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Demo Diskette Offer

TK!Solver EXPLA

TK!Solver does for equations what word processing did for words. The first thing you should know about the TK!Solver™ program is that it is not a spreadsheet. Instead, it does something completely unheard of (until now) — it turns your personal computer into a voracious equation processor.

The next thing you should know is that if the TK!Solver program can't make life with your personal computer easier (and pay for itself), even if you use it only 15 minutes a week, you are a very rare person.

And finally, you should know exactly what equation processing is, and how it works. If you keep reading this, you will.

Equation processing with TK!Solver, or problem solving made easy. The best way to understand what the TK!Solver program is, is to understand what it *does*. The following simple example is designed to do just that. If you're still a little in the dark after reading it, stop in at your local computer store for a very enlightening hands-on demonstration.

Begin by setting up your problem. The TK!Solver program lets you do it quickly, easily, and naturally. For example, a car costs \$9785. What would be the monthly payment on a three-year loan if the down payment is 25% and the interest rate is 15%?

STEP 1. Formulate the necessary equations to solve your problem and enter them on the "Rule Sheet" simply by typing them in (as in the screen

64 /

(1r) Rule: "CAR LOAN"

St	Input	Name	Output	Unit	Comment
	9785	price		dollars	price of car
		down	2446.25	dollars	down payment
		loan	7338.75	dollars	bank loan
	25	dp		percent	down payment percentage
		payment	254.40018	dollars	monthly payment
	15	i		percent	interest rate
	3	term		years	term of loan

===== RULE SHEET =====

S Rule

"CAR LOAN

price-down=loan
down/price=dp
payment=loan*(i/(1-(1+i)^-term))

photo). For example: "price — down = loan."

STEP 2. Enter your known values the same way on the "Variable Sheet." For example: "9785" for price. You may also enter units and comments, if you want.*

STEP 3. Type the action command ("!" on your keyboard) to solve the problem.

STEP 4. TK!Solver displays the answer: the monthly payment is \$254.40. **Backsolving, the heart of TK!Solver.** Now that you've defined the problem and solved it, TK!Solver's

unique backsolving ability also lets you think "backwards" to solve for any variable, regardless of its position in the equation. For example, if you can only afford a monthly payment of \$200, you can re-solve the problem in terms of that constraint. The TK!Solver program will solve the problem, displaying your choice of a higher down payment, a longer loan term, or a lesser interest rate. This unique backsolving capability forms the basis of TK!Solver's remarkably flexible problem-solving ability.

Also, as you can see from the

* You can easily define appropriate unit conversions on the unit sheet.

SOLVERTM GAINED:

example on the screen, TK!Solver deals not only with single variables, but with entire equations and sets of simultaneous equations. It also deals with much more complicated problems than this one. How complicated? That's up to you. What kinds of problems? That's up to you, too, but popular applications include finance, engineering, science, design, and education.

Other extremely useful and interesting things TK!Solver does.

Aside from its basic problem-solving abilities, the TK!Solver program performs a number of pretty fancy tricks. Like: *Iterative Solving*; in which TK!Solver performs successive approximations of an answer when confronted with equations that cannot be solved directly, (like $\exp(x) = 2 - x \cdot y$ and $\sin(x \cdot y) = 3 - x - y$). Like: *List Solving*; in which TK!Solver attacks complete lists of input values and solves them all, allowing you to examine numerous alternative solutions, and pick the one you like best. Like: *Tables and Graphs*; using the values you produced with the List Solver, the TK!Solver program will automatically produce tables and graphs of your data. You can look at your formatted output on the screen or send it to your printer with a single keystroke. And like: *Automatic Unit Conversion*; in which TK!Solver lets you formulate problems in one unit of measurement, and display answers

in another. Very convenient what with all this talk about going metric.

The TK!Solver program also provides a wide variety of specialized business and mathematical functions like trig and log and net present value.

Then, there's TK!Solver's on-screen Help facility that provides information on commands and features any time you want it. Just type "?" and a topic name.

And of course the TK!Solver program combines all these features in one *integrated program*.

TK!SolverPacks make problem-solving a picnic. TK!SolverPack™ application packages are specially developed by experts in specific fields. Each package contains a diskette with about a dozen models that include the necessary equations, values, and tables for solving a particular problem. The models are usable as-is or you can easily modify them.

TK!SolverPack application packages available from Software Arts include Financial Management, Mechanical Engineering, Building Design and Construction, and Introductory Science. Additional TK!SolverPacks are on the way from Software Arts, McGraw-Hill,™ and others.

We know you're out there. No matter who you are, or what you do, if it involves using equations, the TK!Solver program is an indispensable tool for you.

So, visit your local computer store today, and see TK!Solver in action. You'll be amazed at how much faster and more effectively you'll be able to work when you discover the power of equation processing with the TK!Solver program.

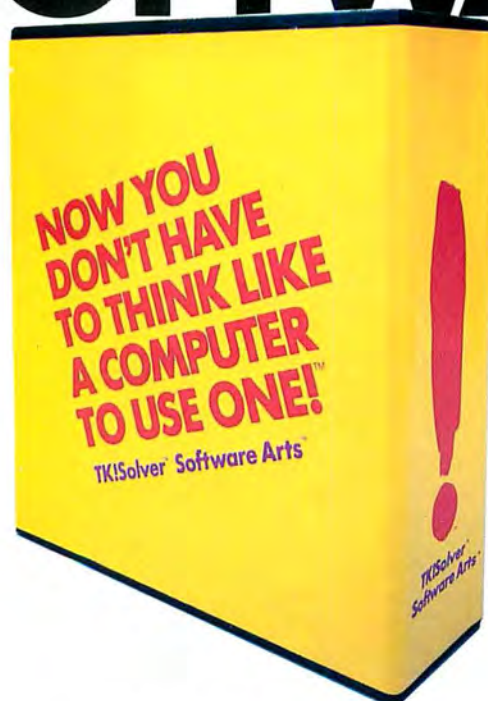


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*DBM II directly reads and writes Lotus 1-2-3 Worksheet (WKS) files. No translating is required.

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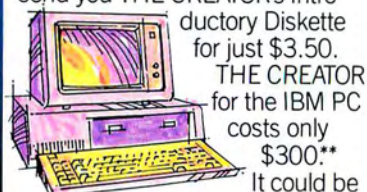
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PC WORLD

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What's on the best-seller list in IBM Personal Computer software?

Games can make anyone
a winner while treating
you to hours of fun
and fantasy.



Payroll can boost your
productivity and make employee
deductions less taxing.



Electronic spreadsheets help
build financial models that
can shape your future.



Word processing can
give any writer
visible support for
creating and editing.

Inventory control can help put you on top by keeping track of what's what and where.



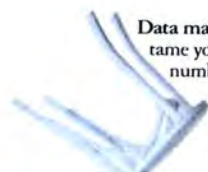
Languages like BASIC can encourage students to write programs of their own.



Stock monitoring can help put you in the chips by tapping the world of Wall Street.



Data management can help tame your file of names, numbers, facts and figures.



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People prefer IBM Personal Computer software for a variety of reasons. And one of the best reasons is its variety.

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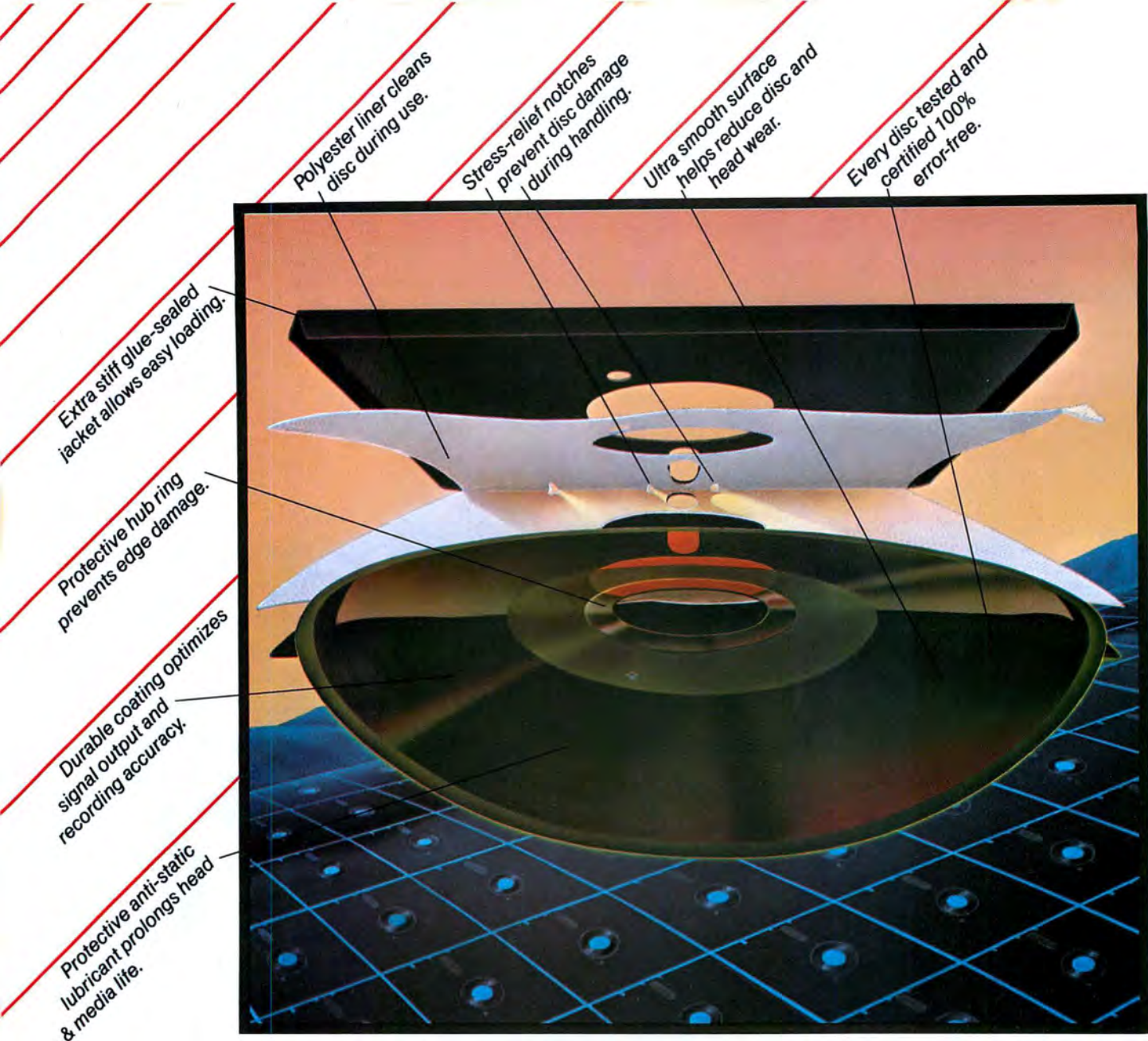
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- Supports field and display attributes
- Supports a PC-compatible parallel printer which emulates the 5256 Printer
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- Includes several diagnostic tools to aid in troubleshooting communication problems
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The Great Combination

Microsoft's software wizard, Bill Gates, who wrote the introduction to this issue's section on programming languages, once defined software as "a great combination of artistry and engineering." Writing good software is surely one of the great challenges of all time. Packages such as Mitch Kapor's *1-2-3* or Microsoft's new word processor, *Microsoft Word*, are like symphonies—they are immensely complicated and yet elegantly refined.

Not all the programs reviewed in this special edition of *PC World* are works of art, but most are useful or entertaining. And a surprising number deserve superlatives such as "wonderful" or even "magical."

This special edition marks the second anniversary of the IBM PC, which was first shipped in October 1981. The people at the personal computer division of IBM, headed by Philip D. Estridge, have done more than make the PC a commercial success. Along the way, they have turned personal computing into the hottest growth industry of our times. And they have shown that IBM isn't quite



the stuffed-shirt company it is often thought to be. Today, as this *Software Review* demonstrates, over 1200 software products are available for the PC. But if you think that amount of software is impressive, the sheer volume of PC software written over the course of the next two years will stagger the imagination. Our 1985 annual *Software Review* may have to be published in two installments.

It is no wonder that venture capitalists, who are pouring billions of dollars into high-tech companies, rank software at the top of the most-lucrative investment list. As you can see for yourself by thumbing through the pages of this issue, the software industry represents the gold rush of our time.

Three of the leading PC software companies—MicroPro, Lotus Development, and VisiCorp—are rumored to be preparing a public stock offering to take place sometime during the next six months. If any of them do half as well as Apple did with its public offering, the principals of these companies will be on their way to becoming personal computing's first software billionaires.

As rosy as this appears, life can be rugged and unpredictable even for the software whiz kids. Thoughts about fierce competition from both American and Japanese firms, price slashing, coping with rapid organizational growth, and the many technical challenges ahead are enough to crash many a young hacker's processor.

The cost of product development is on a steep incline. A well-designed program like *Multiplan* or *1-2-3* can cost several megabucks and take one to two years to write. Established companies have an edge, especially if they have a "cash cow" type product like *VisiCalc* or *WordStar* that keeps R & D juices flowing. However, with crazed venture capitalists crawling about Silicon Valley, dollars falling out of their pants cuffs, money is not

enough of an obstacle to stop anyone with a good idea and lots of determination.

Speaking of good ideas, it is my jaded observation that too many software publishers are putting out "me-too" products (witness the number of word processors for the IBM PC). New concepts with the potential impact of *VisiCalc*, the program that put personal computers in the office, are difficult to come up with. A better spreadsheet, an integrated package, or a program that uses a mouse seem to be today's standard developments.

The search for a new *VisiCalc* has proved elusive even to the authors of the original. Perhaps it was just one of those brilliant ideas that comes along every 100 years or so.

"User-friendly" has become an overused phrase as well as a puzzling abstraction that has sent many a programmer to an early shower. Users want programs that are accessible and easy to understand but are not "user-burdensome," with option menus that lead to menus that lead to

menus. Many user-friendly programs are really an insult to our intelligence.

Office networking and interfacing PCs to mainframe computers are turning out to be much more difficult tasks than many had thought. Getting your PC hooked up to a big computer isn't the problem. The problem is the software interface between the two. PC users shouldn't have to learn mainframe protocols.

The above are creative challenges, and the talented people in the software industry, many of whom have written articles for this issue, are up to the task if anyone is. However, one ugly issue keeps rearing its head and threatening to blow the house down.

The number one issue facing the personal computer industry is software piracy. Software piracy threatens to rob software authors of not only their royalties but ultimately their incentives. It is a growing problem because it keeps manifesting itself in new forms. I recently heard about a disk magazine selling programs obtained from the public domain software library of an IBM PC user group. The user group sells the software for \$5 per disk, and the disk magazine in turn sells it to a multitude of customers at a much higher rate without paying the club or the original authors. The problem is that it may not be illegal for someone to

repackage public domain software and sell it. But is it fair for the disk magazine to make money from work done by the people in the user group?

As personal computers become mass-market items, piracy runs rampant because it is easier for pirates to hide amid the crowd of new software vendors, distributors, retail outlets, and users. The pirate's bounty will represent a bigger market share unless something concrete is done. Unfortunately, no one really knows what to do.

Meanwhile, be aware, and hats off to the software authors who have created such an amazing wealth of programs for the IBM Personal Computer!

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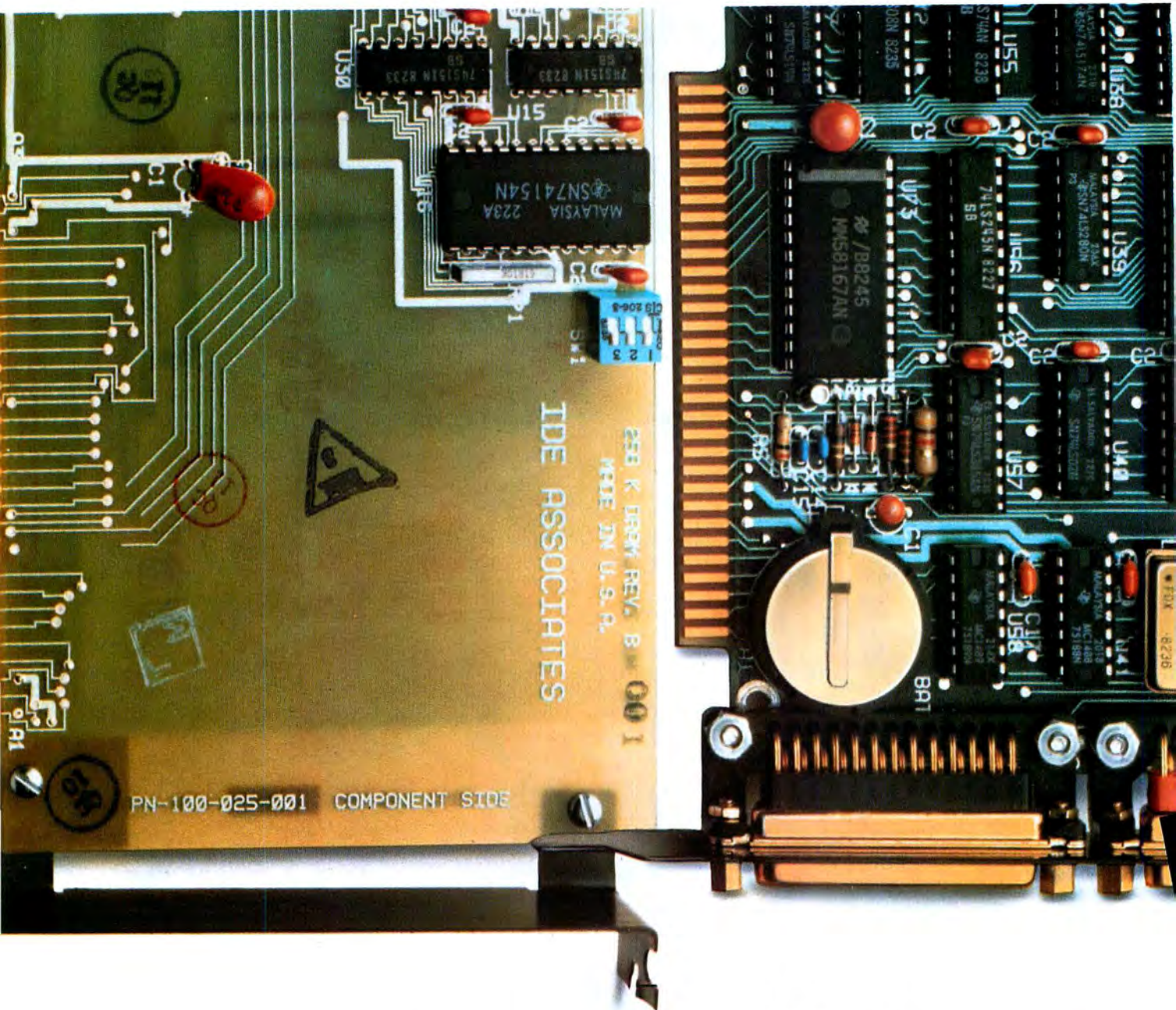
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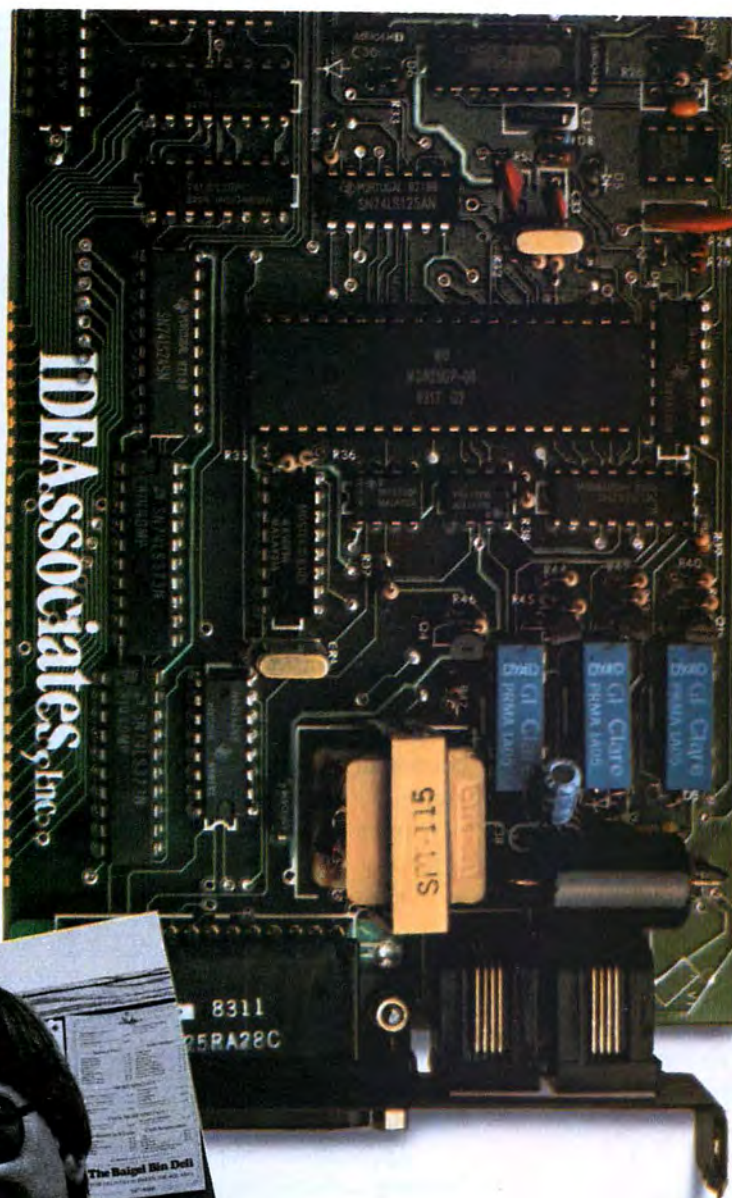
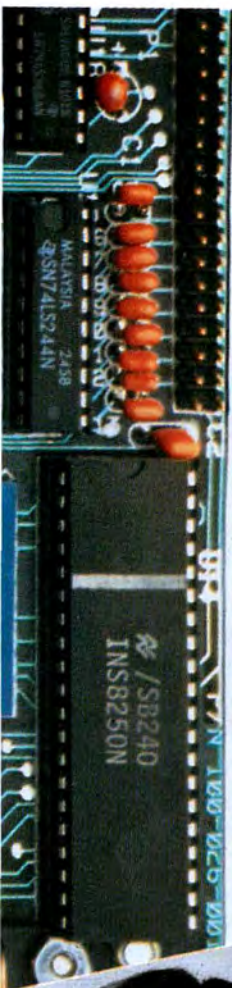
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Introduction

Adrian Mello

IBM PC users are fortunate to have one of the largest and fastest-growing software bases in the personal computer marketplace. That good fortune, however, can seem like a mixed blessing when it comes time to shop for programs. To help you find the programs you're looking for and alert you to the constantly expanding range of applications for your PC, the *PC World Software Review* provides descriptions, prices, access information, and opinions on more than 1250 PC-compatible software products.

Perhaps the most interesting aspect of the *Software Review* is the comments from readers like yourself that tell about the useful or not-so-useful features of a program. These comments add another dimension to the software reports by showing the character of a program as it is perceived by those who use it.

Organization

The *Software Review* is divided into 18 categories. The categories, in turn, are listed under two general classifications: System Software and Applications Software. The difference between using system software and applications software is like the difference between building or remodeling a house and just living in one. To design or remodel a house you need to understand more about fundamental structural principles than if you accept a house as is. Users involved with system software are likely to have programming experience and be able to design or modify programs. Applications program users will probably just want to use their programs as they were designed.

The categories covered under System Software are Operating Systems, Languages, and Utilities. Operating systems permit the computer to control peripherals such as the monitor, the disk drives, and the keyboard. Oper-

ating systems also provide fundamental organization for commonly executed tasks such as maintaining files and controlling the way the computer uses other programs. Languages give users a more familiar and human way to communicate with the computer than the machine language that the computer uses. Utilities give programmers development tools to help them design and modify other software.

Most programs for the PC fit into the Applications Software classification, which comprises 15 of the 18 categories in the *Software Review*.

Traditional, general-purpose applications are represented by Spreadsheets, Word Processing, Data Management, Graphics, and Communications. These applications help you perform tasks such as writing, record keeping, and making graphs.

Applications categories for planning and overseeing business activities include Financial Applications, Business Management, and Accounting. Categories that deal with vertical markets such as real estate, medicine, law, construction, manufacturing, and engineering include Job Specific Applications and Industrial Applications. The Personal Management, Games, and Entertainment categories address users' personal affairs as opposed to their business activities.

Finally, the *Software Review* presents trend-setting applications that are revolutionizing the usefulness of the personal computer. Two categories form the vanguard in the *Software Review*. Integrated Applications lists programs that unite a number of traditionally separate jobs in a single product, making software more versatile and also making each new task easier to learn due to the software's use of similar commands, menus, and prompts. The programs in Deduction and Reasoning Applications promise even greater advances with programs that solve algebraic equations and accept natural language commands.

Each of the 18 software categories in the *Software Review* begins with an essay that introduces the overall purpose and character of the products within that category. The essays are written by experts who have played an important role in developing software for the IBM PC or who have worked extensively with the type of software in the category.

Many categories cover a variety of products. In the Languages category, for example, you'll find both interpreters and compilers. In the Word Processing section you'll find spelling checkers, thesauruses, grammar checkers, text editors, and general-purpose word processors.

Following the essays are reports on the individual programs that make up the categories. Each product report is divided into two or three sections. Appearing at the beginning of every report is the name of the product and the manufacturer's name, address, and telephone number. The second part of the report describes the product's purpose and features. Distinguishing features are mentioned first, followed by more general features. The product's list price and minimum system requirements are given at the end of the description.

The third part of the report is the comments written by readers. The comments, which reflect contributors' opinions and not those of *PC World*, are intended to serve as stepping stones toward the development of your own opinions.

Using the Software Review

You can use the *Software Review* to find out what kinds of jobs computers do and about the specific programs that do those jobs. If you already know the name of a program or its manufacturer, you can use the Product Index or Manufacturer Index to locate the information you want. To find out about the tasks computers can perform, read the introductory essays for each of the categories. Then go through the reports in each category.

You may notice that programs in one category are described with terminology different from that applied to programs in another category. The reason is that software is as diverse as the fields of expertise for which it is developed.

Once you know about the tasks different programs perform, you're ready to look for the products that suit your particular purposes. For example, your business may require that you maintain records that are periodically evaluated to monitor your business's progress. If you have heard about people who use computers for this purpose, you may have some idea that data management programs keep records that can be retrieved in an organized fashion. To find the best program for you, read the introductory essay for the Data Management category to see whether the category suits your needs. If it seems right, read through the reports and look for promising products. You may want to look in more than one category to find programs that use different problem-solving approaches. For example, Data Management, Spreadsheets, Financial Applications, and Accounting all list programs that help maintain records. The programs in each section are designed to use those records in different ways and for different purposes.

Using the *Software Review* should awaken you to the variety of programs that have become available in the short time since the PC's appearance on the market. As the base of software for the IBM PC and compatibles continues to expand, *PC World* will keep you abreast of those developments with new product announcements and in-depth reviews. We will follow the *Software Review* in the spring with a companion volume, the *PC World Hardware Review*, as part of our commitment to provide thorough, up-to-date information that can unlock the potential computing power of the IBM PC.

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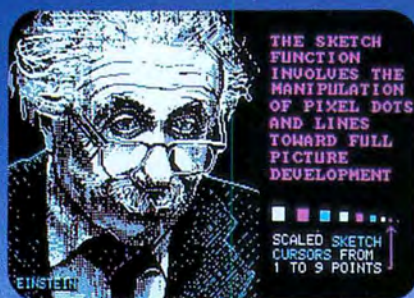
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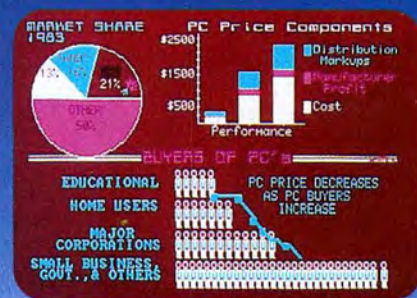
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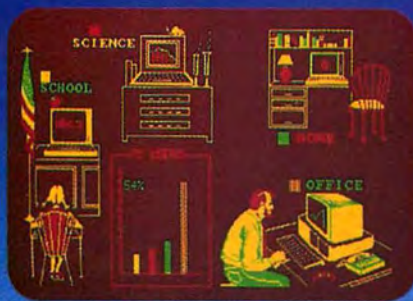
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It's one confusing business, choosing a word processor. All those companies assuring you theirs is the most fantastic one of all. And leaving you to cut through all the smoke and hopefully whittle them down to the best one for you.

Well, we can help. If you'll just invest the next three minutes reading this, we'll tell you about a word processor that makes picking the right one a real breeze.

FIRST, A WARNING. There are two things you must do when evaluating any word processor. First, be careful. It's no secret that many of today's claims about being easy to learn and use just don't stand up to careful comparison. Watch carefully for complicated codes and programs that require "training sessions." Secondly, be selective. Buy a word processor you can use on a daily basis, not one that requires another "training session" when someone goes on vacation. In other words, be very careful to select



the word processor that's absolutely the best and easiest to use. Which is what we'll now introduce you to.

WHY ONE WORD PROCESSOR MAKES THE MOST SENSE OF THEM ALL. Meet WordPlus-PC. It's the advanced, "user-oriented" software package that turns your IBM-PC computer into a word processor equipped with the sophisticated capabilities of far larger, more expensive systems.

THE REMARKABLE WORDPLUS-PC STORY. In a nutshell, it's this. WordPlus-PC was designed from the ground up to be the very latest in word processing technology. It has all the important features you

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HOW WE CAN BE SO SURE OF OURSELVES. We're Professional Software, a leader in word processing software with over 30,000 customers contentedly churning out letters and documents around the world on personal and business computer systems. We know precisely what a top quality word processor must do. And we've studied all the shortcomings of our competitors. That's how WordPlus-PC came to be the easiest-to-use word processor ever.

ALL THE FEATURES YOU'D EXPECT.

WordPlus-PC is both powerful and versatile. Its long list of major functions includes movement of paragraphs, global search-and-replace, and creation of multiple "boilerplate" and personal letters with the touch of a few buttons. There are 3-line headers and footers and automatic page numbering. When you underline or boldface words as you type, WordPlus-PC displays them in that form on the screen. You can merge information created by popular spread sheet programs. You'll create personal letters quickly and easily, or merge name and address information from other programs. You can easily create standard layouts for preprinted forms and use WordPlus-PC to prepare



answers to questions. That's how WordPlus-PC helps you learn. In addition to the help you'll get from your dealer, we're ready to assist you when you call our special toll-free number and talk to one of our carefully trained advisors. This service is available at no charge during the 90 days following receipt of your user registration card. It's all part of Professional Software's total commitment to customer service and support.

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With WordPlus-PC's easy-to-use documentation, you'll be using your word processor right from the first minute. After an hour, you'll feel at home with all the basic functions and ready to explore the more sophisticated ones. After a few hours you'll put the manual away. There are

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WordPlus-PC was designed and written by Andres Escallon.

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Operating Systems



Gary Kildall

Some people who use microcomputers may not even know they have an operating system. Other people spend a good part of their day using the operating system to do sophisticated manipulations on complex bodies of data. A good operating system should be transparent to those who don't want to think about it but also powerful and easy to use for those who know how to use it.

Of all the software you have, the operating system is the most crucial. The operating system is what a computer uses to mind its own business. It consists of a supervisory kernel and a collection of utility programs. The utilities tell the computer how to handle input and output and how to keep track of the collections of data, known as files, that are created, modified, moved, copied, renamed, and deleted. The kernel is the nucleus of the operating system; it schedules and synchronizes the utilities' tasks.

Most tasks performed on microcomputers are accomplished with applications programs. These programs apply the power of the computer to jobs such as word processing, accounting, data management, and communications. They are what you normally think about when you think of computer programs. For applications programs to do your work, they must be managed by an operating system.

Sometimes an operating system is included with a computer when you buy it. You should learn the basic features of the operating systems available for your computer or the computer you want to buy. Consider what they do, how much software currently runs under them, and how much will be available to run under them in the future. In an 8-bit computer the objective is for the operating system to be efficient and compact, leaving as much space as possible for applications programs. In 16-bit machines the emphasis is different. Since memory is less a constraint, functionality is more important. What features does the operating system have? Can it support multitasking, multiaccess file systems, networking, or shared code? If you are a programmer, you want an op-

erating system that is a complete software development environment. Does it have a debugger, an editor, and an assembler? Is a full range of programming languages available? Does the system have room for you to grow as you become more proficient? Are there compatible 8- and 16-bit versions in case you want to increase system performance by upgrading from one computer to another?

Early operating systems were primitive tools used by computer operators to move data through the system. Just as early automobile drivers had to be mechanics, users of the first operating systems had to be programmers. Today neither car drivers nor computer users need to know much about their hardware. We have seen an evolution that brought us from the ROM-based "operating system" that ran the Intel 4004 processor to Concurrent CP/M-86, which includes 27 utilities, and permits four applications programs to run simultaneously on the same computer.

In the future we will see interactive concurrent processing. Users will be able to look in on one program while working on another by means of dynamic windowing, switching screens only when they want to intervene. Networking will make such features available to many users simultaneously. There will be more and better graphics and better user interfaces. Software and hardware will get better, cheaper, and easier to use. More people will discover the excitement that is possible when they bring a microcomputer into their lives. Even more fascinating times lie ahead.

Gary Kildall was a software consultant at Intel when he wrote CP/M, the first practical operating system for microcomputers. Intel could not use it, so Kildall sold his product to hobbyists via mail order. From this modest beginning an entire industry evolved. Kildall is currently chairman of the board and chief executive officer at Digital Research of Pacific Grove, California.

DOS 2.00

IBM

Systems Products Division

P.O. Box 1328

Boca Raton, FL 33432

800/447-4700, 800/322-4400

Illinois, 800/447-0890 Alaska,
Hawaii

Microsoft's DOS 2.00 is an enhanced, single-user operating system that uses a tree-structured filing system and contains both Disk BASIC and Advanced BASIC. The operating system helps keep track of files and has directory commands such as MKDIR, RMDIR, CHDIR, PATH, and TREE. Hard disk support, redirection features, and SORT filters are also included. DOS 2.00 is compatible with DOS 1.00. Storage capacity has been increased from 160K to 180K for single-sided disks, and from 320K to 360K for double-sided disks. List price: including BASIC 2.0 \$60. Requirements: 128K, one disk drive.

UCSD p-System, Version IV.1

SofTech Microsystems

16885 W. Bernardo Dr.

San Diego, CA 92127

619/451-1230

The UCSD p-System, Version IV-1 enables software developers to write portable programs that run on most microcomputers. The p-System compilers create code for a hypothetical computer called the p-machine. Brief emulator programs translate the p-System code for various micro-

processors. The operating system includes a full set of integrated tools such as an editor that can perform automatic indenting. The editor, the compilers, and the execution system work together for flexible program development. A program's maximum size is limited only by the disk storage capacity. The operating system automatically manipulates programs that are larger than memory size to permit their use. Disks don't have to be changed to edit, execute, compile, debug, and run programs. List price: \$650 (run-time version also distributed by IBM, \$50). Requirements: 64K, one disk drive.

UCSD p-System Version IV-1

Network Consulting Incorporated

1093 W. Broadway

Vancouver, British Columbia

V6H 1E2 Canada

604/430-3466

UCSD p-System Version IV-1 is an enhanced version of the UCSD p-System with a p-machine emulator. The program provides compatibility with standard IBM disks, utilities for using a hard disk, and a disk emulator. Adaptable system facilities are included for adding custom I/O drivers. The program enables you to use remote terminals and the 8087 coprocessor. XON/XOFF flow control for serial printers and disk write verification are provided. List price: \$845. Requirements: 64K, two disk drives.

"The reputation of this product is that it's better than IBM's own version. In my opinion, this p-System is excellent." Vim Toutenhoofd,
Cottage Grove, Oregon

Real Time Operating System (RTOS)

MicroWare

P.O. Box 79

Kingston, MA 02364

617/746-7341

RTOS is a configured version of iRMX-86, which is Intel's real-time operating system. The program is entirely reentrant, providing many features normally found only on mainframe computers. Included with RTOS is the Intel assembler, ASM-86. All modules produced by the compilers or by ASM-86 are combined, loaded, and managed with the three utilities LINK-86, LOC-86, and LIB-86. These products make it possible to load modules anywhere in RAM and resolve external references between run-time modules. List price: \$600. Requirements: 500K, one disk drive, 8087 coprocessor.

BOS/5, MBOS/5, BOS/NET

BOS National, Inc.

2560 Royal Ln. #228

Dallas, TX 75229

214/484-2717

Like programs written for the UCSD p-System, programs written for BOS (Business Operating System) will run on any computer using a BOS system. BOS operating systems provide

business-oriented utilities and programs, including file maintenance, file conversion, file dump programs, and a text editor. Each operating system has sign-on messages with full password protection and enables you to customize system menus. BOS/5 is the single-user version. The multiuser version, MBOS/5, provides all functions of BOS/5 as well as print-spooling, record-locking, and file-sharing. MBOS/5 makes it possible to connect two dumb terminals to the IBM PC. BOS/NET enables several PCs to be linked in a local area network with a central file server and various shared peripherals. BOS operating systems enable single-user programs to be run in multiuser environments. List price: BOS/5 \$500, MBOS/5 \$1050, BOS/NET \$1050. Requirements: for each program 64K, two disk drives.

BITS (Boeing Intelligent Terminal System)

Boeing Computer Services
2800 160th Ave. SE
Bellevue, WA 98009
206/763-5636

BITS includes a full-screen editor, the TeleType or TeleTypewriter communications facility, and a data bridge. The operating system has menu-oriented work stations for beginners, and the menus may be exited easily for entry into the command language mode. The data bridge provides file compatibility with CP/M, MS-DOS, and RT11-OS. List price: \$200. Requirements: 64K, two disk drives.



Oasis-16

Phase One Systems, Inc.
7700 Edgewater Dr. #830
Oakland, CA 94621
415/562-8085

Oasis-16 is a multiuser operating system that includes the EXEC job control language, a BASIC interpreter and compiler, and a script processor. The program also has diagnostics and conversion utilities, communications utilities, a macro assembler, a debugger, and a linkage editor. Private or shared lines, optional passwords, and privileged security access are also provided. Applications software developed for Oasis-16 runs without modification on other Oasis-based microcomputers. List price: \$1495. Requirements: for single user 192K, one floppy disk drive, 5M hard disk; for multiuser environment 250K.

PolyFORTH II Levels 3 and 4

FORTH, Incorporated
2309 Pacific Coast Hwy.
Hermosa Beach, CA 90254
213/372-8493

PolyFORTH II is an integrated, multiprogrammed operating system. It includes the FORTH language, an 8086 assembler, an editor, data base support, an 8087 coprocessor mathematics package, and graphics capabilities. The product is a full multiuser, multitasking operating system. Only FORTH and 8086/8087 assemblers are supported. List price: Level 3 \$600, Level 4 including system source code \$3200. Requirements: 64K, two disk drives.

Concurrent CP/M-86

Digital Research
160 Central Ave.
Pacific Grove, CA 93950
408/649-3896

Concurrent CP/M-86 is a single-user, multitasking operating system that enables users to run up to four applications programs at one time. Users can toggle between programs with a single keystroke. The operating system uses a real-time monitor to keep all tasks and files separate. Communication between programs is accomplished through the use of queues. Up to 16 user numbers can be assigned for logging on to the operating system. List price: \$350. Requirements: 256K, two disk drives.

MS-DOS 1.10

Microsoft Corporation
10700 Northup Way
Bellevue, WA 98004
206/828-8080

MS-DOS 1.10 is an operating system that can manage up to four logical drives, two RS-232C serial ports, and two parallel printer ports. The program supports single- or double-sided disks, storing 160K or 320K per disk respectively. It includes utilities to copy and compare disks and files. MS-DOS 1.10 also includes a line-oriented text editor, a machine language debugging utility, a relocating linker, and BASIC with extensions to support color graphics. List price: \$40 (also distributed by IBM, \$40). Requirements: 32K, one disk drive.

XENIX 68000

Sritek, Inc.
10230 Brecksville Rd.
Cleveland, OH 44141
216/526-9433

The XENIX 68000 package has a C compiler, a Motorola 68000 processor assembler, utilities, a text processing package, multiuser capabilities, and I/O software. The product also has record and file locking. List price: \$495. Requirements: 256K, one disk drive, Sritek 68000 MicroCard, Sritek VersaCard.

"XENIX 68000 gives the fastest Sieve benchmark of any 68000 product on the market (3.6 seconds). The operating system is beautifully integrated with the IBM PC and has outstanding product support." D. R. Unruh, Toronto, Ontario

QNX

Quantum Software Systems, Inc.
7219 Shea Ct.
San Jose, CA 96139
408/629-9402

QNX is a multiuser, multitasking operating system with full 8087 coprocessor capabilities. The program includes reentrant code, device independent I/O, a full-screen editor, macros, user commands, a C compiler, an assembler, a linker, a debugger, and utilities to convert to and from PC-DOS file formats. QNX uses tree-structured files and provides background compilation and print spooling. List price: \$650. Requirements: 96K, two disk drives.

"QNX is much more powerful than PC-DOS 1.00, but not as transparent (it suffers from UNIX history). A great tool for people with more than minimal computer ability." Harvey L. Lynch, Sunnyvale, California

"QNX runs MS-DOS programs when using the Qdos utility and is faster on an IBM PC than XENIX is on an INTEL 80286." Terry Laughlin, San Francisco, California

Venix

VenturCom, Inc.
215 First St.
Cambridge, MA 02142
617/661-1230

Venix is a licensed version of Bell Labs' System III Unix. Venix adds real-time programming capability and Berkeley utilities such as the vi editor and cshell. The multiuser operating system includes a relational data base and business graphics. Software development tools include C, BASIC, and FORTRAN 77 languages and a symbolic debugger.

The operating system has MS-DOS file transfer capability and enables you to run MS-DOS on the same hard disk as Venix. Networking software includes UUCP (a Unix-to-Unix copy utility) and vx, VenturCom's VAX VT 52 terminal emulator. List price: multiuser version \$1000, single-user version \$850. Requirements: 192K, floppy disk drive, 5M hard disk.

CP/M-86

Digital Research
160 Central Ave.
Pacific Grove, CA 93950
408/649-3896

CP/M-86 is a general-purpose, single-user operating system designed for 16-bit microcomputers. The operating system enables users to create, test, and run assembly language programs. The program's features include dynamic file management, fast assembly, general-purpose editing, and advanced debugging. CP/M-86 is compatible with CP/M-80 and is tailored to take advantage of increased address space. The operating system also supports the ISO and ANSI standard graphics extensions. Digital Research's version of the product includes background print spooling so that users can print a file in the background while running a separate application. List price: \$60 (also distributed by IBM, \$240). Requirements: 64K, one disk drive.

"Some of the best documentation I've ever seen. This operating system also comes with GSX-86 graphics extensions, an assembler, and utilities at no extra charge." Larry E. Baker, Jr., Lafayette, Louisiana

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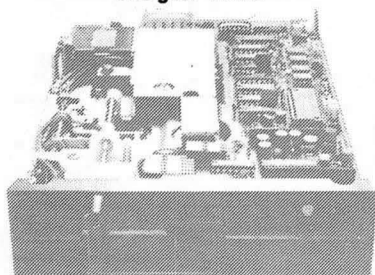
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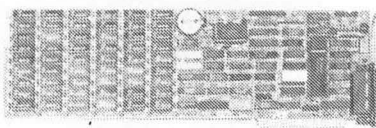
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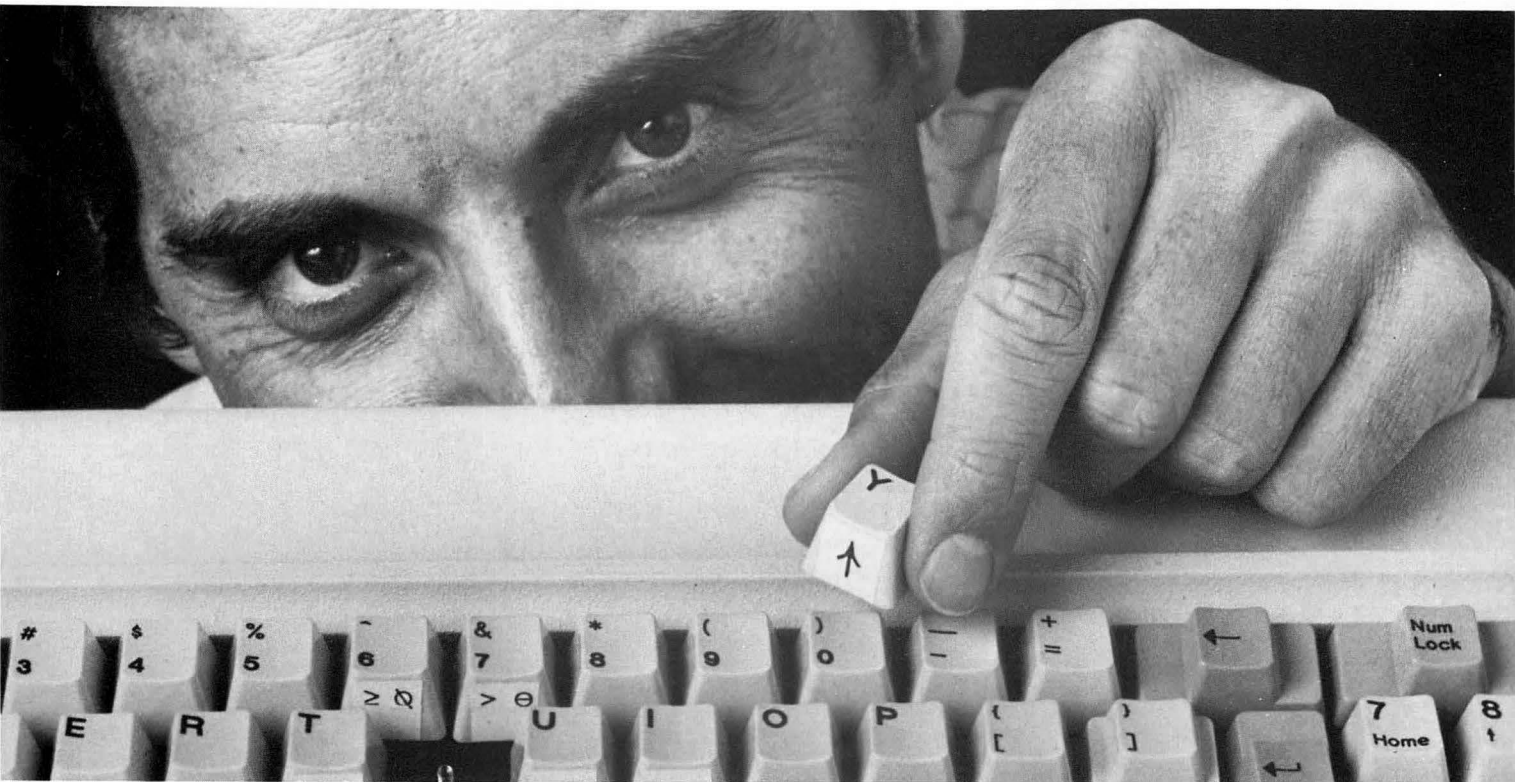
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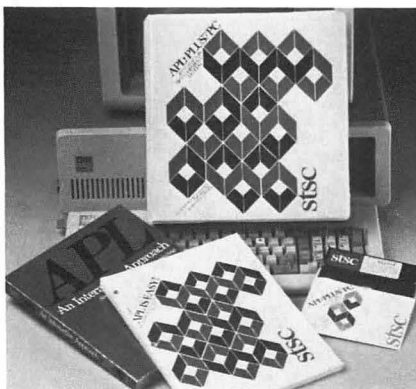
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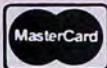
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Languages

William Gates

If you traveled overseas without learning any foreign languages, you would have difficulty communicating with anyone you met who did not speak your native tongue. The same problem exists between people and microcomputers. Computers understand only binary instructions that take the form of electrical impulses. Because it takes years of education and training to understand the inner workings of computers, computer languages have been developed that allow you to manipulate information within the computer without really knowing anything about the computer's internal processes. Languages act as interpreters, allowing people and computers to communicate accurately.

Programming languages have been around as long as computers have. But until Paul Allen and I developed the first microcomputer BASIC in 1975, high-level languages were restricted to mainframes and minicomputers, with which you had the luxury of fast processing capability and large memory.

Today many companies have been successful in adapting former mainframe and minicomputer languages to the 8-bit and 16-bit environments of microcomputers. The languages are suited to different applications; all have unique sets of rules, called syntax, that dictate how you use the language to communicate to the computer.

In choosing a programming language, first look at what you want the program you are developing to do. Next, evaluate the computer environment you are writing the program for and what your level of expertise is.

I divide programming languages into three categories: assembly language, high-level languages, and the C language. One step up from binary code, assembly language is suited for experienced programmers who like to get into the machine and understand what's going on in every register or memory location. Assembly language can also be very difficult to use because it leaves you on your own to understand a lot of cryptic computer codes.

Programs written in assembly language offer the advantage of fast execution because the language contains little overhead code to slow the computer down. So if you really know what you're doing and want to write a fast program, assembly language is for you.

High-level languages make up the second language category. The overhead code that makes high-level languages run more slowly than assembly language also makes them easier to use. But despite the fact that high-level languages are slow, they are significantly more popular than assembly languages with most programmers.

The four most popular high-level languages available for microcomputers are BASIC, FORTRAN, Pascal, and COBOL. They are called high-level languages because they give programmers guidance and assistance in the form of commands that instruct the computer to perform various functions automatically.

BASIC is by far the most widely used high-level language. The language was originally created for instructional purposes and now has emerged as the language for all microcomputers. In fact, almost all computer manufacturers supply a version of BASIC bundled with their system.

BASIC is popular because it closely resembles the English language, with commands like PRINT and RUN that tell the computer what to do. Besides being easy to learn and use, BASIC is also quite flexible—you can make it carry out just about any task. Because of its popularity, BASIC has evolved faster than other high-level languages to take advantage of new microcomputer hardware features.

While BASIC is very flexible, other languages are better suited to specific programming applications. FORTRAN, which stands for Formula Translation, was first developed by IBM for the engineering and scientific community. The language is useful for manipulating complex



formulas that require a high degree of numerical precision. Because many FORTRAN programs that perform standard equations and calculations are public domain, you can easily incorporate existing FORTRAN software into your programs.

COBOL, an acronym for Common Business Oriented Language, was designed for business applications in which formulas less complex than those used in FORTRAN are applied to large files and data bases. COBOL's strength lies in its ability to manipulate large amounts of data and perform repetitive calculations.

Pascal, like BASIC, was developed as a teaching aid for computer programming classes. BASIC tends to promote bad programming habits because it allows you to write code in an unstructured manner and still run the program. The lack of structure leads to problems in developing extremely large programs. Because Pascal promotes a more structured approach to programming, it has emerged as a favorite among software development teams. Pascal allows you to build long programs in a series of simple sequences that can be debugged in modules before the entire program is finished.

C, which was first developed as the programming language for the UNIX operating system, is just now emerging as a programming language for microcomputers. Because it lies somewhere between high-level languages and assembly language, C is in a category of its

own, with some of the advantages of both high-level and assembly languages in addition to a number of its own special capabilities.

The biggest advantage of C is portability. A program written in C can be transported to almost any microprocessor. This portability frees you from having to develop a program for every different microprocessor. You have to write the program only once.

For the experienced programmer, C is very powerful. The language is structured much like assembly language, without a lot of predefined functions and statements, so you have to understand what is happening within the system. Yet C still provides all the building blocks that help you develop sophisticated programs. And since the language contains only a small amount of overhead code, a C program runs very fast. Many future applications programs and programming languages will be written in C.

Computer languages will continue to adapt to new conditions. In that respect a computer language is just like a human language. Our languages are not static; they follow trends and adjust to new situations. Similarly, computer languages will continue to evolve as the role of the microcomputer continues to expand in our society.

William Gates is chairman of the board and cofounder, with Paul Allen, of Microsoft, manufacturer of MS-DOS.

BASIC Compiler

SofTech Microsystems
16885 W. Bernardo Dr.
San Diego, CA 92127
619/451-1230

The BASIC Compiler expands the syntax of standard, line-by-line Interpreted BASIC. This enables users to write programs that have indented, unnumbered statements and statements that are not in order by line number. Subroutines can be separately compiled and introduced into a host program, so users do not have to recompile the entire program. The compiler also has files and virtual arrays. The BASIC Compiler is compatible with UCSD Pascal and FORTRAN-77, and it includes the IF...THEN...ELSE construction. The program allows statements with a maximum usable memory size of 128K. List price: \$225. Requirements: 64K, one disk drive.

APL *Plus/PC

STSC, Inc.
2115 E. Jefferson St.
Rockville, MD 20852
301/984-5123

APL*Plus/PC is an advanced, general-purpose programming language processor with an applications development system. The implementation is a complete APL language processor with a shared file system, report forms, screen control, and command capability. It provides built-in communications capability and 8087 co-processor support. Over 200 primitive functions for general-purpose applications developments are included. List price: \$595. Requirements: 128K, one disk drive.

UCSD Pascal

IBM
Systems Products Division
P.O. Box 1328
Boca Raton, FL 33432
800/447-4700, 800/322-4400
Illinois, 800/447-0890 Alaska,
Hawaii

The UCSD Pascal Compiler as developed by SofTech Microsystems enables users to create Pascal or assembly language programs. IBM's FORTRAN-77 or BASIC Compiler can be added due to the modular nature of the UCSD p-System, and modules written in one language can be used in programs written in another language. Separately compiled Pascal modules existing in program libraries can also be used. List price: \$375. Requirements: 64K, one disk drive, UCSD p-System.

COBOL Compiler

IBM
Systems Products Division
P.O. Box 1328
Boca Raton, FL 33432
800/447-4700, 800/322-4400
Illinois, 800/447-0890 Alaska,
Hawaii

The COBOL Compiler is used to develop programs in COBOL for the IBM PC. The compiler provides simplified screen definition and nine of the Level 2 function modules. The program includes segmentation and CALL and CHAIN to other programs. It combines object modules with those from the Macro Assembler. Extensions support color and screen formatting. List price:

\$700 (also distributed by Microsoft Corp. at \$750). Requirements: 64K, two disk drives.

"The COBOL Compiler has a well-written user manual, although there are ambiguous error messages. An updated version has been released, which is free for the asking to anyone who purchased the original product." Steve Miller, Columbus, Ohio

"This is a full-feature COBOL with easy-to-implement indexed files that use supplied routines for prefixed B-trees." Tom Mayhew, Lilburn, Georgia

Optimizing C86 C Compiler

Computer Innovations, Inc.
10 Mechanic St., Ste. J
Redbank, NJ 07701
201/530-0995

The Optimizing C86 C Compiler is a full implementation of the C language, and it has 8087 coprocessor support for floating point math. The compiler includes bit fields, initializers, and run-time support. Also provided are dynamic memory allocation, file direction, and library functions. Compiled programs are capable of addressing the machine's full memory capacity. List price: \$395. Requirements: 96K, one disk drive.

"C86 is fast, fast, fast, and friendly, though documentation could be much better." P.E. Begley, Jr., New Hope, Pennsylvania

"C86 is an excellent compiler that allows code to be transported from larger UNIX systems, usually without changes." Armand MacMurray, Palo Alto, California

FORTRAN Compiler

Microsoft Corp.
10700 Northup Way
Bellevue, WA 98004
206/828-8080

FORTRAN Compiler is a subset of standard ANSI-77 FORTRAN and is fully compatible with IBM Pascal, using the same global optimizer, code generator, and linking loader. Compiler directives are added to provide source text INCLUDE features and FORTRAN-66 DO loops, with named COMMONS residing in separate segments of up to 64K each. The language features double-precision arithmetic and long (32-bit) and short (16-bit) integers with selectable default integer lengths. Expressions may appear wherever they are allowed in the full standard language implementation. Interactive I/O and 8087 co-processor features are included. List price: \$350 (also distributed by IBM, \$175). Requirements: 128K, two disk drives.

BASIC Compiler

Microsoft Corp.
10700 Northup Way
Bellevue, WA 98004
206/828-8080

BASIC Compiler produces highly optimized, true machine code and supports all commercial language features of Microsoft's BASIC Interpreter. The compiler supports double-precision transcendental functions as well as INCLUDE, CHAIN, and FORTRAN-like COMMON. It adds source-code program security to BASIC programs because only compiled code need be distributed to the end user. The single-

pass compiler provides either a stand-alone executable .EXE file or a compact .EXE file that can be run with the BASRUN run-time module. List price: \$395 (also distributed by IBM, \$300). Requirements: 64K, one disk drive.

"BASIC Compiler is easy to use. The first program I compiled ran perfectly and much faster than the interpreted version." Isaako Si'uleo, Seattle, Washington

"BASIC Compiler's most valuable feature is its improved formatting of source code. Though this compiler does not produce object code subroutines, it is an acceptable first effort." Jay Nickson, Weston, Massachusetts

87 Macro

MicroWare
P.O. Box 79
Kingston, MA 02364
617/746-7341

87 Macro is preprocessing software that generates the complete set of 8087 coprocessor instructions and contains a library of macros and subroutines that simplify writing 8087 code. Macros are included for common floating point tasks, such as computing transcendental and trigonometric functions, checking logarithms and powers, encoding and decoding real numbers, trapping errors, and comparing 8087 operands. The program also implements higher level features such as data declarations, FOR loops, and IF...THEN...ELSE constructions. 87 Macro runs with the IBM Macro Assembler. List price: \$150. Requirements: 128K, one disk drive, 8087 coprocessor, IBM Macro Assembler.

Waterloo microCOBOL

Watsoft Products Inc.
158 University Ave. W
Waterloo, Ontario
N2L 3E9 Canada
519/886-3700

Waterloo microCOBOL is an implementation of ANSI Standard (1974) COBOL. The level 1 COBOL Nucleus, Sequential I/O, Relative I/O, and Table-handling modules and the level 2 verbs PERFORM, STRING, and UNSTRING are included. The language also comes with the manufacturer's microEDITOR program and an interactive debugger.

Waterloo microFORTRAN

Watsoft Products Inc.
158 University Ave. W
Waterloo, Ontario
N2L 3E9 Canada
519/886-3700

Waterloo microFORTRAN is designed for teaching. The language has many of the characteristics of normal FORTRAN, but varies from the language's established standards. The language processor has characteristics of the WATFIV-S compiler and some features from the FORTRAN-77 definition, such as FORMAT, subroutines and functions, multidimensional arrays, extended character-string manipulation, structured programming control, and file I/O. Included with the language are an interactive debugger, the manufacturer's microEDITOR program, and color/graphics capabilities. List price: \$225. Requirements: 192K, one disk drive.

87 FORTRAN

MicroWare
P.O. Box 79
Kingston, MA 02364
617/746-7341

87 FORTRAN is compatible with the IBM FORTRAN Compiler. The product replaces the functions provided by IBM FORTRAN. Floating point routines written in assembly language drive the 8087 coprocessor. Critical algorithms can be written in the manufacturer's 87 MACRO or 87 BASIC and called from 87 FORTRAN. The program also contains applications that regulate transcendental, roots, or powers. List price: \$150. Requirements: 128K, one disk drive, 8087 coprocessor, IBM FORTRAN Compiler.

Macro Assembler

IBM
Systems Products Division
P.O. Box 1328
Boca Raton, FL 33432
800/447-4700, 800/322-4400
Illinois, 800/447-0890 Alaska,
Hawaii

The Macro Assembler is designed for 8088 or 8086 machine-language assembly. It features powerful assembler directives, fast compilation of source-code assembler programs, and macro command capabilities. The product supports pseudo-operations, cross-reference indexing, and listing and assembly pass controls, with the ability to include code from external files in the assembly of a module. High-level language programs in Pascal, COBOL, or FORTRAN, as well as other assembler-

produced programs, can be called from users' own BASIC programs. List price: \$100. Requirements: 96K, one disk drive.

"The Macro Assembler has no true interactive debugger and is intended for experienced, detail-oriented programmers." Richard Hamilton, Houston, Texas

"This product has most of the features that make a good macro assembler. Its main limitation is the sketchy description of some functions in the documentation." Martin S. Meehan, San Diego, California

87FORTRAN/RTOS

MicroWare
P.O. Box 79
Kingston, MA 02364
617/746-7341

87FORTRAN/RTOS is an ANSI-FORTRAN 77 subset with 8087 coprocessor capabilities. The language generates in-line 8087 code that accommodates all data types. The Intel large-memory model allows data/code structures to use a megabyte of memory. The program provides direct access to 8088 ports and support of logical operations on 8- and 16-bit operands that would normally be handled with assembly language. The language is suited for applications that are number intensive or that control hardware operations. List price: \$1350. Requirements: 128K, one floppy disk drive, 1M hard disk, 8087 coprocessor.

87Pascal/RTOS

MicroWare
P.O. Box 79
Kingston, MA 02364
617/746-7341

87Pascal/RTOS is an ISO-standard Pascal extended with additional data types to support the 8087. The language enables you to use all 8087 data types directly. The compiler has the capability to cause and handle interrupts, read ports, and perform all tasks necessary to control iAPX-86 hardware. List price: \$1350. Requirements: 128K, one floppy disk drive, 1M hard disk, 8087 coprocessor.

Waterloo microAPL

Watsoft Products Inc.
158 University Ave. W
Waterloo, Ontario
N2L 3E9 Canada
519/886-3700

Waterloo microAPL is a single-user implementation of the IBM/ACM standard for APL. The language supports files of APL arrays, with PEEK, POKE, and SYS BASIC equivalents, and has special color and graphics features. List price: \$295. Requirements: 192K, one disk drive.

87 Pascal

MicroWare
P.O. Box 79
Kingston, MA 02364
617/746-7341

87 Pascal is a library of floating point routines that are compatible with the IBM Pascal Compiler. The language replaces all 39 functions provided by IBM Pascal. The program provides floating point routines

written in assembly language that drive the 8087 coprocessor. The product aids scientists, engineers, and Pascal programmers seeking to write fast programs. List price: \$150. Requirements: 128K, one disk drive, 8087 coprocessor, IBM Pascal Compiler.

87 BASIC

MicroWare
P.O. Box 79

Kingston, MA 02364
617/746-7341

87 BASIC gives access to the 8087 numeric coprocessor through the IBM BASIC Compiler. The language is used for number crunching and scientific and business applications. Single- and double-precision numbers and all 8087 floating point features are provided. List price: \$150. Requirements: 128K, one disk drive, 8087 coprocessor, IBM BASIC Compiler.

Pascal Compiler

IBM

Systems Products Division

P.O. Box 1328

Boca Raton, FL 33432

800/447-4700, 800/322-4400

Illinois, 800/447-0890 Alaska,
Hawaii

The Pascal Compiler is the version IV.0 Pascal Compiler for the UCSD p-System. The compiler is used in program development and in learning to use a structured programming language. List price: \$300. Requirements: 128K, two disk drives, PC-DOS.

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- **C_to_dBASE™** is in Beta Test by CI. It is a package to interface C86 with dBASE files. Heavily annotated source to the product and a function library are included. Save time and learn C86 quickly.
- A **C86 User's Group** is being formed.

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Waterloo microBASIC

Watsoft Products Inc.
158 University Ave. W
Waterloo, Ontario
N2L 3E9 Canada
519/886-3700

Waterloo microBASIC includes full ANSI x3.60-1978 BASIC. The language has extensions for structured programming control, long names for variables, character-string manipulation, callable procedures, and multiline functions. It also has sequential and relative file capabilities and integer arithmetic. Waterloo microBASIC enables programmers to use the BASIC CHAIN statement with the "NAMES" option. Quotes around file names are optional. Matrices can be passed as parameters to a function or procedure. The language also has a BASIC-oriented interactive debugger. List price: \$225. Requirements: 192K, one disk drive.

UCSD FORTRAN Compiler

IBM

Systems Products Division
P.O. Box 1328
Boca Raton, FL 33432
800/447-4700, 800/322-4400

Illinois, 800/447-0890 Alaska,
Hawaii

The UCSD FORTRAN Compiler is the version IV.0 FORTRAN-77 Compiler for the UCSD p-System. The compiler features a subset of the ANSI x 3.9, 1978 (FORTRAN-77) standard with several extensions. Programs in both UCSD Pascal and UCSD FORTRAN can be developed using this product. List price: \$175. Requirements: 64K, two disk drives.

Waterloo microPASCAL

Watsoft Products Inc.
158 University Ave. W
Waterloo, Ontario
N2L 3E9 Canada
519/886-3700

Waterloo microPASCAL is a refined implementation of the International Standards Organization draft Pascal originally defined by Wirth. The language supports text files, pointer variables, and multidimensional arrays. It also includes an interactive debugging facility and color/graphics features. List price: \$225. Requirements: 192K, one disk drive.

PC-FORTH

Laboratory Microsystems
4147 Beethoven St.
Mar Vista, CA 90066
213/306-7412

PC-FORTH is a language development system that has an interpreter, a compiler, a screen editor, an assembler, coresident utilities, and demonstration programs. PC-FORTH provides full access to all operating system services, is compatible with hard disk drives, and enables users to test compiled code quickly. Advanced graphics, floating-point math with 8087 coprocessor capability, and target compilation are available at extra cost. List price: \$100. Requirements: 48K, one disk drive.

"PC-FORTH is an outstanding piece of software; it is well documented and powerful." Thomas Menacher, Toledo, Ohio

"PC-FORTH allows access to normal disk files and all operating system services, but disk access is slightly slower than conventional, stand-alone FORTH systems." R. Duncan, Sacramento, California

PC/Pilot

Washington Computer Services
3028 Silvern Ln.
Bellingham, WA 98226
206/734-8248

PC/Pilot is an authoring language for producing tutorial modules. The implementation conforms to Common Pilot standards. It is programmed in C language for speed and uses small modules for program development. The program includes a graphics image editor. PC/Pilot has no royalty plan (this helps school districts and industry lessen expenses when implementing the language) and requires little programming skill. List price: \$100. Requirements: 64K, one disk drive.

Level II COBOL-86

Digital Research
160 Central Ave.
Pacific Grove, CA 93950
408/649-3896

Level II COBOL-86 is a mainframe-level compiler for ANSI '74 COBOL programs. It enables microcomputers to compile and run programs written in full ANSI '74 COBOL with minimal source code modification, allowing maintenance and execution of existing programs. List price: \$1600. Requirements: 64K, one disk drive, CP/M-86 or Concurrent CP/M-86.

Intellect-UL

PCD Systems, Inc.
163 Main St.
P.O. Box 143
Penn Yan, NY 14527
315/536-7428

Intellect-UL is a LISP interpreter for the UCSD p-System. While other languages are oriented toward numbers, LISP is oriented toward symbols and handles data structures that are not easily specified in advance. Intermediate structures can be built and discarded; users don't have to worry about finding and reusing the space necessary for storage. The language's syntax facilitates modular programming. List price: \$100. Requirements: 64K, one disk drive, UCSD p-System run time.

Lattice C Compiler

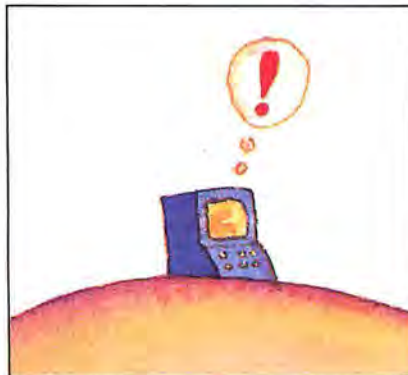
Lifeboat Associates
1651 Third Ave.
New York, NY 10028
212/860-0300

Lattice C Compiler is a full implementation of the C programming language rather than a subset of it. The program defines a comprehensive set of I/O subroutines that implement most of the standard UNIX-compatible C functions. The compiler enables users to develop powerful, complex applications on a microcomputer and is compatible with the C Compiler of the UNIX Version 7 operating system. Relocatable machine code in Intel's 8086 object-module format is produced using the PC-DOS supplied linker. List price: \$500. Requirements: 128K, two disk drives.

FORTH, Level I

The Software Works
465B Fairchild Dr. #204
Mountain View, CA 94043
415/960-1800

FORTH, Level I is an enhanced, 79 Standard version of the FORTH programming language. The language is interactive and structured. PC-DOS is used for file handling and disk I/O, giving the language the capability of sharing data files and disk storage with other languages and applications programs written in other lan-



guages. Included with this product are a FIG-style line editor, a full-block editor, a modular assembler, a generalized interface for character I/O devices, and a stack practice aid. FORTH, Level I provides utilities for copying and deleting FORTH screens, terminal-independent I/O, simultaneous output to several devices, and volume spanning. List price: \$95. Requirements: 64K, one disk drive.

Janus/Ada

R. R. Software
P.O. Box 1512
Madison, WI 53701
608/244-6436

Janus/Ada is a Pascal-like, high-level, modular language suitable for large program applications. It permits separate module compilations and supports floating-point calculations using the 8087 co-processor. The language does not have multidimensional arrays. Janus/Ada supports separate compilation, arbitrary precision fixed-point and floating-point numbers, and user-defined types. The package includes compiler object code, assembler and disassembler, linker, screen editor, and example programs. List price: \$400. Requirements: 256K, one disk drive.

FORTH, Level II

The Software Works
465B Fairchild Dr. #204
Mountain View, CA 94043
415/960-1800

FORTH, Level II is an enhanced, 79 Standard version of the FORTH programming language. The language includes a FIG-style line editor, a full-block editor, and a modular assembler. The language also has a generalized interface for character I/O devices, a stack practice aid, and a collection of utilities for copying and deleting FORTH screens. The language includes enhanced terminal independence, simultaneous output for several devices, volume spanning, double number extensions, multiple-file capabilities, and function key operations. List price: \$179. Requirements: 64K, one disk drive.

C Compiler

Telecon Systems
1155 Meridian Ave. #218
San Jose, CA 95125
Telecon's C Compiler provides compatibility with the C language and UNIX version 7 (including System 3) in assembly source form or executable object code. The program provides a transparent interface to PC-DOS that makes the program look like UNIX to users. The interface enables users to compile programs and then execute them under PC-DOS. Generated code is reentrant and allows the intermixing of assembly and C through pseudo operations. The compiler is a complete implementation of the C language, with 1-year user support, including upgrades. The C Compiler does not address a bit field within a structure or process double-data type. The compiler is designed to run as either a native or a cross compiler. List price: \$200, with software floating point support \$350, source code \$2500. Requirements: 96K, one disk drive.

muMATH-83

Soft Warehouse
P.O. Box 1174
Honolulu, HI 96828-0174
808/734-5801
muMATH-83 offers a syntax similar to that of block-structured Pascal or PL/I. The language uses an efficient pseudo code compiler and interpreter. muMATH-83 performs symbolic mathematics operations from exact rational arithmetic through calculus, trigonometry, and matrix algebra. List price: \$300 (also distributed by Microsoft, \$300). Requirements: 64K, one disk drive.

SSI*FORTH

Satellite Software International
288 W. Center St.
Orem, UT 84057
800/321-5906
SSI*FORTH is a FIG compatible FORTH development system. Included are an interpreter, a compiler, a decompiler, and a full-screen FORTH editor with search and text conversion tools. The system also has interfaces to BIOS and PC-DOS for the keyboard, the screen, disks, and other I/O ports. The words PEEK, POKE, PEEKW, and POKEW are included for easy transfer of functions defined in BASIC. SSI*FORTH includes source code to facilitate specialized program development. List price: \$95. Requirements: 64K, one disk drive.

LISP/88

Norell Data Systems
3400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
213/257-2026
LISP/88 is a LISP interpreter and includes 75 built-in functions. The program also has data structures and functions, 16-bit integer arithmetic, list operations, recursion, string operations, file I/O, and automatic memory reuse. The language includes a simple editor and file package, debugging aids, and provisions for loading user-supplied machine language functions callable from LISP programs. List price: \$49.95. Requirements: 64K, one disk drive.

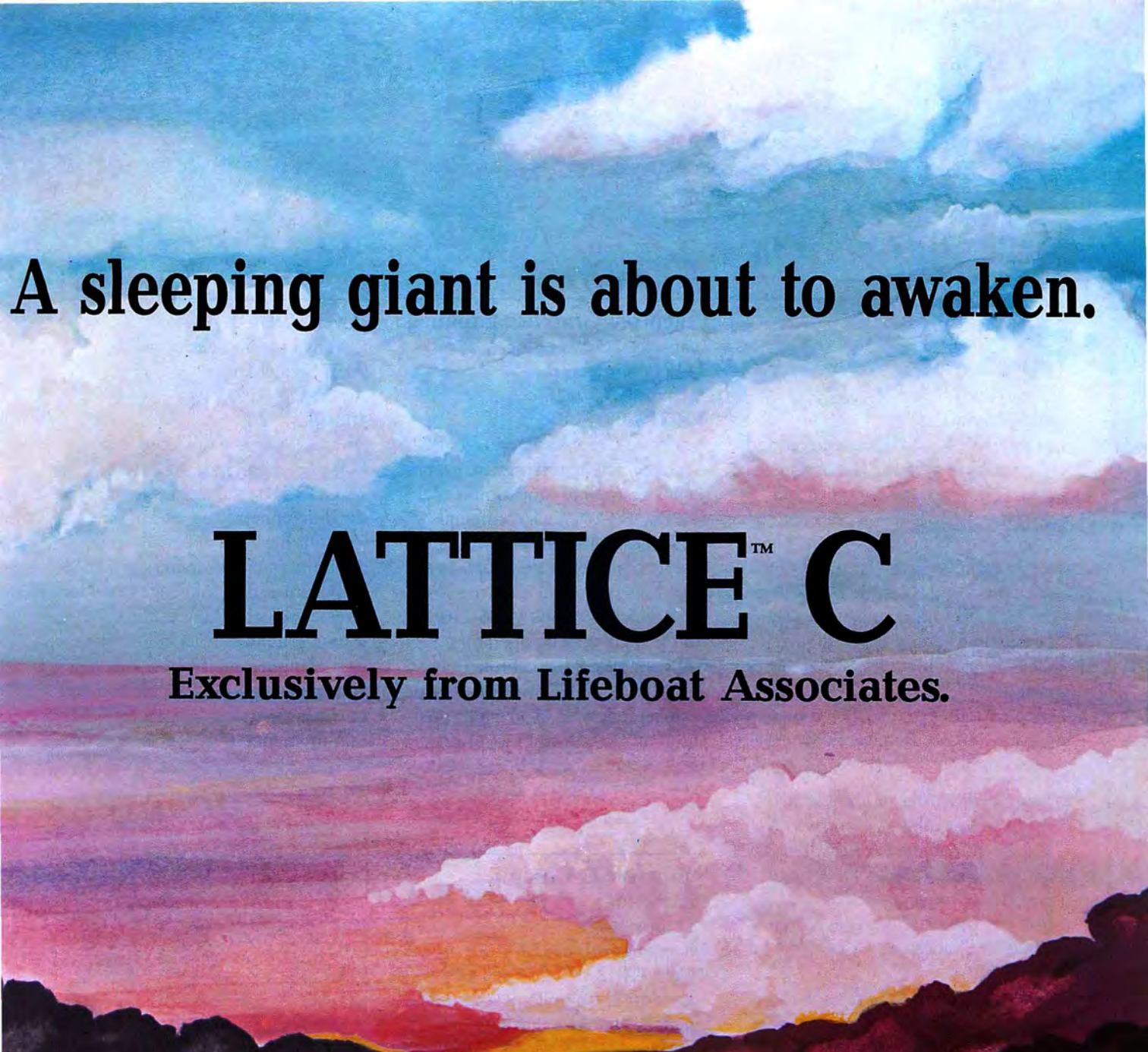
MVP COBOL

MVP Software and Systems
Technologies, Inc.
7700 Edgewater Dr. #360
Oakland, CA 94621
415/632-1555
MVP COBOL is a GSA-certified ANSI 74 COBOL compiler that has full Level 2 for nucleus, table handling, segmentation, and all I/O modules. The system produces native machine language object code and provides a screen management system and an interactive debugger. List price: \$500. Requirements: 128K, hard disk.

"MVP COBOL produces genuine object code, which increases run-time performance. It has a compilation speed of 150 to 250 lines per minute (depending on the hardware). The intended use is for transporting MVP COBOL from a mainframe to an IBM PC environment." Wolfgang Behrens, Castrop-Rauxel, West Germany

SuperSoft FORTRAN

SuperSoft Inc.
P.O. Box 1628
Champaign, IL 61820
217/359-2112
SuperSoft FORTRAN meets ANSI 66 standards and has extensions and optional 8087 co-processor support. It compiles arithmetic and character variables and supports implicit declarations. The program has recursive subroutines with static variables, free formatting, unformatted I/O, logical types, and double-precision variables. The product compiles up to 600 lines per minute. List price: \$425. Requirements: 128K, one disk drive.



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If you're serious about writing your next program in C (and you should be), check out the competition, then take a good look at Lattice C. We think you'll come to the same conclusion we did: Lattice C is the finest 16-bit C compiler on the market today.

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Lifeboat Associates

1651 Third Avenue, NY, NY 10028 (212) 860-0300 TWX: 710-581-2524 (LBSOFT NYK) Telex: 640693 (LBSOFT NYK)

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Circle 92 on reader service card

muLISP-83

Soft Warehouse
P.O. Box 11174
Honolulu, HI 96828
808/734-5801

muLISP-83 is a LISP interpreter and development system. The language is also a pseudo code compiler and contains a resident screen-oriented editor and debugging system. The language is designed for LISP programmers and software developers and contains numerous upwardly compatible extensions of LISP 1.5. The program includes on-line lessons that teach LISP interactively. List price: \$250 (also distributed by Microsoft, \$250). Requirements: 64K, one disk drive.

"muLISP-83 links in user-defined machine language subroutines, although no compiler is available. The language is fast and compact and generally compares well with Mac-lisp and Interlisp." Gary Rader, Boulder, Colorado

C Compiler

Digital Research
160 Central Ave.
Pacific Grove, CA 93950
408/649-3896

The Digital Research C Compiler is an implementation of C that is compatible with Bell Labs' UNIX, version 7. The compiler works with Digital Research utilities and includes a relocating linker and assembler and a UNIX-like run-time library. The program duplicates many of the features of the UNIX *Lint*, a sophisticated error-checking program. List price: \$60. Requirements: 128K, two disk drives, CP/M-86.

Peachtree Graphics Language

Peachtree Software, Inc.
3445 Peachtree Rd.
Atlanta, GA 30326
404/239-3000

Peachtree Graphics Language (PGL) is an interactive, interpretive graphics programming tool comprising 150 English-language commands used to create graphics. Two coordinate systems define the graphics applications space and an active display area, which contains a full-screen editor, 16 arithmetic operators, 9 system variables, 8 logical functions, and data manipulation from files or peripheral devices in string or floating-point array form. List price: \$600. Requirements: 64K, one disk drive, color graphics board.

SuperSoft C Compiler

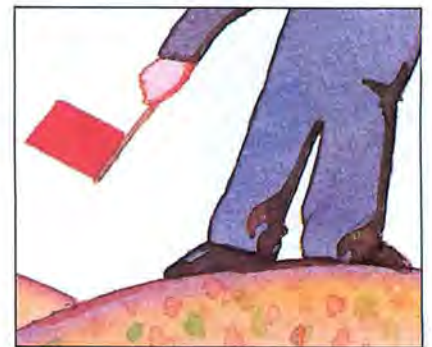
SuperSoft Inc.
P.O. Box 1628
Champaign, IL 61820
217/359-2112

SuperSoft C Compiler is a two-pass language compiler that supports all features of UNIX version 7 as well as double floating-point functions (including trigonometric functions) and most standard library functions. LONG, FLOAT, DOUBLE, and LONG FLOAT variables may also be defined. The compiler is portable and produces highly optimized assembly code. Intermediate code (universal code) is produced on the first pass, with the translator and optimizer contained in the second pass. List price: \$500. Requirements: 48K, one disk drive.

RM/COBOL

Ryan-McFarland Corporation
9057 Soquel Dr.
Aptos, CA 95003
408/662-2522

RM/COBOL is a full Level 2 (for I/O) implementation of the ANSI 74 COBOL standard designed for the development and execution of COBOL business applications on mini and microcomputers and IBM mainframes. The language provides interactive debugging at the COBOL source statement level, a fast single-pass compiler, multikeyed index files, and full compatibility with over 100 operating systems. List price: \$950. Requirements: 64K, one disk drive.



"This product is an excellent implementation of COBOL for business users and business software developers." Dwight T. Wallace, Montezuma, Georgia

"RM/COBOL is extremely portable from one computer to another, allowing flexibility in software design. Although the size of the run-time module is a limitation, I found the system consistent, flexible, and more powerful than any other COBOL language." Barry Small, Highland Lakes, New Jersey

HAI*BAS BASIC Compiler

Holland Automation USA, Inc.
3400 W. MacArthur Blvd., Ste. D
Santa Ana, CA 92704
714/641-2844

HAI*BAS is a flexible BASIC code interpreter with a compiler and a number of utilities that provide cross-referencing. The required run-time system provides general system utilities and a pseudo code interpreter. The program has an ACCEPT statement for conversation procedures. An extended DIM statement for data definition is included. A CHAIN statement provides module and display menu chaining so that large programs can operate in small memories. Program exchange during execution does not require users to close and reopen files. The language offers automatic retention of program data, data manipulation statements, foreground/background display handling, and interpreters for both source and compiled codes. List price: including HAI*BAS Run-Time system \$345. Requirements: 64K, two disk drives, HAI*BAS Run-Time system.

BITS Pascal Compiler

Boeing Computer Services Co.
2800 160th Ave. SE
Bellevue, WA 98009
206/763-5636

The BITS Pascal Compiler is an easy-to-use, single-pass compiler that enables microcomputers to support an extended Pascal. The compiler has the ability to create libraries and has string-handling capabilities. The program permits up to 26 overlays, each having up to 10,000 source code statements. List price: \$400. Requirements: 64K, two disk drives.

MetaBASIC

Software 128
363 Walden St.
Concord, MA 01742
617/369-6400

MetaBASIC is a preprocessor for BASIC programs that provides features usually found in more structured languages such as Pascal, FORTRAN, and C. MetaBASIC has a subroutine function with true argument passing that enables users to modularize programs as well as create utility libraries. List price: \$59. Requirements: 64K, one disk drive.

APCBASIC Rev. 4.0

American Planning Corporation
4600 Duke St. #423
Alexandria, VA 22304
703/751-0451

APCBASIC is a flexible BASIC programming language that has an editor, a compaction program, a cross-reference generator, and library modules that include matrix multiplication, inversion, and quick sorting for numbers and strings. The language can also merge common routines without requiring field statements. Programmers can modify source code during debugging, and programs can address one megabyte of memory. Long variable names can also be used. APCBASIC provides 50 functions, 18 commands, and 42 statements. Its features include automatic program arrangement, buffer space reclamation, and multiple-line functions. Program lines are scrambled to guard against unauthorized decoding. List price: \$375. Requirements: 128K, one disk drive.

PCFORTH

Armadillo International Software
P.O. Box 7661
Austin, TX 78712
512/459-7325

PCFORTH is a FIG-FORTH version of FORTH tailored for the IBM PC; the editor and compiler are constantly in residence in memory. The compiler, editor, and most compiled applications programs fit within 32K of RAM. Testing and debugging are relatively easy due to the language's modularity and portability. The product interfaces with machine language, and the FORTH modules can be tested or accessed from the keyboard without having to write tracers or drivers. List price: \$89.95. Requirements: 32K, one disk drive.

Digital Research C

Digital Research
160 Central Ave.
Pacific Grove, CA 93950
408/649-3896

Digital Research C supports the full UNIX version 7 standard C language and is a complete development system. The language includes documentation and a compiler, a linker, and a run-time library with over 100 functions. Four memory modules (small, medium, compact, and big) take advantage of the 8086 and 8088 microprocessors, allowing access to 64K code and 64K data. Digital Research uses this language as its in-house development language tool. List price: \$600. Requirements: 112K, one disk drive.

BITS FORTRAN Compiler

Boeing Computer Services Co.
2800 160th Ave. SE
Bellevue, WA 98009
206/763-5636

The BITS FORTRAN Compiler is an easy-to-use FORTRAN 77 with extensions to ANSI subset standards. The compiler permits separate compilation and overlay with 4000 source statements and 26 overlays. List price: \$400. Requirements: 64K, two disk drives.

FORTH-32

Quest Research
P.O. Box 2553
Huntsville, AL 35804
205/533-9405

FORTH-32 has complete PC-DOS and BIOS interfaces for graphics, video, parallel and serial ports, light pen, joystick, sound, and color. DOS file access is provided. Also featured are a double-screen editor, a full FORTH-8088 assembler, and several utility packages. List price: \$150. Requirements: 64K, one disk drive.

Pascal/MT + 86

Digital Research
160 Central Ave.
Pacific Grove, CA 93950
408/649-3896

Pascal/MT + 86 is a highly structured language designed to do modular compilation. It has advanced debugging capabilities and permits segmented development. This Pascal implementation provides a complete

program-development environment consisting of a compiler, a linker, and a wide range of utilities, including a speed programming package. List price: \$600. Requirements: 192K (256K recommended), two disk drives.

PL/I-86

Digital Research
160 Central Ave.
Pacific Grove, CA 93950
408/649-3896

PL/I-86 is a high-level, structured language that includes an optimizing native compiler. It combines the block structure of ALGOL, the string handling and decimal arithmetic of COBOL, and the numeric functions of FORTRAN. PL/I-86 dynamically allocates storage, generating highly optimized and compact native code, and features user-controlled error handling. List price: \$750. Requirements: 128K, one disk drive.

CIS COBOL, CIS COBOL-86

Digital Research
160 Central Ave.
Pacific Grove, CA 93950
408/649-3896

CIS COBOL is a complete software system for developing and executing ANSI '74 standard COBOL programs. It combines the benefits of minicomputer or mainframe COBOL with the efficient interactive facilities of a personal computer. It is upwardly compatible with Level II COBOL. List price: \$800. Requirements: CIS COBOL 48K, CIS COBOL-86 64K, one disk drive, CP/M-86.

MMSFORTH

Miller Microcomputer Services
61 Lakeshore Rd.
Natick, MA 01760
617/653-6136

MMSFORTH is a structured, modular language that operates in its own environment without PC-DOS and provides more tracks per data space than most DOS disks. The language provides a complete assembler, full-screen editing, string handling, and arrays. It includes 79-STANDARD FORTH words, so programmers can precompile modified versions of MMSFORTH for specific applications. List price: \$249.95. Requirements: 32K, one disk drive.

Pascal/MT +

Digital Research
160 Central Ave.
Pacific Grove, CA 93950
408/649-3896

Pascal/MT + is the full ISO standard Pascal, with enhancements to provide full numeric types that support either binary coded decimal (BCD) or floating-point real numbers. The language also includes overlays and chaining, which provide arithmetical precision and large program execution in a small amount of space. Also included is a compiler that generates relocatable object files, a linker to generate an executable file from the relocatable compiler output, and a run-time library. The language's disassembler and debugger allow symbolic program debugging. List price: \$600. Requirements: 107K, one disk drive.

PC/FORTH™

If you want total control over your IBM® Personal Computer . . . If you are interested in graphics, games, communications, robotics, data acquisition, or process control . . . you should be using FORTH!

Compatible with PC/XT, COMPAQ, and all hard disks
Versions available for PC-DOS 1.1 and 2.0, CP/M-86®, Concurrent CP/M
Quarterly Newsletter
Inexpensive Updates
Uses memory mapped video for blinding fast displays!
NEW! Animation Support and Turtle Graphics
83-Standard Version available Sept. '83.

- FORTH is interactive and conversational like BASIC, but twenty times faster.
- FORTH programs are highly structured, modular, and easy to maintain.
- FORTH gives you direct control over all interrupts, memory locations, and i/o ports.
- Full access to DOS files and functions.
- Your application programs can be compiled into turnkey COM files and distributed with no license fee.
- Cross Compilers available for ROM'ed or disk based applications on most popular microprocessors.

PC/FORTH™ \$100.00

Includes interpreter/compiler with virtual memory and background multi-tasking, full screen editor, assembler, many demonstration programs, and 170 page manual. Upgrade to PC/FORTH+ available.

PC/FORTH+™ \$250.00

Allows creation of FORTH programs up to 1 megabyte in size. Upgrade from basic PC/FORTH available.

FORTH Cross Compiler \$300.00

Choose target microprocessor from Z-80, 8080, 8086/88, IBM PC, LSI-11, 68000, 6502, Z-8, 1802.

Programmer's Package #1 \$250.00

PC/FORTH, Advanced Graphics, Symbolic Debugger, Cross Reference Utility, and "Starting FORTH".

DEMO Disk \$5.00

Requires graphics card

Extension Packages

Advanced Color Graphics	\$100.00
Intel 8087 Support	100.00
Software Floating Point	100.00
Interactive Symbolic Debugger	100.00
PC/GEN™ Custom Character Sets	50.00
PC/TERM for Smartmodem	60.00
QTF+ Editor/Screen Formatter	100.00
Curry FORTH Programming Aids	150.00
Cross Reference Utility	25.00
Hierarchical File Manager	50.00
B+ Tree Index Manager	125.00
B+ Tree File and Index Manager	200.00

Intel 8087 Processor \$250.00

"Starting FORTH" tutorial \$16.00

PC/FORTH requires 48 kbytes RAM and 1 disk drive, Cross Compilers require 64 kbytes RAM. PC/FORTH+ requires 128 kbytes RAM. Prices include shipping by UPS or first class mail within USA and Canada. California residents add appropriate sales tax. Master Charge and Visa accepted. We also sell FORTH's for 8080, Z-80, 8086/88 (including TI Professional, Zenith Z-100, and DEC Rainbow), and 68000 based microcomputers.



Laboratory Microsystems Incorporated

4147 Beethoven Street, Los Angeles, CA 90066

Phone credit card orders to (213) 306-7412

Trademarks:

IBM—International Business Machines Corp.

CP/M—Digital Research Inc.

PC/FORTH+ and PC/GEN—Laboratory Microsystems Inc.

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Languages

EMCEE

System Vision Corporation
199 California Dr. #207
Milbrae, CA 94030
415/697-3861

EMCEE/Demonstration Development Language appears similar to BASIC though it reads more like English. It provides input/output buffering, built-in terminal support, simple screen formatting, and in-memory reference tables. EMCEE is well suited to screen-oriented output and terminal input but is not a general-purpose programming language. List price: \$150. Requirements: 128K, one disk drive, CP/M-86.

FFIFORTH

Satellite Software International
288 W. Center
Orem, UT 84057
801/224-8554

FFIFORTH includes standard FORTH features and enhanced editing capabilities. The language is a FIG-compatible FORTH system. List price: \$95. Requirements: 64K, one disk drive.

BI-286

Control-C Software, Inc.
6441 S.W. Canyon Ct.
Portland, OR 97221
503/297-7153

BI-286 is an interactive BASIC Interpreter for business use and is compatible with Basic Four Business BASIC Level II. It has a built-in ISAM manager for keyed access of files, with screen management that may be configured for any terminal. List price: \$500. Requirements: 128K, one floppy disk drive (1M hard disk recommended).

PC Logo

Harvard Associates, Inc.
260 Beacon St.
Somerville, MA 02143
617/492-0660

PC Logo has a LISP-based design and is coded in assembly language. The language includes such features as programmable function keys and enhanced editing capabilities. It can use devices such as a mouse or mechanical turtle. List price: \$199.95. Requirements: 64K, one disk drive.

Dr. Logo

Digital Research
160 Central Ave.
Pacific Grove, CA 93950
408/649-3896

Dr. Logo, an interactive, graphics-oriented educational programming language, is an advanced version of the Logo programming language. Dr. Logo includes editing and debugging features, work space management tools, and its own operating system. The language uses "turtle" graphics; the turtle, a triangular pointer, appears on the screen to indicate position and heading. As you move the turtle with keyboard commands, the turtle leaves a trail in one of four user-selected colors to form a graphic image. Dr. Logo has over 10,000 nodes of memory, built-in help commands that explain and give examples of Dr. Logo primitives, and a full-screen procedure editor that explains editing commands. List price: \$149.95. Requirements: 192K, one disk drive, color graphics board.

High Performance Level II COBOL

Micro Focus
1860 Embarcadero Rd. #235
Palo Alto, CA 94303
415/856-4161

High Performance Level II COBOL is a compiler for ANSI '74 COBOL programs that enables the IBM PC to compile and run programs written in High Level GSA Standard COBOL based on the ANSI '74 COBOL Standard. The compiler demands minimal source code modifications, so users with an investment in existing COBOL programs can execute them on microcomputers. *High Performance Level II COBOL* is native code generated to speed compilation and is designed to work with the manufacturer's native code generator. List price: \$2400. Requirements: 256K, two disk drives, COBOL.

CBASIC Compiler

Digital Research
160 Central Ave.
Pacific Grove, CA 93950
408/649-3896

CBASIC Compiler is a native code compiler that is easily maintained and simplifies implementation and support of large business systems. The compiler provides multiple line functions with parameters and chaining with common variables. The array subscripts are limited to 15, and users must supply an editor. The compiled program's structure enables users to write, test, and then combine separate modules to create a complete program. List price: \$600. Requirements: 96K, one disk drive.

Matchmaker 8600

Photon Software
P.O. Box 1408
Bellevue, WA 98008
206/451-8272

Matchmaker 8600 is an interpreter for programs written in the Databus language for Datapoint minicomputers. The interpreter enables the programs to run in a single-user environment on the IBM PC. Databus instructions are translated into Datapoint standard pseudo code on a Datapoint minicomputer. Users then transmit the program to an IBM PC, and *Matchmaker 8600* permits the program to run on the PC by using the pseudo code. List price: OEM sublicenses start at \$6000. Requirements: 96K, one disk drive.

C/88 Compiler

Norell Data Systems Corporation
P.O. Box 70127
Los Angeles, CA 90010
213/257-2026

The C/88 Compiler uses the IBM Macro Assembler to turn an assembly language text file created by the C/88 Compiler into executable object code. The compiler provides compile-time evaluation of constant expressions, run-time command arguments, random access file I/O, I/O redirection, dynamic storage allocation, a conventional C I/O library, a run-time execution profile facility, and in-line assembly code. List price: \$79.95. Requirements: 64K, one disk drive, IBM Macro Assembler.



Microcobol

MPSI
2471 E. Bayshore Rd. #540
Palo Alto, CA 94303
415/856-3382

Microcobol incorporates the major features of mainframe COBOL. The features are extended to allow structured programming and interactive CRT operation. The language provides multiple-key sorting and six access methods, including RSAM and ISAM. A large library of relocatable routines is also provided. List price: \$400. Requirements: 64K, two disk drives.

C-System C Compiler

C-Systems
P.O. Box 3253
Fullerton, CA 92634
714/637-5362

The C-System C Compiler is pre-processing software that uses extended pointers to address 64K or more of code and access up to 64K of data. The program also makes it possible to test programs at the C source code level. The compiler has a standard C function library and includes all C language elements for operations on characters, signed and unsigned integers, structures, and unions. List price: \$195. Requirements: 128K, two disk drives.

Thread

DWB and Associates
P.O. Box 4609
Portland, OR 97208
503/249-0412

Thread is an extendable, threaded language with a syntax much like that of C or PASCAL. Programmers can extend the language by adding their own commands and operators. The high level syntax provides powerful constructs in a small amount of code space. Thread's features include procedures, functions, parameter passing, local variables, file I/O, and an in-line, full-function editor. Values are stored in a stack-ing area. List price: \$249. Requirements: 128K, one disk drive.

C88 System

Intellect Associates, Inc.
P.O. Box 365
Holbrook, NY 11741
516/472-4449

The C88 System is a compiler that accepts a large subset of the C programming language and has a linkage editor and an extensive functions library. Included are int, char, arrays, pointers, and C statements such as For, Do, While, and Switch. Modules and functions can be linked either by direct conversational interaction with users or via linking instructions contained in a command file. Shell sorting, a sequential disk I/O package, a random disk I/O package, a screen package, and a cursor I/O package are included in the library functions. The program also supports string manipulation routines, memory and I/O device access routines, and operating system interface routines. List price: \$250. Requirements: 64K, two disk drives.

Personal BASIC

Digital Research
160 Central Ave.
Pacific Grove, CA 93950
408/649-3896

Personal BASIC is an advanced BASIC language interpreter that automatically checks command statement syntax as each line of code is entered. The language has CP/M-style command key words and informative diagnostic messages. Only 15 files may be open simultaneously, and the editor is single line, but enhanced program development, testing, and debugging aids are included. List price: \$150. Requirements: 76K, one disk drive.

Compact Level II COBOL

Micro Focus
1860 Embarcadero Rd. #235
Palo Alto, CA 94303
415/856-4161

Compact Level II COBOL is a main-frame level compiler for ANSI '74 COBOL programs. The program enables the IBM PC to compile and run programs written in full high level GSA standard COBOL (based on the ANSI '74 COBOL standard) with minimal source code modifications. This enables users of existing COBOL programs to maintain and execute them on microcomputers. List price: \$1600. Requirements: 64K, two disk drives, COBOL.

R/BASIC

Cosmos, Inc.
10626 148th Ave. SE
Renton, WA 98056
206/496-5974

R/BASIC is an expanded version of BASIC that uses the 8087 coprocessor. The language allows data manipulation and variable portion extracts that permit concatenation of other variables. Data stored in a relational data base may be manipulated through R/BASIC statements. R/BASIC can use optional hardware such as an RS-232C serial port and a hard disk and can use as much system memory as is available. R/BASIC uses structured programming constructs similar to those used in Pascal and C. List price: \$500. Requirements: 128K, one disk drive, 8087 coprocessor.

CBASIC-86

Digital Research
160 Central Ave.
Pacific Grove, CA 93950
408/649-3896

CBASIC-86 is specifically designed for business applications development. It is a commercial dialect of BASIC, is implemented as a compiler/interpreter, and has debugging capabilities. Users must supply an editor. CBASIC-86 is designed to use memory efficiently, uses precision arithmetic and high-level file management, and is upwardly compatible with Digital Research's 8-bit version. List price: \$200. Requirements: 32K, one disk drive.

Ultra-BASIC Translator

Basic Business Software, Inc.
P.O. Box 26311
Las Vegas, NV 89126
702/876-9493

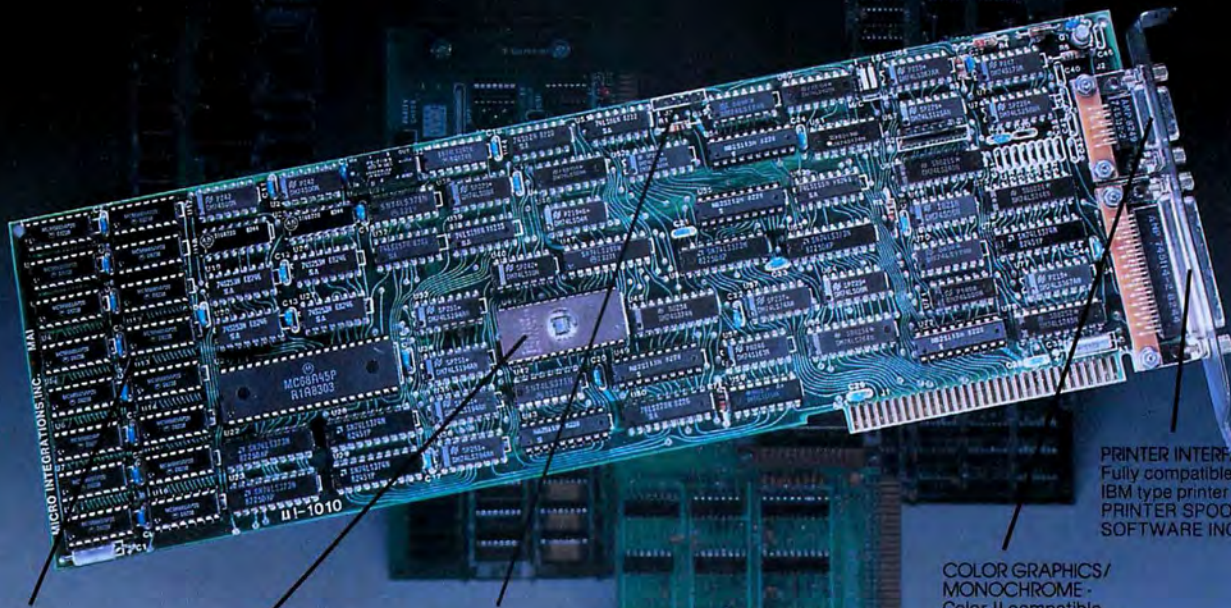
The Ultra-BASIC Translator translates high-level structured BASIC into IBM Disk BASIC. FIELD and LSET statements and MKI and CUI functions are not needed. Any PC-DOS command or statement is supported, as well as alphanumeric labels of up to 70 characters in length. A structured block code for program maintenance is included. List price: \$75. Requirements: 64K, one disk drive.

DMA. "C"

Dynamic Microprocessor Associates
545 Fifth Ave.
New York, NY 10017
212/687-7115

DMA. "C" is a C language compiler that generates either Z-80 or 8086 assembly language code. It features an optimization routine based on a functional p-code model, which greatly improves the language's efficiency. List price: \$295. Requirements: 64K, one disk drive, CP/M-86.

Put graphics
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MEMORY EXPANSION
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Allows easy modifica-
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lution. Video-310A or
IBM Monochrome
compatible - 8 pages
of text storage

This IBM/PC compatible board provides memory expansion (128 KBytes of DRAM), monochrome or color video, light pen, and printer interface on a single plug-in board. The MAI board's high-density memory (up to 8 pictures storage) provides unexcelled color graphics enhanced up to 640(H) x 400(V) resolution in a wide variety of operating modes. Modes are selectable right on the board.



Now available with Halo* software for 320 x 200 16-color, 640 x 200 4-color, and 400 vertical line resolution modes. (*Halo is a registered trademark of Media Cybernetics, Inc.)

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SLOT 3	RAM Board 1 Slot Left*	3 Slots Left*	RAM Board 2 Slots Left*	3 Slots Left*

*When Using Disk Controller

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Circle 204 on reader service card

"Higgins, where's your report?"

TO: Charlie
FROM: Carol
DATE: 11/14
SUBJECT: "the 17th"

I'm still waiting for your part of the sales report. We both know the presentation is on the 17th. And we both know what will happen if it's late!

Carol

11-14

Charlie: Our secretary just quit. We've either got to hire a temp or you're going to type the sales report yourself. I don't have to remind you about the 17th.

Carol

11-15

TO: CHARLES HIGGINS
FROM: E.J. FENWICK

HIGGINS: GUESS WHO'S GOING TO GET A WORD PROCESSOR?
THAT'S RIGHT, YOU! MY ASSISTANT BILL GOT A RECOMMENDATION FROM A COMPUTER DEALER AND THERE'S A SPACE COMPUTER. CALL HIM.

The Word From
Bill Stevens

DATE: 11/16

CHARLIE: I FOUND A WORD PROCESSING PACKAGE THAT RUNS ON OUR PC. THE BEST PART IS WE CAN BOTH LEARN IT OVER LUNCH. GRAB A SANDWICH AND MEET ME IN MY OFFICE TODAY AT 11:30.

Bill
IT'S DON'T WORRY, I'LL MAKE THE DEADLINE

Date: Nov. 16
To: E.J.
From: Charles Higgins

Thanks for the tip. With Bill's help, I found the perfect word processor. It's called SELECT. It's got all the features we'll need. If you'd like, I'll show you how to use it after the report. Don't worry about the presentation. I've attached a copy of the report and everything's under control.

AWAII

BILL,
THANKS FOR SELECT.
WE GOT THE CONTRACT!
YOUR VACATION'S ON US.
ALPHA
CHARLIE

Charlie Higgins. Caught in the crossfire of today's busy office environment. And totally unprepared. At Select Information Systems, we've created a word processing package that solves this problem.

Select: The Word Processor.™

This powerful software package was created for business professionals—like you—who need maximum productivity and efficiency from their computers without sacrificing profits or personnel to get it.

> SELECT: Create Edit Delete View List Name Print Spell Teach Merge

Create - to CREATE a new document
Edit - to EDIT or change a document
Delete - to DELETE a document
View - to get a scrolling VIEW of a document
List - to LIST all the documents in your directory
Name - to assign a new NAME to a document
Print - to PRINT a document
Spell - to check your SPELLING
Teach - to TEACH you to use SELECT
Merge - to MERGE a document with a mailing list
Help - to HELP explain the commands
Quit - to QUIT your SELECT work session

Select is the most versatile, powerful word processor available. Our interactive Teach™ on-screen tutorial guides you every step of the way. You'll be creating, editing and printing documents in less than 90 minutes—without reading a manual! And you can even use many of your existing "calc" and database files.

THE TEACH MENU	
DIRECTIONS: 1. Read the menu choices listed below.	
2. Type number of selection you want, then press RETURN.	
- To leave TEACH press RETURN.	
Your entry: * * * (To start at the beginning, type 1)	
1. How TEACH WORKS	15. How to FORMAT
2. How to MOVE THE CURSOR	16. How to DISPLAY
3. How to CREATE a document	17. How to VIEW
4. How to READ THE COMMAND LINE	18. How to set POINTERS
5. How to BEGIN A NEW DOCUMENT	19. How to MOVE
6. How to EDIT a document	20. How to COPY
7. How to INSERT	21. How to ZAP
8. How to ERASE	22. How to OUTPUT
9. How to RICHANG	23. How to WRITE
10. How to LOCATE	24. How to JUSTIFY
11. How to REPLACE	25. How to use KEY
12. How to GOTO	26. How to get HELP
13. How to APPEND	27. How to QUIT
14. How to set TABS	

Select uses easy-to-remember single key commands—such as "E" for erase and "M" for move. It has a comprehensive spelling checker which makes sure everything that leaves your office is letter perfect. Everytime. A powerful and flexible Merge/Print function for combining letters with mailing lists. And, at the touch of a key, our exclusive "Help" feature provides instant on-screen assistance for every command. All these features

are integrated into one competitively priced package. There's nothing extra to buy.

If you'd like to know more about how Select works on your computer, write us and we'll send you a free review copy. Then just type "T" for Teach. In less than 90 minutes, you'll be convinced that Select: The Word Processor will save your business time and money. Ask Higgins.



SELECT

Select Information Systems
919 Sir Francis Drake Blvd.,
Kentfield, CA 94904

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IBM PC

The keys to success.

Whether you have a small retail company, manage a service agency or run a cattle ranch, you have to do something else well to build a business—*manage money.*

You've got to analyze cash flow, see trends and forecast profitability in a time and cost effective manner.

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A computerized accounting system makes sense, but finding the right software is important. The "home checkbook" programs are easy to use but they don't have the advanced reporting capabilities you need. And many small businesses just don't need the complexity or the cost of the modular systems.

Practical Accountant™ is a single entry, small business accounting program that comes complete in one package. It's friendly enough to balance your checkbook, yet sophisticated enough to give you the kind of money management information you need for a successful business.

We could have called it "Accounting Made Easy."

Practical Accountant is designed around fundamental accounting procedures. Even if you don't know much about accounting it is an ideal program.

The manual explains basic accounting terminology and provides a comprehensive tutorial. It will take you step-by-step through the process of setting up a complete, single entry accounting system you can begin using right away.



It's quick to learn and convenient to use.

The program guides you with easy-to-use menus and provides on the screen prompting. Practical Accountant even does some of your work for you like organizing entries in date order—even if you don't.

It's very flexible. You set it up to fit your business.

Practical Accountant allows you to set up your "Chart of Accounts" (income and expense categories) with up to 50 categories, 300 sub-categories and with 20 tax type definitions—all

defined by you. The manual shows you how to set up an accounting system for a small business, complete with samples.

Cash Flow Reporting—money management information.

Perhaps the most valuable feature of the program is the cash flow reporting capability. You can look at cash flow by category, by sub-category and by tax type to analyze profitability, tax consequences and general performance. All of your reports are professionally formatted and you have access to profitability information that leads to sound business management.

There is more to this success story.

If you would like to know more about Practical Accountant your dealer can give you a great demonstration and a brochure with a more complete story, or call Softlink TOLL FREE at 800 633-6300 (in CA 800 222-1244) and we will send you the brochure.

Practical Accountant™

Single entry, small business accounting for the Apple IIe, IBM PC and compatibles.

\$149.95
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SOFTLINK™

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Practical Accountant is a trademark of Softlink Corporation
Apple is a registered trademark of Apple Computer, Inc.
IBM is a registered trademark of International Business Machines Corporation

Circle 520 on reader service card

Even your favorite software can have annoying personal habits. Get ProKey.

If you're like most of us you probably own an IBM PC and a closetful of popular software. Maybe Wordstar, Visicalc, dBase II and a few others. And with each program comes its own peculiar protocol, commands and demands.

Suddenly you've become a personal slave to your personal computer.

Free yourself with ProKey.™

ProKey is unlike any other software because it operates just about any other software. So you can spend your time creatively while ProKey takes care of the tedious operational details. Silently, instantly, without errors.

ProKey can print spreadsheet tables, update databases, reformat reports and plot graphics and still leave you time to train for the triathlon or run out for a danish.

In fact, ProKey can memorize and execute anything you can type.

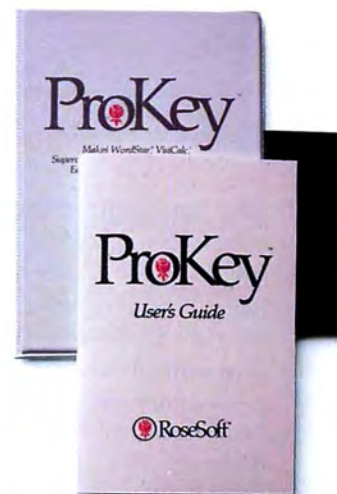
And no matter how extensive your software collection becomes ProKey controls them all, with one easy to remember protocol.

With all the time you save you'll be able to customize off-the-shelf software to your own personal or business requirements.

Ultimately you'll use ProKey as a "super-command center" operating your own software programs together to create a totally unique, incredibly creative system.

ProKey is available at most Computerland stores and wherever fine software is sold.

Once you use ProKey you'll never curse your cursor again.

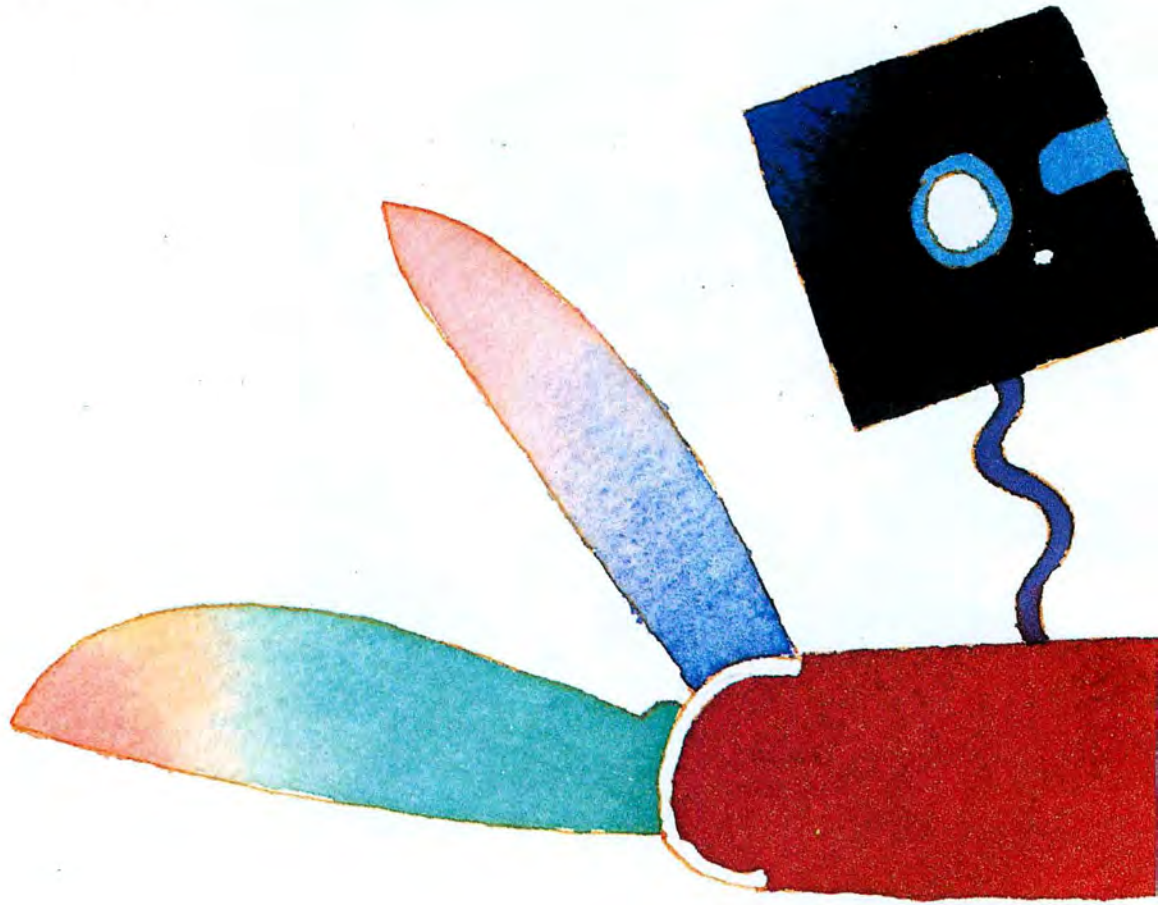


RoseSoft, Inc.
4710 University Way, N.E.
Suite 601,
Seattle, WA 98105
(206) 524-2350

To run ProKey, you'll need an IBM Personal Computer or workalike DOS (any version, including 2.0), and 64K of RAM (WordStar requires 96K).

WordStar, VisiCalc and dBase II are trademarks, respectively, of Micro Pro, Visicorp and Ashton-Tate.

Utilities



Peter Norton

Utilities are among the least glamorous and least understood categories of personal computer software, yet they are an essential part of every software library. Utilities can have a great effect on the success you have using your computer. *Utility* is something of a catchall category that is difficult to define. The easiest way to understand utilities and why we all need them is by imagining applications for them.

- If you need to convert an Apple or CP/M file for use with PC-DOS, you can use a file conversion utility.
- If you accidentally erase an important file or damage a disk, you will need a file recovery utility.
- If you need help creating or debugging programs, you'll want a program development utility.

○ If you want to use some of your PC's spare memory to act as a high-speed disk, you need a RAM disk utility.

Utilities are more like parts of the operating system (with functions like FORMAT, CHKDSK, and DEBUG) than like applications programs such as spreadsheets or business accounting packages. Because an operating system can't include every possible feature, utility programs fill in the gaps. The gaps you need filled probably aren't the same as those that are important to someone else, but no matter what you do with your PC, you are sure to need some utility programs.



Some utilities, such as color graphics displays, are useful for people who work in narrowly defined areas. Others provide services (such as file recovery) that everyone needs.

Since writing utilities is neither glamorous nor lucrative, you don't find the variety or the quality of programs available among word processors or spreadsheets. You must remember this unfortunate fact when you shop for utilities. Utilities have traditionally been written with the technical needs of programmers in mind, so user-friendliness is often lacking in program design. Although better utilities are now appearing on the market, the development of utilities remains one of the weaker areas of the software industry.

When you shop for utilities, look for signs of quality and ease of use. When you can, check the reputation

of the programs or their developers. If you find that only one program will fill your needs, go for it. But if you have a choice, look for user-friendliness—that's what's in shortest supply.

Peter Norton writes about and develops programs for the IBM PC. Excerpts from his book Inside the IBM PC have appeared in PC World. He is also the author of The Norton Utilities.

Windrive

Tall Tree Systems
1032 Elwell Ct. #124
Palo Alto, CA 94303
415/964-1980

Windrive is an installable device driver that enables users to add and run hard disk systems on their IBM PCs. The driver can provide up to 1 gigabyte of storage divided into 32 volumes. Four hard disks can be supported at once. The utility does not support booting the computer from a hard disk. List price: \$40. Requirements: 64K, one floppy disk drive, hard disk.

JFormat-2

Tall Tree Systems
1032 Elwell Ct. #124
Palo Alto, CA 94303
415/964-1980

JFormat-2 provides formatting routines for 19 disk formats and works with any mechanical disk drive. The program is useful for those whose data requirements do not fit their normally used disk size or format, or who must use download information from hard disks. The utility works with single, dual, quad, and 8-inch disk drives and is supplied as an installable device driver for PC-DOS 2.00. The program works with a maximum disk storage size of 2.5M. New disk drive formats can be installed easily. List price: \$40. Requirements: 64K, one disk drive.

Xeno-Copy

Vertex Systems
7950 W. Fourth St.
Los Angeles, CA 90048
213/938-0857

Xeno-Copy enables users to copy files from non-IBM PC disks to PC-DOS disks. The file transfer program can read disks for 20 microcomputer models including Kaypro II, Lobo MAX80 with CP/M, Morrow Designs Micro Decision, NEC PC8001a, Osborne I and II, Superbrain Junior, Televideo TS 802, DEC VF180, Epson QX10, TRS-80 III with CP/M, and Xerox 820 II. To run *Xeno-Copy* users put the non-IBM disk in one drive and the PC-DOS disk in another and select the files to be transferred to the PC-DOS disk. The program does not require modems, hard-wired serial links, or additional hardware to perform the file transfer. List price: \$99.50. Requirements: 64K, two disk drives.

DOSEASE

Software Solutions Inc.
305 Bic Dr.
Milford, CT 06460
203/877-9268

DOSEASE provides users with a menu listing PC-DOS commands. After selecting a command, users are presented with secondary menus listing options for the command. *DOS-EASE* enables computer novices to use DOS commands without referring to manuals. The program uses the monitor's color capabilities and supports any PC-DOS-compatible hard disk. List price: \$60. Requirements: 128K, one disk drive.

Cross Reference

Ensign Software
7337 Northview Rd.
Boise, ID 83704
208/378-8086

Cross Reference enables programmers to cross-reference variables in a BASIC program. All variables and line numbers referenced by statements in a program are listed. The utility can cross-reference by variable name, key word, and line number. The program also provides the option of creating a paginated printout. List price: \$24.95. Requirements: 64K, one disk drive.

Keyswapper 2.0

Vertex Systems
7950 W. Fourth St.
Los Angeles, CA 90048
213/938-0857, Source: CL0187

Keyswapper 2.0 enables users to configure the keyboard to represent any desired key layout and includes four preconfigured keyboard layouts. Users can define any series of keystrokes and commands as macro file commands and can use them to control the operation of programs such as *VisiCalc*, *1-2-3*, and *WordStar*. Users can define and record macro files during the execution of a program and store them in text files that can be edited and printed. A help menu and macro file definitions can be displayed during the run of another program. Users can move the function of any key to another key or redefine it. The program can display the date and time at the current cursor position, suspend a macro's operation, create menus, and produce audible feedback when the <CapsLock> and <NumLock> keys are pressed. List price: \$69.95. Requirements: 64K, one disk drive.

Sort Subroutine

NF Systems, Ltd.

P.O. Box 76363

Atlanta, GA 30358

404/252-3302

Designed for Interpretive BASIC programs, *Sort Subroutine* sorts one string array in either ascending or descending order (according to the ASCII collating sequence). The program sorts string arrays of variable lengths; maximum length is determined only by the disk space available. *Sort Subroutine* can be used to develop a sorted index for any file. List price: \$34.95. Requirements: 64K, one disk drive.

The Norton Utilities

Peter Norton

2210 Wilshire Blvd.

Santa Monica, CA 90403

213/399-3948

The Norton Utilities comprises 14 programs that enable users to recover files, set screen attributes, modify disks, and control hidden files. Two utilities, *Unerase* and *Filefix*, enable users to restore accidentally erased files and repair damaged files on disk. *Disklook* and *Setmod* display the contents of a disk and enable users to make patches and disk modifications. Three screen-control utilities set the color attributes of the screen while in PC-DOS, produce displays in inverse video, and clear the screen. *Timemark* displays the date, time, and elapsed time during an operation. *Filesort* sorts files by date or name and *Diskopt* speeds disk access for faster accessing of files. List price: \$80. Requirements: 64K, one disk drive.

Reformatter Conversion Software

MicroTech Exports

467 Hamilton Ave. #2

Palo Alto, CA 94301

415/324-9114

Reformatter allows the IBM PC to read and write 8-inch disks in IBM 3740 format. The program reads source code from a PC-DOS file and writes it with all needed conversions to a 3740 disk, or reads a 3740 disk and writes it to a DOS disk file. *Reformatter* initializes blank single-sided, single-density 8-inch disks with a 3740 directory and allows the directories to be altered and displayed. The program displays and dumps 3740 records and translates EBCDIC code to ASCII and vice versa. List price: \$350. Requirements: 96K, one 5 1/4-inch disk drive, one 8-inch disk drive.

Jspool

Tall Tree Systems

1032 Elwell Ct. #124

Palo Alto, CA 94303

415/941-5500

Jspool enables users to run programs on the IBM PC and use the printer at the same time. The utility transfers data to a buffer that varies in size depending on the amount of user-specified memory. From the buffer, on a first-in, first-out basis the data is sent to either a serial or parallel printer. The spooler runs in background mode, giving users the option of running other programs during printing. List price: \$40. Requirements: 128K, one disk drive.

CompareMaster

N. F. Systems, Ltd.

P.O. Box 76363

Atlanta, GA 30358

404/252-3302

CompareMaster is a file comparison utility that displays or prints differences in files. The program compares files in ASCII, sequential, text, data, random data, or binary format. *CompareMaster* displays differences in character or hexadecimal format. List price: \$34.95. Requirements: 64K, one disk drive.

Pascal Utilities Package

Software Labs

1052 Lily Ave.

Sunnyvale, CA 94086

408/241-9539

Pascal Utilities Package enables Pascal programmers to call functions that control screen, keyboard, graphics, sound, printers, and communications ports. The utilities provide functions to draw circles, ellipses, or portions of a circle or ellipse. The package also provides a graphics cursor, multiple pattern fill, and light pen and multiple-joystick control. Screen-control utilities include functions for menu selection, full-screen input, multiple-screen pages, inverse video, blinking characters, multiple color strings, and various cursor sizes. Peripheral control utilities provide a random number generator, RS-232C serial port control, printer control, input and output control, and a terminal emulator. Function algorithms are written in assembly language for speed and efficiency. List price: \$119. Requirements: 128K, two disk drives, IBM Pascal Compiler.

Diskette Catalog

N. F. Systems, Ltd.
P.O. Box 76363
Atlanta, GA 30358
404/252-3302

Diskette Catalog keeps track of an unlimited number of disks and displays or prints single or complete master directories. The program searches any program or file name and can create catalogs automatically or by keyboard entry. *Diskette Catalog* stores program names and dates from the disk directory and attaches a 20-character name to the disk. List price: \$34.95. Requirements: interpretive version 64K, compiled version 96K, one disk drive.

SuperPack

AST Research Inc.
2372 Morse Ave.
Irvine, CA 92714
714/540-1333

SuperPak is composed of two utility programs that can be purchased apart from AST Research's line of hardware products. SuperDrive is a disk emulator that allows the simulation of up to four disk drives in the computer's memory. Users can define the sizes of programs and emulated disks in memory and restrict drive operation to specific areas of memory. The utility supports single- or doubled-sided emulated drives with eight or nine sectors per track. It enhances the computer's processing speed and allows faster retrieval of files than is possible with mechanical drives. The program does not require modification of the operating system.

SuperSpool enables users to use a printer and continue running other programs at the same time. The utility provides a buffer in memory that holds information until sending it to a parallel or serial printer for printing. SuperSpool operates in the background during printing and frees the operating system to perform other tasks. A simple command sequence enables users to specify printer ports as well as bps rates and line conditions. Users can control the size of the spool buffer and its location in memory. List price: \$45. Requirements: 128K, one disk drive.

FORTRAN Utilities Package

Software Labs
1052 Lily Ave.
Sunnyvale, CA 94086
408/241-9539

FORTRAN Utilities Package provides FORTRAN programmers with extended features. Included are routines to draw dots, lines, and circles; store and retrieve graphics images; interface with lightpens and joysticks; and manipulate text on screen. The utilities also provide a graphics cursor, a multiple-pattern fill, and music composing formats. SIGGRAPH Core's setwindow, setviewport, and clipping are provided. All routines are implemented in assembly language. List price: \$119. Requirements: 128K, two disk drives.

Jetdrive

Tall Tree Systems
1032 Elwell Ct. #124
Palo Alto, CA 94303
415/941-5500

Jetdrive is a disk emulator that can be used with any memory board. When the program is used with Tall Tree Systems' memory boards, it can emulate a disk in memory with up to 2.5 megabytes of storage. The disk emulator decreases file access time and speeds up processing time for many programs. Although data may be lost during power failure, *Jetdrive* restores the contents of the disk emulator after a warm boot (pressing <Ctrl>-<Alt>-). List price: \$40. Requirements: 96K, one disk drive.

Active Trace

Aware Company
P.O. Box 695
Gualala, CA 95445
707/884-4019

Active Trace is a debugging and learning tool that enables users to see how a BASIC program works as it runs. The program provides cross-reference mapping of BASIC programs and a window into program functioning. The utility displays all variables and functions of a BASIC program with their current line numbers and values. This information may be printed or saved as a file on disk. Disk files can be used with an editor to find bugs. The printed files chronologically document the use of program variables. *Active Trace* eliminates the need to single-step through programs during debugging. List price: \$79.95. Requirements: 64K, one disk drive.

Vdisk

CompuView Products, Inc.
1955 Pauline #200
Ann Arbor, MI 48103
313/662-6923

Vdisk enables the IBM PC to format, read, and write information on disks for use by non-IBM microcomputers. The program supports almost all popular 5¼-inch double-density disk formats. It is menu-driven and uses an enhanced version of CP/M-86 that is included with the utility. Some formats, such as the DEC format, may require installation of 80-track disk drives. List price: \$1150. Requirements: 64K, two disk drives.

"Vdisk is ideal for software developers and data processing departments that need to produce program and data disks for different types of microcomputers." James C. Eckroad, Ann Arbor, Michigan

ProKey 3.0

RoseSoft Inc.
4710 University Way NE #601
Seattle, WA 98105
206/524-2350

ProKey 3.0 enables users to define the functions of up to 130 key combinations. The defined keys can then be used to control programs running on the IBM PC. Keys can be defined in any program from PC-DOS or while the program is being run. Key definitions can be saved, edited, loaded, and printed from files on disk. Individual keys can be programmed to provide fill-in-the-blank fields, program pauses, and numerical arguments. Keys may also call

other *ProKey* functions. The program is not menu-driven and in PC-DOS versions 1.00 and 1.10, users must return to the PC-DOS command level to read and write files using *ProKey*-defined functions. List price: \$75. Requirements: 64K, one disk drive.

PC Accelerator

STB Systems
601 N. Glenville
Richardson, TX 75081
214/234-8750

PC Accelerator is a print spooler and disk emulator program. Print spooling enables users to print files and use the computer for other tasks simultaneously. Spooling is limited to use with parallel printers. The program also emulates a disk drive by reserving a portion of the computer's memory for file storage. *PC Accelerator* is compatible with PC-DOS 1.10 and 2.00 and provides a tutorial on disk. List price: \$79.95. Requirements: 64K, one disk drive.

Cross Reference

N. F. Systems, Ltd.
P.O. Box 76363
Atlanta, GA 30358
404/252-3302
Cross Reference provides a cross-referenced listing of BASIC programs and breaks programs into components such as line numbers, variables, constants, functions, or subroutines. The program sorts in ascending alphanumeric order and prints results. List price: \$34.95. Requirements: 64K, one disk drive.

BITS Utilities

Boeing Computer Services Company
2800 160th Ave. SE
Bellevue, WA 98009
206/454-1861

BITS Utilities is a series of 15 utility programs that complement the BITS operating system and applications included on BITS work station disks. The sort utility sorts ASCII text files. The calculator utility has capabilities similar to those of a ten-key calculator. Other utilities make file comparisons, cross-reference Pascal programs, and recover damaged disk directories. List price: \$200. Requirements: 64K, two disk drives, BITS operating system.

PC-Padlock

Glenco Engineering
915 E. Carpenter
Palantine, IL 60067
312/537-4200

PC-Padlock protects against unauthorized copying of compiled programs. It provides protection by encrypting users' programs in conjunction with disks. Programs protected by *PC-Padlock* may be backed up on unauthorized disks, but the copies will not run. Backed-up copies may be recopied later onto authorized disks, however, and these copies will run. Programs to be encrypted require one extra line of code. The utility requires additional space of 2.5 percent of a formatted disk. List price: \$99. Requirements: 64K, two disk drives.

Disassembly Cross-Reference

SofTool Systems
8972 E. Hampden Ave. #179
Denver, CO 80231
303/793-0145

Disassembly Cross-Reference System provides disassembly listings of assembly language programs. The listings mark each referenced address and include, sorted and cross-referenced, all hexadecimal byte and word values appearing in the disassembly list. The program enables users to identify all references to individual subroutines and working storage locations. *Disassembly Cross-Reference System* includes machine language subroutines for rapid processing. The size of the disassembly object module is limited by the amount of available memory. List price: \$49. Requirements: 64K, one disk drive.

Micro/SPF

Digital Research Inc.
P.O. Box 579
Pacific Grove, CA 93950
800/227-1617, 800/772-3545

California

Micro/SPF is a structured programming facility similar to those used on mainframe IBM computers. This program development tool features full-screen editing and programmable function keys. The program editor enables users to browse, edit, and use utilities, and it provides a tutorial for on-line operating information. List price: \$250. Requirements: 64K, one disk drive.

I-C-Magic Utilities

MBI Corporation
1019 Eighth St.
Golden, CO 80401
303/279-8438

I-C-Magic Utilities provides print spooling of information sent to printers, hard copy reproduction of screen graphics, and terminal emulation for receiving data from other systems. Users select the sizes of buffers used in spooling. During reproduction of screen graphics, users can reproduce the whole screen or any section of it. Printed graphics images can be rotated, expanded in size, and colored according to the printer's capabilities. The BASIC.COM program must be modified to make use of the buffering capability of *I-C-Magic Utilities*. List price: \$85. Requirements: 64K, one disk drive, dot matrix printer.

"I-C-Magic Utilities is very useful, and the price is reasonable." Hung-Yi Pao, Indianapolis, Indiana

LMK

LXI Inc.
P.O. Box 3007
West Lafayette, IN 47906
317/423-2080

LMK enables users to keep track of changes in projects, providing updated information on project progress. Projects are sets of files that store information and sets of programs that manipulate the files. After users specify the interrelatedness of the project files, *LMK* determines the steps in a project that need to be taken. The utility is helpful in coordinating the development of multi-module programs and in preparing large documents. List price: \$99. Requirements: 64K, one disk drive.

Screen Set

Field Computer Products
909 N. San Antonio Rd.
Los Altos, CA 94022
415/949-3457

Screen Set helps make IBM PC screen displays legible by changing the screen colors of text displayed on color or monochrome monitors. Users can control the foreground and background colors of desired portions of text. Color functions are activated by single keystrokes at any time during the run of a program. Screen changes are temporary and do not alter the program in which they are invoked. *Screen Set* enables users to switch instantly between color and monochrome monitors in a two-monitor configuration. List price: \$35. Requirements: 64K, one disk drive.

AMI Master Menu Interface

Automation Management Inc.
5718 Westheimer #410
Houston, TX 77057
800/231-0634

AMI Master Menu Interface creates menus that list Soft-Touch software applications, making them easy to select and run. The program enables you to display Soft-Touch business applications programs such as general ledger, client billing, client write-up, and job cost. Applications not belonging to the Soft-Touch systems can also be displayed. The program is specifically designed to help inexperienced users perform multiple applications on the IBM PC XT. List price: \$49.95. Requirements: 128K, PC XT, DOS 2.00.

ETWSort

ETW Systems
9419 Seven Locks Rd.
Bethesda, MD 20817
301/469-7823

ETWSort sorts files using fields of varying lengths. It sorts up to 30 fields by ascending or descending order. The utility is compatible with DOS 2.00 and can be used when piping and filtering files. Files cannot be larger than 64K, and the program does not merge files except by sorting. List price: \$35. Requirements: 64K, one disk drive.

COGEN 6.0

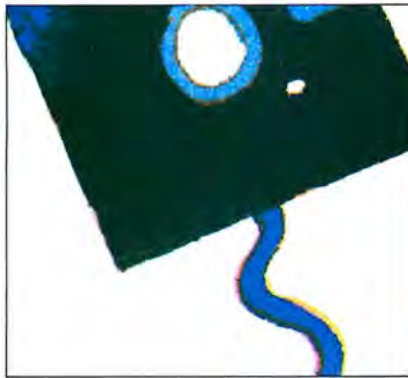
Bytel Corporation
1730 Solano Ave.
Berkeley, CA 94707
415/527-1157

COGEN 6.0 is a COBOL program generator. The program increases programmer productivity by using a series of steps such as menus and prompts to generate structured COBOL source programs. A data dictionary speeds program generation by making all data fields and their definitions available to programmers in a centralized format. Programmers can permanently alter the way the system generates source code. *COGEN 6.0* enables programmers to specify up to nine conditions for data acceptance in a field. Program output may be directed to the screen, enabling *COGEN 6.0* to function as an on-line query system. You can also update data in the batch mode by generating batch control programs. List price: \$950. Requirements: 64K, one disk drive.

LSH

LXI Inc.
P.O. Box 3007
West Lafayette, IN 47906
317/423-2080

LSH is a command processor that implements a hierarchical file system similar to the UNIX system. Compatible with PC-DOS, *LSH* enables users to organize files into categories grouped in directories. The program provides 16 commands for manip-



ulating the file system, including functions to copy files, locate files and directories, provide help on available commands, list directories sorted by name or date, and print the current directory. Additional functions enable users to make new directories, delete directories, print disk usage, and rename and move files to a new directory. *LSH* can pass multiple arguments to a command, specify groups of files using wild-card characters, and direct input and output of a program to a file or device. Documentation includes tutorials on *LSH* features and a reference section describing the commands. List price: \$99. Requirements: 96K, one disk drive.

XF-Dump

Distributed Software Systems, Inc.
P.O. Box 1301
Northbrook, IL 60062
XF-Dump is a full-screen utility that lets you display and change contents of disk files. The program, designed for programmers and experienced users, works with most file structures including random and sequential files. It displays the current file name and absolute sector or head and track values. Data can be displayed, modified, and searched for in both character and hexadecimal formats. The program may be used to display any sector including the directory and the file allocation table and can mark files as hidden or normal. List price: \$35. Requirements: 64K, one disk drive.

Sounds

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
913/843-5863

Sounds is a collection of programs that generate sounds for incorporation into programs. When used with a color monitor and a light pen, the program plots new sounds by frequency and automatically generates the BASIC program statements needed to reproduce the sounds. The program simplifies sound reproduction and simulation on the IBM PC. List price: \$30. Requirements: 64K, one disk drive, color graphics board, light pen, printer.

PCF-KeySet

Field Computer Products
909 N. San Antonio Rd.
Los Altos, CA 94022
415/949-3457

PCF-KeySet defines the IBM PC keys so that they produce any sequence of keystrokes the user chooses. A key can be assigned one character, a line of characters, or even many lines of text. Pressing the defined key enters the assigned text all at once, as if it were input from the keyboard. The program saves sets of keystroke assignments in files on disk that can be reused for specific applications. *PCF-KeySet* enables users to customize the keyboard to make using specific programs easier. List price: \$35. Requirements: 64K, one disk drive.

PR256, Nuchar

Field Computer Products
909 N. San Antonio Rd.
Los Altos, CA 94022
415/949-3457

PR256 enables users to print 256 different characters using a dot matrix printer. Characters are printed automatically as other programs send information to be printed. All normal features of the Epson printer remain in use. *Nuchar*, a character-customization utility that runs with *PR256*, enables users to specify up to 128 customized characters for printing. These characters do not look changed on the monitor screen, but are printed as defined. List price: \$35. Requirements: 64K, one disk drive, Epson MX-100 or MX-80, Graftrax or Graftrax Plus.

ETWFILTR

ETW Systems
9419 Seven Locks Rd.
Bethesda, MD 20817
301/469-7823

ETWFILTR filters files, converts them to or from compressed format, converts text to upper- or lowercase, deletes unprintable characters, and deletes or translates characters listed in a run-time file. These operations can be performed singly or together. Command syntax for initiating the utility is similar to the PC-DOS copy command. *ETWFILTR* may be used with DOS piping and filtering. Characters cannot be added to the file, only deleted or changed. File compression is performed by reducing strings of identical characters whenever possible and by inserting tabs, reducing file size by up to 40 percent. List price: \$35. Requirements: 64K, one disk drive.

Data Safe

Trigram Systems
3 Bayard Rd. #66
Pittsburgh, PA 15213
412/682-2192

Data Safe encrypts and decrypts data and verifies the encryptions of data. The program also does data authentication and plain text destruction. *Data Safe* implements the Federal Data Encryption standard and features on-line help, safety checks, and automatic maintenance testing. Files are encrypted and decrypted at 40K to 60K per minute. The program can be used in conjunction with communications programs for secure electronic telecommunications. List price: \$149. Requirements: 64K, one disk drive.

KSAM/PC

Prodata, Inc.
663 S. Capitol Blvd.
Boise, ID 83702
208/342-6878

KSAM/PC (Keyed Sequential Access Method) is designed for programmers developing BASIC applications. It provides file access routines that are faster than B-tree structured file access. The program uses key files on disk that are not limited in size by the amount of available computer memory or affected by system crashes. The file access routines use keys of up to 249 bytes for data records of up to 32K. Seven *KSAM/PC* files may be open at any one time. List price: \$69.95. Requirements: 64K, one disk drive.

BASIC Development System

Softool Systems
8972 E. Hampden Ave. #179
Denver, CO 80231
303/793-0145

BASIC Development System provides utilities that help develop BASIC applications. Users can trace program operations using single stepping and can renumber and relocate sections of code. The program cross-references and searches BASIC listings. Program lines can be listed one at a time, forward or backward, throughout a listing. Users can compress BASIC programs, removing remarks and spaces and combining single lines into multiple ones to reduce program size by as much as 40 percent. Editing functions are carried out using a single keystroke. The *BASIC Development System* dif-

fers from similar programs because it integrates with the BASIC interpreter, and all program functions operate while in the immediate BASIC mode. List price: \$79. Requirements: 64K, one disk drive.

"This program has excellent manufacturer support." James C. Pottkotter, Memphis, Tennessee

Peeks 'n Pokes for the IBM PC

Data Base Decisions
14 Bonnie Ln.
Atlanta, GA 30328
404/256-3860

Peeks 'n Pokes for the IBM PC enables programmers to use PC-DOS BIOS functions in BASIC and Pascal programs. The utilities consist of 58 programs written in BASIC, assembly, Pascal source code, and assembler object code. The programs enable you to access the system's configuration and read and change the keyboard, monitor, printer, disk, and communications board statuses. You can also make PC-DOS BIOS function calls to perform such tasks as printing the screen, booting the system, changing the default drive, scrolling the screen up or down, and changing the date and time. Other functions enable you to clear the screen, swap monitors, generate sound, pass data from one program to another, save current memory to disk, and compare the contents with another "memory map" to identify other PEEK and POKE functions. Assembly subroutines that perform the same functions as the BASIC PEEK, POKE, INP, and OUT functions are included for Pascal programmers. List price: \$30. Requirements: 48K, one disk drive.

Screengen Design Facility

Fogle Computing Corporation
P.O. Box 5166
Spartanburg, SC 29304
803/574-4950

Screengen Design Facility is a program utility that enables users to develop sophisticated screen display and data entry subroutines. The program allows entry of alpha, numeric, or alphanumeric data and supports insert, delete, and erase-to-end-of-field functions within data windows. The <Tab> and <Backtab> keys move the cursor from window to window. The program supports any special IBM monochrome graphics characters as well as high-intensity and inverse video images. List price: \$150. Requirements: 64K, one disk drive.

Menu/Power!

Computing!
2519 Greenwich
San Francisco, CA 94123
415/567-1634

Menu/Power! is a menu-driven utility package that simplifies using PC-DOS and CP/M-86 commands. The program numbers all disk files so that users can select the file number and use a command without typing the file name. The utility also displays a menu of 20 commands such as COPY, ERASE, SPACE, TEST, RECOVER, RUN, COMP, and TYPE. Users pick a number that initiates a specific command. *Menu/Power!* enables users to specify passwords for files to protect against unauthorized file access. List price: \$149. Requirements: 64K, one disk drive.

Panel

Roundhill Computer Systems
Limited
Box 14
Marlborough, Wiltshire
England 0672 54675

Panel enables programmers developing interactive applications to design screens quickly for user interfaces. Screens are invoked using simple subroutine calls. The utility generates code for IBM Pascal but does not support BASIC. The program also generates MS-COBOL code to define screen layout. Both monochrome and color monitors are supported. List price: \$380. Requirements: 128K, one disk drive.

Speed Disk

Tecmar, Inc.
6225 Cochrane Rd.
Cleveland, OH 44139
216/349-0600

Speed Disk is a disk emulator that duplicates a disk drive of 64K to 512K in memory. The emulator disk storage capacity is variable and can be defined during drive installation. The emulated disk drive can be used as any logical drive and the program requires no adapter boards or disk controllers. The program enables users to make rapid file transfers. The emulator must be initialized each time the computer is turned on, and files stored on the disk emulator must be transferred to a floppy or hard disk before the computer is turned off. List price: \$95. Requirements: 128K, one disk drive.

"Speed Disk saves me a considerable amount of time during file transfer operations." John Nehring, Bozeman, Montana

Miraculous Menu Manager

Computer Workshop Inc.
322 Shelden Ave.
Houghton, MI 49931
906/482-8009

Miraculous Menu Manager enables users to create menus of PC-DOS commands and execute commands with one keystroke, eliminating the need to type lengthy system commands. Pressing a single key initiates the DOS commands, and the program executes the command for the selected file. Users can set up information directories for files on disk. By selecting a file name from the directory, they can view a description of the file in a 10-row by 60-column screen display. Information about the file can be edited and updated. File directories hold up to 138 files, and DOS command menus list up to 50 commands. The number of menus that can be defined is limited only by the amount of available disk space. List price: \$39.95. Requirements: 64K, one disk drive.

Display Manager

Digital Research
P.O. Box 579
Pacific Grove, CA 93950
800/227-1617, 800/772-3545 in California

Display Manager enables programmers using Digital Research languages to design screen displays. The program supports languages such as Pascal, PL/I, CBASIC, and the C language supplied by Digital Research. The utility reduces program development time by enabling programmers to format information for screen display easily. *Display Manager* does not generate code for screens, but

stores displays in files on disk. It features a full-screen editor and has functions for transferring information to and from fields in screen displays. *Display Manager* can be used to create terminal-independent screen displays. List price: \$500. Requirements: 64K, one disk drive.

Disk Doctor

SuperSoft Inc.
P.O. Box 1628
Champaign, IL 61820
217/359-2112

Disk Doctor enables users to recover damaged disks and accidentally erased files. The program is menu driven and does not require that users understand CP/M-86 file structure. During operation the program displays a directory of recoverable files. When recovering damaged disks, *Disk Doctor* blanks out and skips bad disk sectors and reads remaining data from disk. The program is not designed for use with double-sided drives or fixed disks. List price: \$100. Requirements: 48K, two disk drives, CP/M-86.

Disk-Edit

SuperSoft Inc.
P.O. Box 1628
Champaign, IL 61820
217/359-2112

Disk-Edit is a screen-oriented disk editor and debugging tool that gives users access to all data on disk in both Hex and ASCII formats. Information on disk can be altered using the program's editing commands. List price: \$100. Requirements: 32K, one disk drive.

Talking Computer Programs

A. L. Cassel Computing Enterprises
P.O. Box 6056
Westlake Village, CA 91359
805/496-8705

Talking Computer Programs enable users to incorporate voice recordings into BASIC programs. The programs allow 1- to 7-second vocal messages. A cassette recorder puts messages on disk; the computer's internal speaker reproduces the messages during operation of the BASIC program. A cassette interface and external speaker and amplifier can increase volume and clarity. The programs enable users to improve applications programs and games with audible prompts and messages. They require only seven Advanced BASIC statements to add voice output to a program. List price: \$32.95. Requirements: 64K, two disk drives, cassette tape recorder interface cable, cassette recorder.

DBLink

Global Technologies
P.O. Box 441000, Dept. 165-C
Aurora, CO 80044
303/337-7758

DBLink transfers data from *dBASE II* files to spreadsheet and word processing programs. The menu-driven program can move data to *Multiplan*, *SuperCalc II*, and *VictorCalc* spreadsheets. It creates spreadsheet files with the same format as data base files and transfers as many as 256 records, each with up to nine fields, to the spreadsheet file. Users can also move spreadsheet files and text into data files. List price: \$79. Requirements: 48K, one disk drive.

dBASE and NEW! dBASE WINDOW DOOR

PRODUCTS FOR THE FUTURE— AVAILABLE NOW!

EntryPoint

The Datalex Company
650 Fifth St. #406
San Francisco, CA 94107
415/541-0782

EntryPoint is a commercial-grade data entry system that turns a personal computer screen into an interactive form. The system provides easy-to-use data entry screens and immediate validation of entries. Completing the entry screens is as simple as filling out forms because the program guides users from entry to entry. Users design entry screens to fit each application. The system saves data in a batch as it is entered, and individual records can be added, modified, and deleted. *EntryPoint* replaces card and key-to-disk data entry systems in distributed processing environments. List price: \$1000. Requirements: 128K, two disk drives.

Cryptopac

U.S. Software
5470 N.W. Innisbrook Pl.
Portland, OR 97229
503/645-5043

Cryptopac is a FORTRAN program that secures data base files through an eight-level encryption/decryption process. The program compresses and decompresses files, reducing or inflating them by 25 to 40 percent, and may be used with any data base file. You can protect specific files by specifying an encryption key before accessing data. List price: \$49.89, source code \$394. Requirements: 64K, one disk drive.

dBASE WINDOW is a full-fledged dBASE II Application Generator. Working from your design, dBASE WINDOW generates and runs record keeping applications of all kinds, quickly and effectively. Just draw your input screen and report formats and dBASE WINDOW will create your application for you.

dBASE DOOR is a new product for those who only require the report generating capability of dBASE WINDOW. dBASE DOOR can be used with existing dBASE II command files and databases, providing the most powerful report generation available for dBASE II. If you own QUICKCODE or AUTOCODE, you need dBASE DOOR!

dBASE WINDOW and dBASE DOOR have the unique capability to build upon a relation between two independent databases. Here's how:

Personal Records			Job Records	
ADDRESS	FIRST NAME	LAST NAME	EMPLOYEE NUMBER	DEPARTMENT NUMBER

Any two databases can be linked by a common field. In this example, the field 'last name' establishes a relationship between the personal records file and the job records file. Using dBASE WINDOW or dBASE DOOR, you may now print reports which contain data from *both* databases!

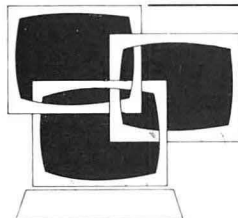
Compare the features of dBASE WINDOW with any program generator:

- Any number of databases may be present in an application
- Up to five indexes per database
- Real time interactive queries
- Built-in powerful free-form report generator, also available separately as dBASE DOOR
- Uses two databases in one report
- Easy to add custom code when necessary to meet special needs.

Requirements: CP/M® and dBASE II 2.3B; CP/M-86® or PC-DOS and dBASE II 2.3D. Disk space required for dBASE WINDOW: 400K or more.

dBASE WINDOW is \$249, dBASE DOOR is \$149, either manual only \$20 (manual price will be credited toward future purchase of program).

Tylog



Tylog Systems, Inc., 9805 S.W. 152 Terrace, Dept. pw. Miami, Florida 33157 (305) 253-5942

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dBASE II is a trademark of Ashton Tate. CP/M® and CP/M-86® are registered trademarks of Digital Research, Inc. Quickcode and Autocode are trademarks of Fox & Geller and Stemmos Ltd.

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Sort Directory Utility

Datasource
1660 S. Hwy. 100
Minneapolis, MN 55416
800/328-2260

Sort Directory Utility provides sorted directory listings, enabling users to find file names quickly. The utility reads the directory from disk, sorts it, and stores the sorted entries on disk again. Directory entries can be sorted in four ways: by file name, extension, file size, or date. Space left in the directory by previously deleted entries is moved to the end of the directory. The utility works with all versions of PC-DOS but sorts root directories on floppy disks only. List price: \$23. Requirements: 32K, one disk drive.

Print Spooler

SofTech Micro Systems
16885 W. Bernardo Dr.
San Diego, CA 92127
619/451-1230

Print Spooler for the UCSD p-System sends a text file or series of text files to the printer while enabling users to continue running other programs on the computer terminal at the same time. The utility creates a print queue of up to 21 files, deletes and displays files currently in the queue, and temporarily or permanently halts the printing of a file. *Print Spooler* can also concurrently send spooler and other program output to a printer; the spooler finishes printing the current file and turns the printer over to the user's program. *Print Spooler* eliminates the need to wait while the computer is tied up with a printing job. List price: \$50. Requirements: 64K, one disk drive, UCSD p-System.

BASTOC

JMI Software Consultants, Inc.
1422 Easton Rd.
Roslyn, PA 19001
215/657-5660

BASTOC translates programs written in BASIC to C language. Converting BASIC programs to C language enables users to maintain and enhance the programs using software development tools available for the UNIX operating system. MBASIC is the default version of BASIC used by *BASTOC*, but you can convert other versions of BASIC by editing a configuration file supplied with the program. In addition to converting programs to C, *BASTOC* also functions as a BASIC compiler when used with a C compiler. The conversion program is implemented in modules with more than 36 options. Programs converted to C language can be used with most UNIX and UNIX-like operating systems. List price: \$300. Requirements: 64K, one disk drive.

Info-Sort

Info-Pros Inc.
2102 Business Center Dr.
Irvine, CA 92715
714/851-8975

Info-Sort is a sorting program that can be used with other applications programs or as a stand-alone utility. Records can be sorted using up to nine keys in either ascending or descending order. The utility can sort 1000 records 64 bytes long each using 6-byte key strings in 10 seconds. List price: \$95. Requirements: 64K, one disk drive.

PowerXLIST

Micro Technical Products, Inc.
123 N. Sirrine #106
Mesa, AZ 85201
602/834-0283

PowerXLIST is a debugging tool for BASIC programmers. The program generates highly readable, structured listings of BASIC programs, indenting constructs such as FOR...NEXT, IF...THEN...ELSE, and WHILE...WEND for ease of reading. The utility also provides complete cross-reference tables of GOTO and GOSUB statements and program variables. Programs to be cross-referenced must first be saved on disk. List price: \$45. Requirements: 64K, one disk drive.

IDSprint

Scott Hammett
1520 Encino Ave., Ste. A
Monrovia, CA 91061
213/574-0270

IDSprint provides customized configuration of an IDS Microprism 480 printer to be used with an IBM PC. The program permits users to change standard defaults to suit specific printing requirements. The printer can be configured with only three keystrokes. *IDSprint* is designed for owners of IDS Microprism 480 printers who are unfamiliar with the technical aspects of printer setup codes. The program does not allow for the configuration of all printer features. List price: \$19.95. Requirements: 64K, one disk drive, IDS Microprism 480 printer.

Disk Clean-Up Utility

Data Source

1660 S. Highway 100

Minneapolis, MN 55416

800/328-2660

Disk Clean-Up Utility enables users to purge files selectively from disks. The program displays each file name on disk and asks if the file should be erased. Users simply type Y or N. The program erases only files included in a root directory. List price: \$23. Requirements: 64K, one disk drive.

Diagnostics II

SuperSoft Inc.

P.O. Box 1628

Champaign, IL 61820

217/359-2112

Diagnostics II provides system maintenance routines that can check the functioning of memory, disk drives, central processing unit, printer, and monitor. Using a quick test, walking-bit test, burn-in test, and speed test, the program tests all computer memory, then gives an error report. During its disk drive test, the program checks the read and write functions, seek accuracy, and data integrity after transmission. For its printer tests the program checks carriage position, upper- and lowercase printing, forward and reverse printing, interleaved overprinting, horizontal tabbing, and superscript, subscript, and boldface printing. Also provided is a quick test function that can check the computer's memory, central processing unit, and disk drives in less than 4 minutes. List price: \$125. Requirements: 32K, two disk drives, CP/M-86.

PC/Help

Relational Solutions Inc.

8723 Woodleigh Dr.

Houston, TX 77083

713/530-4161

PC/Help explains PC-DOS commands and provides information about command names, functions, types, syntax, and correct usage. It includes hints and examples for using each DOS command. The program gives users quick access to information and eliminates reliance on the DOS reference manual. *PC/Help* is easy to install and can be stored on the system disk. Information on LINK, EDLIN, and DEBUG commands is not included. List price: \$29.95. Requirements: 64K, one disk drive.

Qusort

Miracle Computing

313 Clayton Ct.

Lawrence, KS 66044

913/843-5863

Qusort is a sort utility that sorts records in memory and stores the results in memory or on disk. The program can sort 1600 records in 15 seconds, and sorting can be performed on keys up to 255 characters long. A maximum of 8 million records can be sorted. The program can be easily incorporated in users' applications programs without a large addition to the code. *Qusort* comes with complete documentation. List price: \$35. Requirements: 64K, one disk drive.

Power!

Computing!

2519 Greenwich

San Francisco, CA 94123

415/567-1634

Power! is a package of 55 house-keeping utilities for using PC-DOS and CP/M-86. The utilities restore accidentally erased files, fix errors on disk, and enable users to copy files by simply selecting them from a numbered menu. The utilities sort and format directories in four ways. For CP/M-86 the utilities create 32 user areas, doubling CP/M-86's 16 user areas. The contents of the computer's memory may be displayed and modified in ASCII, hexadecimal, or binary format. Another feature enables users to assign passwords to files to prevent unauthorized access. List price: \$169. Requirements: 64K, one disk drive.

ISAM Routines

Ensign Software

7337 Northview Rd.

Boise, ID 83704

208/378-8086

ISAM Routines give BASIC programmers fast data file access routines. The routines provide keyed access to data files for reading, writing, updating, and deleting records within a file. Maximum file size is 32,767 records, and records can be added or found in less than 2 seconds. The routines support multiple keys and provide for partial key searches. They can also be compiled and enable users to browse forward and backward in a file. List price: \$69.95. Requirements: 48K, one disk drive.

Fast Sort

Ensign Software
7337 Northview Rd.
Boise, ID 83704
208/378-8086

Fast Sort is a machine-language sorting routine that can be implemented in BASIC programs. The routine sorts any array into ascending or descending order. It can be invoked by the BASIC interpreter and by Compiled BASIC programs. The routine sorts 5000 items in 22 seconds or 1000 items in 3 seconds. Only single-dimensional arrays can be sorted, and sorting begins with the first character of string arrays. List price: \$24.95. Requirements: 48K, one disk drive.

PC/Messages

Relational Solutions Inc.
8723 Woodleigh Dr.
Houston, TX 77083
713/530-4161

PC/Messages is a help facility that explains error messages and ways of resolving errors. After users specify a command, a list of possible error messages for the command appears on screen with a probable explanation of the error and instructions for correcting the problem. The program does not include information for LINK, EDLIN, and DEBUG commands. *PC/Messages* is easy to install and can be copied onto the system disk. List price: \$29.95. Requirements: 64K, one disk drive.

Screen Generator

K & S Systems
P.O. Box 643
Drexel Hill, PA 19026
215/789-0670

Screen Generator enables programmers to create screens for text and data entry. The program is menu driven and uses simple commands. Screens are recorded as files on disk and are used with applications programs. You can change screens without altering the applications program code and store up to 50 screen formats in a library. List price: \$125. Requirements: 96K, one disk drive.

View Manager

Blaise Computing Inc.
1609 Acton St.
Berkeley, CA 94702
415/524-6603

View Manager is a screen management system that reduces development time for Pascal programs. The programs automate the screen design process and control data capture with simple procedure calls. Screens are stored in a data base and can be displayed almost instantaneously. *View/Screen* enables users to create screens interactively and maintain the screen data base, and data base utilities help archive and maintain the data base. *View/Document* enables users to document screens created, and *View/Library* invokes screens and reports on the data entered. Screens have up to 255 fields, and an unlimited number of screens may be saved. List price: \$275, with source code \$425. Requirements: 128K, two disk drives, Pascal Compiler.

LTF

LXI Inc.
P.O. Box 3007
West Lafayette, IN 47906
317/423-2080

LTF is a text formatter similar to the UNIX 'nroff' formatter. It formats text according to control commands embedded in text files. Formatting options include sending all error messages to a file, calling a form feed after each printed page, printing help messages, setting the page number of the first page printed, and formatting a page and pausing for user input. Also included are commands that boldface and underline text, center lines, indent, set left and right margins, set line spacing, and read text from another file. Text can be entered in any format; the formatting commands then automatically adjust the text to produce the desired appearance. List price: \$79. Requirements: 64K, one disk drive.

Halo

Lifeboat Associates
1651 Third Ave.
New York, NY 10028
212/860-0300

Halo provides programmers with a set of functions for designing graphics software. The utility consists of a subroutine library for graphics functions such as arch, circle, ellipse, box, bar, line, point, flood, and set as well as functions for controlling text, graphics, cross-hair cursor, and text and error processing. Functions can be called from FORTRAN, BASIC, Pascal, C, or any language compiling to object files. The utility supports graphics produced by the Epson printers. List price: \$150. Requirements: 64K, one disk drive.

Quickcode

Fox & Geller
604 Market St.
Elmwood Park, NJ 07407
201/794-8883

Quickcode is an easy-to-use program generator for *dBASE II*. The program enables users to create concise *dBASE II* programs quickly. *Quickcode* provides three types of data validation, data base keys, and menu generators. Also featured are a mail merge interface, the ability to generate forms and reports up to 132 characters wide, and four data types not used by *dBASE II*. List price: \$295. Requirements: 64K, one disk drive, *dBASE II*.

Emulator/86

Lifeboat Associates
1651 Third Ave.
New York, NY 10028
212/860-0300

Emulator/86 enables PC-DOS users to run programs written for CP/M-86. PC-DOS and CP/M-86 programs can be used in a single-operating-system environment. Users can integrate and use programs for both operating systems without having to purchase CP/M-86 or learn a new set of utilities or commands. List price: \$75. Requirements: 64K, one disk drive.

Magic Keyboard

Lifeboat Associates
1651 Third Ave.
New York, NY 10028
212/860-0300

Magic Keyboard reconfigures the IBM PC keyboard for ease of typing. It creates standard shift and return keys without sacrificing any of the normally available characters. Reconfiguration of the keyboard helps eliminate the problem of an awkwardly designed keyboard. The program also provides access to IBM PC graphics characters, which can be called using a single keystroke. List price: \$30. Requirements: 64K, one disk drive.

AZTEC C — 'C' PROGRAM DEVELOPMENT SYSTEM
PORTABLE SOFTWARE APPLE CP/M IBM

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MAIN

SOFTWARE SYSTEMS

- AZTEC C is the most complete implementation of UNIX V7 'C' available for microcomputers.
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- AZTEC C is a complete development system that includes relocating assembler, linkage editor, library utility, debugging aids, overlay support, interfaces to Microsoft and Digital Research development software, and run time routines for I/O, utility, and scientific functions. Source for all library routines is provided.
- AZTEC C generates fast native code for the 6502, 8080, Z80, 8088, and 8086.
- Cross compilers are available from PDP-11, 8086, 8080, and 6502 processors.
- Since its release in 1981, AZTEC C has been acquired by several thousand users. Commercial applications include a wide variety of business, scientific, word processing, database, entertainment and financial applications.

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AZTEC C86 CP/M 80 (MP/M 80)	199
AZTEC C II APPLE DOS	199
AZTEC C65 COM 64 OR ATARI	199
AZTEC Cross Compilers PDP-11	2,000
AZTEC Cross Compilers Other	500

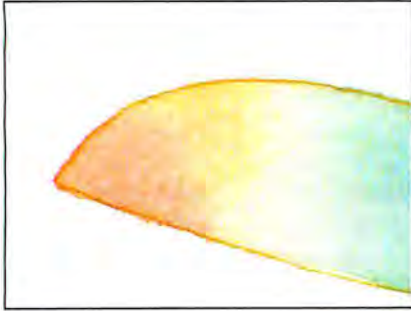
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Pascal Tools

Blaise Computing Inc.
1609 Acton St.
Berkeley, CA 94702
415/524-6603

Pascal Tools consists of six compiled PASCAL units. One unit has string extraction capabilities and translation and conversion routines. The units provide screen handling functions including cursor movement and attribute setting. Users create windows and scroll text within the windows with a single procedure call. The units come with an assembly language routine that lets you access BIOS functions. The six units are: BASIC Intrinsic Functions, which has a function that generates a random number; String Functions, which includes a function that extracts the leftmost character of a string; Screen Handling, which has a function that scrolls text within a specified window; Fast Forms Utility, which includes a function that clears the screen; Graphics Interface, which provides graphics functions; and Application Routines, which includes a function that displays a prompt and accepts a yes or no response. List price: \$125, including source code. Requirements: 128K, two disk drives, Pascal Compiler.

Pascal Tools 2

Blaise Computing Inc.
1609 Acton St.
Berkeley, CA 94702
415/524-6603

Pascal Tools 2 enables programmers to use the advanced operating system functions of PC-DOS 2.00. The programs feature program chaining, memory management, and extended file-handling capabilities. Utilities that set and read dates, inspect and maintain directories, and report disk space allocation are also included. With *Pascal Tools 2*, Pascal programs can invoke and run other programs, DOS commands, and even batch files, and return control to the Pascal programs upon completion of the task. File-handling procedures let programs read 64K of a file at a time, making processing efficient. Directory maintenance routines perform such functions as creating and deleting subdirectories, changing current directories, renaming files, and returning paths of current directories. Six routines provide system information such as reporting the time, date, and available and allocated disk space. List price: \$100 including source code. Requirements: 128K, two disk drives, Pascal Compiler, DOS 2.00.

Access Manager

Digital Research
P.O. Box 579
Pacific Grove, CA 93950
800/227-1617

Access Manager is a set of sub-routine calls that helps you retrieve and update files by key. The functions are compatible with Digital Research's compiled languages and operate in single- and multiuser en-

vironments. The utility has ISAM functions for compiled languages such as Pascal, CBASIC, PL/I, and the C language supplied by Digital Research. The program makes it possible for applications programs written in different languages to share data files. In a multitasking environment, data integrity is ensured by data file and record-locking functions. *Access Manager* also maintains separate index and data files so you don't have to sort data records. List price: \$400. Requirements: 64K, two disk drives.

BASIC Aids 2.0

Tulsa Computer Consortium
P.O. Box 707
Owasso, OK 74055
918/747-0151

BASIC Aids 2.0 is a program development tool that enables users to document BASIC programs. The menu-driven utility enables users to print program listings easily, cross-reference maps of branching instructions, list variable names as used in a BASIC program with their line numbers, and create a table of contents listing the names of routines and sections of BASIC code. The program provides a menu that simplifies loading, listing, renaming, copying, and searching and replacing parts of BASIC programs. The program displays default function key assignments in a menu format and enables users to reassign function keys by filling in blanks. Assignments are stored on disk for reuse. List price: \$79. Requirements: 64K, one disk drive, printer.

Cache/Q

Techne Software Corporation
3685 Mt. Diablo Rd. #210
Lafayette, CA 94549
415/283-6824

Cache/Q speeds program processing by reserving portions of unused computer memory as buffers for data from mass storage devices. The program eliminates unnecessary disk read-and-write operations and can be used with programs that frequently access files on disk. It has a print spooler, which enables users to run the printer and computer terminal simultaneously. *Cache/Q* is distinguished from disk emulator programs in that changes made to data in the buffer are automatically written to a mass storage device. List price: \$225. Requirements: 64K, one disk drive.

RAM Driver 2.0

Datasource
1660 S. Highway 100
Minneapolis, MN 55416
612/544-3615

RAM Driver 2.0 is a disk emulator program that enables the computer to use memory as if it were a mechanical disk drive. Files can be stored and accessed on the disk emulator more rapidly than on a mechanical drive. The emulated disk can range from 10K to 360K in size. More than one drive can be emulated in memory. The program does not require a specific memory board or special switch setting, nor does it modify DOS. List price: \$23. Requirements: 64K, one disk drive.

Panel

Lifeboat Associates
1651 Third Ave.
New York, NY 10028
212/860-0300

Panel enables programmers who develop interactive applications to design program screens quickly. Single-keystroke commands enable users to define field presentations, make changes, and specify names and attributes on screen layouts. A terminal tailoring system allows customizing of screen displays for use on almost any terminal without requiring changes in program code. The program is available for the following languages: PL/I 80 with LINK 80, PL/I with run-time library, Pascal/MT+, and COBOL-80. Screens are invoked using simple subroutine calls. List price: \$380. Requirements: 44K, one disk drive.

Baby/34

California Software Products, Inc.
525 N. Cabrillo Park Dr.
Santa Ana, CA 92701
714/973-0440

Baby/34 enables RPG II System/34 programs to be transported and run on the IBM PC. The utility replicates a System/34 environment on the PC and enables users to run System/34 programs without conversion or modification. *Baby/34* consists of eight modules: Conversion Utility, Operating Control Language, RPG II Compiler, Run-time Execution Package, Screen Format Generator, Source Entry Utility, Data File Utility, and Sort/Merge Utility. List price: \$2500, run-time version purchased separately \$595. Requirements: 256K, one disk drive.

Opt-Tech Sort

Opt-Tech Data Processing
P.O. Box 2167
Humble, TX 77347
713/454-7428

Opt-Tech Sort is an easy-to-use assembly language sort-and-merge program. It can be run as a PC-DOS command and invoked by BASIC programs. The program can simultaneously sort up to ten files of any record length or file size. Variable and fixed-length data can be sorted using up to nine key fields. The program is useful for program developers or anyone needing to sort data. List price: \$75. Requirements: 48K, one disk drive.

C-window

C-systems
P.O. Box 3253
Fullerton, CA 92634
714/637-5362

C-window does interactive symbolic debugging of C programs at the C source code level. Program execution is controlled per C statement, and variables can be displayed or altered using normal C expressions including assignment, comparison, and structure and array operators. The program provides source code level single stepping of programs, auto and external variable display, full C expression evaluation and recursion, and a variety of breakpoints. Multiple commands can be entered and are executed for each single step, trace, or breakpoint. This feature permits multiple variable display similar to assembler register display as a program is tested. List price: \$195. Requirements: 128K, two disk drives.

LXI Utilities Package

LXI, Inc.
P.O. Box 3032
West Lafayette, IN 47906
317/423-2080

LXI Utilities Package features 15 utility programs. Some of the utilities enable users to sort file names in disk directories; change foreground, background, and border colors; list files one screenful at a time; and print files formatted for continuous-form paper. Other utilities enable users to recover files from damaged disks; mark files as having been recently updated; perform character, word, line, and page counts for a given file; and read specified sectors of a disk and print out the contents as characters or octal numbers. A Force utility enables users to input strings of characters as if from the keyboard during batch file processing. List price: \$54. Requirements: 64K, one disk drive.

BOS AutoClerk

BOS National, Inc.
2560 Royal Ln.
Dallas, TX 75229
214/484-2717

BOS AutoClerk is a report and program generator. The program enables users who have limited computer experience to develop commercial-quality programs quickly. *AutoClerk* can be used for data entry, file maintenance, and report generation. The program can create any desired disk, file, screen format, or print layout. It can sort, amend, update, validate, and calculate data. *AutoClerk* can operate in single-user, multiuser, and network modes. List price: single-user \$550, multiuser \$900. Requirements: 64K, two disk drives.

FTX

Probity
P.O. Box 259
New Lenox, IL 60451
815/485-3493

FTX is a full-screen editor for use with text files that use a carriage return and linefeed after each line of text. *FTX* outperforms standard line editors and is specifically designed for the IBM PC and its keyboard. Text can be copied and moved among different files. Files longer than 64K must be broken into smaller files. List price: \$65. Requirements: 64K, one disk drive.

Cross Reference Utility

Prentice-Hall, Inc.
Englewood Cliffs, NJ 07632
201/592-2000

Cross Reference Utility provides BASIC programmers with a complete reference listing of variables within a BASIC program. The utility may be used for commercially purchased software as well as for personal programs. Programmers can use the utility to label variables for identification. Programs must be saved in ASCII format before the utility can be used. The program is capable of handling a maximum of 425 program lines or 850 variables. List price: \$29.95. Requirements: 64K, one disk drive.

"Cross Reference Utility is useful for lengthy programs and helps you avoid repeating variables during programming." Michael J. Suess, Brooklyn Park, Minnesota

Programmer's Tool Kit

SimSoft Inc.
P.O. Box 7095
Port Huron, MI 48301
313/984-1570

Programmer's Tool Kit is a set of 45 BASIC software development modules. The programs have a screen/keyboard manager and more than 40 common routines designed to aid BASIC programmers in structuring programs. The screen/keyboard manager is a generalized BASIC language routine that performs screen displays and keyboard input using simple programmer-defined codes. It can be merged with existing programs or used to create new ones and features data checking routines that eliminate keyboard input errors. The other modules interact with the screen/keyboard manager and are incorporated into programs according to specific program requirements. List price: \$70. Requirements: 64K, one disk drive.

Btree

Quantum Software Systems, Inc.
7219 Shea Ct.
San Jose, CA 95139
408/629-9402

Btree is an interface to an indexed sequential file for the QNX operating system. The utility provides a fast binary-tree algorithm and supports up to 16 multiple keys. Records must be of fixed length. The utility is designed to speed program development, and a run-time license is available for systems developers. List price: \$150. Requirements: 96K, one disk drive, QNX operating system.

Autosort/86M

Computer Controls Systems
298 21st Terrace S.E.
Largo, FL 33541
813/586-1886

Autosort/86M is a high-speed sorting utility designed for large files with fields and records of fixed lengths. Record lengths can be 5000 bytes or more if the specified sort buffer is at least 40K. Nine modes of sorting, merging, and selecting data can be used. MBASIC's integer, single-precision, double-precision, and string fields are supported. The sorting program can be used as a stand-alone utility or called as a subroutine by Pascal or BASIC programs. List price: \$150. Requirements: 64K, one disk drive.

California 10 Pak

California Software Products, Inc.
525 N. Cabrillo Park Dr.
Santa Ana, CA 92701
714/973-0440

California 10 Pak consists of ten utilities useful to business professionals and programmers. Four easy-to-use utilities include Browse, for a rapid scan of files; Sort, which can sort files quickly using up to five fields; Cdiff, which provides line-by-line comparison of two files, highlighting any differences; and Cdir, which provides a display of file names sorted by criteria specified by users. Five additional utilities useful to programmers include Ccomp, which provides a byte-by-byte comparison of files; Cdisk, which provides a screen display of hard or floppy disk information; Cfile and Cmem, which enable users to scan alpha and hexadecimal displays of file and memory

contents rapidly; and Cenv, which displays information about system configuration and a pictorial map of installed memory. Also included is a disassembly utility that produces ready-to-assemble source files extracted from any area in main memory. List price: \$100. Requirements: 64K, one disk drive.

Matrix Pak

Microware
P.O. Box 79
Kingston, MA 02364
617/746-7341

Matrix Pak is a group of matrix routines that can be called from Compiled BASIC, FORTRAN, Pascal, or assembly language programs. The routines employ the Intel 8087 chip as a true coprocessor and achieve floating point arithmetic throughput approaching the theoretical speed of the chip. All matrices are stored in memory in a user-designated area, and the limit on matrix size is set by the amount of memory users allocate for matrix storage. The routines are written in assembly language and use algorithms that have been optimized for the 8087 chip. Eight data types are supported including word integer, short integer, long integer, BCD integer, short real, long real, and temporary real formats. Future releases will support the data-type short real complex format along with sparse matrices. List price: \$150. Requirements: 64K, one disk drive, BASIC Compiler, Intel 8087 coprocessor.

The Informer

SimSoft Inc.
P.O. Box 7095
Port Huron, MI 48301
313/984-1570

The Informer displays information stored in a disk directory, including operating system, program, and data files. The program enables users to change file names and file attributes for hiding and showing files. The program uses a machine language routine linked with a BASIC program to access the disk directory. The utility reads and writes the directory and makes changes in file names and attributes while controlled by the BASIC program. Directory information can be displayed on screen or sent to a printer. The information includes file name, size, and attributes; date of creation or update; time of last update; starting side; and track and sector location on disk. The total numbers of entries used and those remaining and of bytes used and bytes available on disk are also displayed. List price: \$40. Requirements: 64K, one disk drive.

Electronic Disk

Ensign Software
7337 Northview Rd.
Boise, ID 83704
208/378-8086

Electronic Disk is a disk emulator program that reserves a portion of computer memory for file storage. Users can specify the size of the emulated disk in 1K increments up to 320K. The program can emulate two drives of any size in memory and provides print spooling. List price: \$69.95. Requirements: 96K, one disk drive.

LoadCalc

Micro Decision Systems
P.O. Box 1392
Pittsburgh, PA 15219
412/276-2387

LoadCalc converts text files and print-image files into Data Interchange Format (DIF), enabling users to integrate the converted files into other programs that use this format. Conversion control is performed with single keystrokes, and no size limitations exist for the converted files. The program is useful for moving data from mainframes to microcomputers. List price: \$95. Requirements: 96K, one disk drive.

DataSafe

IMSI
633 Fifth Ave.
San Rafael, CA 94901
415/454-7101

DataSafe enables users to encrypt computer data. Users can ensure the confidentiality of data by creating a simple password that is the key to decoding the encrypted file. Users can verify whether data has been tampered with. The utility uses the DES algorithm, an encryption algorithm developed by IBM for use on federal computer systems. The DES algorithm is certified by the National Bureau of Standards as safe and reliable. The program uses both ASCII and hexadecimal keys, tests data integrity of nonencrypted files, and encrypts files of up to 16 megabytes. Encrypted files are increased in size by 40K. The program is written in assembly language and performs self-testing before data is encrypted. List price: \$135. Requirements: 64K, one disk drive.

MatchPoint/86

American CompuSoft
23113 Plaza Pointe Dr.
Laguna Hills, CA 92653
714/472-8186

MatchPoint/86 enables PC-DOS users to use programs written for CP/M-86. Files stored in CP/M-86 format can be used while running under PC-DOS. The program enables users to run two operating systems simultaneously while the computer behaves as if all the programs and data were written in the same operating system format. *MatchPoint/86* works for floppy and hard disk drives and requires no hardware alteration or conversion equipment. List price: \$99. Requirements: 8K, one disk drive.

Access Pak

Peachtree Software, Inc.
3445 Peachtree Rd.
Atlanta, GA 30326
404/239-3000

Access Pak enables users of PeachTree programs to access files from and exchange information with other programs such as *WordStar*, *EasyWriter*, and *VisiCalc*. Four programs are provided: *Information Access*, a *WordStar*-to-*PeachText* translator, an *EasyWriter*-to-*PeachText* translator, and a *VisiCalc*-to-*PeachCalc* translator. *Access Pak* programs convert ASCII files into the format used by *PeachText* and *PeachCalc*. List price: \$525. Requirements: 64K, two disk drives.

Programmer Utilities

Data*Easy Software
Data Consulting Group
877 Bounty Dr. #EE203
Foster City, CA 94404
415/571-8100

Programmer Utilities is designed to improve programmer productivity. One utility enables programmers to display, list, or edit data stored in random access files by typing the file specifications. The data is then displayed with record positions appearing across the top of the screen or printed page followed by the record number and contents. A compress utility enables users to recreate files with undesirable records removed or to create a subset of the file. Other utilities display disk contents, switch printer ports, and change character sets. Another utility can display 20 characters of a record at a time in character, hexadecimal, ASCII, or bit format. List price: \$50. Requirements: 64K, one disk drive.

SID-86

Digital Research
P.O. Box 579
Pacific Grove, CA 93950
800/227-1617, 800/772-3545
California

SID-86 is a symbolic instruction debugger for experienced programmers. The program allows the use of symbolic addressing rather than using hexadecimal numbers to manipulate memory values. It enables users to display and alter memory and registers; compare, fill, and move blocks of memory; and read and write disk files. List price: \$150. Requirements: 64K, one disk drive.

Menu Design Aid

Data*Easy Software
Data Consulting Group
877 Bounty Dr. #EE203
Foster City, CA 94404
415/571-8100

Menu Design Aid provides an unlimited number of menu selections and displays up to 20 per screen. It features a confirmation screen that displays options individually after selection. Users can enter file specifications and run the program by chaining even if the file is not a menu selection. Menus have highlighted title and user instructions. Users receive a completed sample menu and instructions for modifying it. List price: \$15. Requirements: 16K, one disk drive.

Screen Design Aid

Data*Easy Software
Data Consulting Group
877 Bounty Dr. #EE203
Foster City, CA 94404
415/571-8100

Screen Design Aid enables users to create screen displays and BASIC code for data input. Users type the design, field titles, and pairs of brackets to mark field sizes. The resulting screen displays and BASIC statements are created automatically and saved for incorporation into programs. A hard copy of each screen is also printed showing input-field locations and sizes. Screen displays may be recalled and changed easily. Existing screens can be used as templates for new screens. Line 25 of the screen is reserved for status and operator instruction information. List price: \$35. Requirements: 64K, one disk drive.

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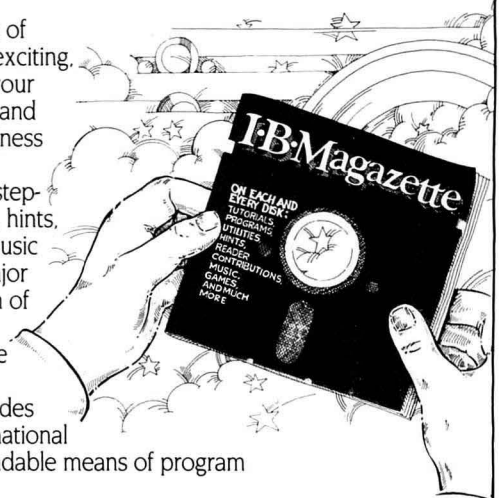
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Ultimenu for BASIC

DB/DC Software Associates
P.O. Box 4695
Manchester, NH 03108
617/682-6629

Ultimenu for BASIC provides menus that list the BASIC programs in a software library. The program creates menus of up to 36 entries that can be selected with a single key-stroke. Ten function key definitions are also supported in the menus. Each entry can contain up to 34 characters describing the BASIC program it runs. *Ultimenu for BASIC* enables users to create primary and secondary menus and to display the time and date continuously. The menus are easy to design and require no modification of PC-DOS or BASIC. List price: \$19.95. Requirements: 48K, one disk drive.

Screen Design Program

Delta Software Systems, Inc.
2221 Thornwood
Memphis, TN 38119
901/755-4063

Screen Design Program enables users to create, design, and change BASIC or COBOL screens easily. The program generates an ASCII source code program and it comes in two versions, BASIC or COBOL. BASIC screens use a field-handling subroutine and field attribute prompts. COBOL screens enable users to select all COBOL options. Screens can be modified by changing the ASCII source program or by regenerating the screen. List price: \$100. Requirements: 64K, two disk drives.

RDS Read-Only Utility

Resuba Digital Systems
P.O. Box 440
Blackwood, NJ 08012
609/228-5666

RDS Read-Only Utility enables users to give files a read-only status that protects them from accidental erasure. The utility can set and reset the read-only status of any DOS 2.00 file. The program does not protect files from erasure through reformatting. List price: \$19.95. Requirements: 128K, one disk drive, DOS 2.00.

PC-Create

Lifeboat Associates
1651 Third Ave.
New York, NY 10028
212/860-0300

PC-Create is a program generator that enables users who have no prior programming experience to create BASIC programs. The program can be used to create an electronic filing system with a report option, mailing lists, and inventory programs. It also compiles lists of records with up to 19 fields that can be sorted by multiple keys. List price: \$49. Requirements: 64K, one disk drive.

KSAM

SofTech Microsystems
16885 W. Bernardo Dr.
San Diego, CA 92127
619/451-1230

KSAM is a file management system that provides sequential and keyed retrieval of data. The system is primarily for applications that require fast access to information. Records

can be accessed by primary key, alternate key, and partial key. *KSAM* uses a special buffering technique that eliminates unnecessary disk accesses in order to increase retrieval speed and reduce wear on drives and disks. The utilities are a collection of units that can be added to a library or used in a program. File-handling functions include add, close, create, delete, erase, load, open, and three-record handling. *KSAM* also includes a utility program *KASAMUT*, that performs such tasks as checking the print file status, verifying that all records are in sequence, copying a file in compacted or reorganized form, merging two files, and creating a *KSAM* data base or alternate file. List price: \$200. Requirements: 64K, one disk drive, UCSD p-System.

Information Access

Peachtree Software Inc.
3445 Peachtree Rd.
Atlanta, GA 30326
404/239-3000

Information Access enables users to create procedures that convert Peachtree accounting data files to formats readable by *PeachText*, *PeachCalc*, and *List Manager*. Users can extract data from accounts receivable files to construct a *PeachText* form letter to be sent to all customers with past-due accounts. Machine-readable descriptions of the nine most commonly used accounting system data files are included with the program. A hard disk is supported but not required. List price: \$375. Requirements: 128K, two disk drives.

Qmenu

Quantum Software Systems, Inc.
7219 Shea Ct.
San Jose, CA 95139
408/629-9402

Qmenu is a data-driven menu system that enables users to run programs with a single keystroke. The utility can be used as a hierarchical menu system for the operating system or for users' programs. The menu system can be changed with editing programs provided in the utility. Menus must be changed from the master console of the system but are available concurrently on all other terminals. The utility supports all IBM PC function keys, a mouse, and the ADM31, Televideo, VT100, and Viewpoint terminals. Other terminals can be added using a termcap mechanism. List price: \$150. Requirements: 128K, one disk drive.

QDOS

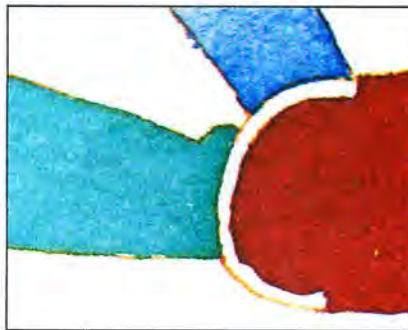
Quantum Software Systems, Inc.
7219 Shea Ct.
San Jose, CA 95139
408/629-9402

QDOS enables users to run PC-DOS programs under the QNX operating system. A single emulated PC-DOS program can be run concurrently with multiple QNX programs. PC-DOS programs can then be used in a multitasking, multiuser environment. Any IBM-supported software can be run on the QNX operating system; however, *QDOS* will not run copy-protected programs or programs that modify the operating system. The program works for applications programs running under PC-DOS 1.10. List price: \$60. Requirements: 96K, one disk drive, QNX operating system.

UT-86

Dynamic Microprocessor Associates
545 Fifth Ave.
New York, NY 10017
212/687-7115

UT-86 comprises four utility programs: Copyfile, D, Patch, and Print. Copyfile copies existing files on the same or different disks and optionally changes file names. Copyfile displays the name of each file copied and optionally prompts users before copying takes place. The D utility provides a sorted full or partial directory of files on disk and of file sizes. It also provides a summary of disk space usage including hidden



and system files. Patch is a file examination and modification program that enables records from files to be accessed, modified in hexadecimal or ASCII values, or filled with fixed values. Files can be opened, closed, typed, renamed, erased, created, extended, or searched. Print is a general purpose print utility that prints multiple files according to specifications such as page height, lines per page, left margin width, tab expansion width, parity strip, and page headings. List price: \$95. Requirements: 64K, one disk drive.

PCDOS Bubble

Datalex Company
650 Fifth St. #406
San Francisco, CA 94107
415/541-0780

PCDOS Bubble enables users to run programs written for the UCSD p-System under PC-DOS. Using the utility, users can run a mix of PC-DOS and p-System programs without leaving the PC-DOS environment. The programs can share data files and read and write standard p-System format disks. The utility enables users to tie p-System programs to the large number of PC-DOS software packages, with PC-DOS files read and written from within the p-System. It also allows p-System programs to communicate with system hardware through PC-DOS in order to access peripheral devices such as hard disks and RS-232C serial ports. List price: \$24, with the UCSD p-System \$750. Requirements: 128K, one disk drive.

SureStroke

Seasoned Software, Inc.
P.O. Box 3036
Chapel Hill, NC 27515
919/967-5818

SureStroke provides a Dvorak keyboard system on the IBM PC keyboard. The program comes with press-on labels that indicate the Dvorak system key identifies without obscuring the normal IBM key-top labeling. The program includes *SureStroke Coach*, a tutorial that teaches the use of the Dvorak keyboard, and a self-hypnosis tape to speed mastery of the keyboard system. List price: \$49.95. Requirements: 64K, one disk drive.

Virtual Screen Interface

Amber Systems
811 Alderbrook Ln.
Cupertino, CA 95014
408/996-1883

Amber Systems' *Virtual Screen Interface* provides applications programs with window management. The program supports up to 255 virtual screens that can be of different sizes and can appear anywhere on the physical screen. Virtual screens appear through windows that can be smaller than the virtual screen and that can have single-line, double-line, or user-defined character borders. The interface is implemented as a set of functions that can be called from any program language able to call assembler code. Interfaces are available for C, Pascal, FORTRAN, Modula-2, and BASIC (both interpretive and compiled). *Virtual Screen Interface* provides internal diagnostics and numerous source code examples. List price: object code \$295, source code \$10,000 plus royalty agreement. Requirements: 128K, one disk drive.

XenoFile

SofTech Microsystems
16885 W. Bernardo Dr.
San Diego, CA 92127
619/451-1230

XenoFile translates CP/M-80 files to p-System files so that CP/M files can be accessed by p-System programs. The program permits Pascal programs to use output from a CP/M program and vice versa. *XenoFile* also includes a CP/M filer program that enables users to display a CP/M directory, transfer a text file from a CP/M disk to a Pascal disk and vice

versa, and display all entries (including deleted entries) on a CP/M directory. Although any type of CP/M file can be translated to a p-System file, translations of CP/M code cannot be executed. List price: \$50. Requirements: 64K, one disk drive, UCSD p-System.

DC/Diskette Catalogue

Creative Programs Unlimited
16533 37th Ave. NE
Seattle, WA 98155
206/367-7949

DC/Diskette Catalogue is a menu-driven program that catalogs disks and files. The program is written in assembly language so that processing goes quickly even when files number in the thousands. The program can sort by file name, extension, date and time, file size, and disk volume name. It uses dynamic memory allocation to take advantage of the amount of computer memory available during processing. Cataloging capacity is limited only by the amount of memory and disk space available. List price: \$20. Requirements: 48K, one disk drive.

"DC/Diskette Catalogue *performs a necessary and important task very quickly and easily.*" R.M. James, Seattle, Washington

Ultimenu for DOS

DB/DC Software Associates
P.O. Box 4695
Manchester, NH 03108
617/682-6629

Ultimenu for DOS is a full-screen menu system for PC-DOS. The program creates menus of up to 36 entries that can be selected with a single keystroke. Each entry can contain up to 34 characters describ-

ing the program it runs. The program enables users to create primary and secondary menus that run programs, commands, and batch files. The menus are easy to create and customize and require no modification of PC-DOS. *Ultimenu for DOS* simplifies using PC-DOS by eliminating the need to remember complex DOS commands and syntax. List price: \$24.95. Requirements: 48K, one disk drive.

8087 Support Software

Hauppauge Computer Works
358 Veterans Memorial Hwy.,
Ste. MSI
Commack, NY 11725
516/360-3827

8087 Support Software is an aid to programmers developing software for the 8087 coprocessor. The program includes a math interface library for the IBM Pascal Compiler and a math macro library for the IBM Macro Assembler. The software, used in conjunction with the 8087 chip, can speed up floating point calculations from 2 to 180 times and maintain accuracy in results. The software includes an 8087 numeric coprocessor installation test; libraries for Pascal real functions, Pascal transcendental functions, and Pascal advanced transcendental functions; Macro Assembler 8087 opcodes; a conversion program for Pascal and 8087 math formats; other macros for use with Pascal; and a demonstration program that provides a processing speed check. List price: \$150. Requirements: 64K, one disk drive, IBM Pascal or FORTRAN Compiler or IBM Macro Assembler, 8087 coprocessor.

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UltraFAST Software Package

Daystar Systems, Inc.
10511 Church Rd., Ste. A
Dallas, TX 75238-9990
214/341-8136

UltraFAST Software Package consists of three utility programs: UltraFAST Electronic RAM disk, UltraTRAP, and UltraBOOT. UltraFAST emulates up to four RAM disks in memory. Users can specify emulation of single- or double-sided drives or select a specific-sized disk emulator. UltraTRAP is a parity error-handling program that alerts users to parity errors and prevents the computer from locking up. UltraBOOT enables users to reallocate the computer's memory from the keyboard. Memory can then be restructured according to the system disk's size requirements. List price: \$39.95. Requirements: 128K, one disk drive.

Screen Design Program

Delta Software Systems, Inc.
5418 Oakleaf Ave.
Memphis, TN 38134
901/755-4063

Screen Design Program enables users to create, design, and change BASIC or COBOL screens. The program generates an ASCII source code program and comes in two versions, one for BASIC and one for COBOL. BASIC screens use a field handling subroutine and field attribute prompts. COBOL screens enable users to select all possible options in COBOL programs. Screens cannot be modified after inclusion in another source program. List price: \$100. Requirements: 64K, two disk drives.

8086 OS Converter

Dynamic Microprocessor Associates
545 Fifth Ave.
New York, NY 10017
212/687-7115

8086 OS Converter permits CP/M-86 programs to run under PC-DOS and vice versa. Two versions are available. The CP/M-86 to PC-DOS version includes a utility that enables PC-DOS to read disks formatted under CP/M-86 for direct disk-to-system transfer. The PC-DOS to CP/M-86 version requires using a communications program or another method of file transfer to make object files accessible to the CP/M-86 operating system. List price: \$95. Requirements: 64K, one disk drive.

EM80/86

Dynamic Microprocessor Associates
545 Fifth Ave.
New York, NY 10017
212/687-7115

EM80/86 is an emulator that enables programs written for CP/M-80 systems to run on systems using 8086/8088 processors. After transferring 8080 object files to an 8086 system, users can run the programs by invoking the emulator and specifying the program object file and any optional parameters used when running the program on an 8080 system. Under the emulator, all input and output operations run at the operating system speed. Programs that interact primarily with system peripherals run at speeds equivalent to those of the original 8080 system. Programs that perform much internal processing run more slowly. List price: \$95. Requirements: 64K, one disk drive.

Memory/Shift

North American Business Systems
642 Office Pkwy.
St. Louis, MO 63141
800/325-1485

Memory/Shift enables users to run up to nine applications programs in memory at one time and permits users to switch control from program to program. Data can be transferred from one program to another, but the utility does not allow concurrent processing (although DOS 2.00 users can run the printer while continuing other processing). If more than one monitor is available in the computer configuration, applications programs can be directed to use different monitors. List price: \$99. Requirements: 128K, one disk drive.

"Memory Shift is valuable for experienced PC users." Stuart A. Jones, Allentown, Pennsylvania

PolyLibrarian

Polytron Corporation
P.O. Box 787
Hillsboro, OR 97123
503/648-8595

PolyLibrarian creates code libraries for any compiler or assembler that uses the IBM PC Linker program. The utility creates a single library from related object modules. It examines, reorganizes, and optimizes existing libraries and provides main-frame librarian features. Modules can be added and deleted from a library, and public names within a module can be listed and changed. List price: \$99. Requirements: 128K, one disk drive.

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Spacemaker

Realia Inc.
10 S. Riverside Plaza
Chicago, IL 60606
312/346-0642

Spacemaker compresses .EXE and .COM executable files by compressing binary zeros and relocation information within the files. Programs with large data or stack segments can be significantly compressed to save disk space and program loading time. When executed, the compressed programs expand and relocate themselves, recreating the original programs. *Spacemaker* replaces the EXE2BIN program and can convert any .EXE program to a .COM program if the compressed version uses less than 64K. *Spacemaker* has complete documentation, including information on the format of compressed files. List price: \$75. Requirements: 64K, one disk drive.

Print Driver

MainData
844 Stevens Ave.
Portland, ME 04103
207/773-1051

Print Driver is designed for multi-user systems that have a limited number of CPU ports. Whereas normally each printer and CRT in those systems requires an individual port, the utility permits them to share a single port, thus freeing a port for other uses. No patches to the operating system or applications software are required. List price: \$350. Requirements: 64K, one disk drive, Oasis-16.

Graphics Utility

Savant Corporation
P.O. Box 440278
Houston, TX 77042
800/231-9900, 713/556-8363

Graphics Utility is a programming tool used to create character sets and shapes for BASIC programs. The program can also be used as a stand-alone graphics generator. Character sets may be designed in different sizes and shapes. The maximum size is 39 by 39 pixels. Shapes may be combined and saved as one large picture. Three subroutines (animation, accessing a string binary array, and separating the characters out of the binary array) enable users to incorporate the character sets and shapes into a program. List price: \$85. Requirements: 64K, one disk drive, color graphics board.

Sayonara Scramble

Percs Software
P.O. Box 34357
9734 Grant St.
Omaha, NE 68134
402/397-0361

Sayonara Scramble is designed to give consultants and BASIC programmers access to copy-protected BASIC source files. The utility removes the protection option and enables users to list and modify programs in the same way as they would any unprotected program. The utility is written in assembly language and can modify commercially available software to make changes, alter report formats, or make additions to a protected BASIC program. List price: \$55. Requirements: 64K, one disk drive.

RTCS/UDI

Real-Time Computer Science Corporation
P.O. Box 3000-886
Camarillo, CA 93011
805/482-0333

RTCS/UDI enables users to run Intel Series III Microcomputer Development System software on an IBM PC. The utility makes Intel languages and other UDI-compatible programs run 20 percent faster on an IBM PC than on a Series III system. The program includes a library of routines that enable Series III programs to use UDI and PC-DOS functions. Other programs linked to the *RTCS/UDI* library can also run under PC-DOS. Included are communications programs that enable users to transfer files to and from the IBM PC and Series III systems. List price: \$500. Requirements: 256K, one disk drive.

PC-Util

Tecmar Inc.
6225 Cochran Rd.
Cleveland, OH 44139
216/349-0600

PC-Util provides an enhanced directory with sort options and a utility that enables users to copy files from hard disks onto multiple floppy disks. The directory utility displays files in a two-column format showing file name, extension, time and date of last update, and file size. Users can sort directory listings by file name, extension, or time and date, and long displays can be viewed page by page. The utilities are designed to exploit the storage capacities of the PC-Mate Disk Expansion options. List price: \$95. Requirements: 64K, one disk drive.

Soft-Scope

Real-Time Computer Science
Corporation

P.O. Box 3000-886
Camarillo, CA 93011
805/482-0333

Soft-Scope is a high-level debugging program that features high-level breakpoints and single-stepping, remote debugging with a second terminal, high-level trace, and machine disassembly and 8087 coprocessor floating-point support. Users interact with a display of the source code listing of PLM-86, Pascal 86, FORTRAN 86, or Mark William's C Compiler. Any part of a module listing may be displayed on command. Symbols are readily accessible for any module compiled with DEBUG, and there is no limit to the total number of symbols declared. Breakpoints can be set by execution labels, line numbers, absolute addresses, variable equations, and logical conditions. Users perform single-stepping by pressing the space bar, which executes one line of the module currently open for debugging and displays the complete source line corresponding to the next instruction to be executed. All *Soft-Scope* interactions can be directed to a second terminal to give the program being debugged exclusive control of the main console. When required, users can view and single-step programs at the assembly level. The disassembler supports floating point instructions and can display or change all 8087 coprocessor numeric types. List price: \$995. Requirements: 256K, one disk drive, RTCS/UDI.

Disk Sort Utility

Jack Strick and Associates
949 S. Lake Dr.
Hollywood, FL 33019

Disk Sort Utility contains a run-time sorting module that can be incorporated into BASIC programs. The program sorts ASCII records of up to 4096 bytes using several selection criteria. *Disk Sort Utility* is compatible with BASIC, sequential, and random files. It supports either floppy or hard disk drives. List price: \$60. Requirements: 64K, one disk drive.

Btrieve

SoftCraft, Inc.
P.O. Box 9802 #590
Austin, TX 78766
512/346-8380

Btrieve is a B-tree-based retrieval system that works with BASIC, Pascal, COBOL, and C. The utility features multikey access to any number of files, duplicate and modifiable keys, an unlimited number of records per file, and efficient memory utilization. It provides programmers with B-tree file access routines for sequential and random access to data. The utility provides transaction-level control to protect a data base's logical integrity. By bracketing a set of *Btrieve* calls between begin and end transaction calls, users can be sure that none of the operations is applied to the data base unless they all are. The utility features automatic data recovery following system failure. List price: \$145. Requirements: 64K (96K with PC-DOS 2.00), one disk drive.

"SoftCraft's support of Btrieve is excellent." Karen Lahey, Ann Arbor, Michigan

Creator

Software Technology for Computers
153 California St.
Newton, MA 02158
617/244-2590

Creator generates BASIC programs from information supplied by users without requiring users to have previous programming experience. Users create BASIC applications programs by answering simple questions asked by the program. The utility can create programs that do invoicing, music composition, data base management, checkbook management, word processing, and form letter mailings. *Creator* also generates spreadsheet programs and programs that create bar graphs. Once programs are designed, users save them on separate disks. Source code is provided so that users can customize the programs they have created. List price: \$300 including documentation and a tutorial. Requirements: 64K, two disk drives.

RAMSpooler

Tecmar Inc.
6225 Cochran Rd.
Cleveland, OH 44139
216/349-0600

RAMSpooler provides high-speed print spooling that enables users to run programs and print files at the same time. Once the utility is installed, all printing is managed by the spooler software and is carried out as a background task, freeing the computer to carry out processing. The variable-sized buffer can hold up to 64K. List price: \$95. Requirements: 64K, one disk drive.

XREF

Single Source Solutions
2637 Pleasant Hill Rd.
Pleasant Hill, CA 94523
415/680-0202

XREF is a cross-referencing utility for disk BASIC programs. The software generates a listing of a program including the time, date, program name, and formatting features such as indentation and pagination. The utility then prints out a list of all variables, their line numbers, and a table of all the line numbers. List price: \$79.95. Requirements: 64K, one disk drive.

Assembler Translator

Seattle Computer Products, Inc.
1114 Industry Dr.
Seattle, WA 98188
800/426-8936

Assembler Translator is a Z-80 to 8086/8088 source code translator. The program accepts source files written using Zilog/Mostek Z-80 mnemonics and converts them to 8086/8088 source code files. Once converted, files are assembled by the ASM program included with the translator. ASM, the Seattle Computer Products assembler, is an alternative to the MASM assembler; it is smaller and faster than the MASM product but does not support macros. ASM has full 8087 processor opcode support and is recommended for smaller assembly language programming or whenever 8087 opcodes are needed. List price: \$150. Requirements: 64K, one disk drive.

Catalog

MultiPro
P.O. Box 342
Saline, MI 48176
313/429-2344

Catalog is a disk librarian program that enables users to maintain a cross-referenced index of all the disks and files in their library. The program supports up to 198 disk volume directories and 3900 files on one 320K disk. The program provides space for a 38-character description of each volume and a 40-character comment for each file. The date of creation, number of bytes in each file, and volume identification numbers are also included in the library listings. List price: \$34.95. Requirements: 96K, one disk drive.

HAI*Bus Runtime and Utilities

Holland Automation USA, Inc.
3400 W. MacArthur Blvd., Ste. D
Santa Ana, CA 92704
714/641-2844

*HAI*Bus Runtime and Utilities* is Holland Automation's operating system interpreter and utility package under which HAI*Microware products run. It is portable and runs on many Z-80, 8080, 8088, and 6809 based microcomputers. The utilities provide user-alterable menu fields, disk directories that allow 20-character descriptions of files, and a printer configuration program. They provide English dialog commands for file allocation, file copy, file reorganization, and file deletion functions. The product is available in English (British), Spanish, Dutch, German, and French. List price: \$50. Requirements: 128K, two disk drives.

Unprotect Program

Software Masters
6704 Hoover Rd.
Indianapolis, IN 46260
317/253-8088

Unprotect Program is a utility that enables users to save and list BASIC programs that have been encrypted with the 'p' option. List price: \$50. Requirements: 64K, one disk drive, BASICA.

CodeSmith-86

Visual Age
642 N. Larchmont Blvd.
Los Angeles, CA 90004
213/464-8141

CodeSmith-86 is a debugger for creating full-screen 8086/8088 machine language disassemblies that you can scroll through, insert comments in, search, and insert breakpoints in with simple keystroke commands. Machine register values are displayed automatically at the top of the screen. A multilevel screen windowing arrangement allows you to view up to 23 different parts of a program in rapid succession. The windows can also be used to display memory dumps while you simultaneously single-step through a disassembly. Disassemblies can be dumped either to a printer or to disk files. Screensave mode saves and restores a program's display image during breakpointing and single-stepping operations. In addition to supporting many Microsoft *DEBUG* commands, *CodeSmith-86* also has commands for setting and releasing multiple breakpoints and formatting disassemblies. List price: \$145. Requirements: 128K, one disk drive.

TYP/PRT

Contract Services Associates
706 S. Euclid
Anaheim, CA 92802
714/635-4055

TYP/PRT sends keyboard input directly to the printer, allowing the computer and printer to function as a typewriter. On-screen data can also be captured to disk. The program runs concurrently with most other programs and lets you switch back and forth between them. *TYP/PRT* contains a six-function calculator with a three-column limit. List price: \$24.95. Requirements: 64K, one disk drive.

Lazycoder Screen

Nelson Data Resources, Inc.
900 S. 74th Plaza #118
Omaha, NE 68114
402/397-3030

Lazycoder Screen is an easy-to-use screen designer. The program can be used both to input fields for data entry and to design screens for informational purposes such as slide-making. *Lazycoder Screen* provides 25 ways to create screens using an Etch-a-Sketch-type electronic black-board process. The program allows you to create special graphics and to perform correction, deletion, and display functions. *Lazycoder Screen* enables you to save and store designs, and the program can be used with random access data files. Screen designs can be called up and used with any filing system applications program. The informational mode can be used to link screens together to create slides or design books. List price: \$125. Requirements: 64K (128K for DOS 2.00), two disk drives.

PC Screen

Single Source Solution
2637 Pleasant Hill Rd.
Pleasant Hill, CA 94523
415/944-5161

PC Screen allows you to create screen displays by entering images onto the screen exactly as they should appear. The program provides for input fields and protected prompts and generates modules that can be inserted into any BASIC program. The various screen fields can be painted with enhancements such as inverse video and high and low intensity. A help module and a manual are included. List price: \$79.50. Requirements: 32K, two disk drives.

V-Utility

Yucaipa Software
12343 12th St.
Yucaipa, CA 92399
714/797-6331

V-Utility is a collection of utility programs that work with 1-2-3, *Multiplan*, *SuperCalc*, and *VisiCalc*. The menu-driven program includes V-sort, V-print, V-stat, and V-plot. *V-Utility* allows users to sort columns numerically and alphabetically and select columns to print. It also provides complete statistical analysis and plotting of spreadsheet data. Plotting does not require a graphics printer. List price: \$129.95. Requirements: 64K, one disk drive.

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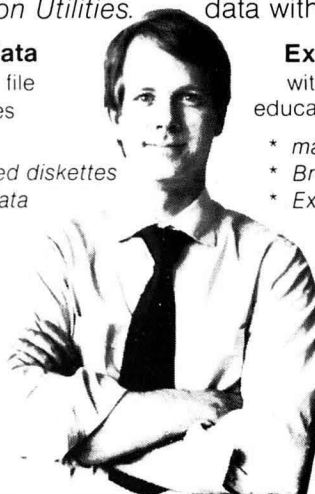
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IBM BASIC Utilities

Basic Business Software, Inc.
P.O. Box 26311
Las Vegas, NV 89126
702/876-9493

IBM BASIC Utilities is a package of utilities and subroutines for BASIC. The package comes with source code, two disks, and a 130-page manual. The package includes a BASIC source code cross-reference, a miniature full-screen editor, a BASIC program listing utility, and a line drawing BASIC subroutine. The package also includes a random file search subroutine, a matrix functions BASIC subroutine, an ultra BASIC translator, and an input, message, and change BASIC subroutine. Monitor subroutines, string handling subroutines, and miscellaneous subroutines are also part of the package. List price: \$95. Requirements: 64K, one disk drive.

TeleSoft PSE

TeleSoft
10639 Roselle St.
San Diego, CA 92121
619/457-2700

TeleSoft PSE (Programming Support Environment) is a collection of programming tools for the Ada language. The package includes an operating system, a compiler, native code translators, interpreters, run-time support, and utilities. *TeleSoft PSE* also provides capabilities for supporting applications, command line interpreting, file handling, terminal control, and text processing. The package also includes a macro assembler, a system generator and a code translator. The machine-independent environment lets designers develop programs in a familiar at-

mosphere and target them for different environments. TeleSoft also sells the *TeleSoft-Ada Compiler* separately for a variety of mainframe, mini-, and microcomputers. List price: \$3030. Requirements: 576K, two disk drives.

ScreenMaster

N.F. Systems
P.O. Box 76363
Atlanta, GA 30358
404/252-3300

ScreenMaster enables programmers using BASIC to design data entry screens and menus for use with data and list management programs. Password protection at the field level can be written into programs for security during data entry. The program enables users to include in screen designs effects such as blinking, inverse video, and color. List price: \$79.95. Requirements: 64K, one disk drive.

PCScreen

InfoSoft Computers
2699 Clayton Rd.
Concord, CA 94519
415/680-0324

PCScreen enables users to design screens for data entry or reports. The program then saves them as BASIC programs. Users design screens in free-form style by placing fields on a blank screen. The program allows screens to be designed with fields in inverse video and high or low intensity. A help module is included. List price: \$79.95. Requirements: 32K, one disk drive.

D2Form

Information Access Corporation
P.O. Box 871
Shalimar, FL 32579
904/651-3108

D2Form is a screen-forms generator that records the location coordinates and length of each field on screen and then stores it in a file. *D2Form* allows data fields to be created anywhere on the screen and supports the full IBM character set. Users move from window to window using either cursor-control or tab keys. The program prints out the coordinates and length of each field and also the screen image itself. *D2Form* allows users to interact with most applications programs. List price: \$45. Requirements: 64K, one disk drive.

Sideways

Funk Software
P.O. Box 1290
Cambridge, MA 02238
617/497-6339

Sideways prints information on paper vertically instead of horizontally. The utility enables users to print all columns of a spreadsheet sideways, providing more room for printing and diminishing the chance of having to divide the printed spreadsheet among several sheets of paper. The utility works with any text file and permits printing with large fonts. List price: \$60. Requirements: 64K, one disk drive, IBM printer with Graftrax.

Serial Printer Program

Personal Computer Products
1400 Coleman Ave. #C-18
Santa Clara, CA 95050
408/988-0164

Serial Printer Program allows the IBM PC to send files to a serial printer. The program supports BASIC formatting, line widths, paging, and form handling. Files are printed with name, date, and time information. A translation table for program customization allows any outgoing character string to be converted to any user-designated string. The table also lets you lock in upper or lowercase characters, set bps rates, and set tab space length. *Serial Printer Program* supports data transfer rates from 75 to 9600 bps. List price: \$69.95. Requirements: 64K, one disk drive.

CP +

Taurus Software Corporation
3685 Mt. Diablo Blvd. #251
Lafayette, CA 94549
415/283-7222

CP + replaces the control language in CP/M-86 or MS-DOS with a series of menus that have English-language commands. The program enables first-time users to operate the computer without learning the CP/M-86 control language by providing English-language prompts for all operating system functions, including copy, erase, and format. Typing of file names is not required; users select a file number from an automatically displayed disk directory. List price: \$200. Requirements: 64K, two disk drives.

Keynote

Advanced Software Interface
381 First St. #5126
Los Altos, CA 94022
415/572-1347

Keynote is a keyboard enhancer that allows users to assign an indefinite number of strings to selected keys or key combinations on the IBM PC. The program lets you make key assignments while an applications program is running. Key assignments can be made one at a time or in groups and can be edited using *Keynote's* editor, which is similar to EDLIN. The set of key assignments can be reviewed, saved to disk, and loaded from disk. List price: \$99.95. Requirements: 64K, one disk drive.

SerPrinSoft

International Computers
P.O. Box 13547
Mexico Beach, FL 32410

SerPrinSoft replaces the IBM PC Mode command when used with serial printers. The program allows serial printers to communicate at speeds of up to 9600 bps and supports XON/XOFF and hardware handshaking. It also enables users to set bps rates and communications parameters and to insert or delete linefeeds. The programming language FORTH is included with *SerPrinSoft* and can be accessed by pressing the F key. List price: \$59.95. Requirements: 64K, one disk drive, RS-232C serial port.

MM64SW-1 Memory Test Program

Micro Match
10049 Commerce Ave.
Tujunga, CA 91042
213/352-3253

MM64SW-1 Memory Test Program provides a complete expansion memory test and also tests color graphics and monochrome monitors. Results are stored on disk. The program includes instructions. The manufacturer provides the *MM64SW-1 Memory Test Program* free with the purchase of a Micro Match memory board. List price: \$24.95. Requirements: 64K, one disk drive.

Screen Machine

Omrac Corporation
258 Tower Hill Rd.
P.O. Box 309
Chaplin, CT 06235
203/455-0492

Screen Machine is a utility that facilitates screen management in text manipulation for Pascal, FORTRAN, COBOL, and assembly language. The program provides a 160-column by 25-line buffer in which all characters are written. A 40- or 80-column screen mode acts as a window over the buffer, and the window slides right or left. *Screen Machine* allows you to locate and move the cursor, scroll in four directions, and define up to nine subscreens within the system buffer. The program enables you to assign an attribute to each character, such as underlining, inverse video, and color. *Screen Machine* is linked as an external module to your program while the program is linked to PC-DOS. List price: \$49.95. Requirements: 129K, one disk drive.

Copy II PC

Central Point Software, Inc.
P.O. Box 19730-203
Portland, OR 97219
503/244-5782

Copy II PC enables users to make backup copies of IBM PC disks. The program also copies disks of different sector sizes including ten sectors (JFORMAT) and nine sectors (DOS 2.00). *Copy II PC* provides a disk speed check that allows users to monitor the speed of disk drives accurately. The program enables experienced programmers to copy protect their own disks. List price: \$39.95. Requirements: 64K, one disk drive.

Programmer

Sams Software
4300 W. 62nd
Indianapolis, IN 46268
800/428-3696

Programmer is a menu-driven program generator that produces BASIC code. The program enables users to choose from a menu that lists a range of stored programming functions. The functions include filing, alpha and numeric fields, system utilities, deletions, updating, printing, and error trapping. The product ID number is 26077. List price: \$199.95. Requirements: 64K, two disk drives.

ScreenPro

New Venture Systems
P.O. Box 2141
Chesapeake, VA 23320
804/482-1889

ScreenPro, a BASIC programming language subroutine, enables users to develop professional screen-oriented software. The program accepts 17 types of data including dates and times. The cursor-control keys, the ten function keys, and the <Ins>, , and <Esc> keys can be used during data entry. A help key can also be designated. A forms generator with examples is included. List price: \$32. Requirements: 48K, one disk drive.

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Sort-Merge-Copy

Software Masters
6704 Hoover Rd.
Indianapolis, IN 46260
317/253-8088

Sort-Merge-Copy is a sorting program that provides 30 commands to support fixed- or variable-length records. The program sorts with or without delimiters between fields and sorts on multiple criteria. *Sort-Merge-Copy* provides up to ten input files and offers definition help to users. The program translates characters and can change lowercase letters to uppercase. *Sort-Merge-Copy* can sort records of different lengths called up from other programs. List price: \$150. Requirements: 64K, one disk drive.

ListMaster

Software Masters
6704 Hoover Rd.
Indianapolis, IN 46260
317/253-8088

ListMaster is a utility that enables users to look at files in a debug-type format. The program shows size of records, width of screen, text, rulers, linefeeds, and hexadecimal representations. List price: \$50. Requirements: 64K, one disk drive.

Personal COBOL

Micro Focus
1860 Embarcadero Rd. #235
Palo Alto, CA 94303
415/856-4161

Personal COBOL provides an integrated programming environment that enables users to create personal use applications written in high-level AMSI '74 COBOL with optional use

of extensions specific to the IBM PC. The program has a COBOL-oriented, full-screen editor, generates forms on-screen, and works with source code animation. List price: \$350. Requirements: 192K, two disk drives, COBOL.

D2Bakrst

Information Access Corporation
P.O. Box 871
Shalimar, FL 32579
904/651-3108

D2Bakrst provides a system to back up hard disk files onto floppy disks even when the file size exceeds the capacity of the floppy disk. When a floppy disk is written to capacity, *D2Bakrst* prompts the user to insert the next disk to continue the backup process. The program provides built-in help screens and on-screen documentation. List price: \$35. Requirements: 64K, one floppy disk drive, one hard disk.

ISAM-100

Johnson Associates Software
P.O. Box 3069
Redding, CA 96049
916/221-0740

ISAM-100 is a set of BASIC subroutines that can be added to any applications program to control random-data files. *ISAM-100* uses routines by issuing GOSUB statements with control variables previously set to indicate appropriate action. The program is recorded on disk in ASCII format. List price: \$90. Requirements: 64K, one disk drive.

Halo

Lifeboat Associates
1651 Third Ave.
New York, NY 10028
212/860-0300

Halo is a graphics applications development tool written in assembly language. The program provides a series of color graphics subroutines including line, plot, arc, box, circle, ellipse, and point primitives. Users can generate bar and pie charts. *Halo* is compatible with four add-on color graphics boards: Scion, Orchid, Amdek, and IBM. The program works with six programming languages: BASIC (interpreted or compiled), Pascal, Lattice C, FORTRAN, and assembly. Screens can be viewed consecutively, in the manner of slide-show presentations. List price: with one language interface \$150, each additional interface \$100, BASIC Interpreter/Compiler combination \$200, all six interfaces \$350. Requirements: 64K, one disk drive, color graphics board.

Type Faces

Alpha Software Corporation
12 New England Executive Park
Burlington, MA 01803
617/229-2924

Type Faces enables dot matrix printers to generate more than 100 characters and symbols in many type styles, ranging from Roman Complex to Italian. Printouts can be copied onto acetate for use with overhead projectors. Designed for nontechnical users, *Type Faces* can be learned quickly and is compatible with PC-DOS, text editors, and word processors including *WordStar*. List price: \$125. Requirements: 64K, two disk drives.

SpoolMaster

Software Masters
6704 Hoover Rd.
Indianapolis, IN 46260
317/253-8088

SpoolMaster enables you to select the amount of RAM you want to spool. RAM can be spooled to either an RS-232C serial port or a parallel printer port. The program provides keyboard commands to clear buffers. List price: \$60. Requirements: 64K, one disk drive.

C-window Debugger

C-systems
P.O. Box 3253
Fullerton, CA 92634
714/637-5362

C-window Debugger is a source-level debugger for the C language. It enables users to trace through a source program one step at a time, displaying variables and following the logic of the program to identify and locate problems. *C-window Debugger* traces through original source code, and it keeps track of the C statements rather than memory locations. The program lets users display external variables automatically and modify them in a variety of formats. *C-window Debugger* also provides full C expression evaluation and recursion and a variety of breakpoints. Users can enter multiple commands that are executed for each single step, trace, or breakpoint. List price: \$195. Requirements: 128K, two disk drives, C-systems' C Compiler, IBM Macro Assembler.

PC/Coder

Nelson Data Resources, Inc.
900 S. 74th Plaza #118
Omaha, NE 68114
402/397-3030

PC/Coder is a screen designer and code generator for programmers. The program provides all the screen design functions of *LazyCoder Screen* except for the informational functions. *PC/Coder* enables users to select an indexed or key file and generate code to be transported between color and monochrome monitors. The program provides up to 300 fields, 1024 records, and 12 field types per screen. List price: \$450. Requirements: 128K, two disk drives, DOS 2.00.

Quikprnt/Scrnpnt/Pntparm

Prosoft, Inc.
16920 Oakridge Ln.
Morgan Hill, CA 95037
408/287-6900

Quikprnt/Scrnpnt/Pntparm is a collection of three utilities that allows users to print screens immediately on a serial printer. *Quikprnt* captures the screen image using <Shift>-<PrtSc> and steers it to the serial interface but does not print blank spaces or lines. *Scrnpnt* does the same thing but prints all blanks and blank lines as a conventional print screen function would. *Pntparm* allows you to change the bps rate of a print screen transmission to the serial printer. All three programs load transparently into resident memory and remain there. List price: \$39.95. Requirements: 64K, one disk drive, serial printer.

WS Print Patch

Resuba Digital Systems
P.O. Box 440
Blackwood, NJ 08012
609/228-5666

WS Print Patch enhances print formatting for Epson printers run from *WordStar 3.24* or *3.30*. The program enables users to print text in double-width, compressed, emphasized, or italic type. Print enhancement marks are similar to *WordStar*'s boldface and underline indicators, and the program corrects menus to reflect new print modes. *WS Print Patch* changes type style without disturbing margin alignment. List price: \$24.95. Requirements: 96K, one disk drive, *WordStar 3.24* or *3.30*, Epson printer.

PascalSet

First Systems Corporation
865 Manhattan Beach Blvd.
Manhattan Beach, CA 90266
213/546-5581

PascalSet is a collection of three Pascal preprocessors that can be bought separately or as a package. *PAdapt* allows you to use the Ada syntax subset and to preprocess it back into Pascal syntax before compiling. The program includes exception handling. *PTrace* inserts tracing calls during preprocessing for Pascal source programs. During run time the program displays on screen every procedure entry and exit and also the procedure's parameters and values. *PMacro* defines Pascal macros and gives conditional inclusion/exclusion capabilities. List price: complete package \$450, \$150 each. Requirements: 128K, two disk drives.

Helpware

SoftWrights
1401 N. Central Expwy.
Richardson, TX 75080
214/690-0595

Helpware is an interactive file directory management utility. The program includes an editor and help features. List price: \$195. Requirements: 96K, one disk drive.



MXREF

Computer Toolbox, Inc.
1325 E. Main St.
Waterbury, CT 06705
203/754-4197

MXREF is a cross-reference utility for IBM BASCOM or Macro Assembler source files. The program cross-references line numbers, variables, key words, and all other components except remarks. *MXREF* provides output to screen, disk, or printer. List price: \$96. Requirements: 64K, one disk drive, IBM BASCOM or Macro Assembler.

O.S. Converter

Dynamic Microprocessor Associates
545 5th Ave. #1103
New York, NY 10017
212/687-7115

O.S. Converter is a utility that permits conversion of programs written for one operating system into any other operating system. List price: \$95. Requirements: 48K, one disk drive.

Master Sort

Micro Masters Software Ltd.
P.O. Box 513
Edmonton, Alberta
T5J 2K1 Canada
403/423-3509

Master Sort is a sort-and-merge utility that can be run from a PC-DOS batch file called from BASIC or COBOL. When the utility is used from a batch file, up to 8 input files can be specified and up to 12 ascending/descending sort keys can be assigned. When *Master Sort* is called from a program, the calling module must access it via a COBOL or BASIC call command. A one-record command file that contains the sort commands is set up prior to the call. Once this process is completed, the program updates the first 4 bytes of the record and lists the sort completion code and number of records sorted. *Master Sort* is written in assembly language and uses the Hoare Quick Sort technique. The program reads an input file, creates sort keys in memory, sorts using Hoare Quick Sort, and then creates the required output file. List price: on-line \$115, BASIC or COBOL callable \$115, both versions \$160. Requirements: 64K, one disk drive.

PC BASIC Programmer

Professional Software Associates
5353 Wayzata Blvd. #407
Minneapolis, MN 55416
612/541-0742

PC BASIC Programmer is a package of three utilities for programming in BASIC. One program, Cref, produces a cross-reference of any BASIC program. The utility checks line transfers and variable references and provides a complete BASIC keyword command listing in line usage. Another program, Pac, reduces the code size of memory requirements in IBM BASIC and improves execution speed. The utility eliminates unnecessary spaces and comments and concatenates line numbers. It also enables users to copy protect programs. Form formats a BASIC program listing for easy reading and debugging. The utility indents For...Next loops, offsets REM lines, and breaks down multiple statement lines into separate lines. List price: \$49.95. Requirements: 64K, one disk drive.

Pick 'n' Pack

Joseki Computer Corporation
2604 Artesia Blvd. #5
Redondo Beach, CA 90278
213/374-3251

Pick 'n' Pack is a package of two BASIC programming utilities. One compresses BASIC programs by removing remarks and combining lines, resulting in faster programs. The second utility generates BASIC code for screen menus. List price: \$29.95. Requirements: 64K, one disk drive.

Print-It

M.A.P. Systems Inc.
1120 NASA Rd. One #444
Houston, TX 77058
713/333-9640

Print-It enables users to dump black-and-white graphics or text screen data to any Epson printer and print the IBM extended character set. The program works with a monochrome adapter or color graphics board. List price: \$44.95. Requirements: 64K, one disk drive, Epson printer.

Color-It

M.A.P. Systems Inc.
1120 NASA Rd. One #444
Houston, TX 77058
713/333-9640

Color-It enables users to dump color graphics or text screen images to the IDS Prism printer and to print the IBM extended character set. List price: \$49.95. Requirements: 64K, one disk drive, IDS Prism printer.

Animator

Micro Focus
1860 Embarcadero Rd. #235
Palo Alto, CA 94303
415/856-4161

Animator is a visual programming tool for development and maintenance of AMSI '74 COBOL programs. The program displays its source code on screen and moves the cursor from statement to statement as each is executed. Access is provided to a full range of debugging commands. List price: \$800. Requirements: 64K, two disk drives, COBOL.

Forms-2

Micro Focus
1860 Embarcadero Rd. #235
Palo Alto, CA 94303
415/856-4161

Forms-2 is a visual programming tool designed to speed the creation of programs that contain interactive screens. The program enables programmers to "paint" the form on the screen as they wish it to appear to users at run time. *Forms-2* generates the COBOL source code to define the screen. List price: \$200. Requirements: 64K, two disk drives, COBOL.

PaperScreen

M.A.P. Systems Inc.
1120 NASA Rd. One #444
Houston, TX 77058
713/333-9640

PaperScreen is a utility that enables users to dump graphics screen data to a Toshiba P1350 printer. The utility works with 1-2-3 and other copy-protected programs. List price: \$44.95. Requirements: 64K, one disk drive, Toshiba P1350 printer.

M8087.MAC

Field Computer Products
909 N. San Antonio Rd.
Los Altos, CA 94022
415/949-3457

M8087.MAC is a utility that enables assembly programmers to access the 8087 numeric data coprocessor. The utility provides a full Intel mnemonic instruction set. List price: \$50. Requirements: 64K, one disk drive, 8087 coprocessor, IBM Macro Assembler.

Compress

Starside Engineering
P.O. Box 18309
Rochester, NY 14618
716/461-1027

Compress is a file compression utility that reduces the size of text files by 40 to 45 percent. The compressed version is useful for archival storage or long-distance telecommunications. List price: \$29.95. Requirements: 64K, one disk drive.

Run-time Support Packages

Micro Focus
1860 Embarcadero Rd. #235
Palo Alto, CA 94303
415/856-4161

Run-time Support Packages for Compact and High Performance Level II COBOL is designed for applications vendors who have written programs using one of the COBOL compilers and want to package the program with a run-time system. List price: \$400. Requirements: 25K, two disk drives, COBOL.

GraphNec

Shadow Hill Software
59 Gold St.
Rochester, NY 14620
716/442-3795

GraphNec allows users to attach either an NEC 8023A or a Prowriter printer to an IBM PC. Any screen within any program can be dumped to the printer by pressing the <PrtSc> key. Either the positive or the negative image of the screen may be printed. List price: \$20. Requirements: color graphics board, NEC 8023A or Prowriter printer.

Drive-It

M.A.P. Systems Inc.
1120 NASA Rd. One #444
Houston, TX 77058
713/333-9640

Drive-It is a disk emulator that works with any memory expansion board. List price: \$59.95. Requirements: 128K, one disk drive.

WordStar Driver

MicroCorp
913 Walnut St.
P.O. Box Q
Philadelphia, PA 19107
215/627-7997

WordStar Driver is a printer driver that allows you to take advantage of the full line of printer features. The program allows you to print subscripts, superscripts, boldface, and other special effects, depending on the printer. The program is printer specific and *WordStar*-version specific. *WordStar Driver* is free when you purchase *WordStar* from MicroCorp. List price: \$50. Requirements: 64K, one disk drive, *WordStar*.

PAS + 87

Field Computer Products
909 N. San Antonio Rd.
Los Altos, CA 94022
415/949-3457

PAS + 87 is a utility for Pascal programmers that provides a full primitive library to access the 8087 coprocessor directly through Pascal procedure calls. List price: \$50. Requirements: 64K, one disk drive, IBM Pascal Compiler, 8087 coprocessor.

Super Ramdisk

Software Masters
6704 Hoover Rd.
Indianapolis, IN 46260
317/253-8088

Super Ramdisk permits users to define a memory board so that it emulates an electronic disk. The program enables you to select eight or nine sectors per track. List price: \$50. Requirements: 64K, one disk drive, DOS 2.00.



Kwicindx

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
913/843-5863

Kwicindx is an index generator designed for writers and researchers that produces indexes sorted by key words in context. The program's stop-word table facility allows you to stop selected words from appearing in text. A sample stop-word file is included that removes small, inessential words from index material. *Kwicindx* reads ASCII files only. List price: \$25. Requirements: 64K, one disk drive.

FrameUp

International Market Resources, Inc.
38 Garden Rd.
Wellesley, MA 02181
617/235-8830

FrameUp is a BASIC program development standardization tool that includes commonly required screen, keyboard, and printer interface routines. The program provides applications development in BASIC as a method of enforcing file, screen, and error handling. List price: \$125. Requirements: 64K, one disk drive.

Spool-It

M.A.P. Systems Inc.
1120 NASA Rd. One #444
Houston, TX 77058
713/333-9640

Spool-It is a print spooler that works with most applications programs, including *VisiCalc* and other copy-protected programs. List price: \$44.95. Requirements: 64K, one disk drive.

FABS/PC

Computer Control Systems
298 21st Terrace SE
Largo, FL 33541
813/586-1886

FABS/PC is a fast-access, B-tree structure key index utility that maintains assembly language subroutines for all popular programming languages. The program maintains duplicate keys and variable-length keys without requiring resequencing. *FABS/PC* includes 19 commands for searching, deleting, creating, and building. List price: \$150. Requirements: 64K, one disk drive.

FORTRAN Scientific Routine

Alpha Computer Service
P.O. Box 2517
Cypress, CA 90630
714/894-6808

FORTRAN Scientific Routine is a collection of 100 subroutines that emulates the IBM scientific subroutine package. Available on seven disks, the package is split into 12 sets: matrix storage and operations, correlation and regression, design analysis, discriminate analysis, factor analysis, eigen analysis, time series, nonparametric statistics, distribution functions, linear analysis, polynomial solutions, and data screening. Also included is a problem-solving update for the IBM FORTRAN Compiler and Library. Sources and objects are supplied with the collection. List price: \$295 (\$355 with *FORTRAN Graphics Package*). Requirements: FORTRAN, 64K, one disk drive.

PFAS

Gryphon Systems
P.O. Box 755
Cardiff, CA 92007
619/436-1455

PFAS works with the indexed sequential access method to allow Pascal programmers to store and retrieve index records by key. *PFAS* can read forward, sequentially, or by partial key and supports any number of files. List price: \$200. Requirements: 64K, one disk drive, Pascal.

ISAM-300

Johnson Associates Software
P.O. Box 3069
Redding, CA 96049
916/221-0740

ISAM-300 is an indexed sequential access method utility for BASIC, Pascal, C, and assembly language programmers. The program's machine language implementation of ISAM can access an 8M file in less than 1 second. *ISAM-300* provides automatic recovery of deleted space and can create index-only structures for secondary key access. The utility allows you to read backwards to a previous file and provides three index levels to speed up access of large files. List price: \$190. Requirements: 128K, one disk drive.

DataEntr 200

Johnson Associates Software
P.O. Box 3069
Redding, CA 96049
916/221-0740

DataEntr 200 is a set of subroutines that can be added to any applications program to simplify and improve operational characteristics of keyboard data entry. The program allows you to draw a data entry form on the display screen. The resulting picture is stored on disk for later use when you enter data. If corrections are necessary during data entry, keying in the field number allows a single field to be reentered. List price: \$80. Requirements: 64K, one disk drive.

PhosForm

Gryphon Systems
P.O. Box 755
Cardiff, CA 92007
619/436-1455

PhosForm formats screen I/O and designs forms interactively. The program handles different data types and provides functions such as preliminary data checking and crash-proofing. List price: \$95. Requirements: 64K, one disk drive, UCSD p-System.

Fancy Font

SoftCraft, Inc.
8726 S. Sepulveda Blvd. #1641
Los Angeles, CA 90045
213/821-8476

Fancy Font is a print enhancer for dot matrix printers that lets you print with different fonts. The program includes special science, math, chemistry, and foreign language characters and enables you to create your own characters. *Fancy Font* supports printing characters of from 8 to 40 points in height. Since users can print characters and design graphics as large as one inch square, the program can be used to create view graphs for overhead projections. You can embed codes in text with any PC-compatible word processing program and then print the document using *Fancy Font*. List price: \$180. Requirements: 128K, one disk drive.

Frieze

Starside Engineering
P.O. Box 18306
Rochester, NY 14618
716/461-1027

Frieze is an assembly code program that saves graphics screens from the color graphics board or dumps them to a dot matrix printer that has graphics capabilities. Supported printers include the Epson MX-80 and the MX-100 with Grafrax, the IDS 460G and 560G, the IDS Prism with graphics, the IDS Prism/color, the NEC 8023, and the Okidata 83A. List price: \$55. Requirements: 64K, one disk drive, color graphics board.

Expandson

Blue Water Systems
P.O. Box 1877-D
Oceanside, CA 92054
619/722-0059

Expandson enhances printer capabilities for *WordStar* users. The program allows the user to create expanded headers and titles, italics, compressed print, subscripts and superscripts, line graphics, and foreign characters. The program is printer sensitive, and printing effects vary depending on the capabilities of the printer. For instance, foreign and math characters are available on the

IBM Graphics Printer only, and italics cannot be accessed from this printer. List price: with Epson \$39, with IBM Graphics Printer \$49, with Okidata Microline \$59. Requirements: 64K, one disk drive, *WordStar*, printer.

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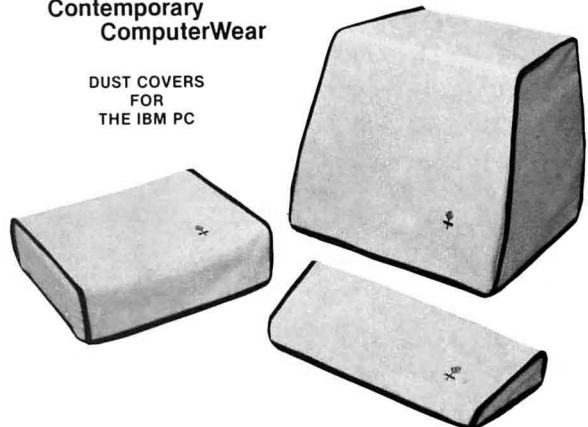
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INVOICES THAT
FIT OUR FORMS.

I WANT
TAX REPORTS
THAT STAND UP
IN AN AUDIT.

DOES IT
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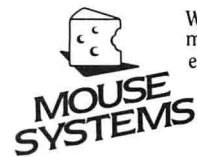
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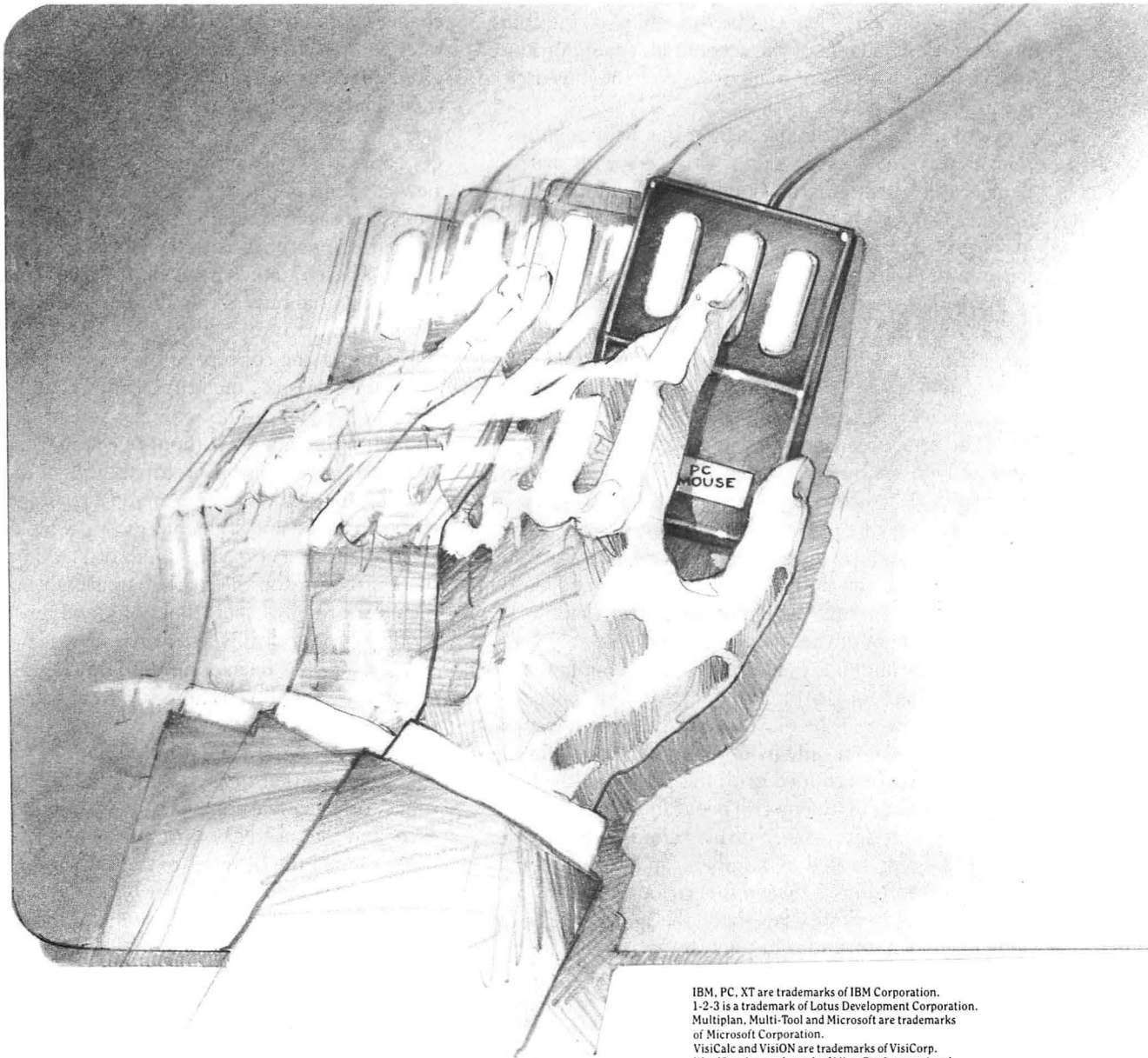
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Spreadsheets

Daniel S. Bricklin

Spreadsheet programs, widely credited with revolutionizing the market for personal computers, evolved from a very basic concept. They can be thought of as the computer age descendants of the accountant's hand-produced spreadsheet, that grid of many rows and columns used to record figures and calculations.

Producing a single spreadsheet manually requires hours, even days, of painstaking drudgery with sharp pencils and sturdy erasers. Often an accountant or a financial planner has to produce several spreadsheets using alternative figures. The calculations involved are often repetitive and sometimes complicated. Even with the help of a calculator, errors easily creep into the final results. When a mistake is made at the beginning of a train of calculations, a whole series of dependent figures will be wrong right down the line. Any change in data can also necessitate a time-consuming chain of recalculations.

The first spreadsheet program was designed to save time and erasers by instructing the personal computer to produce a spreadsheet automatically. People would feed in the necessary figures, and the computer would fill in the columns and rows, performing all the necessary calculations as it went along. If a number had to be changed, the computer would make all the related changes throughout the spreadsheet.

From this humble beginning as an accountant's tool, the spreadsheet took off into a new realm of applications. The power of the most successful spreadsheet programs is derived not only from their ability to fill in the spaces on a predetermined grid, but also from the fact that they are highly interactive programs. Users can set up the columns and rows to display almost any situation that can be represented by numbers, and they can establish the relationships between the various locations on the grid. This capability has made the spreadsheet a valuable analytical tool for not only the accountant and financial planner but anyone who compares data, makes projections, or formulates strategy.

After setting up a basic model, users can ask a host of "what if" questions to rapidly discover the effect that changes will have on the bottom line. What if interest rates go up? What if mailing costs increase? What if we give all factory workers a wage hike? What if we cut the travel budget? What if we lease rather than buy a new car?

Spreadsheet programs are hot. Every few months new capabilities and features are introduced. Manufacturers are eager to differentiate their product from those of their competitors as well as meet any significant upgrade. These rapid changes in the marketplace make some potential buyers wary. What if something better is offered tomorrow?

But it is the concept of the interactive spreadsheet program that is the quantum leap. The differences between what you can do with any spreadsheet program and what you can do without one are far more significant than the variations in capabilities among the software on the market. There are differences to be sure, in both substance and style, but most people use only a fraction of most software capabilities. Almost all spreadsheet programs on the market are capable of performing the most broadly useful functions, and most of the major producers periodically offer upgrades.

Change has been coming so quickly to this category of software that it is hard to say what we can expect to see six months from now. Everyone is pushing the spreadsheet concept as far as it will go—perhaps too far. The danger is that the software will become too baroque, offering features that are meaningless to most users and that needlessly complicate day-to-day applications. One of the beauties of the earliest spreadsheet programs was simplicity. The very first ran on a diskless 32K Apple—and it ran well. Some of the newer versions



is purely a matter of style. There is an increasing tendency to integrate spreadsheets with other computer functions such as graphics or word processing. This integration is being accomplished through either related information sharing or the development of integrated multipurpose programs. Each approach has its relative advantages. The computational abilities of the programs steadily increase. There are also new variations in editing functions and file storage options.

In deciding which spreadsheet program is best for you, consider not only the software's capabilities, but also its ease of use. The most advanced version on the market is not necessarily the best choice if you have little computer experience. At any level you may not want to sacrifice ease of use to gain unnecessary capabilities. Also be aware of the difference between ease of use and ease of learning. Consider which software is being used by the people with whom you share information. Also consider how much related information you will need, not only good documentation, but books and journals that offer suggestions on the use of the software, and user support from software producers. After mastering the basics of a simple spreadsheet, you can move on to more complex versions and programs produced by other companies.

Daniel S. Bricklin is chairman of the board at Software Arts. With President Robert M. Frankston, he invented VisiCalc, the first electronic spreadsheet program. The company has also produced VisiCalc, Advanced Version and is now marketing TK!Solver, the first equation-processing personal computer program for scientists and financial managers.

require several times that amount of memory. The days of eight-page instruction cards have given way to an era of manuals and on-line documentation that can be hundreds of pages long. The challenge remains to increase software capabilities while keeping programs easy to use.

The developments within this category have taken several directions. New ways of formatting have gotten big play in several programs. This is a significant advance in some cases and in some applications, while in others it

Multiplan

Microsoft
10700 Northup Way
Bellevue, WA 98004
206/828-8080

Multiplan sorts data and can be used as a simple data base manager as well as a 255- by 63-cell worksheet. Spreadsheets can be linked, allowing automatic updating of one spreadsheet by another. *Multiplan* provides for varied formatting of the display and reports and includes window commands that show multiple windows in color. The program features help menus, protected cells, individual column widths, and print options. List price: \$275 (also distributed by IBM, \$250). Requirements: 64K, one disk drive.

"Multiplan can be used by anyone, is flexible, and can be used for text, numbers, and even bar graphs. Sometimes it is a little slow on calculations and will not work with a spooler." Ted Trilling, Doylestown, Pennsylvania

"The instruction manual is very well written and comprehensive. Multiplan has both professional and personal applications." Philip Jhin, Plano, Texas

UniCalc

Lifeboat Associates
1651 Third Ave.
New York, NY 10028
212/860-0300

UniCalc handles up to 16,322 numeric fields and texts in a 255-row by 64-column worksheet. Fields may be designed as calculations of other

fields using arithmetical or relational operators. Field formats and column widths are variable. Functions include net present value, "what if" tests, and lookup tables. Whole or partial files may be printed or saved on disk. *UniCalc* includes on-line help instructions. List price: \$99. Requirements: 64K, one disk drive.

SuperCalc

Sorcim Corporation
2310 Lundy Ave.
San Jose, CA 95131
408/942-1727

SuperCalc provides single-key on-screen help, variable column widths, and text fields that can extend into adjacent blank cells. The program creates a 254- by 63-cell worksheet with two windows and performs "what if" calculations on up to 5 years of data. It saves files in a format compatible with *WordStar* and has copy commands that adjust formulas. A color display informs users of protected fields and negative numbers. List price: \$195. Requirements: 48K, one disk drive.

"SuperCalc is pretty good for budgeting and accounting analyses but not flexible enough for involved discounted cash flow analyses." Don Phan, Los Angeles, California

"SuperCalc is equally useful for personal or business use, but it does not sort data, and the If function will only test numeric cells." Wayne Socha, Monrovia, California

The Thinker

TexaSoft
3415 Westminster #100
Dallas, TX 75205
214/369-0795

The Thinker enables you to link tables together to form large spreadsheets that can be transferred to word processing files. Each table holds up to 14 columns and 60 rows, with 9 characters per cell. Twenty tables can be linked together in the 128K version. *The Thinker* creates numeric relationships with 16 different mathematical functions, answers "what if" questions, and automatically recalculates values when one number is changed. Colors and intensities are variable. List price: \$75. Requirements: 64K or 128K, one disk drive.

"A cost-effective and easy-to-use spreadsheet." Patrick Ong, Daly City, California

VisiCalc

VisiCorp
2895 Zanker Rd.
San Jose, CA 95134
408/946-9000

VisiCalc is a multipurpose planning and forecasting package that creates a 254- by 63-cell worksheet. The program provides for replication, automatic recalculation of all values and formulas, and evaluation of "what if" scenarios. Worksheets can be divided into two windows to permit simultaneous manipulation of different sections of the table. The program's cursor controls permit scrolling in four directions. List price: \$250 (also distributed by IBM, \$200). Requirements: 64K, one disk drive.

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Edward R. Schwinn, Jr.
President, Schwinn Bicycle Company

"Multiplan software helps me make better business decisions. It's as simple as that. With Multiplan on my microcomputer, I can explore a number of alternatives faster. That's really important to me in planning and tracking my totally hand-crafted Schwinn Paramount Bicycle. As with anything handmade, cost control and product planning are major considerations. For instance, Multiplan lets me study the

effect of the learning curve on overall productivity. And although we have a mainframe computer, I find that Multiplan is a tool that allows me to personally examine my business options—without spinning my wheels."

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In plain English. You won't have to learn a cryptic language to use Multiplan. It takes commands in plain English. And, it will prompt you as you go along by telling you what to do next. There's even a HELP key in case you need help at any point. Press it and it gives you information to get you going again.

See it in action. If you'd like to see Multiplan in action, and receive our latest brochure, call us toll-free:

1-800-426-9400

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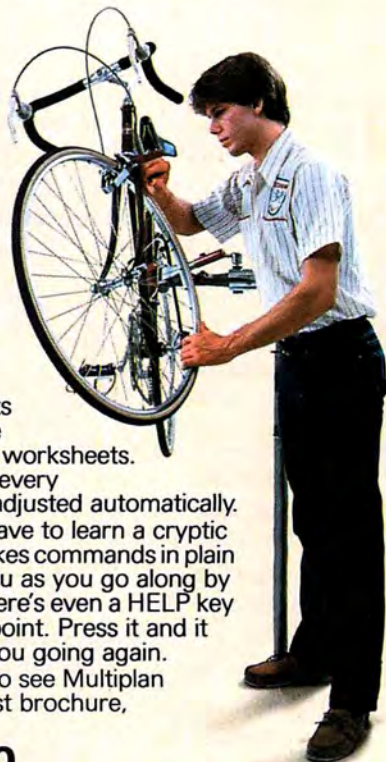
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Spreadsheets

"VisiCalc is easy to use, has powerful features, and comes with a good manual. But it's easy to make errors." Robin Lamb, Vancouver, British Columbia

"A bit cumbersome to define mathematical relationships." Tang Lee, Calgary, Alberta

ProCalc

Software Products International, Inc.
10343 Roselle St., Ste. A
San Diego, CA 92121
619/450-1526

The *ProCalc* worksheet package provides a separate text processor on the program disk and includes a function that allows the program to be used as a calculator. Spreadsheet functions include single-cell as well as data-channel linking, partial row or column insert and delete, variable column widths, and numeric formatting. Up to six windows can be used, and up to four can be viewed at one time. *ProCalc* can be used as a data management program, retrieving and sorting data from lookup tables. List price: \$350. Requirements: 64K, one disk drive, UCSD p-System.

MiniModel

Westico, Inc.
25 Van Zant
Norwalk, CT 06855
203/853-6880

MiniModel is a financial modeling system whose model size is limited only by disk file space. The model time horizon can be advanced to

eliminate old data automatically. Actual operating results can be fed into the model and protected from erasure. Models can be consolidated and then processed under a separate set of customized rules. *MiniModel* includes 45 financial commands to create rule sets. List price: \$495. Requirements: 128K, two disk drives, CP/M-86.

EasyCalc

Norell Data Systems Corporation
3400 Wilshire Blvd.
Los Angeles, CA 90010
213/257-2026

EasyCalc is a 52-column spreadsheet for computing budgets and recording and projecting investments, returns, and taxes. The program provides pagination, on-screen help, variable column widths, natural logarithms, and global addressing. *EasyCalc* is written in C and comes with IRS 1040 and three other templates. List price: \$99.95. Requirements: 64K, one disk drive.

PlanStar

MicroPro International Corporation
33 San Pablo Ave.
San Rafael, CA 94903
415/499-1200

PlanStar is a financial modeling program that goes beyond basic spreadsheet capabilities for financial analysis and forecasting. The program uses English calculation commands rather than formulas, consolidates up to 1000 spreadsheets per project, and has a capacity of more than 32,000 cells per spreadsheet. Replication of entries is not necessary because data is stored sep-

arately from spreadsheets. *PlanStar* allows arithmetic calculations between spreadsheets and provides numerous financial functions including net present value, internal rate of return, amortization, and moving averages. The program writes text files for use with *WordStar*, can accept input from a data file, and can read DIF files. *PlanStar* generates up to 14 reports for any spreadsheet and numerous graphs including bar charts and line plots. List price: \$695. Requirements: 128K, two disk drives.

VisiCalc IV

VisiCorp
2895 Zanker Rd.
San Jose, CA 95134
408/946-9000

VisiCalc IV combines *VisiCalc* and *StretchCalc* in one program that provides integrated sorting and graphics and includes keystroke function keys. The program's Keysaver command allows you to recall the last 80 characters entered and to define them as a macro. Each file holds up to 66 macros, and when new files are added there is no limit to the potential number of macros. *VisiCalc IV* permits permanent and temporary sorting or rearrangement of rows and columns on a spreadsheet. The program includes a data base management system that allows you to query or treat spreadsheet rows as records. List price: \$250. Requirements: 192K, two disk drives.

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SuperCalc 2

Sorcim Corporation
2310 Lundy Ave.
San Jose, CA 95131
408/942-1727

SuperCalc 2 is an expanded version of *SuperCalc* that provides sorting, automatic merging and consolidation, in-line editing, variable column widths, adjustable decimal places, and protected cell areas. Other functions include comma-separated values, a calendar function, on-screen help, tab and template capabilities, and the ability to view all formulas simultaneously. The package includes the SuperData interchange program, which exchanges ASCII files between *SuperCalc 2* and other programs. List price: \$295. Requirements: 64K, one disk drive.

MergeCalc

Micro Decision Systems
P.O. Box 1392
Pittsburgh, PA 15219
412/276-2387

MergeCalc adds, subtracts, multiplies, and divides *VisiCalc* models by other models or constants. Segments of business records are added into a consolidated model using equations with up to ten levels of brackets. The program handles up to 14 files on each pass, with no size limitation as long as the files follow the same template and are on-line during the pass. *MergeCalc* creates percentage and time-change reports, investment and variance analyses, and incremental sales reports. *MergeCalc* is menu-driven with on-screen prompts and includes a currency convertor. List price: \$125. Requirements: 96K, one disk drive, *VisiCalc*.

VIS/Bridge/Sort

Solutions, Inc.
13 State St.
P.O. Box 989
Montpelier, VT 05602
802/229-0368

VIS/Bridge/Sort sorts the rows or columns of *VisiCalc* spreadsheets. All or part of a worksheet can be sorted, and up to five rows or columns can be used as sort keys. Sorts can be alphabetic or numeric and in ascending or descending order. All expressions and references are preserved during sorting. List price: \$89. Requirements: 64K, one disk drive, *VisiCalc*.

Visualize

Norell Data Systems Corporation
3400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
213/257-2026

Visualize provides hard-copy documentation of *VisiCalc* templates. The program produces four reports: Layout prints each cell and describes each process; Calculation sorts worksheet calculations by rows; Anomalies lists redundant format entries; and Map provides a summary of the spreadsheet. Each report includes file information, size statistics, and global parameters. *Visualize* includes three annotated templates: Check Register, Balance Sheet and Operating Statement, and Cash Flow. List price: \$100. Requirements: 64K, one disk drive, printer, *VisiCalc*.

VIZ.A.CON

Abacus Associates
6565 W. Loop South #240
Bellaire, TX 77401
713/666-8146

VIZ.A.CON consolidates *VisiCalc* models by combining multiple "pages" of data from a model for hierarchical consolidation. *VIZ.A.CON* makes summations over periods of time or consolidations by organizational divisions such as departments or companies. Information from up to 50 reports with similar spreadsheet parameters can be consolidated without replicating the model in memory or building formulas to sum the cells. List price: \$139.95. Requirements: 64K, one disk drive, *VisiCalc*.

MicroPlan

Chang Laboratories, Inc.
5300 Stevens Creek Blvd. #200
San Jose, CA 95129-1088
408/246-8020

MicroPlan is a menu-driven spreadsheet with built-in formulas, numeric commands, and automatic replication. A programming mode lets users set up a matrix and enter special prompts that explain the worksheet process. Automatic documentation describes any calculation. Two add-on products are available for *MicroPlan*: a consolidation module that performs calculations in three dimensions and a link module that enables users to add data from outside sources to the worksheet. List price: \$495. Requirements: 64K, one disk drive.

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FINANCE OR ACCOUNTING WORKSHEETS FAST.

SELLING AND ADMINISTRATIVE - BASIC INFORMATION

Enter company name: MODERN FURNITURE

Enter project name: BUDGET PLANNING

Enter Report name: SALES/ADMINISTRATIVE EXPENSES

Description of budget period: 1983

COMMAND: Example Help Load Next Quit Review Save

Enter responses:
Press Tab to move to command line. Expert System: expense

Gentlemen, start your computers.

Time: 0

SELLING AND ADMINISTRATIVE - INTERVAL SELECTION

Monthly

Quarterly

Annually

Other

COMMAND: Example Help Load Next Quit Review Save

Type an "x" beside one choice
Press Tab to move to command line. Expert System: expense

Select budget intervals.

Time: 0.5

SALES REVENUE

Enter sales revenue for each quarter

1st Qtr 1983: \$ 2500000

2nd Qtr 1983: \$ 2600000

3rd Qtr 1983: \$ 2700000

4th Qtr 1983: \$ 3000000

COMMAND: Example Help Load Next Quit Review Save

Enter responses:
Press Tab to move to command line. Expert System: expense

Enter sales revenue.

Time: 1.0

VARIABLE SELLING EXPENSES - EXPENSES (BY CATEGORY)

List desired categories by typing in one category name per line.
(If suggested responses shown are not wanted, delete them or replace them with your own preferred categories.)

Variable Selling Expenses: 1. Commissions

Variable Selling Expenses: 2. Other

Variable Selling Expenses: 3.

Variable Selling Expenses: 4.

Variable Selling Expenses: 5.

Variable Selling Expenses: 6.

Variable Selling Expenses: 7.

Variable Selling Expenses: 8.

Variable Selling Expenses: 9.

Variable Selling Expenses: 10.

COMMAND: Example Help Load Next Quit Review Save

Select option or type command letter
Press Tab to edit responses on screen. Expert System: expense

Enter selling expenses.

Time: 1.5

BUDGET PLANNING	SALES/ADMINISTRATIVE EXPENSES
1983	1983
1st Qtr	2nd Qtr
1983	1983
1. SALES REVENUE	2,500,000
2. VARIABLE SELLING EXPENSES	2,600,000
3. Commissions	100
4. Other	31,800
5. TOTAL VARIABLE SELLING	56,320
6. FIXED SELLING EXPENSES	112,140
7. Salaries	112,140
8. Advertising	100,000
9. TOTAL FIXED SELLING	212,140
10. VARIABLE ADMINISTRATIVE EXPENSES	23,000
11. Accounting	23,000
12. COMMAND: Action Blank Copy Delete Edit Format Go Help Insert	
13. Lock Mouse Name Options Print Quit Sort Transfer	
14. Visual Windows: Plans	
15. Select option or type command letter	
16. BUDGET PLANNING	NO Multiplan: TEMP

Your sales budget on the Multiplan electronic worksheet - in record time.

Time: 5.2

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and build financial or accounting worksheets tailored to your specific needs. In minutes.

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For example, the Multi-Tool Budget expert system creates seven inter-related

Multiplan worksheets for a total budget planning and control environment.

What's more, each system is developed by experts: business professionals and leading authorities in finance and accounting.

You'll benefit from their knowledge immediately, through the powerful worksheets each Multi-Tool expert system builds for you. And with the sophisticated tutorial manuals that accompany each system. Each manual provides in-depth information about both the design of the worksheets and the areas of finance and accounting they cover.

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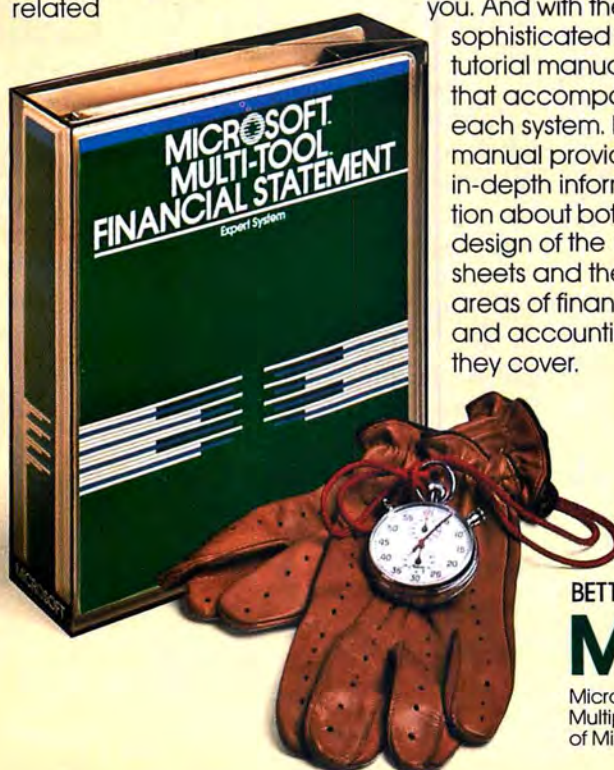
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Bitscalc

Boeing Computer Services Company
2800 160th Ave. SE
Bellevue, WA 98009
206/763-5636

Bitscalc processes three-dimensional matrices by columns, rows, and pages. The program is disk based, providing capacity for large matrices. Data manipulation formulas use standard mathematical operators and built-in functions. Data is printed in a variety of formats and passed to the *BITS* graphics program or communicated to other computers. *Bitscalc* includes a data interchange format and automatic recalculation feature. List price: \$300. Requirements: 64K, two disk drives.



Perfect Calc

Perfect Software
1400 Shattuck Ave.
Berkeley, CA 94709
800/222-4222

Perfect Calc offers multiple spreadsheet buffers and virtual memory, enabling users to share data among as many as seven spreadsheets. A multiple-spreadsheet display shows two spreadsheets simultaneously. *Perfect Calc* provides regional recalculation, allowing calculation to be limited to a spreadsheet area defined by the user. The program includes logical formula components, variable format displays, variable column widths, report generation, and formula replication and locking, as well as a built-in "functions library" that can be supplemented or modified to suit specific needs. Data is stored in ASCII files, allowing an exchange of data between *Perfect Calc* and other systems. List price: \$295. Requirements: 128K, one disk drive.

Novacalc

Hourglass Systems
P.O. Box 312
Glen Ellyn, IL 60137
312/690-1855

Novacalc is a menu-driven spreadsheet that provides on-line instructions and a help screen. The program's format functions include protected fields, titles, indenting and underlining, and decimal and comma controls. Financial functions include internal rate of return, net present value, and depreciation. Mathematical functions include summing, averaging, and standard deviation. *Novacalc* offers wide-carriage and selective printing. List price: \$29.95. Requirements: 128K, two disk drives.

BPT

Sofstar, Inc.
13935 U.S. 1, Juno Square
Juno Beach, FL 33408
305/627-5511

BPT (Business Planning Tool) is a line-oriented budget and forecasting program that combines a spreadsheet with a data base management program and allows users to view 12 months of data in a "time window." The program creates graphs on a monochrome monitor and allows users to change worksheet assumptions directly on graphs using the cursor and arrow keys. *BPT* prints financial reports and automatically writes *VisiCalc* templates and stores them on disk. *BPT* templates can also be used with *Multiplan* and *1-2-3*. List price: \$195. Requirements: 96K, one disk drive.

VoiceDrive for ScratchPad

SuperSoft
P.O. Box 1628
Champaign, IL 61820
217/359-2112

VoiceDrive for ScratchPad is a combination voice-recognition and spreadsheet package that allows users to enter *ScratchPad* spreadsheet data and commands vocally. *VoiceDrive* can be used in conjunction with the keyboard, and users can train the computer to understand the 97 *ScratchPad* commands in the user's voice. List price: \$495, bundled with Tecmar Voice Recognition Board \$995. Requirements: 96K, one disk drive, *ScratchPad* spreadsheet program, Tecmar Voice Recognition Board, microphone.

PlannerCalc

Comshare
1935 Cliff Valley Way
Atlanta, GA 30329
404/633-8737

PlannerCalc is a spreadsheet with English syntax for program operations. It allows calculations to be entered using conventional mathematical logic and individual comments to be added to program commands. The program is upgradable to 128 columns and 512 lines. List price: \$99. Requirements: 128K, one disk drive.

Encore!

Ferox Microsystems Inc.
1701 N. Fort Myer Dr. #611
Arlington, VA 22209
703/841-0800

Encore! is a financial modeling package that combines spreadsheet analysis and business graphics with a systems development program. Its spreadsheet functions include "what if" calculations, goal seeking, virtual memory, consolidation, and report generation. Financial functions include depreciation, Accelerated Cost Recovery System, loan amortization, tax-loss carryforward, and periods to payback. Logic and statistics functions include IF...THEN...ELSE, Repeat...Until, deviations, regressions, logarithms, and exponentials. The menu-driven program includes error checking, on-line tutorials, and help screens. *Encore!* prints bar charts, pie charts, and scatter graphs with the Ferox *GraphPower* program. List price: \$1850. Requirements: 256K, hard disk, printer.

Desktop Plan

VisiCorp
2895 Zanker Rd.
San Jose, CA 95134
408/946-9000

Desktop Plan enables users to create financial models with a modeling language rather than directly on a spreadsheet. The program's menu asks for input on model size, calculation rules, starting values, and user-defined formulas. *Desktop Plan* prints formatted reports, tables, charts, and graphs. List price: \$300. Requirements: 64K, two disk drives.

VIS/Bridge/Report Plus

Solutions, Inc.
13 State St.
P.O. Box 989
Montpelier, VT 05602
802/229-0368

VIS/Bridge/Report Plus is written in BASIC and improves the report printing capabilities of *VisiCalc*. The program has all the capabilities of the advanced version of *VisiCalc*. List price: \$95. Requirements: 64K, one disk drive, *VisiCalc*.

ScratchPad

SuperSoft, Inc.
P.O. Box 1628
Champaign, IL 61820
217/359-2112

ScratchPad provides a worksheet of up to 256 by 256 cells with virtual memory, consolidation and merge functions, unlimited window splitting, and flexible grid dimensions (up

to 999 in either direction). Features also include title locking and built-in sum, sine, cosine, tangent, and square root functions. An additional program, *Voice Drive SpeechWare*, is available for vocal input and data manipulation. List price: \$295. Requirements: 96K, one disk drive.

Phoenix Planning Model

Phoenix Consulting Group, Inc.
P.O. Box 2951
Abilene, TX 79604
915/676-8208

Phoenix Planning Model is a template for building 1-2-3 spreadsheets. The program is designed for users who have a working knowledge of 1-2-3 but don't have the time to develop Lotus models from scratch. *Phoenix Planning Model* analyzes cash flow requirements and allows revenue and expense details to be entered by location, product, or person. List price: \$189. Requirements: 256K, two disk drives, 1-2-3.

Finar

Finar Research
2750 S. Wadsworth
Denver, CO 80227
303/986-1507

Finar is a large-scale, sequential-logic, financial modeling system designed for tabular data. User-constructed prompts are written in basic English. *Finar* handles up to 32,000 elements and consolidates up to 1000 spreadsheets. The program includes a built-in editor, a report generator, and financial and mathematical functions. List price: \$695. Requirements: 128K, two disk drives (hard disk recommended).

Peachtree Connection

Sofstar, Inc.
13935 U.S. 1, Juno Square
Juno Beach, FL 33408
305/627-5511

Peachtree Connection is a stand-alone program that reads *Peachtree General Ledger* data disks and builds a comprehensive data base to produce spreadsheet templates for *VisiCalc*, *Multiplan*, or 1-2-3. Templates are preformatted to include report titles, column headings, and total and subtotal formulas. List price: \$129. Requirements: 64K, two disk drives, *Peachtree General Ledger*, and *VisiCalc*, *Multiplan*, *BPT*, or 1-2-3.

BOS/Planner

BOS National, Inc.
2560 Royal Ln.
Dallas, TX 75229
214/484-2717

BOS/Planner is a financial planning and modeling system for "what if" investigations, budgets, cash flow forecasting, and other financial calculations. The worksheet contains up to 10,000 lines and 60 columns, restricted only by disk storage space. The program can use data files and includes consolidation, merging, and sorting functions. *BOS/Planner* operates on sets of rows and columns rather than on cells only. A graphics function allows tables to be printed or displayed from selected lines in a plan. List price: \$400. Requirements: 64K, two disk drives, BOS operating system.

CalcStar

MicroPro International Corporation
33 San Pablo Ave.
San Rafael, CA 94903
415/499-1200

CalcStar is a 255-row, 127-column spreadsheet program with column and decimal width variation, conditional logic, and advanced math capabilities. The program includes an automatic forms mode feature that allows you to designate a specific pattern of cells for the cursor to follow. *CalcStar* uses *WordStar* cursor commands and works with *WordStar* for enhanced reporting capabilities. Data can be printed in text file format and merged or edited with *WordStar*. *CalcStar* provides numerous business forecasting functions, password protection, and a choice of up to six colors for custom formatting. List price: \$195. Requirements: 160K, two disk drives.

PeachCalc Electronic Spreadsheet

Peachtree Software Inc.
3445 Peachtree Rd.
Atlanta, GA 30326
404/239-3000

PeachCalc prepares an electronic spreadsheet containing up to 254 rows and 64 columns of text, numbers, and formulas. The program merges and consolidates tables or repeats any portion of a worksheet in formula format or as current values. *PeachCalc* also includes a protected block function to save data from accidental erasure. List price: \$150. Requirements: 64K, two disk drives.

EZVISI

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
913/843-5863

EZVISI converts direct (random) files into *VisiCalc* format and produces a *VisiCalc* model. The program reads fields selectively into columns, generates a reusable program, and is user controlled. List price: \$70. Requirements: 64K, one disk drive, *VisiCalc*.

EasyPlanner

Information Unlimited Software
2401 Marinship Way
Sausalito, CA 94965
415/331-6700

EasyPlanner is a programmable spreadsheet with a worksheet size of up to 255 by 255 cells. It allows simultaneous consolidation of multiple spreadsheets. Features include full IF...THEN programming, worksheet maintenance capabilities, function-key command entry, and prompts for data input. The program compares values, branches to another section, and loads programs from disk or from another worksheet. The report generator paginates, centers, and varies column width. *EasyPlanner* integrates with *EasyWriter* to allow combined word processing and numeric calculations. List price: \$250. Requirements: 96K, two disk drives.



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COPE

Antech, Inc.
788 Myrtle St.
Roswell, GA 30075
404/993-7270

COPE (Computerized Operations Planning and Engineering) is a menu-driven modeling system that has unlimited matrix size and virtual memory. The program includes a report generator that formats reports in any fashion, a goal-seek function that searches the starting conditions for a desired end result, and automatic trend analysis. *COPE* underlines all user-input variables and includes financial planning functions. List price: \$395. Requirements: 128K, two disk drives.

Spread

Lupfer & Long, Inc.
P.O. Box A-57
Hanover, NH 03755

Spread Financial Analysis & Reporting System is a complete language with a built-in editor that enables you to append, merge, and consolidate tables of unlimited size using virtual memory. Features include "what if" calculations using substitution variables, goal seeking, and variable column widths. Built-in financial functions include internal rate of return, depreciation, and compounding. List price: \$500. Requirements: 256K, one disk drive.

StretchCalc

Multisoft Corporation
14025 S.W. Farmington Rd.
Beaverton, OR 97005
800/322-4110, 503/626-4727

StretchCalc extends the abilities of *VisiCalc* to provide graphics, and sorts and rearranges spreadsheet rows and columns. The program builds four types of charts (bar, stacked bar, pie, and high/low/close) and four types of graphs (line, scatter, dot, and area). Any portion of the spreadsheet may be used without exiting *VisiCalc*. Spreadsheet data can be reordered permanently or temporarily with a sort command that rearranges the worksheet based on numeric values in any column or set of columns. A rearrange command, which repositions worksheet columns, can also be used by giving the command and listing the desired order of the columns. Command sequences can be stored or used with a single-character command. The last 75 keystrokes are constantly retained by *StretchCalc* to allow users to store or reuse and edit sequences. List price: \$99. Requirements: 128K, one disk drive, *VisiCalc*.

Electronic Spreadsheet

American Planning Corporation
4600 Drake St. #423
Alexandria, VA 22304
703/751-2574

Electronic Spreadsheet is designed for large-scale spreadsheet applications and performs mathematical calculations in three dimensions with a

descriptive file for each dimension. The program handles up to 2 million numbers. Reports can be printed with full-row descriptions and 6-line column headings. Intermediate text can be placed anywhere in a final report. *Electronic Spreadsheet* includes interspreadsheet communications, multiple levels of indenture, and audit trail capability. List price: \$1500. Requirements: 64K, hard disk.

LogiCalc

Software Products International, Inc.
10343 Roselle St., Ste. A
San Diego, CA 92121
619/450-1526

LogiCalc includes built-in linear regression, depreciation, and net present-value functions. The program provides conditional expressions for "what if" processing and relational and logical operators. *LogiCalc* merges and consolidates two or more reports, has an independent calculator function, and allows formulas to be viewed and printed for providing an audit trail. Print commands allow users to define parameters for printing whole or partial worksheets. *LogiCalc* automatically splits tables that are too wide for a printer. The program interfaces with Software Products International's data base, accounting, and word processing programs. A *Password Protection* file security program is available. List price: \$190. Requirements: 64K, one disk drive, UCSD p-System.

"LogiCalc allows me to list my directory without first going to the p-System, which speeds up my work."

Richard Lantz, San Francisco, California.

DocuCalc

Micro Decision Systems
P.O. Box 1392
Pittsburgh, PA 15219
412/276-2387

DocuCalc prints *VisiCalc* and 1-2-3 models in grid form and shows underlying equations for future reference or explanation. The program includes seven formats plus global details and forward reference warnings. Any size model may be documented. *DocuCalc* calculates appropriate column spacing and grid size to print an entire spreadsheet if required. List price: \$95. Requirements: 128K, one disk drive.

Plan 80

Digital Marketing Corporation
2363 Boulevard Circle #8
Walnut Creek, CA 94595
800/826-2222

Plan 80 is a menu-driven financial modeling system that uses English prompts and names instead of numbers to address rows and columns. The program's spreadsheet functions include table lookup, consolidation, and "what if" analysis. Financial functions include depreciation, net present value, amortization, internal rate of return, and Accelerated Cost Recovery System. *Plan 80* adds, subtracts, multiplies, and divides, and performs trigonometric and IF...THEN...ELSE functions. List price: \$295. Requirements: 128K, two disk drives.

Target Financial Modeling

Comshare
1935 Cliff Valley Way
Atlanta, GA 30329
404/633-8737

Target Financial Modeling is an interactive spreadsheet with a maximum size of 1000 by 5000 cells. The program offers a report writer, variable column width, multiple model consolidation, automatic formula replication, and forward referencing. English syntax is used for all program operations, and users can build models that prompt for data during calculations. *Target Financial Modeling* includes an on-line help system. List price: \$325. Requirements: 128K, one disk drive.

Micro/Prophit

Via Computer, Inc.
7177 Construction Ct.
San Diego, CA 92121
619/578-5356

Micro/Prophit is a financial modeling system that includes graphics, "what if" and goal-seeking analysis, simultaneous equations, and 70 calculation methods and financial functions for model building. The program handles large models of up to 9000 lines and 120 columns. *Micro/Prophit* provides full consolidation and recalculation of dissimilar plans and reports. List price: \$3000. Requirements: 192K, two disk drives.



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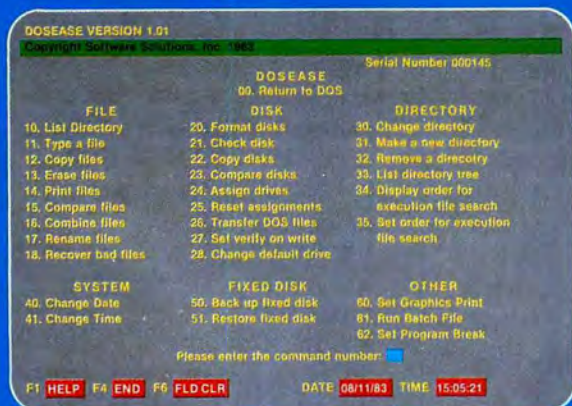
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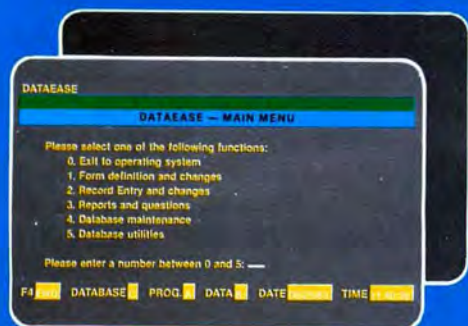
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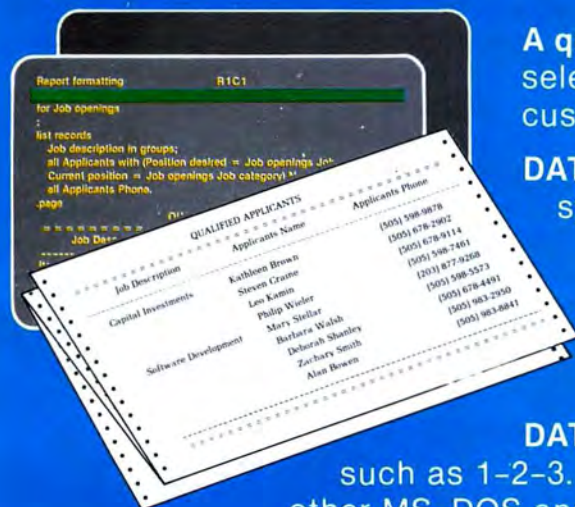
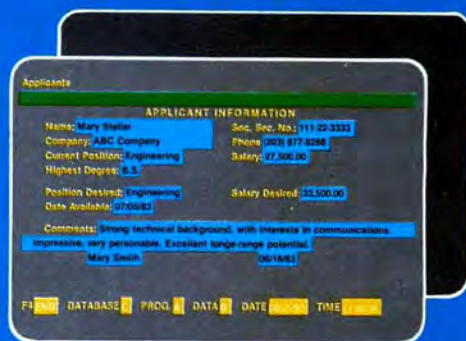
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Word Processing

Camilo Wilson

Word processing is one of the most popular uses for personal computers. If you type, even with two fingers, you and your family can benefit from word processing software.

The great advantage of the IBM PC over the typewriter is that the PC stores what you write on floppy disks, so you can modify the text until you get it just right, or you can change it and use it again in different circumstances.

A word processor helps you to be both creative and productive. The freedom you experience knowing you can edit and rearrange what you have written on the screen can dramatically improve your written communications.

With word processing software you can use the PC to write correspondence, memoranda, schoolwork, proposals, reports, manuscripts, legal documents, and technical manuals. You can also use it to keep checklists of things to be done, or as a family bulletin board.

Choosing a word processor is one of the most important software decisions you will ever make. Why? Because a word processor ties all your software together. With the right applications software you can take spreadsheet calculations and put them into a word processed report without retyping; you can run your text through a spelling and style checker to improve its readability; you can send personal letters to people whose names and addresses are stored in your data base; or you can capture live newswire and stock price quotes from The Source or CompuServe and examine them at your leisure.

A bewildering variety of word processors has appeared on the market. To select one, analyze your needs, making them as specific as possible to narrow your

choices. If your needs are complex, put them in writing and ask vendors and store clerks for suggestions. If you are new to the field, look for something that is simple to use and gives you room to grow. Identify unique features that you need such as foreign language symbols, mathematics characters, subscripts, superscripts, footnotes, multiple fonts, carbon copies, and boilerplate texts.

Try your choices at a store and get a friend's recommendation before making your decision. The cost of the program is only one factor. Using a word processor is like owning a car; because you are likely to spend many hours with it, you will want one that handles well.

The printer you buy and its ability to work with your word processor are of critical importance since the printer is likely to be one of the most expensive items you buy. Printers vary a great deal in capabilities, speed, and print quality. You pay a premium for good performance, so insist that dealers show you the printer, the word processor, and the computer, all working together, doing exactly what you want. Make sure you understand what it takes to make the system perform consistently.

Word processing software is an important investment; it can give you time, creativity, clarity, and peace of mind—or it can make your life miserable. With the right word processor your PC can be a pleasure; all you have to do is find the right program.

Camilo Wilson is the author of Volkswriter and the president of Lifetree Software of Monterey, California.

Amgen Juchan
von Juchan
Der Juchan
argen von der
andern *neulich*
Juchan



Microsoft Word

Microsoft Corporation
10700 Northup Way
Bellevue, WA 98004
206/828-8080

Microsoft Word is a multiple-window word processor that can be used with the Microsoft mouse. The mouse and/or the keyboard can be used to move between as many as eight files to compare and transfer sections. *Microsoft Word's* glossary enables you to create boiler plates and call up commonly used phrases with simple codes. The program includes a number of style formats and can create and store new formats. *Microsoft Word* provides automatic reformat, columnar word wrap, an undo key, and a display ruler that can be called up to the screen to help place tabs and margins. Special effects appear on screen as they would on a printout. List price: \$375. Requirements: 128K, one disk drive.

PMate

Lifeboat Associates
1651 Third Ave.
New York, NY 10028
212/860-0300

PMate is a full-screen text editor that has ten editing buffers and screen formatting capabilities. The program furnishes an intrinsic structured macro language for text creation and manipulation. The language enables users to create Boolean operators, variables, GOTO statements, and other text processing functions. *PMate* enables you to edit files of up to 500K. List price: \$225. Requirements: 64K, one disk drive.

MultiMate

Softword Systems, Inc.
52 Oakland Ave. N
East Hartford, CT 06108
203/282-0131

MultiMate emulates a Wang dedicated word processor and supports boiler-plate functions through the library feature. The program automatically sorts files by character or numerical designations and allows movement of columns. *MultiMate* (an earlier version was called *Word-Mate*) is a page-oriented word processor. The program provides complete support for a wide variety of printers. List price: \$495. Requirements: 128K, two disk drives.

"The merge function requires tedious restatement of parameters, but all in all MultiMate is ideal for routine office communications. It shines with short documents and letters." Marc Schnapp, Jamaica, New York

"MultiMate is the word processor I would have been proud to design." John Chaffins, Coeur d'Alene, Idaho

FinalWord

Mark of the Unicorn
P.O. Box 423
Arlington, MA 02174
617/576-2760

FinalWord's split-screen capability allows you to view and edit two files simultaneously. The program can produce tables of contents, indexes, and automatically placed and numbered footnotes. *FinalWord* permits printing of one file while another file is being edited. The program is distinguished by a "state save" feature that prevents text from being lost, even if the system crashes. This fea-

ture allows you to exit the editor and then return to the saved editing state while preserving all editor settings and updated text. The program has a full set of utilities, including the ability to back up and format a disk. *FinalWord* does not lay out or move columns, nor does it allow you to pause for text entry during printing. List price: \$300. Requirements: 64K, two disk drives.

"Cut and paste between files is easy to do, and the flexibility of cursor control makes the program a pleasure to use. The program is limited by its liberal use of disk space, especially when the 'print while editing' feature is used. FinalWord may be better suited to the sophisticated user than the novice." Robert A. Lerche, Menlo Park, California

"FinalWord seems best for writers of complex or lengthy documents. The documentation is clear and has a good index." Michael Crouch, Columbia, Missouri

ProScript

SoftCraft, Inc.
P.O. Box 9802 #590
Austin, TX 78766
512/346-8380

ProScript is a text formatter that can be used with standard text editors. The program can create headers, footers, and tables of contents. It can also number paragraphs. *ProScript's* printing features enable users to generate emphasized, wide, and condensed type on a standard IBM Graphics Printer. List price: \$75. Requirements: 64K, one disk drive.

Scribble

Mark of the Unicorn, Inc.
222 Third St.
Cambridge, MA 02142
617/576-2760

Scribble is a text formatter that furnishes a wide choice of formats. The program provides numbered footnotes, chapters, sections, subsections, appendices, indexes, and tables of contents with up to five levels of numbering. Printing features include alternate fonts, superscripts, subscripts, and true proportional spacing. List price: \$175. Requirements: 48K, one disk drive.

Volkswriter

Lifetree Software, Inc.
411 Pacific St. #315
Monterey, CA 93940
408/373-4718

Volkswriter is an easy-to-use word processing program distinguished by comprehensive printing features, ASCII file storage, and a search function that executes a search of an entire text beginning at any point. Other features include multiple-line headers and footers, full cursor control, and the storage of multiple formats. Utilities are included for automatic backup during a save operation and for file copying, deleting, and merging. The *Volkswriter International Edition* is a separately sold program that has *Volkswriter's* functions as well as the ability to gener-

ate math, science, and multilingual characters. List price: \$195, *International Edition* \$225. Requirements: 64K, one disk drive.

"The program is an executive-class word processor distinguished by single-keystroke editing functions."

Robert Yamaguchi, Monterey, California

"I write on it directly. No need for a secretary. Typing via IBM 75 works through the ET12 black box." D. B. Curll, Brooklyn, New York

Word Proof

IBM
Systems Products Division
P.O. Box 1328
Boca Raton, FL 33432
800/447-4700, 800/322-4400
Illinois, 800/447-0890 Alaska,
Hawaii

Word Proof is a 125,000-word spelling checker that has a built-in text editor and a thesaurus. The program allows users to create an additional word list of 600 words and also provides the ability to create anagrams. The text editor provides insert, delete, word wrap, search and replace, and output to a printer. The program does not check grammar or usage. List price: \$60. Requirements: 64K, one disk drive.

"The word list is very comprehensive and even includes the two-letter state abbreviations, but there is no word count or word frequency given. The product is excellent, but I would like a better function key overlay."

William C. Hueston, Wappingers Falls, New York

MegaWriter

Megahouse
5703 Oberlin Dr.
San Diego, CA 92121
619/450-1230

MegaWriter is a menu-driven word processor that uses one-keystroke commands to furnish standard word processing functions. The program's automatic document finder enables you to find and retrieve documents by key word or date created as well as by document name. *MegaWriter* lets you program the keyboard, and the program provides multiple-font printing and an undo key. The mail merge function reads and merges lists created by *MegaFile*, a separately sold program. Spelling can be checked with *MegaSpell*, another separately sold program that is based on a 40,000-word expandable dictionary. List price: *MegaWriter* \$99.95, *MegaSpell* \$99.95. Requirements: 64K, two disk drives.

Execu/Writer

Executec Corporation
12200 Park Central Dr.
Dallas, TX 75251
214/239-8080

Execu/Writer is a word processor that can be used with *Execu/File* and *Execu/Model* (sold separately). The program allows you to indent and number itemized lists and blocks of text. Other editing features include headers, footers, centering, underlining, and boldfacing. Names and addresses from *Execu/File* or *Execu/Model* can be used in form letters written with *Execu/Writer*. List price: \$450. Requirements: 128K (256K for the PC XT), two disk drives.

Spell-It

Berzurk Systems
1434 Parker St.
Berkeley, CA 94702
415/652-4400 ext. 415

Spell-It is a 41,000-word interactive spelling checker. The program allows you to create up to ten supplemental dictionaries. Proper names and contractions are kept in separate dictionaries for optional use. *Spell-It* provides in-context display of suspect words and enables users to mark a word for later correction, restore the original spelling of a word, or correct a word on the spot with the help of a built-in text editor. The program is compatible with most word processing systems. List price: \$29.95. Requirements: 64K, two disk drives.

"Spell-It is a bit time-consuming for proofreading a large document, but all in all I am delighted with its performance with both WordStar and EasyWriter files. You can't beat the cost." Anthony LaBruzza, Orange, Connecticut

Word Grinder

International Disk
7246 Remmet Ave. #101
Canoga Park, CA 91303
213/992-0514

Word Grinder is an 84,000-word expansion dictionary that can be added to the *SpellStar* and *SpellGuard* spelling checkers through their dictionary maintenance programs. List price: three double-sided disks \$149, six single-sided disks \$159. Requirements: 1M hard disk, *SpellGuard* or *SpellStar*.

Wordplus-PC

Professional Software, Inc.
51 Fremont St.
Needham, MA 02194
800/343-4074, 617/444-5224

Wordplus-PC is a word processing program that includes a mail merge function and the ability to read from spreadsheet, data base, and mailing list programs. The program uses the <Alt> and <Shift> keys in conjunction with the function keys to provide a wide variety of easily accessible commands. *Wordplus-PC* features proportional spacing, microjustification, the ability to edit while printing, and on-screen underline and boldface. Although *Wordplus-PC* is not a screen-oriented word processor, you can create a video printout to test the actual print layout. List price: \$395. Requirements: 64K, one disk drive.

"Wordplus-PC provides the ideal combination of ease of use and power. We have eight versions up and running in varied applications." Alan Dolgoff, San Francisco, California

PeachText

IBM
Systems Products Division
P.O. Box 1328
Boca Raton, FL 33432
800/447-4700, 800/322-4400
Illinois, 800/447-0890
Alaska, Hawaii

PeachText offers a wide range of print commands and formats that can be embedded in text or implemented from the print menu. The program provides print enhancements such as variable pitch control, headers and footers, and nine shades of boldfacing. It also offers fast

screen handling and print spooling and a mail merge option. You can print unusual ASCII characters such as foreign language characters on screen. A similar version of *PeachText* is offered by PeachTree Software as one of the modules of the integrated *PeachText 5000* package. List price: \$400. Requirements: 64K, one disk drive.

"An excellent range of report-writing capabilities but perhaps too complex for manuscripts. The program is more than adequate for letters and has a well-written manual." H. Sozhor, Redondo Beach, California

"PeachText can be run from a disk emulator or a hard disk, but there are many things you can't do with the program, such as underlining and decimal tabbing." Morris Trees, Champaign, Illinois

Blue

Symmetric Software
1805 Clemson St.
San Bernardino, CA 92407
714/887-8595

Blue is a multiwindow word processor that enables users to define the color, size, shape, and location of each window and to transfer data among eight files simultaneously. It also supports the use of a mouse. *Blue* furnishes keystroke and format macros so that both text strings and format styles can be entered with single commands. Other features include automatic word wrap, conditional and global search and replace, headers and footers, and block and line movement. List price: \$150, mouse software \$35. Requirements: 64K, one disk drive.

FriendlyWriter

FriendlySoft, Inc.
3638 W. Pioneer Pkwy.
Arlington, TX 76013
817/277-9378

FriendlyWriter combines a word processor and a spelling checker. It is screen oriented, and most functions can be invoked with single-keystroke commands. The program has a maximum file size of six pages and is backed by a 24-hour support line. List price: \$69.95. Requirements: 64K, one disk drive.

Leading Edge Word Processor

Leading Edge Products, Inc.
Fortune 1300 Division
21 Highland Circle
Needham Heights, MA 02194
800/343-3436, 617/449-6762

Leading Edge Word Processor is a split-screen, function-key-controlled program that allows you to move the cursor by character, word, line, sentence, screen, page, or document. Other features include global search and replace, an undo function, capitalization/uncapitalization, special place markers, column centering, automatic letter transposition, and decimal and dot leader tabs. The program's print features include boldfacing, double width, double height, overstriking, superscripting, and subscripting. Other print features include underlining, double underlining, font selection, color selection, justification, semijustification, and print spooling. List price: \$300. Requirements: 128K, two disk drives.

Personal Editor

IBM
Systems Products Division
P.O. Box 1328-C
Boca Raton, FL 33432
800/447-4700, 800/332-4400
Illinois, 800/447-0809 Alaska
or Hawaii

The *Personal Editor* is a screen-oriented text editor aimed at program editing, but it is also useful for simple word processing tasks. The Define and Macro commands allow for extensive customization of the PC keyboard. The *Personal Editor* is capable of such standard word processing functions as move, copy, erase, overlay, search and replace, tabs, margins, word wrap, and reformat. The program also provides a capitalize command and a limited undo function. The *Personal Editor's* print formatting is primitive, and no automatic top and bottom margins are set. List price: \$100. Requirements: 64K, one disk drive.

"A very flexible full-screen text editor that is also very nearly a word processing system." Paul Berger, Halifax, Nova Scotia

"Fast, flexible, powerful..." Jonathan Wan, Milpitas, California

TextMaster

N. F. Systems, Ltd.
P.O. Box 76363
Atlanta, GA 30358
404/252-3302

TextMaster is a text formatter for any standard ASCII file and can support up to nine user input variables per document. The program creates form letters, formatted program list-

ings, indexes, and tables of contents. *TextMaster* supports most printers. List price: \$99.95. Requirements: 64K, one disk drive.

EasyWriter 1.10

IBM
Systems Products Division
P.O. Box 1328
Boca Raton, FL 33432
800/447-4700, 800/322-4400
Illinois, 800/447-0890 Alaska,
Hawaii

EasyWriter 1.10 is a menu-driven word processor that makes full use of the IBM PC function keys. The program provides block move of paragraphs and sentences, global search and replace, headers and footers, automatic word count, and an undo key. List price: \$175. Requirements: 64K, one disk drive.

"I found EasyWriter friendly. The programmed lessons helped me learn the commands. My wife, who is experienced on the Wang, had no trouble using the program." James Jewhurst, Manchester, Missouri

Mince

Mark of the Unicorn, Inc.
222 Third St.
Cambridge, MA 02142
617/576-2760

Mince is a screen-oriented text editor with multiple buffers and windows that enable users to work on more than one document at a time. The program's virtual memory allows you to create a file larger than the computer's main memory. Features include four-way cursor movement, an undo key, block moves and deletes, and global and query search and replace. The name *Mince* is short for Mince Is Not Complete

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**THE SUPERSTAR WORD PROCESSOR
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MEGAHAUS Corporation, 5703 Oberlin Drive, San Diego, CA 92121 (619) 450-1230

Circle 348 on reader service card

Word Processing

Emacs, which means that the program is a subset of Emacs, the powerful mainframe text editor. List price: \$175. Requirements: 64K, two disk drives.

"Mince doesn't take advantage of memory-mapped video, but the program allows you to edit without moving your hands from the home keys. Mince uses good mnemonics for commands." Henry Perkins, Menlo Park, California

WordEase

Software Solutions, Inc.
305 Bic Dr.
Milford, CT 06460
203/877-9268

WordEase is a screen-oriented word processor that provides full use of the function keys and extensive prompting. The program can make multiple paragraph columns and store and recall paragraph margins. *WordEase* permits global search and replace as well as query replace. *WordEase* can be used with a color monitor, a hard disk, and in conjunction with other modules of Software Solutions' DataEase integrated family. List price: \$295. Requirements: 128K, two disk drives.

Professional Editor

IBM
P.O. Box 1328-C
Boca Raton, FL 33432
800/447-4770

Professional Editor is a full-screen line editor designed for programmers using the IBM PC. The program enables you to tailor various parameters to different types of files, or to choose from a series of common defaults. Though *Professional Editor*

does not display the line numbers of a continuous column line, it lets you quickly delete, move, or copy large amounts of text. List price: \$130. Requirements: 64K, one disk drive.

"Professional Editor is written well for someone who is doing programming, but it is definitely not designed to be a word processor. There is a long learning curve and no on-line help facility." Steve Miller, Columbus, Ohio

WordPerfect

Satellite Software International
288 W. Center St.
Orem, UT 84057
800/321-5906

WordPerfect uses a virtual edit buffer to provide unlimited file size. The program comes with mail merge and math functions and provides a macro capability. *WordPerfect* allows you to create columns and automatic headers, footers, and footnotes. Other features include flush right, double underlining, and automatic capitalization. List price: \$495. Requirements: 128K, one disk drive.

"WordPerfect is easy to learn for a relatively complex system. We are using the product in a genetics research lab." Jane Wilson, Salt Lake City, Utah

"WordPerfect has the best math feature I've seen in a word processor. I also like the Blank Screen feature, like a sheet of typewriter paper. What you see is what you get." Richard C. Bracken, Littleton, Colorado

Edvance

SofTech Microsystems
16885 W. Bernardo Dr.
San Diego, CA 92127
619/451-1230

Edvance is a full-screen editor that works with the UCSD p-System. Users can edit a large file that has used the entire storage capacity of a single disk by storing updates to another disk (for which a second disk drive is then required). Tables and graphics can be created and edited easily. The program features nested editing functions, enabling users to edit a file within a file. *Edvance* improves search and replace functions and also enables users to define macro commands and redefine keys. List price: \$200. Requirements: 64K, one disk drive, UCSD p-System.

"A fine editor that I use constantly in my work as a contract programmer." Vim Toutenhoofd, Cottage Grove, Oregon

Personal WordPerfect

Satellite Software International
288 W. Center St.
Orem, UT 84057
800/321-5906

Personal WordPerfect is a scaled-down version of *WordPerfect*, lacking features such as merge, math, footnotes, and column centering. The program provides automatic formatting, boldfacing, underlining, justification, and search functions. *Personal WordPerfect* cannot run with *WordPerfect Speller*. List price: \$195. Requirements: 128K, one disk drive.

WordPerfect Speller

Satellite Software International
288 W. Center St.
Orem, UT 84057
800/321-5906

WordPerfect Speller is a 30,000-word, expandable-dictionary spelling checker that includes a 1500-word common usage dictionary to speed up the checking process. The program can work from within the *WordPerfect* word processor, but not with *Personal WordPerfect*. *WordPerfect Speller* can run with many other word processing programs. The program checks spelling by word, page, or document but does not check grammar or assist in hyphenation. List price: \$145. Requirements: 128K, two disk drives.

Bibliography

Digital Marketing Corporation
2363 Boulevard Circle #8
Walnut Creek, CA 94595
415/947-1000, 800/826-2222

Bibliography is an auxiliary program that checks citations in text against bibliographic entries in a separate reference file. The program constructs a bibliography of all cited entries and can move them into footnotes or add them to a reference file with a word processor. *Bibliography* works with most word processing systems and is designed for the writer of long manuscripts. List price: \$125. Requirements: 48K, one disk drive.

"Ideal for scholars or for anyone who writes many articles in the same field." Paul Brest, Stanford, California

Footnote

Digital Marketing Corporation
2363 Boulevard Circle #8
Walnut Creek, CA 94595
800/826-2222, 415/947-1000

Footnote is an auxiliary program for users of *WordStar* and *Select* that automatically numbers and formats footnotes. Both single and multiple footnotes can be entered anywhere in text; *Footnote* correctly places the entry either at the bottom of the page or in a separate file. The program enables you to renumber or reformat footnotes after entering additions. Deletions and corrections can be made to footnotes already placed, and the footnotes can be renumbered and reformatted. A companion program, *Pair*, makes sure that underline and boldface commands have terminated and also checks for start and end quotation marks and parentheses. List price: \$125. Requirements: 48K, one disk drive, *WordStar* or *Select*.

"Footnote is the only program of its kind. Ideal for lawyers, writers, and academics." Paul Brest, Stanford, California

Star-Edit

SuperSoft Inc.
P.O. Box 1628
Champaign, IL 61820
217/359-2112

Star-Edit is a screen-oriented text editor for programming and word processing. The program, which resembles the powerful EMACS text editor, is easy to learn. Over 100 text manipulation commands are available. List price: \$225. Requirements: 32K, one disk drive.

Wordflex

NEMCO
9 Walnut St.
Rutherford, NJ 07070
201/933-4933

Wordflex uses all memory available on the IBM PC to provide fast, memory-resident text processing and formatting. The program's large addressing space (512K) enables you to edit up to five files at once. *Wordflex* can be run on an RGB color monitor or on a monochrome monitor. The program provides only limited support of printer features. List price: \$140. Requirements: 128K, one disk drive.

Grammatik

Wang Electronic Publishing
P.O. Box 339
Tijeras, NM 87059
505/281-1634

Grammatik is a stand-alone grammar checker and style analyzer that works with most word processors. The grammar checker detects typing errors in capitalization and punctuation, including doubled words and doubled capital letters. The style analyzer calls attention to misused phrases, trite and wordy sentences, and sexist language. Document profiles access levels of text difficulty and average word and sentence length. New profile categories can be created, and *Grammatik*'s phrase dictionaries can be augmented by the user. List price: \$75. Requirements: 64K, one disk drive.

"Grammatik's parameter-driven menu is difficult to understand. Some of the profile information may not be meaningful to writers." Wayne Socha, Monrovia, California

"All in all a good program. But Grammatik can't do anything that requires understanding meaning, such as subject-verb agreement. The user interface tends toward the cryptic." Richard L. Swanson, North Bend, Washington

ReadiWriter

ReadiWare Systems, Inc.
P.O. Box 680
West Redding, CT 06896
203/431-3521

ReadiWriter is a full-featured text formatter that interfaces with both PC-DOS files and the IBM main-frame text processing software, Document Composition Facility (DCF). *ReadiWriter* supports printer functions such as proportional spacing and underlining, and there is no limit on file size. The program can create footnotes, indexes, and tables of contents. *ReadiWriter* allows the user to substitute variables such as names and addresses or a recurring word or phrase. List price: \$125. Requirements: 128K, two disk drives.

"ReadiWriter is well documented and the company offers good support, but the program is not 100 percent compatible with DCF." H. Clay Davis III, Henrietta, New York

Vedit

CompuView Products, Inc.
1955 Pauline #200
Ann Arbor, MI 48103
313/996-1299

Vedit is a full-screen text editor that performs simple word processing tasks on its own or in conjunction with any popular text processor. The

program provides unlimited split and merge file handling and is equipped with ten scratchpad buffers for creating macro strings. *Vedit's* command mode speeds up repetitive tasks such as search and replace. The program is function-key-driven and provides flexibility in redefining the keyboard. Other features include automatic screen scrolling, an undo key, and line and column status displays. Although updates are planned, at this time *Vedit* does not provide print formatting or proportional spacing. List price: \$150. Requirements: 16K, one disk drive.

"The whole program is loaded into RAM, which provides fast operation. The compact size (48K) makes it possible to have a copy on each working disk." James C. Eckroad, Ann Arbor, Michigan

TypeGraph

Soft Lab, Inc.
P.O. Box 2186
2545 Perry Ave. N
Bremerton, WA 98310
206/479-3700

TypeGraph is a UNIX-like, command-oriented text formatter equipped with graphics capabilities. The program allows you to generate tables of contents, create boxed text, and print with various type fonts. *TypeGraph* includes a mail merge function and enables you to generate bar charts. The program can be configured to format most word processing text files or can stand alone as its own word processor. List price: \$395. Requirements: 196K, one disk drive.

"TypeGraph requires a higher level of expertise to use than word processors, but the profiles take much of



the trouble out of using it. An extremely powerful text formatter."

Rob Lundahl, Bremerton, Washington

PIE: Writer

Hayden Software Co.
600 Suffolk St.
Lowell, MA 01853
617/937-0200

PIE: Writer is a screen-oriented word processor with a virtual memory machine buffer that allows text to be entered while scrolling. Simultaneous editing of two files is available in a split-screen or alternate-screen mode. *PIE: Writer* also provides columnar tabbing, horizontal scrolling, print queueing, and automatic paragraph indent. The program comes with an on-screen tutorial and built-in mail merge and telecommunications programs. List price: \$199.95. Requirements: 64K, one disk drive.

ProofWriter

Image Processing Systems
P.O. Box 5016
Madison, WI 53705
608/233-5033

ProofWriter is a science and foreign language oriented word processing system that displays special characters and equations on screen and translates them to a printer. The pro-

gram is equipped with a mail merge capability and allows you to read and write files between various documents. *ProofWriter* uses a separate print formatter and does not show page breaks on screen. A 25,000-word expandable spelling checker is included with the program. List price: \$195, demonstration program \$5. Requirements: 128K, one disk drive.

Dillowriter

Software Research
P.O. Box 10004
Austin, TX 78766
512/346-5097

Dillowriter is an inexpensive word processor that uses labeled keys to simplify learning. It does not offer automatic hyphenation or proportional spacing but provides most standard word processing functions. The program can perform inverse video highlighting of text. List price: \$29.95. Requirements: 64K, one disk drive.

Textra

Ann Arbor Software
407 N. Main
Ann Arbor, MI 48104
313/769-9088

Textra is a screen-oriented word processor that provides an on-line tutorial and on-screen underline and boldface. The program is customizable and allows you to print while you edit. Other features include paragraph reformatting, full printing commands, and headers and footers. The program's page preview function shows where pages break in the text. List price: \$95. Requirements: 128K, one disk drive.

Random House Proofreader

Wang Electronic Publishing, Inc.
P.O. Box 339
Tijeras, NM 87059
505/281-1634

The *Random House Proofreader* is a comprehensive spelling checker that allows you to correct spelling in context without having to reenter the word processing system. The program comes equipped with a 32,000-word dictionary for single-sided disk drives and either a 50,000- or 80,000-word dictionary for double-sided drives. *Random House Proofreader* displays alternative spellings and allows you to look up words in its dictionary. The program provides literal checking of words and does not rely on root-word analysis. Interactive menus allow you to correct, learn, or accept words. The ample dictionary contains proper names, and the program automatically reports the total number of words and unique words. List price: \$50. Requirements: 64K, one disk drive.

"This is a good program and is inexpensive, but I find The Word Plus much easier to use." Martha Haines, Moorestown, New Jersey

"The Random House Proofreader is written in two phases and is driven by a .BAT file; it cannot be easily invoked from other batch files. Augmenting the dictionary with an auxiliary dictionary slows the program up considerably. However, the main dictionary is easily expanded. A low price for such a high-quality piece of software." Jay Charles Weber, Wheaton, Maryland

Spellbinder

Lexisoft, Inc.
P.O. Box 1378
Davis, CA 95617
916/758-3630

Spellbinder is an office-oriented word processor with integrated editing and printing sections. *Spellbinder's* extensive macro capabilities extend the program's abilities to functions such as data base management, mail merge, and program development. In addition to featuring standard word processing functions, *Spellbinder* permits on-screen indentation for outlines, alphanumeric and sequential queue sorting, boiler plating, and columnar manipulation. Print formatting features include bidirectional printing, true proportional spacing, two-column printing, and a limited ability to print foreign language characters. List price: \$495. Requirements: 128K, one disk drive.

"Some of the tutorial descriptions don't match the display, and there aren't enough sample text items available." Morris Trees, Champaign, Illinois

"By far the easiest to learn of the full-featured word processors. Most imaginative cursor movement system and macros." S. E. Schulman, Chestnut Hill, Massachusetts

"Lexisoft was very helpful on customizing problems for printers and foreign characters over the phone. The product includes source code for terminal and printer I/O." Michael M. Thomas, Houston, Texas

"Compared to a Sears typewriter, Spellbinder is fit for, and a gift of, the gods." Lee Bellavance, Hailey, Idaho

"Queue sort on address label macro can be used as a mini data base. Indents are hard to remove, but Spellbinder is well worth the money."

Marsha Bellavance, Ketchum, Idaho

"Spellbinder is great for outline work of any kind. The boiler plate was a little difficult to use without a split screen." Harold Johnson, Sun Valley, Idaho

Super Spellguard

Sorcim Corporation
2310 Lundy Ave.
San Jose, CA 95131
408/942-1727

Super Spellguard is a spelling checker that checks misspellings and typing errors against a 20,000-word, expandable dictionary. The program is capable of checking 30 pages per minute. *Super Spellguard* counts total words and unique words and provides percentages of each, but the program has no interactive means to correct spelling. It is written in machine language and is compatible with most existing word processors. List price: \$195. Requirements: 32K, one disk drive.

"An awful lot of manual for not much. I bought this before I knew any better." Martha Haines, Moorestown, New Jersey

"It would be better if they listed the words to be checked sequentially rather than alphabetically. Spellguard is great for writers who must limit their words and also for specialty writers who want to create their own dictionary." Luanne Pfeifer, Malibu, California

Wordvision

Bruce & James Program Publishers
4500 Tuller Rd.
Dublin, OH 43017
614/766-0110

Wordvision is an inexpensive word processing program that uses icon selection to perform a number of operations. The program is for simple writing tasks rather than complex business applications. It comes with color stick-on labels for the function keys. Features include the ability to transpose letters, capitalize, lowercase, and undelete. The program also has 11 forms of delete. *Wordvision* allows you to type frequently used phrases into text with a 2-character command. List price: \$49.95. Requirements: 64K, one disk drive.

"The stickers for the keytops don't stick, but even in its pioneer state Wordvision beats any of the word processors on the market." Bob Nellans, Argos, Indiana

EasyWriter II

Information Unlimited Software
2401 Marinship Way
Sausalito, CA 94965
415/331-6700

EasyWriter II has an on-screen tutorial and a powerful screen-oriented format. The program uses no embedded commands. *EasyWriter II* allows for on-screen boldfacing and underlining as well as double underlining. Margin tabs, decimal tabs, and spacing formats can be named and called from other documents.

The 96K version can be run with *EasyFiler*, *EasyPlanner*, *EasyBusiness systems*, *EasyMailer II*, and *EasySpeller II*. *EasySpeller II* is an 88,000-word, nonlexicon, dictionary-style spelling checker. Special medical and legal versions of *EasySpeller II* are also available. *EasyMailer II* is a separately sold mailing list program with minimal data base capabilities. The program can generate labels and can merge addresses with letters written on *EasyWriter II*. List price: \$350, *EasySpeller II* \$225, *EasyMailer II* \$175. Requirements: 64K or 96K (two versions), two disk drives.

"Good value for the money." Robin Lamb, Vancouver, British Columbia

"EasyWriter II lacks automatic pagination and hyphenation, but the documentation and phone support [optional] make the package easy to use." Leo J. Scanlon, Inverness, Florida

Spelling Proofreader

PeachTree Software Inc.
3445 Peachtree Rd.
Atlanta, GA 30326
404/239-3000

Spelling Proofreader finds spelling and typographical errors in text prepared by *PeachText* and other word processors. The program contains a 21,000-word expandable dictionary. When using double-density disks, *Spelling Proofreader* can check a 30-page document in 1 minute. The program can be bought separately or as one of the modules of the integrated *PeachText 5000* package. List price: \$150. Requirements: 64K, one disk drive.

Textra Jr.

Ann Arbor Software
407 N. Main
Ann Arbor, MI 48104
313/769-9088

Textra Jr. is an easy-to-learn full-screen text editor that has minimal word processing functions. The program can be customized and includes an interactive on-line tutorial that is presented on screen as if it were a film. The program's features include automatic word wrap, line shifting, and minimal print functions. List price: \$39.95. Requirements: 64K, one disk drive.

"Best cost/performance ratio of any of the full-screen editors." Nicholas Biddle III, Wilmington, Delaware

P-Edit

Satellite Software International
288 W. Center St.
Orem, UT 84057
801/224-8554

P-Edit is a multiuser context program editor that also edits text. It can be entered from the keyboard or from another file at any point and the context is maintained and updated. *P-Edit* uses the IBM PC function keys and other user-definable single-keystroke macros. Features include search and replace, move, delete, scroll, help, file and retrieve, range save and append, dynamic insert, and duplicate line and field. List price: \$95. Requirements: 64K, one disk drive.

"There's no software limitation on file size, but the program will not generate line numbers and has no automatic word wrap." Rich Woolf, Orem, Utah

WordStar

MicroPro International Corporation
33 San Pablo Ave.
San Rafael, CA 94903
415/499-1200

WordStar is a menu-driven screen-oriented program that allows cursor movement by character, word, page, and beginning and end of document. The program allows block movement, justification, and full search capabilities. Files can be copied, merged, deleted, and backed up automatically. Print features include underline, boldface, subscript and superscript, proportional spacing, pause for text entry, and the ability to print multiple copies of documents.

WordStar text files can be checked with *SpellStar*, a 20,000-word spelling checker sold separately. *SpellStar* allows you to check and flag errors and add words to the dictionary. *MailMerge* is a file-merging program that runs only with *WordStar* and is also sold separately. *MailMerge* allows you to create personalized form letters, mailing labels, invoices, and boiler-plate documents. *StarIndex* is a separately sold index generator that enables you to produce alphabetized indexes, tables of contents, and lists of figures and tables for *WordStar* files. List price: *WordStar* \$495, *SpellStar* \$250, *MailMerge* \$250, *StarIndex* \$195, all four \$895. Requirements: 64K, one disk drive.

"WordStar is very powerful and user-friendly, but it will lose a file if the disk is full. It has poor scrolling."

Paul H. Fistler, Detroit, Michigan

"The program is powerful and easily customized." Mark Cutting, Oakland, California

"The use of a ruler line to indicate the margin width is a useful and distinguishing feature." Luanne Pfeifer, Malibu, California

"WordStar has so many commands that it is difficult to learn and time-consuming to master. There are an abundance of commands requiring two or more characters." Martin DiRienzo, San Francisco, California

EDIX + WORDIX

Emerging Technology Consultants
2031 Broadway
Boulder, CO 80302
303/447-9495

EDIX + WORDIX combines the text editor *EDIX* with the text formatter *WORDIX* to create a comprehensive, multiwindow word processor. *EDIX + WORDIX* provides up to four windows to different files and allows independent settings and editing. The program has a keystroke macro capability, multicolumn layout, automatic footnotes, section numbering, and a table-of-contents generator. The program features a tutorial disk and an on-line help facility. *EDIX*, *WORDIX*, and the *SPELLIX* spelling checker can be purchased separately. List price: *EDIX + WORDIX* \$390, *EDIX* \$195, *WORDIX* \$195, *SPELLIX* \$95. Requirements: 128K, one disk drive.

"The printer file is a real hassle, but the technical support people are super. The program is incredibly powerful!" T. Reichenbach, Campbell, California

"The program restricts the number of special control characters and uses a lot of memory, but it's the best text editor I have ever encountered—no exceptions." Larry Baker, Jr., Lafayette, Louisiana

PowerText

Beaman Porter, Inc.
Pleasant Ridge Rd.
Harrison, NY 10528
914/967-3504

PowerText is a complex word processing system based on stored formats. The program can automatically generate tables of contents and outlines from text. Copy can be enclosed in boxes, and tabular material can be entered vertically. Hexadecimal code commands can be sent directly to the printer. *PowerText* does not take advantage of the IBM PC function keys. List price: \$399. Requirements: 64K, two disk drives.

The Word Plus

Oasis Systems
2765 Reynard Way
San Diego, CA 92103
619/291-9489

The Word Plus is a spelling checker that also finds rhymes, helps solve crossword puzzles, and forms or reassembles anagrams. It is compatible with most word processing programs. The program can automatically check spelling and shows potentially misspelled words within the context of the line in which they are used. A 45,000-word spelling dictionary comes with the program, and users can add words up to disk capacity. *The Word Plus* recognizes hyphenation and has rules for proper hyphenation. When the correct spell-

ing of a misspelled word is not listed in the program's dictionary, the intelligent lookup feature can use an algorithm for common spelling errors to create alternative spellings from which users can choose. List price: \$150. Requirements: 164K, one disk drive.

"The program is very easy to use and is helpful to anyone who does word processing." Martha Haines, Moorestown, New Jersey

"The Word Plus is very reliable and has a number of unusual features, including the intelligent lookup feature, hyphen recognition, and anagram and rhyme formation." James Grier, Portland, Oregon

Benchmark

Metasoft Corporation
6509 W. Frye Rd.
Chandler, AZ 85224
602/961-0003

Benchmark enables you to create form letters and indexed documents by a simple process of marking documents and writing them into a new indexed file. The program includes math and business graphics. *Benchmark's* 52-key, 2000-phrase boiler-plate keyboard enhancer allows you to perform 75 percent of the program's commands with a single keystroke. The program also allows for sentence deletion, proportional spacing, column manipulation, and single-line centering. *Benchmark* can work with two separately sold programs, *Benchmark Spelling Checker* and *Benchmark Mail List*.

Spelling Checker is based on a 27,000-word expandable dictionary. *Mail List* helps create form letters, labels, and billings; it uses 14 format fields, and entries can be selected on any position of any field. List price: *Benchmark* \$499.95, *Spelling Checker* \$175, *Mail List* \$250. Requirements: 128K, two disk drives.

Textplus

Owl Software
6927 Atoll Ave.
North Hollywood, CA 91605
213/982-6243

Textplus combines a word processor with a built-in file manager data base to handle many different applications without switching disks. The program can produce mailing labels, bar charts, prioritized lists, computer programs, and letters that merge data and text. *Textplus* offers a sort and select function (using Boolean features) that can act upon single or multiple fields in both data and text. The program will not justify the right margin when you use proportional spacing. *Textplus* has a calculator function. List price: \$149. Requirements: 64K, one disk drive.

"The manual is easy to use, but the program lacks versatility." Morris Trees, Champaign, Illinois

"The compiled (128K) version is quite fast and overcomes the deficiencies of the 64K program." Bernard Stolzman, North Hollywood, California

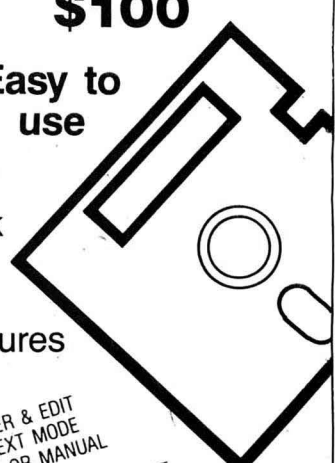
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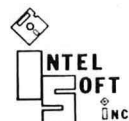
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Quick-Text

Distributed Software Systems
P.O. Box 1301
Northbrook, IL 60062
312/634-1511

Quick-Text is a full-screen word processor that provides a status line and ghost cursor for easy entry of tabular data. The program offers the option of saving or discarding tabs, margins, and other format options. *Quick-Text* provides standard word processing functions as well as header, footer, and file merging capabilities. A 1500-word expandable spelling checker is included. Several *Quick-Text* data files can be chained and sent to the printer simultaneously. List price: \$55. Requirements: 64K (128K for DOS 2.00 version), one disk drive.

"The few bugs were cleared up promptly by the manufacturer, who sent fixes on new disks." Millard S. Cohen, St. Louis, Missouri

"Quick-Text is a dynamite word processor that is extremely easy to use." Martha Evans, Buffalo Grove, Illinois

Datatest

Datatek, Inc.
2621 Enterprise Rd.
Clearwater, FL 33575
813/797-6464

Datatest incorporates the *Datatest Text Editor* with formatting features and enables you to merge *Datatest* files with *dBASE II* files to produce mass mailings from addresses entered in *dBASE II*. The program allows you to print while editing and supports true proportional spacing with justification. *Datatest* uses em-

bedded English commands instead of control codes. Special features include footnoting, alphabetized indexing, and horizontal scrolling that allows you to edit lines of up to 255 characters. List price: \$450. Requirements: 128K, two disk drives.

Datatest Text Editor

Datatek, Inc.
2621 Enterprise Rd.
Clearwater, FL 33575
813/797-6464

Datatest Text Editor is a programming-oriented text editor that is function key controlled. The program includes an on-line help menu and can be used to edit any ASCII data file. List price: \$175. Requirements: 128K, two disk drives.

Perfect Writer

Perfect Software
702 Harrison St.
Berkeley, CA 94710
800/222-4222

Perfect Writer is a word processor that uses a split-screen, multiple-file display to let you merge and manipulate text from as many as seven files. The program's virtual memory allows you to edit files of up to 200 pages. Special features include index compilation, footnoting, an undo key, table of contents generation, and proportional spacing. *Perfect Writer* furnishes 50 style formats and lets you create your own formats. The program's in-text referencing capability tags text to be referenced and automatically inserts the page number of the original reference. *Perfect Writer* can interact with the companion programs *Perfect Calc*, *Perfect Filer*, and *Perfect Speller*. List price: \$495. Requirements: 64K, one disk drive.

AutoWriter

BOS National Inc.
2560 Royal Ln.
Dallas, TX 75229
214/484-2717

AutoWriter is a screen-oriented, menu-driven word processing system designed for both single-user and multiuser applications. To run *AutoWriter* on an IBM PC, the BOS operating system must be installed, at extra cost. The program is equipped with mailing list, filing, and print-spooling capabilities. You can customize *AutoWriter* to take advantage of the PC function keys and to define standard page layouts and a library of standard phrases or paragraphs. The program works with other BOS business software. List price: single-user \$400, multiuser \$750. Requirements: 64K, two disk drives, single-user or multiuser BOS operating system.

MemoPlan

Chang Laboratories
5300 Stevens Creek Blvd. #200
San Jose, CA 95129
408/246-8020

MemoPlan provides split-screen word processing and can keep up to five files open at one time. Text can be transferred between documents, and one keystroke moves you to a different file. *MemoPlan* provides proportional spacing and an undo key as well as standard word processing functions. The program automatically saves documents to backup files during power outages. *MemoPlan* can be used with two other Chang Laboratories programs, *MicroPlan* and *GraphPlan*. List price: \$195. Requirements: 128K, two disk drives.

WordCraft UltraCalc

Cimarron Corporation
2158 S. Hathaway St.
Santa Ana, CA 92705
714/662-2801

WordCraft UltraCalc is a word processor that has a built-in calculator, data base, list manager, and an expandable dynamic spelling checker. The data base provides search and sort of all fields and wild card search. *WordCraft UltraCalc* enables you to create a wide variety of print formats, including overprinting, special character generation, true proportional spacing, and wait points that allow changes of print wheels or thimbles during printing. The program includes a mail merge function and can incorporate *VisiCalc* data. List price: \$395. Requirements: 128K, one disk drive.

Word Worker

Design Enterprises of San Francisco
P.O. Box 14695
San Francisco, CA 94114
415/282-8813

Word Worker is an inexpensive, easily customized word processor constructed in four modes: Edit, Write, Print, and BASICWP. It permits automatic word wrap, underlining, centering, and flush left and right, but not right justification. The program is one of the only word processing programs available for the IBM PC that can be run from a cassette recorder. A separately sold book, *Write, Edit, and Print*, shows how to modify and reprogram *Word Worker* to individual specifications. List price: \$29.95, *Write, Edit, and Print* \$24.95. Requirements: 48K, one disk drive.

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Document Management System (DMS)

Syntax Systems—Software Products
921 Tilden Ave.
Kent, WA 98032
206/251-8438

DMS integrates functions for word processing and list management in programs that can be purchased as one integrated package or as separate programs. Edscreen, the system's text editor, produces files compatible with those produced by PC-DOS's EDLIN. Edscreen uses cursor control and keyboard function keys. Document Writer, the system's word processing program, produces letters, reports, and memos. Document Writer automatically generates a table of contents for a document and has the ability to sort indexed files. Headers, footers, superscripts, subscripts, and boldface features are provided. Letter Writer is DMS's form letter generator. Mailing Label Maker enables users to create and maintain lists. Fields in files are pre-structured and include those for name, title or company, three address lines, 9-digit zip code, telephone number, and user-defined code. Selection of records is made by zip code range or by entries in the user-defined code field. The program prints one- to three-up labels. When used with DMS's Letter Writer program, Mailing Label Maker provides name and address information for form letters. List price: for the integrated package \$500, Edscreen \$125, Document Writer \$300, Letter Writer \$200, Mailing Label Maker \$100. Requirements: 128K, two disk drives.

Muse

MARC Software International, Inc.
260 Sheridan Ave.
Palo Alto, CA 94306
415/326-1971

Muse is a word processing system designed for scientific and technical use. The program performs standard word processing tasks as well as specialized technical functions. Special characters can be created on screen and printed on 13 different printers if you buy a printer chip sold separately by the manufacturer. Muse offers seven levels for superscripting and subscripting. Print options can be coded directly into a document, and all menus and commands are in English. The program comes with an encryption subprogram that lets you make certain files available by password only. List price: \$595, printer chip \$100. Requirements: 256K, 1M hard disk.

Qspell

Quantum Software Systems, Inc.
7219 Shea Ct.
San Jose, CA 95139
408/629-9402

Qspell is a QNX-based, multiuser spelling checker that identifies and globally corrects errors and enables users to edit text without returning to the word processor. The program checks spelling from a 30,000-word lexicon and allows for multiuser, modifiable lexicons—both shareable and separate. One copy of Qspell loaded into the system will service

up to 16 users. List price: \$185. Requirements: 256K, one disk drive, QNX operating system.

"Qspell is very fast, but the size of the lexicons is limited by the amount of available RAM." Terry Laughlin, San Francisco, California

Select

Select Information Systems, Inc.
919 Sir Francis Drake Blvd.
Kentfield, CA 94904
415/459-4003

Select is a menu-driven word processor that uses single-key English commands. The program comes with an on-screen interactive tutorial. Special features include headers, footers, background printing, and proportional microspacing. Select also comes with a mail merge function and SuperSpell, a 20,000-word spelling checker. List price: \$495. Requirements: 128K, two disk drives.

BITS Word Processing System

Boeing Computer Services Co.
2800 160th Ave. SE
Bellevue, WA 98009
206/763-5636

BITS Word Processing System is a full-featured system that uses cursor shortcuts and single-keystroke commands. The program consists of a print program and an edit program that can be interchanged using menus. It also comes with the BITS operating system. Custom formats can be stored, and extensive on-screen help is provided. List price: \$300. Requirements: 64K, two disk drives.

BITS Text Processing System

Boeing Computer Services Co.
2800 160th Ave. SE
Bellevue, WA 98009
206/763-5636

BITS Text Processing System is a combination screen editor and text formatter that can format long documents using embedded commands. Format features include headers, footers, and justification. The program comes with the BITS operating system, a "bridge" subprogram that converts a PC-DOS file into the BITS operating system and vice versa, and a limited communications program that can transmit files to another system using BITS. List price: \$300. Requirements: 64K, two disk drives.

MicroSpell

Trigram Systems
3 Bayard Rd. #66
Pittsburgh, PA 15213
412/682-2192

MicroSpell is a 50,000-word, literal-dictionary spelling checker that can work with any ASCII word processing file. The program scans text, stops at each dubious word, and shows suspect words in context. *MicroSpell* displays a list of guesses at intended words and allows you to accept a guess, stay with the original, and/or add a word to the dictionary. The program provides options to ignore format commands, skip abbreviations, identify suffixes, and create auxiliary dictionaries. List price: \$149. Requirements: 64K, one disk drive. This product is also available from Lifeboat Associates, 1651 Third Ave., New York, NY 10028, 212/860-0300.

"The automatic guessing function nearly always finds the intended word. A guess can be substituted for a suspect word with only a few keystrokes." Robert Lucas, Pittsburgh, Pennsylvania

Word-Plot

ATC Software
Rt. 2, Box 448
Estill Springs, TN 37330
205/837-4718

Word-Plot produces business-quality plots that can be merged with word processing text files. The program provides automatic data entry and scaling, and can create over 10,000 plot formats. Plot size ranges from 1 inch to 8½ inches. *Word-Plot* can be used with any word processor capable of reading standard PC-DOS-compatible files. List price: \$49.50. Requirements: 64K, one disk drive, printer.

Forthwrite

Miller Microcomputer Services
61 Lake Shore Rd.
Natick, MA 01760
617/653-6136

Forthwrite is a word processor written in FORTH that uses a screen full of dots instead of a blank screen to assist in layout visualization. Other screen formats made up of any character can be easily defined. The program provides wild-card search and replace and enables users to delete by word, blank, sentence, paragraph, block, page, or to the end of text. Nine help screens are furnished, and the program allows you to customize

such variables as cursor speed and scrolling distance. *Forthwrite* can incorporate data from *Datahandler* and *Datahandler-plus*, programs from the same manufacturer. The program provides true proportional spacing, decimal tabs, and the ability to turn a tape recorder on and off for dictation. *Forthwrite* comes with a source code and a utility that allows you to convert files to and from DOS. List price: personal license \$175. Requirements: 64K, two disk drives, MMSFORTH operating system.



PIE: Spell

Hayden Software
600 Suffolk St.
Lowell, MA 01853
800/343-1218

PIE: Spell is a 22,000-word spelling checker that displays suspect words in context and automatically updates text with corrected words. The program can build any number of separate dictionaries. *PIE: Spell* counts the total number of words in a document but cannot check words longer than 18 characters. The program can be run with *PIE: Writer* or any other PC-DOS text file. List price: \$79.95. Requirements: 64K, one disk drive.



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have dreams
while others
have visions.

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EZMemo +

Systemics
3050 Spring St.
West Bloomfield, MI 48033
313/851-2504

EZMemo + is a line-oriented word processor that can use all dot matrix type styles, enabling users to print custom letterheads. The program is capable of generating automatic form letters but cannot edit files longer than one page. List price: \$49.95. Requirements: 64K, two disk drives.

Rainbow Writer Color Text Formatter

Application Techniques, Inc.
80 Townsend St.
Pepperell, MA 01463
617/433-5201

Rainbow Writer Color Text Formatter produces multicolored documents when used with a Prism printer. The program allows you to select different colors as often as you wish and merge color graphics with text. It is compatible with a separately sold graphics program, *Rainbow Writer Screen Grabber*. *Rainbow Writer Color Text Formatter* also provides variable character size and density, intercharacter proportional spacing, variable tabs, subscripts, superscripts, and exact horizontal and vertical positioning. The program has 65 printer commands and generates headers, footers, indexes, and tables of contents. List price: \$149. Requirements: 64K, one disk drive, Integral Data Systems P-series printer.

Busi-Text

Transaction Systems, Inc.
8708 E. 39th St.
Tulsa, OK 74145
918/663-3436

Busi-Text is a word processor that creates text files and program codes. The program provides search and replace and other standard editing features. Although *Busi-Text* has limited file-merge capabilities, it can integrate *VisiCalc* print files. List price: \$80.88. Requirements: 64K, one disk drive.

Docurite

Simplified Software Systems
Division of M.B. Rowe & Assoc.
118 Third Ave.
P.O. Box 1192
Hickory, NC 28601
704/328-2386

Docurite is a simple menu-driven word processor that formats text and provides optional page numbering and dating and a variable number of headers and footers. The program comes in two parts, a text-creating mode and an editing mode. Text can be appended to a previously created file. List price: \$69.50. Requirements: 64K, two disk drives.

ETWedit

ETW Systems
9419 Seven Locks Rd.
Bethesda, MD 20817
301/469-7823

ETWedit is a text editor that provides multiple working files, directory support, and compressed file support. Features include screen and file printing, sort subcommands and a macro files facility. A display line shows statuses of the <Ins>,

<CapsLock>, and <NumLock> keys. *ETWedit* offers minimal text formatting, and printer control code sequences must be entered manually. The program supports PC-DOS 2.00 paths and directories. List price: \$75. Requirements: 64K, one disk drive.

AmeriSoft Edit Tool

AmeriSoft
345 S. McDowell Blvd. #410
Petaluma, CA 94952
707/778-8594, 707/762-0640
AmeriSoft Edit Tool is a multifile, multiwindow text editor. The program performs file macros, wild-card search, edit in place, edit in hexadecimal, and command stack. *Edit Tool's* command language enables users to build new editor commands or undo any number of editor changes. The program does not support special print characters or footnote generation. List price: \$175. Requirements: 128K, one disk drive.

SuperStar

Relational Solutions, Inc.
8723 Woodleigh Dr.
Houston, TX 77083
713/530-4161

SuperStar permits *WordStar* users with color monitors to design their own color schemes and customize default parameters. Users can choose foreground and background colors and can change to inverse video on monochrome monitors. List price: \$29.95. Requirements: 128K, one disk drive, *WordStar*.

MicroScript

MicroType

6531 Crown Blvd. #3A

San Jose, CA 95120

408/997-5026

MicroScript is a text formatter that provides automatic functions for widow and orphan suppression, section numbering, and bullet, number, and definition lists. The program also features multiline headers, footers, footnotes, proportional spacing, multiple columns, and left and right indentation with delay and duration. The program enables you to use macrofiles and allows you to create multiple-input files of unlimited size. List price: \$99. Requirements: 128K, two disk drives.

MicroEd

MicroType

6531 Crown Blvd. #3A

San Jose, CA 95120

408/997-5026

MicroEd is a full-screen text editor that allows you to scroll by line, half window, or full window. Other features include global or selective search and replace and the ability to read external files into text. List price: \$49. Requirements: 128K, two disk drives.

EinsteinSpeller

Einstein Corporation

11340 W. Olympic Blvd.

Los Angeles, CA 90064

213/477-6733

EinsteinSpeller is a 62,000-word expandable spelling checker that can run with the manufacturer's *EinsteinWriter* or any other PC-compatible word processor. The dictionary is based on frequently used words.

The program suggests alternative words according to the user's particular misspelling habits. List price: \$149.95. Requirements: 128K, one disk drive.

Advanced Productivity System

Arrix Logic Systems Inc.

P.O. Box 142

Don Mills, Ontario

M3C 2R6 Canada

416/292-6425

Advanced Productivity System (APS) is a word processor that enables you to customize the keyboard. Other features include delete, copy, move, move between files, and global search and replace. The program enables you to enter hexadecimal bytes into text to print characters not found on the keyboard. *APS* is sold in two versions, one that provides split-screen editing (version 3) and one that doesn't (version 2). List price: version 2 \$200, version 3 \$240. Requirements: version 2 128K, version 3 192K, both versions one disk drive.

APS Text Formatter

Arrix Logic Systems Inc.

P.O. Box 142

Don Mills, Ontario

M3C 2R6 Canada

416/292-6425

Advanced Productivity System (APS) Text Formatter formats text created on either version of the *APS* word processor. Tags embedded in text are read and acted upon by *APS Text Formatter*. The program specifies headings, paragraphs, highlighted

phrases, line and page length, page numbers, margins, and output medium. *APS Text Formatter* supports embedding of data sets and therefore allows you to compose large documents in a hierarchical, inverted tree structure from sections found in separate data sets. List price: \$250. Requirements: 128K, one disk drive, *APS* word processing system.

Big Ed

Irohnic Systems, Inc.

11195 25-Mile Rd.

Utica, MI 48087

313/781-4587

Big Ed is a line-oriented text editor that includes word processing functions. The program performs search and replace, copying between files, and block scrolling. Other features include tabs, on-line help screens, and block move, copy, and delete. List price: \$125. Requirements: 256K, one disk drive.

Docuform

Irohnic Systems, Inc.

11195 25-Mile Rd.

Utica, MI 48087

313/781-4587

Docuform is a text formatter designed to be used with the manufacturer's *Big Ed* text editor. The program provides variable typefaces of 40, 80, and 132 characters per line. Other features include automatic pagination, error scan, boldface, and file insert. List price: \$50. Requirements: 256K, one disk drive, *Big Ed* text editor, IBM Graphics Printer.

Write-On!

Datamost, Inc.
8943 Fullbright Ave.
Chatsworth, CA 91311
213/709-1202

Write-On! is a word processor with mail merge capabilities that helps you to create form letters and maintain mailing lists. The program provides automatic word wrap, on-screen underlining, global search and replace, and multiple headers. *Write-On!* comes with a conversion program that enables you to use mailing lists created on other word processing systems. List price: \$129.95. Requirements: 64K, one disk drive.

Screen

Basic Business Software, Inc.
P.O. Box 26311
Las Vegas, NV 89126
702/876-9493

Screen is a full-screen text editor that allows you to edit text that requires more memory than you have in your computer. The program does horizontal scrolling, capitalization, lowercasing, global search and replace, line exchange, line repeat, line splitting, and line merging. Other features include two help-menu screens and the ability to page up and down by one or three pages at a time. List price: \$75. Requirements: 96K, one disk drive.

IEdit

Innovative Technology, Inc.
2387 Blackstone
Ottawa, Ontario
K1B 4H3 Canada
613/521-8391

IEdit is a customizable full-screen text editor for programming and word processing. The program provides function key support, block move and copy, automatic pagination, and multiple-copy printing. An expandable spelling checker is included for both programming and word processing purposes. List price: \$35, with source code \$120. Requirements: 64K, one disk drive.

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Digital Marketing Corporation
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800/826-2222

IBR (Incorporate by Reference) merges paragraphs or citations from a library file into any standard text file. Users can enter blocks of text of any length into the library file. To retrieve a stored block you type a code name into the text file where the block should appear. The program also orders paragraphs numerically and creates alphabetized, unnumbered tables of contents. List price: \$125. Requirements: 64K, one disk drive.

"IBR is ideal for lawyers who write briefs, wills, contracts, interrogatories, and other form documents."
Paul Brest, Stanford, California

EasyText Format Processor

Norell Data Systems
3400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
213/257-2026

EasyText Format Processor responds to formatting instructions embedded in any standard text editor or word processing file. The program automatically formats documents with margins, headings, and page numbers. Text can be underlined, boldfaced, centered, hyphenated, indented, and overstruck. *EasyText Format Processor* enables you to generate tables of contents, form letters, mailing labels, and indexes. List price: \$79.95. Requirements: 64K, one disk drive.

Perfect Speller

Perfect Software
702 Harrison St.
Berkeley, CA 94710
800/222-4222

Perfect Speller is a 50,000-word, expandable spelling checker that runs with a *Perfect Writer* text file or any other ASCII text file. A prefix/suffix dictionary and a root-word dictionary are also included, and the program enables users to create their own dictionaries. *Perfect Speller* checks 4000 words per minute. List price: \$295. Requirements: 64K, one disk drive.

Formlet

Contract Services Associates
706 S. Euclid
Anaheim, CA 92802
714/635-4055

Formlet creates form letters from a stock of prewritten and stored paragraphs. Up to ten form letters can be stored on disk, and new text can be added to any form letter. List price: \$57.95. Requirements: 64K, one disk drive.

WordStar Driver

MicroCorp
913 Walnut St.
P.O. Box Q
Philadelphia, PA 19107
215/627-7997

WordStar Driver is a printer driver that allows you to take advantage of the full line of printer features. The program allows you to print subscripts, superscripts, boldface, and other special effects, depending on the printer. The program is printer specific and *WordStar*-version spe-

cific. *WordStar Driver* is free when you purchase *WordStar* from MicroCorp. List price: \$50. Requirements: 64K, one disk drive, *WordStar*.

Executive Secretary Word Processing

Sof/Sys Inc.
4306 Upton Ave. S
Minneapolis, MN 55410
612/929-7104

Executive Secretary Word Processing System is a screen-oriented word processor that provides a built-in data base that can be merged with word processing documents or used alone. It comes with a communications program, document indexing capabilities, and a 10,000-word, expandable spelling checker. The program provides conditional printing, document customization from keyboard during printing, embedded printer commands, and word or phrase abbreviation. List price: \$295. Requirements: 128K, one disk drive.

Scriptron

Tronware, Inc.
3809 W. 95th St.
Overland Park, KS 66206
913/381-7176

Scriptron is a word processor that provides a multilevel security system to protect data files. The program also includes math, mail merge, and list processing functions that can be integrated with word processing. *Scriptron* contains a built-in 20,000-word expandable spelling checker and an electronic mail function. List price: \$895. Requirements: 128K, two disk drives.

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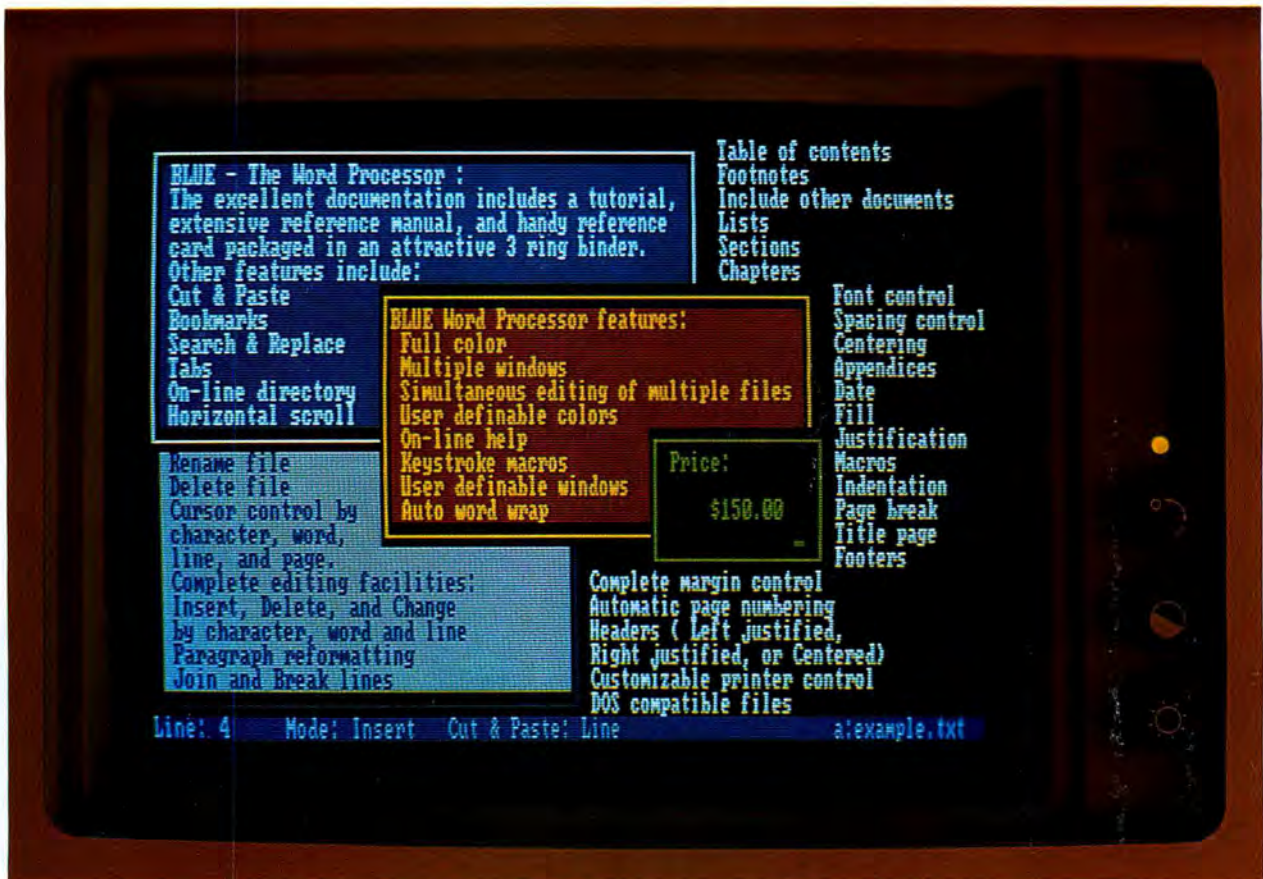
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Word Processing

Merge 'n Print

MBS Software
12729 N.E. Hassalo St.
Portland, OR 97230
503/256-0130

Merge 'n Print is a mail merge program that allows you to merge boilerplate blocks and insert variables into form letters from a data file or from the keyboard during printing. The program generates custom labels in any format. *Merge 'n Print* can also be used with the manufacturer's *Mailing Label Program* and *Data Filer* to create customized form letters. List price: \$149. Requirements: 64K, one disk drive, *EasyWriter 1.1*, *EasyWriter II*, *Volkswriter*, *Benchmark*, *MultiMate*, or *WordStar*.

Expandson

Blue Water Systems
P.O. Box 1877-D
Oceanside, CA 92054
619/722-0059

Expandson enhances printer capabilities for *WordStar* users. The program allows the user to create expanded headers and titles, italics, compressed print, subscripts and superscripts, line graphics, and foreign characters. The program is printer sensitive, and printing effects vary depending on the capabilities of the printer. For instance, foreign and math characters are available on the IBM Graphics Printer only, and italics cannot be accessed from this printer. List price: with Epson \$39, with IBM Graphics Printer \$49, with Okidata Microline \$59. Requirements: 64K, one disk drive, *WordStar*, printer.

WordExec

Ferox Microsystems
1701 N. Ft. Myer Dr.
Arlington, VA 22209
703/841-0800

WordExec is a word processor that has an on-screen tutor and one-key-stroke commands. The program has menu printer selection, widow and orphan protection, automatic indentation, and cursor movement by sentence and paragraph. Pagination features include automatic page renumbering, headers and footers, and protection against breaking pages. *WordExec* is written in Pascal and works with other Pascal programs. List price: \$495. Requirements: 128K, one disk drive.

PC/Edit

Persyst
15801 Rockfield Blvd., Ste. A
Irvine, CA 92714
714/859-8871

PC/Edit is a full-screen text editor that allows you to insert text from preloaded word, line, and text buffers. The program's features include global search and replace, large-file editing, and horizontal and vertical scrolling. More than 40 screen commands allow you to display and manipulate text. List price: \$98. Requirements: 64K, one disk drive.

PC/Format

Persyst
15801 Rockfield Blvd., Ste. A
Irvine, CA 92714
714/859-8871

PC/Format is a screen formatter for programmers that includes a format-definition language. Fields can be defined as prompt, fixed constant, gen-

eral, alpha, integer, numeric, and signed numeric. Several formats can be displayed concurrently on screen. *PC/Format* supports COBOL, FORTRAN, Pascal, the BASIC Compiler, and the Macro Assembler. List price: \$125. Requirements: 64K, one disk drive.

SuperWriter *

Sorcim Corporation
2310 Lundy Ave.
San Jose, CA 95131
408/942-1727

SuperWriter is a word processor that has simple commands, similar to those for *SuperCalc*. The program provides extensive document history for each file and a user profile function that lets you set personal system defaults. The AnswerKey provides on-screen help with explanations of options. *SuperWriter* also comes with a form-letter generator that allows you to do conditional merging, and the *Super SpellGuard* spelling checker. The program supports full proportional spacing. List price: \$295. Requirements: 64K, two disk drives.

Quick Brown Fox

Dwo Quong Fok Lok Sow, Inc.
Joseph Ming
548 Broadway #4-G
New York, NY 10012
212/925-8290

Quick Brown Fox is a word processor that allows a user to create boilerplates. The program provides justification, underlining, global search and replace, and deletion by line, word, and paragraph. List price: \$65. Requirements: 64K, one disk drive.

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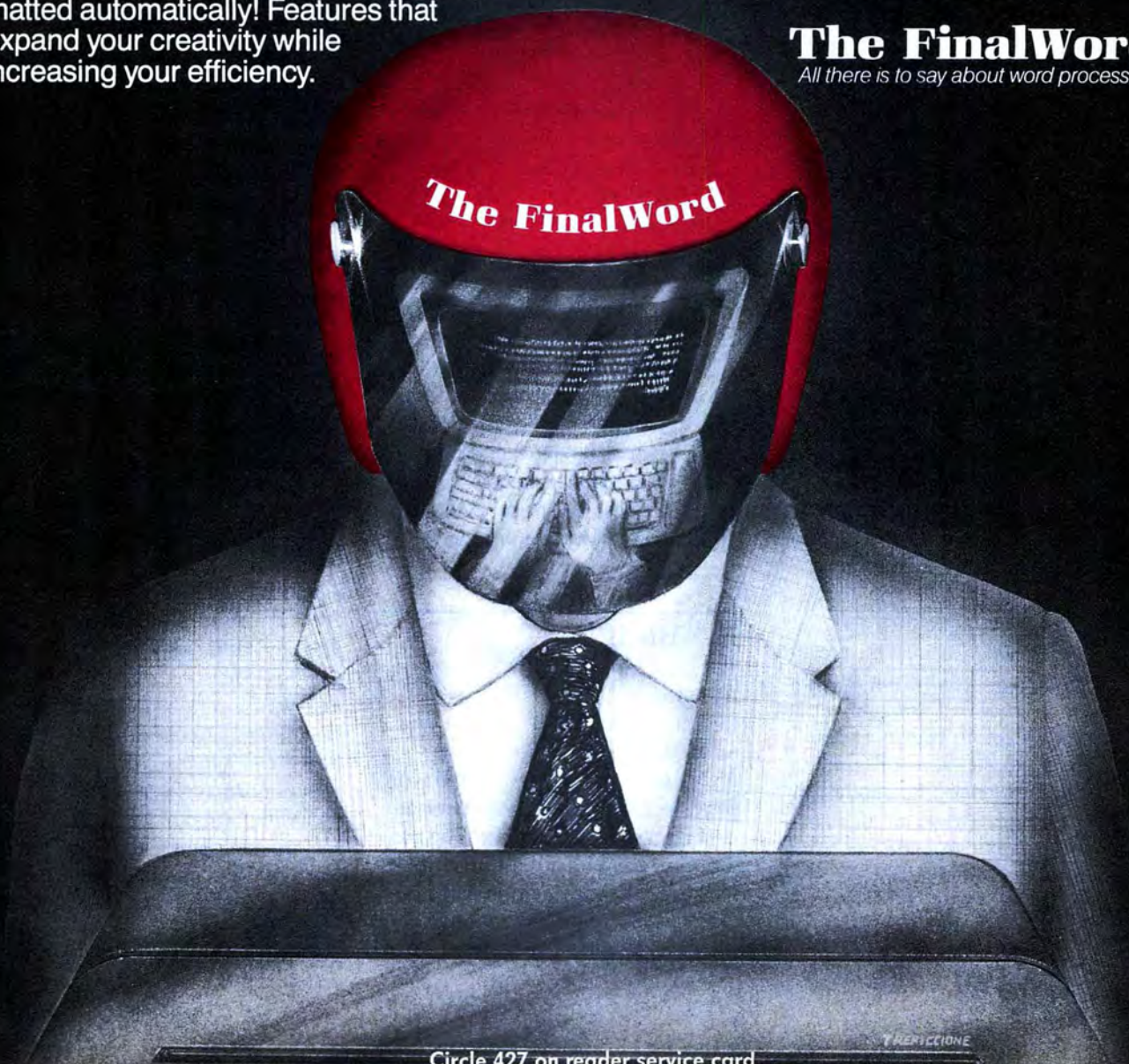
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pfs:write

Software Publishing Corporation
1901 Landings Dr.
Mountain View, CA 94043
415/962-8910

pfs:write is a word processor that integrates data from the manufacturer's *pfs:file*, *pfs:report*, and *pfs:graph*. The program provides a mail merge function using data from *pfs:file* and also includes an automatic envelope generator. Other features include headers and footers, four help screens, on-screen underline and boldface, global and wildcard search and replace, word count, decimal tabs, and automatic word wrap. With *pfs:write* you can highlight blocks in inverse video and delete, copy, move within a document, or move to a new boilerplate file. The program does not provide right justification. List price: \$140. Requirements: 128K, one disk drive.

Samna Word II

Samna Corporation
2700 Northeast Expwy. #C-1200
Atlanta, GA 30345
404/321-5006

Samna Word II is a screen-oriented word processor with split-screen editing. The program provides three levels of on-screen help and allows you to create multiple formats. *Samna Word II* provides on-screen underlining and boldfacing and includes an ASCII conversion program that enables you to transport data from other applications programs. The program makes the operating system transparent, so all file management functions can be run from the word processor. List price: \$450. Requirements: 192K, two disk drives.

SPF/PC

Rogue River Software
2822 Tahitian Ave.
Medford, OR 97504
503/779-3002

SPF/PC is a full-screen text editor that imitates the IBM mainframe SPF editor and provides up to 786K for work space. The program supports split-screen editing and offers on-line help. *SPF/PC* provides automatic line numbering and four-way scrolling and allows users to define 40 program function keys. List price: \$149.95. Requirements: 128K, one disk drive.

FSEditor

Cypress Software, Inc.
P.O. Box 8715
Coral Springs, FL 33065
305/755-1513

FSEditor is a full-screen text editor for programmers that allows editing of long files and files up to 250 columns wide. The program provides power-failure protection to ensure against data loss. Other features include keyboard macros and move, copy, scroll by page, and selective find functions. List price: \$75. Requirements: 64K, one disk drive.

XyWrite II

XyQuest Inc.
P.O. Box 372
Bedford, MA 01730
617/275-4439

XyWrite II is a screen-oriented word processor that provides split-screen or alternate-screen editing. The program comes with a built-in math package for four-function calculations and furnishes limited mail merge capabilities. Other features in-

clude headers, footers, footnotes, horizontal scrolling, and column definition. Blocks of text can be deleted, moved, or copied between files or within a file, and blocks can be stored for use as boilerplates. *XyWrite II* shows indents, line breaks, underlining, and boldfacing on screen. List price: \$195. Requirements: 128K, one disk drive.

PC Forms

Single Source Solution
2637 Pleasant Hill Rd.
Pleasant Hill, CA 94523
415/944-5161

PC Forms is a text formatting system designed specifically for operation with a line printer to allow text to be formatted for display on the screen. The program supports macros nested ten deep and printer specifications for overstrike and double-strike. Its functions include setting text characteristics, text formatting, page control, and printer control. Combined with *PC Word*, *PC Forms* provides all necessary word processing capabilities. List price: \$95. Requirements: 64K, one disk drive.

PC Word

Single Source Solution
2637 Pleasant Hill Rd.
Pleasant Hill, CA 94523
415/944-5161

PC Word is a full-screen text editor that allows full use of IBM PC keyboard characters. The program offers all normal text editing functions including on-line help, automatic file saving, and paging up and down. All function keys can be redefined by users, and a manual is provided. List price: \$95. Requirements: 64K, one disk drive.

VersaText

TexaSoft

3415 Westminster #100
Dallas, TX 75205
214/369-0795

VersaText is a word processor that includes a data base with mail merge capabilities. The program does global search and replace, subscripts, superscripts, boldfacing, and underlining. *VersaText* supports the use of a color monitor and can take advantage of the special effects of a wide range of printers. List price: \$199.95. Requirements: 128K, two disk drives.

Entry System for Programs

Bellesoft, Inc.

2127 Bellevue Way SE
Bellevue, WA 98004
206/451-9788

Entry System for Programs (ES/P) is a language-oriented editor for Pascal and C. Using a split-screen, multiple-file text editor, *ES/P* enhances program design and construction. The program can cut your typing load in half by building complete skeletons based on one-keystroke Pascal and C-structure abbreviations. *ES/P* formats program code during editing, checks for proper syntax, and places

code at the correct indentation level. Another version of the program is being developed for other languages. List price: \$245. Requirements: 192K, one disk drive.

"ES/P saves me many hours of re-compiling and debugging. Even beginners can start writing Pascal and C programs using ES/P. The documentation is excellent." Don Hasson, Seattle, Washington

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VisiSpell

VisiCorp
2895 Zanker Rd.
San Jose, CA 95134
408/946-9000

VisiSpell is a *VisiWord*-compatible 100,000-word spelling checker that can also check spelling on any standard ASCII file. The program allows you to create auxiliary personal dictionaries of up to 15,000 words. *VisiSpell*'s Spelling Memory feature remembers unique spelling and typing habits to help suggest the spelling that is most likely to be correct. The program highlights misspelled and repeated words, suggests correct spelling, provides global replace, and allows changes to be made with a single keystroke. List price: \$225. Requirements: 128K, one disk drive.

Script

Harper Business Systems
910 179th Ct. NE
Bellevue, WA 98008
206/643-9762

Script is a line-oriented word processor that imitates an IBM Selectric typewriter in use and formatting. The program has no word wrap or automatic hyphenation. Carriage returns must be inserted manually, but a document can be reformatted with justification. English commands process one or more lines at once, and there are no embedded controls. *Script* provides a search function, six different character sets, and stickers for the function keys. The program's optional printer controls enable the user to create boldfaced, underscored, and italicized text. List price: \$190. Requirements: 64K, one disk drive.

EinsteinWriter

Einstein Corporation
11340 W. Olympic Blvd.
Los Angeles, CA 90064
213/477-6733

EinsteinWriter is a menu-driven, split-screen word processor that can be used with the manufacturer's *EinsteinLetters* and *EinsteinSpeller*. The program provides move and copy between files, global search and replace, and deletion by character, word, line, sentence, and block. Other features include an undo function, separate wrap points for indentations, and seven stored format layouts. Printing features include microjustification, underline, boldface, italics, file chaining, and print spooling. A 200-word thesaurus comes with the program. List price: \$300, package including *Einstein Social and Civic Model Letters* and *EinsteinSpeller* \$399.95. Requirements: 128K, one disk drive.

EinsteinLetters

Einstein Corporation
11340 W. Olympic Blvd.
Los Angeles, CA 90064
213/477-6733

EinsteinLetters is a series of sample letter packages that you can copy and modify for your own use. The letters can be used interactively with *EinsteinWriter*, allowing you to create custom form letters automatically, or they can be used as text files with other word processing systems. A built-in extraction function enables you to copy a form letter's entire text, parts of the text, or the schematic outline only. The *Social*

and *Civic* series provides sample personal letters such as thank-you notes, wedding correspondence, and club announcements. The *Consumer and Employment* series presents model consumer complaints, letters to various political figures, and responses and solicitations. *Business Operations* includes standard business correspondence and consumer requests, and the *Business Operations II* package focuses on credit and collections. List price: *Social and Civic* \$49.95, *Consumer and Employment* \$69.95, *Business Operations* \$149.95, *Business Operations II* \$149.95. Requirements: 64K, one disk drive.

VisiWord

VisiCorp
2895 Zanker Rd.
San Jose, CA 95134
408/946-9000

VisiWord is a split-screen word processor compatible with the other VisiCorp programs, *VisiSpell*, *VisiCalc*, and *VisiFile*. When *Visi/ON* becomes available, *VisiWord* users will be able to trade in the old program for the new at an additional cost of \$50. *VisiWord* provides standard word processing functions as well as automatic reformatting, an undo command, headers and footers, global search and replace, and microspace justification. *VisiWord*'s document statistics function shows how many words are in a file. The program's print spooling capability lets you print one document while editing another. List price: \$375. Requirements: 128K, one disk drive.

Editor

Sunshine Computer Software Co.
1101 Post Oak Blvd. #9-493
Houston, TX 77056
713/552-0949

Editor is a full-screen text editor that provides full cursor control and enables users to define the IBM PC function keys. The program provides vertical and horizontal scrolling and a help function. Other features include search and replace, line numbering, and line number removal. List price: \$75. Requirements: 128K, one disk drive.

WES

WB Systems
137 Main St.
Westerly, RI 02891
401/596-1811

WES is a word processor that includes math, mail merge, and data base recall. The program provides word wrap, adjustable pagination, headers, and footers. *WES* includes macro language, and the company helps users write macro programs to format specialized documents such as invoices. List price \$495: \$295 by direct mail. Requirements: 64K, one disk drive.

Final Copy

TICOM Systems
13470 Washington Blvd. #207
Marina del Rey, CA 90291
213/827-7118

Final Copy is a menu-driven word processor and report generator with a built-in data base manager and calculator. The program provides bidirectional global search and re-

place, automatic word wrap, automatic indentation, an undo key, headers and footers, subscript and superscript, and chaining of printer files. Data processing features include data entry mode, stored data record layouts, stored formats, field formatting, and selective record processing. The calculator can act on equations embedded directly into text. List price: \$495; package including *Final Form* forms creation data base manager and *RemCon* communications program \$890. Requirements: 64K, one disk drive.

MediScript I

MediSoft
Medical Professions Bldg.
1595 Soquel Dr. #350
Santa Cruz, CA 95065
408/476-7106

MediScript I is a function-key-controlled word processor that allows you to create special character graphics from the IBM PC keyboard. The program provides underline, word wrap, justify, hyphenate, paragraph relocate, and word search. Data from the data base manager *MediScript II* can be merged with text from *MediScript I* to create form letters. The program has a 1000-line file size limit. List price: \$49.50. Requirements: 64K, one disk drive.

EasyWord Processing System

Norell Data Systems Corporation
3400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
213/257-2026

EasyWord Processing System combines *EasyEdit Text Editor*, *Easy-Text Format Processor*, and

EasyProof Spelling Checker into a single word processing system. The three programs are connected through a menu system. List price: \$149.95. Requirements: 64K, one disk drive.

EasyProof Spelling Checker

Norell Data Systems Corporation
3400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
213/257-2026

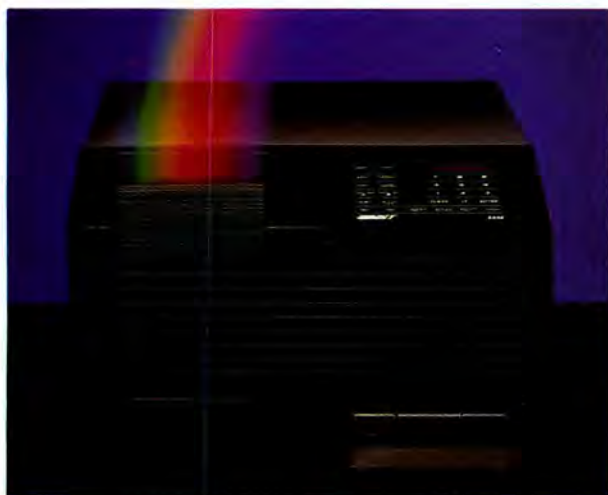
EasyProof Spelling Checker is a program that marks and lists misspelled words from most word processing text files. The program allows you to pass a word, add it to the dictionary, or mark it as an error. Editing must be done within the word processor. It uses a root dictionary and a list of common prefixes and suffixes. The program can recognize 50,000 English words. List price: \$49.95. Requirements: 64K, one disk drive.

EasyEdit Text Editor

Norell Data Systems Corporation
3400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
213/257-2026

EasyEdit Text Editor is a cursor-based text editor that provides split-screen and dual-file editing. The program allows you to insert or delete text by character, word, line, sentence, or page. It comes with bidirectional, global, and wild-card search and replace. The program enables you to use macro files to define the function keys and lets you create virtual file sizes. List price: \$79.95. Requirements: 64K, one disk drive.

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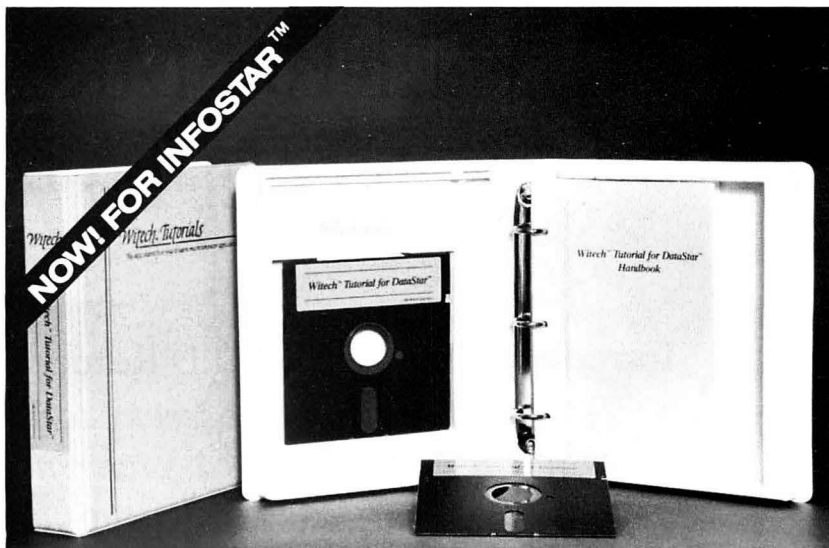
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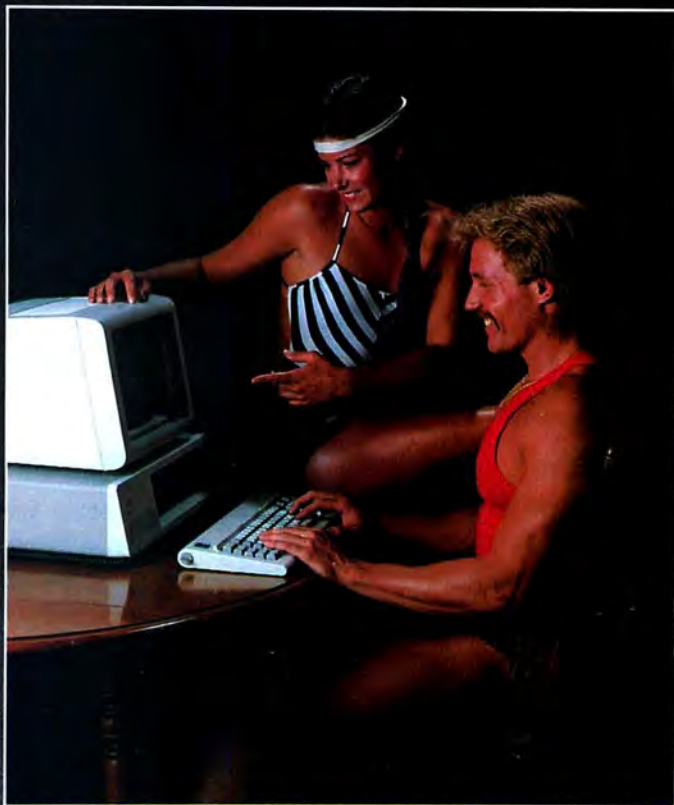
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Data Management

George Tate

When IBM first introduced the Personal Computer, data management software was one of microcomputing's better kept secrets. As software publishers and new computer users entered the microcomputer arena, data management software's reputation for organizing information grew. Realizing the importance of good information, computer users enthusiastically embraced these products in their effort to access the technology brought about by the information age.

Using information as an effective tool requires collecting, organizing, and translating general data into a knowledge bank that you can then apply to specific tasks and projects. Data management programs provide systems for accomplishing this process on the computer. The programs allow you to access information quickly and retrieve facts in whatever order you need them. You can sort a list of businesses in alphabetical order by company name, type of business, in zip code order, or by yearly sales revenue. When you want to add or delete information such as one of the businesses on the list, you edit the data base structure to accommodate changes. You can also produce specialized reports, and with some programs you can make calculations of numerical data.

Finding data management software to meet your needs should not pose a problem since many publishers offer general electronic filing systems or vertical products targeted for specific tasks such as keeping medical and dental records or real estate and insurance information. Software containing programming languages offers yet another option. With these products you can design your data base system to meet your own requirements while increasing the power of the system.

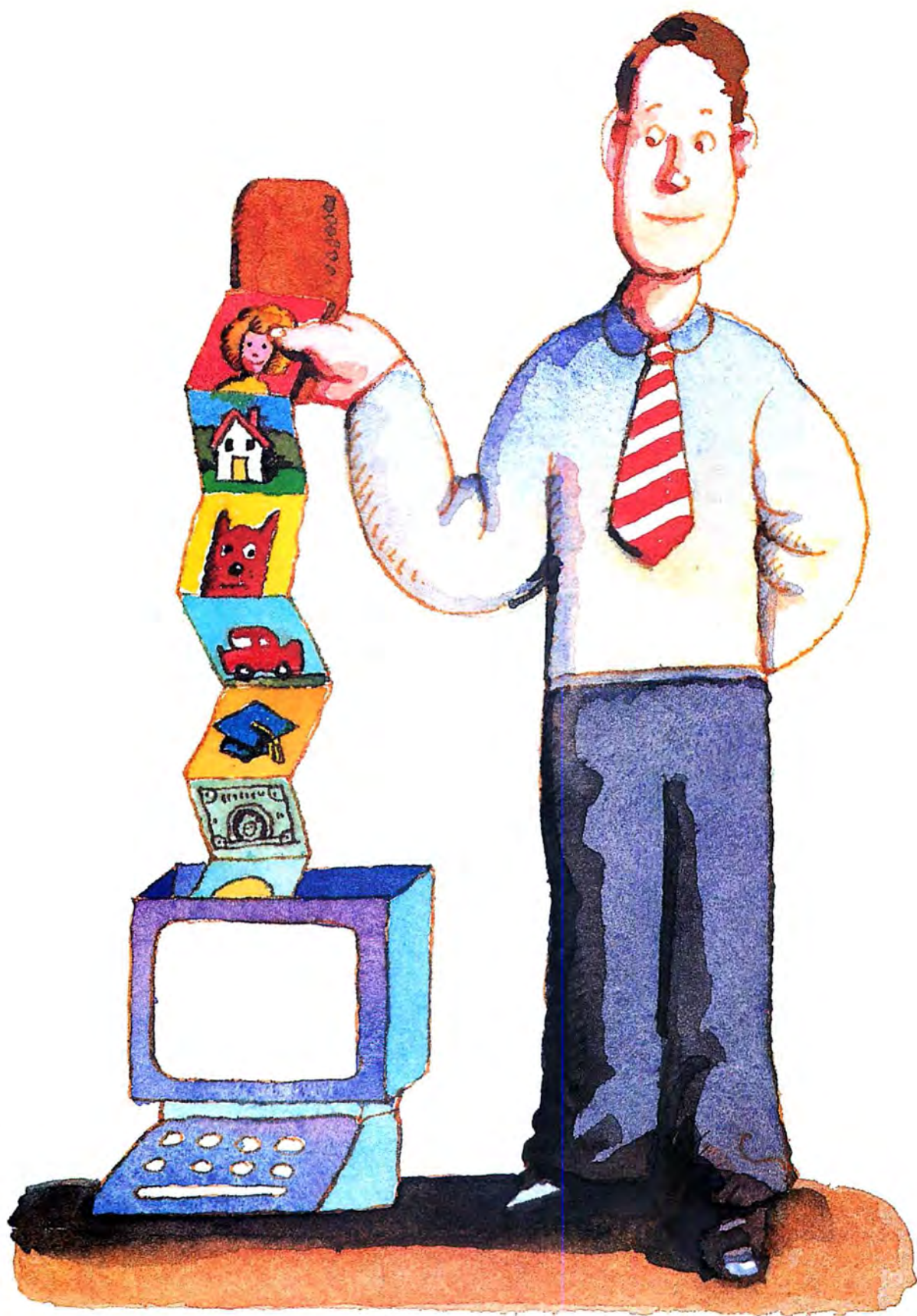
When you shop for software, it is imperative that you define your information management needs. Focus-

ing your attention on vertical products is appropriate if specific tasks are your primary concern. Simple electronic file management systems may meet your needs if you're interested in home and office productivity tools for routine filing and record keeping. Investigating a larger, more powerful product is necessary if your application requires inventory, job costing, or accounting capabilities.

Examine your long-range information management plans; if an easy-to-use system will restrict your future needs, opt for a more powerful system that will accommodate your changing situation. Thorough documentation and post-sale product support are essential components for any software, whether you are a new computer user or a long-time hobbyist.

Organizing information and effectively managing data are key to successfully piloting the information age. Data management software can perform an important role in extending the power of information. Be it main-frame interaction, integrated processing information, or electronic environment productivity, the popularity of data management software has yet to crest.

George Tate is the founder and chairman of Ashton-Tate, manufacturer of dBASE II.



FileMaster

N.F. Systems, Ltd.
P.O. Box 76363
Atlanta, GA 30358
404/252-3302

FileMaster includes a DIF extract function that allows selected fields and records to be extracted from a file and put in DIF format for export and use with a spreadsheet program such as *VisiCalc*. A DIF load function brings data from DIF files into new or existing *FileMaster* files in the program's required format. Users can select records with a single statement containing up to eight tests, including numeric and alphabetic ranges, matches, and nonmatches. Reports can have titles, dates, page numbers, column headings, subtotals, and totals. The program also permits users to pause during printing at the end of a page for single-sheet rather than tractor-feed printings. List price: \$125. Requirements: 96K, one disk drive.

DataEase

Software Solutions, Inc.
305 Bic Dr.
Milford, CT 06460
203/877-9268

DataEase is a relational data base system designed for beginners. The program is menu or command driven and accepts descriptive English-language instructions to create forms and generate reports. A forms editor and a report writer are built into the program for standard mailing list and label production. *DataEase* sorts, indexes, and processes multiple files. Files contain up to 65,000 records. No facility is provided for transferring system data

files to the program, but an export utility lets users transfer *DataEase* files to ASCII file format. List price: \$595. Requirements: 128K, two disk drives.

"*DataEase is easy to use for the novice.*" Arthur J. Matas, New York, New York

"*DataEase makes changing file structures and producing reports easy.*" Rob Harris, Brooklyn, New York

dBASE II

Ashton-Tate
10150 W. Jefferson Blvd.
Culver City, CA 90230
213/204-5570

dBASE II is a command-driven, relational data base system that has a built-in applications development language. Files are created, edited, appended, and modified with single, English-syntax commands. The program includes Boolean logic, string operators, relational comparisons, sums, subtotals and totals, sorting, and indexes for record selection. A limited report generator is built in, and reports are partially customizable. The applications development language helps you create customized reports, screens, and menus. *dBASE II* lets you import and export ASCII files. Files contain up to 65,535 records that can each have 32 fields of up to 254 characters. Each record can have a maximum of 1000 characters. Multiple files may be processed simultaneously. List price: \$700. Requirements: 128K, one disk drive.

"*You can do almost any data management application with dBASE II. Programming experience helps.*" Michael Mandell, Santa Fe, New Mexico

"*dBASE II has poor documentation and the report forms can't be edited, but the program offers powerful file editing features.*" Robin Lamb, Vancouver

"*Editing is easy, and the program has a variety of methods for record selection, but the manual is complicated.*" Ira Goldman, San Francisco, California

Data Plotting Software

Kern Publications
P.O. Box 1029
Duxbury, MA 02332
617/934-0445

Data Plotting Software is a data management package that provides building blocks for creating customized data management programs. These programs may include output for data plotting and chart production. The disk has program modules written in BASIC for the IBM PC, and an accompanying book tells you how to put modules together to create data management programs. The program is most useful for engineers, statisticians, data analysts, and scientists who need to manage and process data. A knowledge of programming is helpful. List price: disk \$19.95, book \$28.50. Requirements: 64K, two disk drives, color graphics board.

"*Data Plotting Software is very useful for analyzing lab test data. A good mathematics background is necessary to use the program.*" Hung-Yi Pao, Indianapolis, Indiana

Supermail

Professional Software Assoc.
5353 Wayzata Blvd. #407
Minneapolis, MN 55416
612/541-0742

Supermail is a list manager that allows users to enter address information and print mailing labels simultaneously. An on-line help screen displays U.S. Postal Service approved state abbreviations. Input fields are fixed and include first and last names, double-address, city, state, zip code, and phone number. The program also has five user-definable fields. Two additional fields show the number of times each record has been printed and the most recent printing date. Users can sort and select by specified fields and can print master list reports from records in the file. List price: \$89.95. Requirements: 64K, one disk drive.

MicroRIM

MicroRIM, Inc.
P.O. Box 585
Bellevue, WA 98009
206/453-6017

MicroRIM is a relational data base management system that evolved from and is compatible with the mainframe data base management system RIM. Files are transportable from the IBM PC to mainframes so that data may be entered, edited, and processed at the microcomputer level. Five relational commands manage the interaction between files: intersect, join, union, project, and subtract. The program is command driven, and input screens for data entry are defined by users. Reports can have headings, subtotals, and totals. List price: \$595. Requirements: 256K, two disk drives.

Revelation

Cosmos, Inc.
123 Ferntree Dr. W
P.O. Box AH
Morton, WA 98356
206/496-5974

Revelation is a system that includes statistical tools such as scientific notations and logarithmic functions for manipulating data. The program's design is patterned after the PICK system design available on minicomputers. Applications created with *Revelation* are compatible with software running on minicomputers under the PICK operating system. A communications option called R/NET is also available from the manufacturer and allows asynchronous telecommunications of data from IBM PC to PC and from PC to mini or mainframe computers. *Revelation* automatically documents applications it develops. It includes a data dictionary, error checking, and a report generator. List price: \$950. Requirements: 320K, two disk drives, Intel 8087 processor.

"Revelation is extremely powerful when understood. It is for those who need a serious DBMS. Users need knowledge of the PICK systems for Revelation to be truly effective."
Kent Phelps, Englewood, Colorado

Sunmail

Sunward Systems
655 W. Irving Park Rd. #5203
Chicago, IL 60613
312/935-5702

Sunmail prints multiple-page form letters, reports, envelopes, directories, and one-up to four-up mailing

labels. Labels can be pressure sensitive or cheshire style. You can use an unlimited number of codes for each record. The program uses the ISAM format for sorting on record codes. Date validation is included during data entry. Reports are limited to 80 columns. With a hard disk the program lets you create up to 32,000 records per file. List price: \$99. Requirements: 96K, one disk drive.

"Sunmail's record selection is fast. The program works best on a hard disk since floppy disks hold only 300 records." Richard Suter, Chicago, Illinois

dBASE Window

Tylog Systems, Inc.
9805 S.W. 152nd Terrace
Miami, FL 33157
305/253-5942

dBASE Window is an applications generator for use with *dBASE II*. You can use multiple *dBASE II* files with *dBASE Window* and simultaneously process up to five indexes per file. The free-form report generator helps you create menus, messages, and report formats on screen. The program automatically generates the applications program to produce the screen or report for file processing. *dBASE Window's* maximum horizontal line consists of 160 characters. The menu-driven program includes an interactive query language for record selection and is designed for nonprogrammers. List price: \$249. Requirements: 128K, one disk drive.

Labels

Software Solutions, Inc.
P.O. Box 301
Muscatine, IA 52761
319/264-1384

Labels is a mailing system for large mailing lists and provides fast searching and retrieval of records. In an 8000-record file, retrieval of a single record takes about 3 seconds. Files hold up to 32,757 records with predefined fields. The name field has 25 characters, address fields have 20 characters for each line, the zip code field has 9 characters, and the phone number field has 14 characters. Users can define four additional fields for each record. Alpha or numeric sorting as well as conditional selection can be applied before processing. The report generator prints one-up to four-up labels or a master list of selected records. List price: \$895. Requirements: 64K, hard disk.

Mailing List I

Alphanetics Software
P.O. Box 339
Forestville, CA 95436
800/321-5346, 707/887-7237

Mailing List I has prestructured fields for addressee information including phone number, attention line, date, and 10-digit zip code. Users can select records for list or label printing for any of the address fields. The program sorts in machine language and prints single- or double-width labels on Epson and IBM printers. List price: \$39.95. Requirements: 64K, one disk drive.

Knowledge Man

Micro Data Base Systems, Inc.
P.O. Box 248
Lafayette, IN 47902
317/463-2581

Knowledge Man integrates data base management, spreadsheet analysis, and applications development. Users create data base files with read/write access codes specified for a particular file or its record fields. A query language lets you select data by logical and conditional operators or wild-card strings. The spreadsheet feature enables you to enter formulas for fields in the data base files. Screens defined for data entry include error checking, special effects such as inverse video and free-form field placement. For advanced users the program includes a structured language for creating and executing procedures including arithmetic and logical operations and IF...THEN...ELSE type control structures. List price: \$500. Requirements: 192K, two disk drives.

"Great features, but Knowledge Man won't read dBASE II files directly."
Lawrence H. Muhlbaier, Durham, North Carolina

MDBS III

Micro Data Base Systems, Inc.
P.O. Box 248
Lafayette, IN 47902
317/463-2581

MDBS III is a modular system for the experienced applications developer. Options include a data description language that allows hierarchical, relational, and network structuring of data base files and includes an automatic recovery mechanism. A query/retrieval option lets you define

standard reports and screens. An interactive data manipulation language enables nonprogrammers to select and process data in files easily. A menu-driven design modification utility permits the modification of file structure, file size, and security settings such as password control over fields. Another option enables users to create screens for input and editing. A communications system that allows data transfer among mini-, micro-, and mainframe computers is also available. List price: single user \$2200, options at additional cost. Requirements: 128K, two disk drives.

"MDBS III is the best micro data base system I've seen for experienced programmers." W. A. Johnson, Scotia, New York

microIPF

Control Data Corp.
8100 34th Ave. S
Bloomington, MN 55440
612/332-1065

microIPF is a data management system that includes an integrated graphics subsystem for generation of bar, pie, and line graphs, and a communications component for transmission of files between the IBM PC and Control Data computers. Files created on the PC may be edited and communicated to the mainframe or mini for processing or network distribution. The program has a spreadsheetlike calculator that allows formulas to be stored within fields. When a formula is changed, all fields containing the formula are automatically updated. Error checking and

range checking are two field validation attributes of the program. Reports may have headers, footers, and automatically numbered pages. Formats for reports are defined by users. The maximum number of records per file is determined by disk space. List price: \$500. Requirements: 128K, two disk drives, color graphics board.

Data Base Manager II

Alpha Software Corporation
12 N.E. Executive Park
Burlington, MA 01803
800/451-1018, 617/229-2924

Data Base Manager II—The Integrator is distinguished by its ability to transfer data in a completed format to and from spreadsheet programs such as *VisiCalc*, *1-2-3*, *Multiplan*, and *SuperCalc*, and word processing programs such as *WordStar*, *Volks-writer*, and *EasyWriter II* that use standard ASCII files. The program is menu driven and has a built-in form letter generator and calendar. Users design reports by using menu defaults or overriding defaults with customized specifications. The number of records in a data base file is limited by the user's disk capacity. Each record allows up to 40 fields with 60 characters per field. File structures can be easily modified. Sorting, summing, and subtotaling capabilities are included. While only one file can be opened for processing at a time, multiple files can be merged prior to processing. List price: \$295. Requirements: 128K, two disk drives.

RunTime

Ashton-Tate
10150 W. Jefferson Blvd.
Culver City, CA 90230
213/204-5570

RunTime is an applications development module for use with *dBASE II*. The module allows software developers to design and sell their own *dBASE II* applications. *RunTime* includes the dBCODE program, which condenses applications code and guards against unauthorized reading of or tampering with the code. Another *RunTime* program, dBRUN, enables users to execute *RunTime* programs without accessing the *dBASE II* dot prompt. Technical instructions are provided for producing applications, as are serialized disk labels, software license agreement models, and the option of having Ashton-Tate review software developers' *RunTime* applications programs. List price: each package \$100; minimum purchase of five packages required, quantity discounts available. Requirements: 64K, two disk drives, *dBASE II*.

V.I.P. Mailer

SimSoft, Inc.
P.O. Box 7095
Port Huron, MI 48301
313/984-1570

V.I.P. Mailer is a list manager that allows name, address, and customer information to be stored in files. One-up mailing labels can be printed from selected records in a file. Also, names and addresses along with customer information can be printed on 3- by 5-inch cards. The program enables users to add, delete, and modify records. List price: \$40. Requirements: 64K, one disk drive.

BitsBase

Boeing Computer Services Co.
2800 160th Ave. SE
Bellevue, WA 98009
206/763-5636

BitsBase is a relational table system for data base management that is command driven by simple English-syntax commands. The table structure allows viewing of data in a variety of sequences without sorting because indexes are built into the table during the creation of a file. Eighteen commands and five qualifying clauses make up the command language with which users edit and select information from the files. A full-screen editor is included, but a report writer feature is not yet implemented. List price: \$400. Requirements: 64K, two disk drives.

List Manager

Peachtree Software, Inc.
3445 Peachtree Rd.
Atlanta, GA 30326
404/239-3000

List Manager produces files that can be transported without modification between MS-DOS and CP/M-80 through standard telecommunications methods. The program works with Peachtree Software's word processing program *PeachText* to produce form letters. Each file holds up to 32,000 records with 14 fields per record. Three key fields may be assigned and indexed automatically during data entry and editing. Conditional selections may be made for record processing. The report generator does not allow headers, footers, or automatic page numbering. List price: \$250. Requirements: 128K, two disk drives.

UltraFile

Continental Software
11223 S. Hindry Ave.
Los Angeles, CA 90045
213/410-3977

UltraFile combines file management, report writing, and graphics capabilities in one program. Browsing backward and forward through files is permitted as well as selecting records for display or printing. Selected records may be highlighted on screen, sorted, calculated, and formatted. The graphics component allows data to be configured in three-dimensional bar, circle, or area graphs. Graphs may be manipulated for financial projection. List price: \$195. Requirements: 128K, two disk drives.

Info-Gen

Info-Pros, Inc.
2102 Business Center Dr.
Irvine, CA 92715
714/851-8975

Info-Gen is a data manager that processes standard BASIC files. Applications software written in BASIC can also use *Info-Gen* to collect data for input and output purposes. The program has menu-driven steps so that beginners can create, edit, and report files. Users can also design data entry screens. Sum totals and subtotals and simple calculations may be performed on field data. A limited report writing capability is included. List price: \$245. Requirements: 64K, two disk drives.

Info-Reporter

Info-Pros, Inc.
2102 Business Center Dr.
Irvine, CA 92715
714/851-8975

Info-Reporter is a menu-driven report writer that works with any standard BASIC file. The program reads a BASIC file and writes a report based on the data in the file, or it can be used by a BASIC program to produce a report as part of the overall applications program. *Info-Reporter* may be used with *Info-Gen* to produce report formats more complex than those *Info-Gen* produces. Two or three files may be used at once with specified data fields selected for the report output. Help screens display all report format options. List price: \$125. Requirements: 64K, two disk drives.

TIM III

Innovative Software, Inc.
9300 W. 110th St. #380
Overland Park, KS 66212
913/383-1089

TIM III (Total Information Management) is a menu-driven system that works with word processing and spreadsheet programs. Selections are available for up to ten criteria, and output can be sent to screen, disk, printer, or files. Global search and update are permitted. Function keys are used in editing for operations such as field deletion and automatic date entry. Several files may be linked for reports, and reports can contain subtotals, totals, and averages. A list generator prints one-up to four-up mailing labels. List price: \$495. Requirements: 128K, two disk drives.

"TIM III is a large-capacity DBMS with very fast sorting and performance." Steven Reisman, Jamaica, New York

"The program allows files to be merged and fields to be calculated for reports, but the manual is difficult to understand." Hung-Yi Pao, Indianapolis, Indiana

"Transfer of data from TIM III to WordStar is a snap. The menu-driven software is very easy to use." Martha Haines, Morristown, New Jersey

"TIM III has no programming capabilities, so its file manipulation capabilities are limited. Color monitors are not supported." Susan McGlynn, Irvine, California

Versaform

Applied Software Technology
170 Knowles Dr.
Los Gatos, CA 95030
408/370-2662

Versaform allows free-form screen design of single- or columnar-item fields for transactional processing. A field in which to store telephone number information can include two or three phone numbers. Records may be designed with error-trapping features and automatic filling of field information. The report generator is oriented toward typical business forms and can be customized to accommodate special report formats and preprinted forms such as checks. Printouts may be up to 200 characters wide. Only one file at a time may be open for processing. List price: \$389. Requirements: 128K, two disk drives.

Accept no substitutes.

If you're looking to buy a dBASE-like system, you'll really like dBASE II®

dBASE II is the relational database management system (DBMS) we introduced to the microcomputer world in 1980. It was the best, most powerful and easiest-to-use database management system available.

It still is.

You'll wonder how you managed without it.

Because it's so powerful yet so easy to use, dBASE II has become the standard for managing data with a microcomputer.

Doctors and lawyers, accountants and salespeople, stockbrokers and students, big businesses and small are all managing their data better with dBASE II. Books have been written about it. And other microcomputer data handling programs measure themselves against what dBASE II can do.

dBASE II turns data into a company resource.

dBASE II starts where file handling systems (such as our own Friday!™) leave off.

You get a running start on your business solutions because dBASE II includes a complete hands-on tutorial. You can quickly and easily create a full business information system because all of your data is at your fingertips. Using English-like commands, you add, delete, edit, display, print and manipulate your information.

Once you've decided on what you want done, you save the instructions so that even your least experienced personnel can perform the most complex business functions with two words: *Do Invoices*, *Do Payroll*, *Do anything that needs to be done*.

Your data and your programs are independent, so you can change one without changing the other; in fact, change the way you do business without destroying what you've done.

And dBASE II even simplifies conversion from your present system, and can handle data from other programs, or create files that other programs can use.



It's the most advanced information management tool available for your microcomputer. And it's only \$700 (suggested retail price).

The best selling DBMS known to man.

dBASE II struck a responsive chord in the business community when it was introduced and quickly became the best selling database management system made for any computer, micro or mainframe.

To see why, drop by your nearest computer or software store and ask for a demonstration. Then take a package home and use it for 30 days. If it's not everything we said it was, return it and get your money back.

But we think you'll keep it.

Can over 150,000 users be wrong?

Ashton-Tate, 10150 West
Jefferson Boulevard, Culver City,
CA 90230. (213) 204-5570.

ASHTON-TATE ■

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dBASE II is a registered trademark and Friday! is a trademark of Ashton-Tate.

Circle 335 on reader service card

IF YOU'RE CONSIDERING CONSIDER

As a knowledgeable personal computer user, you know that there's a world of difference between first generation software products and second. (Think of VisiCalc™ and Lotus 1-2-3™ for example.)

It's the difference between setting standards. And then raising them.

INTRODUCING R:BASE™, FROM MICRORIM™.

R:base is the new generation of relational database software. With a combination of capacity, speed and transportability that today's more powerful PC applications need. (Check out the comparisons.)

Not only that, R:base is much simpler to use and learn. So your applications are up in days, instead of weeks. And anyone—computer literate or not—can enter and view data, and generate reports. Just what you would expect from a second generation product.

MANAGING A DATABASE. CONVENIENTLY.

With R:base, it's simple. A series of prompts guides you every step of the way. Which means you don't have to be a programmer to create data entry or report forms just like the ones you're used to using.

As you become more proficient, you'll create shortcuts by customizing menus of stored commands. And print reports

W2 EMPLOYEE WAGE AND TAX STATEMENT

Control number: Company ID: 91-3262143

Company State Number: 00631

Enter Company name and address:

XYZ Printing Co.
1920 115th NE
Bellevue WA 98004 Status:

Enter Employee name and address:

Susan Duncan
433 California St., San Francisco, CA 94104
Social Security Number: 502-85-8880

Wages, other compensation: FICA Wages:
Fed. Income Tax Withheld: FICA tax withheld:

Any form, from a standard W-2 to your company's own invoices, can be created on the screen without any programming at all—a few simple prompts is all it takes.

as simple or complex as you like at the touch of a key. With R:base, prompted, ad-hoc queries and customized report formatting become the reality that first generation products could only promise!

R:base is also very forgiving. It's very hard to make a mistake. That's because commands are simple English expressions—like SELECT, PROJECT, WITH, WHERE, FROM, etc. Dates and dollar amounts are written normally: 11/16/83;

	MAXIMUM RECORDS/ DATABASE	FILES AVAILABLE CONCUR- RENTLY	MAXIMUM NUMBER FIELDS/ DATABASE	TIME TO SORT 1000 RECORDS* (MIN: SEC)	UPDATE MULTIPLE FILES CON- CURRENTLY	PRICE (LIST)
R:BASE 4000	100 billion	40	400	0:59	Yes	\$495
dBASE II	65,535	2	32	5:47	No	\$695
CONDOR	32,768	2	127	2:03	No	\$650

*Sort 1000 records on 1 key value. (IBM PC with 256K and DS/DD diskettes)

PURCHASING dBASE II, THIS FIRST.

E(edit), R(relation list), A(tribute list), S(select), Q(uit)

SELECT is used for ad hoc queries from a relation.

What is the name of the relation? EMPLOYEE

Enter the word ALL to display all attributes or a

list of attributes if you want selective attributes.

Enter ALL or a list: EMP_NAME EMP_SS SALARY DEPT

Enter the attributes to be used for sorting.

(this is optional)

Attribute list: **DEPT**

What conditions must be met? (this is the optional WHERE clause)

WHERE

SELECT emp_name emp_ss salary dept FROM employee SORTED BY dept

EMP_NAME	EMP_SS	SALARY	DEPT
GEOFF SMITH	501-87-9021	\$2900	ACCOUNTING
AL RIDER	543-67-8962	\$3100	ACCOUNTING
NICOLE JONES	507-43-9837	\$3400	ADVERTISING
BILL MURPHY	508-34-2175	\$4000	MARKETING
SALLY ROSS	507-74-5652	\$2400	MARKETING
SUSAN DUNCAN	502-65-8330	\$2700	PERSONNEL

New users can also choose to have command prompting. All you do is answer a sequence of plain-English questions by filling in reversed-out fields. R:base does the rest.

And here's your list. Notice that the command formed by "filling in the blanks" on the previous screen is written out to teach new users about R:base.

\$500.00. And, because data entry verification rules are defined up front, you just can't put any "garbage in"—even if you try!

What's more, R:base allows you to sort and select data on up to ten different criteria, perform totals, and then display the results—all with a single, powerful command (see screens).

QUESTIONS? ASK FOR HELP.

The R:base HELP feature provides detailed information that describes every command and process required for complete mastery of the database. (As does our plain-English documentation.) For example, if you're not sure what SELECT does, simply key in HELP SELECT and R:base will tell you what the command does, how it works, even the proper syntax. This way you don't have to keep referring back to the user manual—it's all right there in front of you.

R:base + MULTIPLAN™ = POWER.²

Unlike first generation microdatabases offering the "amazing" capacity of one file and some 60,000 records, R:base literally blows the lid off database size. You may never create an application using forty files with 100 billion records. But with R:base, you can.

Now imagine being able to tap all that power in conjunction with one of the most popular spreadsheet programs on the market today: MultiPlan. R:base is fully compatible with MultiPlan, so you can zip back and forth between programs without cumbersome file manipulation.

THE R:base PRODUCT FAMILY.

R:base™ 4000 is a single-user relational database (MS-DOS™

version is list \$495). R:base™ 6000 is a multi-user version, available early 1984. In addition to MS-DOS, both packages will also be available in CTOS™ with UNIX™ to follow.

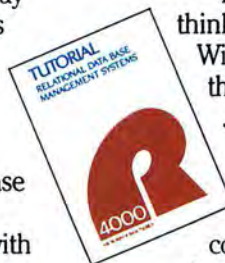
The optional extended ReportWriter™ provides enhanced reporting and calculating capabilities (MS-DOS version is list \$150). Program Interface™ is a set of subroutines which allows direct database access from PASCAL or FORTRAN programs (MS-DOS Version is list \$395).

And what happens if you've already got dBASE II? Not to worry. It's easy to transfer your files to R:base.

FULL DEMO PACKET, \$9.95.

Does all this sound too good to be true? If you think it does, let us prove to you that R:base is for real. With a comprehensive tutorial and demo diskette that will give you convincing hands-on experience. Just call our order desk at (800) 227-6703 (in California, 800-632-7979) and have your VISA or MasterCard number handy.

Better yet, hurry over to your nearest computer or software retailer for an eye-opening demonstration.



MICRORIM™

Relational Information Management

Microrim, Inc.

1750 112th N.E.

Bellevue, WA 98004

Circle 505 on reader service card

MIS Builder

American Planning Corporation
4600 Duke St. #423
Alexandria, VA 22304
800/368-2248, 703/751-2574

MIS Builder is an upgradable system made up of a data management program, screen-formatting and applications development utilities, and APC BASIC system software. The menu-driven data management program includes B-tree indexing, password security, multiple file processing, error checking, and a simple report generator. Selections are made through conditional, relational, and logical operations. Optional utilities provide enhanced screen-formatting capabilities for designing menus and input screens and an applications development component. Advanced applications developers can purchase APC BASIC system software for use with the data management program and utilities in developing integrated applications. List price: data base \$495, utilities \$295, APC BASIC \$100. Requirements: 128K, one disk drive.

OmniBase

Conceptual Software, Inc.
P.O. Box 56627
Houston, TX 77256
713/667-4222

OmniBase allows unlimited numbers of variables in a record, characters in a record, records in a data base, files that may be merged, and variables in a sort operation. File structures such as field and record lengths are automatically formatted as users enter



and edit record information. The program features a full set of trigonometric and logarithmic functions appropriate for scientists and engineers. Formula calculations, such as determining probability, are accessible. Conditional and unconditional branching and looping commands facilitate record selection for processing. *OmniBase* works with graphics, statistics, and accounting packages from Conceptual Software. The program also runs under the UNIX operating system. List price: \$720. Requirements: 128K, two disk drives.

"The amount of RAM you have determines how complex your application can be. The data manipulation language provides an environment like that of SAS [Statistical Analysis System, available on mainframes] for science and engineering." Anthony S. Akins, Freeport, Texas

Notebook

Digital Marketing Corp.
2363 Boulevard Circle #8
Walnut Creek, CA 94595
800/826-2222

Notebook is distinguished by its ability to store up to 32,000 characters in a record. Each record can have a maximum of 20 fields, and each field contains up to 4000 characters as long as the maximum number of characters per record is not exceeded. Field space is dynamic: no fixed amount of space is stored according to field size specifications; disk space is thereby saved. The program uses *WordStar*-type commands, keyboard cursor-control keys, and full-screen editing. Relational operators assist in the selection of records for processing. Reports are limited to 80-column formats. All commands are displayed at the bottom of the screen during program use. List price: \$150. Requirements: 128K, two disk drives.

Maillist

Omni Software Systems, Inc.
146 N. Broad St.
Griffith, IN 46319
219/924-3522

Maillist provides list management and sorts 1000 records in 5 seconds. Fields for data input are of fixed lengths. In addition to name and address fields, an attributes field is available that includes up to 21 single-character items for selection. The program prints one-up labels and master lists. List price: \$150. Requirements: 96K, two disk drives.

LogiQuest III

Software Products Intl. (SPI)
10343 Roselle St., Ste. A
San Diego, CA 92121
619/450-1526

LogiQuest III is a relational data base management system that works with SPI's family of applications, including spreadsheets, graphics, accounting, and word processing. The program uses a query language to communicate with the data base and to perform processing operations. Relational and logical operators may be used to select records in a file. Up to five files may be processed at once. Masks for data entry are created on a blank screen. Each mask may comprise up to eight pages. Range checking and other field validation functions may be designed for use during data entry. Password protection for specified fields is also available. Standard report formats are supplied, or users can create unique formats containing headers and footers and automatic page numbering. Subtotals, totals, averages, and maximum or minimum values may be reported for math fields in the file. Users can also perform calculations on fields from one or more files with results entered on the report. List price: \$550. Requirements: 64K, two disk drives.

"LogiQuest III includes extensive utilities support and password protection. The program does not run with disk emulators." Larry G. Dighera, Santa Ana, California

"LogiQuest III has powerful, attractive features, but poor documentation and the lack of sufficient error trapping limit its usefulness." Kim Davis, Commack, New York

"The program uses a subset of IBM's Structured Query Language (SQL) and is easy to learn and use because of the power of SQL. Moving data to SPI's LogiCalc is not as easy as it should be." Richard Lantz, San Francisco, California

Member

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
913/843-5863

Member is a mailing list program designed to handle mailings for clubs and groups. The program flags memberships about to expire and prints renewal notices and membership forms. In addition to standard name and address fields, the program allows up to 64 characters of supplemental information about each addressee. Up to 1000 names and addresses may be included in one list. List price: \$35. Requirements: 64K, two disk drives.

Mail Master

Micro Research, Inc.
6938 S. Yukon Ct.
Littleton, CO 80123
303/973-5289

Mail Master is a list manager that runs with several popular word processing programs including *Mail-Merge*, *EasyWriter I and II*, *Benchmark*, *Volkswriter*, *Word PC*, and *WordStar*. Fields for data entry are predefined except for a four-character, user-defined code that supplements addressee mailing

information. Zip codes and state abbreviations are validated automatically during data entry. All selections for record processing are made by menu. A program feature produces mailing labels and lists, and a utility allows records to be copied or moved between disks. The utility also has a recovery program for files damaged during disk handling or power failure. List price: \$120. Requirements: 128K, two disk drives.

Formula II

Dynamic Microprocessor Associates
545 Fifth Ave.
New York, NY 10017
212/687-7115

Formula II consists of building-block structures for the creation of files, menus, reports, and data processing operations. Users give instructions that allow the program to set up files and file interrelationships. In addition to enabling users to create and report on files, the program allows job streams to be set up so that menus may be linked for a particular processing operation. Data entry operators can then perform jobs that might include data entry and report writing by accessing one set of linked menus. A format report module allows screen and report formats to be designed on blank screens. Text highlighting, underlining, and pagination are provided. A query language facility allows access and manipulation of data in English commands. The program works with word processors and electronic spreadsheets. List price: \$695. Requirements: 64K, two disk drives.

Qbase

Applied Software Technology
170 Knowles Dr.
Los Gatos, CA 95030
408/370-2662

Qbase includes a report generator with a mailing list utility and several error-checking features to control the accuracy of data entered and edited in a file. The report generator can display or print information in a fixed format. Headers, footers, and page numbers may be included. Conditional selection of record information can be made for report output. Sorting is performed on up to three keys, and subtotals and totals can be solicited from selected information. Error-checking parameters can be designed into the record structure. The maximum number of records in a file is dependent upon disk space. List price: \$189. Requirements: 128K, two disk drives.

Questext III

Information Reduction Research
1538 Main St.
Concord, MA 01742
617/369-5719

Questext III is a menu-driven system for storing and retrieving information. The system is organized into treelike structures; each of the four levels in a tree structure holds up to 99 text lines, and each line can contain up to 65 characters. Each level in which text is entered becomes a menu, and each line of text on the menu makes up a menu selection. Successive levels become submenus. Users create the tree and a hierarchical structure of data by using the four category levels to create increasingly detailed text menus. Lev-

els may also be structured as questions and answers for educational applications. Functional applications include electronic question answering, electronic teleprompting for presentations, scheduling and planning, and inventory systems. Templates can be created and stored for data retrieval. Reports can be printed from tree nodes or from the entire tree structure. List price: \$299.95. Requirements: 96K, one disk drive.

Control RDBMS

Phase One Systems, Inc.
7700 Edgewater Dr. #830
Oakland, CA 94621
415/562-8085

Control RDBMS is an applications development system that includes a screen-generating program and a query language module. The screen generator (Screen) enables users to design data entry screens with error checking, help messages, field validation, and case conversion features. The query language module (Access) lets you control data bases with record locking in multiuser environments so that multiple users can query the same file without corrupting the data in it. Access includes a data dictionary and report formatting with totals, subtotals, headers, and footers. A sort program included with *Control RDBMS* sorts by character or field specification. Users can purchase two options with the program for structuring multi-page data entry screens and customizing report formats. Requirements: 512K, hard disk, Oasis 16 operating system.

Dataflex

Data Access
4221 Ponce de Leon Blvd.
Coral Gables, FL 33146
305/446-0669

Dataflex is a single- or multiuser relational data base with applications development features. As a core program, the data base manager enables users to create, update, query, and obtain reports on files. Twelve files can be open at the same time. The applications development module allows screen development, which includes error checking for data entry and customization of report formats. The program includes a data dictionary. List price: single user \$995, multiuser \$1250. Requirements: 128K, two disk drives.

"Dataflex requires lots of disk access and memory. It is flexible and cuts applications development time by two-thirds." Jay Robinson, Burlington, Vermont

Sequitur

Pacific Software Manufacturing Co.
2600 Tenth St.
Berkeley, CA 94710
415/540-5000

Sequitur is a table-oriented data base system that performs operations such as selection, sorting, and joining with the aid of an on-screen model of the data base. When the model is displayed, the cursor can be moved to the field(s) where the operation is to take place, and criteria can be entered for the selection, which is then performed automatically. *Sequitur* can display a data base in either table or row style. Fields vary in length up to several pages. List price: \$795. Requirements: 256K, two disk drives.

Next Systems' Manager's Data Base

Next Systems, Inc.
P.O. Box 2671
Toledo, OH 43606
419/475-0099

Next Systems' Manager's Data Base helps users access data through sorts and relational, logical, and conditional selections. Field entries may be repeated from one record to the next with one keystroke. Help files are on line. File size is limited to disk space with records allowing up to 252 characters each and up to 40 fields. The program is written and compiled in MBASIC, and the manufacturer provides a large portion of the source code to users. List price: \$125. Requirements: 128K, two disk drives.

Perfect Filer

Perfect Software
702 Harrison St.
Berkeley, CA 94710
800/222-4222, 415/527-2626

Perfect Filer has two types of record structures for files: one with prestructured fields for standard mailing list maintenance and one with fields defined by users for customized files. A Filer program generates form letters, mailing labels, reports, and sorted lists. A Move program enables you to transfer record data between data bases. *Perfect Filer* can be used with *Perfect Writer*, also available from Perfect Software. List price: \$495. Requirements: 128K, two disk drives.

Btrieve™

A b-tree based record retrieval system designed to solve all your application's database needs.

- interfaces to BASIC, Pascal, COBOL and C
- multi-key access to any number of files
- duplicate and modifiable keys
- unlimited number of records per file
- built-in file integrity controls
- unsurpassed access speed
- efficient memory utilization

Compare Btrieve's capabilities to any record management or ISAM system available and we are convinced that you will select Btrieve. Write or call for details today. \$145.00

Reader Service #173

SoftCraft Inc.

Requires PC-DOS.

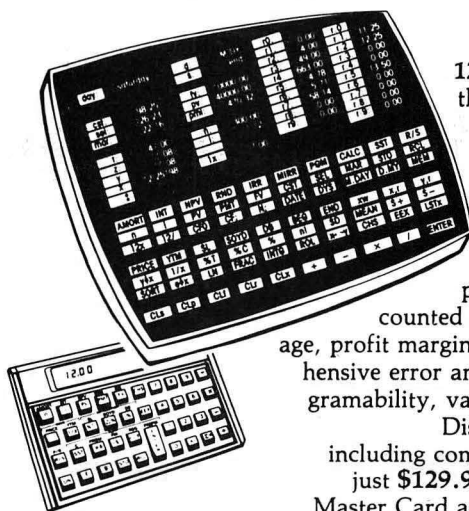
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PC-DOS is a trademark of International Business Machines Corp.

P.O. Box 9802 #590 Austin TX 78766
(512) 345-8380

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Finance 12Q provides compound interest, amortization, discounted cash flow, depreciation, percentage, profit margin, on-line help screen for comprehensive error and command reporting, user programmability, value annotations and much more.

Diskette programs for the IBM PC, including comprehensive, easy-to-use manual, just \$129.95. Call (703) 385-6450. Visa and Master Card accepted. Dealer inquiries invited.

Specific calculation capabilities include:
Net Present Value (NPV) / Modified Internal Rate of Return (MIRR) / Present Value / Future Value / Payment Amount / Number of Payments / Interest Rate / Odd-Period / Gross Profit Margin (GPM) / Selling Price / Cost / Amortization / Depreciation / Straight-Line / Sum-of-the-Year-Digits / Declining-Balance / Bond Price / Bond Yield / Mean / Standard Deviation / Weighted Mean / Linear Estimation / and more...

MicroQ Incorporated
3843 Plaza Drive / Fairfax, Virginia 22030

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Pony Express Mailing Program

BK Services, Ltd.
418 Yeshiva Plaza
Lakewood, NJ 08701
201/364-3005

Pony Express Mailing Program is designed to produce mailing lists and labels. Files can contain from one to several thousand records, depending upon disk space. When records in one file are updated, several other files containing duplicate information can be automatically updated with multiple correction and multiple deletion features. Title codes are included so that titles such as Mr. and Ms. can be entered with a single keystroke. An auto-repeat command duplicates field entries from record to record. Labels may be printed in one- to five-up or cheshire-style formats. Master-list printings may be in a single-line-per-record or label-style format on 80- to 132-column paper. Sorting may be done by name, zip code, or address. Records may be selected for printing by record number, zip code, or zip code range. List price: \$169. Requirements: 64K, one disk drive.

Personal Data Base II

SuperSoft Inc.
P.O. Box 1628
Champaign, IL 61820
217/359-2112

Personal Data Base II is a menu-driven program that creates tree-structured files and allows users to define screen forms for data entry and editing. Record searching may be performed on up to three fields in one pass, and sorting on two fields may be performed in ascending or descending order. The program al-

lows global entry and replacement of field items. The report generator allows output of up to 80 characters per line. Included in the output capabilities is a two-up mailing label generator. Cursor control keys are utilized. The number of records per file is limited by disk size. Each record may have up to 20 fields with a maximum of 50 characters per field. List price: \$125. Requirements: 48K, one disk drive.

Optimum Data Management System

Uveon Computer Systems, Inc.
899 Logan St. #111
Denver, CO 80203
303/831-7000

Optimum Data Management System is available in the Executive Series for first-time computer users and in the Professional Series for program developers and experienced users. The Executive Series is upgradable to the Professional Series. Both series include multiuser processing with record-locking, user-defined files and screen forms; interfile validation; key-word cross-referencing; and record selection for customized reports. Other features include file and forms access protection and a dynamic help facility. List price: Executive Series \$295, Professional Series \$600. Requirements: 64K, two disk drives.

"It is difficult to describe the true power of Optimum....We have used the program for 18 months, and in that time we developed four complex applications systems that would have taken longer to develop in any other programming environment." Mike Auclair, River Falls, Wisconsin

Informax

Abacus Data
1920 San Marco Blvd.
Jacksonville, FL 32207
800/874-8555

Informax is available for single- or multiuser environments. The program provides field security, and the documentation includes a tutorial. Demonstrations for accounts payable, accounts receivable, and mailing list reports are included on disk. Files hold up to 65,000 records. List price: single-user \$795, multiuser \$995. Requirements: 64K, two disk drives.

"Informax has the fastest sorting I've ever seen. This is truly a multi-user program. A hard disk is preferable for use with the system." Greg Arikian, Plainview, New York

Autocode 1

Axel Johnson Corp.
666 Howard St.
San Francisco, CA 94105
415/777-3800

Autocode 1 is a program generator for use with *dBASE II*. The program uses menus to solicit record information from users and then structures a data base file accordingly. Alpha-numeric and numeric range checking, error trapping, and calculated fields may also be incorporated by menu when a file is set up. Reports can be designed with *dBASE II*'s modify command or with a word processing system such as *WordStar*. Reports that users can edit may also be generated within the program through menu selection of output parameters. Only one data base may be accessed at a time. List price: \$195. Requirements: 64K, one disk drive.

REVELATION



NOW THERE IS ONLY ONE RELATIONAL DATA BASE MANAGEMENT SYSTEM IN THE MICROCOMPUTER UNIVERSE—REVELATION. BY COSMOS.

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Revelation co-exists with MS/DOS™ or PC/DOS™ and is compatible with the IBM PC™, XT™, COMPAQ™, Corona™, Columbia Multi-Personal® and Eagle 1600™. Also compatible with minicomputers utilizing the PICK Operating System™. Minimum configuration requires 320K memory and 8087 math chip.

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123 Ferntree Drive W.
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MAG/base 1, 2, and 3

MAG Software, Inc.
21054 Sherman Way #305
Canoga Park, CA 91303
213/883-3267

MAG/base 1, 2, and 3 form an upgradable, modular data management system offering list management capabilities with the first module; file merge, calculations, and record selection capabilities with the second module; and applications development capabilities with the third module. The first module is menu driven and contains many error-trapping features. Up to 999 fields per record are allowed, and the number of records in a file is limited by disk space or a maximum of 999,999. A record may have up to 2500 characters. A report generator produces form letters and mailing labels.

MAG/base 2 has all the capabilities of the first module as well as a report-writing feature that allows field calculations, conditional selection of records, and sorting on ten key fields. The program allows definition of report headers, footers, control breaks, subtotals, and grand totals. An advanced report-writer option is available, permitting simultaneous processing of up to five files.

MAG/base 3 has all the features of modules 1 and 2 as well as capabilities for menu definition, password protection, and a data management language for applications development. List price: *MAG/base 1* \$295, *MAG/base 2* \$495, *MAG/base 3* \$795. Requirements: 128K, two disk drives.

Informix

Relational Database Systems, Inc.
1208 Apollo Way #503
Sunnyvale, CA 94086
408/746-0982

Informix includes a full report writing language and a screen generation facility with data entry and relational query capabilities. The report writing language can be used to extract and organize data in a user-defined format. Reports may include headers, footers, and variable page-lengths, and multiple files can be processed at once. The program screen-generation component allows fields from multiple data base files to be positioned on individual or linked screens. Data validation, help messages, and table lookup commands can be specified for input fields. The query capabilities permit the browsing of data in a file and searches based on range of values and wild cards. List price: \$795. Requirements: 192K, two disk drives (hard disk recommended).

Lan:DataCore

Software Connections, Inc.
1800 Wyatt Dr. #17
Santa Clara, CA 95054
408/988-3704

Lan:DataCore is a data base development tool designed for local area networks. The applications developer can use the program to develop multiuser data base networks with record locking, enabling up to 16 people to use the same file concurrently. The program can be purchased initially in a single-user format that can be upgraded to a

multiuser format. Maximum file size is 16 megabytes, and each record holds up to 512 fields. Each record can have up to 16 key fields internally structured in dynamic B-tree form. *Lan:DataShare* from the same manufacturer works with *Lan:DataCore* to create forms, retrieve data from files, and generate reports. List price: single user \$650, multiuser \$1950. Requirements: 128K, one disk drive, Corvus Omninet Network Interface Card.

Foresight Data Manager

Foresight Software
125 Carpenter Frwy.
Dallas, TX 75062
214/556-1251

Foresight Data Manager is a menu-driven system that makes use of the keyboard function keys and continuously displays user prompts that show the available alternatives for processing data. While users add and modify data, the program displays function keys that control the cursor. Users can set up the program to trap errors during data entry. A report generator permits the production of form letters, labels, and single- or multiline reports. Free-form placement of fields on reports can be used for preprinted forms such as checks. Mathematical calculations are performed on numeric or dollar fields or any field defined as a calculation field. A soundex feature allows word searches by phonetic spelling. List price: \$199.95. Requirements: 128K, two disk drives.

**Bob Wilson is waiting for
the reports he needs...**

**... and waiting, and
waiting, and
waiting...**

**He could be rescued
by ResQ™**



ResQ is quite simply the easiest-to-use, fastest and most comprehensive information management system ever developed for the IBM Personal Computer. It was designed from the ground up to provide you with the exact information you need... *only* the information you need... in the exact form you need it... now!

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Like many other Data Base Managers, ResQ organizes, files, locates, controls and interrelates just about any kind of information. It prepares reports and mailing labels, is a general filing and reference system, handles customer records and inventories, tracks sales leads and follow-ups, and does the required calculating for any of these functions automatically. But that's where the similarity to other systems stops!

ResQ is the *only* system that allows you or a secretary to design *your own* forms and reports, create them right on the screen, then have them continuously available at the touch of a key! ResQ offers password protection to keep confidential information confidential, and does it on a number of different levels. ResQ reads, searches and sorts data faster than the fastest competitor we've tested.

ResQ's larger fields hold more information, and field sizes can be easily changed to increase your number of salesmen, products, files or reports. It allows for calculations on up to 8 levels of totals at report time, and interfaces with most popular word processing programs.

The ResQ "How-To" Manual is written in plain, simple English—not like a scientific textbook in a foreign language! It was created for immediate use by clerical help who had never touched a computer before. It's been tested... and it works! As an added feature, "help screens" are always immediately available to answer questions for the user, without having to turn to the Manual.

We believe you'll be absolutely thrilled with ResQ and the way it prepares reports, manages information and solves your business problems. We're so certain that we offer ResQ with a 30-day money-back guarantee of satisfaction. You can try ResQ in your own business environment and prove its value for yourself... completely without risk!

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PCW

Total Recall: The List Manager

The Softa Group
778 Frontage Rd.
Northfield, IL 60093
312/446-7638

Total Recall: The List Manager accommodates large lists with up to 32,000 records in a file. A tutorial is included in the documentation, and the program is menu driven. Three levels of sorting may be performed for record selection as well as exact, partial, and range matches. Totaling and subtotaling of numeric fields are available. A label generator prints one-up to four-up mailing labels with up to five addressee lines per label. Records are limited to 15 fields, and fields hold up to 35 characters. List price: \$129.95. Requirements: 128K, two disk drives.

"The program does not offer selection by logical parameters, but it has fast selection and sorting." Nancy Ziegler, Deerfield, Illinois

"Several formats for report or label printing are available. An excellent program." Wayne Spath, Deerfield, Illinois

"Total Recall is limited in the number of characters allowed per field (35 in alpha fields). It is also slow." H. D. Tran, Houston, Texas

PC-File

Jim Button
P.O. Box 5786
Bellevue, WA 98006
206/746-4296

PC-File is user-supported data management software that provides many sophisticated features such as simple mathematic calculations on

fields, Boolean logic, sorting, merging of files, and exporting of files to spreadsheet and word processing programs. Files can hold up to 32,000 records, but only 4000 records may be sorted at one time. *PC-File* is menu driven and leads the user through each step of file creation and report or screen formatting. Files can be backed up, copied, and deleted without exiting the program. Keys can be assigned data or commands for recall during file editing. List price: \$35 requested contribution. Requirements: 64K, one disk drive.

"PC user groups in Boston, Washington, D.C., and New York are enthusiastic about PC-File." Davis Carter, Gloucester, Massachusetts

"The program is excellent." Arvin Chaikin, Santa Clara, California

"The program is ideal for the person who wants a data base manager but can't afford to spend hundreds of dollars for one." Carrington Dixon, Garland, Texas

Datahandler

Miller Microcomputer Services
61 Lake Shore Rd.
Natick, MA 01760
617/653-6136

Datahandler is a management program that uses variable-length fields for data storage. The program stores field data dynamically, using only as much space as a field requires for stored characters, so users don't have to specify the number of characters for each record field when they are setting up a file. Users can sort on

any field and access up to ten fields at a time in ascending or descending order. Record selection can be made using wild cards and zip code ranges. Users can print one-up mailing labels and columnar reports with up to 255 characters per horizontal line. List price: \$59.95. Requirements: 64K, one disk drive, MMSFORTH Disk System.

Data Ace

Computer Software Design, Inc.
1911 Wright Circle
Anaheim, CA 92806
714/634-9012

Data Ace is a data base manager that has a query language, a programming language, and a data dictionary. The query language enables users to sum numeric fields, reorder fields for file modification or report formatting, and select fields for screen display or printing. The programming language is a superset of FORTH language commands and can be used to structure complex arithmetic calculations. A full-screen editor is included. *Data Ace* permits an unlimited number of records per file. Each record has up to 25 fields with a maximum of 255 characters per field. Users can open 12 files at a time for multiple file processing. List price: \$645. Requirements: 128K, two disk drives.

"This system is truly easy to use and is by far the most comprehensive on the market since it is almost a full applications development system. You can reorganize, resequence, and limit the fields to be printed or displayed by using the query language." Linda T. Taylor, Los Angeles, California

Courtney Database

Courtney Business Systems, Inc.
710 W. Main
Arlington, TX 76013
817/265-2132

Courtney Database allows multiple field editing from one file to another, either through key matches or data exceptions reported. Data entry of certain codes triggers other entries; for example, entering a zip code automatically enters the corresponding city and state. Data validation is defined by users. Screen design for reports is flexible for formatting data on preprinted forms. List price: \$795, tutorial version \$60. Requirements: 128K, one disk drive.

Easy Filer

Information Unlimited Software
2401 Marinship Way
Sausalito, CA 94965
415/331-6700

Easy Filer performs data management, generates reports, and has a built-in mail merge capability for producing labels and form letters. Prestructured formats for screen and printer output are included and may be edited for customized applications. A full-screen text editor is used to create form letters or layouts for placing file field data on preprinted forms. No sorting capability is included, but the program allows record access by one of ten key fields that are automatically indexed. A soundex option allows search of key information by phonetic spelling. The program can also interact with BASIC program files. List price: \$400. Requirements: 64K, two disk drives.

Cardbox

Micro Technical Products, Inc.
123 N. Sirrine #106
Mesa, AZ 85201
602/834-0283

Cardbox is a hierarchical data management program that retrieves records and processes information quickly. The program is command driven, but multiple choices for each command are presented on screen for ease of selection. Files can hold up to 55,535 records with 26 fields per record. Each record can have a maximum of 1404 characters. No sorting or arithmetic capabilities are provided. List price: \$245. Requirements: 64K, one disk drive.

CataList

Automation Consultants
International
18070 Lake Encino Dr.
Encino, CA 91316

CataList is a list manager that acts as a front-end preprocessor for 13 word processing systems. The program produces lists, envelopes, labels, and cards for card files. Once data is entered in a file, it can be converted to a specific word processing system's format for producing form letters or merging documents. For example, a name and address file created with *CataList* may be converted through a program utility to a *WordStar* or *MailMerge* data file in the proper format for the word processor document merge function. *CataList* features two numeric fields for data to be summed or counted. A

built-in table providing title codes for addressees may be used during entry of file additions. Eleven of the codes are assigned for titles and 15 more codes are available for customizing. When an asterisk is entered in the first character position of a field, the corresponding field information from the previous record is repeated. List price: \$200. Requirements: 128K, two disk drives.

Condor Series 20

Condor Computer Corporation
2051 S. State St.
Ann Arbor, MI 48104
313/769-3988

Condor Series 20 (Levels 1 and 3) is a relational data base designed for beginning data base users. The program is optionally menu driven or command driven. Files can be created with five data types: alphabetic, alphanumeric, date, dollar, and numeric. Up to 32 key fields may be sorted at a time. Help screens are available and provide menu selection of options for file creation and report writing. Level 1 allows storage, retrieval, and manipulation of information in single files. Level 3 provides multiple file processing, a sophisticated report writer, and efficient indexing of large data files. *Condor Series 20* Level 1 may be upgraded to Level 3 for the difference in price plus \$50. List price: Level 1 \$295, Level 3 \$650. Requirements: 80K, one disk drive.

"*Condor Series 20 is excellent for engineering, inventory, payroll, or any data base application.*" Stephen John Hysick, G.P. Woods, Minnesota

Creatabase

PCsoftware
9120 Grammercy Dr. #416
San Diego, CA 92123
619/571-0981

Creatabase designs screen or report layouts that look like preprinted forms such as invoices, mailing labels, and small form letters. The program is written in BASIC except for the sort function, which is written in assembly language for speed. It can perform sorts on up to three fields simultaneously. This program fits on a single disk, is menu driven, and is designed to take full advantage of the IBM PC keyboard. A guide to the function keys appears at the bottom of the screen, and help menus can be called up with one of the function keys.

Editing is performed by typing over the incorrect entry and updating the record. The data base can be modified by creating a new form and using a data conversion utility to transfer data into the new format. The program cannot merge two or more files. Each field holds up to 62 characters, and each record holds up to 16 fields. The data base can hold a maximum of 1200 records with 64K and 2000 records with 96K. Field parameters can be set for numeric, text, capitals, date, length, and number of decimal places. List price: \$75. Requirements: 64K, one disk drive (two recommended).

"Creatabase is capable of very fast sorts on up to three fields. The program cannot compute totals or sub-totals during output. It is well

written, but some people may overlook it simply because it doesn't cost what they feel a superior product should cost." Ed Frazier, San Diego, California

"The program is very easy to use and contains many features found in data base packages costing hundreds of dollars more." David P. Miranda, Briarcliff, New York

TCW/DMS 120

The Computer Workshop, Inc.
322 Shelden Ave.
Houghton, MI 49931
906/482-8009

TCW/DMS 120 is a three-level data base management program. Level I allows basic data base file creation and record maintenance for displaying, adding, deleting, and sorting records. The program allows sorting of up to 24 key fields in ascending or descending order. Data in numeric fields can be calculated. Screen layouts and reports can be defined by users, but the program also provides an automatic report generator that centers titles, prints the current date, and numbers pages automatically. Level II adds more flexibility to the report-writing design by including subtotalling and totaling. A query language is provided for selecting records for output and editing. An import/export feature allows interaction with system data files. Capabilities for X-Y plotting of numeric fields and simple statistics are included. Level III adds the ability to merge files, modify file structure, and interact with BASIC programs. List price: Level I \$149, Levels II and III \$149, Levels I, II, and III \$289. Requirements: 128K, two disk drives.

Fantastic Filer

The Computer Workshop, Inc.
322 Shelden Ave.
Houghton, MI 49931
906/482-8009

Fantastic Filer is a menu-driven list management program that allows records to be sorted, totaled, and subtotaled. Records can be sorted in ascending or descending sequence. Record selection for editing or printing may be made on several conditions and on any field or combination of fields. Calculations can be made on numeric fields. Files can have a maximum of 24 fields per record and can be exported as ASCII files for use with other programs. The compiled version of the program processes data faster than the interpreted version. List price: interpreted version \$49.95, compiled version \$69.95. Requirements: 64K, two disk drives.

Subject Indexer

Personal Software Co.
P.O. Box 776
Salt Lake City, UT 84110
801/277-3174

Subject Indexer cross-references categories and subcategories of data. Index records hold up to 64 characters in a free-form or four-field format. Users can assign alphanumeric and numeric fields, summarize numeric data by month, and calculate subtotals and totals. The program produces lists by category and subcategory and strings together separate indexes for listings. List price: \$34.95. Requirements: 64K, one disk drive.

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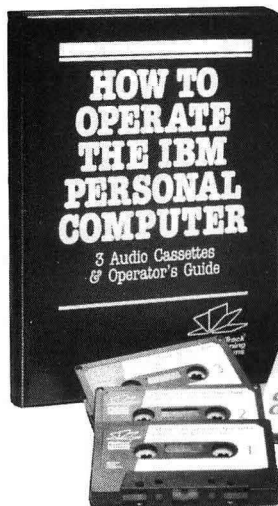
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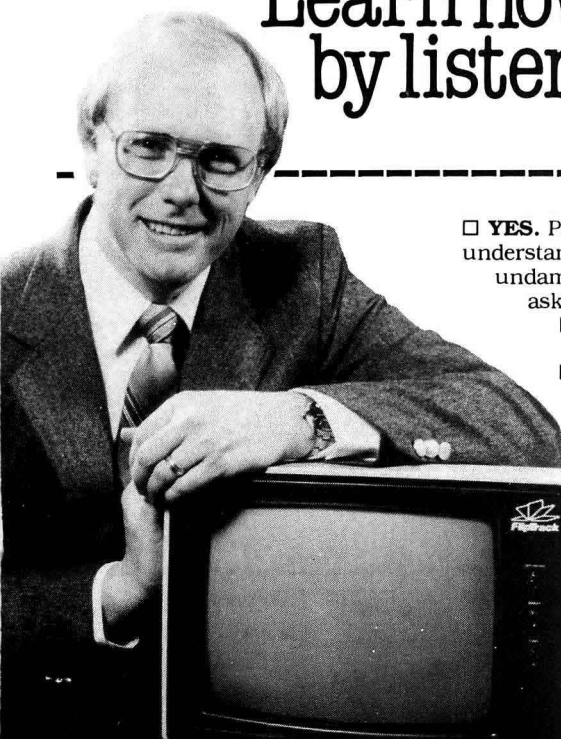
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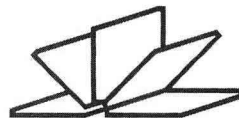
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FlipTrack Learning Systems is a division of Mosaic Media, Inc.

FYI 2000/Superfile

FYI, Inc.

4202 Spicewood Springs Rd. #204

Austin, TX 78759

512/346-0133

FYI 2000/Superfile is a free-format file management program designed for use with word processing program text files. Up to 250 of a text file's key words can be cross-referenced. The program provides search and retrieval using logical operators and wild cards. As many as 99 files can be sorted simultaneously. Replacements can be made throughout files, and files can be split or merged. List price: \$195. Requirements: 64K, two disk drives.

"FYI 2000/Superfile lets you search and retrieve text information with ease and speed. The program has an excellent user manual and provides powerful data handling." Fred Zahnow, Luling, Texas

"Superfile's manufacturer provides great support through telephone conversations. The program has flexible search routines but requires that even experienced users go through a complete series of menus for regular program use." Millard S. Cohen, St. Louis, Missouri

"Superfile has very fast retrieval and is excellent for filing letters, memos, reports, and annotated bibliographies." Anthony LaBruzza, Orange, New Jersey

Mail/List

FYI, Inc.

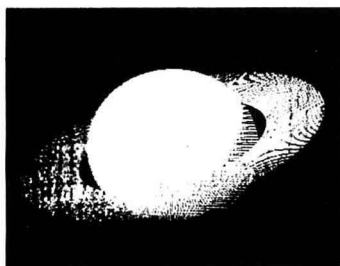
4202 Spicewood Springs Rd. #204

Austin, Texas 78759

512/346-0133

Mail/List is a list manager that creates files and prints mailing lists and mailing labels in a one-up to five-up format. The program allows sorting by name field or zip code field. Sorting is limited to about 2500 records at a time. The program can import MicroPro *MailMerge* files for sorting and quick label and list production. When used with *FYI 2000/Superfile* the program prints selected records for mailings. List price: \$95. Requirements: 64K, two disk drives.

Graphics for the IBMpc



This is a spectacular collection of graphics programs for the IBMpc. It contains more than 60 programs in BASICA. They're listed beside theory and equations in a 280 page self-teaching guide. An optional program disk is available. These programs will show you how to write your own 2D and 3D graphics software and they will give you many useful, ready-to-run graphics routines to incorporate in your own software.

Programs are menu driven and modular. They show how to use elementary graphics commands and do 2D and 3D translation, rotation, scaling, clipping, windowing, hidden line removal, shading, perspective, hi-speed animation, with applications to science, business, engineering and games. Adopted as a text in many leading universities. We know you will be pleased.

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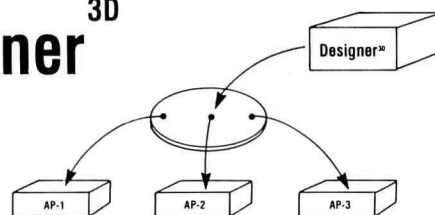
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KERN PUBLICATIONS • P.O. Box 1029PCW • Duxbury, MA 02332

Designer^{3D}



This is a professional 3 dimensional graphics design program for the IBMpc. With **Designer^{3D}** you can interactively create 3D drawings on the screen, rotate in 3 dimensions, enlarge, view in perspective, store on disk, recall and update. Run **Designer^{3D}** - a cursor appears on the screen with a set of 3 dimensional coordinate axes. Move the cursor around in 3 dimensions identifying node points, lines and points defining curves. Curves fit through points using a cubic spline algorithm. See your 3D picture being created on the screen. X,y,z coordinates are displayed as the cursor moves. Then enlarge, rotate, store your 3D picture on disk, recall and modify.

The picture stored on disk is a text file of node x,y,z coordinates and the lines and curves comprising the 3D object. Interface **Designer^{3D}** to other programs through this disk file. Use **Designer^{3D}** as a graphics pre-processor for your own applications software.

Designer^{3D} is supplied on disk in machine language with a user's manual. Perfect for CAD/CAM applications.

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Bits Data Entry

Boeing Computer Services Co.
2800 160th Ave. SE
Bellevue, WA 98009
206/763-5636

Bits Data Entry system is intended for data entry clerks and uses the screen forms produced from the *Bits Data Entry Forms Composer* for data collection activities. The system performs addition, deletion, and editing of data in a data base. Edits, table validations, range checks, and masks can be carried out at the time of data collection. Data is formatted and freed of errors before entry to a host. List price: \$300. Requirements: 64K, two disk drives.

DMS

SimSoft, Inc.
P.O. Box 7095
Port Huron, MI 48301
313/984-1570

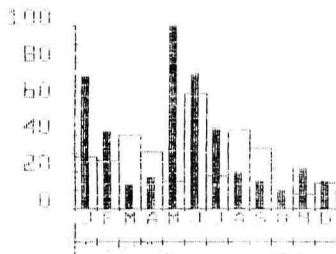
DMS is a disk management system for keeping track of IBM PC disks. The system assigns a volume serial number to each disk on first use and maintains a master list of disks. In addition to assigning a number to each disk, the program stores the description of data, creation date, and location as general disk information. The master list can be updated to reflect disks ready for discarding or reusing. List price: \$40. Requirements: 64K, one disk drive.

Data Manager

DataSmith, Inc.
P.O. Box 8036
Shawnee Mission, KS 66208
913/381-9118

Data Manager is a general file management program that has fixed record input screens. You can sort on up to ten key fields, process more than one file, and sum and subtotal fields. Record additions, updates, changes, and deletions are menu driven. Reports can be customized. Files can contain up to 32,000 records that each have 48 fields and a maximum of 250 characters per field. List price: \$450. Requirements: 64K, two disk drives.

Business Scientific Data Plotting



Data Plotting Software for Micros- This 232 pg book/disk package contains 18 programs in BASIC for processing and plotting data: Histograms, pie charts, log plots, regression, statistical analysis, curve fitting, barcharts, stock market charts, 3D views of surfaces, data management, applications to science, engineering and business.

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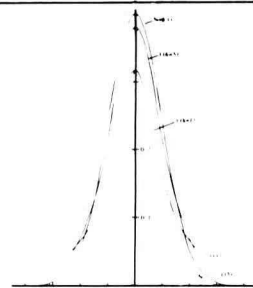
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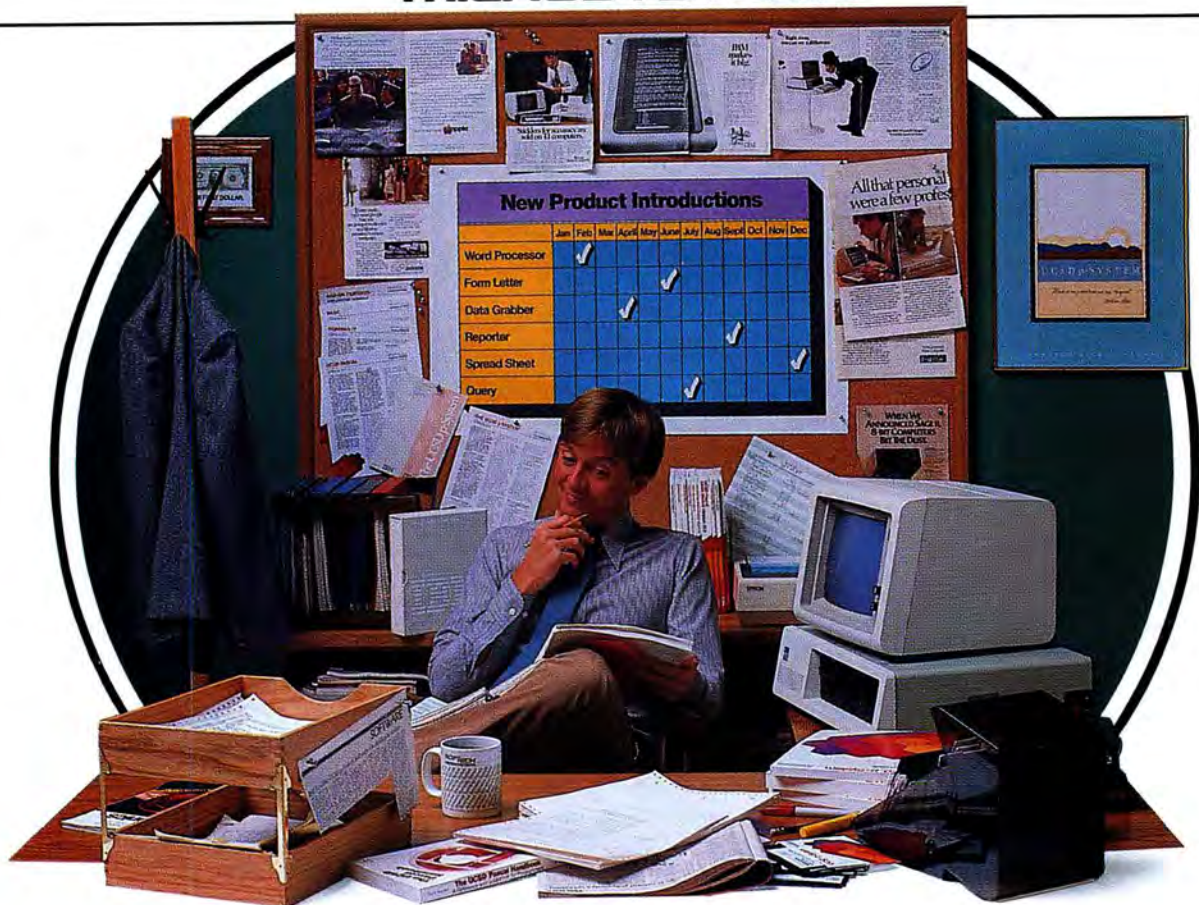
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For full details contact Phone 1, Inc., 461 North Mulford Road, Rockford, IL 61107; phone (815) 397-8110.

Standard Features-CLEO 3270

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- 3276-12 protocol, coming soon

Standard Features-CLEO 3780

- Point-to-point and multipoint communications
- Available for CP/M™, MP/M™, MsDOS™, TurboDOS™, Unix™, and Xenix™.
- Supports transparent mode
- Coded in C language

CLEO

EasyView

Advanced Business Systems, Inc.
P.O. Box 596
Montezuma, GA 31063
912/472-2341

EasyView is a menu-driven list manager with predefined fields for name, address, and telephone number; the user can define six supplemental fields for additional addressee information. Each record also permits inclusion of a 180-character comment field. The program has a built-in report writer and form letter generator. Report formats can also be designed on screen through menu selections. Records can be accessed alphabetically, or they can be selected for output with logical operators such as greater than, less than, equal to, and not equal to. *EasyView* is a stand-alone program and does not have importing or exporting capabilities. No math functions are included. List price: \$250. Requirements: 64K, one disk drive.

Organizer I

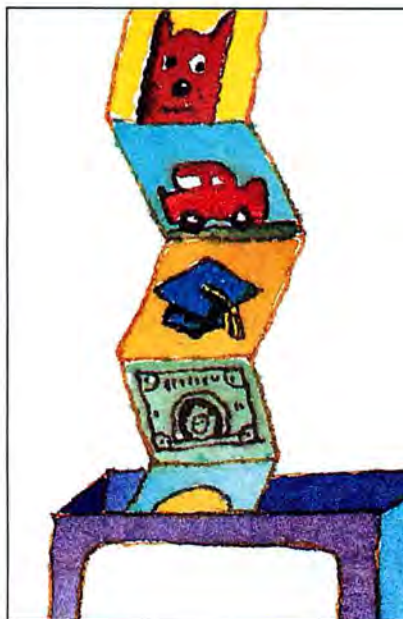
Random House, Inc.
7307 S. Yale #103
Tulsa, OK 74136
800/331-5469

Organizer I allows in-memory sorting of up to 15 fields at once. Files are limited to 500 records. Records hold up to 15 fields with up to 40 characters per field. Reports can have totals, counts, and averages. Files must be processed one at a time. The user manual contains 15 example files and applications. List price: \$81. Requirements: 64K, one disk drive.

EazyMail

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
913/843-5863

EazyMail is a list management program that displays prestructured screens for entry and editing of addressee information. Each name and address field is 30 characters long. Two supplemental code fields are provided with a capacity of 20 characters each for storage of additional addressee information. Output includes mailing lists, one-up and two-up labels, and envelopes. When used with Miracle Computing's *Qusort* program, *EazyMail* can sort, search, and select for specific record processing. List price: \$35. Requirements: 64K, two disk drives.



EZLabel +

Systemics
3050 Spring St.
West Bloomfield, MI 48033
313/851-2504

EZLabel + is a low-cost mailing label program that prints one-up or two-up pressure-sensitive mailing labels. Predefined fields are built in for entry and updating of record information. The program will search and sort by last name, zip code, or record number; the user can also define five single-character codes included with each record. Field information may be repeated from one record to the next by entering a single keystroke. Files may contain a maximum of 5000 records. List price: \$49.95. Requirements: 64K, two disk drives.

Data Design

Insoft
P.O. Box 19208
Portland, OR 97219
503/244-4181

Data Design provides 26 built-in forms for file creation and data entry and output including form letter, mailing list, and label formats. You can edit each form and perform calculations on data. No sorting feature is provided, but the program has 26 indexes that are automatically updated when records are added or deleted. Files contain up to 32,000 records that can each have up to 40 fields and up to 79 characters per field. *Data Design* uses the IBM PC function keys. List price: \$225. Requirements: 128K, two disk drives.

DataFax

Link Systems
1640 19th St.
Santa Monica, CA 90404
800/438-5465, 213/453-8921
California

DataFax is an electronic file folder program that enables you to use up to 100 key words per file for indexing and cross-referencing. You enter text in a file from a blank screen, as if you were typing on a page of paper, and indicate key words during text entry. After you have completed a file, you can index, access, and cross-reference the key words for future recall. Book indexing is one application for *DataFax*. No report-writing feature is included. List price: \$299. Requirements: 64K, two disk drives.

Fast Facts

Innovative Software, Inc.
9300 W. 110th St. #380
Overland Park, KS 66210
913/383-1089

Fast Facts is a menu-driven program with a report writing feature that enables users to draw boxes and lines on a blank screen for designing screen and report formats. Other report formats are built in, such as a mailing label generator that produces one-up to four-up self-adhesive or cheshire-type mailing labels. Built-in report formats can be edited and help menus are on line at all times. A calculator allows equations to be performed on fields. Sorting and logical operators provide record selection. List price: \$195. Requirements: 128K, two disk drives.

First Class Mail

Continental Software
11223 S. Hindry Ave.
Los Angeles, CA 90045
213/410-3977

First Class Mail (FCM) allows beginners to create custom applications with its menu-driven format. Mailing list and label components are included and can be edited for customized jobs. The program can be used with several word processing programs. Files hold up to 25,000 records, and fields contain up to 132 characters. List price: \$124.95. Requirements: 128K, one disk drive.

"Searching unalphabetized files is slow and merging files is complicated, but overall the program is easy to use." Jeffrey M. Feldman, Torrington, Connecticut

Bits Data Entry Forms Composer

Boeing Computer Services Co.
2800 160th Ave. SE
Bellevue, WA 98009
206/763-5636

Bits Data Entry Forms Composer is intended for data entry supervisors and enables users to design screen forms and output definitions for data entry systems. The program can be used with *Bits Data Entry*, Boeing's data entry system. The forms composer and data entry system are designed to prepare data bases at the microcomputer level before sending data to a mainframe computer. The menu-driven program produces screen mask generation, table validation, and output format definition. List price: \$600. Requirements: 64K, two disk drives.

BOS AutoIndex

BOS National, Inc.
2560 Royal Ln.
Dallas, TX 75229
214/484-2717

BOSAutoIndex data management software supports up to 999 concurrent users. A single-user package is also available. Built-in mailing list and label components are included and may be edited for customized projects. Files can have up to 65,000 records with 12 main fields for addressee information. Thirty-five supplemental fields may be utilized to record codes with more detailed information about each addressee. Records may be searched, sorted, and retrieved by the main fields or supplemental fields. Multiple files may be processed simultaneously. List price: single-user \$400, multi-user \$750. Requirements: 64K, one disk drive, BOS operating system.

EazyFile

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
913/843-5863

EazyFile is an electronic file cabinet with a comprehensive search function that enables users to search for words or phrases across all the data categories in all files. The program displays or prints a report listing all occurrences of the searched-for items. A limited full-screen editor allows entering and editing of text with use of the IBM PC editing keys. The system is suited for storing and organizing bibliographies, articles, receipts, recipes, and other non-field-oriented data items. List price: \$35. Requirements: 64K, one disk drive.

Pro-IV

Capro Incorporated
12781 Pala Dr.
Garden Grove, CA 92641
714/891-1109

Pro-IV is a multiuser, multitasking data base management system with an integrated business-applications development facility. Multitasking abilities provide multilevel file security, arithmetical operations and conditional logic, help and error messages, and record locking for multiuser systems. Multiuser systems let you access multiple files. Applications development requires no coding. Instead, applications developers fill out a series of system-design worksheets on line. The program then generates the code for a specified application. List price: \$2000. Requirements: 256K, 1M hard disk.

RMS

Washington Computer
3028 Silvern Ln.
Bellingham, WA 98226
206/734-8248

RMS (Record Management System) is a data base manager that has quick record retrieval and sorting features. It provides for parent-child relations within records, and users can designate records as primary or secondary. Reports can be printed with title pages, headers, page numbers, subtotals, and totals. When users print on preprinted forms, free-form positioning of fields is possible. A data dictionary is included. List price: \$90. Requirements: 48K, one disk drive.

RDS Mail Manager

Resuba Digital Systems
P.O. Box 440
Blackwood, NJ 08012
609/228-5666

RDS Mail Manager produces labels, telephone listings, address listings, and reports. File size is limited to the available disk space. Sorting is provided for selecting records. The data from files can be transported to BASIC, *MailMerge*, and *dBASE II* files. List price: \$250. Requirements: 128K, two disk drives.

Mailroom II

The Software Works
465 B Fairchild Dr. #204
Mountain View CA 94043
415/960-1800

Mailroom II is a menu-driven mailing list manager that prints address labels, single and continuous envelopes, name badges, index cards, and detail, summary, and telephone lists. Names and addresses of up to five lines and 32 characters per line are printed in the format in which they are entered. The program provides two record search keys, a section for brief notes, and select codes that identify records using up to 36 different characters in 10 positions. *Mailroom II* edits records with its own screen editor and enables users to find records by date of entry or most recent change even when names are misspelled. List price: \$179. Requirements: 64K, two disk drives.

RL-1 Relational Database Management

ABW Corporation
P.O. Box M1047
Ann Arbor, MI 48106
313/971-9364

RL-1 Relational Database Management enables applications developers to use a high-level language to write programs that can be used with *RL-1's* data base files. A forms processing language enables users to design data entry screens, and a forms generator can print reports with page numbers, totals, and subtotals. The program can print one- to four-up mailing labels and holds up to 65,535 records per file. Users can sort on any number of fields. The files can be written in ASCII format for exporting to other programs such as word processing. List price: \$495. Requirements: 128K, one disk drive.

Data-Writer

Software Options, Inc.
19 Rector St.
New York, NY 10006
212/785-8285

Data-Writer is designed for first-time computer users. Menus with prompts guide users through steps for creating files and managing data. A text editor is included for producing form letters and designing reports. Record selection is made by relational operators and sorts. Math capabilities include adding, subtracting, multiplying, dividing, and exponentiation. The maximum file size is 10,000 records. Records can contain up to 40 fields. List price: \$225. Requirements: 128K, two disk drives.

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HAI*Line Filekeeper

Holland Automation USA Inc.
3400 W. MacArthur Blvd., Ste. D
Santa Ana, CA 92704
714/641-2844

*HAI*Line Filekeeper* is a menu-driven list manager available in several languages including English (American and British), German, Dutch, Spanish, and French. Disk size determines the number of records a file can hold. During data entry users can control input of field types and sizes, minimum and maximum values in numeric fields, and date validation. Calculation of numeric fields includes addition, subtraction, multiplication, division, and percentage. Results from math operations can be entered in result fields and printed out on reports or held in memory. Reports can have control breaks, subtotals, totals, multiple lines per record, page numbers, and up to 132 characters per line. List price: \$195. Requirements: 128K, two disk drives.

PC-File

TexaSoft
1028 N. Madison Ave.
Dallas, TX 75208
214/369-0795

PC-File is an electronic filing cabinet with up to 200 lines of free-formatted text with each entry. Users can create fields for bibliographic information and key words pertaining to the information in the file. Records can be retrieved by fields, such as key-word fields, or by multiple key-word searches constructed with up to 10 logical operators. List price: \$75. Requirements: 64K, one disk drive.

Mail Route

Affordable Software
P.O. Box 61195
Sunnyvale, CA 94088

Mail Route is a mailing list program that permits users to produce form letters by merging name and address files with PC-DOS format word processing documents. Special characters readable by *Mail Route* are embedded in the word processing program's form letter so that variable information from the data file can be inserted during printing. Fields are prestructured and consist of five name and address fields with 40 characters each and five user-definable code fields of 5 characters each. Each file holds up to 1500 records. Records can be selected for display and printing through string searches and single field sorting.

Mail Route prints master lists, envelopes, and one- to four-up mailing labels. List price: \$75. Requirements: 64K, one disk drive.

Correspondence Management System

American Business Systems, Inc.
3 Littleton Rd.
Westford, MA 01886
617/692-2600

Correspondence Management System is for large mailing lists of as many as 999,999 addresses. All fields are defined by the user, and up to 108 variables per address can be included and used for record retrieval before displaying or printing. A form letter feature is included, and 9999 letters can be produced from one file at a single printing. Other printing capabilities include labels and reports. Requirements: 64K, one disk drive.

MailStar-I

Sapana Micro Software
1305 S. Rouse
Pittsburg, KS 66762
316/231-5023

MailStar-I is a menu-driven list manager for lists with entries of up to 131,000 addresses. The program has many data entry check features, including zip code validation, state abbreviation validation, and other types of error trapping. In addition to fields for addressee name, title, phone number, and address is a 56-character user-defined field. Any field can be sorted and selected for printing lists, labels, forms, and letters. Math and statistical abilities are included. List price: \$195. Requirements: 128K, one disk drive.

Soft-Cardfile-Index-I

Sapana Micro Software
1305 S. Rouse
Pittsburg, KS 66762
316/231-5023

Soft-Cardfile-Index-I is a file manager that keeps track of information from magazines and books. Prestructured fields for data entry include fields for titles, volumes, numbers, and other bibliographic information. Each entry can include an abstract of up to 32,000 60-character lines. The abstracts can be printed on any size page. Error-trapping routines are included. Lists of categories and subcategories can be selected through codes that users define during file creation. List price: \$49.95. Requirements: 128K, one disk drive.



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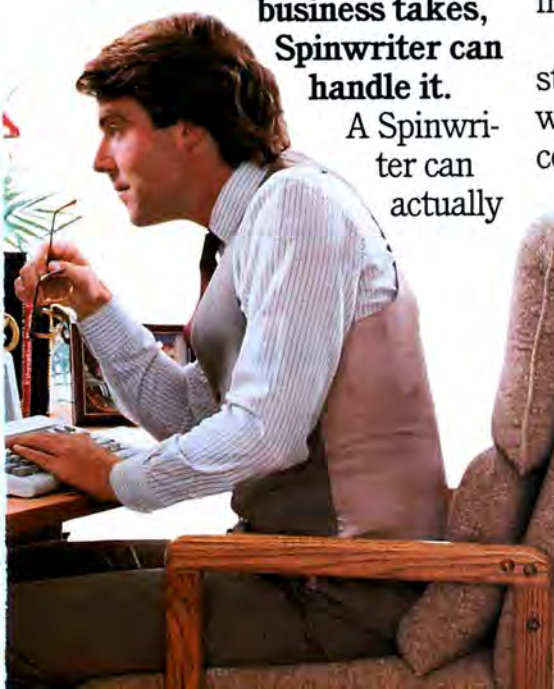


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NEC Information Systems, Inc.
5 Militia Drive, Lexington, MA, 02173



Golden Retriever

Cooperative Library Agency
for Systems and Services
1415 Koll Circle #101
San Jose, CA 95112
408/289-1756

Golden Retriever is designed for librarians and researchers but is recommended for anyone who needs to store and retrieve large amounts of information. The program is able to use logical operators in searching for key words throughout fields in a file. Files can be sorted or indexed. Two report formats for display or printing are available. The first is a catalog format that shows record fields, with or without tags, formatted in columns on a page. The second is a reference format that suppresses field labels and prints data in a block format with commas between fields. List price: \$1800. Requirements: 128K, hard disk.

Power-base

GMS Systems, Inc.
12 W. 37th St.
New York, NY 10018
212/947-3590

Power-base includes a "DataZoom" feature that enables users to view information from any file in the data base while another file is in use. Users design data entry screens and printed report formats by positioning fields on a blank screen. Reports include titles, column headings, subtotals, and totals. Key field sorting of up to six keys is allowed. Selections are made with relational operators. List price: \$475. Requirements: 256K, two disk drives.

Mail-Trak

TCI Software
6107 W. Mill Rd.
Flourtown, PA 19031
215/836-1406

Mail-Trak maintains files with names, addresses, and phone numbers. Records to be displayed or printed are selected with relational operators. Users can sort records but cannot modify record structures. List price: \$65. Requirements: 64K, one disk drive.

"*Mail-Trak helps small businesses, groups, or clubs keep name and address information.*" Chris Jacobs, Arlington, Texas

DataKeep

Mathtech
P.O. Box 2392
Princeton, NJ 08540
609/799-2600

DataKeep interrelates word processing programs with spreadsheet, graphics, and statistics programs, maintaining each program's required format. Once data base files are created, sorted, and selected in *DataKeep*, you can export them to a mail merge program for form-letter production or to a spreadsheet program for financial analysis. Files can also be imported to *DataKeep* for processing. Reports are formatted from the menu and can be saved. Up to three files can be opened and processed simultaneously. The program provides sorting, mathematics, logical and conditional record selection, range checking, file comparison, file merging, and repetition of field information from one record to another during additions to a file. *DataKeep* uses the IBM PC number pad keys. List price: \$450. Requirements: 128K, two disk drives.

Data Reporter

Synergistic Software
830 N. Riverside Dr. #201
Renton, WA 98055
206/226-3216

Data Reporter is a menu-driven file manager that buffers files in memory for fast record retrieval. The maximum number of records held in a file can be determined by dividing buffer size by the number of characters per record. The more memory available, the larger the files can be. Users can sort on up to three key fields. Selecting is by match in full or part, no match in full or part, range, and soundex (phonetic match with key words). Field types are alphanumeric, numeric, monetary, and date. Printing is done in three formats: lists of one record per line with subtotals, totals, and page numbers; blocks with field names on the left and field contents on the right in vertical format; and labels printed in one- to four-up style. The manufacturer produces two other programs that work with *Data Reporter*. *Report Writer* provides greater flexibility in printing and allows files to be used by a word processing program. *DR-Graph* formats file data for pie charts, bar graphs, and line graphs. List price: \$250, *Report Writer* and *DR-Graph* \$100 each. Requirements: 64K, one disk drive.

FileManager +

Synapse Software
5221 Central Ave.
Richmond, CA 94804
415/527-7751

FileManager + is menu driven and handles up to 40 fields per record and as many records per file as fit on

a disk. Fields hold up to 100 characters. Field types include numeric, monetary, alphabetic, and calculated. The program provides for searches with up to five field specifications and wild cards. Reports are printed in three formats: vertical with field names to the left and field contents to the right, horizontal with fields in columns and records in rows, and labels. Hard disks are not supported. List price: \$149.95. Requirements: 64K, one disk drive.

MainStor

MainData
844 Stevens Ave.
Portland, ME 04103
207/773-1051

MainStor is an integrated data management, spreadsheet, and accounting system that is available in single- or multiuser versions. Applications developers can customize and combine programs within the system to create specialized applications for end users. The system includes an accounting module with scratchpad spreadsheet functions. The spreadsheet reads selected information from the data base. On-line documentation is included. *MainStor* can be used with other products in the MainData product line, and the program is transportable to other computers, including minis and mainframes running under the Oasis-16 operating system. List price: from \$5000. Requirements: 128K, hard disk drive, Oasis-16 operating system.

Mail-Track-I

Sapana Micro Software
1305 S. Rouse
Pittsburg, KS 66762
316/231-5023

Mail-Track-I is a program that maintains lists of foreign and domestic addresses and prints labels and form letters. Record fields are prestructured. The zip code field is automatically indexed so that when an address is added to the list, it is entered in zip code order. Selections for display or printing can be made on other fields through sorts and searches. Every time a new address is entered, the program searches existing entries by zip and first letter of the last name field. When a match is made, indicating a possible duplicate entry, the screen displays the existing record. Fields can be repeated with one keystroke. Up to 5000 records will fit in a file. List price: \$49.95. Requirements: 64K, one disk drive.

Data Entry and Edit

Data*Easy Software
Data Consulting Group
877 Bounty Dr. #EE203
Foster City, CA 94404
415/571-8100, 415/349-4001

Data Entry and Edit allows creation of customized screens for data enter, delete, change, and inquiry functions. Sort keys can be assigned for record selection to view data. Records can contain up to 14 fields with 255 characters per record. Browsing backward and forward through files is possible. Data in files created by this program are transportable and can be used with other programs, such as word processors. List price: \$75. Requirements: 64K, one disk drive.

Addressor

Info Soft Computers
2699 Clayton Rd.
Concord, CA 94519
415/680-0324

Addressor reminds users of dates to contact addressees or to process records. The program stores dates with address information and upon request displays records with dates close to the current date. Names and addresses may be alphabetized and printed on labels, cards, or lists. Included with the program is a tutorial that explains how a filing system may be set up and maintained. List price: \$59.95. Requirements: 64K, one disk drive.

Personal Mailer

Computer Age
1827 Haight St.
San Francisco, CA 94117
415/921-7792

Personal Mailer provides record files of up to 12 automatically indexed fields. Sorting is never required. Users can select records with keyword match, no match, close match, and string searches. Type and size of fields are user defined. Each file can have up to 65,535 records with up to 68 characters per field. Reports include printing of one- to three-up mailing labels or lists with up to 132 characters per line. Files may be written as delimited ASCII files for use with *MailMerge* or other word processing programs. List price: \$79.95. Requirements: 64K, one disk drive.

Information Please!

Select Information Systems
919 Sir Francis Drake Blvd.
Kentfield, CA 94904
415/459-4003

Information Please! provides information management in chart format rather than file format. A blank chart with rows and columns is displayed on screen. The user defines the rows and columns for a particular grouping of data. Grouped charts make up file drawers and can be processed together. Spreadsheet functions, such as storing formulas in cells, are program features. The gyro-printing capability used with dot matrix printers prints charts sideways so that one wide chart can be printed on an 80-column printer with its paper inserted vertically rather than horizontally. List price: \$295. Requirements: 196K, two disk drives.

File-It

CMC Microproducts
P.O. Box 220511
Charlotte, NC 28222
704/365-1481

File-It is a file manager that enables users to print mailing labels for small lists (less than 1000 records). Record structures are created by the user but they cannot be modified. Sorting is accomplished by rearranging data on disk. List price: \$65. Requirements: 64K, one disk drive.

"File-It is a good value in an Interpretive BASIC program for simple file management and information retrieval." Chris Jacobs, Arlington, Texas

Benchmark Mail List

Metasoft Corp.
711 E. Cottonwood Ln., Ste. E
Casa Grande, AZ 85222
602/836-0268

Benchmark Mail List is a list manager that can be used with Meta-soft's word processing program, *The Benchmark*, to produce form letters or preprinted forms. Fields are indexed automatically so that no sorting is necessary. Fields are of variable length; they contain stored information only, not unused space. The PC function keys can be used to operate the program. The date and time of each entry are recorded automatically and stored with records. Lists can be merged for processing. Users can set up horizontal and vertical pitch for printing reports. List price: \$250. Requirements: 128K, two disk drives.

Kwic-Ref/1

Chen Information Systems, Inc.
1499 Bayshore Hwy. #205
Burlingame, CA 94010
415/692-4358

Kwic-Ref/1 uses ASCII files created on word processors or text editors to build a data base that is cross-referenced by key words. Users set up a key-word or exclude-word dictionary, and the program automatically scans the text file(s) for cross-reference key words that match those in the dictionary. Data is retrieved by using key words and key-word combinations that use AND or OR. The program displays titles of documents where key-word matches are made and if instructed to displays a specified document on screen. On-line help screens are included. List price: \$450, demo disk \$40. Requirements: 128K, two disk drives.

InfoStar

MicroPro International
33 San Pablo Ave.
San Rafael, CA 94903
415/499-1200

InfoStar can be used at two levels of complexity, by beginners and by experienced applications developers. Users design data entry screens, starting with a blank screen. Files can hold up to 65,535 records, and records can hold up to 255 characters. Each record may be assigned 25 key fields. A report generator prints selected records in columnar form with headers, footers, titles, and page numbers. Print enhancements include boldfacing, underlining, superscripts, and subscripts. Four levels of help menus can be called up during program use. *InfoStar* can be used with MicroPro's *MailMerge* program to produce form letters. List price: \$495. Requirements: 96K, one disk drive.

"Infostar is best for nonprogrammers. Although its menu features can be cumbersome, it's the best program around of its type." Jay Herson, Houston, Texas

Telephone Directory

Data*Easy Software
Data Consulting Group
877 Bounty Dr. #EE203
Foster City, CA 94404
415/571-8100, 415/349-4001

Telephone Directory keeps names, addresses, and telephone numbers. The prestructured fields include two telephone numbers, one date, and a 20-character comment. Browsing backward and forward through files is possible. List price: \$35. Requirements: 64K, one disk drive.

Query!2

Hoyle and Hoyle Software
716 S. Elam Ave.
Greensboro, NC 27403
919/378-1050

Query!2 is a low-cost data manager written in assembly language for fast record retrieval. Files can hold up to 65,535 records with a maximum of 4000 characters per record. Searches can be performed with up to 40 conditions including relations, strings, and logical operators. Fields are alphanumeric. The program doesn't perform mathematical operations. Reports can be printed in horizontal-columnar format, mailing-label format, or free-form placement of field format for preprinted forms. List price: \$29.95. Requirements: 48K, one disk drive.

Database Management

Data*Easy Software
Data Consulting Group
877 Bounty Dr. #EE203
Foster City, CA 94404
415/571-8100, 415/349-4001

Database Management enables users to manipulate data from files by filling in options on menu screens. Users define customized screens for data entry and inquiry. A report generator allows formatting of headers and footers and subtotalling and totaling. Labels can be printed from standard or custom-designed formats. Each record can contain up to 14 fields and 255 characters. List price: \$195. Requirements: 64K, two disk drives.

Mail Lists and Labels

Data*Easy Software
Data Consulting Group
877 Bounty Dr. #EE203
Foster City, CA 94404
415/571-8100, 415/349-4001

Mail Lists and Labels is a list manager that allows users to assign attribute codes to records for selections during printing. Sorting by any field with up to 64 characters is allowed. One- to three-up labels and oversize packing labels can be printed. Multiple copies of any label can also be printed. Browsing backward and forward through a file is possible. List price: \$75. Requirements: 64K, two disk drives.

Softbase

International Microcomputer
Software
P.O. Box 2643
San Anselmo, CA 94960
415/454-7101

Softbase is a program that allows records to be sorted and stored on multiple disks. An on-line key file stores indexing information for records sorted across disks. Up to 32,767 records per file are permitted, and a record can be the size of a disk. The more RAM available, the more fields allowed per record. A 64K system allows up to 700 fields per record. Fields can have an unlimited number of subfields. *Softbase* features include field validation, range checking, reports with headers and automatic page numbering, and free-form report design. Reports are limited to 80 columns. List price: \$475. Requirements: 64K, one disk drive.

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TALL TREE SYSTEMS
1032 Elwell Court #124
Palo Alto, CA 94303
(415) 964-1980

Circle 187 on reader service card

Forms Designer

Business Information Technologies
1048 Nicholas Ave.
Milpitas, CA 95035
408/262-1054

Forms Designer is a program for experienced applications developers who want to design data entry screens for use with data base management programs. Data entry features such as validation of social security number, date, data type, and range are included. Field entries can be designated as required, and screens can be designed so that they are displayed only during a specified entry job. Users can draw lines and boxes within and around screens. Help screens can be designed so that information can be called up during entry. Fields may be displayed in color, with default values, and in blinking or inverse video. List price: \$175. Requirements: 128K, two disk drives.

Forms Manager

Business Information Technologies
1048 Nicholas Ave.
Milpitas, CA 95035
408/262-1054

Forms Manager is an electronic filing system that has calculating and mathematics capabilities, including arithmetic, trigonometry, and statistics. Data can be entered, updated, retrieved, and printed through custom-designed screens and reports. Error checking can be included for entry jobs. The program makes full use of the IBM PC function and cursor keys. When used with the numeric and function keys, the <Alt> key provides editing functions for manipulating data. The program can handle up to 32,765

records per file. An optional function provides more flexible report generation and the ability to convert files between ASCII and DIF formats. List price: \$195. Requirements: 128K, two disk drives.

VisiFile

VisiCorp
2895 Zanker Rd.
San Jose, CA 95134
408/946-9000

VisiFile is a filing system that allows data to be transferred to other VisiCorp programs. Data from the file can be used with *VisiCalc* for computing and planning or with *Visi-Trend/Plot* for statistical analysis and graphing. The program provides global commands for viewing, searching, replacing, or deleting data in fields. Other features include phonetic searching and logical and conditional selecting. Users can enforce security through password protection of files and fields and can modify and merge files. Reports optionally include headers, footers, date, subtotals, and totals in a columnar or free-form format. Mailing labels may be printed up to five across. List price: \$300. Requirements: 64K, two disk drives, printer.

VisiDex

VisiCorp
2895 Zanker Rd.
San Jose, CA 95134
408/946-9000

VisiDex is a filing-cabinet-type program that stores and prints lists, notes, and memos and cross-refer-

ences data by key words. All files are entered in a free-form format; key words are indicated during entry and can be used for later retrieval of data. The program displays a calendar for any month between 1900 and 2000 and highlights the names of files stored during a specified month. Users can edit stored text and add or change key words for files. *VisiDex* can display key words in inverse video, flashing, or highlighted format and prints specific items, files, or entire disks. List price: \$250. Requirements: 64K, two disk drives.

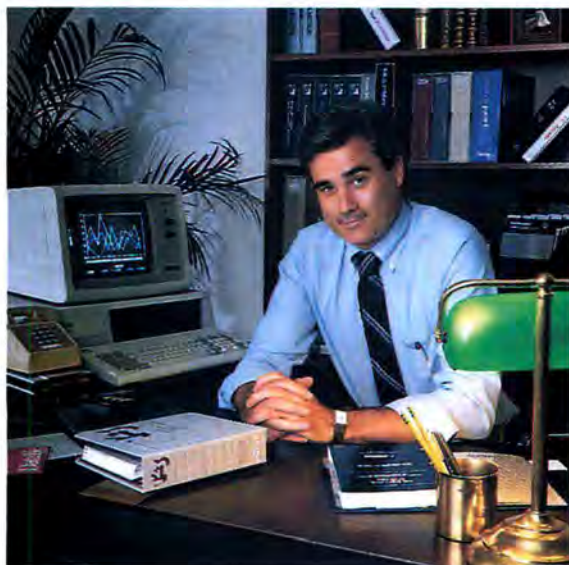
PDBase

IOTC, Inc.
910 Sully
Laramie, WY 82070
307/721-5818

PDBase is a data base program implemented under the UCSD p-System. A program interface, sold separately, allows programmers to write applications programs in Pascal that directly interact with files created and maintained in *PDBase*. Command files can be built using the program's procedure language, and a query language allows updating, searching, sorting, and computing. Users define data entry screens. Fields are of variable length and take up only enough disk space to accommodate stored data. The number of records per file is limited by disk space (16 megabytes maximum). Twelve files can be processed at once. The program uses password protection for files and fields within records. List price: \$245, program interface \$100. Requirements: 64K, one disk drive, UCSD p-System.

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Graphics

Nelson Johnson

A picture can often impart more information than any verbal or written expression, and with greater impact. Humans understand and communicate in verbal and nonverbal ways. As a child grows, the halves of the brain become specialized. One side becomes adept at handling spatial concepts, and the other at language and computation. The computer has developed a similar dual nature. Early computers, designed for computing only, were incapable of displaying graphics. But they soon began to process text as well as numbers and to display and print the results. With further increases in power, computers became capable of displaying extremely precise images.

Along the way, an interesting discovery was made: words, numbers, and graphic images could all be worked on and integrated into the same system. An engineer could draw a picture of a car with each part matched to its cost. The cost of the entire car could then be recalculated each time the design changed.

Humans tend to separate the elements of a problem when attempting to solve it. We first draw a picture of a car part by part, then calculate the cost of the parts, and finally, write a financial report. Although the computer is capable of performing all these tasks simultaneously, most current software still reflects the human's compartmentalized approach to solving a problem. Spreadsheets are used for numbers, word processors for words, and graphics programs for charts and drawings.

But the distinctions among numbers, text, and graphics are fading as new programs and personal computers alter our way of solving problems. Integrated spreadsheets already combine text, numbers, and graphics. Unfortunately, while existing software is useful, it tends to emphasize one function at the expense of the others. For example, you cannot use a spreadsheet to

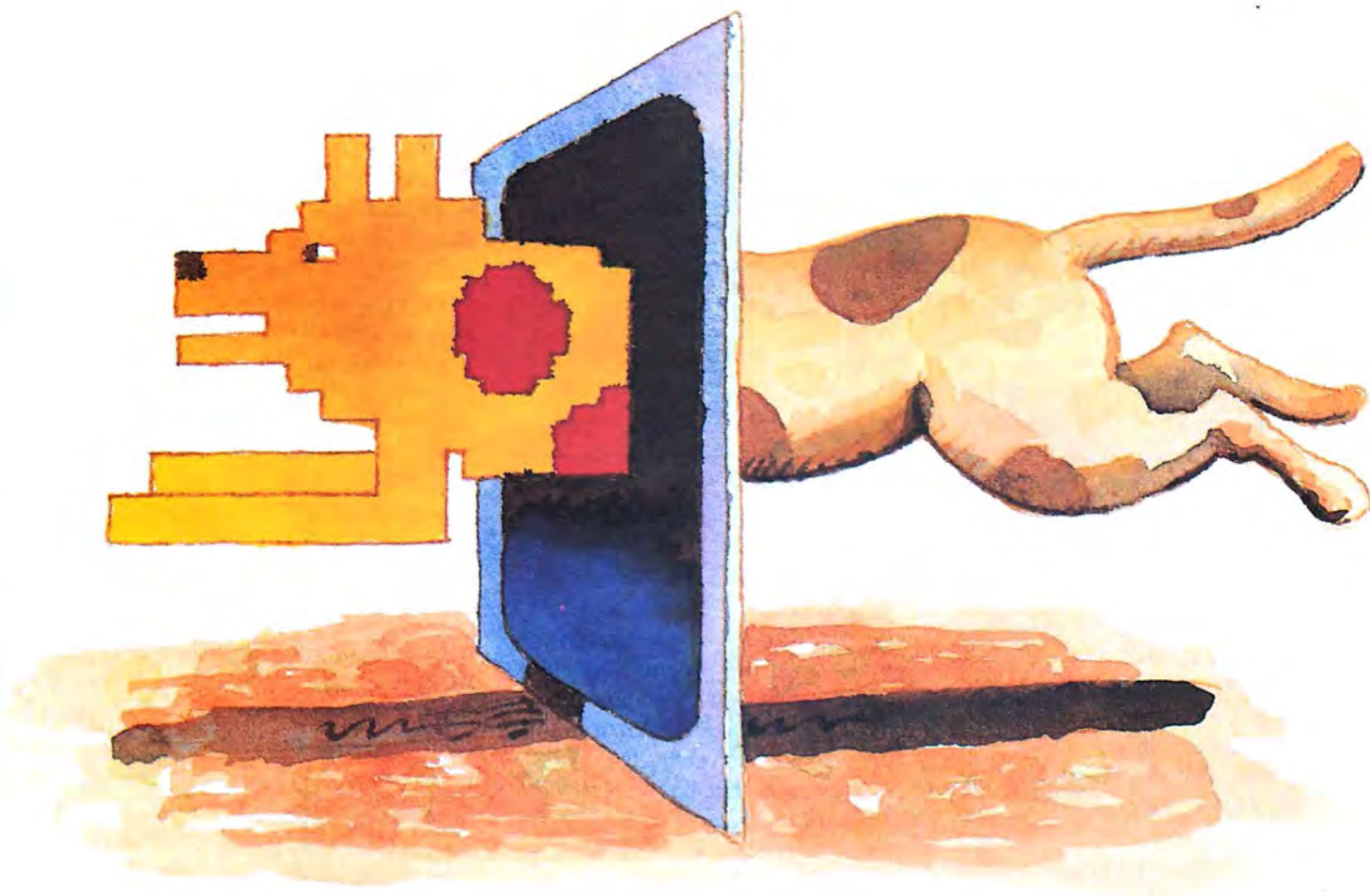
write a book or a word processor to create a multidimensional financial model. Graphics programs are similarly limited.

Despite limitations, programs can display on screen or print almost any kind of plot or chart: standard Cartesian plots, pie charts, horizontal and vertical bar charts, and other variations. The amount of data that can be handled is increasing, and as many as 30,000 data points can be used to generate a graph.

A number of spreadsheets readily share their data with graphics programs, eliminating the need to key in data when the graphic is created. Other packages interface with data base programs such as *dBASE II* and express text or numbers in graphic form.

Along with integrated functions has come the ability to create and manipulate images on screen. With the use of a light pen, the screen becomes a sketch pad where fine etching takes place, colors merge, and intricate patterns are woven. The user can display three-dimensional graphics and can rotate, append, or view objects in different perspectives.

As such capabilities expand, graphics programs, which are already used by designers, business managers, scientists, and educators, are being put to new uses in such professions as medicine and law. For example, a doctor can produce a model of an entire operation, illustrating the internal organs of a patient by assembling a three-dimensional image from a CAT scanner. A lawyer can prepare color illustrations of a crime or visually simplify complex financial data. For those who want to explore a potentially expensive or dangerous situation,



the ability to simulate or model graphically can be extremely useful.

The personal computer can also be an effective tool for many design applications. But there are certain limitations. As the amount of information to be handled increases, editing usually suffers because of slow processing speeds. The professional designer should be wary, for representations of some objects can be difficult to produce on a personal computer. Interaction between pictures and related alphanumeric information might also be limited.

Inevitably, though, graphics on personal computers will come to supplement the symbolic languages we use. Words and numbers often fail us when it comes to expressing abstract ideas. A picture may indeed be worth a thousand words—and then some. As personal computers evolve, pictures will expand the powers of human thought and expression.

Nelson Johnson is an architect and engineer who recently developed a three-dimensional professional design system for the IBM PC called MicroCAD. He is currently writing a book for Prentice-Hall on microcomputer-aided design.

Video Etch

Alphanetics
P.O. Box 597
Forestville, CA 95436
707/887-7237

Video Etch is a graphics editor that generates and saves high-resolution line etchings. The program is designed for engineers, draftsmen, educators, program developers, and graphic artists. The program's features include single- or multiple-dot drawing and erasing, selectable line length, palette and color selection, and dot/line/figure plotting by axis specification. Lines, circles, and boxes can be executed with single-keystroke commands. List price: \$49.95. Requirements: 64K, one disk drive, color graphics board.

TurtleGraphics

Network Consulting, Inc.
Discovery Park #110
3700 Gilmore Way
Burnaby, British Columbia
V5G 4M1 Canada
604/430-3466

TurtleGraphics is a graphics drawing program that runs under Pascal, FORTRAN, or BASIC. Figures are drawn by moving the cursor on the display screen and can be edited and saved for later viewing. Users can determine figure size, display scale, background, and coordinates. Work windows or viewports can be created. List price: \$845 with NCI's Advanced Development System. Requirements: 64K, one disk drive, color graphics board.



Graphwriter

Graphic Communications, Inc.
200 Fifth Ave.
Waltham, MA 02254
617/890-8778

Graphwriter is a business graphics package with 24 programs capable of producing over 40 graphic formats that can be modified to suit individual needs. Formats are divided into two sets. The Basic Set includes standard bar, pie, range, line, scattered, regression, and text charts as well as an overlay chart that allows users to add to an already plotted chart. The Extension Set includes more elaborate charts such as bubble organization, Gantt, table, combination pie-bar, and surface charts. *Graphwriter* supports three plotters: the HP7470 2-pen, the HP7220 8-pen, and the IBM XYZ 50 8-pen. Hard copy can be printed on paper or transparencies. Pen speed varies according to the type of paper and the width of the pen. List price: Basic Set \$395, Extension Set \$395, combination package \$750. Requirements: 128K, one disk drive, color graphics board, RS-232C serial port.

PC Draw

Micrografx
8526 Vista View Dr.
Dallas, TX 75243
214/343-4338

PC Draw is a design tool that allows users to create, edit, store, and print complex high-resolution, black-and-white drawings. The program provides a symbol template that users can define as well as predefined symbol templates for software and electrical design. Two types of free-hand line drawing are supported. *PC Draw* prints in compressed, expanded, or emphasized format. List price: \$250. Requirements: 128K; two disk drives; color graphics board; Epson MX-80, MX-100, or IBM Graphics Printer with Grafrax (light pen optional).

"PC Draw is well designed and easy to use." George Grayson, Ferguson, Missouri

Data*Easy Bar Graph Generator

Data*Easy Software
Data Consulting Group
877 Bounty Dr. #EE203
Foster City, CA 94404
415/571-8100

Bar Graph Generator is a business graphics utility program that allows users to display statistical information in bar graph format without a color graphics board. Data is entered directly from the keyboard. One to three graphs can be displayed simultaneously in three possible formats. Fifteen time periods may be represented. List price: \$35. Requirements: 64K, one disk drive.

Graph Magic

International Software Marketing
120 E. Washington St.
University Bldg. #421
Syracuse, NY 13202
315/474-3400

Graph Magic produces pie charts, bar charts, line graphs, scattergrams, and overlays. Text can be mixed with graphics. Data can be entered from the keyboard or read from *VisiCalc* or *MatheMagic*, International Software's mathematics program. List price: \$89.95. Requirements: 96K, one disk drive, color graphics board.

CADPlan

Personal CAD Systems
15425 Los Gatos Blvd.
Los Gatos, CA 95030
408/356-3183

CADPlan, designed for architects, engineers, and builders, facilitates the creation of two-dimensional designs with the IBM PC. The program features many of the same capabilities as a mainframe CAD system. A data base management system maintains statistics on design components. Users can select a grid specified in either English or metric units. Designs are created on the monitor with either a pen and tablet, a mouse, or a digitizer. Combinations of lines, arcs, circles, rectangles, and text constitute the designs. Editing commands include Copy, Move, Rotate, Delete, and Undo. Designers may "pan" around the design for a global view or

"zoom in" and "zoom out" to check details in a specific part of the design. Different line types—solid, dash, dots, and a choice of three colors—can be chosen to highlight the design. Images can be stored as symbols in *CADPlan*'s symbol library for use in subsequent designs. List price: \$1200. Requirements: 256K; one disk drive; color graphics board; choice of pen and tablet, mouse, or digitizer.

PCcrayon

PCsoftware
9120 Grammercy Dr. #416
San Diego, CA 92123
619/571-0981

PCcrayon enables users to create animated presentations, add drawings and symbols to self-generated programs, and create unique type fonts. *PCcrayon* takes advantage of all of BASICA's graphics functions. The program assigns single letters for whole chains of graphics statements. The program stores vector (outline only) drawings by number in vector files to be recalled in any size and at any angle into another drawing on the screen. Whole-screen or partial-screen images can be stored and retrieved. List price: \$44.95. Requirements: 64K, one disk drive, color graphics board.

"PCcrayon is so simple and makes the color board behave so effortlessly for cartoons, large lettering, simple illustrations, and even animated sequences that I disappeared happily into my color board for a whole weekend." Berkeley F. Fuller,
Honolulu, Hawaii

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BPS Business Graphics

Business & Professional Software
143 Binney St.

Cambridge, MA 02142

800/342-5277, 617/491-3377

BPS Business Graphics charts up to 4000 points of numeric data in a variety of formats: horizontal and vertical bar charts, full or partial pie charts, line graphs, and scattergrams. Different formats can be combined on the same axes. Graphs may be scaled. Charts and graphs are produced with English-language commands. Graphs can be displayed on a color or monochrome monitor. Hard copy can be produced with most printers and plotters. Data is entered directly from the keyboard or from *VisiCalc*, *SuperCalc*, or *MultiPlan* files. Frequently used formats can be stored and retrieved so that standard graphics reports can be prepared or updated automatically. *BPS Business Graphics* can perform several mathematical functions: moving average and exponential smoothing; curve fitting and specification by constant, line, logarithm, parabola, and sine; and calculation of minimum, maximum, sum, mean, variance, and standard deviation. List price: \$350. Requirements: 128K, two disk drives, color graphics board.

"A very useful program and easy to learn." C. Dennis Jones, Charlotte, North Carolina

Chart Pro

Micro Control Systems, Inc.
143 Tunnel Rd.

Vernon, CT 06066

203/872-0602

Chart Pro, a business graphics package, produces bar and dot charts in a variety of formats: multivariable horizontal bar and dot charts, and single or multivariable vertical bar charts. The charts can be rescaled automatically or manually. Data is entered in response to menu prompts or read from *VisiCalc* DIF files. Hard copy can be produced on an Epson MX-80. List price: \$95. Requirements: 128K, one disk drive.

DIFmaster

Starside Engineering

P.O. Box 18306

Rochester, NY 14618

716/461-1027

DIFmaster includes a Graphics Drawing System and four integrated utility programs—ChartDIF, PlotDIF, GraphDIF, and ScatrDIF—that generate graphs from spreadsheet DIF files. Although a color graphics board is required, a monochrome monitor can be used to produce higher resolution graphics. ChartDIF displays spreadsheet data in chart format. PlotDIF generates three-dimensional displays used to compare values and trends. GraphDIF displays spreadsheet data in three-dimensional line graphs in a user-determined scale. ScatrDIF reads data from a two-column spreadsheet

and displays it in a scatter diagram. The utility includes a correlation coefficient that allows users to determine whether the values in the first column have a direct relation to the values in the second. *DIFmaster* diagrams can be printed out or saved to disk. List price: \$79.95. Requirements: 64K, one disk drive, color graphics board.

Chart-Master

Decision Resources

21 Bridge Square

Westport, CT 06880

203/222-1974

Chart-Master, a menu-driven business graphics package, produces presentation-quality pie, bar, line, and scatter charts on a variety of pen plotters. The program also supports the Polaroid Palette, a computer image recorder that produces 35mm color slides and instant Polaroid prints of screen displays. Data may be read from DIF files or keyed in by the user. With a color graphics board, charts can be previewed and edited on screen. *Chart-Master* provides many options for custom charts including a choice of eight cross-hatchings, eight line styles, and ten colors. Text can be produced in six fonts and 16 sizes and can be italicized, underlined, and centered. List price: \$375. Requirements: 128K, two disk drives, color graphics board, RS-232C serial port, pen plotter.

"Chart-Master makes full use of your plotter's capability. Users have excellent control over graph appearance." William Castner, Bethesda, Maryland

Color Demonstration

Ensign Software
7337 Northview
Boise, ID 83704
208/378-8086

Color Demonstration, a package of ten graphics demonstration programs, illustrates the IBM PC's graphics capabilities. Kaleidoscope creates a series of symmetrical dot patterns in 16 colors. Weave makes a crisscross pattern in 16 colors. Logo draws the Ensign logo of a mountain climber. String Art plots lines. 3-D Hills lends three-dimensional depth. Script writes and saves messages in a special font. Portrait sketches a picture of the author, Star draws multi-pointed stars, and Prism depicts symmetrical geometric figures. Calendar lets users write and save reminders for any day of any year. List price: \$24.95. Requirements: 64K, one disk drive, color graphics board.

Business Graphics Package

Transaction Systems, Inc.
8708 E. 39th St.
Tulsa, OK 74145
918/663-3436

Business Graphics Package displays numerical data in line, point, bar, multibar, area, stacked bar, pie, Gantt, and high-low-close graphs. Data can be read from *VisiCalc* files. Graphs can be saved and used for on-screen slide-show presentations. The program supports the Epson printer with Grafrax. List price: \$125. Requirements: 64K, one disk drive, color graphics board.

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(for IBM PC System Unit)

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Diagram Master

Decision Resources
21 Bridge Square
Westport, CT 06880
203/222-1974

Diagram Master is a business graphics program that produces flow charts, organization charts, and decision-tree diagrams. Free-form diagrams with symbols and text may be created, or a predefined diagram in the program's library may be used. Symbols include rectangles, circles, triangles, arcs, and arrows. Diagrams can be stored and edited, and hard copy can be produced on a pen plotter. List price: \$285. Requirements: 128K, one disk drive.

MetaGraph

Graphicon Systems
399 Sherman Ave. #10
Palo Alto, CA 94306
415/329-1791

MetaGraph is an interactive color graphics program that has two graphics modes: business graphics and sketchpad. The program generates line plots, bar graphs, pie charts, maps, and user-designed charts. The business graphics mode offers a choice of two- or three-dimensional graphics, clustering and stacking, different line styles, and line thicknesses of from 1 to 4 pixels. Areas may be shaded or filled with color, and up to 32,000 points of data may be entered. In the sketchpad mode users can create free-form graphics, draw icons, and combine pictures to create a collage effect. Objects can be drawn on the screen or retrieved from a disk file. In the on-screen editing mode images can be moved and

rescaled. Users can switch between screen display and data entry without losing the drawing on the screen. *MetaGraph* works with *dBASE II*, *VisiCalc*, and *SuperCalc*. The program supports the IBM Graphics Printer, NEC 8023, or HP7470 plotter. It comes with a set of pens of varying shapes, colors, and patterns. List price: \$495. Requirements: 128K, two disk drives.

Demonstration Software Program

FTG Data Systems
P.O. Box 615 #M-2
Stanton, CA 90680
714/995-3900

Demonstration Software Program illustrates how to use a light pen. A subroutine is provided that corrects errors in IBM's light pen BIOS. The demonstration includes a series of games and a graphics program, *Picture Program*, that enables users to create images on a color monitor using a light pen. Pictures can include boxes, lines, circles, text, and fill. List price: \$39.95. Requirements: 64K, one disk drive, color graphics board, FT-156 light pen.

Emu-Tek

FTG Data Systems
P.O. Box 615 #M-2
Stanton, CA 90680
714/995-3900

Emu-Tek emulates models 4010 to 4012 of the Tektronix graphics terminal, and accesses mainframe graphics software. The emulator provides a mode for text scrolling.

As on the Tektronix, graphics displays are stationary and do not scroll. Four options are available with *Emu-Tek*: a screen dump, an advanced communications package, light pen support, and a zoom/pan/plot program that captures data directly into a disk file, redisplay the data, or directs it to the plotter. List price: \$395, screen dump \$35, advanced communications \$65, light pen support \$159.95, zoom/pan/plot \$45. Requirements: 128K, one disk drive, color graphics board, RS-232C serial port.

Boardroom Graphics

Analytical Software, Inc.
10939 McCree Rd.
Dallas, TX 75238
214/340-2564

Boardroom Graphics is a business color graphics program that displays numeric data in pie charts, bar charts, line graphs, scattergrams, and three-dimensional plots. Data can be entered directly from the keyboard or read from DIF, *VisiCalc*, or BASIC files. The program also works with mainframe data bases. It features automatic scaling, label legends, and color shading, and prints values below graphs and compound growth rates. Hard copy can be produced on paper or transparencies. Up to five variables and 60 points of data can be plotted in one graph. The program supports HP plotters and a variety of printers. Users can plot forecast data generated by Analytical Software's program *The Financial Analyst*. List price: \$95. Requirements: 64K, one disk drive, color graphics board.

"What Is Now Proved Was Once Only Imagined."

William Blake



The **Graphic Decision Support System, GDSS**, is a business graphics package created for decision making. To meet this objective GDSS® offers:

Internal Database Facility Data can be entered manually or retrieved from a remote computer via terminal emulation and host data utilities. By offering access to vast quantities of information, selecting from that pool, and displaying the selection as graphic images, GDSS enables decision makers to identify trends, spot spikes, make comparisons among related and unrelated objects and perform mathematical functions on the results.

Software Interfaces GDSS interfaces easily with spreadsheet packages and existing mainframe applications. An effective vehicle for moving host-quality graphics to the PC environment.

Easy To Use Chart Building

Tools Multiple user levels begin with a simple menu structure for the non-computer trained and advance through commands and command files to the development of customized menu structures. GDSS provides over twenty different formats (i.e. line, bar, 3-D bar, pie, bubble, text, report, etc.) and even enables users to define their own formats.

Graphic Editing The powerful graphic editing facility is an effective tool for creating or enhancing graphs of arbitrary complexity using the digitizing tablet.

Environment GDSS will run in a variety of configurations. The following is the minimal configuration required for the IBM PC:

■ 320K random access memory ■ two double-sided, double density 5.25 inch floppy disk drives ■ two RS 232 ports ■ IBM PC color

Circle 378 on reader service card

monitor board and a color monitor (Amdek, IBM, etc.). For higher resolution, use an intelligent graphics screen (AED, Chromatics, Ramtek, and Tektronix supported). ■ optional digitizing tablet

No other business graphics package offers all the features of GDSS.

Our demo diskette and user manual are available for your review at **\$35⁰⁰**

This amount will be applied to your purchase of GDSS. Call or write:



Data Business Vision, Inc.
3510 Dunhill, Suite B, San Diego, CA 92121
619/450-1557

Pixon

Olive Branch Software
1715 Olive St.
Santa Barbara, CA 93101
805/569-1682

Pixon generates free-form graphics on a monochrome monitor. The program's graphics primitives include line, box, and diagonal. A character-set library contains different fonts and letter sizes; the library may be modified and added to. Graphs may be printed, saved to disk, or included in a BASIC program. List price: \$79. Requirements: 64K, one disk drive.

Benchmark

Metasoft Corporation
711 E. Cottonwood, Ste. E
Casa Grande, AZ 85222
602/961-0003

Benchmark is a comprehensive graphics program written in machine language. It includes free-hand drawing, graphics primitives, bar and pie charts, and text/graphics combinations. Images can be combined to form a single picture and the picture or its components can be saved and edited. The program allows users to copy images, zoom into or enlarge an image, display a grid for reference while drawing, remove hidden lines, and fill with five different fill patterns. Color line and fill are supported when used with a color monitor. List price: \$699. Requirements: 128K, one disk drive, color graphics board.

GraphPlan

Chang Labs
5300 Stevens Creek Blvd.
San Jose, CA 95129
408/246-8020

GraphPlan is an integrated spreadsheet and business package with resident formulas, sorting and ranking capabilities, and graphics generation. Formats include bar and pie charts, line graphs, and scattergrams; these formats can be combined. Legends are generated automatically. Axis labels can include date, time, alphanumeric characters, or logarithmic data. Hard copy can be produced on most popular dot matrix printers and the Hewlett-Packard 7470A plotter. List price: \$395. Requirements: 128K, two disk drives, color graphics board.

PC-Plot II

Microplot Systems Company
1897 Red Fern Dr.
Columbus, OH 43229
614/882-4786, Telex 62186730,
CompuServe 70575,406

PC-Plot II is an intelligent serial ASCII communications program that enables the IBM PC to emulate the Tektronix Model 4010 graphics terminal. The program provides access to mainframe graphics programs by ISSCO, SAS Graph, Precision Visuals, and Tektronix. Charts, graphs, pictures, and engineering blueprints can be generated and previewed on the PC screen, saved on a local disk file, and redrawn on the screen when the PC is no longer connected to the network. The program includes an HP7470A two-pen plotter driver. List price: \$75. Requirements: 64K, one disk drive, color graphics board, RS-232C serial port.

UGraf

Transparent Data Systems, Inc.
P.O. Box 18276
San Jose, CA 95158
408/559-0288

UGraf is a business graphics program that generates analytical, presentation-quality graphs from existing data files. Pie and bar charts, line graphs, and scattergrams can be produced. The program is compatible with a variety of data bases and spreadsheets including *SuperCalc*, *dBASE II*, and *Condor*. List price: \$495. Requirements: 64K, two disk drives, Digital Research's GSX.

WaveDisplay

Epic Instruments, Inc.
551-G Foster City Blvd.
Foster City, CA 94404
415/574-9081

WaveDisplay displays waveforms that have been captured by any data acquisition system on the IBM PC monitor, transforming the PC into an intelligent oscilloscope. Data is transferred from the data acquisition system through the RS-232C serial port to the PC and is immediately stored to disk. Data can be displayed or saved for later analysis. The program's expand/zoom feature permits the entire captured waveform to be viewed for close analysis. Multiple waveforms can be displayed simultaneously in stacked or superimposed form. Waveshapes can be created with BASIC, a text editor, or a word processor and displayed on the monitor. List price: \$99.95. Requirements: 64K, one disk drive, color graphics board.

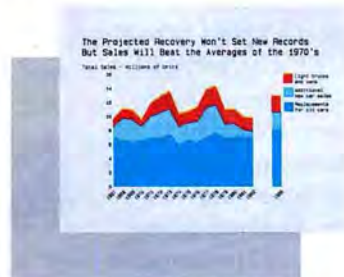
It's easy to see why DEC, Hewlett Packard, NEC and Burroughs chose

Graphwriter[®] for presentation graphics.

When Digital Equipment Corporation, Hewlett Packard, NEC Information Systems, and Burroughs Corporation selected a presentation graphics package to offer with their microcomputers, they surveyed the market carefully. All of them made the same decision: They chose **Graphwriter**.

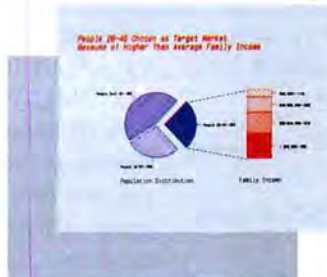
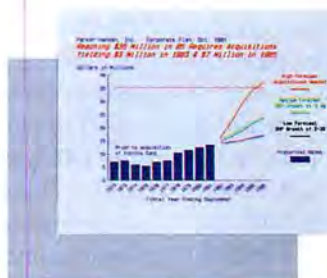
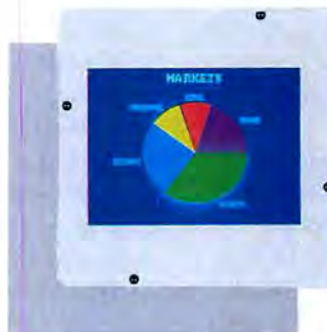
When you choose a presentation graphics package for your personal computer, you will look for the same capabilities these major manufacturers looked for. Highest quality output. More chart types. Flexibility to create just the look you want. And easy enough for everyone in your organization to use. Only **Graphwriter** can give you the power of a main-frame graphics package on your microcomputer.

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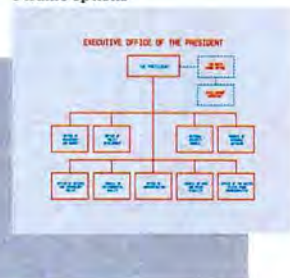


Graphwriter versions for the DEC Rainbow[™], HP150[™], NEC APC[™] and Burroughs ET2000[™] are available from the manufacturer or an authorized dealer. **Graphwriter** for the IBM PC/XT is available through IBM dealers, including ComputerLand and Entre Computer Centers.

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More graphic formats
column (vertical) charts
stacked column
clustered column
bar (horizontal) charts
stacked bar
clustered bar
single pie
double pie
triple pie
quadruple pie
proportional pie
line charts
scatter plots
bar-line combination
text/word charts
Gantt
organization
bubble
table
pie-bar combination
surface line
stacked line
line-table
double stacked bars
range
paired bars
overlay text
More flexibility
move chart elements
heading justification
footnote justification
italic fonts
bold fonts
bold lines
variable font size, all text
variable font color, all text
values displayed on bars
values displayed for pie slices
adjustable bar widths
adjustable pie sizes
pie rotation
pie placement
single bar color control
single bar omission
unequal line lengths
8 line types
4 line marker types
8 line marker types
5 frame options



8 fill patterns
axes labels (\$, % or x)
log scaling
semilog scaling
multiple curve fits
floating comments
More space for your message
150 character heading
150 character footnote
150 character comment
50 character axis titles
40 character legends
20 character bar/slice labels
More ways to present
paper
transparencies
35mm slides
coated paper plotting
horizontal page plotting
vertical page plotting
multiple plots per page
custom size and location
graphics only plotting
Easier to use
individual format programs
pre-designed formats
format selection from chart book
input forms
spreadsheet file access
data transfer between formats
format-specific help messages
prompt-specific help messages
user-defined default options
screen preview
preview plotting
printed proof sheet
"built-in artist"
automatic chart composition
automatic page layout
pen sorting
minimal pen changes
pen change prompting
faster solid fill
transparency color separation
automatic storage of last data
chart storage

For more information, contact:
Graphic Communications, Inc.
200 Fifth Avenue
Waltham, Massachusetts 02254

617 890-8778

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Softplot/BGL

Graphic Software, Inc.
1972 Massachusetts Ave.
Cambridge, MA 02140
617/491-2434

Softplot/BGL (BASIC Graphics Language) is a device-independent graphics library for Microsoft BASIC that runs under PC-DOS or CP/M-86 and provides functions comparable to the CORE and GKS base level standards. The program consists of two modules: BGL and Emuplot. BGL features two-dimensional viewing with windows, image rotation, three-dimensional plotting, and automatic text justification. It supports a variety of device features such as color, area fill, and dashed lines. Emuplot produces high-resolution hard copy on printers that lack graphics display hardware. The program is suited for technical, business, and educational applications. List price: \$200. Requirements: 128K, one disk drive, color graphics board.

Bitsgraf

Boeing Computer Services Company
2800 160th Ave. SE
Bellevue, WA 98009
206/763-5636

Bitsgraf is a general-purpose graphics program that generates business and two-dimensional engineering graphics. The program works with the *Bitscalc* spreadsheet program. It is designed for hard-copy plotting devices but does not produce screen graphics quickly enough for conference display. *Bitsgraf* supports the HP7470 and HP7220. List price: \$600. Requirements: 64K, two disk drives, color graphics board.

Chartman

Graphic Software, Inc.
1972 Massachusetts Ave.
Cambridge, MA 02140
617/491-2434

Chartman is a business graphics package available in five versions. *Chartman I* generates two- or three-dimensional, high-resolution graphics on a monochrome monitor. The program enables users to design 20 chart formats. Screens can be viewed consecutively in the manner of slide presentations. It supports the Epson MX-80 and MX-100 printers and can produce plots in color on the Hewlett-Packard 2-pen 7470 and 8-pen 7220 plotters. Data can be read from DIF format files. *Chartman II* displays charts on a color monitor in combinations of 32 colors or on a monochrome monitor. Color charts can be printed on the P-Series printer (formerly the IDS Prism printer). The program supports the Epson MX-80, Epson MX-100, HP7470, HP7220, and IBM XY-750 printers. *Chartman III* allows users to design 12 chart types including line graphs and pie, bar, text, and three-dimensional charts. Charts are displayed on the monochrome monitor. The program supports the Epson MX-80, Epson MX-100, HP7470, and HP7220 printers.

Chartman IV offers a specialized set of graphics formats including Gantt, organizational, area fill, and on-screen text charts, scattergrams, and statistical curve fitting. Charts can be displayed on a color monitor in combinations of 32 colors. The program supports the Epson MX-80, Epson MX-100, P-Series, HP7470, and HP7220 printers. *Super-Chartman II* displays data on a color or

monochrome monitor in 25 chart formats. Data may be transferred from one chart format to another. Charts may be previewed on screen before printing or plotting. Up to 6 charts can be presented on a single sheet of paper. The program supports the Epson MX-80, Epson MX-100, P-Series, HP7470, HP7220, IBM XY-749, and IBM XY-750 printers. List price: *Chartman I* \$325, *Chartman II* \$380, *Chartman III* \$199, *Chartman IV* \$500, *Super-Chartman II* \$425. Requirements: 128K, two disk drives, color graphics board.



Bits Business Graphics

Boeing Computer Services Company
2800 160th Ave. SE
Bellevue, WA 98009
206/763-5636

Bits Business Graphics is a series of programs that plots bar charts, pie charts, line graphs, Gantt charts, and text charts for cost and resource planning. The programs produce

hard-copy charts but do not generate screen graphics quickly enough for conference use. Data may be entered from the keyboard or read from the *Bitscalc* spreadsheet program. The programs support the HP7470 and HP7220. List price: \$300. Requirements: 64K, two disk drives, plotter, color graphics board.

Image Edit

Micro Network Corporation
511 Eleventh Ave. #429
Minneapolis, MN 55415
612/333-4303

Image Edit generates job-specific symbols and permits the IBM PC to work as a computer-aided-design work station. The program includes symbol libraries for subjects such as printed circuit board design, process control, architectural drafting, math and science, and chemistry. List price: with one library \$295, each additional character set \$100. Requirements: 128K, one disk drive, color graphics board.

VisiTrend/Plot

VisiCorp
2895 Zanker Rd.
San Jose, CA 95134
408/946-9000

VisiTrend/Plot is a business graphics program that performs statistical analysis and forecasting. Graphs are displayed on a monochrome monitor as pie, bar, and high-low-close charts and X-Y plots. The program supports Epson MX printers and the NEC Spinwriter. List price: \$300. Requirements: 128K, two disk drives.

Lenipen

Duncan-Atwell Computerized
Technologies
924 Worth Ave. #B-2
Linden, NJ 07036
201/355-1690

Lenipen is a collection of color graphics programs written in the artificial intelligence language SOUL (Symbolic On-line User Language). Images are drawn with a light pen. The program features line, circle, sound, and text editors. Up to 16 colors can be selected with the IBM PC's function keys and mixed with color-mixing subroutines. The program includes Lenimation, an animation subsystem that uses scenery and moving objects and allows for sound-track editing. List price: \$199. Requirements: 64K, one disk drive, color graphics board, light pen.

Graph Power

Ferox Microsystems
1701 N. Fort Meyer Dr., 6th Floor
Arlington, VA 22209
703/841-0800

Graph Power generates camera-ready, presentation-quality business graphics. Data can consist of input from the keyboard, DSS/F data files, or DIF data files. Bar charts, stacked bar charts, line and pie charts, and text and reports can be produced on paper or transparencies. *Graph Power* features multiple-image overlays, shading combinations, text annotation, and mathematical operations. Users can scale graphs automatically or manually with a choice of eight letter sizes. Up to four graphs can be included in a page, and up to 260 points of data can be processed. List price: \$295. Requirements: 128K, one disk drive.

Slide Pro

Micro Control Systems, Inc.
143 Tunnel Rd.
Vernon, CT 06066
203/872-0602

Slide Pro, a menu-driven business graphics program, generates charts that can be used for overhead projector slides. Slide files can be saved on disk. Charts are made with stored shapes of arrows, boxes, diamonds, and circles. Users choose the size, color, and location of each shape. Text can be used for labeling. Black-and-white hard copy can be produced with a printer. List price: \$75. Requirements: 64K, one disk drive, color graphics board.

Graphics Generator

Robert J. Brady
431 Vineyard Point Rd.
Guilford, CT 06437
203/643-4897

Graphics Generator displays data in bar charts, pie charts, line graphs, and function graphs on either a monochrome or color monitor. Graph editing, formatting, and saving are performed with single-key-stroke commands. In editing mode data can be added or deleted, and graphs are automatically modified to reflect changes in data. Graphs can be superimposed or merged. Up to ten curves can be plotted on one graph. List price: \$200. Requirements: 64K, one disk drive, color graphics board.

dGraph

Fox & Geller, Inc.
P.O. Box 1053
Teaneck, NJ 07666
201/837-0142

dGraph displays *dBASE II* data or data entered with the keyboard in pie, line, pie-bar, and stacked or side-by-side bar formats. The program supports the following printers and plotters: Epson MX-70, MX-80, and MX-100; Okidata Microline; Xerox 1650; NEC Spinwriter; and HP7470A plotter. List price: \$295. Requirements: 96K, one disk drive.

HP7470 Plotter Demo

Ensign Software
2312 N. Cole Rd., Ste. E
Boise, ID 83704
208/378-8086

HP7470 Plotter Demo is designed to demonstrate the HP7470's plotting capabilities. Ten demonstrations are included in the program. Birthday plots spirals from random points; 12 Month Trend plots a 12-month moving average for two sets of data; Phone Chart plots a ledger sheet for entering names, addresses, and phone numbers. Other demos include Display Slides, Digitizer, Archimedes Spiral, Polar Functions, and Ensign Software's Logo. List price: \$24.95. Requirements: 48K, one disk drive, HP7470 or HP7225 plotter.

DR Graph

Digital Research
P.O. Box 579
Pacific Grove, CA 93950
408/649-3896

DR Graph is an interactive graphics and editing tool for developing slide presentations, trend charts, and financial analysis reports. The program incorporates GSX graphics, making it possible for the CP/M operating system to work with hardware devices such as printers, plotters, and monitors. List price: \$295. Requirements: 192K, two disk drives.

Fontastic

IHS Systems
4718 Meridian Ave. #211
San Jose, CA 95118
408/265-5503

Fontastic is a word processing text customizer and print enhancer that uses the full power of dot matrix printers with bit-graphic features. The program enables you to print diagrams, drawings, foreign language characters, and special character symbols. It provides 20 fonts and also lets you create your own. The program supports subscripts and superscripts, italics, emphasized type, double-width type, double-strike type, underscored type, and compressed type. *Fontastic* commands can be inserted into any PC-DOS text file in place of control codes. List price: \$125. Requirements: 128K, one disk drive, Epson model MX or FX, C.Itoh 8510A, or Okidata Microline printer.

GrafTalk

Redding Group, Inc.
609 Main St.
Ridgefield, CT 06877
203/431-4661, Telex: 643351

GrafTalk is an interactive business graphics package used to display data in bar, pie, line, and symbol charts. Composite graphs, line drawings, and maps can be generated. The program accepts data from the keyboard or from ASCII files. Custom graphs can be designed with *GrafTalk*'s Move and Draw commands. The text editor can be used to create a command file for regularly updated graphs. *GrafTalk* supports the HP7470 plotter and a number of printers. List price: \$450. Requirements: 128K, one disk drive, color graphics board.

Graphics Mantus

Suttle Enterprises
29844 W. Chicago
Livonia, MI 48150

Graphics Mantus is a full graphics editor. It enables the user to draw lines, boxes, and ellipses. Text can be incorporated into graphs, and images can be scaled and rotated on screen. The built-in function key definer allows users to design commands. Images may be saved to disk and used in BASIC programs. List price: \$69.95. Requirements: 128K, one disk drive, color graphics board, separate printer dump.

Artist

Sunshine Computer Software Co.
1101 Post Oak Blvd. #9-493
Houston, TX 77056
713/552-0949

Artist is a black-and-white graphics program that includes a library of standard shapes. Shapes can be created and added to the library, and figures can be translated, rotated, erased, or colored in. Users can determine the size and location of text included in the display. List price: \$75. Requirements: 128K, one disk drive, color graphics board.

Fast Graphs

Innovative Software, Inc.
9300 W. 110th St. #380
Overland Park, KS 66210
913/383-1089

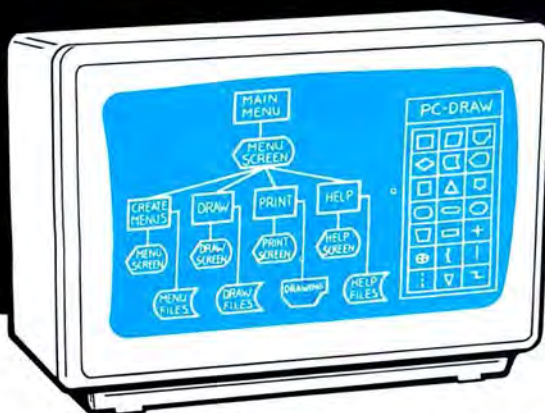
Fast Graphs is a business graphics program that allows users to display data in bar or pie charts and point/line graphs. Data can be read from DIF files and a variety of spreadsheets. *Fast Graphs* includes an editor that can be used for customizing graphs or free-form drawing. The program works with Innovative Software's data base management programs, *TIM III* and *Fast Facts*. List price: \$295. Requirements: 128K, two disk drives, color graphics board.

Joydraw

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
913/843-5863

Joydraw is a color graphics program that enables users to draw diagrams and illustrations on the screen with a joystick. Users can combine text with graphics. The program supports the Epson MX-80 printer. List price: \$23 including documentation. Requirements: 64K, one disk drive, color graphics board, game port, joystick.

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- And other Drawing Applications



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Suite 703
Richardson, TX 75081
(214) 343-4338

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HIgraph-III

Houston Instrument
Division of Bausch and Lomb
8500 Cameron Rd.
Austin, TX 78753
512/835-0900

HIgraph-III is a business graphics program that displays statistical data in line graphs, bar charts, or pie charts. Data is entered from the keyboard. The program supports Houston Instrument's DMPL plotters but no printers. List price: \$25. Requirements: 64K, one disk drive, RS-232C serial port, HIDMPL plotter and cable.

Graphit

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
913/843-5863

Graphit is an interactive graphics program that generates pie charts, bar charts, dot graphs, line graphs, histograms, and overlays. Up to 30 items can be plotted per graph. Data is entered from the keyboard or from *VisiCalc* DIF files. The program supports an Epson printer with Grafrax. List price: \$70. Requirements: 64K, one disk drive, color graphics board.

Easygraf

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
913/843-5863

Easygraf is a color graphics program whose line drawings can be incorporated into pictures and charts. The

graphics can be saved to disk and printed on an Epson MX-80 with Grafrax. The program offers a choice of high- or medium-resolution graphics. List price: \$38 including documentation. Requirements: 64K, one disk drive, color graphics board.

Ultradraw

Ultragraphics Systems
1100 S. Main St.
Racine, WI 53403
414/636-7739

Ultradraw is a computer-aided design and drafting package that generates two-dimensional designs. The cursor is controlled and commands are selected using the keyboard, a joystick, a mouse, or a digitizing tablet. The program's geometric construction features allow the use of Cartesian or polar coordinates to create lines and arcs. Advanced line construction features enable users to produce lines that are parallel, angular, of defined length, vertical, horizontal, and tangent to arcs. Circles and arcs can be constructed in 12 ways. Images can be duplicated, rotated, and flipped to create mirror images. Length, distance, angular displacement, and parallelism can be measured to assure accuracy. Commonly used shapes, symbols, and notes can be saved in a separate file and used in subsequent drawings at any scale factor. Drafting features include dashing of hidden lines and automatic dimensioning. Final drawing components can be separated into 256 overlays and displayed in any combination. List price: \$195. Requirements: 128K, two disk drives.

Micro-Graf, Print-Graf

Micro-Z Company
P.O. Box 2426
Rolling Hills, CA 90274
213/377-1640

Micro-Graf and *Print-Graf* work together to create and print graphs. *Micro-Graf* displays numeric data in high-resolution bar charts or line graphs. Data is entered from the keyboard. Both axes and the graph itself can be titled. Data and graphs can be saved. *Print-Graf* is required for hard-copy graphs. *Print-Graf* dumps medium- or high-resolution graphics to an Epson or IBM printer with Grafrax. Graphs can be printed upright or sideways, in dark or light print, and in either black-on-white or white-on-black. The program comes with a one-line BASIC command for automatic printing. List price: *Print-Graf* \$44.50, *Print-Graf* with *Micro-Graf* \$79.50. Requirements: 48K, one disk drive, Epson or IBM printer with Grafrax.

Grafcalc

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
913/843-5863

Grafcalc is a color graphics program that displays data in pie charts, bar charts, scatter graphs, dot graphs, line graphs, histograms, graph overlays, and map graphs. The program plots columns or rows from a *VisiCalc* model and supports the Epson MX-80 printer. Optional support is available for the IDS P-Series printer or any Hewlett-Packard plotter. List price: \$400 including documentation. Requirements: 64K, one disk drive, color graphics board.



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Glyphix

Starside Engineering
P.O. Box 18306
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716/461-1027

Glyphix allows the IBM PC screen to be used as a sketch pad. Images and diagrams are drawn by directing the single-pixel cursor around the screen using the numeric keyboard. Users can draw vertical, horizontal, and 45- and 90-degree lines from any point in the graph. The Ray command can be used to connect any two points on the screen. The program uses all BASICA graphics features. *Glyphix* is compatible with the manufacturer's graphics utility program, *Frieze*, which stores graphics to disk or dumps them to the printer. List price: \$24.95. Requirements: 48K, one disk drive, color graphics board.

KeyChart Business Graphics System

SoftKey, Inc.
411 Shaw St. #1
Toronto, Ontario
M6J 2X4 Canada
416/537-0792

KeyChart Business Graphics System is a menu-driven plotter driver with a preview option. The program supports the HP7470, Sweet P, Strobe, DMP 40, and DMP 29 plotters. The program produces presentation-quality color graphs in a variety of formats: clustered and stacked bar, line, pie, and combined bar and line

charts. With the optional graphics preview, charts can be displayed in color while being developed. A chart's location can be previewed with its title's location highlighted, which is useful when incorporating charts into business reports. Charts can be expanded or compressed, and legends, titles, and text may be placed anywhere within a chart. Up to 64 variables can be entered, and lines can be projected from any point on the chart. Data can be entered from the keyboard or read from 1-2-3, *Multiplan*, *SuperCalc*, *VisiCalc*, *PeachCalc*, and *PerfectCalc* spreadsheet files. List price: \$275, with preview option \$375. Requirements: 64K, with preview option 128K, two disk drives.

Creative Graphics

Accupipe Corporation
222 West Lancaster Ave.
Paoli, PA 19301
215/296-7376

Creative Graphics is a general-purpose drawing program designed to generate two-dimensional, medium-resolution color graphics. Users can produce circles, boxes, lines, and ellipses. Images can be generated in free-style sketch mode. Part of a design may be copied or moved to another area of the screen. Images can be rotated in 90-degree increments or flipped to produce a mirror image. Symbols can be created and stored in a library and be easily revised or referenced for placement in any drawing. All IBM PC keyboard symbols and characters, including upper- and lowercase, can be incorporated into a design. A series of up

to 18 screens can be displayed on the monitor in slide-show fashion in either automatic or manual mode. List price: \$139.95. Requirements: 64K, one disk drive, color graphics board; IDS Prism 80/132, Microprism printer, IBM Graphics Printer with Grafrax, or Epson printer with Grafrax.

Grafmatic

Microcompatibles
11443 Oak Leaf Dr.
Silver Spring, MD 20901
301/593-0683

Grafmatic is a set of four integrated graphics programs that include 57 FORTRAN callable subroutines ranging from cursor movement and pixel setting to three-dimensional solid modeling with hidden line removal. The first program is a utility package written in assembly language (though the commands look like FORTRAN subroutine calls to the user) that allows users to draw lines, paint, and set screen mode and foreground and background color. The second program is an interactive, two-dimensional graphics program that can generate, edit, and merge objects. The third program, a general-purpose, two-dimensional plotting package, draws axes, sets scales, writes text, and draws general user-defined curves. The fourth program draws three-dimensional plots and solid objects that can be rotated and scaled. Hidden line removal renders realistic three-dimensional images. List price: \$95. Requirements: 128K, color graphics board.

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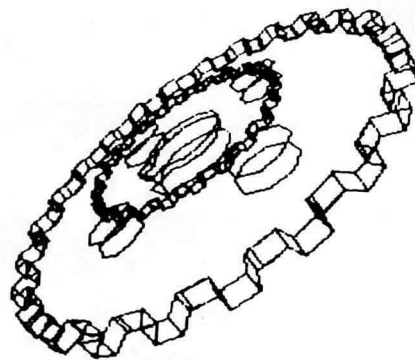
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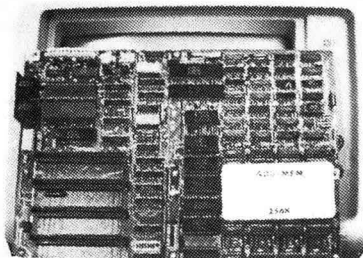
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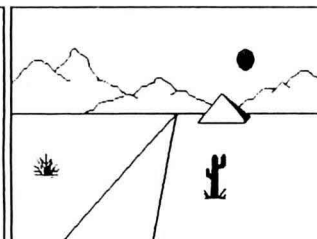
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Business Graphics System

Peachtree Software, Inc.
3445 Peachtree Rd.
Atlanta, GA 30326
404/239-3000

Business Graphics System (BGS) displays numerical data in a variety of chart formats. The basic graphs include line charts, vertical bar charts, area and pie charts, word charts, and horizontal single- and double-sided bar charts. Data can also be displayed in histograms, critical ratio graphs, and scatter charts with linear regression and mean-value calculations and lines. Formats can be varied with eight colors, nine area fills, and seven character fonts. Charts are defined by on-screen forms that users fill in. Alternatively, data can be read from a spreadsheet or another ASCII file. Chart size and graphics location may vary as corners are defined by coordinate points or plotter pen movement. *BGS* file manager can copy, delete, and rename files. Default files for each chart type can be created. List price: \$295. Requirements: 128K, two disk drives, color graphics board, color monitor.

Sketchpad

Evryware
1950 Cooley Ave. #6208
Palo Alto, CA 94303
415/321-2708

Sketchpad is a graphics utility program that creates, moves, edits, and saves images. Boxes, lines, circles, diamonds, and arcs are drawn auto-

matically. Images can be enlarged or reduced and rotated by 5-degree angles. Images can be saved to disk and incorporated into other programs.

List price: \$49.95. Requirements: 128K, one disk drive, color graphics board.

ES Painter

E & S Software Services
P.O. Box 238
Bedford, MA 01730
617/275-8534

ES Painter is a program for children that generates four-color graphics. It uses a joystick to create images and uses function keys for commands. Images can be stored on disk or deleted, but no provisions for producing hard copy are included. A disk of drawings comes with the program. List price: \$45. Requirements: 64K, one disk drive, color graphics board, color monitor, game adapter, joystick.

Big-Print

ATC Software
Rt. 2, Box 448
Estill Springs, TN 37330
205/837-4718

Big-Print prints messages in 8-inch-high letters on standard 80-column printers. Messages can be of any length and can include letters, numbers, and special symbols. List price: \$49.50. Requirements: 64K, one disk drive.

"It's fun to make cards that say 'Welcome Back,' 'Happy Birthday,' or 'I love you' on my PC." David Meyers, Atlanta, Georgia

Four Point Graphics

IMSI
633 Fifth St.
San Rafael, CA 94901
415/454-7101

Four Point Graphics is a color graphics design tool that has four drawing modes: single-point draws lines and circles; two-point draws lines at any angle; three-point draws arcs, large circles, and ellipses; and four-point draws boxes and generates overlays. All four modes can be used simultaneously, and multicolored text can be incorporated. Images can be inverted and texture added. Images can be printed in color or shades of gray. List price: \$225. Requirements: 128K, one disk drive, color graphics board.

Character Generator

Ensign Software
7337 Northview
Boise, ID 83704
208/378-8086

Character Generator enables users to design graphics character cells for ASCII codes 128 through 255. Up to five cells can be defined simultaneously. Cells can be inverted from left to right or from top to bottom, rotated 90 degrees, and filled or left blank. Character definitions can be saved and are easily accessed from other BASIC applications programs. List price: \$24.95. Requirements: 64K for BASIC version, 96K for Compiled BASIC version, one disk drive, color graphics board.

PC World Subscribers Help Us Make History

Inside the attached package you'll find something that we think is a small revolution in computer communication. For the first time in publishing history a magazine contains bound within its pages a computer program on disk that you can pull out, boot up, and use.

The disk holds a sneak preview of a new word processing program called *Microsoft Word*. With the program you can input your own text and try out the system's features on your IBM PC. Except for saving, printing, and a few other complex operations that are possible only with a purchased version, you can put the program through its paces and get a feel for what it's like.

Breaking Ground

Delivering the *Microsoft Word* disk in working order into your hands turned out to be quite a complicated

task. The challenge included binding the disk into the magazine, protecting the data from electrical charges and magnetic fields during mailing, and ensuring that the Postal Service was able to deliver the package intact.

Since each of our subscribers was to receive the Microsoft program in a copy of the *Software Review*, we had to obtain a large number of blank disks to bind in with the pages. We worked with Data Encore, a Verbatim Corporation subsidiary, to get the disks and copy the program onto each one.

While Data Encore copied the disks, we worked on packaging them for safe mailing. With the help of Dave Ellies' Industrial Design Inc. we listed the features we needed for

the disk package. The package had to protect the disks from electrical charges and physical damage during mailing. We also had to make sure that even though the package was easy to detach and open, the disk wouldn't fall out accidentally.

To test Dave Ellies' disk package designs, we carried out a series of trial mailings. The test packages differed in the types of stiffening material used and in outer packaging. We also had to decide whether we should shrink-wrap the magazine or insert it into a regular Kraft mailer.

Binding Tiles

In preparation for the trial mailing we inserted test disks into over 800 copies of *PC World*, issue 5. At the printer's plant, the bindery manager took one look at the packages and said, "You want me to put floor tiles

through my binding machines?" His response left us with no choice but to have the bindery insert each disk package into the magazine by hand.

To carry out a reliable test mailing we had to send the packages to people. We enlisted the *PC World* staff as well as their friends and relatives, mailing magazines to over 800 people along with instructions to return the package unopened as quickly as possible.

Checking the Tracks

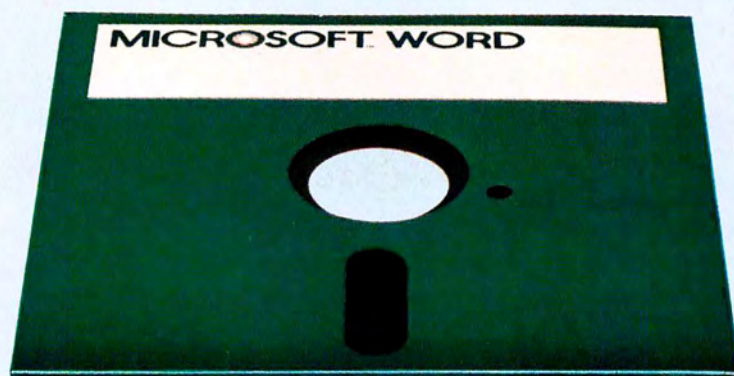
As the test magazines began returning, we checked each sample to find out how well it had come through the Post Office handling. We checked for moisture damage, torn magazine bindings, and opened disk packages.

We also checked the quality of the disks themselves to make sure that all the electronic data had survived the mailing. The staff at Data Encore

used their sophisticated disk evaluation equipment to carry out tests for amplitude and resolution loss, modulation factors, and disk drive torque.

Final Decision

After evaluating the testing, we chose the package you see in the *Software Review*. We hope that you enjoy previewing *Microsoft Word*. And we hope to give you a sneak preview of new software again in the near future.



This little floppy disk can turn a personal computer into one of the world's most versatile word processors.

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other files. And edit anything you see. These are just a few of the things you can do with Word.

Word's easy to master because it speaks your language—plain English. No codes to memorize. And with the optional Microsoft Mouse, you can move, delete, and edit text as quickly and naturally as you move your hand.

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It has features your personal computer has never seen before. Because you've never seen word processing from Microsoft before.

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Other word processors say they're easy to learn and use. We're going to do better than that. Watch as we *show* you, with your enclosed free preview version, exactly how quick and easy writing is on Microsoft Word. In this demonstration, you'll actually see software in the process of development, a rare glimpse of a superior program that will be available in December.

As you walk through these easy, step-by-step instructions, pay attention to what's happening on the screen as you edit and choose commands. You'll see how logically Microsoft Word operates. And you'll dis-

cover the powerful features Word offers to make your writing assignment easier.

So that you can stay on the track of our exercise, it's important that you follow the instructions carefully. **Make sure you do not press any keys that are not indicated in the script.** At least, not until you're out of the demonstration and exploring on your own. (Try to control that burning desire to play with Word right now. You'll get to that later.)

We will always indicate in color the keystrokes that you are supposed to execute. And we'll give you little tips on how to get back on track if you stray. But relax. It's easy, and if you get lost, you can always go back to the beginning.

When you're asked to type in text (instead of commands), and you make a mistake, use the Backspace key to erase the character to the left of the cursor, or the Del(ete) key to erase any highlighted text.

Keep in mind that to give you the opportunity to view this program before release, we produced a special version of the final product. With this preview copy, you won't be able to save or print out the text you edit or enter. Some of the more complex commands have also been deactivated, but you'll still be able to learn about them in the Help file.

Remember, this is a brief guided tour and is not intended to be a lesson in using Microsoft Word (although Word is so easy, you'll probably learn a lot). This is a short, entertaining exercise that will only demonstrate a few of Microsoft Word's powerful features. You'll learn how to use these features in the documentation provided when you buy Word for yourself. In the meantime, sit back and enjoy this fun and engaging demonstration.

Get the Word

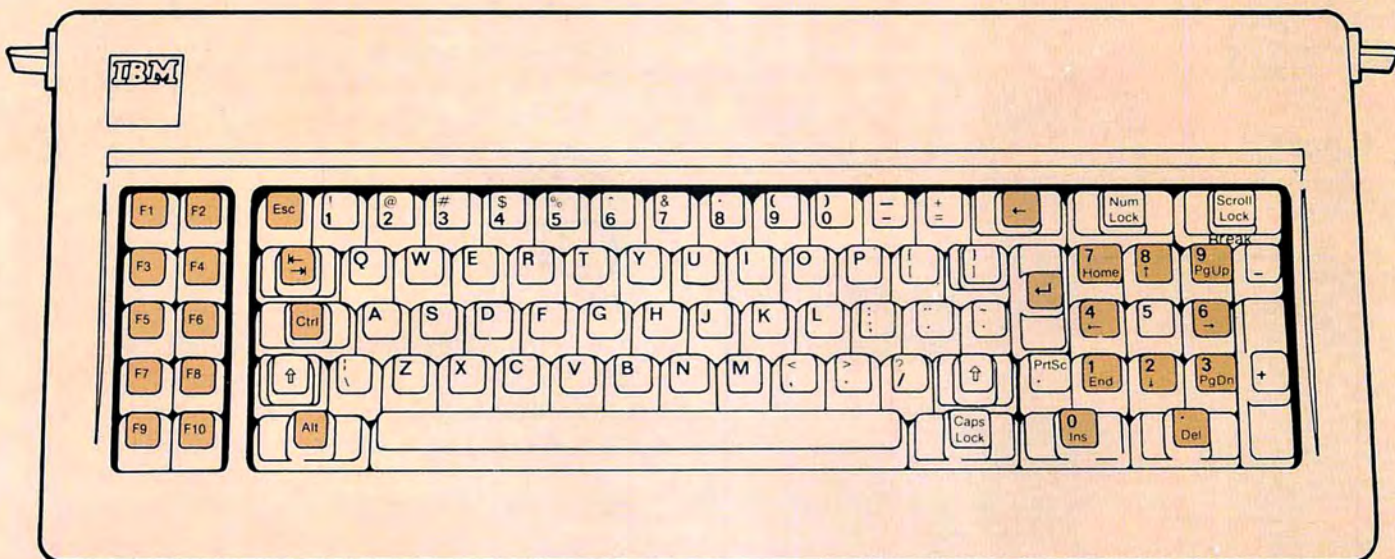
How? Just call 800/426-9400. We'll send you a detailed brochure telling you more about the features that make Microsoft Word the best writing system ever. And we'll give you the name of the dealer nearest you. If you need technical help in getting through this demonstration, feel free to ask for the number of our technical support group when you call.

Before We Begin...

You'll need an IBM Personal Computer with at least 128K of memory and one disk drive.

Insert your IBM Personal Computer DOS disk in disk drive A and load the Disk Operating System. You should see the A> on your screen.

Now replace the DOS disk with your preview version of Microsoft Word.



Function
Keys



Escape

Tab

Control

Alternate



Backspace

Enter (Return)

Insert

Delete

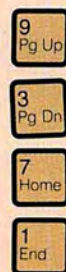


Up Arrow

Down Arrow

Left Arrow

Right Arrow



Scroll Up

Scroll Down

Home

End

Let's Get Started.

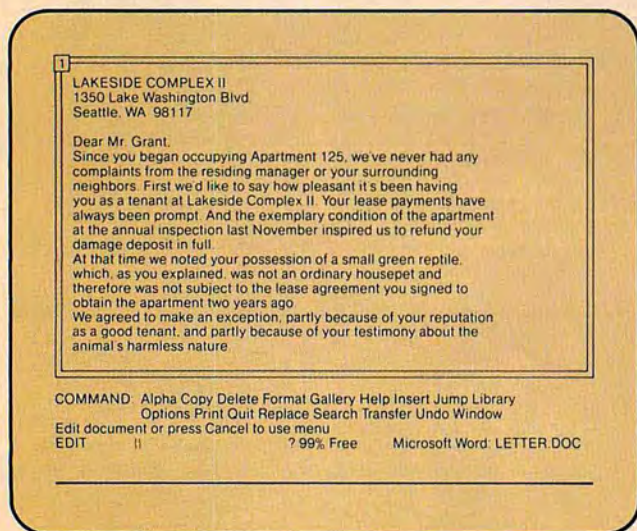
You'll start Microsoft Word by typing in "word" after the DOS prompt, like this:

A>**word**

Press 

Look!

Microsoft Word will start up and your screen will look like this.



Microsoft Word starts out showing a practice document... a letter. Right now this document is just raw, unformatted text. There are no spaces between the paragraphs, no justified text. So let's do a little formatting and add some text to make it complete and presentable, as we briefly look at some of Word's easy, powerful features.

Watch Your Words.

First let's choose some text for action. Anything that's highlighted is "selected" for action on Microsoft

Word. When you want to move, delete, insert or format text (among other things), you must select it first.

Microsoft Word lets you select simply by expanding the cursor highlight to cover any amount of text you'd like. We'll select the address:

Press 

Now the address is highlighted. That's how easy it is to select a paragraph. But suppose we wanted it to be aligned to the right:

Hold down  then press the letter 

(From now on, when we want you to hold down one key, and while holding it down, press another key, we'll connect them. In the example above we would say "Press AltR.")

Suppose we want the address to be centered?

Press  

You could just go through this document a paragraph at a time, formatting it in the style you liked as you went along, just as you would have to with other word processors.

But that would be a lot of trouble. Wouldn't it be nice if you could simply say that you would like to see this letter in a suitable letter style with one command? You can.

Word lets you select what general style you would like a document to be in. Then it reformats the entire document automatically. Microsoft Word does this with "style sheets," a unique feature you won't find on any other word processor.

To execute the commands we must first get into the menu of commands at the bottom of the screen.

What's on the Menu?

Press 

Note that the Alpha command on the command menu is highlighted. You can always tell if you are in the command menu by the presence of this highlight. Anytime you want to leave the command menu and enter text in your document, execute the Alpha com-

mand. You can choose a command by typing the first letter of the command:

Press the letters **F** (ormat), **S** (tyle), **S** (heet)

Press **6** →

Word displays a list of all the style sheets that you have on your preview copy of Word. We want the letter style, which is already highlighted.

Press **↵**

When the letter reappears, notice that it is in an attractive letter format. All the paragraphs are justified and have a space between them. The paragraphs even have a first line indentation. We didn't have to type in tabs or press an indent key to make this happen.

Our letter style sheet has now done most of the reformatting we would want in this letter. Now it's simple for you to make minor changes in this particular style. In addition, you have complete control over the style you choose. So if this isn't what you think a letter should look like, you can design your own formats with the copy of Microsoft Word you buy.

Just as you can control paragraph properties (like the alignment, the indents and the line spacing) you can also control the appearance of the characters (letters) in your document. Word can even show the actual character formats on the screen, like boldface:

Press **Alt** **B**

Press **4** ←

Or to see it underlined:

Press **F10**

Press **Alt** **U**

Press **4** ←

And to return to our normal character format:

Press **F10**

Press **Alt** Space Bar.

As you'll discover later, it's just as easy to make your characters italicized, superscripted, subscripted, even struckthrough, among other formats. With Word, there are never any control characters embedded in the text, so boldface looks like this:

bold and not like this: ^Bbold^B

You can even create styles that are combinations of these formats. We have created an address style that is both bold and underlined that we can easily call up here:

Press **Alt** **A**

Press **6** →

As a matter of fact, you can create any styles you want and use them over and over again, just this easily. We'll see more styles later.

Now let's look at Word's powerful Glossary command.

Suppose you were writing a formal paper on the space shuttle and were getting really bored with typing "National Aeronautic and Space Administration." Wouldn't it be great if you could just type "Nasa," press a key, and have the proper name inserted automatically? Guess what. You can with Word.

In our practice letter, we are the owner of an apartment complex, and we want to send a letter to one of our tenants, a Mr. Grant, with whom we are concerned because of his taste in household pets. We want to insert his address, and since we've written to him before, it makes sense that we keep his address handy:

Type in the word **grant**.

Press **F3**

You can store any frequently used text that you want in a Glossary file. And you can give it any abbreviation you want, from legal phrases for contracts to addresses, as we've done here.

It's time now for us to look at Word's text editing features:

Press 

Press 

Now the "S" in the word "Since" should be highlighted.

Press 

See the way this key selects a word? It's the same way F10 selects a paragraph. And there are other Function keys that let you select a single line, sentence, paragraph, the entire document, or any arbitrary amount of text in between. Now delete the word "Since":

Press 

Take a look at the bottom of your screen. Next to the word EDIT, between the brackets { }, you'll see the text you just deleted. This location is called the "scrap." This is where Word keeps "scraps" of text that you are deleting or moving around, so that you can reinsert them later. Right now, we want to type in some text.

Type in the words **In the two years since**

Be sure to include a space after the last word.

Undo This, Undo That.

Notice that when you deleted and entered text in the previous steps, Word automatically reformatted the paragraph. When you applied the first style sheet, you told Word that you wanted a justified paragraph with a certain first line indent (our basic letter style) and Word kept it that way even as you edited it. Word would never make you continually press a "Reform" key as you make changes.

Even better, Word corrects or "undoes" any editing change you make like magic:

Press 

Press the letter  (ndo).

Word's special Undo feature was also smart enough to Undo the deletion before, so that you are back to your original sentence. And Undo applies not only to edits like text entries and deletions, but also to formatting changes.

You can even Undo an Undo:

Press 

Press the letter  (ndo).

Wouldn't it be great if life were always this easy?

You can even use this feature to hop back and forth between two formats or two editing changes while you're deciding between them.

Want to see more?

Let's look at how easy it is to move our text around from one place to another:

Press 

The entire first sentence of the first paragraph should now be highlighted.

Getting Your Words In Edgewise.

The ability to "cut-and-paste" your text is an important feature of any word processor. With Microsoft Word it's particularly easy because it's already easy to select text. It's pretty obvious that this sentence is in the wrong place, so let's move it:

Press 

First you have to move the cursor to where you want the text inserted, however.

In this case we want to insert it before the second sentence:

Press 

Press 

Now we simply:

Press 

The text is now in its proper location. Instead of using the Del(ete) and Ins(ert) keys, we could have used the Delete and Insert commands on the command menu.

Notice that the text we just inserted is still in the "scrap." If we wanted to insert some text in several locations, we could simply move to the first, press the Ins(ert) key, move again, press Ins(ert) key again, etc.

Now let's move to the end of our document:

Press  

Your cursor is now at the end of the document, indicated by the diamond. Have we forgotten anything?

Our document isn't done yet. We want to include our standard closing and salutation, so we will use Word's Glossary capabilities once again.

Press 

Press the letter  (nsert).

Press 

The screen now displays a list of all the names for the different text we have stored in the Glossary file. Notice that "grant" is there along with the names of the other tenants. Also, the abbreviation "closing" is there. We can now just point at the one we want rather than having to type it in. To select it:

Press 

The glossary name "closing" should now be highlighted.

Press 

Word automatically inserts the closing and salutation at the end of your document.

We've almost finished our letter.

Press  and then 

Press  and then  (Again.)

Press  and then  (And again.)

This is a great way to move one paragraph at a time.

The next to last paragraph of the letter, beginning with "We're sorry," should be highlighted. (If you're lost, move the cursor to the "W" at the start of the paragraph, and press F10.)

We have Mr. Grant's contract on our disk but how do we see it without leaving the letter? Easy. Word lets you split your screen into as many as 8 windows. These windows can contain different parts of the same document, or other documents.

Press 

Press the letters  (indow),  (plit),

 (orizental).

Press  or  until the number 13 appears in

the highlighted field in the Window command near the bottom of the screen.

The Window command should look like this:

WINDOW SPLIT HORIZONTAL at line: 13

Press 

Let's load up the contract to show you what we mean:

Press 

Press the letters  (ransfer),  (oad).

Press 

Now we see a list of all the documents on our disk.

To select the contract:

Press 

Press 

Searching for the Right Words?

Now the contract is loaded into the lower window. We want to find the specific part of our document relating to pets. It seems reasonable that this section would contain the word "pets" so we use Word's Search command to find it:

Press 

Press the letter  (earch).

Type in the word **pets**.

Press 

Now wait while Word searches for the word "pets."

Word found it!
Let's select it:

Press 

The paragraph beginning with "9.) Pets:" should be highlighted. You can copy it to the scrap by using Word's Copy command:

Press 

Press the letter  (opy).

Press 

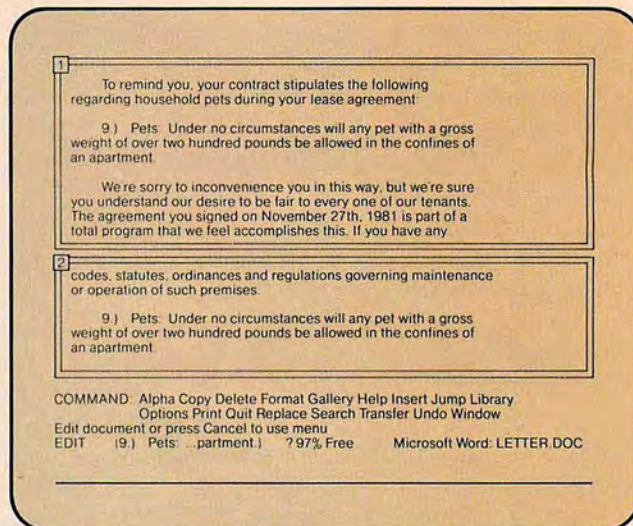
Word just copied the highlighted text to the scrap. The Copy command is similar to the Del(ete) key and Delete command, but instead of deleting the selected text to the scrap, it copies the text to the scrap.

We can now move the text very easily to *another* document using Word's windows. First move your cursor to window number 1, with the "next window" key:

Press 

The highlight should move to the upper window containing the letter and the last paragraph, beginning with "We're sorry," should be highlighted. To insert our contract quote now:

Press 



Word copied it from the scrap and placed it right before the cursor, just where we wanted it. To move text from one place to another, you first Delete the text to the scrap and then you Insert it where you want it. To copy text from one place to another, you Copy the text to the scrap rather than Delete it.

Now our letter is done!

But what about our contract? If you didn't notice, it isn't neat at all! We could fix it up a little.

So let's get rid of our letter by closing window 1:

Press 

Press the letters  (indow),  (lose).

The Window command will display the line:

WINDOW CLOSE window number: 1

That's the window we want to close.

Press 

At this point Word will ask you to confirm that you want to close this window and that you will lose the edits you have made. Since we won't need to keep these edits in our practice document:

Press the letter  (es).

Let's return to the beginning of our document.

Press  

If you're still going strong and want to finish the tutorial, skip the next section in the box and continue with the step that says "Press F9."

If you want to take a break now and quit from Microsoft Word:

Press  (ape) key.

Press the letter  (uit).

Press the letter  (es) to confirm.

Wait until your screen displays a message such as:

Insert DOS disk in drive A and strike any key when ready

Insert your IBM Personal Computer DOS disk in drive A and press any key.

When you are ready to continue with the tutorial, replace the DOS disk with your pre-view version of Microsoft Word. Type "word" after the DOS prompt, like this:

A>**word**

Press 

When Microsoft Word has finished loading and the document appears on the screen:

Press 

Press the letters  (ransfer),  (oad).

Type in the word **contract.**

Press 

Now we are back where we left off and we can continue with the tutorial.

Press 

Word Gives You More Than One Way To Do Things.

The headline "LAKESIDE COMPLEX II LEASE AGREEMENT" should be highlighted. Our heading sentence is selected at this time, and we can make it look more professional by giving it some character formats.

This time we'll use the Format Character command instead of commands like ALT-B or ALT-I. Word's Format character command is to do more complex formatting.

Word always gives you more than one way to do a function, which is one reason why it's such an easy, quick and powerful word processing program.

Ready to try it?

Press 

Press the letter  (ormat),  (haracter).

Now we're looking at our options on formatting our selected characters.

What could be easier? All we have to do is choose, just like a menu!

Our cursor is already positioned in the "bold: Yes No" field. Since we want boldfaced type, we'll:

Press the letter  (es).

Now let's move to the Underline field:

Press  twice.

Press the letter  (es).

Press 

Press 

Notice that our heading is now boldfaced and underlined. It looks great. If you want to change it back, however, just "undo" it. You remember how:

Press 

Press the letter  (ndo).

It's just as easy to choose other character formats with the Format Character command, like small caps, italics, superscript and subscript.

Let's find out what style the contract is currently in:

Press .

Press the letters  (ormat),  (tyle),  (heet).

Notice that the Format command shows that the current style sheet is the Letter style sheet. That is inappropriate for a contract. We want to see our contract in a contract style so we simply:

Type in the word **contract**.

Press .

Watch again as our entire document is automatically reformatted. And this time, what a difference! Let's take a look:

Press  several times.

Notice that the major points are all in one special format, while the minor points are in their own special format.

Press  several times.

Make sure you press the PgUp key enough times to get to the top of our contract.

Press .

Press .

Press .

Press .

Your cursor should be in the second paragraph, beginning with the word "WITNESSETH."

Keep in mind that we created the Contract style sheet with Word to our own specifications, just as you could do. You could also create style sheets for drafts, manuals, articles, personal letters, business letters, departmental memos. Anything you can

imagine that you would like to be able to format easily and in a consistent way.

As we have shown before, with the style sheets, you can do more than just change the general format of an entire document. You can call up individual styles like the Address style we used above. Let's apply some paragraph styles.

Style sheets allow you to change the general style and to create hundreds of styles that you can control completely.

Perhaps we'd like to see this paragraph in an indented or "nested" style for major points:

Press   and then the number 1 from the number row across the top of your keyboard.

Or perhaps you'd like a different nested style for minor points:

Press   and then the number 2 from the row of numbers across the top of your keyboard.

Or perhaps in our quotation style:

Press  .

We chose the codes N1, N2 and Q for these styles, but again, you could pick any combination of one or two characters that you want when you make these styles up.

Maybe we'd like to see this in our title styles:

Press   and then the letter .

Or in our footnote style:

Press   and then the letter .

Or to return to our normal paragraph style:

Press  .

Now, get ready to look at Word's automatic footnotes.

Microsoft Word is an expert at footnotes. It automatically manages them for you both on the screen and on paper.

First we open up a special footnote window:

Press 

Press the letters  (indow),  (plit),

 (ootnote).

Press  until the number 14 appears in the highlighted field in the Window command near the bottom of the screen.

The Window command should look like this:

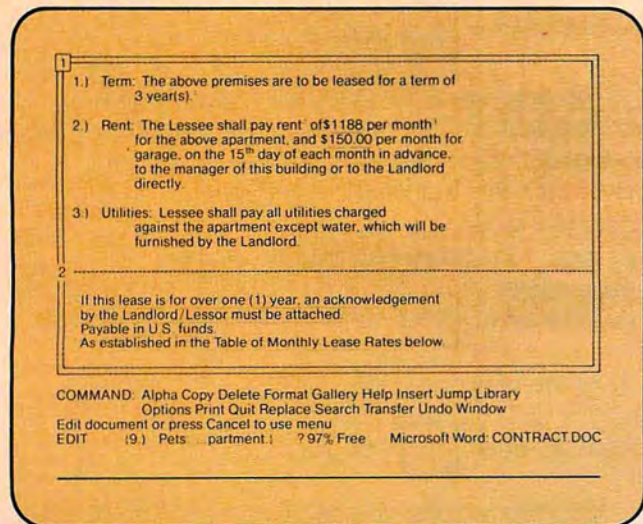
WINDOW SPLIT FOOTNOTE at line: 14

Press 

The Footnote Window always displays the footnotes for which there are footnote markers on the screen above. Right now there are no footnotes in the lower window because there are no markers up above. But if we:

Press 

Three markers appear in the text, and three footnotes appear in the lower window.



When you insert or delete footnotes, Word automatically rennumbers them so you don't have to.

Let's select footnote number 2:

First, look for: 2.) Rent: then use the Arrow keys to move the cursor to footnote marker number 2, in between the words "rent," and "of" in window number 1, in the middle of the sentence.

Press 

The second footnote was deleted and is now in the "scrap." But even more importantly, the other footnotes and markers were automatically renumbered to account for the missing footnote.

And we can Undo this to restore the footnote:

Press 

Press the letter  (ndo).

Again, Word rennumbers the footnotes automatically.

Now let's close the Footnote window:

Press 

Press the letters  (indow),  (lose), and then the number **2** from the top row of your keyboard.

The window should display the line:

WINDOW CLOSE window number: 2

Press 

As an example of Word's tremendous formatting strengths, we'll show you how our tabs work. We have an unformatted table of lease rates near the bottom of the contract. Again we use the Search command to let Word find it for us:

Press 

Press the letter  (earch).

Type in the word **table**.

Press 

After the table appears:

Press  twice.

Press 

Now we'll call up our table style:

Press   and then the letter 

Watch as Word gives the table an appropriate format.

Take notice of the leader dots . . . that's a nice feature of Word's tabs that you can choose. You can tell Word to fill up the space occupied by a tab character with dots, hyphens or an underline for a pleasing appearance.

Press 

Press  three times.

Now the letter "T" in the third line of the table should be highlighted.

Again, as with all the other formatting that Word can do for you, whether it is paragraphs or characters or tables, the text retains its desired format as it is edited. In this case this word should be "bedrooms," not "bathrooms."

Press  twice.

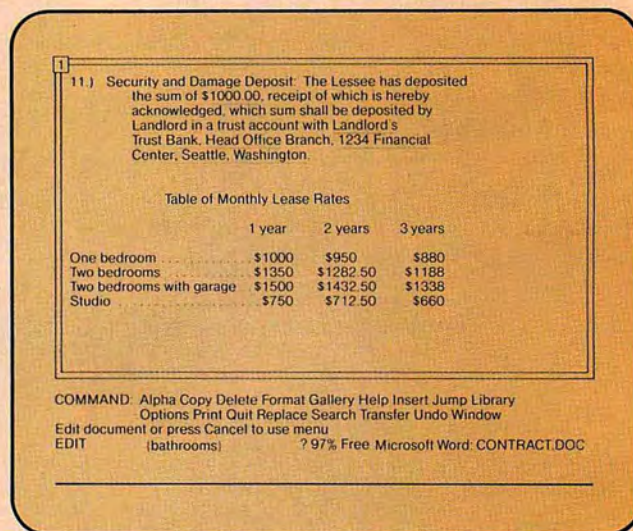
The word "bathrooms" should be highlighted.

Press 

Note that as we edit, the tab adjusts in size so that the columns are always lined up just as we would want them. Keep an eye on the screen as you type and you can observe this:

Type in the word **bedrooms**.

Be sure to include a space after the word.



You can easily set tabs yourself with the Format Tabs command, which is described in the Help file.

The One Word to Remember: Help

The Help file can answer many questions you might have about functions not covered in this walk-through:

Press 

Now it's time to look at the Help file.

Press the letter  (elp).

We are now at the introduction to the Help file. Notice that there is a new menu of commands at the bottom of the screen. You use these commands to move around in the Help file and to return to your document when you have the help you need. For instance, you can move to the next page:

Press the letter  (ext),

or the previous page:

Press the letter  (revious).

Or you can jump to specific parts of the Help file. If you want information on the commands:

Press the letter **C** (ommand)

or on the keyboard:

Press the letter **K** (eyboard)

(If you ever want to find out what specific keys do, this is the key to remember.)

Or on use of the Microsoft(R) Mouse:

Press the letter **M** (ouse).

You can always get back to your document with the Resume command:

Press the letter **R** (esume).

But don't think that you always have to page through the Help facility to find the information you want. Word always tries to bring you right to the information you need.

Let's say we were setting tabs and suddenly forgot how:

Press **Esc**

Press the letters **F** (ormat), **T** (abs), **S** (et).

Even though you're in the middle of a command, you can still ask for Help:

Press **Alt H**

Word always gives you the help you need on the command you're in. That's called "context-sensitive" and it's a fast, easy way to learn about the program or to refresh your memory if you forget how to use a command. Of course, once you're in Word's Help file you'll be able to go to any topic you desire more information on.

Now, where were we?

Press the letter **R** (esume).

As you can see, Word will take us there if we simply ask it to. We are returned to where we were when we asked for Help from Word.

In this case we don't want to execute this command, so:

Press **Esc** (ape)

You can always use the Esc(ape) key any time you want to get out of a command and back to the main command menu. Anytime the command menu is active, you can return to editing by executing the Alpha command.

Press the letter **A** (lpha).

Now it's time for you to explore other features of Word for yourself. Use the Help file to answer any questions you might want to ask as you go along. In a very short time, you'll learn how to do all the functions that interest you and will benefit you and your business.

If you think that this demonstration was easy, you should see how exciting Word can be with the Microsoft Mouse. The Mouse is a hand-held input device that lets you "point" to select commands or text. You move the state-of-the-art accessory around on your desk to control how the arrow moves around on your screen. It's the greatest invention since the joystick. See both Microsoft Word and Microsoft Mouse at your dealer soon.

For our last step, we'll clear the screen so you can enter text of your own:

Press **Esc**

Press the letters **T** (ransfer), **C** (lear), **A** (ll).

Keep the Undo and Help commands and the Escape key in mind. And remember, the Alpha command removes the highlight from the command menu and lets you enter text.

If you enjoyed this demonstration, you can make copies of it for your friends, too.

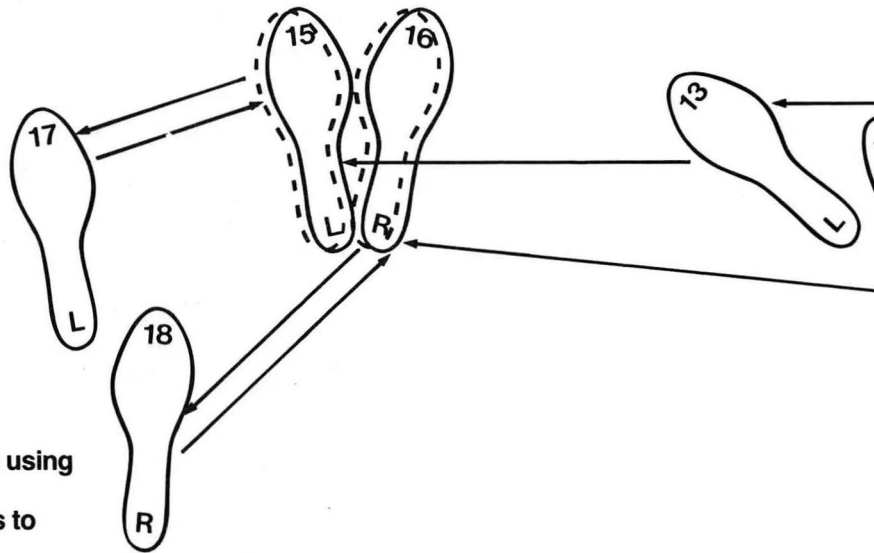
[When you're ready to quit Word, just press the

Esc (ape) key and the letter **Q** (uit), and then

confirm with the letter **Y** (es).]

Do the "N"

A step-by-step do-it-yourself applications generator.

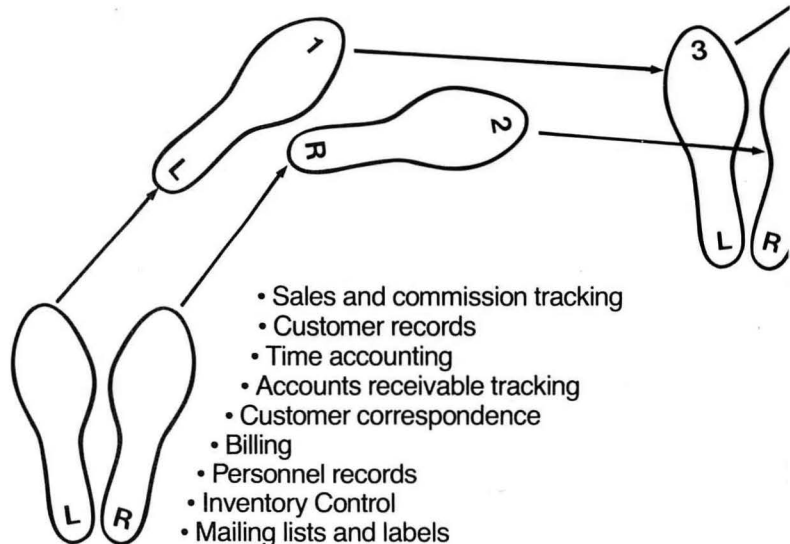


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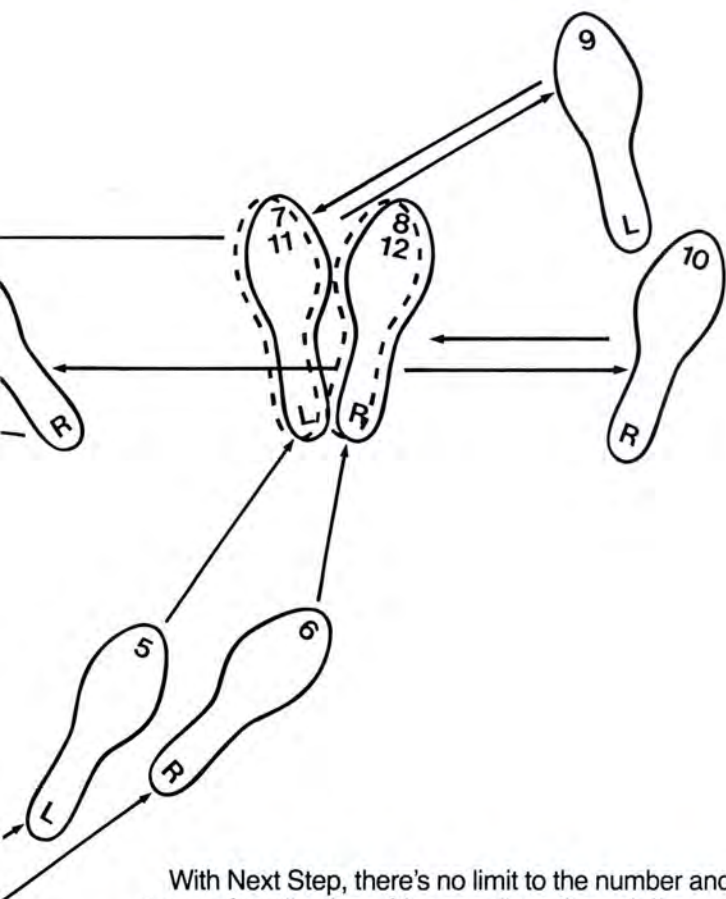
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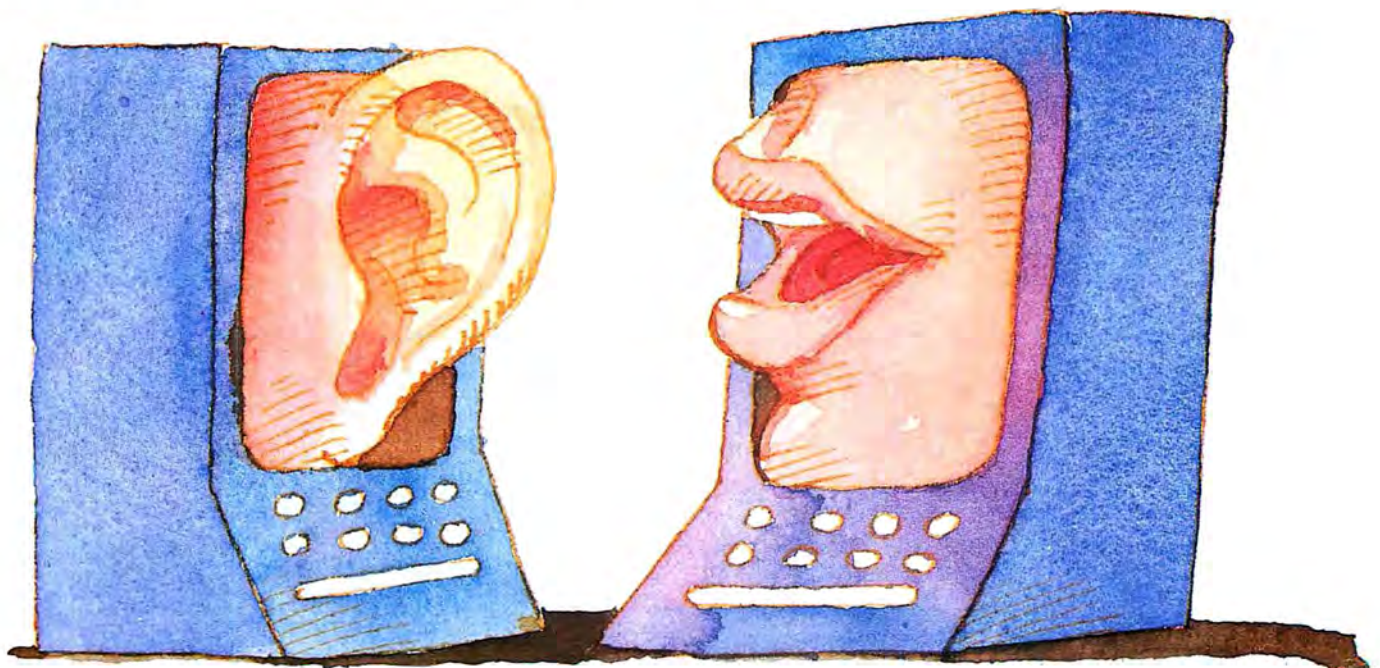
What's the most powerful program in a software library? Without question, it's a communications package. What other software can transform your lone, desk-bound IBM PC into hundreds of thousands of computers of every stripe and give you access to stored information around the world? With communications capability you can have a computer with 1 million kilobytes of RAM and 4 billion bytes of storage.

The PC needs some hardware help to reach those dimensions. You'll require a board with an RS-232C serial port and a modem to transform digital signals from the computer into analog signals that can be transferred over phone lines. You'll also need to be in Ma Bell's good graces with a standard telephone line and equipment. Once your system is set up, your communications software will put you on line, broadening your computing horizons.

The communications program doesn't do anything mysterious. It simply organizes information from the computer's keyboard or disk files and sends it out in an orderly fashion through the serial port. At the receiving end the program organizes information coming in through the port and sends it to the screen, the printer, or the disk files, all according to your specifications.

Parameters

Digital information can be sent through the port in various formats. Setting the baud rate determines the rate at which information is sent (how many bits per second are communicated). A fairly reliable generalization is that 10 bits are needed to send 1 character, so a rate of 300 bps would send about 30 characters through the port each second.



Other parameters specify the number of data bits used to encode each character, the number of stop bits used to separate one character from another, and whether a bit will be encoded with parity information summarizing the values of the data bits.

These parameters must be set by the communications program to match the parameters used by the computer at the other end of the line. A few of these parameters are standard in personal computer communications, such as 300 baud, even parity, 7 data bits, and 1 stop bit. The program should permit you to select one of these standard parameters with a minimum of fuss.

Another factor associated with parameter selection is whether the remote computer echoes back the information you send it (full duplex) or whether there is no echo (half duplex).

File Management

As long as the program is merely sending out information from the keyboard and displaying incoming information on the screen, it is said to be operating in dumb terminal mode.

Good communications programs are much smarter. They should allow you to specify a disk file to transmit outgoing information (a process called uploading) and another file to receive incoming information (downloading). A good program is able to transmit and receive both text files consisting of ASCII characters and binary files such as .COM and .EXE programs.

The program should provide a full repertoire of file management functions, such as the ability to view disk directories, specify file names, and delete files. Some programs provide extensions of these file management functions, allowing you to view files on disk while communications are in progress and even to perform limited file editing while on line.

Being able to print incoming information instantly is convenient; however, if the maximum speed of the printer is slower than the communications rate, you'll create a bottleneck that might prove fatal to the system.

Some programs cope with such bottleneck problems by buffering or storing incoming information in the computer's memory before sending it to the appropriate file or peripheral device. The problem with buffering, however, is that buffered information remains volatile until it is safely written to disk or hard copy.

Error-checking Protocols

The accuracy of the information you send and receive is only as good as the quality of the phone line. If you communicate over long-distance lines or at high speeds, information may become corrupted. It's usually tolerable if a *j* gets changed to a *k* in a letter to your aunt, but if you are sending important financial data or transmitting a program, one misplaced character can have disastrous results.

The solution is to communicate files using an error-checking protocol. Although several protocols are used, they all involve sending the information in blocks (usually of 128 to 512 bytes) along with an error-checking value called a checksum. A checksum is the result of mathematical calculations performed on each block of data. Once a block of data has been transmitted, the sending and receiving computers have to agree that the checksum relates properly to the block of information before proceeding with the next block. Use of an error-checking protocol for file transfers ensures better than 99 percent accuracy during data transfer.

Of the available error-checking protocols, some are in the public domain (such as Ward Christensen's Xmodem protocol) and are available in a wide variety of communications programs. Other protocols are part of specific software packages. Even if the sending and re-

ceiving computers are running different communications programs on different computer systems, both computers must be using the same protocol for error-checking to work.

Dialing and Modem Communications

Some modems are "smart"; they contain an internal microprocessor that makes them capable of performing many useful tasks. The most notable examples are direct-connect modems that dial phone numbers when instructed to do so.

Since dialing is a modem function, it is important that the communications program be able to communicate successfully with the modem. Some programs are tailored to work with specific modems, while others provide flexibility in the format of modem commands and permit interaction with a variety of modems.

A good communications program can store phone numbers in a directory and have the modem place the call when given a simple command. A really good program allows you to store communications parameters, conversion and throttling instructions, and protocols for each entry in the directory and then automatically puts them into effect as each call is dialed.

Many programs redial busy numbers automatically until a connection is made. This feature is useful if you are trying to access an especially popular remote bulletin board or system. Another feature, vital since the days of Alexander Graham Bell, is the ability to hang up.

Auto-logon and Remote Access

A fully automated communications program provides tools for logging on to a remote system and for streamlining communications with the system.

At the most rudimentary level, the program might permit you to store logon sequences or other commands as predefined macros. A more sophisticated implementation works interactively with the remote system, waiting for prompts from the system and responding with stored macro commands until the auto-logon sequence is complete.

Another automated function permits batch transfer of a number of specified files with a single command.

The ultimate in automation gives the computer the capacity to dial a remote system at a specified time, log on, upload or download specified files, log off, and perhaps wait until it's time to initiate another session with a

different system. This unattended operation capability is valuable if you communicate regularly with overseas systems that might be operating in widely divergent time zones.

The complementary feature to auto-logon is remote access. Remote access programs keep your system in a ready state so that it can be accessed unattended. Two general types of remote access programs are available. One is intended for public access and is typified by bulletin board software. This type of program allows many callers to leave and receive messages and upload and download files to and from the system.

The other type of remote access software is intended primarily for private use by the owner of the system. These programs allow full manipulation of files, frequently at the operating system level, from a remote location. Many permit you to run programs on your system by remote control; an example of this might be entering or receiving information through a data management program.

This level of remote functioning is similar to that found in communications software designed for specific bisynchronous protocols found on mainframe systems and software designed to support local area networks.

Evaluating Communications Programs

The first step in choosing a communications program is to identify the tasks you're likely to be performing. If you have never tried computer communications, however, you might at first underestimate what you want to accomplish. Once you discover the programs and information available on other systems, you're likely to want the full retinue of uploading, downloading, and automated features.

When you are evaluating a communications program, look closely at program design. Like a well-schooled butler ushering guests at a large party, a good communications program does its job efficiently and unobtrusively. The program should provide the tools you need without forcing you to be conscious of its presence.

A computer that can't talk to other computers is like a genius who speaks a language no one else understands. If you haven't already done so, put your computer on line and join the network nation.

Andrew Fluegelman is Editor-in-Chief of PC World and the author of PC-Talk.

If buying a car was like buying software, you'd see a lot of these on the road.

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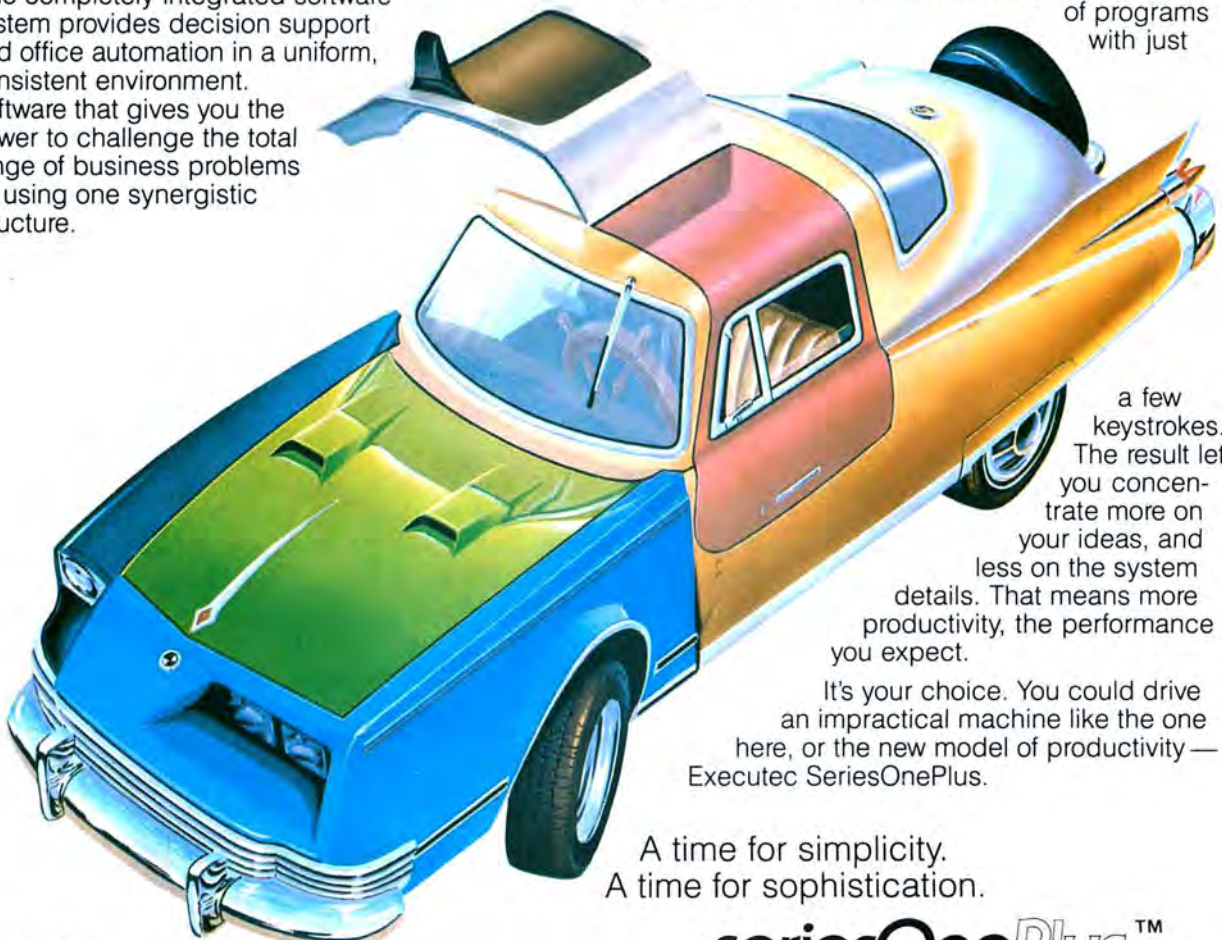
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Asynchronous Communications Support IBM

P.O. Box 1328
Boca Raton, FL 33432
800/462-3333

The *IBM Asynchronous Communications Support* is menu driven and allows communications with information services, mainframes, and other microcomputers. The program captures data to disk from any ASCII system and permits communications parameters to be saved in batch files for reuse with host systems. The program protects novices by toggling off the printer mode during download operations and provides a detailed instruction manual. List price: \$60. Requirements: 64K, one disk drive, RS-232C serial port.

"The documentation is well written and comprehensive." Philip Jhin, Plano, Texas

Smartcom II

Hayes Microcomputer Products, Inc.
5923 Peachtree Industrial Blvd.
Norcross, GA 30092
404/449-8791

Smartcom II is a menu-driven program that captures ASCII or binary files to disk, printer, or buffer from information services, mainframes, and microcomputers. The program allows the designation of parameters and macro commands for 25 remote systems, on-line file manipulation including delete and rename, and error correction between *Smartcom II* systems. Specific macro functions allow

the designation of character prompts and time-delay characters from host systems. Other features are page pause during download, line delay, linefeed/CR control, and unattended remote operation with other *Smartcom II* systems. List price: \$119. Requirements: 96K, one disk drive, RS-232C serial port.

"The program is easy to use; I am quite satisfied." Marsha Bellavane, Ketchum, Idaho

SmarTerm/PC Model TE125-FT

Persoft, Inc.
2740 Ski Ln.
Madison, WI 53713
608/233-1000

SmarTerm/PC Model TE125-FT enables the IBM PC to function as a DEC VT125, VT100, VT101, VT102, or VT52 terminal. The program transfers ASCII and binary files at speeds of up to 9600 bps and uses an error-correction protocol. The program supports graphics features such as a setup mode, which lets you scale the image field and select 15 colors for foreground display; four writing modes; vector, curve, and text command emulation; user-selected patterns for shading screen areas; and the ability to send graphics screens to an IBM printer. The program supports nongraphics features such as character attributes, line and character insert and delete, modification of host terminal characteristics, and full local printer support. List price: \$295.

Requirements: 128K, two disk drives, color graphics board, DOS 2.00, RS-232C serial port.

Transporter

Microstuf, Inc.
1845 The Exchange #205
Atlanta, GA 30339
404/952-0267

Transporter is a command-driven program that enables the IBM PC to perform prescheduled ASCII or binary file transfers unattended.

Through the creation of a task list, *Transporter* automatically sends or receives files from any location at any preset time, allowing efficient crossing of time zones. The program provides password protection, error correction with any *Crosstalk* or *Transporter* system, and an automatically generated "results list" of the previous day's communications activity. List price: \$295. Requirements: 96K, one disk drive, intelligent modem, RS-232C serial port.

R/Net

Cosmos
P.O. Box AH
123 Ferntree Dr. W
Morton, WA 98356
206/496-5974

R/Net is a smart terminal program that emulates the ADDS Regent 100. Using *R/Net*, the IBM PC uses the standard communications protocol of the Pick operating system and observes the cursor addressing schemes of the Reality, Ultimate, Mentor, Evolution, and Information relational data base machines. The program captures files to printer or disk and is completely transparent to users. *R/Net* permits users to change communications parameter defaults, including character translation codes. List price: \$200. Requirements: 64K, one disk drive, RS-232C serial port.

R/Upload

Cosmos
P.O. Box AH
123 Ferntree Dr. W
Morton, WA 98356
206/496-5974

R/Upload is designed to complement the download feature of *R/Net*. The program transmits data from a PC-DOS file stored on the IBM PC to a local or remote minicomputer that uses the Pick operating system or one of its lookalikes. *R/Upload* sends attribute, value, and subvalue marks and converts carriage return line feed sequences to attribute marks during the process. List price: \$100. Requirements: 64K, one disk drive, RS-232C port.

Apple-IBM Connection

Alpha Software Corp.
12 New England Executive Park
Burlington, MA 01803
617/229-2924

Apple-IBM Connection provides bidirectional transfer of ASCII files between an Apple II computer and an IBM PC. The program permits *VisiCalc* files to be transferred from an Apple to a PC and then inserted directly into 1-2-3. Electronic mail messages can be stored and forwarded among a group of Apples and PCs, and any computer can process all the mail for the others. The program also includes remote, unattended terminal operation and a checksum error protocol. List price: \$195. Requirements: 64K, one disk drive, RS-232C serial port.

PC/InterComm

Mark of the Unicorn
P.O. Box 423
Arlington, MA 02174
617/576-2760

PC/InterComm provides complete emulation of the DEC VT 100 data terminal, including full-screen cursor addressing and data-to-disk paging. The smart-terminal, menu-driven program captures and transmits ASCII and binary files at speeds of up to 9600 bps and uses the Xmodem error-protection protocol. Time-delay throttling, XON/XOFF handshaking, and linefeed deletion/addition facilitate uploading from a host computer. The program allows specific terminal configurations to be stored on disk for easy logon, and provides up to 30 programmable keys of 20 characters each. List price: \$100. Requirements: 64K, one disk drive, RS-232C serial port.

"PC/InterComm is easy to use due to very clear menus and built-in help information." Robert A. Lerche, Menlo Park, California

SmarTerm/PC Model TE100-FT

Persoft, Inc.
2740 Ski Ln.
Madison, WI 53713
608/233-1000

SmarTerm/PC Model TE100-FT enables the IBM PC to function as a DEC VT100, VT101, VT102, or VT52 terminal. The program transfers ASCII and binary files at speeds of up to 9600 bps and uses an error-correction protocol. The program duplicates all features of the above terminals, including setup mode, character attributes, line and charac-

ter insert and delete, modification of host system characteristics, and full local printer support. *Model TE100-FT* enhances the VT100 terminal with four setup configurations and ten programmable keys that simplify auto-dial, logon, and repetitive tasks. The program provides character filtering and timing delay during file capture. List price: \$150. Requirements: 96K, two disk drives, RS-232C serial port.

SmarTerm/PC Model TE400-FT

Persoft, Inc.
2740 Ski Ln.
Madison, WI 53713
608/233-1000

SmarTerm/PC Model TE400-FT enables the IBM PC to function as a Data General Corporation D100, D200, or D400 terminal. The program duplicates all features of these terminals, including multiple display windows with vertical scrolling and window erase, full character display, and local printer support. *Model TE 400-FT* transfers ASCII and binary files at speeds of up to 9600 bps and uses an error-correction protocol. Though the program does not allow horizontal scrolling, compressed character display, or European word processing character sets, it provides four separate setup configurations and ten programmable function keys per configuration. Other features include character filtering and timing delay during file capture and a built-in transmission test pattern. List price: \$125. Requirements: 96K, two disk drives, RS-232C serial port.

IBM 3101 Emulation

IBM

P.O. Box 1328

Boca Raton, Florida 33432

800/447-4700, 800/322-4400

Illinois, 800/447-0890 Alaska,

Hawaii

By providing preassigned specification files as well as user-designed files, the *IBM 3101 Emulation Program* enables an IBM PC to emulate a 3101 terminal. The specification files let the PC operate with the following systems: VM/370, MVS/TSO, IBM 8100, IBM System/34, IBM System/38, IBM 7426 Terminal Interface Unit, Yale IUP for Series/1, 3101 Pass-through, and extended information services such as The Source or CompuServe. The program captures and sends ASCII files to and from host computers and converts ASCII files to and from binary format. List price: \$140. Requirements: 64K, one disk drive, RS-232C serial port.

"The program is a workhorse; quick, easy, reliable, and technically complete." Gene R. McGalliard, Monterey, California

Telios

Genasys

11820 Parklawn Dr.

Rockville, MD 20852

301/468-6900

Telios is a command-driven program that captures ASCII and binary files to disk or buffer at speeds of up to 9600 bps. The program lets you stop and restart the downloading process with a single keystroke and scroll on-line files by using the <PgUp> and <PgDn> keys. Command files

allow you to store telephone numbers, communications parameters, and interactive logon information for specific host systems. The command-driven program permits time-delayed and host-prompted file transmission, filter of control characters, and linefeed insertion and deletion. Other features include elapsed time display and on-line file manipulation. List price: \$99.95. Requirements: 64K, one disk drive, RS-232C serial port.

PC-Talk III

Freeware

The Headlands Press, Inc.

P.O. Box 862

Tiburon, CA 94920

PC-Talk III allows ASCII and binary file transfers using XON/XOFF handshaking or Xmodem error-detection/correction protocols. The 60-entry dialing directory with auto-dial and redial permits designation and storage of parameter information, character stripping, and new pacing/time-delay facility. *PC-Talk III* provides 40 programmable input strings of up to 126 characters each and includes 70 pages of documentation on a separate disk. List price: \$35 requested contribution. Requirements: 64K or 128K (for compiled version), one disk drive.

"This is the best and least expensive communications software." Hung-Yi Pao, Indianapolis, Indiana

"PC-Talk III includes very clear, helpful documentation." John Crick, Jr., Hobe Sound, Florida

Micro Link II

Digital Marketing Corporation

2363 Boulevard Circle

Walnut Creek, CA 94595

800/826-2222, 415/947-1000

Micro Link II is menu driven and communicates with information services, mainframe time-sharing computers, and other microcomputers. Data can be sent or received in text, object, or source code and captured to either disk or printer. Control characters, including linefeeds, can be stripped from received files, and block transfer is supported with the Xmodem protocol. *Micro Link II* allows up to 20 programmable strings to be saved for easier logon to mainframes and bulletin boards. The program requires no installation. List price: \$89. Requirements: 32K, one disk drive, RS-232C serial port.

Hostcomm

Janadon, Inc.

N.F. Systems, Ltd.

P.O. Box 76363

Atlanta, GA 30358

404/252-3302

Hostcomm is a host communications system that allows remote program execution, unattended ASCII file transfer, and electronic mail functions. With a capacity of 225 files, the program provides user group software exchange and 24-hour product order access for businesses. Full SYSOP features include message and menu maintenance as well as three-level password protection. List price: \$170. Requirements: 128K, RS-232C serial port, Hayes Smartmodem (printer recommended).

Move-it

Woolf Software Systems
6754 Eton Ave.
Canoga Park, CA 91303
213/703-8112

Move-it provides error-free checksum communications with mainframe time-sharing computers, bulletin boards, and other microcomputers running the *Move-it* package. Dialing directories for both local and remote systems are included, making *Move-it* ideal for use with unattended computers. The smart-terminal program provides automatic logon and runs under MP/M and other time-sharing and network systems. *Move-it* captures both ASCII and binary files to disk or printer. List price: \$150. Requirements: 32K, RS-232C serial port, one disk drive.

PC COM I

Rixon, Inc.
2120 Industrial Pkwy.
Silver Spring, MD 20904
301/622-2121

PC COM I is a full communications program designed for use with Rixon PC212A or R212A intelligent modems. Data is captured to printer or disk by means of an auto-dial directory that contains communications parameter settings for up to 26 systems. The program provides full or brief operating menu modes and single-function key commands for ease of operation. List price: \$89. Requirements: 64K, one disk drive, RS-232C serial port, Rixon modem.

Acculink

IE Systems Inc.
P.O. Box 359
Newmarket, NH 03857
603/659-5891

Acculink captures binary or ASCII files to disk or printer from microcomputers and a variety of minis and mainframes including the DEC-10, DEC-20, VAX, and PDP-11. The menu-driven program supports wild-card file names while sending or receiving files and provides its own error-correction protocol. Other features include auto-dial and redial, programmable keystings, optional menu screens, and terminal emulation for the DEC VT-100. List price: \$245. Requirements: 64K, one disk drive, RS-232C serial port.

BIS-3270

IE Systems Inc.
P.O. Box 359
Newmarket, NH 03857
603/659-5891

BIS-3270 is a full-function terminal emulation program for the IBM 3270 series (3271, 3277, 3274, 3278, 3275, and 3276). The program allows communications over point-to-point or multipoint phone lines using the IBM BSC protocol. It features full-screen and keyboard emulation of the 3270 terminal, local print-key support, and real or logical 3284 or 3286 printer support. Diagnostic functions include ALTEST to check operations of the microcomputer, modem, and cable, and a software line trace to assist with configuration problems. List price: \$695. Requirements: 80K, one disk drive, IBM Bisynchronous Adapter Card.

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VideoLink 88

Windmill Software Inc.
2209 Leominster Dr.
Burlington, Ontario
L7P 3W8 Canada
415/336-3353

VideoLink 88 is a menu-driven program with a format designed for the novice. Features include single-function key commands for erasing or creating files, an interactive automatic logon, and a dialing directory that enables complete parameter designation for up to nine systems per disk. The program selectively captures data to disk or printer and supports the XON/XOFF handshaking protocol during file transfers. List price: \$59.95. Requirements: 64K, one disk drive, RS-232C serial port.

"The copy protection annoyed me, and the program was at times cumbersome to use." Larry Baker, Jr., Lafayette, Louisiana

BIS-3780

IE Systems Inc.
P.O. Box 359
Newmarket, NH 03857
603/659-5891

BIS-3780 is a terminal emulation program for the IBM 3780 series (2780, 3780, 3741, and 2770) that captures data files to disk or printer using the IBM BSC protocol. The program provides Remote Job Entry console command support and printer forms-control capability. Diagnostic functions include ALTEST to check operations of the micro-computer, modem, and cable, and a software line trace to assist with configuration problems. List price: \$695. Requirements: 80K, one disk drive, IBM Bisynchronous Adapter Card.

LYNC

International Software Alliance
1835 Mission Ridge Rd.
Santa Barbara, CA 93103
805/966-3077

LYNC is a smart-terminal program that offers two operating modes: *LYNC* and *Remote*. While in the *LYNC* mode the program can communicate with a remote *LYNC*-driven system to perform protocol file transfers of any type of file. Drive directories can be accessed and listed from either end of the communications link, and wild card file names are supported during file transmission. The *Remote* mode provides password-protected access to your IBM PC from another terminal, featuring auto-dial when used with a Smartmodem. The package doesn't provide binary file transfer; instead it converts incoming binary characters to hexadecimal format, which later must be converted back to binary. List price: \$155. Requirements: 48K, one disk drive, RS-232C serial port.

PCMODEM

Solution Software Systems
117 S. Main
Mt. Prospect, IL 60056
312/259-4800

PCMODEM is a personal communications program that provides a dialing directory with space for communications parameters and specific logon commands for each system. Once the directory is configured, the program permits both auto-dial and auto-redial. If the line is busy, the system repeats the call every 2 min-

utes until a connection is made. *PCMODEM* also provides selection of specific time delays for use with slow host systems and the Xmodem protocol for error-free file transmission. List price: \$79.95. Requirements: 96K, one disk drive, RS-232C serial port, modem.

smarTelex (s version)

Cappcomm Software Inc.
One World Trade Center #1453
New York, NY 10048
212/938-5702

smarTelex (s) is an expandable, menu-driven terminal emulation program that transforms the PC into a telex work station. The program performs all necessary conversions to support either international or domestic telexes and sends messages created and maintained with *Word-Star*. Both on-line conversation and auto-delivery modes are supported at the speed of 50 bps. List price: \$449.95. Requirements: 64K, two disk drives, WUI or WUT telex link, RS-232C serial port.

MicroGate

Gateway Microsystems Inc.
P.O. Box 10998
Austin, TX 78766
512/250-9795

MicroGate is a command-driven IBM 2780 or 3780 terminal emulation program that runs in both interactive and batch modes using the IBM BSC protocol. The program provides complete remote command capability and synchronous and asynchronous file transfer at speeds of up to 4800 bps. *MicroGate II* is a specialized version of the program

that provides a programmable interface to MS-COBOL using the BSC protocol. A 120-page user guide is included. List price: \$895. Requirements: 64K, one disk drive.

smarTelex (e version)

Cappcomm Software Inc.
One World Trade Center #1453
New York, NY 10048
212/938-5702

smarTelex (e) is an expandable, menu-driven system that allows the PC to send and receive telexes, mailgrams, and cablegrams via Western



Union's Easylink service. *WordStar*-prepared message files are accessed through *smarTelex*'s main menu and sent using preassigned function templates. The program provides unattended auto-receive of files and a one-key mailbox service. List price: \$449.95. Requirements: 64K, two disk drives, RS-232C serial port, Hayes Smartmodem.

Passport

The Datalex Company
650 5th St. #406
San Francisco, CA 94107
415/541-0780

Passport is a corporate communications package that allows error-free transmission of ASCII and binary files between IBM PCs and host computers such as the IBM/CMS, NCSS, DEC-10 and DEC-20, HP3000, and PRIME. The program provides preassigned communications parameters for automatic logon to the above systems and user-defined command files for automatic interactive tasking. *Passport* supports wild-card file names, packeted data, blank compression, and sequence checking during file transfer. The program can be configured to any specific host environment. List price: \$500 per micro, \$1200 per host computer. Requirements: 128K, one disk drive, RS-232C serial port.

Transfile

Jack Strick & Associates
949 S. Southlake Dr.
Hollywood, FL 33019
305/925-7004

Transfile transfers Apple II or TRS-80 Model I, II, or III data, program, and text files to the IBM PC at speeds of up to 9600 bps. BASIC programs are converted and transferred so that they can be loaded on the PC. IBM BASIC editing features can then be used to correct syntax differences. *Transfile* transfers both Applesoft and Integer BASIC files. List price: \$225. Requirements: 64K, one disk drive, RS-232C serial port.

VTerm

Techland Systems Inc.
25 Waterside Plaza
New York, NY 10010
212/684-7788

VTerm enables the IBM PC to emulate the DEC VT100 and VT52 terminals. The program transfers ASCII or binary files asynchronously at speeds of 50 to 9600 bps. *VTerm* provides full cursor addressing and keyboard emulation and supports the VT102 and VT1XX printer ports. The program can be commanded from the local or host end and supports any PC-compatible printer. List price: \$125. Requirements: 64K, one disk drive, RS-232C serial port.

Modem-86

CompuView Products, Inc.
1955 Pauline Blvd. #200
Ann Arbor, MI 48103
313/996-1299

Modem-86 captures data to disk or buffer while the PC is connected to mainframes, information services, or microcomputers. The menu-driven program provides XON/XOFF handshaking, the Xmodem error detection/correction protocol, and on-line file manipulation. Installing *Modem-86* requires knowledge of system hardware; however, the complex installation provides adaptability with other microcomputers such as the Zenith 100 and the DEC Rainbow. List price: \$89. Requirements: 48K, one disk drive, RS-232C serial port.

"Modem-86 is particularly useful for people with CP/M-86 or MS-DOS systems who communicate with 8080 or Z-80 CP/M systems." James C. Eckroad, Ann Arbor, Michigan

InterLync

Starside Engineering
P.O. Box 18306
Rochester, NY 14618
716/461-1027

InterLync captures ASCII or binary files to disk or printer at speeds of up to 9600 bps. The program provides the XON/XOFF, ETX/ACK, and XModem protocols. Command files can be programmed to dial specific hosts. Other features include an on-line tutorial program and on-line DOS file commands such as DELETE, TYPE, and DIR. *InterLync* provides 26 programmable keys, an ASCII file-compression utility, and a full-screen editor. List price: \$149. Requirements: 128K, one disk drive, RS-232C serial port.

ReadiTerm

ReadiWare Systems
P.O. Box 680
West Redding, CT 06896
203/431-3521

ReadiTerm is a command-driven program that captures binary or ASCII files to disk, printer, or console. The program can emulate both the Perkin-Elmer 1251 and the DEC VT-100 terminals. *ReadiTerm* provides auto-dial, auto-redial, and the XModem error-checking protocol. Command files can be configured with phone numbers, communications parameters, and specific logon sequences to facilitate logging on to host systems. Preconfigured files are included for The Source, the Dow Jones News/Retrieval service, and CompuServe, and the program has forty programmable function keys. List price: \$75. Requirements: 64K, one disk drive, RS-232C serial port.

Communicator/Text Editor

Electronic Data Systems Corp.
7171 Forest Ln.
Dallas, TX 75230
214/661-6273

Communicator/Text Editor is both a communications program and a single-line text editor. The program captures ASCII files to memory or disk, after which files in the capture buffer can immediately be transmitted to a second host system. An entire disk file or portions of a file can be inserted selectively into a file located in the buffer. The program provides a 24-entry data file dialing directory and performs auto-answer and auto-dial. The editor permits on-line editing of captured files one line at a time, enabling you to remove undesired characters from *VisiCalc* files. List price: \$125. Requirements: 96K, one disk drive, RS-232C serial port.

Qbulletin

Quantum Software Systems, Inc.
7219 Shea Ct.
San Jose, CA 95139
408/629-9402

Qbulletin is a multiline, multiuser bulletin board and message system that enables you to upload and download ASCII files. The store-and-forward system can accommodate up to 16 work stations and provides password protection and privilege support. When run with QNX and an 8-bit modem, the system provides error detection and retransmission of binary and ASCII files. List price: \$250. Requirements: 128K, one disk drive, RS-232C serial port.

Ascom

Dynamic Microprocessor Associates
545 Fifth Ave. #602
New York, NY 10017

Ascom is a menu-driven program that allows ASCII 8-bit file transfers with standard XON/XOFF handshaking protocol, CRLF protocol, and BLOCKV protocol. In CRLF (carriage-return linefeed) protocol, you can change the standard CR and LF prompts into different characters for use with specific systems. BLOCKV allows multiple file transmission using *Ascom*'s error-checking protocol. *Ascom* also permits unattended remote operation; on-line control of file commands including TYPE, DELETE, and RUN; and printer function toggling. List price: \$175. Requirements: 64K, one disk drive, RS-232C serial port.

VDTE 2

Inner Loop Software
P.O. Box 45857-A
Los Angeles, CA 90045
213/645-5162

VDTE 2 is an emulation program that enables the IBM PC to operate as a Hewlett-Packard 26XX terminal. The program emulates the HP2624B, HP2648A, and DEC VT52, and supports the HP2624 block/format mode for most HP3000 software. The program provides file transfer, seven-page scrolling, and eight programmable softkeys. Other features include cursor control arrow and scrolling keys, full printer functions, transfer speeds of up to 9600 bps, and some HP2648 vector graphics plotting functions. List price: \$200. Requirements: 128K, one disk drive, RS-232C serial port.



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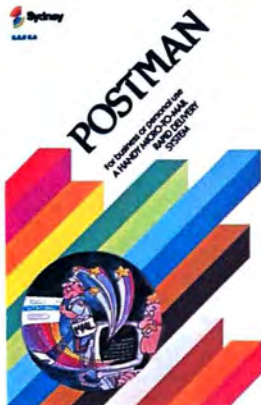
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XVI

1845 The Exchange / Suite 140 / Atlanta, Georgia 30339 / (404) 952-0267

Dealer orders call toll-free (800) 241-6393

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CROSSTALK XVI is a trademark of Microstuf, Inc.

DataLink

Link Systems

1640 19th St.

Santa Monica, CA 90404

213/453-8921

DataLink captures binary or ASCII files to disk or printer. The menu-driven program provides a 27-entry dialing directory, and the XON/XOFF, STX/ETX, and ACK/NAK protocols. *DataLink* features auto-dial, auto-answer, auto-redial, and user-defined command configurations for automatic logon to host systems. *DataLink* can emulate a variety of terminals if users have the desired terminals' character codes. List price: \$149. Requirements: 64K, one disk drive, RS-232C serial port.

E-Mail

Jones Engineering Associates, Inc.

P.O. Box 26134

Charlotte, NC 28221

704/455-9616

E-Mail is an electronic mail program that allows specific applications to be customized. The program comes complete with functions for most applications but also provides user-programmable modules for people who know BASIC. *E-Mail* provides electronic mail, a bulletin board service, and a message maintenance system. The program provides user-defined passwords, programmable function key capability, and log files to record daily activity. Files can be captured to printer or disk at speeds of 300 bps. List price: \$99.95. Requirements: 64K, one disk drive, RS-232C serial port.

Benchmark

Telecommunication Program

Metasoft Corporation

6509 W. Fry Rd. #12

Casa Grande, AZ 85222

602/961-0003

Benchmark Telecommunication Program is menu driven and transfers ASCII or Metasoft files to other *Benchmark* systems at speeds of up to 9600 bps. The program provides error checking between *Benchmark* systems and captures data to disk or to printer. The program is geared to corporate users who need quick file transfer between locations. List price: \$150. Requirements: 96K, one disk drive, RS-232C serial port.

Mail-Com

Digisoft Computers Inc.

1501 Third Ave.

New York, NY 10028

212/734-3875

Mail-Com is a menu-driven program that facilitates access to the U.S. Postal Service's E-COM system. Letters are electronically sent from a subscriber's system to a post office, where they are sorted, printed, folded, placed in envelopes, and delivered within 48 hours. The cost is 26 cents for a one-page letter. *Mail-Com* provides its own text editor and mailing list manager for composing and maintaining lists and can interface with other programs such as *WordStar* and *dBASE II*. The program can mail 200 to 2000 letters and can handle single address messages, text insertion, and common text messages. List price: \$195. Requirements: 64K, one disk drive, RS-232C serial port.

Intellicom

Computer Toolbox

1325 E. Main St.

Waterbury, CT 06705

203/754-4197

Intellicom transfers ASCII and binary files between the IBM PC and information services, mainframes, and other microcomputers. The menu-driven program offers the following file transfer modes: XON/XOFF handshaking, RCPM block checksum with Xmodem, Compu-Serve "A" protocol, and standard Intel hexadecimal formatting. *Intellicom* provides half- and full-duplex modes and a printer toggle. List price: \$49.95. Requirements: 56K, one disk drive, RS-232C serial port.

Direct.connect

Direct.aid

P.O. Box 4420

Boulder, CO 80306

303/442-8080

Direct.connect captures ASCII and binary files to disk or printer at speeds of up to 9600 bps. The menu-driven program provides simple <Alt> key commands, program-mable function keys, and a screen paging system to prevent data from scrolling off the screen. *Direct.connect* permits communications parameters to be changed on line and provides instant notification of communication errors. Other features include linefeed control, character delay throttle, and high data bit masking. List price: \$145. Requirements: 96K, one disk drive, RS-232C serial port.

Remcom

Ticom Systems
13470 W. Washington Blvd.
Marina del Rey, CA 90291
Remcom allows you to use wild-card file names during file transfers and change communications parameters while on-line. The menu-driven program enables users to design command files containing host system phone numbers and communications parameters for quick logons and allows on-line access to the disk directory. *Remcom* includes linefeed and carriage control, XON/XOFF handshaking protocol, and programmable function keys using the p-System. List price: \$95. Requirements: 64K, one disk drive, RS-232C serial port, UCSD p-System.

P-Com

Fogle Computing Corp.
357 E. Blackstock Rd.
P.O. Box 5166
Spartanburg, SC 29304
800/845-7594
P-Com links the IBM PC to the U.S. Postal Service's E-Com system and handles all formatting requirements of E-Com, including header and control records and forms control. Office correspondence is composed using the *P-Com* word processor and then sent to the post office using the *P-Com* communications program. *P-Com*'s word processor provides word wrap, paragraph reformatting, end-of-page mark, and insert, delete, and line replication functions. *P-Com* also transmits *WordStar* files. List price: \$225. Requirements: 128K, one disk drive, RS-232C serial port.

Icom

Smith Educational Engineering Services
P.O. Box 244
Arlington Heights, IL 60006
312/394-3513
Icom transfers ASCII, binary, and spreadsheet files between the IBM PC and mainframes, minicomputers, or other microcomputers at speeds of up to 19,200 bps. During file transmission the program provides XON/XOFF protocol, blocked mode transfer, time-delay pacing, and filter control for all 256 ASCII characters. *Icom* allows a user to leave the program and edit a file without losing the modem connection. The menu-driven program also emulates 12 terminals including the IBM 3101, the VT100, the LSI ADM3, the Hazeltine, and the Visual. Other features include 20 preassigned function keys, 9 definable keys, and I-key toggle control of all *Icom* functions. List price: \$150. Requirements: 128K, one disk drive, RS-232C serial port.

LawSearch

Direct.aid
695-C S. Broadway
Boulder, CO 80303
303/494-8265
LawSearch enables the IBM PC to access the Westlaw data base. The program captures files to disk or printer, converts screen files to normal text files, and uses Westlaw's highlighting scheme. Other features include forward and reverse pagination, Hazeltine 1520 terminal emulation, and two programmable function keys for quicker logon. List price: \$350. Requirements: 96K, one disk drive, RS-232C serial port.

Forthcom

Miller Microcomputer Services
61 Lake Shore Rd.
Natick, MA 01760
617/653-6136
Forthcom is a menu-driven program designed for use with the MMSFORTH operating system. The program transfers data from Miller Microcomputer's *Datashandler* and *Forthwrite* and can send FORTH blocks to computers not running *Forthcom*. Two systems running *Forthcom* can transfer files with full error checking and data compression at speeds of up to 1200 bps. The program provides print spooling and includes the full source code for users who want to adapt the program. List price: \$39.95. Requirements: 64K, one disk drive, MMSFORTH, RS-232C serial port.

Micro/Terminal

Microcom
1400 A Providence Hwy.
Norwood, MA 02062
617/762-9310
Micro/Terminal transfers files between the IBM PC and mainframes, information services, or other microcomputers. The menu-driven program has an on-line text editor that deletes, inserts, and replaces words, lines, and paragraphs. *Micro/Terminal* provides XON/XOFF protocol, programmable key strings, and macro files for storing logon sequences. The program also allows users to insert or delete linefeeds and carriage returns, filter control characters, and regulate the pace of file transmissions. List price: \$100. Requirements: 64K, one disk drive, RS-232C serial port.

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throughput to 9600 baud, printer support, and PC-Host file exchange, in addition to the standard capabilities of an asynchronous communications package. Call or write today. Our software mechanics are standing by.

*Also available for the TI Professional

Intercom 100

Intercomputer Communication Corporation

3195 Linwood #2A
Cincinnati, OH 45208
513/321-3199

Intercom 100 enables the IBM PC to emulate the Burroughs MT983/TD830 terminal. The menu-driven program simultaneously supports up to six Burroughs terminal addresses. Four are used for concurrent operator dialogues or bidirectional file transfers, one is used for background printing, and one is saved for future upgrades. *Intercom 100* allows on-line disk file transfers at speeds of up to 9600 bps. A data communication

line monitor mode lets users check the flow of all data characters, including keyboard input and escape and control codes. Two-wire direct interface is also provided. List price: \$99. Requirements: 64K, one disk drive, RS-232C serial port.

Zipcom

Zipco, Inc.
400 Quivas St.
Denver, CO 80204
303/534-2097

Zipcom captures any type of file to disk or printer at speeds of up to 19.5K bps. A conversion table lets users designate characters to be re-

defined during file transfers to agree with the host system's character set. The table has preassigned character translation for communication with EBCDIC systems. The program provides ten programmable keys, XON/XOFF protocol, and an on-line text editor with insert, delete, and cursor-control functions. Other features include carriage return and linefeed control, on-screen display of parity errors, and user-designed batch files containing host logon information. *Zipcom* includes *Z-Com*, a file formatter program used for sending electronic mail to the U.S. Postal Service's E-Com service. List price: \$205. Requirements: 48K, one disk drive, RS-232C serial port.

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*Requires 96K

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Rockville MD 20852
301-770-4600

Genterm

Information Analysis Systems
Mason Rd. #2
West Willington, CT 06279
203/429-1691

Genterm transfers ASCII or binary files to disk using the XON/XOFF handshaking protocol and its own error-checking protocol. The menu-driven program lets users create custom handshaking protocols by saving each unique character set in a command file. In local mode, *Genterm* can strip control characters from disk files. The program enables users to control communications parameters and to delete separate files or list file directories while on line. *Genterm* also permits adding or deleting linefeeds and carriage returns and transferring files from a remote, unattended system. An IBM 3101 terminal emulator with full character attributes is available as an option. List price: \$79.95. Requirements: 64K, one disk drive, RS-232C serial port.

Blast

Communications Research Group
8939 Jefferson Hwy.
Baton Rouge, LA 70809
504/923-0888

Blast allows transfers of binary and text files during full-duplex mode to other microcomputers and various minicomputers including the DEC VAX, the PDP-11, and the Data General. Designed for corporate users, *Blast* provides an SDLC/HDLC-type protocol to transfer files simultaneously in two directions over hard-wired circuits, satellite links, packet-switched nets, and local area networks. During communications line breaks, *Blast* automatically redials the host and restarts file transfer at the point of interruption. The program also allows remote operation, on-line control of communications parameters and control of linefeed and carriage returns. *Blast* checks the quality of a phone connection and then displays it as a percentage figure on screen. List price: \$250. Requirements: 64K, one disk drive, RS-232C serial port.

Crosstalk XVI

Microstuf, Inc.
1845 The Exchange #205
Atlanta, GA 30339
404/952-0267

Crosstalk XVI is a smart-terminal program that captures ASCII and binary files to disk, memory, or printer. It has full error checking when used with a compatible system. The software provides auto-dial and

auto-answer, on-line technical support, and 40 programmable function keys for quick logon to information services or mainframes. *Crosstalk XVI* permits on-line control of communications parameters and speeds of up to 9600 bps. When requested to, the program displays the amount of data captured, the available disk space remaining, and file transmittal times. *Crosstalk XVI* provides terminal emulation for the IBM 3101, DEC VT100, Televideo 910 and 920, ADDS Viewpoint, and TI 940 computers. List price: \$195. Requirements: 96K, one disk drive, RS-232C serial port.

LAN: Mail Monitor

Software Connections, Inc.
1800 Wyatt Dr. #17
Santa Clara, CA 95054
408/988-3704

LAN: Mail Monitor is an electronic mail system that enables you to send letters and transfer ASCII and binary files to local or remote systems linked to a Corvus Omninet network. The program allows remote, unattended operation between networks and has built-in, screen-oriented editing features such as insert, delete, replace, and printer spooling.

LAN: Mail Monitor permits "registered" mail delivery; by pressing one key a letter's originator receives a list of terminal addressees who haven't yet "picked up" the letter. The program provides businesses with automated distribution lists for quick delivery of memos and status

reports. List price: \$750 to \$1200 (per network). Requirements: 192K, Corvus Winchester hard disk, Corvus Omninet or Multiplexor local area network.

Intelliterm

MicroCorp
913 Walnut St.
P.O. Box Q
Philadelphia, PA 19107
215/627-7997

Intelliterm transfers ASCII and binary files between the IBM PC and minicomputers, mainframes, and other microcomputers. The program display screen is divided into two sections; the top portion displays outgoing data (keyboard input and/or files), and the bottom displays incoming host system data. The sizes of these two screen sections are adjustable. The program allows file transfers using XON/XOFF handshaking or the Xmodem or CRC protocols. The program provides a 1000-entry dialing directory, time-delay pacing of file transmission, and on-line control of communications parameters. Other features include remote, unattended operation, a character translation table for incoming or outgoing data, and a full-screen text editor that includes global search and replace. List price: \$150. Requirements: 128K, one disk drive, RS-232C serial port.

ACOM-300

Allston Group
P.O. Box 1557
Richardson, TX 75080
214/235-1631

ACOM-300 is a menu-driven program that accesses the General Electric Information Services Company (GEISCO) Mark III network. The program captures data to disk, memory, or printer. During file transmissions, *ACOM-300* enacts a low-cost connect mode. It provides on-line file manipulation, enabling you to do such things as delete, rename, and view files. Ten preassigned function keys are included; a status line displays each key's operation state. List price: \$49.95. Requirements: 64K, one disk drive, RS-232C serial port, 300 bps acoustic modem.



TRS-80 to IBM File Transfer Program

Personal Computer Products
1400 Coleman Ave. #C-18
Santa Clara, CA 95050
408/988-0164

TRS-80 to IBM File Transfer Program enables users to move files from TRS-80 computers to the IBM PC. The program works for the TRS-80 Model I, II, III, IV, 12, and 16 computers and transfers files one way only, from the TRS-80 to the PC. Any electronic file (including ASCII, binary, BASIC, Pascal, or FORTRAN) can be transferred at rates of up to 9600 bps. The program does not convert files for use on the PC but includes utilities that help with program conversions. The program includes a cable adapter for connecting the TRS-80 and PC serial ports. List price: \$89.95. Requirements: 64K, one disk drive, RS-232C serial port.

UAP-Link

Unique Automation Products
15401 Redhill Ave., Ste. G
Tustin, CA 92680
714/730-1012

UAP-Link transfers binary and ASCII text files between an IBM PC and minicomputers and mainframes running *UAP-Link*. The program's protocol corrects line errors and compresses transmitted data for quicker and less expensive transfer. Designed for commercial and corporate users, the program permits a remote time-sharing system's commands to be stored on a local file. This file enables *UAP-Link* to automatically log on to the host system, perform file transfers, log off, and

terminate the connection. The program provides independent device defaults, file protection, and remote, unattended operation. List price: \$250. Requirements: 64K, one disk drive, RS-232C serial port.

LogOn

Ferox Microsystems, Inc.
1701 N. Fort Myer Dr. #611
Arlington, VA 22209
703/841-0800

LogOn is a menu-driven program that allows transmission of ASCII or binary files to any mini, mainframe, or microcomputer. The program supports auto-dial and auto-redial, column settings of from 1 to 80, and user-configured, system-specific dialing directory files. Other *LogOn* features include message exchange, electronic mail, connection to most information services, and graphic image transfer of up to 120 cps.

LogOn operates only on micros running UCSD Pascal. List price: \$150. Requirements: 128K, one disk drive, RS-232C serial port.

CommTalk

Professional Software Associates
5353 Wayzata Blvd. #407
Minneapolis, MN 55416
612/541-0742

CommTalk allows capture and transmission of ASCII and binary files to mainframes, information services, and other microcomputers. The menu-driven program includes command-driven options and provides interactive logon, XModem error detection/correction, and printer spooling. A 36-entry dialing directory lets

you designate communications parameters, including the initial command sequence. Other features include remote, unattended operation; character filtering; and speed throttling. List price: \$89.95. Requirements: 64K, one disk drive, RS-232C serial port.

Data Capture/pc

Southeastern Software
7743 Briarwood Dr.
New Orleans, LA 70128
504/246-8438

Data Capture/pc is a menu-driven program that allows data to be selectively captured to or transmitted from disk or memory. The program lets you select any or all control characters to be filtered from received data. Printer control is extensive; the entire contents or selected portions of files may be sent to a printer from either the buffer or disk. Operating parameters for specific host systems can be saved in command files for easy host access, although the package offers no dialing directory. List price: \$120. Requirements: 128K, one disk drive, RS-232C serial port.

Odd-Couple

Rogue River Software
2822 Tahitian Ave.
Medford, OR 97504
503/779-3002

Odd-Couple transfers ASCII or binary files between the Apple computer and the IBM PC or between two Apples or two PCs. During file transmissions *Odd-Couple* allows ei-

ther XON/XOFF handshaking or Xmodem error checking protocol. The menu-driven program lets you change communications parameters and manipulate external files while connected to another computer. Other features include linefeed and carriage return control and a dialing directory. List price: \$79.95. Requirements: 64K, one disk drive, RS-232C serial port.

Telecommunications

Peachtree Software Inc.
3445 Peachtree Rd.
Atlanta, GA 30326
404/239-3000

Telecommunications captures data to disk or printer from time-sharing mainframes, information services, and microcomputers. The program can operate at speeds up to 9600 bps. It provides auto-answer and auto-redial, on-line file manipulation for deleting and renaming files, and wild card file names to be used in batch file transmission and capture. *Telecommunications* also supports checksum error correction when used with another *Telecommunications*-equipped system. List price: \$150. Requirements: 64K, one disk drive, RS-232C serial port.

Apple to IBM File Transfer Program

Personal Computer Products
1400 Coleman Ave. #C-18
Santa Clara, CA 95050
408/988-0164

Apple to IBM File Transfer Program enables users to move files from Apple computers to the IBM PC. The program works for the Apple II,

II+, and IIe computers and transfers files one way only, from the Apple to the PC. Any electronic file (including ASCII, binary, BASIC, Pascal, or FORTRAN) can be transferred at rates of up to 9600 bps. The program does not convert files for use on the PC but includes utilities that help with program conversions. The program includes a cable adapter for connecting the Apple and PC serial ports. List price: \$94.95. Requirements: 64K, one disk drive, RS-232C serial port.

Relay

VM Personal Computing
60 E. 42nd St.
New York, NY 10165
212/697-4747

Relay is a menu-driven program that allows the PC to simultaneously send, receive, print, and edit files. The smart-terminal software provides auto-dial and auto-answer, split-screen message communication, an on-line help facility, and remote operation for transmitting and capturing files. Other features include a *Relay to Relay* error-checking protocol and APL terminal support. When used in conjunction with the new program, *Please, Relay* provides error-free file transfer with a VM-equipped mainframe. List price: \$89. Requirements: 64K, one disk drive, RS-232C serial port.

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David Shultz, Bridgewater, New Jersey

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 - Early/Late Start
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PC World received such an overwhelming response to the *Software Review* that we are making sure that one good thing follows another! Now that you know what the most useful software products are, we are going to help you find the best hardware products on which to run them.

The *PC World Hardware Review* will be published in the spring of 1984 as a companion to the *Software Review*. It will reflect the experience of the community of PC users, with comments based on firsthand testing.

Once again, with the assistance of our readers, *PC World* will publish the definitive guide to IBM PC compatible products. This time we'll tell you about the full range of hardware products, from compatible computers and expansion boards to modems, monitors, and printers.

Besides becoming part of the most useful reference tool ever put together for the IBM PC and compatible computers, you can win big! As a contributor you receive credit for each comment published in the *Hardware Review*, and as a published contributor you will be eligible to become one of five people who will each win \$500 in PC-compatible hardware. Contest winners will be chosen in a random drawing and will be announced in the *Hardware Review*.

If you've used an IBM PC or compatible hardware product, submit a review form for the product to the *Hardware Review*. There is no limit to the number of products for which you can submit comments. *PC World* must receive all submissions by December 1, 1983.

Once received, user comments will be printed with product descriptions written by *PC World's* expert *Hardware Review* editors. *PC World* reserves the right to edit comments to make them conform to the magazine's format and style. A review form for submitting evaluations is provided with this announcement.

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Use this form for each product on which you want to comment. The form may be photocopied to submit more than one evaluation.

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Manufacturer _____

Address _____

Telephone _____

Type of hardware _____

Comment on the product in terms of features or limitations.

Please avoid ambiguity and sweeping remarks. Be specific!

Comments _____

Contributor's name _____

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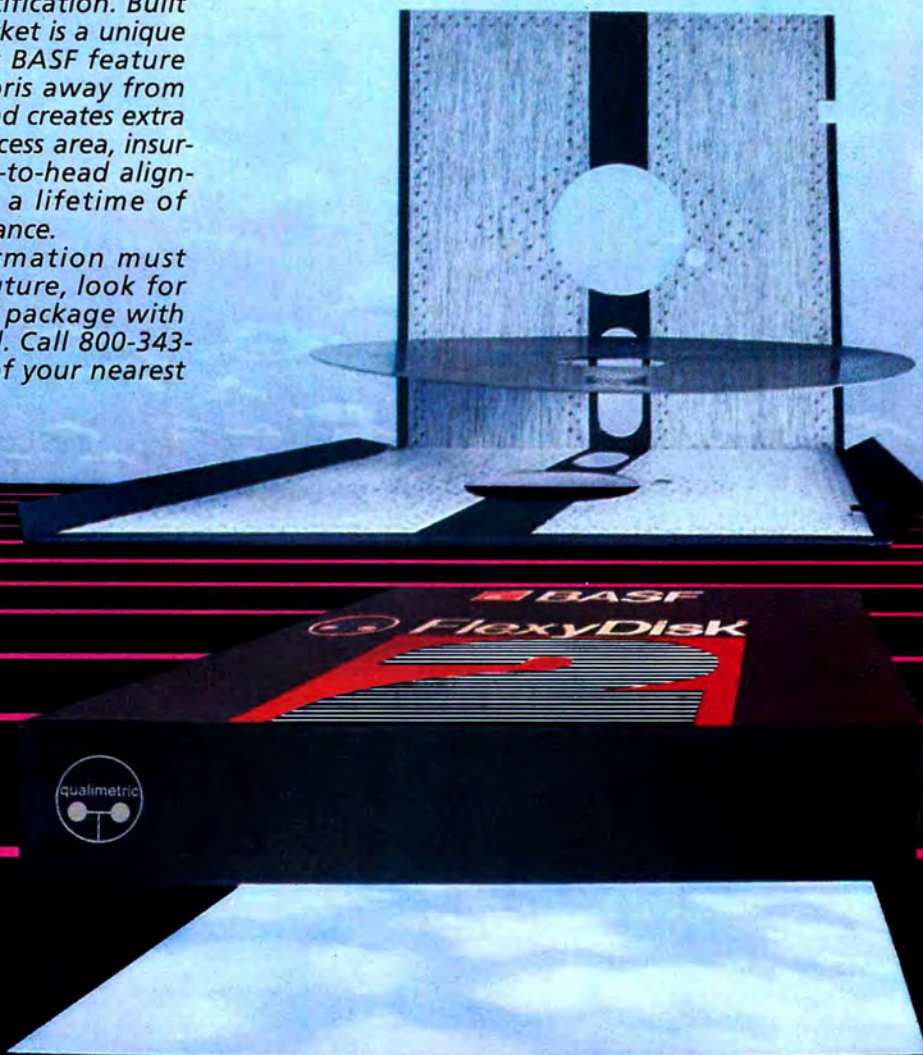


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	Jan84	Feb84	Mar84	Apr84	May84	Jun84	Jul84	Aug84	Sep84	Oct84	Nov84	Dec84	Total84
Revenue:													
Components Div.	100	115	135	150	215	260	325	430	540	645	750	955	4620
Micro Systems Div.	10	20	40	80	120	165	240	325	430	535	630	750	3345
Industrial Sys. Div.	25	25	50	75	100	130	160	190	225	250	300	350	1880
Total Revenue	135	160	225	305	435	555	725	945	1195	1430	1680	2055	9845
Cost of Sales:													
Components Div.	80	90	100	110	135	165	210	245	350	405	525	605	3180
Micro Systems Div.	15	15	20	40	55	75	100	140	185	230	300	335	1510
Industrial Sys. Div.	25	35	35	50	75	100	125	150	175	200	225	275	1470
Total COS	120	140	155	200	265	340	435	535	710	915	1050	1215	6160
Operating Expenses:													
Components Div.	100	125	150	170	190	200	200	200	205	200	205	190	2135
Micro Systems Div.	75	85	95	100	105	110	110	115	115	120	120	120	1255
Industrial Sys. Div.	50	65	75	90	105	100	100	105	110	105	100	100	1105
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BARR SYSTEMS, INC.

2500 Blue Ridge Road/Suite 315/Raleigh, NC 27607

Education

Fred D'Ignazio

Educational software is fun. If you buy the right program, you will be entertained, amused, fascinated, and charmed. Of course, you will also learn in a more immediate, interactive way than you might have imagined. You will feel like a basketball player dribbling up the court to make a slam dunk, instead of a bored spectator in a cut-rate seat high in the rafters. Your learning will be active, suspenseful, and under your own control.

Educational software's mission is to teach, and to do so in an effective, entertaining manner. Superior educational software should turn your computer into a friendly, encouraging, and patient teacher.

Who uses educational software? According to a recent Gallup poll, 46 percent of personal computer owners use their computers to teach their children spelling and mathematics. Future Computing Inc., a Texas-based market research firm, predicts that 5.25 million educational programs will be sold by the end of 1983, up from the 1.4 million sold in 1982. Most of these programs are for school-age children.

Adults too are interested in learning. According to the same Gallup poll, 42 percent of the adults surveyed use their computers as learning tools. But adult educational software is still playing catch up with children's software. The older programs still on the market are thinly disguised electronic textbooks—in other words, tedious page turners.

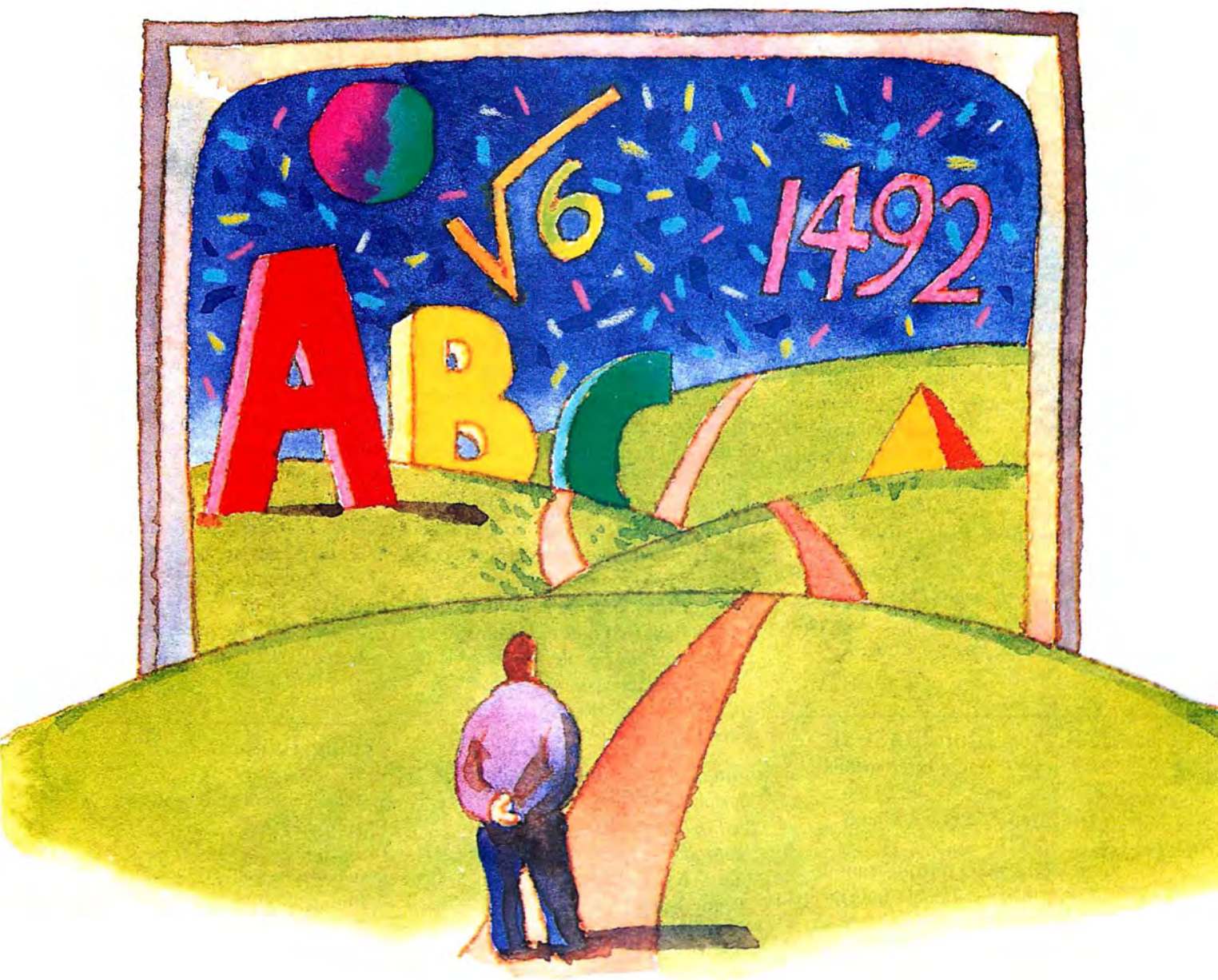
For children in kindergarten through grade 12, the variety and flavor found in learning programs are growing. A computer can be both a tool and a teacher. As a tool the computer can manage information, write letters, and perform calculations. As a teacher it can demonstrate ideas and concepts, all the while testing, challenging, and assessing a learner's performance.

Still, most educational software available today is either disguised drill and practice or electronic text. Subjects like math and spelling predominate, while other areas (notably the sciences and liberal arts) are poorly represented.

No part of the software industry is changing as rapidly as the educational software market. Traditional approaches are giving way as computer power increases and educators become more involved with the production and design of educational software. The trend is away from drill and practice, game, and simple text display approaches, and toward interaction, graphics, and simulation. Computers will cease to be a poor second cousin to the filmstrip or the workbook. As a learning device computers can test and assess student performance. More importantly, they can determine whether a concept has been understood. If a student has not grasped a concept, the computer can take corrective action. Students who are unable to understand the first time will be shown a different path to the right answer. The program will continue to "branch" to new information until the student demonstrates comprehension of the material.

What makes all this possible are advances in microcomputer technology. Internal memory has gotten less costly. New techniques (involving efficient, machine-portable languages such as FORTH or C) have made it possible to put large, complex programs on a disk while speeding up machine response time.

As a result, high-resolution, rotating, three-dimensional graphics (which require a large amount of disk space) can finally be used. With improved graphics, sim-



ulations will become more realistic. Computers may play the role of a chemistry set, a telescope, a bass guitar, or a probe on the surface of Pluto.

Computers, aided by a new generation of educational software, will be able to assist teachers by providing stand-alone instruction. As superior educational software turns computers into efficient and friendly teaching aides, teachers will have more time to devote to working individually with students. Personal computers will make personal instruction a reality.

What do you do until the new programs arrive? For the present, be critical and demanding of the existing educational software. Before you select a program, read about it, talk to people who know it, and make sure it is the right program for you.

Fred D'Ignazio is an associate editor at Compute! magazine and a contributing editor for Enter magazine, published by the Children's Television Workshop. His latest book is Katie and the Computer.

ATI Training Power for PC-DOS

American Training International
3770 Highland Ave. #201
Manhattan Beach, CA 90266
213/546-4725

ATI Training Power for PC-DOS introduces PC-DOS commands to beginners. Because students can choose the amount and pace of learning, the program is easy to use. Actual practice with learning drills is minimal. List price: \$75. Requirements: 64K, one disk drive.

"With Training Power you get an efficient lesson on PC-DOS without having to learn unrelated material."
Mark Salem, Eugene, Oregon

D.B. Power for dBASE II

American Training International
3770 Highland Ave. #201
Manhattan Beach, CA 90266
213/546-4725

D.B. Power is an introduction to *dBASE II*, the data base management program. The introductory mode is for beginners, while the review mode teaches more advanced commands for sorting data and generating reports. List price: \$75. Requirements: 64K, one disk drive.

"If you're unfamiliar with what dBASE II does and how it works, D.B. Power gives you a general idea. You'll have to practice on your own."
Alan Parker, Minneapolis, Minnesota

Menu-Power and Command-Power for WordStar

American Training International
3770 Highland Ave. #201
Manhattan Beach, CA 90266
213/546-4725

Menu-Power introduces *WordStar* menus and commands to beginners in less than an hour. Lessons include creating, editing, saving, and exiting a file. After covering main menu commands, *Menu-Power* briefly demonstrates the other five *WordStar* menus. The documentation serves as a reference guide to the menus and commands. *Command-Power* teaches advanced *WordStar* functions in less than two hours. The program is designed for people who have some *WordStar* experience. List price: \$75 each. Requirements: 64K, one disk drive.

Although MicroPro's WordStar tutorial is much better than the manual, ATI's interactive training approach is far more useful to beginners." B.G. Dudley, Coraopolis, Pennsylvania

States 'n Caps

Alphanetics Software
P.O. Box 339
Forestville, CA 95436
800/321-5346

States 'n Caps teaches the names of the states and their capitals and is intended for all age groups. The program interacts with users, offering quizzes by state, capital, or state and capital. Scores and elapsed time are shown, and correct answers are provided when necessary. Graphics and sound are included. List price: \$29.95. Requirements: 64K, one disk drive, color graphics board.

Comput-a-Sketch

Software Labs, Inc.
6924 Riverside Dr.
Dublin, OH 43017
800/531-1309

Comput-a-Sketch lies somewhere between education and entertainment. The screen becomes a sketch pad for children up to 10 years old. Only the cursor control keys and the <Enter> key are required for drawing lines on the screen. The menu explains which cursor keys to use for various drawings, but perfect diagonals and circles are beyond the program's capability. Either a color or monochrome monitor is supported. List price: \$10. Requirements: 64K, one disk drive.

Typing Tutor

IBM
Systems Products Division
P.O. Box 1328
Boca Raton, FL 33432
800/447-4700, 800/322-4400
Illinois, 800/447-0890 Alaska,
Hawaii

Typing Tutor consists of typing drills that build speed and accuracy on the IBM PC keyboard. Step-by-step lessons guide students through the program, and a feature called the Time Response Monitor records their progress. The program resumes at the point where each student leaves off. An optional teaching mode allows the instructor to monitor 39 students and prepare typing tests; no tests are included in the program. List price: \$25. Requirements: 48K, one disk drive.

"Typing Tutor *teaches the keyboard but not finger placement.*" Darrel Brown, Madison, Wisconsin

"*This program provides a great way to learn to type. It really does keep me from hunting and pecking.*" Lee Bellavance, Hailey, Idaho

"*The documentation is good. The program does not have a drill on capital letters.*" Mr. and Mrs. James C. Pottkotter, Memphis, Tennessee

Plan Power for VisiCalc

American Training International
3770 Highland Ave. #201
Manhattan Beach, CA 90266
213/546-4725

Plan Power for VisiCalc introduces beginners to *VisiCalc* commands in less than an hour. By simulating *VisiCalc*, the tutorial provides practice in setting up, adding to, editing, and saving a spreadsheet. In addition, *Plan Power* explains how to analyze growth rates and conduct "what if" analyses. Five sample spreadsheets are provided. The program is menu driven, can be reviewed as needed, and comes with a tabbed reference manual. List price: \$75. Requirements: 64K, one disk drive.

Plan Power for SuperCalc

American Training International
3770 Highland Ave. #201
Manhattan Beach, CA 90266
213/546-4725

Plan Power for SuperCalc introduces beginners to *SuperCalc* commands in less than an hour. Practice with sample spreadsheets includes creating and editing a spreadsheet as well as entering formulas and doing

"what if" analyses. The program is menu driven and comes with a detailed reference manual. After using *Plan Power* the first time, users can review the tutorial with a special review mode. List price: \$75. Requirements: 64K, one disk drive.

BASIC Power for MBASIC

American Training International
3770 Highland Ave. #201
Manhattan Beach, CA 90266
213/546-4725

BASIC Power for MBASIC introduces beginners to BASIC commands in less than an hour. In addition to defining the commands, the tutorial provides practice in writing programs, using programming techniques (such as looping, counting, and totaling), checking input for accuracy, constructing a report, performing calculations, and using sequential files. *BASIC Power* is menu driven and interactive and comes with a tabbed reference manual. List price: \$75. Requirements: 64K, one disk drive.

BASIC Primer

IBM
Systems Products Division
P.O. Box 1328
Boca Raton, FL 33432
800/447-4700, 800/322-4400
Illinois, 800/447-0890 Alaska,
Hawaii

BASIC Primer is an on-screen workbook that teaches simple BASIC programming. It gives lessons on BASIC statements such as BEEP, PRINT, SOUND, LOCATE, and GOTO and provides practice in using data files

and saving programs. All directions are on screen, and no previous computer knowledge is required to follow the lessons. List price: \$60. Requirements: 64K, one disk drive.

"*BASIC Primer makes you learn programming skills step-by-step before proceeding to the next skill level. This approach forces you to review any skills you haven't mastered before writing more difficult programs later in the tutorial.*" Alex Barnaby, Washington, D.C.

Friendlyware PC Introductory Set

FriendlySoft, Inc.
3609 Smith-Barry Rd.
Arlington, TX 76013
817/277-9378

Friendlyware is a set of programs intended to introduce first-time computer users to the IBM PC. The three-disk package comes with a 50-page manual and has 4 demonstration programs, 8 utilities, and 17 games. It includes a brief history of computers, a personal biorhythms program, and personal finance and business simulation programs. List price: \$49.95. Requirements: 64K, one disk drive.

"*Friendlyware is a good demonstration program, but none of the programs are top of the line. The business simulations are not realistic enough. However, the quantity of programs and ease of use make this program worth the money.*" Marsha Bellavance, Ketchum, Idaho

ATI Training Power for Multiplan

American Training International
3770 Highland Ave. #201
Manhattan Beach, CA 90266
213/546-4725

ATI Training Power for Multiplan introduces beginners to *Multiplan* commands in less than an hour. By simulating *Multiplan* the tutorial provides practice in setting up, editing, and saving a spreadsheet, entering numbers and formulas, conducting "what if" analyses, and other functions. The program is menu driven and interactive and comes with a tabbed reference manual. List price: \$75. Requirements: 64K, one disk drive.

"This tutorial is worth the time and money." Marsha Bellavance,
Ketchum, Idaho

SofTech for UCSD Pascal

SofTech Microsystems
16885 W. Bernardo Dr.
San Diego, CA 92127
619/451-1230

The *SofTech* package consists of a user manual; *The UCSD Pascal Handbook*, which explains the Pascal language as implemented on the UCSD p-System; and a set of automated UCSD Pascal quizzes. The quizzes are of two types. The first type requires students to answer questions in drill and practice exercises. The program makes corrections to wrong answers immediately. The second type of quiz requires students to write a program to perform a specific function. List price: \$125. Requirements: 64K, one disk drive, UCSD p-System.

BASIC Instruction Course

Alphanetics Software
P.O. Box 339
Forestville, CA 95436
800/321-5346

BASIC Instruction Course consists of 12 self-paced modules that cover BASIC and PC-DOS functions on a two-disk set. Designed for beginners as well as more experienced users, the program explains PC-DOS commands, string handling, arithmetic commands, file handling, sub-routines, screen formatting, and other functions. List price: \$39.95. Requirements: 64K, one disk drive.

Word Whiz

Alphanetics Software
P.O. Box 339
Forestville, CA 95436
800/321-5346

Word Whiz uses the flash-card technique to increase spelling proficiency among students in first through sixth grade. *Word Whiz* has a vocabulary of over 1800 words, and the degree of difficulty varies automatically with the number of correct and incorrect responses. The lessons are divided into three levels: grades 1 and 2, 3 and 4, and 5 and 6. The program keeps statistics on the student's progress and has sound and video enhancements. List price: \$29.95.

Computer Tutor

Software Labs, Inc.
6924 Riverside Dr.
Dublin, OH 43017
800/531-1309

Computer Tutor is an introduction to simple BASIC programs. The source code and accompanying explanatory remarks are provided for

30 BASIC programs, and the programs are listed on four menus for games, education, home use, and utilities. With a game program, for example, users can play the game or simply study the code. *Computer Tutor* does not allow for writing original programs. List price: \$49.95. Requirements: 64K, one disk drive.

Teacher PC

CMA Micro Computer
55722 Santa Fe Trail
Yucca Valley, CA 92284
619/365-9718

Teacher PC is a three-part tutorial that teaches beginners to use the IBM PC, PC-DOS commands, and BASIC. The three-disk package comes with a workbook of 86 lessons that are coordinated with the lessons and tests on disk. The tutorial on BASIC provides assignments, enables students to write their own programs, explains why certain responses are incorrect, and monitors accuracy. The manufacturer recommends two hour-long sessions each day for two weeks to complete the entire course. List price: \$149.95. Requirements: 64K, one disk drive.

Question

Alpha Software Corp.
12 New England Executive Park
Burlington, MA 01803
617/229-2924

Question tests players on remembering facts about topics such as famous people, cities, and animals. After players select one item from a particular topic, the program tries to guess

SureStroke[®] Tomorrow's Keyboard Today



the chosen item by asking questions. Answering the questions gives players practice in learning and remembering a wide range of information. Original categories can be created. Because it has an extensive data base, *Question's* response time is quick. Graphics supplement the text on screen. List price: \$45. Requirements: 64K, one disk drive, color graphics board, dot matrix printer.

PC Tutor 1.1 and 2.0

Comprehensive Software
2316 Artesia Blvd., Ste. B
Redondo Beach, CA 90278
213/318-2561

PC Tutor 1.1 is an introduction to computer concepts, PC-DOS 1.10 commands, files, disks, and the PC keyboard. The program also includes information on peripheral devices and asynchronous communications. *PC Tutor 2.0* teaches only the PC-DOS 2.00 commands. A definition and practice exercises are given for each command. List price: \$59.95 each. Requirements: 64K, one disk drive.

"Curious novices will find plenty of information on PC-DOS commands, but they won't get sufficient practice in how to use them." Jennifer Campbell, Houston, Texas

"PC Tutor 1.1 is good, but it could be substantially improved." G. Dyer, Mill Valley, California

"I used this program successfully to christen my PC!" Victoria Pearson, Hollywood, California

The keyboard you use today was deliberately designed for inefficiency. Nineteenth-century inventors had to arrange keys so using them would be unnatural and awkward. Otherwise their mechanical machines couldn't keep up with human fingers.

But today's machines don't have those mechanical limitations. And ANSI has just approved a simplified Dvorak keyboard. This keyboard of tomorrow has a different key layout, with the most-used letters in the middle row. Key use is balanced between right and left hands. You make fewer mistakes because the keyboard is designed for natural ease and efficiency.

SureStroke equips your IBM PC for tomorrow's keyboard with press-on letters and software to reset key locations. And most important, SureStroke equips you with tools to make the transition from old keyboard to new: the first learning manual geared to the new keyboard, learning software that's fun to use, and listen-and-learn cassette.

If you've never learned to use a keyboard by touch, congratulate yourself. Your mind is ready for the keyboard of tomorrow. With SureStroke, you'll be using the new keyboard faster — up to four times faster than learning the old keyboard would take.

If you're good at the old keyboard, you'll be great at the new one. SureStroke gives you the full power of the new keyboard while you retain your skill at the old.

We admit you won't see this new keyboard everywhere. In fact, you'll probably be the first person you know to try it.

But you're used to trying out tomorrow. Try out SureStroke — today.

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Eazylearn

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
913/843-5863

Eazylearn is a course-authoring system for developing and administering business training or classroom courses. Preprogrammed sound, a monochrome monitor, and a color monitor may be used separately or in combination for course development. Up to 32,000 screens can be produced. *Eazylearn* also enables users to create multiple-choice, fill-in-the-blank, essay, and word/phrase recognition tests. List price: \$170. Requirements: 128K, two disk drives.

PC Pal

Comprehensive Software
2316 Artesia Blvd., Ste. B
Redondo Beach, CA 90278
213/318-2561

PC Pal teaches first-time computer users how to use the IBM PC and various types of applications software. The program consists of six lessons: using the keyboard, a simulation of a word processing program, a simulation of an electronic spreadsheet, BASIC programming, an overview of computer hardware, and a game to practice using the cursor control keys. The word processing simulation teaches how to create a file, insert text, move text, reset margins, and other editing functions. The spreadsheet lesson gives practice in creating the spreadsheet, entering and editing data, doing calculations,

and other functions. After completing *PC Pal*, students advance to *PC Tutor*, a program that defines and explains PC-DOS commands and other lessons. List price: \$39.95. Requirements: 64K, one disk drive.

PC Master

Courseware, Inc.
10075 Carroll Canyon Rd.
San Diego, CA 92131
619/578-1700

PC Master introduces beginners to the IBM PC and the variety of available applications software. The first section discusses how to use the keyboard and PC-DOS. The second section is an overview of 11 types of software, such as data base managers and word processors. The third section provides simulations of four actual programs including *WordStar* and *VisiCalc* to give students hands-on practice. List price: \$79.50. Requirements: 64K, one disk drive.

Coach

Open Systems
430 Oak Grove
Minneapolis, MN 55403
612/870-3515

Coach is a program composed of seven tutorials that each cover one of seven integrated accounting packages in Open Systems' *Software Fitness* program series. Lessons are self-paced, and their length can be varied according to the trainee's accounting or computer experience. Trainers can print and monitor student responses. To create original lessons the trainer supplies the lesson material and multiple-choice questions. List price: \$525. Requirements: 64K, one disk drive.

Instructor

Individual Software, Inc.
24 Spinnaker Pl.
Redwood City, CA 94065
415/591-4166

Instructor introduces beginners to the IBM PC keyboard, including the function keys and the numeric keypad. The program uses color graphics, music, and games to make beginners feel comfortable with the computer. The entire program takes one hour to view. List price: \$44.95. Requirements: 64K, one disk drive.

"The Instructor is fun if sometimes a little too cute, but I recommend it for anyone who's afraid of computers."
Molly Rogers, St. Louis, Missouri

DOS Tutorials

Sophco, Inc.
663 W. Aspen Way
Louisville, CO 80027
303/665-5782

DOS Tutorials 1.1, 1.25, and 2.00 provide practice lessons on using PC-DOS commands for beginners and reference guides for more experienced computer users. Each tutorial explains how DOS works, defines PC-DOS commands, has a 25-term glossary, and includes an error-checking function for identifying and explaining incorrect responses. The programs are menu driven and require students to use only the cursor keys and the <Enter> key to select options. The *DOS Tutorial* programs have help screens to assist beginners in keyboard operation. Diagrams and sound supplement the text on screen. List price: DOS 1.1

and DOS 1.25 \$39.95, DOS 2.00 \$49.95. Requirements: 64K, one disk drive for DOS 1.1 and DOS 1.25; 128K, two disk drives for DOS 2.00.

"With this product, you can throw away your PC-DOS Operations Manual." Alex Lacey, Boulder, Colorado

Professor DOS

Individual Software, Inc.
24 Spinnaker Pl.
Redwood City, CA 94065
415/591-4166

Professor DOS gives beginners in-depth coverage of PC-DOS commands, applications, related concepts, and editing functions. The program is designed to build on skills gained from *Instructor* by the same manufacturer, which teaches use of the IBM PC keyboard. *Professor DOS* asks users questions and has color graphics and sound. List price: \$59.95. Requirements: 64K, one disk drive.

Triple Brain Trust

Reston Publishing Company
11480 Sunset Hills Rd.
Reston, VA 22090
703/437-8900

Triple Brain Trust is based on tic-tac-toe and tests players on their knowledge of facts and figures. The player must correctly answer a question before placing an X or an O in the game grid. Question categories include math, movie trivia, colors, and state capitals. A running display of the score appears on screen. The age range for players is 6 to adult. List price: \$30. Requirements: 64K, one disk drive, color graphics board.

The Author

Software Labs, Inc.
6924 Riverside Dr.
Dublin, OH 43017
800/531-1309

The Author helps teachers or instructors design customized lesson plans for classroom use or corporate training. The menu-driven program prompts with questions to assist in creating lessons. The lesson design includes a branching feature that allows designers to present additional questions to students when they give incorrect responses. The questioning continues until the students learn the material. *The Author* keeps score on right and wrong answers and monitors students' progress. List price: \$199. Requirements: 64K, two disk drives.

Fact Track

SRA (Science Research Associates)
155 N. Wacker Dr.
Chicago, IL 60606
312/984-7000

Fact Track is a computerized version of hand-held flash cards. The program teaches addition and subtraction on a first-grade level and multiplication and division at more advanced levels. It can drill students on one or several math skills at a time, with any one of 390 randomly chosen equations. Students select response-time goals for themselves and later can compete against their own or other players' best times. Progress is measured by the number of correct answers. After a student gives an answer, *Fact Track* displays the correct



one and shows the student's score. An Extensions section includes more difficult problems. Numbers can't have more than two digits, but response time can be speeded up to increase the challenge. List price: \$90. Requirements: 64K, one disk drive, color graphics board.

Computer Discovery

SRA (Science Research Associates)
155 N. Wacker Dr.
Chicago, IL 60606
312/984-7000

Computer Discovery introduces junior and senior high school students (in separate versions) to computer science. Its lessons are logical analysis, programming, applications, and history of computers. The package includes two disks, a teacher's guide, and 20 student workbooks. The teacher's guide consists of learning objectives, suggested projects, and a key to workbook assignments. The program takes from 15 to 30 hours to complete. List price: \$200. Requirements: 64K, one disk drive, color graphics board.

Arithmetic Games Set 1

SRA (Science Research Associates)
155 N. Wacker Dr.
Chicago, IL 60606
312/984-7000

Arithmetic Games Set 1 includes two educational games that provide practice in the four basic arithmetic skills: addition, subtraction, multiplication, and division. In Beano players solve arithmetic problems using two or three numbers rolled by computerized dice. In Rockets players do arithmetic problems as they move a spaceship around a 15 by 15 square grid. Players compete against either the computer or each other. List price: \$65. Requirements: 64K, one disk drive, color graphics board.

Speed Reader II

Davidson & Associates
6069 Groveoak Pl. #12
Rancho Palos Verdes, CA 90274
213/378-7826

Speed Reader II teaches students to increase reading speed and comprehension through self-paced practice lessons. The program is appropriate for eighth-grade level through adult and has 35 stories. The reading selections are divided into three sections: eye movement, reading columns, and reading passages. An additional warm-up exercise flashes letters and words on and off the screen to improve comprehension speed and extend peripheral vision by displaying four instead of two words on screen. A timed reading test for speed and comprehension follows each reading selection. The screen displays the number of words just read and the words-per-minute rate. The comprehension quiz has a multiple-

choice format. *Speed Reader II* analyzes the student's reading grade level, and an editing feature allows entry of original reading selections and test questions. Four additional disks are available as add-ons. List price: \$69.95. Requirements: 64K, one disk drive.

Arithmetic Games Set 2

SRA (Science Research Associates)
155 N. Wacker Dr.
Chicago, IL 60606
312/984-7000

Arithmetic Games Set 2 follows its predecessor, *Set 1*, in using two games to provide practice in the four basic arithmetic skills. Discovery Machine shows two numbers and a solution, requiring players to figure out which arithmetic operation was applied. In Number Chase players try to guess a secret number from numerical clues supplied by the program. Like *Set 1*, *Set 2* uses sound and graphics to entertain players. List price: \$65. Requirements: 64K, one disk drive, color graphics board.

CSR PC-Primer

Computer Systems Research, Inc.
40 Darling Dr.
Avon, CT 06001
203/678-1212

CSR PC-Primer trains beginners to use the IBM PC in less than six hours. The course consists of a student workbook and six self-paced modules on six disks. The modules teach basic PC components, computer concepts, keyboard use, diagnostics, BASIC, and PC-DOS. List price: \$50 per module, all six modules \$210. Requirements: 128K, one disk drive.

Math Drills

Starware
2000 K St. NW #504
Washington, DC 20006
202/331-8833

Math Drills teaches addition, subtraction, multiplication, and division to children in grades K-6. Eight difficulty levels determine the complexity of the problems and the number of on-screen instructions. The help facility gives step-by-step explanations of how to do problems. The student gets three tries at giving an answer before the correct answer is provided. The percentage of correct answers is displayed at the end of the lesson. List price: \$39. Requirements: 64K, one disk drive.

Eliza

Artificial Intelligence Research Group

921 N. La Jolla Ave.
Los Angeles, CA 90046
213/656-7368, 213/654-2214

Eliza simulates a session with a "nondirective" psychotherapist who answers every question with another question. Originally written for mainframes in the 1960s by an MIT professor, this program is an experiment in computer simulation of realistic human conversation. *Eliza* was never intended for actual psychotherapy, and the program's author was dismayed to find some people using it for that purpose. Instead of observing a 50-minute hour, *Eliza* will continue a session as long as the "patient" holds out. List price: protected version \$25, unprotected version \$45. Requirements: 64K, one disk drive.

Rhymes and Riddles

Spinnaker Software Corporation
215 First St.
Cambridge, MA 02142
617/868-4700

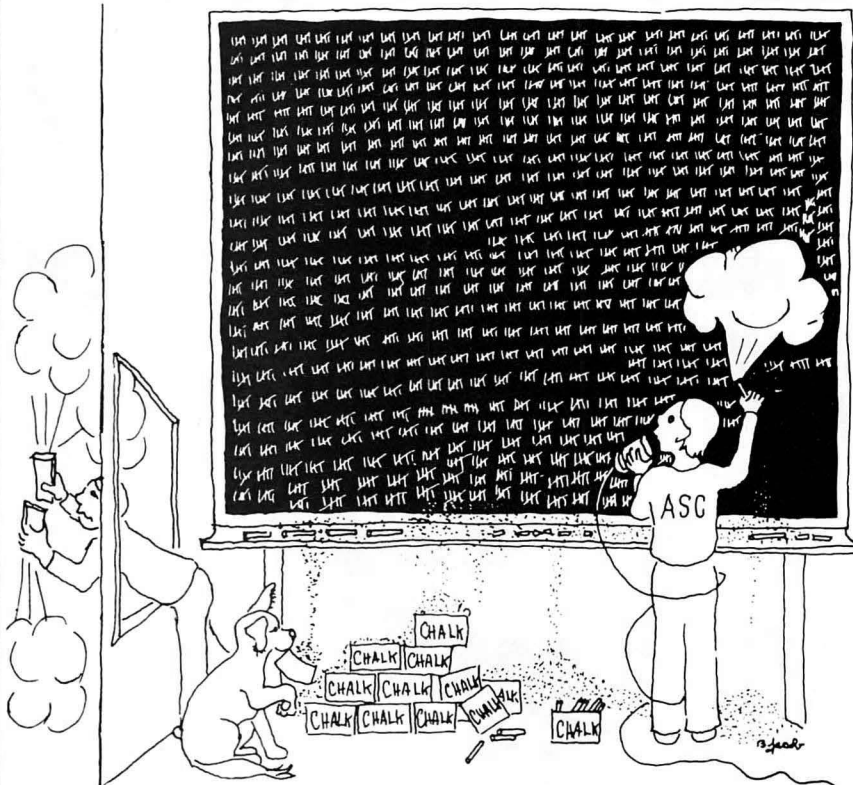
Rhymes and Riddles is a letter guessing game for 5- to 9-year-olds and is presented in three formats: nursery rhymes, riddles, and famous sayings. To correctly complete a nursery rhyme or answer any of the more than 100 riddles offered, players have to fill in blanks with the correct letters. The program supplies the correct answer if players respond incorrectly. In the last section of the program children must put words together to make famous sayings. In each program a picture appears on screen to reward children for correct responses. List price: \$29.95. Requirements: 64K, one disk drive.

FaceMaker

Spinnaker Software Corporation
215 First St.
Cambridge, MA 02142
617/868-4700

FaceMaker is a three-part learning game. In the first part children create a face by choosing from an assortment of eyes, ears, noses, mouths, and hair. The second part lets children make the face wink, smile, frown, cry, stick out its tongue, and wiggle its ears. The third part animates the face with a particular sequence of winks and wiggles, and children have to press keys in the right order to copy the pattern of facial movement chosen by the program. List price: \$34.95. Requirements: 64K, one disk drive (color graphics board recommended).

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Circle 359 on reader service card

Hey Diddle Diddle

Spinnaker Software Corporation
215 First St.
Cambridge, MA 02142
617/868-4700

Hey Diddle Diddle is a learning game that introduces children to traditional Mother Goose nursery rhymes in three steps. Storytime automatically displays rhymes. In Storybook players press the joystick button or a key to see the rhyme displayed. In Rhyme Game players must unscramble nursery rhyme lines to put the verse in its correct order. List price: \$29.95. Requirements: 64K, one disk drive (color graphics board recommended).

KinderComp

Spinnaker Software Corporation
215 First St.
Cambridge, MA 02142
617/868-4700

KinderComp is a six-part program that helps teach children 3 to 8 years old to read, spell, and count. In the first section, Draw, children make colorful drawings using the computer keyboard. In Scribble children press any key, and that letter is repeated in a line across the screen. Name requires children to key in a name or short phrase, which then repeats in various patterns all over the screen. Sequence presents five numbers in ascending order and waits for children to supply the sixth number. After children complete five correct sequences, the computer displays a colorful picture and makes sounds. Letters improves alphabet knowledge by asking children to choose the key

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that corresponds to the letter appearing on screen. The last section, Match, displays a pattern in a box; children must select the matching pattern from three possible choices. List price: \$29.95. Requirements: 64K, one disk drive (color graphics board recommended).

Snooper Troops I and II

Spinnaker Software Corporation
215 First St.
Cambridge, MA 02142
617/868-4700

Snooper Troops I and II is a series of educational adventures that teach organizational and logic skills. The player is a private detective who must determine who committed a crime and what the motive was. The player drives around town, questions suspects, searches houses for clues, and uses the Snoopnet computer to gather information. Instruction booklets are provided with the program. List price: \$44.95. Requirements: 64K, one disk drive (color graphics board recommended).

Delta Drawing

Spinnaker Software Corporation
215 First St.
Cambridge, MA 02142
617/868-4700

Delta Drawing allows children to create colorful drawings on the computer screen by using single-key commands to control cursor movement. Drawings can be nested inside one another to build complex drawing programs. *Delta Drawing* can be used in graphics or text mode. List price: \$49.95. Requirements: 64K, one disk drive (color graphics board recommended).

Story Machine

Spinnaker Software Corporation
215 First St.
Cambridge, MA 02142
617/868-4700

Story Machine supplies a vocabulary of 45 words for children 5 to 9 years old so they can write sentences, paragraphs, or stories of any length. When children incorporate words into sentences, the program displays appropriate illustrations on screen. For example, when a child writes, "The boy ran to the dog," the action is animated. The program is designed to use only the provided vocabulary. List price: \$34.95. Requirements: 64K, one disk drive.

Teach Yourself VisiCalc on the IBM PC

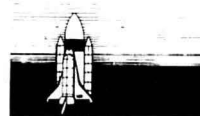
Deltak Microsystems, Inc.
East/West Technological Center
1751 W. Diehl Rd.
Naperville, IL 60566
800/282-5586, 312/369-3000 in
Illinois

Teach Yourself VisiCalc is a 1-hour tutorial that provides practice with various spreadsheet functions. These include moving and displaying parts of a spreadsheet, entering labels and values, making corrections and "what if" calculations, and using commands such as Clear and Replicate. Other lessons cover the sum function and storing and printing the worksheet. The package includes two disks and a self-teaching handbook. Deltak also produces the same type of training package for 1-2-3, *Multiplan*, PC-DOS, BASIC, and *dBASE II*. List price: \$80. Requirements: 64K, one disk drive.

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Teach Yourself the IBM PC

Deltak Microsystems, Inc.
East/West Technological Center
1751 W. Diehl Rd.
Naperville, IL 60566
800/282-5586, 312/369-3000 in Illinois

Teach Yourself the IBM PC combines Individual Software's *The Instructor* with a self-teaching handbook in one training package for beginners. *The Instructor* primarily teaches keyboard use, and the handbook provides additional practice and reference materials. The program takes 1 hour or less to complete. List price: \$65. Requirements: 64K, one disk drive.

TK! Solver Pack for Introductory Science

Software Arts
27 Mica Ln.
Wellesley, MA 02181
617/237-1000

TK! Solver Pack for Introductory Science gives students and teachers equations, tables, and values for solving problems in high school biology, chemistry, and physics. Twelve models are included for tasks such as chemical equation balancing and motion with constant acceleration. The program must be used with the original *TK! Solver* program and is intended to supplement regular textbooks. List price: \$100. Requirements: 128K, two disk drives.

Letter Man

Behavioral Engineering
230 Mt. Hermon Rd. #207
Scotts Valley, CA 95066
408/438-5649

Letter Man is a *PacMan*-style game that offers practice aimed at improving typing speed and accuracy. One screen display shows finger placement on the keyboard. Another is a maze filled with letters and hungry "gobblers" that chase the player's character. Eluding the gobblers requires good typing skills. List price: \$34.95. Requirements: 64K, one disk drive.

Torricelli School, Editor, and Scribe

Answer in Computers
6035 University Ave. #7
San Diego, CA 92115
714/287-0795

Torricelli Editor and *Torricelli School* are separate course-authoring systems used together for courseware creation and presentation. The programs apply to any subject at any grade level and can also be used for corporate training and tutorials.

Users supply original course material and test design. Test scores can be displayed at any time during the *Editor* program. *Torricelli Scribe* is a utility program that provides courseware authors with a spelling checker and a line-drawing graphics function. List price: *Torricelli School* \$150, *Torricelli Editor* \$295, *Torricelli Scribe* \$150. Requirements: 64K, one disk drive, PC-DOS 2.00.

How to Use Your IBM PC with PC-DOS

Cdex Corporation
5050 El Camino Real
Los Altos, CA 94022
415/964-7600

How to Use Your IBM Personal Computer with PC-DOS is an introduction to PC-DOS, BASIC, and different types of applications software. Other lessons discuss other programming languages; computer terminology such as RAM, bits, and bytes; and IBM PC hardware components. The material is presented in two formats. The first displays text followed by multiple-choice questions. Incorrect responses elicit an explanation of the correct answer. The second format simulates various applications software, such as word processing and data base management programs. Practice exercises with PC-DOS commands simulate actual use. For example, after a user keys in the command DIR, a file directory appears on the screen. Computer experience is not necessary. List price: \$69.95. Requirements: 64K, one disk drive.

Managing Your Business with 1-2-3

Cdex Corporation
5050 El Camino Real
Los Altos, CA 94022
415/964-7600

Managing Your Business with 1-2-3 teaches management techniques using this particular spreadsheet. Similar programs are available for *Multiplan*, *VisiCalc*, and *SuperCalc*. Two of the three disks contain the training lessons, while the third has

templates for sales history, product margins, expense budgets, and other management concerns. After the training lessons explain a concept, users enter data, and then the program does calculations and produces graphs. Test questions appear at the end of each lesson. List price: \$69.95. Requirements: 64K, one disk drive.

WordSkill for the Microcomputer

SRA (Science Research Associates)
155 N. Wacker Dr.
Chicago, IL 60606
312/984-7000

WordSkill helps improve vocabulary skills with four word games. It is designed for grade levels 7 to 12. The first game, *RevealIt*, asks players to guess synonyms of the words provided in an on-screen grid. As in the board game *Concentration*, players must also remember the words' location in the grid after they disappear from the screen. *KnowIt* is a definition game in which players guess the word for a definition given by the program. *WordMaze* asks players to guess the antonym for a given word. Next players move through a maze that tests their memory skills by requiring them to remember correct turns and dead ends. *Name That Word* teaches students to use analogies. They fill in the blank for the analogies provided, such as "An apple is to fruit as red is to ____." List price: \$160. Requirements: 64K, one disk drive, color graphics board.

ABC Primer

Techart
P.O. Box 370
Berkeley, CA 94702
415/525-0870

ABC Primer introduces children 2 to 6 years old to the alphabet and the computer. Each letter of the alphabet is shown on a screen with a picture of an object that begins with the letter and the name of the object spelled out. Five operating modes provide drills of increasing complexity in letter recognition. The first mode, *Just Watch*, shows the 26 letters in sequence. The fifth mode shows a picture that the child must match to the appropriate letter. A second volume of this program for the same age group is more difficult in that lowercase and uppercase letters are used, and the size of the letters can be changed. List price: \$39.95. Requirements: 64K, one disk drive, color graphics board.

Hyper Typer

Digital Marketing Corporation
2363 Boulevard Circle #8
Walnut Creek, CA 94595
800/826-2222

Hyper Typer can be used by beginning typists to learn the typing keyboard and finger placement in a series of progressively difficult exercise drills. The first drills give instruction in typing single letters and advance to sentences and paragraphs. The program maintains a speed and accuracy score. The documentation gives explanations and diagrams for finger placement. List price: \$29.95. Requirements: 64K, one disk drive.

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Available at your local computer store. If you can't find them there, you can order directly from Unicorn Software. All programs \$39.95. Please enclose \$2.00 for shipping and handling. Visa and Mastercard welcomed.

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Spellicopter

DesignWare, Inc.
185 Berry St.
San Francisco, CA 94107
800/572-7767, 415/546-1866
collect in California

Spellicopter is an educational game that improves hand-eye coordination and word skills for ages 6 through adult. The program provides 400 of the most frequently used words and enables players to add words. A character flies through a sky filled with clouds, balloons, and hang gliders to a field containing letters of the

alphabet. The letters make up a word described by a context clue given at the beginning of the game. The object of the game is to avoid attack from all the obstacles in the sky and to reach the field of letters before running out of fuel. The number of obstacles increases with each of the three skill levels. This program is for a single player, who can use either a joystick or the keyboard. List price: \$39.95. Requirements: 64K, one disk drive, color graphics board.

Edubas I and II

Europro, Inc.
129 Saratoga
Petaluma, CA 94952
707/763-9700

Edubas I and *Edubas II* teach you how to program in BASIC at both beginning and advanced levels. *Edubas I* uses analogies and examples to demonstrate how to use the computer to perform mathematical functions and write programs. The mathematical functions covered included addition, subtraction, multiplication, and division. Programming lessons include using input and output functions, branching, loops, flow charts, subroutines, and debugging. *Edubas II* teaches more advanced functions of BASIC. The program includes string and substring manipulations, file manipulations, advanced graphics, and advanced instructions such as COMMON, IN-KEY\$, and PRINT-USING. List price: both programs \$170. Requirements: 64K, one disk drive, color graphics board.

Your Personal Computer Tutor

TexasSoft
3415 Westminster #100
Dallas, TX 75205
214/369-0795
09068

Your Personal Computer Tutor is a tutorial on the basic skills required to operate the IBM PC. The tutorial consists of seven modules that cover topics such as Introduction to the Computer, How to Use the Keyboard, and DOS Commands. Question-and-answer sessions follow each lesson. The language is nontechnical, and color graphics are available. Three games are included. List price: \$59.95. Requirements: 64K, one disk drive.

Type & Learn

SimSoft, Inc.
P.O. Box 7095
Port Huron, MI 48301
313/984-1570

Type & Learn teaches computer terminology and typing skills at beginning, intermediate, and advanced levels. Students learn the keyboard at the first level by typing individual letters that appear on the screen. At the intermediate level students type computer terms while speed and accuracy are scored. The advanced level consists of 28 paragraphs on computer-related topics that are used to test speed and accuracy. A directory of the paragraph topics can be produced on screen or printed out. List price: \$60. Requirements: 64K, one disk drive (printer recommended).

CustomWare

Random House, Inc.
7307 S. Yale #103
Tulsa, OK 74136
800/331-5469

CustomWare provides the format and content for five lessons at the third- to sixth-grade level and enables teachers to create five lessons of their own. A variety of formats is available for each lesson. One lesson format is a short paragraph followed by multiple-choice questions. Random House also produces *Quiz Master* for designing tests and *Curriculum Management System* for preparing students for statewide minimum competency tests. List price: \$69.99. Requirements: 64K, two disk drives.

MasterType

Lightning Software, Inc.
P.O. Box 11725
Palo Alto, CA 94306
415/327-3280

MasterType is a typing program that requires arcade game skills while improving typing speed and accuracy. The 18 lessons increase in difficulty from a lesson on the home row keys to nine-letter words. The program gives numbers and BASIC word practice, and users can create additional lessons. Enemy words and letters appear in the four corners of the screen and hurl missiles at the player's command ship. To avoid destruction players must type the letters or words before they explode the ship. List price: \$49.95. Requirements: 64K, one disk drive.

Bonjour Hangman, Buenos Dias Hangman

SeMag Software Corp.
32 Central Ave.
Midland Park, NJ 07432
201/447-5787

Bonjour Hangman and its counterpart, *Buenos Dias Hangman*, teach French and Spanish vocabulary (2000 words), gender, and parts of speech using a hangman game format. The menu has options for three skill levels, and the game can be played from English to the foreign language or vice versa. An English



word (or foreign word depending on the student's choice) is displayed, and the correct number of letter blanks appears for the equivalent foreign (or English) word. The program tells what part of speech the word is and its correct gender when applicable. Players guess one letter at a time until the word is complete. For each incorrect guess, part of a stick figure is drawn. After eight wrong guesses the figure falls through the trap door of the gallows. Points are scored, and the difficulty increases for each 200 points acquired. List price: each program \$34.95. Requirements: 64K, one disk drive.

Brain CompuTeasers

DEC Computing
609 Oakleaf Dr.
Garrett, IN 46738

Brain CompuTeasers contains over 100 brain teasers or riddles in the areas of science, mathematics, and general knowledge. Players must use ingenuity to solve the riddles. The riddles range from simple to complex, some requiring knowledge of algebra. The program is intended for users aged 12 through adult. List price: \$19.95. Requirements: 64K, one disk drive.

School Daze

Metamorphics, Inc.
2 Bala Plaza #719
Bala Cynwyd, PA 19004
215/668-9000

School Daze is a tool for converting measurements from one system to another. Conversions between a variety of systems can be performed in addition to conversions between standard English and metric measurements. Some examples are centigrade to Fahrenheit, quarts to liters, and miles to kilometers. The program works by asking what unit of measurement is being used and the number of units; it then provides a table on which users indicate the conversion desired. *School Daze* also scales a time line, which can be used in history lessons for second to eighth graders. List price: \$25. Requirements: 64K, one disk drive.



Micro Discovery

SRA (Science Research Associates)
155 N. Wacker Dr.
Chicago, IL 60606
312/984-7000

Micro Discovery is a computer literacy program for grades 4 through 8. Students learn the basics of computer theory, operation, programming, and terminology. One section provides practice with keyboard operation. The keyboard is not displayed because the program teaches about microcomputers in general rather than a single model. Practice exercises use screen prompts that apply to any keyboard. Students also learn a simple programming language created for *Micro Discovery*. The practice drill involves moving a spaceship that destroys an asteroid. One exercise simulates a city transit manager's job and gives students decision-making practice. Another simulates a data base with four fields for different types of animals. Students learn how to add and edit data and create their own data bases. List price: \$200, teacher's guide \$10. Requirements: 64K, one disk drive, color graphics board.

Discovering BASIC

SRA (Science Research Associates)
155 N. Wacker Dr.
Chicago, IL 60606
312/984-7000

Discovering BASIC takes students step-by-step through practice exercises with BASIC commands. A textbook is included with the program. The varied exercises require the student to master certain BASIC commands in order to complete different tasks, such as moving a robot across the screen, doing a financial analysis of a bake sale, and finding the problems in a program. Students should know the fundamentals of computer operation to use this program. List price: \$210. Requirements: 64K, one disk drive, color graphics board.

FORTH Computer Assisted Instruction Course

International Computers
13048 Olive Rd.
St. Louis, MO 63141
314/878-8838

The *FORTH Computer Assisted Instruction Course* is an instruction course for learning FORTH. The program includes the FORTH language and editor. List price: \$59.95. Requirements: 64K, one disk drive.

Algebra Volumes I and II

Edu-Ware
P.O. Box 22222
28035 Dorothy Dr.
Agoura, CA 91301
213/706-0661

Algebra Volume I teaches algebra at the introductory level, usually taught in ninth or tenth grade. The lessons include algebraic definitions, number line operations, rules for equation reduction, sets, and evaluating expressions. Sample problems are demonstrated, after which the student solves similar problems. *Algebra Volume II* provides more advanced algebra problems. List price: \$39.95 each. Requirements: 64K, one disk drive, color graphics board.

Executive's Guide to the IBM PC

Reston Publishing Co., Dept. 012
11480 Sunset Hills Rd.
Reston, VA 22090
703/437-8400

Executive's Guide to the IBM Personal Computer: BASIC Programming and VisiCalc teaches business people how to use *VisiCalc* and program in BASIC. A workbook and two disks are used together to complete *VisiCalc* practice exercises for payroll, inventory, and financial analysis. The second half of the tutorial teaches BASIC commands for business applications such as creating sequential files for recording sales commissions. List price: \$49.95. Requirements: 64K, two disk drives.

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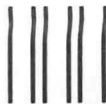
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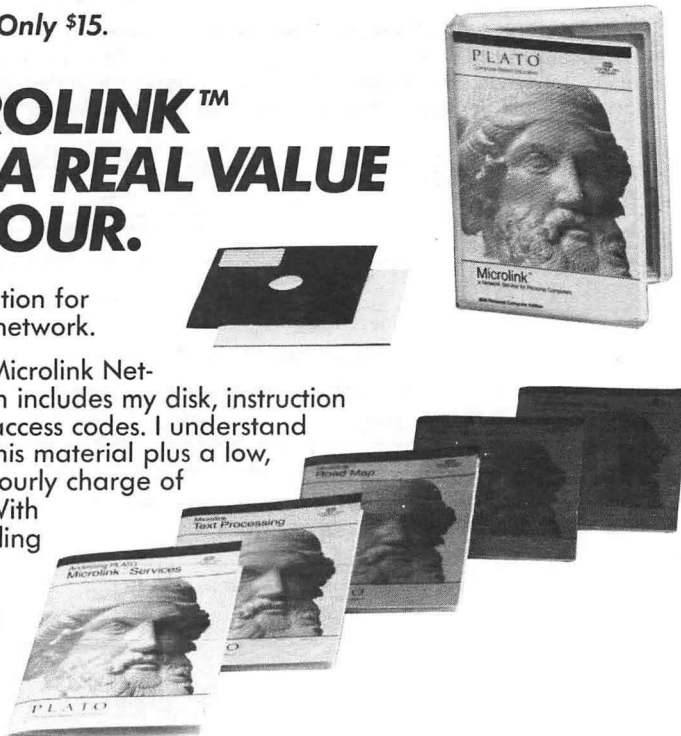
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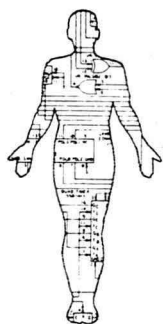
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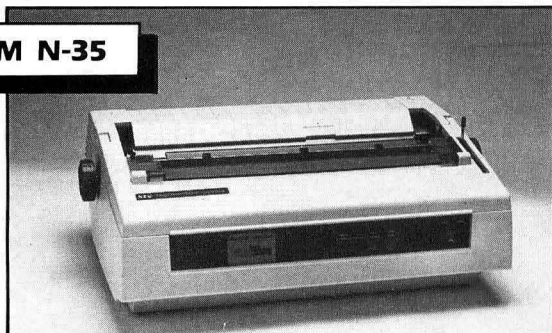
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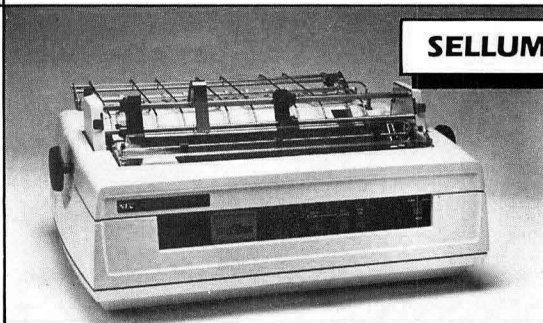


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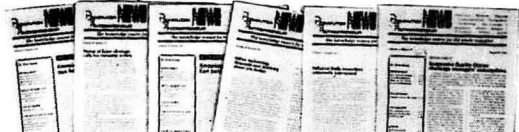
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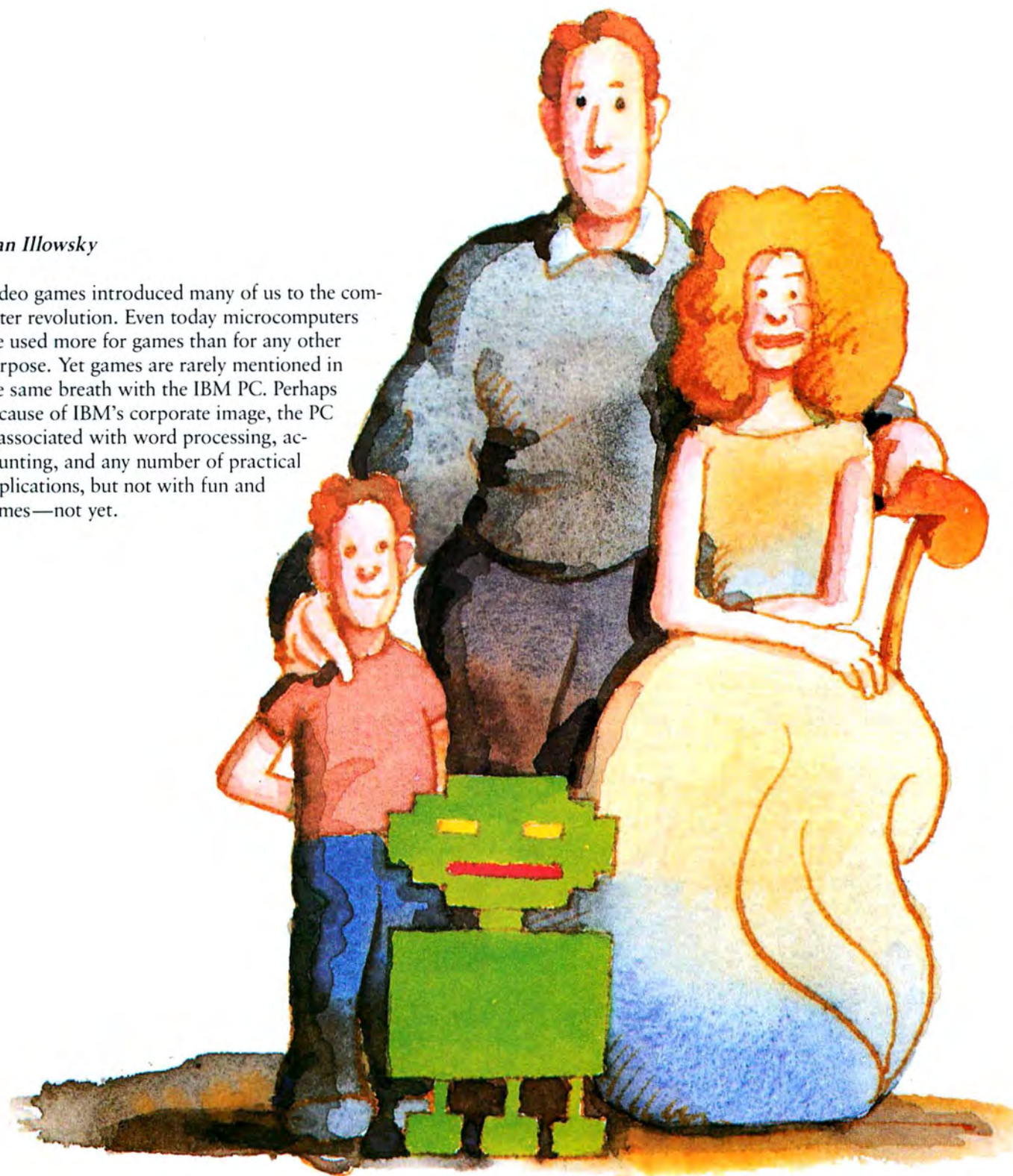
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B91

Games

Dan Illowsky

Video games introduced many of us to the computer revolution. Even today microcomputers are used more for games than for any other purpose. Yet games are rarely mentioned in the same breath with the IBM PC. Perhaps because of IBM's corporate image, the PC is associated with word processing, accounting, and any number of practical applications, but not with fun and games—not yet.



A brief history of computer games shows why the PC is coming into its own as a game machine. Computer games are almost as old as computers, but until the 1970s they were confined to a few legendary programs such as *Adventure*, running on large, expensive computers that only the high priests of computers could access. In fact, when one of the first video games was developed at MIT in the 1960s, the equipment on which it was played reputedly cost over \$50,000.

In the 1970s a series of arcade games, from *Pong* onward, captured the hearts and wallets of a generation. Computers designed for games sought to provide the same pleasures at home, but the home systems had two major limitations. Hardware was not up to arcade standards, and the machines lacked a keyboard. In the late 1970s home computers stepped into the breach. These computers were more powerful than the earlier game machines, and the presence of a keyboard opened up new kinds of games ranging from adventure and role-playing to education and sports. Many computer owners tried their hands at authoring games, and entertaining, innovative programs and instant fortunes resulted.

Even so, the video games were not yet up to arcade standards, and the text games were limited by the capabilities of the machines. Memory, graphics, and processor power all constrained the would-be game author.

Today, the IBM PC bridges the gap between game and "serious" computers. The graphics are equal to those available on any other popular computer, approaching arcade quality when displayed on an RGB monitor. The PC is also a generation ahead of other home computers in computational power. Its advanced processor and tremendous storage capacity allow applications unthinkable on earlier machines. Of equal importance is that the game programmer need no longer

worry about saving every byte of memory; he or she can concentrate on the substance of the game itself. The power of the PC means that programming skill will become less important than game-design skill—surely good news for PC game players.

The entertainment potential of the PC is beginning to be realized. Many games currently available are conversions of games for other computers, but authors are starting to use the speed, graphics, and extra memory of the PC to produce uniquely identifiable PC games. While the first wave of PC entertainment products consisted primarily of old standbys such as blackjack and tic-tac-toe, the past year has brought forth arcade-quality video games, excellent text games, and simulation programs that could never have been written for a less sophisticated computer.

With time the entertainment products available for the PC should have a diversity and sophistication unmatched by those for any other computer. The PC may always have a reputation as a practical, hardworking business computer, but lurking inside that gray flannel exterior is an exciting world of entertainment. The horizons of that world are expanding almost daily.

Dan Illowsky has written many video games for the IBM PC and is the president of Funtastic, Inc., in Drexel Hill, Pennsylvania.

PC Arcade

FriendlySoft, Inc.
3609 Smith-Barry Rd.
Arlington, TX 76013
817/277-9378

PC Arcade is a packet of ten real-time, arcade-style games designed to work with either a joystick or the keyboard. The games are written in assembly language for quick response to controls and can be played on either a color or a monochrome monitor. Graphics are limited to ASCII characters. List price: \$49.95. Requirements: 64K, one disk drive.

"Good value for the money."

Stephen John Hysick, G.P. Woods,
Michigan

"My son, who initially complained about the graphics quality, could not be drawn away from the computer once he began playing." Bernard Stolzman, Adelphi, Maryland

"An enjoyable assortment of challenging games." Richard Marlowe, New Port Richey, Florida

Space Miner

Resolution Software
8 Edgewood Blvd.
Providence, RI 02905
401/461-2417

Space Miner is an arcade-style game that turns you into a prospector searching for minerals in the asteroid belt between Mars and Jupiter. The object of the game is to see how much money you can earn from the ore you find. You must move your ship so you can collect mineral ore with a robot claw while dodging or destroying alien creatures. You are provided with three ships per game.

Each ship is equipped with twin missile launchers and a limited supply of missiles and fuel. You replenish your missiles and fuel by locating and grabbing fuel and missile modules floating about in space.

Space Miner has three levels of difficulty, saves the top ten high scores on disk, and has many sound effects (it even plays J.S. Bach's Goldberg Variation No. 1). The program uses the PC function keys for a variety of purposes, such as freezing the action, turning the sound on and off, and clearing the high scores. *Space Miner* is played with either a joystick or keyboard controls. List price: \$29.95. Requirements: 64K, one disk drive, color monitor.



Millionaire

Blue Chip Software
19824 Ventura Blvd. #125
Woodland Hills, CA 91364
213/881-8288

Millionaire is a stock market simulation game that allows you to compress 77 weeks of stock trading into 2 hours. You begin with \$10,000 and make purchase decisions each "week" based on business and news

information. As your profits increase you progress through higher skill levels that allow trading, borrowing, and other investment alternatives.

Millionaire displays your current status and net worth in an individual portfolio report. The report includes call and put options and stock portfolio, and describes all information relevant to your account such as cash, interest, loans, and net worth. The object of the game is to increase your net worth until you become a millionaire. List price: \$59.95. Requirements: 64K, one disk drive.

Strategy Games

IBM

Systems Products Division
P.O. Box 1328-W
Boca Raton, FL 33432
800/447-4700, 800/322-4400

Illinois, 800/447-0890 Alaska,
Hawaii

Strategy Games is a packet of four computer games. Three are based on old but still popular strategy games, and one was created specifically for the IBM PC. Checkers for Beginners is an introductory-level game that demonstrates the fundamentals of checkers and lets players practice checkers skills. In Reversi, which is similar to the game Othello, players try to occupy the most squares on the game board with their game pieces. The object of Battleship is to sink an opponent's navy by guessing where his or her ships are hidden. Elusion is a strategy game in which each opponent tries to be the last to place a game marker on the screen board. List price: \$30. Requirements: 64K, one disk drive, color graphics board.

Flight Simulator

Microsoft Corp.
10700 Northup Way
Bellevue, WA 98004
206/828-8080

Flight Simulator is a three-dimensional, real-time simulation of a Cessna 182-class single-engine plane. You use the keyboard to operate the throttle, ailerons, and other controls. The video screen displays an instrument panel and a constantly-updated view out the imaginary windshield. Almost any maneuver that can be performed in a real airplane can be duplicated on your PC with *Flight Simulator*, from takeoffs to crash landings. List price: \$50. Requirements: 64K, one disk drive, color graphics board.

"Extremely complex, realistic motion simulation. The similarity to real flight lacks only the airsickness." Tim L. McNinch, Sterling, Illinois

"Fascinating and extremely involving to play. Can be fairly simple or very complicated." Jay Charles Weber, Wheaton, Maryland

Casino Games

IBM
Systems Products Division
P.O. Box 1328-W
Boca Raton, FL 33432

800/447-4700, 800/322-4400
Illinois, 800/447-0890 Alaska,
Hawaii

Casino Games is a collection of three games of chance: Blackjack, Slot Machine, and Poker. One to

four players can play each game. The program asks for the players' names, then gives each player \$500. Any blackjack or poker player who falls below \$10 is urged to switch to slots. Players lose if they go broke and win if they break the bank by winning \$1 million. List price: \$35. Requirements: 64K, one disk drive, color graphics board.

Tycoon

Blue Chip Software
19537 Wells Dr.
Tarzana, CA 91356
213/881-8288

Tycoon is a commodity market simulation that doubles as an educational vehicle. The game compresses 52 weeks of commodity trading into a 1-hour exercise. A player begins with \$10,000 and makes purchase decisions based on a steady flow of business and news information. The player can trade precious metals, foreign currency, financial instruments, and pork bellies and other agricultural commodities. As the player's profits increase, he or she progresses through a series of levels that require increasingly sophisticated trading. List price: \$59.95. Requirements: 64K, one disk drive.

Hoser

PC Connection
Mill St.
Marlow, NH 03456
800/243-8088

Hoser is an obstacle course computer game. Players control a hose that moves within the confines of a backyard. The object of the game is to ac-

cumulate as many gallons of water as possible by hooking up the hose with faucets in the yard before a timer expires. The hose must not touch anything in the yard except the faucets. Successful players advance to the next yard. Failure increases the hose length, making it more difficult to control. *Hoser* has sound effects and 15 different yards on each of two skill levels. The game makes use of the PC function keys and keypad controls. List price: \$25. Requirements: 64K, one disk drive, color graphics board.

Game Pac I

Alphanetics Software
P.O. Box 339
Forestville, CA 95436
707/887-7237

Game Pac I is an anthology of ten menu-driven computer games, including *Dune*, an adventure inspired by Frank Herbert's best-selling science fiction novel; *Howitzer*, a graphics-enhanced artillery challenge; *Tic-Tac-Toe*; *Amazing*, which draws mazes that you must find your way through; *Dice*, a craps simulation; *Hammurabi*, an economics simulation game set in ancient Sumeria; *World War II Bomber*, an action-oriented bombing simulation; *Cord-Couplets*, a computer version of Concentration; and *Number-Guess*, a mathematics game. List price: \$29.95. Requirements: 64K, one disk drive.

The Chrome Ranger

Omniware
8972 Hampden Ave., Box 32
Denver, CO 80231
303/750-9057, 303/451-4197

The Chrome Ranger is an arcade-style game in which the Chrome Ranger scurries through a maze collecting gold nuggets while being chased by bandits. The game can be played on a color or monochrome monitor, with either a joystick or the keyboard. *The Chrome Ranger* offers sound effects appropriate to the action and keeps track of the high score for each session. List price: \$29.95. Requirements: 64K, one disk drive.

Decathlon

Microsoft Corporation
10700 Northrup Way
Bellevue, WA 98004
206/828-8080

Decathlon simulates the actual ten-event track-and-field competition. From one to six people can take turns competing in all ten events. Color graphics put you on the track in the 1500-meter race, in the circle at the shot put, or in the air in the pole vault. You control speed, timing, and direction with rapid and coordinated keystrokes to produce realistic races, throws, and jumps. Your score for each event is shown along with Olympic decathlon winner Bruce Jenner's scores. The object is to obtain the highest cumulative score and win the gold medal. List price: \$35 (also available from IBM, \$35). Requirements: 64K, one disk drive, color graphics board.

Cyborg

Sentient Software, Inc.
P.O. Box 4929
Aspen, CO 81612
303/925-9293

Cyborg is a prose adventure game in which you are a cyborg, half human and half machine. As a cyborg you have unusual capabilities, such as specific types of endurance and extrasensory perception. You must find water and food for your human half and energy for your machine half. Your object in *Cyborg* is to discover, by searching the environment, what you are, where you are, and why you are there. You must, of course, avoid destruction in the process. List price: \$34.95. Requirements: 64K, one disk drive.

Cosmic Crusader

Funtastic, Inc.
5-12 Wilde Ave.
Drexel Hill, PA 19026
215/622-5716

Cosmic Crusader is similar to the popular arcade game *Galaxian*. Rows of enemy spaceships descend upon your lone craft. You must wipe them out with your laser or they will destroy the earth. You can choose from nine skill levels, toggle sound effects on or off, and play with either the keyboard or a joystick. *Cosmic Crusader* is written in machine language for instant response to control inputs. List price: \$38.95. Requirements: 64K, one disk drive, color graphics board.

Stud Poker Parlor

QSI Software
P.O. Box 3-231 ECB
Anchorage, AK 99501
907/349-1189

Stud Poker Parlor pits the player against the computer in a simulation of five- or seven-card stud poker. You choose how much money you and the computer begin play with, the ante, the pot limit, and one of three skill levels. The program behaves like a human opponent, bluffing and adjusting its play to your style. The game can be played on a color or monochrome monitor. List price: \$29.95. Requirements: 64K (96K with DOS 2.00), one disk drive.

Chess-Champ

Zephyr Services
306 S. Homewood Ave.
Pittsburgh, PA 15208
412/241-3459

Chess-Champ lets you play chess on the IBM PC. The game offers the full range of chess moves, including castling and en passant, and provides on-line help for various play options. For example, you can set up the board at any time so that each square is numbered. If the game becomes too one-sided, you can exchange sides with the computer. You can also rearrange the board in the middle of a game or set up a new game or a chess problem. *Chess-Champ* has 24 difficulty levels. The game can be played on either a color or monochrome monitor, but resolution is best on monochrome. List price: \$19.95. Requirements: 64K, one disk drive.

Tigers in the Snow

Strategic Simulations, Inc.
465 Fairchild Dr. #108
Mountain View, CA 94043
415/964-1353

Tigers in the Snow is a computer simulation of the Battle of the Bulge. This is a lengthy and complicated strategy game for serious war-game enthusiasts. The action takes place on a map composed of hexagonal blocks, each with its own set of conditions. *Tigers in the Snow* is divided into several phases: Movement, Combat (further divided into seven segments), Reinforcement, and Victory Status. You must cope with differences in terrain and weather and shortages of fuel and supplies while moving your infantry, artillery, and mechanized units into strategically advantageous battle positions. You can be either the German or Allied forces and can play against either the computer or a friend. *Tigers in the Snow* keeps score, records all positions, and cues each move. List price: \$39.95. Requirements: 64K, one disk drive, color monitor.

Executive Suite

Armonk Corp.
610 Newport Center Dr. #955
Newport Beach, CA 92660
714/760-3955

Executive Suite simulates a corporate office; your goal is to advance to the executive suite. The program describes situations that anyone working in a corporate office might encounter and offers several solutions for each situation. Depending on the solutions you pick, you either ascend or descend the corporate ladder. *Executive Suite* is a prose game,

but it makes good use of graphics to illustrate the text. It can be played on either a color or monochrome monitor. List price: \$39.95. Requirements: 64K, one disk drive.

"The graphics are very entertaining."
Kris Kuchta, Flushing, New York

"Executive Suite is one of the wittiest games on the software market." Janet Ring, San Francisco, California

Snack Attack II

Funtastic, Inc.
5-12 Wilde Ave.
Drexel Hill, PA 19026
215/622-5716

Snack Attack II is an improved version of *PacMan*. It has better graphics than *PacMan*, an on/off sound effects toggle, a way to freeze the action, three different mazes with hiding places, and six skill levels. The game can be played with keyboard or joystick controls and is written in machine language for quick response to control inputs. List price: \$38.95. Requirements: 64K, one disk drive, color graphics board.

PC-Man

Orion Software, Inc.
P.O. Box 2488
Auburn, AL 36831
800/821-8088

PC-Man is a maze game based on *PacMan*. *PC-Man* has four levels of play: beginner, intermediate, expert, and brutal. Each category contains 24 additional skill levels. The program must be played on a color

monitor and makes use of sound effects and 16 colors. The ten games with highest scores are saved to disk. *PC-Man* is copy-protected, but when you send in \$5 or a blank disk the manufacturer will send you another copy of the game. List price: \$34.95. Requirements: 48K, one disk drive, color monitor.

Word Challenge

Proximity Devices Corp.
3511 N.E. 22nd Ave.
Fort Lauderdale, FL 33308
305/565-2188

Word Challenge is a computer version of the Parker Brothers word game Boggle. The object of the game is to build as many words as possible from a grid of letters randomly selected by the computer. The *Word Challenge* program provides a wide range of skill levels and adjustable variables that let you customize each game. The program competes against you, keeps score, and has a built-in timer. *Word Challenge* uses a 90,000-word dictionary and can be played on a color or monochrome monitor. List price: \$39.95. Requirements: 64K, one disk drive.

"Good support. Good documentation." David Michalski, Hickory Hills, Illinois

"Impressive implementation of Boggle-like game. Addictive and educational." John H. Welsch, Incline Village, Nevada

Zork I

Infocom, Inc.
55 Wheeler St.
Cambridge, MA 02138
617/492-1031

Zork I: The Great Underground Empire is a prose adventure game and the first of the Zork trilogy. The game places you in a vast, ancient, and mostly dead underground empire where you must search for 20 treasures while avoiding death at the hands and fangs of ogres, thieves, and other miscreants. List price: \$39.95. Requirements: 48K, one disk drive.

"If you can only buy one game, this should be the one. It stretches your imagination." Mr. and Mrs. James C. Pottkorter, Memphis, Tennessee

Schultz's Treasure

VeriSoft Works
313 W. Rosal Pl.
Chandler, AZ 85224
602/892-2113

Schultz's Treasure is a real-time treasure hunt that takes place in a large maze. You must search for hidden gold with the aid of several pieces of equipment, including an ore detector to show you where to blast for the gold and a pathfinder, which shows your location on a map of the maze. Complicating your task are constant and vicious attacks by bats, rabid dogs, and mutant spiders, which you must quickly destroy before they kill you or—worse—steal your equipment. Colorful, three-dimensional graphics provide a sense of involvement as you move through the maze.

The game can be played with either keyboard or joystick controls. List price: \$39.95. Requirements: 64K, one disk drive, color graphics board.

"Fantastic graphics and animation, all viewed from the perspective of the player's eyes." Bernard Stolzman, Adelphi, Maryland

"Playing the game on the keyboard is pretty difficult; I didn't feel comfortable until I attached a joystick." Elaine Long, Pinole, California

Computer Facts in Five

Microcomputer Games, Inc./
Avalon Hill
4517 Harford Rd.
Baltimore, MD 21214
301/254-5300

Computer Facts in Five is a game of knowledge with educational merit for the entire family. You can choose, or have the computer randomly choose, from more than 1000 popular and academic subjects. Under each subject are five classes and categories. You select one and answer the question it presents. You must reply before an automatic timer expires. The game can be played on a color or monochrome monitor by one to six people. List price: \$26. Requirements: 64K, one disk drive.

Quotrix

Insoft
P.O. Box 19208
Portland, OR 97219
503/244-4181

Quotrix is a puzzle game in which you are given an author's name and then asked to deduce a famous quote made by that author. Players are shown a series of blanks that suggest

the word order of the entire quote, letter-for-letter. You figure out the quote on a word-by-word basis by guessing what letters are in each word. An incorrect guess causes the program to call up one of three puzzle formats to help you guess the quotation word. If you fail to solve a puzzle, the word is revealed, and your score is reduced from the perfect 10,000 points. *Quotrix* can be played with one or two players and has six skill levels. Help screens are available for reminders on game rules and tips on how to play. High scores on each level are saved on disk. List price: \$34.95. Requirements: 64K, one disk drive.

Starcross

Infocom, Inc.
55 Wheeler St.
Cambridge, MA 02138
617/492-1031

Starcross is a prose adventure game similar to *Zork* or *Adventure* but set in outer space aboard an alien spaceship. As a go-for-broke explorer seeking fame and fortune, you explore the alien vessel and attempt to bring it under your control. This is not easy; you must figure out solutions to many different problems and avoid being killed or trapped. As with all Infocom games, you give your instructions to the program in complete sentences rather than in one- or two-word commands. List price: \$39.95. Requirements: 64K, one disk drive.

"Advanced adventure game, imaginative packaging." Jean Pickett, Trenton, New Jersey

Galactic Gladiators

Strategic Simulations, Inc.
883 Stierlin Rd. #A-200
Mountain View, CA 94043
415/964-1353

Galactic Gladiators is a computer space-war game that sets you in the middle of a battle between 14 alien species for control of the universe. The alien creatures are rated for strength, endurance, speed, dexterity, experience, skill with weapons, and armor, and can be armed with any 2 of 14 weapons, provided they have the strength to carry them. *Galactic Gladiators* features a Create-a-Game scenario, in which you can design combinations of teams, battlefields, and games, and a Quest scenario, in which your team is dragged through a series of shoot-outs. You can play *Galactic Gladiators* against the program or another player. List price: \$39.95. Requirements: 64K, one disk drive, color monitor.



Jotto

Word Associates
55 Sutter St. #361
San Francisco, CA 94104
800/227-3800 ext. 1138

Jotto is the computer version of the word game of the same name. The game is simple to play: you pick any five-letter word, and *Jotto* does the same. Then you try to guess what *Jotto*'s word is before *Jotto* guesses yours. Each time you guess, the program tells you how many letters in your guess are in *Jotto*'s secret word. You do the same when *Jotto* guesses. The game has a vocabulary of 6800 five-letter words and uses a secret algorithm to discover your word. List price: \$29.95. Requirements: 64K, one disk drive.

Voyager

Microcomputer Games, Inc./
Avalon Hill
4517 Harford Rd.
Baltimore, MD 21214
301/254-5300

Voyager is a real-time adventure game in which you explore all four levels of an alien spacecraft. Your goal is to search out and destroy killer robots that are eager to search out and destroy you. The robots and your blaster get energy from power generators scattered about the alien ship. When you find one you must power up your blaster, then blast the generator so the robots can't re-energize. Three-dimensional graphics put you in the middle of the action as you move through rooms and corridors. The game can be played on keyboard only, in color or monochrome. List price: \$25. Requirements: 48K, one disk drive.

Master Miner

Funtastic, Inc.
5-12 Wilde Ave.
Drexel Hill, PA 19026
215/622-5716

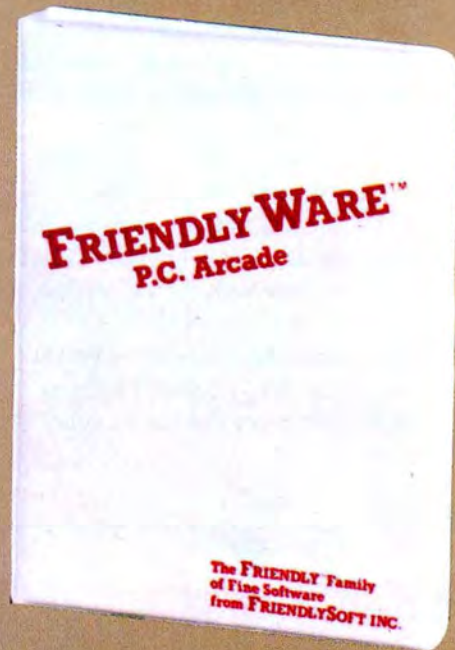
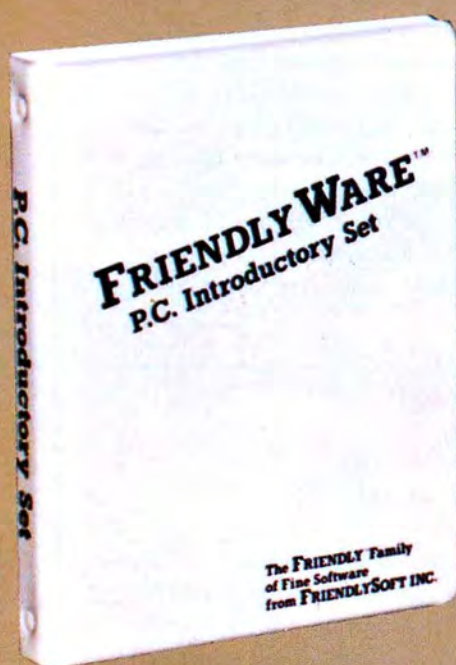
Master Miner is an arcade-type game set in the asteroid belt that circles the sun between Mars and Jupiter. Your goal is to mine more ore than your opponent, thereby earning the title of Master Miner. You can play against the program or take advantage of a two-player mode and compete against a human opponent. *Master Miner* allows keyboard or joystick control and saves the high scores to disk. The game has five levels of play and progresses one level with each round you win. List price: \$39.95. Requirements: 64K, one disk drive, color graphics board.

Wordtrix

Insoft
P.O. Box 19208
Portland, OR 97219
503/244-4181

Wordtrix is a computerized version of the educational word game Boggle. The program fills each square of a grid with a randomly generated letter. The object of the game is to make more words from the assortment of letters than the computer does. *Wordtrix* has six skill levels. At all but the highest level the program eliminates a percentage of the words it finds to give its human opponents a fighting chance. High scores on each level are saved to disk. *Wordtrix* can be played on either a color or monochrome monitor. List price: \$34.95. Requirements: 64K, one disk drive.

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MONEY magazine described the Intro Set as one of the two best learner programs available for microcomputers.

PC magazine said it "had to be seen to be appreciated".

According to SOFTALK, "the implementation and sophistication of the Introductory Set are superior to anything available in the public domain".

The Intro Set is a must for novice users, but it's a lot more than just a starter set. Even seasoned pros are finding things they like among the 4 demo programs, 17 games, and 8 utilities on the package.

Some are even saying that several individual programs on the set (such as the Personal Check Book on disk #3) are worth the price of the package all by themselves.

SUGGESTED RETAIL \$49.95

FriendlyWare PC Arcade

They told us that IBM'ers wouldn't buy games; but our customer feedback told us otherwise.

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PC ARCADE is a solid lineup of 10 fast-action arcade games for the IBM PC.

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Air Traffic Controller

CBL Marketing
313 W. 11th
Lawrence, KS 66044
913/843-4210

Air Traffic Controller is a real-time simulation of an air-traffic-approach control during which human lives and expensive aircraft are at stake. You guide a variety of planes through an approach control area. Within your area jets and propeller-driven planes land, take off, or fly through en route to other destinations. Equipped with only a radar screen and status reports, you must keep planes in your area from crashing into mountains or each other, and you must play quickly enough so they don't run out of gas. You control the program by entering commands to individual aircraft to determine altitude and heading. *Air Traffic Controller* has three variables you can set: a timer you must race, adjustable from 16 to 90 minutes; the number of planes you guide, from 1 to 26; and two different maps. Planes can enter and exit your area from any of ten locations. Jet planes fly at 4 miles per minute, prop planes at 2 miles per minute. Individual games can be replayed easily. List price: \$34.95. Requirements: 48K, one disk drive.

Lost Colony

Acorn Software Products
7655 Leesburg Pike
Falls Church, VA 22043
703/893-0868

Lost Colony is a complex economic management simulation in which you are the manager of a colony on a distant planet. You must decide who

works in different industries, how much each person is paid, how much and where exploration for minerals takes place, how to allocate scarce resources, and what tax rates to charge. The object of the game is to guide the colony safely through its years of growth. If you fail, you lose your job and are sent to work on the farms. *Lost Colony* uses a spreadsheet-like format to keep track of all aspects of the economy. Function keys are used to call up the various charts. List price: \$29.95. Requirements: 48K, one disk drive.

"Gives a good challenge to the user, not merely entertainment...a good value for the money." Richard Marlowe, New Port Richey, Florida

In Search of the Most Amazing Thing

Spinnaker Software Corp.
215 First St.
Cambridge, MA 02142
617/868-4700

In Search of the Most Amazing Thing makes you a B-liner airplane pilot who goes in search of the Most Amazing Thing in the Land of Darksome Mire. The game is an educational adventure that provides you with clues leading to the Most Amazing Thing. Each time you reach your goal, the program automatically selects a new location and new clues for the next game. The package includes documentation with pages for note-taking and the novel *The Adventures of Smoke Bailey*, which inspired the game. List price: \$39.95. Requirements: 64K, one disk drive, color graphics board.

Chomps

Ensign Software
7337 Northview Rd.
Boise, ID 83704
208/378-8086

Chomps is similar to the popular arcade game *PacMan*. The player scurries around a maze filled with dots while alternately dodging and chasing four ghostlike figures. As the player moves he consumes the dots; if he eats them all, he advances to the next level. The player earns points by eating the dots, catching the ghosts, and eating any of several treats that appear from time to time. *Chomps* has four different mazes, saves the ten highest scores to disk, and can be played on either a color or monochrome monitor. List price: \$29.95. Requirements: 64K, one disk drive.

Fun 10

Ensign Software
7337 Northview Rd.
Boise, ID 83704
208/378-8086

Fun 10 is a packet of ten computer games, including *Qubic*, a three-dimensional tic-tac-toe game; *Black Jack*; *Space Trek*, which is similar to *Star Trek*; *Americans & Presidents Quiz*; *Reversal*, a computer version of Othello; *Kingdom*, in which the player must wisely manage his or her peasants and knights; *Cribbage*; *Black Box*, in which the player must obtain clues with a ray gun to solve a mystery; and *Master Mind*, a code-breaking skill game. *Fun 10* is menu-driven and can be played on either a color or monochrome monitor. List price: \$29.95. Requirements: 48K, one disk drive.

Epidemic

Strategic Simulations, Inc.
883 Stierlin Rd. #A-200
Mountain View, CA 94043
415/964-1353

Epidemic makes you the director of the Global Disease Control Center. Your job is to contain an outbreak of a strange, highly contagious disease to as small an area as possible, to minimize deaths, and ultimately to eradicate the contagion. At your disposal are numerous weapons: quarantine, clean-suits, interferon vaccine, x-rays, and gene splicing. You have the power to use any solution you think will work—even nuclear weapons to sanitize a hopelessly infected area. A world map display uses vibrant colors and patterns to show the international status of the epidemic. List price: \$34.95. Requirements: 64K, one disk drive, color monitor.

Treasure Hunt

Ensign Software
7337 Northview Rd.
Boise, ID 83704
208/378-8086

Treasure Hunt is a nonviolent maze game in which you race against the clock to locate ten objects in the maze. All hallways and rooms in the maze are displayed in three-dimensional perspective, and a small overhead view of the maze lets you see where you are at any time. *Treasure Hunt* randomly generates a different maze each game, but you can replay a maze if you wish. The program can be played on either a color or monochrome monitor. List price: \$24.95. Requirements: 64K, one disk drive.

Coffeekbreak

Computoy
P.O. Box 77039
Houston, TX 77234
713/482-4757

Coffeekbreak is a package of five computer games designed for the office: *Bandit*, a gambling game; *Alpha-blast*, a spelling bee-type game; *Ricochet*, a Pong-like game; *Submarine*, an underwater zap-and-dodge strategy game, and *Boomer*, in which players attempt to blast a deer with a cannon. The games can be played on either a color or monochrome monitor with either a joystick or the keyboard. List price: \$29.95. Requirements: 64K, one disk drive.

Warp Factor

Strategic Simulations, Inc.
883 Stierlin Rd. #A-200
Mountain View, CA 94043
415/964-1353

Warp Factor is a tactical space-combat game between starships from five galactic empires. You start with a limited amount of energy, which you divide among weapons, warp-drive engines, and shields. Sensor readings keep you updated on enemy activity in your area. *Warp Factor* offers several battle scenarios including Dogfight, Attack on Star Base, and Attack on Base Station. You can play against the computer or another person. List price: \$39.95. Requirements: 64K, one disk drive.



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The three monster species are wonderful. ... beautifully done ..."

Joe Devlin, *Creative Computing*, September, 1983

"... surprises ... pretty graphics ... (including) the 3-D effect of moving stars on different planes." Corey Sandler, *PC Magazine*, September, 1983

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Resolution Software

Circle 518 on reader service card

Ken Uston's Professional Blackjack

Intelligent Statements
The Courtyard #21
Chapel Hill, NC 27514
919/942-0008

Ken Uston's Professional Blackjack is a gambling program that plays any variation of blackjack. The program also teaches you how to play blackjack and provides tips and advice based on professional gambler Ken Uston's systems for beating the casinos. In either drill or play mode you choose to gamble at any of several casinos in Las Vegas, Reno/Tahoe, or Atlantic City. The program operates according to the blackjack rules in effect at whichever casino you select. Several menus guide you through playing options. Graphics are used to show the cards, and up to seven people can play. List price: \$89.95. Requirements: 48K, one disk drive.

Upper Reaches of Apshai

Epyx/Automated Simulations
1043 Kiel Ct.
Sunnyvale, CA 94086
408/745-0700

Upper Reaches of Apshai is a sequel to and an expansion program for *Temple of Apshai*. It is a suburban-style adventure game focusing on everyday problems, such as rabid dogs and garden snakes. You are a former *Temple of Apshai* adventurer who must find or earn enough money to pay for your passage back home. The program has four levels and plays in the same way as its predecessor. List price: \$19.95. Requirements: 64K, one disk drive, color graphics board, *Temple of Apshai*.

Temple of Apshai

Epyx/Automated Simulations
1043 Kiel Ct.
Sunnyvale, CA 94086
408/745-0700

Temple of Apshai is a real-time adventure game in which you explore an ancient temple in search of weapons, magic, and treasure while battling or avoiding the temple monsters. As play begins your character possesses specific strengths, weaknesses, and abilities, such as intelligence, constitution, dexterity, and physical strength. You explore the four levels of the temple, gaining wealth, power, and experience with each battle and discovery. *Temple of Apshai* uses graphics instead of words to depict the situations you encounter in over 200 caverns and chambers. List price: \$39.95. Requirements: 64K, one disk drive, color graphics board.

Zork II

Infocom, Inc.
55 Wheeler St.
Cambridge, MA 02138
617/492-1031

Zork II: The Wizard of Frobozz is part two of the *Zork* adventure game trilogy in which players explore every corner of the Great Underground Empire in search of treasure, knowledge, and power. *Zork II's* Wizard of Frobozz resembles a slightly demented Merlin and appears at highly inopportune moments to confound and hinder participants. Players type in instructions, and the program responds with descriptions of places, events, and life-or-death situations. List price: \$39.95. Requirements: 48K, one disk drive.

Zork III

Infocom, Inc.
55 Wheeler St.
Cambridge, MA 02138
617/492-1031

Zork III: The Dungeon Master is the last in the *Zork* adventure game trilogy. In *Zork III* players search for the ultimate secret of the Great Underground Empire. En route the players explore a vast area of forests, deserts, mountains, and lakes; do battle with many adversaries; and solve numerous mysteries, puzzles, and paradoxes. *Zork III* accepts complete-sentence commands and handles more than one command at a time. List price: \$39.95. Requirements: 48K, one disk drive.

Crossfire

Sierra On-Line, Inc.
36575 Mudge Ranch Rd.
Coarsegold, CA 93614
209/683-6858

Crossfire is an arcade-style zap-and-dodge game in which players control a ship that has landed in the heart of an alien city. The object is to shoot as many aliens as possible while avoiding their deadly missiles. Each alien you shoot reincarnates in a different form up to three times before dying for good. You begin with 35 missiles; when only ten missiles remain, you must reload by moving into an energized area that appears at random locations and intervals throughout the game. *Crossfire* can be played with either a joystick or the keyboard controls. List price: \$29.95. Requirements: 48K, one disk drive, color graphics board.

"I'm very happy with *Crossfire*."
Roger Rice, Des Moines, Iowa

Flip-Ello

Resuba Digital Systems
P.O. Box 440
Blackwood, NJ 08012
609/228-5666

Flip-Ello is a computer version of the board game Othello. The screen displays a checkerboard on which you and the computer take turns placing markers. The object of *Flip-Ello* is to place your markers in such a way as to capture the computer's markers. The winner is the player who captures the most markers by the time the board fills. List price: \$15. Requirements: 64K, one disk drive.

Multimaze

Micromania Inc.
12 Heald Rd.
Acton, MA 01720
617/263-9149

Multimaze is a maze game featuring micromen and ghosts. It differs from similar games in that you can create your own game. You build mazes using menus and function keys and choose the number and speed of the micromen and ghosts. When you use one microman, you play against the computer, but when you use two, you can play against another person. List price: \$39.95. Requirements: 96K, one disk drive, color graphics board.

Las Vegas Blackjack

Quala
1014 Griswold Ave.
San Fernando, CA 91340
213/365-9526

Las Vegas Blackjack simulates blackjack as played on the Las Vegas Strip. The game features multideck

play (one to ten decks), split betting, double down, and insurance bets. The program teaches players how to count cards and keeps a running count. The playing manual includes tips on how to win. List price: \$39.95. Requirements: 64K, one disk drive.

Bug Off

Bella Software
Suite 500, Citizens Bank Bldg.
Richardson, TX 75080
214/238-5436

Bug Off is a *Space Invaders*-type game in which the invading aliens have been replaced by four types of bugs in a field of mushrooms. You move a shooter back and forth along the bottom of the screen and fire up at the bugs, which try to stop you by touching the shooter. If you zap all the bugs, you advance to the next level where the bugs are faster and their protective mushrooms more numerous. You win points for each bug zapped. *Bug Off* can be played with either a joystick or the keyboard controls. List price: \$34.95. Requirements: 64K, one disk drive, color graphics board.

Frogger

Sierra On-Line, Inc.
36575 Mudge Ranch Rd.
Coarsegold, CA 93614
209/683-6858

Frogger is the official IBM PC version of the popular arcade game. You guide a hopping frog across a hazardous two-lane highway and a river filled with hungry otters,

snakes, and alligators. If you successfully cross the highway and the river, you advance to the next level and repeat the process, with faster and trickier action. List price: \$34.95. Requirements: 48K, one disk drive, color graphics board.

"Fantastic graphics! The best video game on the market for the PC."

Stephen John Hysick, G.P. Woods,
Michigan

Milky Way Merchant

Blythe Valley Software
40879 Hwy. 41
Silver Creek Center
Oakhurst, CA 93644
209/683-4735

Milky Way Merchant is an economic simulation in which players trade commodities, negotiate prices, and buy and sell merchandise throughout the Milky Way galaxy. Players keep track of what goods (e.g., food, machinery, computers, deuterium) are in demand on each planet. The price of each item on each planet is the clue to what is most in demand. The program uses the video screen to show the player's cargo, cash on hand, destination, and current prices of commodities for exchange. The object of the game is to turn the greatest profits, which you do by beating all opponents to each planet and keeping all planets supplied with goods. You must also avoid being taken by angry dealers or ripped off by pirates. *Milky Way Merchant* can be a basic economics learning tool and is designed for both children and adults. Players can define several limitations to set up their own games. One to four people can play. List price: \$34.95. Requirements: 64K, one disk drive.

Ulysses and the Golden Fleece

Sierra On-Line, Inc.
36575 Mudge Ranch Rd.
Coarsegold, CA 93614
209/683-6858

Ulysses and the Golden Fleece is an adventure game in which you are the mythical adventurer Ulysses in search of the Golden Fleece. The program combines high-resolution graphics with text to take you on a journey across valleys, into caves, through castles, and into jungles. To attain your goal you must overcome cyclopes, dragons, condors, and skeletons. List price: \$39.95. Requirements: 48K, one disk drive, color graphics board.

Podlaserium

DP Computer Services Co.
5019 N. Washington Blvd.
Arlington, VA 22205
703/276-1333

Podlaserium is an arcade-style action game in which players maneuver a shooter from side to side along the bottom of the screen and fire up at alien pods that threaten Earth. Each move uses fuel, and each shot uses ammunition, so players must be accurate and pick their targets carefully. Two gauges, one to indicate remaining fuel and one remaining ammunition, help players keep track of their resources. Extra ammunition is awarded for each 2000 points, and extra fuel is awarded for every 1000 points. *Podlaserium* has four kinds of pods plus pod bombs, random pod missile attacks, and pod shields. List price: \$34.95. Requirements: 64K, one disk drive.

Cashman

Gross National Products, Inc.
174 Central St.
North Reading, MA 01864
617/664-3815

Cashman is an arcade-style game similar to *PacMan*, but instead of gobbling dots the object is to make a fortune by maneuvering through a maze of business deals while staying ahead of cutthroat competition. *Cashman* can be played on either a color or monochrome monitor and with either a joystick or the keyboard controls. List price: \$39.95. Requirements: 64K, one disk drive, color graphics board.

Astral Assault

SeMag Software Corp.
32 Central Ave.
Midland Park, NJ 07432
201/447-5787

Astral Assault is a *Space Invaders* lookalike. Waves of three types of alien spaceships in U-formation pass back and forth across the screen, descending with each pass and dropping two types of bombs on your shooter. You can hide temporarily beneath four bunkers and dash out to blast the aliens. Meanwhile, you must also destroy an alien rescue ship that moves back and forth across the top of the screen before it completes three passes or your shooter is automatically destroyed. If you are successful at blasting all the alien ships, you advance to the next level. *Astral Assault* can be operated by a joystick or the keyboard controls on either a color or monochrome monitor. List price: \$24.95. Requirements: 32K, one disk drive, color graphics board.

Original Adventure

Norell Data Systems
3400 Wilshire Blvd.
P.O. Box 70127
Los Angeles, CA 90010
213/257-2026

Original Adventure is the game that began the adventure game genre. You explore a large house or cave in search of treasure while fighting attackers and finding your way out of various situations. *Original Adventure* uses text to describe events and situations. You respond by entering one- or two-word commands to move, fight, and pick up or put down an object. Points are awarded for each treasure found and safely stored. List price: \$24.95. Requirements: 64K, one disk drive.

Insecticide

Bel-Air Software
Cortland Data Systems
P.O. Box 14414
Chicago, IL 60614
312/549-2029

Insecticide is an arcade-style action game similar to *Centipede*. Players move a shooter in and about a field of insect skeletons while attempting to blast a "creepy crawly bug" that runs back and forth, bouncing off bug skeletons, in a gradual descent to the bottom of the screen. Contact with bug skeletons, flying and moving bugs, and creepy crawly bugs results in the shooter's death. High scores are saved on disk. *Insecticide* can be played on a color or monochrome monitor. List price: \$34.95. Requirements: 64K, one disk drive.

Polycube

Linear Aesthetic Systems
P.O. Box 23
West Cornwall, CT 06796
203/672-6360

Polycube is a simulation for the IBM PC of a Rubik's Cube. *Polycube* can set up a 1-inch to a 7-inch cube. The program also has an unscramble feature that reverses the twists and turns you took in attempting to solve the cube so that you can retrace your steps. List price: \$26.95. Requirements: 64K, one disk drive, color graphics board.

Early Games for Young Children

Counterpoint Software, Inc.
4005 W. 65th St. #218
Edina, MN 55435
800/328-1223

Early Games for Young Children is a set of nine entertaining and educational games. Match Numbers, Count, Add, and Subtract are math games designed to teach children to count and to identify blocks on the screen and numbers on the keyboard. Match Letters, Alphabet, and Names help children develop rudimentary character-recognition skills. Compare Shapes and Draw use color and the keyboard controls to encourage children to play with and recognize graphic images. All the games use color graphics, provide immediate feedback to the child, are nonaggressive, and are designed to help children feel comfortable with the computer and develop basic skills with a minimum of frustration. List price: \$29.95. Requirements: 48K, one disk drive, color graphics board.

Asylum

Med Systems Software
P.O. Box 355
Chapel Hill, NC 27514
800/334-5470, 919/933-1990

Asylum is an adventure game that puts you inside an insane asylum inhabited by crazed inmates, sadistic guards, and evil doctors. Not surprisingly, the object of the game is to escape. *Asylum* uses three-dimensional graphics to show you hallways, rooms, beds, desks, and even other inmates. You can enter commands in complete sentences. The program allows you to save up to ten games per disk and supports printer output so you can keep track of your progress. List price: \$39.95. Requirements: 64K, one disk drive.

Groundup!

Direct Entertainment
695-C S. Broadway
Boulder, CO 80303
303/494-8265

Groundup! is a shooting game. You control a gun emplacement in the lower right corner of the screen, and enemy aircraft fly overhead and attempt to bomb you. You must stop them by blasting them out of the sky with your howitzer. *Groundup!* can be played with a joystick or the keyboard controls. List price: \$29.95. Requirements: 48K, one disk drive, color graphics board.

Kaleida

Once Begun Computations
Searsport, ME 04974
207/338-1082

Kaleida is an interactive kaleidoscope generator designed to provide a relaxing visual experience. Operating



instructions are provided on screen. Using the function keys, players choose from ten background colors. Players use the keypad to control other colors and patterns in the kaleidoscope. The result is cyclic generation of a multicolored geometric design. List price: \$12. Requirements: 64K, one disk drive, color graphics board.

Lazermaze

Avant-Garde Creations
P.O. Box 30160
Eugene, OR 97403
503/345-3043

Lazermaze is an arcade-style action game set in the twenty-fourth century, in which interworld conflicts are settled in a hall of mirrors. You must shoot a laser beam into a matrix of mirrors and guess where the beam will exit. A correct guess settles the conflict in your favor, while an incorrect one gets you fire-bombed. You begin with 30 mirrors and work your way up to 70. List price: \$29.95. Requirements: 64K, one disk drive, color graphics board.

Everest Explorer

Acorn Software Products
7655 Leesburg Pike
Falls Church, VA 22043
703/893-0868

Everest Explorer is a logistic simulation of climbing Mt. Everest, the world's highest peak. Players organize the expedition and direct the three phases of the assault: selection of climbers and equipment, establishment and provisioning of a series of camps, and choice of path to the top. The organizer must deal with six major expense items: climbers, sherpas, tents, oxygen, food, and fuel. The object of the game is to juggle all the resource factors in such a way that the ascent is made before either funds or supplies run out. The program keeps score, uses function keys, and allows players to save games with annotations. List price: \$29.95. Requirements: 64K, one disk drive.

Stellar Defender

Alcazar Associates
2638 S. Lynn St.
Arlington, VA 22202
703/684-8053

Stellar Defender is an arcade-style space game in which players have five chances to clear the screen of enemy spaceships. Alien ships appear in groups of five, each group consisting of four types of vessel. Dreadnoughts are particularly tough targets because they require two or more hits to be destroyed and can instantly transport themselves via hyper-drive to a new screen location. List price: \$14.95. Requirements: 32K, one disk drive.

Exterminator

SeMag Software Corp.
32 Central Ave.
Midland Park, NJ 07432
201/447-5787

Exterminator is a lookalike of the arcade game *Centipede*. A multisection caterpillar meanders through a screen full of toadstools arranged in horizontal rows. If the caterpillar hits a toadstool, it reverses direction and drops down one row. You must stop the caterpillar by spraying each section of it with your spray can. If you don't stop the caterpillar in time, it will descend low enough to touch and destroy your spray can. You can hide among ten flowerpots that sit at the bottom of the screen, but you must also destroy muncher beetles that suddenly drop from the top of the screen and destroy your flowerpots. Your score is increased at the end of each round by 50 points times the number of flowerpots remaining. *Astral Assault* can be played with a joystick or the keyboard controls on either a color or monochrome monitor. List price: \$24.95. Requirements: 32K, one disk drive.

Space Guardian

Omrac Corporation
1268 Main St. #207
Newington, CT 06111
203/666-4240

In *Space Guardian*, a version of the popular computer game *Star Trek*, you play the role of Captain Kirk, tirelessly searching quadrant after quadrant of space for Klingons. Your goal is to rid the galaxy of them. As in the television show, your ship, the U.S.S. Enterprise, is equipped with sensors and shields and armed with

phasers and photon torpedoes. The computer gives status reports on your energy levels, the location of enemy vessels, and any damage from Klingon attacks. *Space Guardian* uses the PC function keys for such things as raising or lowering the shields, firing phasers or photon torpedoes, and navigating. List price: \$29.95. Requirements: 64K, one disk drive.

Crypto Cube

DesignWare
185 Berry St.
San Francisco, CA 94107
800/572-7767, 415/546-1866
Crypto Cube is a learn-to-spell word game that combines elements of the card game concentration and a crossword puzzle. Players select 1 of 50 topics such as weather, transportation, or United States presidents. Under each topic category is a list of 20 words that pertain to the topic. The program places the words onto four sides of a three-dimensional cube and hides them so that they interlock at common letters, as in a crossword puzzle. The object of *Crypto Cube* is to uncover vowels in the words and guess the consonants. Successful guesses are rewarded with points, while incorrect ones cause point loss. The program provides on-screen help. Players can design their own word lists, which the program uses to generate another puzzle. *Crypto Cube* offers vocabulary levels for ages 8 to adult, has sound effects, and can be played by one or two players. List price: \$39.95. Requirements: 64K, one disk drive, color graphics board.

All work, and no play, makes Charlie dull.

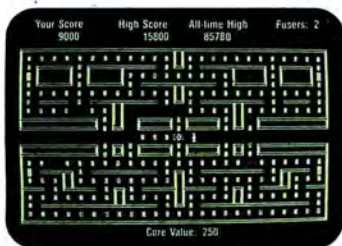
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increase your score! Minimum 48K of memory is required for DOS 1.0 and 1.1. DOS 2.0 requires 64K.

\$24.95



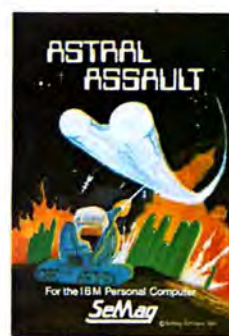
EXTERMINATOR

More fun and excitement than Centipede! Protect your flower boxes from the destructive garden pests ... Muncher Beetles that drop from the sky ... Caterpillars that slide across the screen, multiplying if they aren't stopped! ... and worst of all, the BUZZER BUG that lurks among the toadstools, appearing

when you least expect it! Wipe out these parasites while you watch your score climb!

Minimum 32K of memory is required for DOS 1.0 and 1.1. DOS 2.0 requires 48K.

\$24.95



ASTRAL ASSAULT

Defend your ships from the Astral invasion as you dart back and forth behind your bases. Beware of the Astral ships attack as they maintain their forceful U-SHAPED formation surrounding their most dangerous bombers. Escape the Astral Assault as they drop triple wide bombs that are im-

possible to destroy! And ... watch out for the RESCUE SHIP — it makes its evil way across the screen 3 times and must be demolished — its your best scoring hit! Minimum 32K of memory is required for DOS 1.0 and 1.1. DOS 2.0 requires 48K.

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Desdemona

Zephyr Services
306 S. Homewood Ave.
Pittsburgh, PA 15208
412/241-3459

Desdemona is a strategy game similar to Othello or go. The game is simple to play but demands cunning strategy to play well. *Desdemona* is played on a 64-square board displayed on the monitor. You can play against the computer or against a friend. You and your opponent take turns placing markers on the board, one at a time, one marker per square. The object is to enclose your opponent's markers with your own; whoever has enclosed the most markers by the time the board is filled wins. *Desdemona* features automatic scoring and sound effects and can be played on a color or monochrome monitor. List price: \$19.95. Requirements: 64K, one disk drive.

Ultralight Command

Fast-N-Fun
600 E. Broadway #B-7
Tempe, AZ 85284
602/831-9363

Ultralight Command is similar to the arcade game *Defender*. Players maneuver ultralight aircraft that attack and evade enemy helicopters, bombs, pods, and saucers. A radar screen and sound effects reveal the presence of the invaders. *Ultralight Command* saves high scores to disk, can be played on a color or monochrome monitor, and can be operated with either a joystick or the keyboard controls. List price: \$39.95. Requirements: 64K, one disk drive.

Galaxy

Microcomputer Games, Inc./
Avalon Hill
4517 Harford Rd.
Baltimore, MD 21214
301/254-5300

Galaxy is a strategy game similar to the Parker Brothers board and dice game Risk. You send your galactic fleet out to explore and conquer the universe, solar system by solar system. Play is conducted on a gridlike map. From 1 to 20 players can compete, and the program can also act as an opponent. The game can be played on a color or monochrome monitor. List price: \$25. Requirements: 48K, one disk drive.

"Galaxy is for anyone who likes simple strategy board games." David W. Krogh, Chula Vista, California

Andromeda Conquest

Microcomputer Games, Inc./
Avalon Hill
4517 Harford Rd.
Baltimore, MD 21214
301/254-5300

Andromeda Conquest is a space strategy game of galactic colonization and conquest. You must acquire planets by taking them over if they are uninhabited or fighting for or buying them if they are not. Some planets are inhabited by aliens or humans or have natural resources of use to you. The video screen is divided into four sections that provide information about what planets you own or can buy, planets available in your section of the galaxy, and so on. The game can be played on a color or monochrome monitor by one to four players. List price: \$23. Requirements: 48K, one disk drive.

Nightmission Pinball

Sublogic Communications Corp.
713 Edgebrook Dr.
Champaign, IL 61280
217/359-8482
Telex: 206995

Nightmission Pinball simulates a pinball machine, complete with sound effects and tilt. Games can be individualized by adjusting any of 10 modes and 38 parameters, such as forward incline, spinner friction, and ball speed limiter. *Nightmission Pinball* can be played by one to four people and offers surprisingly realistic action. The game won an award for Best Computer Audio-Visual Effects from *Electronic Games* magazine in 1983. List price: \$39.95. Requirements: 64K, one disk drive, color monitor.

"Outstanding graphics and sound."
David Michalski, Hickory Hills, Illinois

Computer Football Strategy

Microcomputer Games, Inc./
Avalon Hill
4517 Harford Rd.
Baltimore, MD 21214
301/254-5300

Computer Football Strategy simulates a professional football game. You are the coach, and either the computer or a friend can be your opponent. You both choose from a list of offensive or defensive plays, and the computer displays the ensuing action on a playing field on the screen. If your strategy is better than your opponent's over four quarters of play, you win. List price: \$21. Requirements: 64K, one disk drive.

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Commack, New York 11725

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In Canada Contact: Kanatek Micro Box 13029 Kanata, Ontario K2K1X3 613-829-9165

Computer Stocks and Bonds

Microcomputer Games, Inc./

Avalon Hill

4517 Harford Rd.

Baltimore, MD 21214

301/254-5300

Computer Stocks and Bonds is based on the Avalon Hill bookshelf game *Stocks and Bonds*, in which you are a new stock market investor trying to strike it rich. You begin play in year one with \$10,000 and attempt to parlay that into a more sizeable fortune than your opponent's. The program describes available stocks, and you must correctly anticipate the whims of Wall Street and try to invest at the right times. It's up to you to develop winning long-term and short-term investment strategies. The game can be played on color or monochrome monitors by one to four players. List price: \$25. Requirements: 48K, one disk drive.

Dnieper River Line

Microcomputer Games, Inc./

Avalon Hill

4517 Harford Rd.

Baltimore, MD 21214

301/254-5300

Dnieper River Line is a strategy game about a fictional encounter between Russian and German tank divisions in the southern Ukraine in 1943. The computer plays the Russian forces, and you play the Germans. The game has four levels of difficulty and comes with a mounted mapboard and individual counters so you can keep track of your forces. List price: \$30. Requirements: 64K, one disk drive.

U.S. Motors

Alphanetics Software

P.O. Box 339

Forestville, CA 95436

707/887-7237

U.S. Motors puts you in charge of a major automobile manufacturing corporation that is struggling for survival. U.S. Motors' stock is falling through the basement and bankruptcy is imminent. Japanese imports and OPEC oil prices have reduced sales, but the corporation needs billions of dollars to retool and modernize factories. You must make decisions that mean the difference between success and failure. List price: \$29.95. Requirements: 64K, one disk drive.

"U.S. Motors offers action so real you'll swear you read it in a newspaper." Janet Wilson, Atlanta, Georgia

Midway Campaign

Microcomputer Games, Inc./

Avalon Hill

4517 Harford Rd.

Baltimore, MD 21214

301/254-5300

Midway Campaign recreates the World War II Battle of Midway Island, in which outnumbered American forces successfully defended Midway from a Japanese attack. In *Midway Campaign* the computer controls the Japanese forces, and you control the Americans. Your edge lies in the greater range of your planes and—maybe—your superior strategy and tactics. The program re-

quires you to keep a sharp eye on the status and locations of your planes and carriers and to anticipate combat situations. The computer displays the locations of all American and Japanese forces on a grid map of Midway Island and the surrounding area. List price: \$21. Requirements: 48K, one disk drive.

Tachyon

Mirror Images Software, Inc.

Games Division

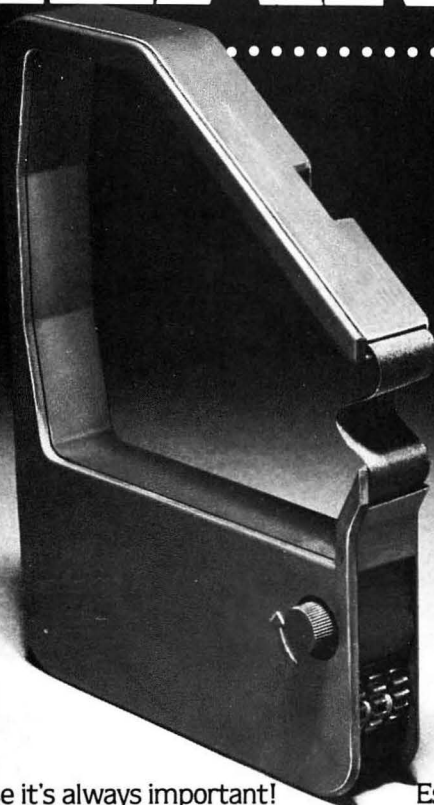
504 Broadway

Troy, NY 12180

518/274-2335

Tachyon is an arcade-style action game set in interstellar space in the year 2110. The player commands a faster-than-light ship capable of leaping from quadrant to quadrant at a touch of the <F1> key. The ship is armed with a limited supply of energy, lasers, torpedoes, sensors, and shields, which are used to battle the spaceships of the evil Galyon Empire. From a grid of 25 quadrants the player selects one, moves into it, and immediately engages in combat with five types of Galyon vessels. After successfully clearing a quadrant of Galyons, the player may choose to attack Galyons in another quadrant or seek a refueling station to rearm and repair. Real-time color graphics illustrate Galyon attack vessels, hyperspace movement, and the unique effect of falling into a black hole and emerging in a different quadrant. *Tachyon* uses several function keys, has numerous sound effects, and offers four skill levels. List price: \$39.95. Requirements: 64K, one disk drive, color graphics board.

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Suspended

Infocom, Inc.
55 Wheeler St.
Cambridge, MA 02138
617/492-1031

Suspended's time frame is the future; you are the controlling intelligence of a large underground complex responsible for regulating Earth's weather, transportation, and food production. As play begins, you have been awakened from your normal suspended-animation sleep to repair a series of malfunctions that threaten the lives of thousands of surface dwellers. You remain in a sleeping compartment in the complex throughout the game. The object of *Suspended* is to use six robots to discover what is wrong, both above ground and in the complex, and to repair all systems as fast as possible in order to minimize the destruction of lives and property. *Suspended* is a complicated text game that requires many hours to comprehend and play and is recommended for adults only. List price: \$49.95. Requirements: 64K, one disk drive.

Championship Blackjack

PCsoftware
9120 Grammercy Dr. #416
San Diego, CA 92123
619/571-0981

In *Championship Blackjack* the program plays the role of blackjack dealer, keeping track of wins, losses, and game statistics. The program also teaches a simple strategy for winning at blackjack, as well as Julian Braun's more complicated (but more effective) point-counting strategy. Blackjack rules can be adjusted

to simulate the play in actual gambling casinos. *Championship Blackjack* displays cards on the screen and can be played on either a color or monochrome monitor. List price: \$34.95. Requirements: 64K, one disk drive.

Aqua Run

Soft Spot Micro Systems
P.O. Box 415
North Canton, CT 06059
203/379-7047

Aqua Run is a treasure hunt game in which the ocean is your maze. Your diver must fight off sea creatures, find the underwater treasure, and bring the treasure to the surface before running out of air. *Aqua Run* can be played with either the keyboard or a joystick. It has five skill levels and records current and high scores. List price: \$39.95. Requirements: 64K, one disk drive, color graphics board.

"High resolution graphics, appropriate sound, and good documentation." Mr. and Mrs. James C. Pottkotter, Memphis, Tennessee

Big Top

Funtastic, Inc.
5-12 Wilde Ave.
Drexel Hill, PA 19026
215/622-5716

Big Top is an arcade-style game in which you guide an acrobat through a series of circus rings as you try to collect the ringmaster's hats while avoiding the numerous obstacles. *Big Top* offers keyboard or joystick control, several circus rings, and nine levels of play. List price: \$39.95. Requirements: 64K, one disk drive, color graphics board.

Night Walker

Adventure International
155 Sabal Palm Dr.
Longwood, FL 32750
305/862-6917

Night Walker is an interactive detective game that uses both text and graphics to help players smash a drug ring. Players move a figure about a map on the screen while searching for clues. The investigation progresses as players converse with potential witnesses and suspects who occupy different rooms in different buildings. The object of *Night Walker* is to record observations and clues that may pertain to the case and to carefully discern which information is useful. When a solid case can be made, players give the ten best observations to the police. Players win when a suspect is arrested. List price: \$24.95. Requirements: 64K, one disk drive.

Boggel

DEC Computing
609 Oakleaf Dr.
Garrett, IN 46738

Boggel is a computer version of the Parker Brothers word game, Boggle. *Boggel* uses a random generator to create a grid of letters from which you make as many words as possible within a preset time limit. The program keeps track of the words you and your opponent find and acts as timekeeper and referee. The program doesn't include a dictionary, so it cannot compete against you or check the validity of the words you find. *Boggel* can be played by one to four people on either a color or monochrome monitor. List price: \$10.95. Requirements: 64K, one disk drive.

Hide and Sink

Mirror Images Software, Inc.
Games Division
504 Broadway
Troy, NY 12180
518/274-2335

Hide and Sink is a sea-war game of strategy and luck, similar to the board game Battleship. The player and the computer secretly position ships on a grid. Both opponents then take turns randomly shooting guns and missiles at each other. A hit on an enemy vessel locates the vessel, and the ship must then be permanently disabled with additional on-target shots. Color graphics illustrate missiles firing and flames rising from vessels that have been hit. The object of *Hide and Sink* is to sink or disable all enemy vessels; the winner must have at least one gun or missile still afloat. *Hide and Sink* offers three versions of the game and a Night-time feature that introduces blind play. List price: \$39.95. Requirements: 64K, one disk drive, color graphics board.

Spyder

Mirror Images Software, Inc.
Games Division
504 Broadway
Troy, NY 12180
518/274-2335

Spyder is an arcade-style action game that is not for anyone who fears spiders. Your player walks back and forth along the bottom of the screen while spyders descend on single strands of webbing. You try to shoot the spyders between the eyes with your laser gun before they get

close enough to ensnare you in webs or land on the ground. If one does land, it will quickly crawl toward you and ensnare you unless you stomp on it first with your boot. If you succeed in killing all the spyders, you enter the bonus frame where you must kill all the spyder eggs before they hatch and drop down to web you. If you kill all the eggs, you are awarded an extra player and the game proceeds to a higher level. *Spyder* has ten skill levels, sound effects, and a pause control. List price: \$39.95. Requirements: 64K, one disk drive, color graphics board.

Cross Clues

Science Research Associates
155 N. Wacker Dr.
Chicago, IL 60606
800/621-0476, 312/984-7000

Cross Clues is a word game that plays like a combination of Scrabble and Hangman on a crossword-puzzle grid. You begin with a grid of 49 squares; some are blank and some are blacked out as in a crossword puzzle. Below the grid is a box containing consonants that you place in words in the grid. Using arrow cursors, you mark out the beginning and end of the vertical or horizontal row of squares you want to guess. The program awards points for each correct letter and word you find, and the object is to guess as many letters and words as you can before you run out of time. *Cross Clues* can be played by one person against the computer or by two people. List price: \$35. Requirements: 64K, one disk drive.

Deadline

Infocom, Inc.
55 Wheeler St.
Cambridge, MA 02138
617/492-1031

Deadline recreates the suspenseful atmosphere of the classic detective novel. You, the renowned inspector, have 12 hours to uncover clues that will lead you to the murderer of millionaire philanthropist Marshall Robner. You can search the house and grounds, question everyone at the Robner estate, and even be murdered yourself if you aren't careful. *Deadline* allows you to enter entire sentences as instructions or to string several commands together in one sentence. List price: \$49.95. Requirements: 48K, one disk drive.

"One of the hardest adventure games I have ever played." Lincoln Bauer, Holland, Michigan

Sea Dragon

Adventure International
155 Sabal Palm Dr.
Longwood, FL 32750
305/862-6917

Sea Dragon is an arcade-style game in which players maneuver a submarine through an endless underwater cave, shooting out mines and enemy boats with a laser cannon. The game gets more difficult as players progress. The underwater cave grows narrower, more enemies and new types of enemies appear, and the action becomes faster. *Sea Dragon* has sound effects that can be turned on or off. The game can be played with either a joystick or the keyboard controls. List price: \$34.95. Requirements: 128K, one disk drive, color graphics board.

Super Novatron

Fast-N-Fun

600 E. Broadway #B-7

Tempe, AZ 85284

602/831-9363

Super Novatron is a real-time strategy game in which you build walls to trap your opponent, the computer. The object is to force the computer to crash into a wall before you do. *Super Novatron* has three speed levels with four wall-building levels at each speed level. Two consecutive wins advance you to a higher level, and three consecutive losses cause you to lose the game. *Super Novatron* draws walls with three-dimensional graphics that make the game visually interesting and challenging to play. *Super Novatron* can also operate as a two-player game with each player opposing the computer and the other player. List price: \$34.95. Requirements: 64K, one disk drive, color graphics board.

Evolution

Sydney Dataproducts, Inc.

444 Camino Del Rio S #129

San Diego, CA 92108

619/298-5886

Evolution is an arcade-style action game in which you begin life as an amoeba, swimming about and gobbling up DNA cells while avoiding hostile spores, microbes, and antibodies. If you succeed in eating all the DNA in your area, you evolve into a tadpole. As a tadpole you try to eat water flies while dodging the mouths of hungry fish. If you eat all the water flies, you evolve into a rodent. If you continue to be skillful and lucky, you evolve into a beaver, then a gorilla, then finally into a

human. Each stage of evolution demands different tasks, skills, and levels of coordination. *Evolution* has 99 skill levels, a pause control, and a sound toggle, and displays the ten highest scores. The game can be played on either a color or monochrome monitor with either a joystick or the keyboard controls. List price: \$39.95. Requirements: 48K, one disk drive, color graphics board.

Jury Trial

Navic Software

P.O. Box 14727

North Palm Beach, FL 33408

800/327-2133

Jury Trial is a legal courtroom simulation in which two players play the roles of defense and prosecuting attorneys. The computer randomly selects a case from thousands of possible scenarios. You and your opponent must find evidence, select a jury, and try to prove your cases in court. You question the witnesses, object when your opponent tries to get favorable testimony, and attempt to build points with each of the six jurors, some of whom are harder to convince than others. Your strategy is to pick favorable jurors, avoid objections from your opponent or have them overruled, know when a witness is lying, reconstruct the events surrounding the crime, and persuade the jury of the defendant's guilt or innocence. If you fail to win your case, you can appeal to a higher court and try again. Additional players can participate as jurors. List price: \$29. Requirements: 64K, one disk drive.

Nuclear Mazeland

SeMag Software Corp.

32 Central Ave.

Midland Park, NJ 07432

201/447-5787

Nuclear Mazeland is a *PacMan*-type game. Your character races through a nuclear reactor maze picking up nuclear waste particles. A nuclear core is set in the center of the reactor maze. The object of the game is to pass through the core when it is not glowing and pick up as many nuclear waste particles as possible. Four protectors chase after you and try to stop you. *Nuclear Mazeland* has five different mazes and increases the pace and difficulty with each level you advance. The game can be



played with a joystick or the keyboard controls on either a color or monochrome monitor. List price: \$24.95. Requirements: 48K, one disk drive.

Pits & Stones

Foundation Software Corporation

719 Jura Way

Sunnyvale, CA 94087

800/227-3800 ext. 981

Pits & Stones is a nonviolent strategy game based on a game that originated centuries ago in North Africa. The screen is divided into 14 pits: 6

on top, 6 on the bottom, and 1 at each end. The pits on top, the stones in them, and the left (home) pit belong to one opponent. The pits on the bottom, the stones in them, and the home pit on the right side belong to the other opponent. The object of the game is to move the majority of your stones into home pit. *Pits & Stones* is written in FORTRAN with an assembler kernel, has sound effects and six skill levels, and can be played on either a color or monochrome monitor. List price: \$36.95. Requirements: 128K, one disk drive.



Microcosm

Aeon Concepts
Computer Products Division
1657 Red Mill
Pittsburgh, PA 15241
412/831-5352

Microcosm is a simulation of birth, life, migration, and death among populations of single-celled organisms. The populations occupy cells—squares on a board or coordinates on a grid—and evolve and change, with each move of the game representing one generation and affecting all cells simultaneously. Each generation unfolds according to three simple genetic laws: survival, birth, and death. Randomly generated populations soon acquire permanent symmetry, and the patterns undergo kaleidoscopic shifts. Many population patterns can be created, such as “blinkers,” which oscillate between two shapes; “still lifes,” which reach stability and refuse to change; and “spaceships” and “gliders,” which migrate. *Microcosm* can

be played in a solitaire mode that allows the player to experiment with population patterns or a competition mode in which two players can design patterns that struggle against each other for dominance. *Microcosm* also has a mutation feature that allows the player to alter the genetic rules, producing entirely new games and pattern phenomena. The FutureSee option previews the future effect of current changes in the patterns. *Microcosm* offers storage and recall of standard and user-created patterns, and it can be played on either a color or monochrome monitor. List price: \$39.95. Requirements: 64K, one disk drive, color graphics board.

Bluebush Chess

Bluebush
P.O. Box 3585
Santa Clara, CA 95055
408/244-1631

Bluebush Chess is a chess program that offers a wide range of features. The program has eight skill levels, and the player can switch between levels during a game. Help information is available at any time during play. Moves are entered by cursor movement using the arrow keys. The chess board can be set up in any arrangement desired, and the player can switch from playing black to playing white and vice versa. Lists of possible moves and previous moves are provided, all moves are automatically checked for legality, the player can take back any unwanted moves, and the computer can even select the best move for the player. *Bluebush Chess* can be played on either a color or monochrome monitor. List price: \$49.95. Requirements: 64K, one disk drive.

Set the Hostages Free

TexaSoft
3415 Westminister #100
Dallas, TX 75205
214/369-0795

Set the Hostages Free is a game in which 90 hostages are being held prisoner in a compound surrounded by a stone wall three layers thick. Your mission is to break through the wall and free as many prisoners as you can while avoiding or killing the menacing guards. You have three heroes to use for rescue, and each hero carries 15 rounds of ammunition for shooting guards and blasting through the wall. The prisoner compound sits in the center of the screen and you move your heroes around it. If you succeed in blasting a hole in the stone wall, some of the hostages escape and the number of guards increases. List price: \$35. Requirements: 64K, one disk drive.

UFO Adventure

Sanctuary Software
P.O. Box 2387
Santa Barbara, CA 93120
805/682-9500

UFO Adventure is an interactive adventure game that makes you the central character of a combination game/novel that you create as you play. The program writes to disk such variables as your name, address, and physical description (even the name of your pet) and uses this information to personalize the game. You begin play by boarding an alien spacecraft that hauls you off into a world in another dimension where a battle between two alien species is raging. As a Terran you are invulnerable to the evil creatures that seek to dominate your alien friends. You must master each situation that arises, help your friends overcome the aggressors, and return to Earth. List price: \$24.95. Requirements: 64K, one disk drive.

Mouskattack

Sierra On-Line, Inc.
36575 Mudge Ranch Rd.
Coarsegold, CA 93614
209/683-6858

Mouskattack is a maze game in which you are a plumber laying pipe underneath a city. Vicious mice chase you around to keep you from working. You have two cowardly cats and two mousetraps that you can move to block paths that the mice might use. You must place your

cats and mousetraps strategically so you can lay down all your pipe. If you succeed, you advance to the next level, where the action intensifies. List price: \$34.95. Requirements: 48K, one disk drive, color graphics board.

Beneath Apple Manor

Quality Software
6660 Reseda Blvd. #105
Reseda, CA 91335
213/344-6599

Beneath Apple Manor is a fantasy adventure game in which you explore an underground maze of corridors, rooms, and secret passages, killing or avoiding dangerous monsters and finding riches and magical treasures. The game uses graphics to illustrate and text to describe situations and monsters you encounter. The dungeon complex consists of many levels, each more dangerous than the last, but as you gain experience from vanquishing green slimes, ghosts, trolls, and other creatures, your capabilities increase to meet each new challenge. Experience points are gained whenever you find gold or defeat a monster, and they can be used to upgrade your four attributes: strength, intelligence, dexterity, and endurance. Gold points may be traded for a valuable brain scan or used to buy new weapons and armor. The object of *Beneath Apple Manor* is to become powerful enough to search the deepest dungeon levels and find the golden apple that is the source of all power. The game can be played on a color or monochrome monitor. List price: \$29.95. Requirements: 64K, one disk drive.

Astro Dodge

Digital Marketing Corp.
2363 Boulevard Circle
Walnut Creek, CA 94595
800/826-2222, 415/947-1000

Astro Dodge is a space action game similar to the arcade game *Asteroids*. The player moves a spaceship in any direction on the screen in an attempt to dodge meteorites that float about randomly. Hostile alien ships appear from time to time and fire at the player's ship. The object is to score points by blasting meteorites and alien ships with a laser. *Astro Dodge* has a hyper-drive feature that can instantaneously transport the player from one part of the screen to another. List price: \$39.95. Requirements: 64K, one disk drive, color graphics board.

Galaxy Master

Info-Pros Inc.
2102 Business Center Dr.
Irvine, CA 92715
714/851-8975

Galaxy Master is an arcade-style game of interplanetary war. Players must score at least 600 points within a 2-minute time limit by blasting the dreaded galaxy master's ship and assorted space debris. Players lose points if the galaxy master shoots and hits their ship. They are armed with lasers, photon torpedoes, and a self-destruct option for when the battle is lost. List price: \$29.95. Requirements: 64K, one disk drive.

• NEW •

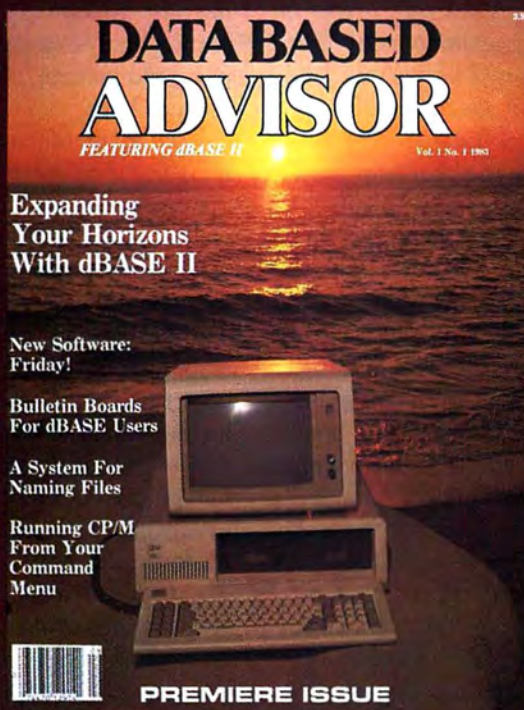
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Financial Applications

JoAnne Kennedy

Whether you're a professional financier or an amateur doing your own investment portfolios, financial applications software can assist you in investment record keeping and financial analysis.

Success in financial transactions invariably relies on rapid gathering and digesting of large amounts of information. The computer is ideally suited to this task, and software developers have taken full advantage of this ability. Since the beginning of the software revolution, manufacturers have designed programs that help people manage and earn more money on their investments.

Investing with the help of a personal computer is usually associated with three specific areas: portfolio evaluation, information retrieval, and investment analysis.

Portfolio evaluation, a method of record keeping, is a fundamental area of financial applications software. Nearly all investors need software that computes their portfolio value as well as gains and losses. More sophisticated programs enable investors to maintain complete records of purchases, sales, and commission costs and to prepare statements of short- and long-term realized gains or losses for use in completing tax returns.

Retrieving information is another function that investment software carries out. Using a personal computer, a modem, and a telephone line, you can gain access to a broad range of financial information. Daily and historical stock quotations, business news, 10-K and other SEC filings, as well as fundamental indicators and other financial information are available through commercial data bases.

Performing investment analysis is another use for financial software. Two types of investment analysis are commonly performed: technical and fundamental. Technical analysis attempts to predict future prices by studying past stock prices and trading volume. Technical stock market analysis programs help you chart such indices as price and volume, moving averages, and support and resistance lines.

Fundamental analysis studies all relevant factors that influence the course of stock prices. This type of analysis involves study of corporate performance indicators as well as consideration of the business and economic environment. The process of comparing stocks and determining which perform best overall is called screening. This process is the key to fundamental stock market analysis programs and works primarily as a sorting process. By carefully choosing selection criteria, you can tailor the screen to find stocks that meet your particular needs. Using fundamental analysis programs, you can find emerging growth stocks, uncover upcoming industry groups, compare investment strategies, and augment technical analysis.

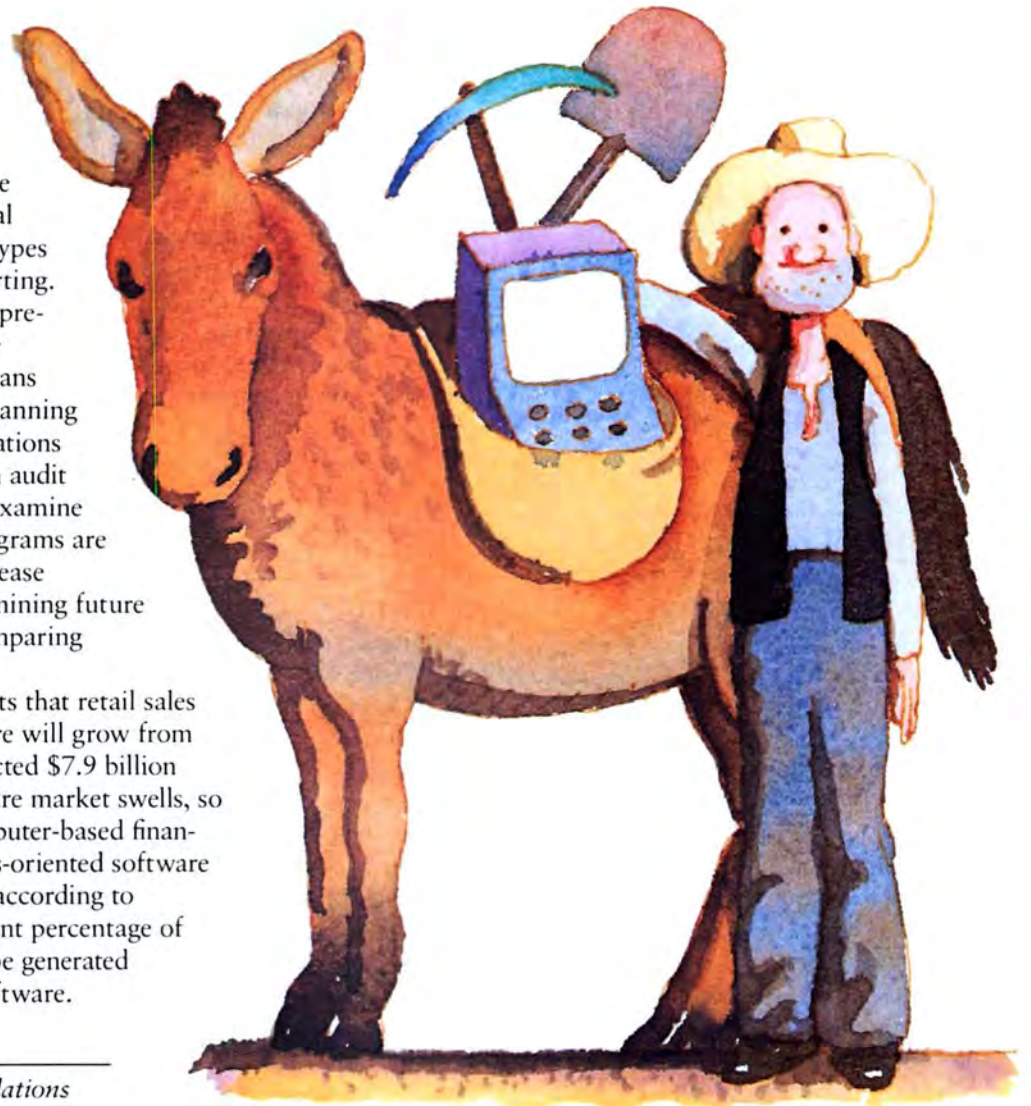
In the areas of calculation and planning, financial software performs calculations such as internal rate of return, net present value, and rate and amount of depreciation. The programs calculate interest rates, payments, and balances for loans, mortgages, and leases over quarterly, annual, and full-term periods. The software enables you to maintain these figures as financial records, print them as pro forma statements and schedules or custom reports, and use them to perform financial analyses and create financial strategies.

Record-keeping functions allow you to manage assets and include helpful features such as tickler files that flag important filing deadlines and loan or bond matu-

rity dates. Programs that create pro forma income and financial statements are helpful for all types of standardized financial reporting. Custom reports are useful for preparing concise, comprehensive reports illustrating financial plans and proposals. The strategy-planning capabilities of financial applications software allow you to perform audit trails, analyze cash flow, and examine budget alternatives. These programs are especially helpful for making lease and purchase decisions, determining future values of investments, and comparing and selecting financial plans.

Future Computing predicts that retail sales for personal computer software will grow from \$1.8 billion in 1983 to a projected \$7.9 billion in 1987. As the general software market swells, so will the market for microcomputer-based financial software. Sales of business-oriented software will reach \$1 billion by 1987, according to *Future Computing*. A significant percentage of that billion-dollar figure will be generated from financial applications software.

JoAnne Kennedy is a public relations representative for the Dow Jones News/Retrieval service.



Financial Applications

Multi-Tool Financial Statement

Microsoft Corporation
10700 Northup Way
Bellevue, WA 98004
206/828-8080

Multi-Tool Financial Statement computes 18 of the most commonly used financial ratios: three liquidity, four leverage, five efficiency, and six profitability. Ratios can be defined for personalized analyses and then calculated automatically. The program eliminates the need to format and enter formulas into the worksheet yet takes advantage of the worksheet's "what if" capabilities. List price: \$100. Requirements: 128K, one disk drive, *Multiplan*.

Multi-Tool Budget

Microsoft Corporation
10700 Northup Way
Bellevue, WA 98004
206/828-8080

Multi-Tool Budget works with the *Multiplan* spreadsheet program to create interrelated budget planning and control worksheets for one product or a line of products. Using a variable cost method, *Multi-Tool Budget* produces six planning worksheets: manufacturing overhead, unit cost, sales, cost of goods sold, selling and administrative expense, and operating expense. The program creates static, actual, and flexible reports to help analyze variances in sales volume, production costs, fixed overhead, and selling and administrative expenses. List price: \$150. Requirements: 128K, one disk drive, *Multiplan*.

Financial Planner

Ashton-Tate
10150 W. Jefferson Blvd.
Culver City, CA 90230
213/204-5570

Financial Planner is a financial development program that combines a spreadsheet with a financial planning language to enable users to develop their own reporting applications. The program includes an internal editor and a report generator for user-defined formatting. *Financial Planner* can consolidate an unlimited number of models. In addition to rows and columns, the program supports scalar variables, thus increasing the system's ability to perform complex calculations. List price: \$700. Requirements: 128K, one disk drive.

Stock Portfolio

N.F. Systems
P.O. Box 76363
Atlanta, GA 30358
404/252-3302

Stock Portfolio is a record-keeping system for stocks, bonds, and options that enables users to input data directly from broker's slips, provides lists and values of current portfolios, and summarizes year-to-date transactions. The program tracks commissions and other costs associated with a sale or purchase, and it prepares capital gains summaries for Schedule D. List price: \$39.95. Requirements: 64K, one disk drive.



STSC Financial and Statistical Library

STSC, Inc.
2115 E. Jefferson St.
Rockville, MD 20852
301/984-5000

STSC Financial and Statistical Library consists of more than 200 financial, forecasting, and statistical programs, including 6 for depreciation, 20 for rate of return, 20 for probability distributions, and 10 for forecasting including exponential smoothing. Each program can be executed from the keyboard or used as a subroutine in a user-written program. Written in APL*PLUS/PC, *STSC Financial and Statistical Library* is designed for financial analysts, management consultants, and applications builders who have beginning APL programming skills. List price: \$275. Requirements: 256K, one disk drive, APL*PLUS/PC programming language.

Dow Jones Reporter

IBM

Systems Products Division

P.O. Box 1328

Boca Raton, FL 33432

800/447-4700, 800/322-4400

Illinois, 800/447-0890 Alaska,
Hawaii

Dow Jones Reporter provides menu-driven access to the Dow Jones News/Retrieval service. The program captures data to disk or to a printer and permits interactive logon. The data base provides quotes and news stories from the *Wall Street Journal* and *Barron's*, as well as profiles on various corporations. List price: \$100. Requirements: 64K, one disk drive, RS-232C serial port, modem, subscription to Dow Jones News/Retrieval service.

Bottom Line Strategist

Ashton-Tate

10150 W. Jefferson Blvd.

Culver City, CA 90230

213/204-5570

Bottom Line Strategist is a financial forecasting program that uses graphics to track and analyze business situations. Users enter business assumptions in eight categories: growth, marketing and advertising, costs, pricing, productivity, inflation impact, depreciation, and accounting methods. *Bottom Line Strategist* analyzes the viability and profitability of each project and graphs and prints 11 types of financial and marketing forecasts. List price: \$400. Requirements: 128K, two disk drives, 120-column printer.

Doughflo

Alphanetics

P.O. Box 339

Forestville, CA 95436

707/887-7237

Doughflo is a financial planning and cash-flow analysis package with several interactive, menu-driven programs designed for tax preparation, budget planning, and income and expense analysis. List price: \$79.95. Requirements: 64K, one disk drive.

Investment Tax Analyst

John Wiley & Sons

605 Third Ave.

New York, NY 10158

Investment Tax Analyst is a menu-driven *VisiCalc* template that forecasts investment and tax scenarios for up to 6 years. One 6-year forecast and three 2-year forecasts can be calculated at one time. The program calculates regular and alternate tax minimums, investment tax credits and limitations, and investment interest limitations. List price: \$150. Requirements: 96K, one disk drive, *VisiCalc* 1.2.

HR-10 Proposal

Insurance Sales Systems

8015 W. 63rd St. #4

Merriam, KS 66202

913/722-0065

HR-10 Proposal (Keogh) calculates the benefits of a tax-deductible Keogh retirement plan to supplement social security benefits. The program produces a three-page report and is written for the non-specialist. List price: \$200. Requirements: 64K, two disk drives, CP/M-86.

Finance Projections

Software Models

P.O. Box 1029

Crestline, CA 92325

800/824-7888 ext. 583,

714/338-1238

Finance Projections is a collection of spreadsheet templates designed to help businesses create cash budget projections for loans and to facilitate periodic planning of a cash budget. The package prepares a break-even analysis, cash budget, pro forma balance sheet, and an income statement. It also offers five depreciation tables from 10 to 30 years, financial ratio formulas, and net present values. *Finance Projections* follows Small Business Administration requirements. List price: \$59.95. Requirements: 64K; one disk drive; *Multiplan*, *VisiCalc*, or *SuperCalc*.

VisiCalc Business Forecasting Model

VisiCorp

2895 Zanker Rd.

San Jose, CA 95134

408/946-9000

VisiCalc Business Forecasting Model is a package of seven *VisiCalc* templates that can be used to calculate financial ratios and prepare income statements, balance sheets, and cash flow statements. The program also prepares salary reports, sales and cost of goods summaries, and assets and depreciation statements. List price: \$100. Requirements: 64K, one disk drive, *VisiCalc*.

Financial Applications

Market Maverick

Financial Software, Inc.
11401 Westridge Circle
Chardon, OH 44024
216/338-6811

Market Maverick is a stock selection program that uses volume and momentum to indicate stocks with the greatest upside potential. The program includes a data base of 960 stocks. Users can purchase a monthly newsletter that pinpoints attractive stocks. Regular updates are available on disk. Model inputs may be selected from the data base or outside sources such as Value Line. List price: \$175, newsletter and updates \$120. Requirements: 64K, one disk drive.

Money Decisions

Eagle Software Publishing, Inc.
993 Old Eagle School Rd. #409
Wayne, PA 19087
215/964-8660

Money Decisions is a financial-decision package of 70 problem-solving programs in a two-volume set. The volumes are available separately or together. The programs cover business management, loans, investments, budget forecasting, and statistics. Calculations can be passed and received among programs. Graphics functions include bar graphs, moving averages, exponential smoothing, and regression analysis. All programs are menu driven and include on-line tutorials and reference guides. List price: Vol. 1 \$199, Vol. 2 \$229, both \$399. Requirements: 64K, one disk drive for one volume, two disk drives for both volumes operating together.

Pear Portfolio Management System

Remote Computing
1044 Northern Blvd.
Roslyn, NY 11576
800/645-3120

Pear Portfolio Management System organizes transaction information into two sets of files, one for securities information and one for portfolio position information. The program uses internal identification numbers to relate one set of files to the other, enabling users to include securities information in every relevant portfolio after entering the information only once. *Pear Portfolio Management System* creates portfolio appraisals that include security descriptions, percentage breakdowns within and by security type, and yield to maturity for fixed income securities. The program also generates security cross-reference reports that list all positions on the system by security, unrealized and realized capital gains and loss reports, and investment income statements for any time period. List price: \$695. Requirements: 128K, two disk drives, modem, printer.

Financial Analyzer

Information Systems
Plaza La Reina #400
6033 W. Century Blvd.
Los Angeles, CA 90045
213/412-8435

Financial Analyzer is a financial analysis package that calculates loan and mortgage repayments, earned interest, and nominal, annual, and effective interest rates. The program also prepares financial forecasts and computes depreciation and investment rates and amounts. List price: \$125. Requirements: 64K, one disk drive.

Stock Manager

Omni Software Systems, Inc.
146 N. Broad St.
Griffith, IN 46319
219/924-3522

Stock Manager is a stock-portfolio management system that handles up to 500 stocks on one disk and prints several types of reports including those required for federal income tax returns. The program calculates short- and long-term capital gains, dividends, and average price per share to reflect changes in dividends or repurchase. *Stock Manager* values stock portfolios at current prices, tracks reinvestment and repurchases, and notifies users of stocks reaching long-term maturity. The Value Line index is included with the program. List price: \$150. Requirements: 64K, two disk drives.

Portfolio

Software Options, Inc.
19 Rector St.
New York, NY 10006
212/785-8285

Portfolio is a futures and options portfolio management system that performs option valuation. The program calculates options hedging requirements, providing synthetic position by maturity and commodity. *Portfolio's* position and profit/loss reports reflect the most current trade entries and prices. A real-time price quotation service is available. List price: \$1240, quotation service \$175 per month. Requirements: 192K, two disk drives, color graphics board.

Technical Investor

Savant Corporation
P.O. Box 440278
Houston, TX 77244
800/231-9900

Technical Investor is a technical data base and charting program that automatically logs on to the Dow Jones News/Retrieval service and the Warner Computer Systems data base for stock price updating. The program plots multiple stock activity on up to four independently controlled window screens. *Technical Investor* offers point-figure charts, relative strength plots, and five price-volume trend indicators. Stocks can be plotted with the program's linear regression, oscillator, and exponential and moving average functions. Any amount of data can be saved to disk, and the data base can be edited manually. List price: \$395. Requirements: 128K, two disk drives, RS-232C serial port, color graphics board, graphics printer.

Fundamental Investor

Savant Corporation
P.O. Box 440278
Houston, TX 77244
800/231-9900

Fundamental Investor is a combined investment and communications package that provides access to the Dow Jones News/Retrieval service and the Warner Computer Systems data base. The program collects and stores fundamental stock data such as earnings per share and capitalization figures. *Fundamental Investor* plots time series and performs screening and sorting of up to 1700 stocks with 40 parameters. List price: \$495. Requirements: 128K, two disk drives.

Wall St. Plotter

Spring Dale Software
1507 Evesham Rd.
Voorhees, NJ 08043
609/795-1454

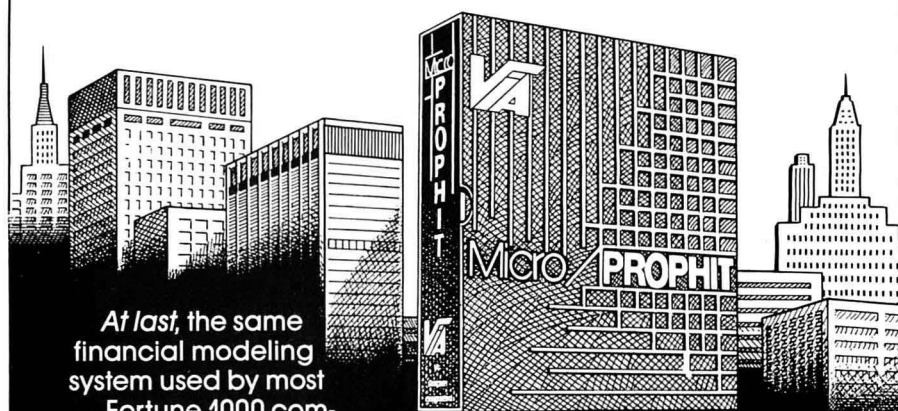
Wall St. Plotter creates stock price and volume charts as well as moving averages, on-balance volume, and point and figure charts. Daily trading is entered through the keyboard. The program includes historical trading data for nine stocks of the user's choice. *Wall St. Plotter* is menu driven and operates with a monochrome monitor. List price: \$169. Requirements: 64K, one disk drive.

N-Squared Stock Analyzer

N-Squared Computing
5318 Forest Ridge Rd.
Silverton, OR 97381
503/873-5906

N-Squared Stock Analyzer incorporates technical analysis functions for studying individual stocks. Functions include high-low-close-volume displays with linear or semilogarithmic auto-scaling, price-volume indicators, relative strengths, momentums, smoothing, averaging, and point and figure charting. List price: \$295. Requirements: 64K, one disk drive, color graphics board.

Mainframe Corporate Planning Software For MICROS.



At last, the same financial modeling system used by most Fortune 1000 companies is available for the IBM PC™! Micro/PROPHIT® applies the same power and capabilities of PROPHIT II to solve difficult business problems beyond the reach of 123™ and VisiCalc™.

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- Over 60 math & financial functions
- Over 30 forecasting techniques
- Ready-to-use industry specific models
- Model design & customizing service

IBM is a registered trademark of International Business Machines Corp. 123 is a trademark of Lotus Development Co. VisiCalc is a registered trademark of VisiCorp.



VIA COMPUTER, INC.
7177 Construction Court
San Diego, CA 92121
619/578-5356

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Financial Planning Mind Tools

Howard W. Sams & Co., Inc.
4300 W. 62nd St.
P.O. Box 7092
Indianapolis, IN 46206
800/428-3696

The *Financial Planning Mind Tools* programs work in conjunction with *Multiplan*, *SuperCalc*, and *VisiCalc*. Each program contains 18 financial functions with formulas and column headings that are superimposed on a *Multiplan*, *SuperCalc*, or *VisiCalc* spreadsheet. Formulas include compound interest, annuities, internal rate of return, and linear regression. List price: \$89.95. Requirements: 64K; one disk drive; *Multiplan*, *SuperCalc*, or *VisiCalc*.

Micro-Master Professional Portfolio System

Software Resources, Inc.
186 Alewife Brook Pkwy. #310
Cambridge, MA 02138
617/497-5900

Micro-Master Professional Portfolio System is a portfolio accounting and reporting system that handles all types of securities and transactions. The program maintains portfolio data, client records, broker information, and custodian bank records. *Micro-Master* prepares custom reports and includes automatic price updating. The program is available in floppy or hard disk versions. List price: floppy disk version \$4500, hard disk version \$6000. Requirements: 512K, two floppy disk drives, modem, printer; or 256K, hard disk, modem, printer.

OptionCalc

Savant Corporation
P.O. Box 440278
Houston, TX 77244
800/231-9900

OptionCalc calculates the theoretical value of call and put options. The program performs "what if" calculations and includes a Repeat command that allows data to be changed without rekeying. List price: \$89. Requirements: 64K, one disk drive.

CPL/Tactix, PC Version

Segra International
444 Castro St. #918
Mountain View, CA 94041
415/961-1670

CPL/Tactix is a financial planning language that handles complex corporate budgets and reports and is written in Intel FORTRAN. It runs independently or tied in to the *CPL/Tactix* mainframe. The system consolidates data and reports, pulls files from other systems and data bases, provides color graphics capability, and includes built-in financial and mathematical functions. *CPL/Tactix, PC Version* offers full-screen editing, unlimited dimensions, user-defined formats and menus, matrix manipulation, and a syntax manager. The program performs "what if" calculations, prepares sensitivity and regression analyses, and calculates annuity, IRR, and PV. List price: \$85,000 mainframe license plus \$2000 per copy. Requirements: 512K, two disk drives, Intel 8087 coprocessor.

Chart Trader Plus

Omega Microware, Inc.
222 S. Riverside Plaza
Chicago, IL 60606
312/648-4844

Chart Trader Plus analyzes stock, commodity, and options markets. The program displays up to 240 days of market activity and includes a full color graphics charting system that allows tracking studies to be superimposed. Included is the Data File Management program, a library of prices and statistics that allows users to create, update, and maintain files. *Chart Trader Plus* is compatible with several stock and commodity data bases. List price: \$199.95. Requirements: 128K, two disk drives, color graphics board.

Financial Analysis System

Valuation Systems Company
1722 S. Carson #3007
Tulsa, OK 74119
918/583-9191

Financial Analysis System contains 28 financial analysis programs in a two-volume set. The volumes are available together or separately. Each modular program runs independently, allowing analysis of varied financial problems. The system allows users to perform "what if" testing. Volume 1 programs include IRR and compound interest and analysis of income, mortgage amortization, balance, and payments. Volume 2 programs include cash flow, multiple regression, time trend, ACRS, and income and expense. List price: Volume 1 \$125, Volume 2 \$250. Requirements: 52K, one disk drive, CP/M-86, CBASIC.

Professional Financial Planner

Professional Software Associates
5353 Wayzata Blvd. #407
St. Louis Park, MN 55416
612/541-0742

Professional Financial Planner is a financial planning program and asset management and tracking system that prepares 5-year financial projections and performs tax analysis. The program includes a relational data base consisting of 19 files that provide a complete client information data bank. The program maintains records of transactions, contracts, and client purchases. Included with the program are a critical task calendar and a tickler file to inform users of pending obligations, deadlines, and maturity dates. *Professional Financial Planner* prepares client financial plan summaries and reports. List price: \$1995. Requirements: 256K, two disk drives.

Financier Investor Series

Financier, Inc.
2000 W. Park Dr.
Westboro, MA 01581
617/366-0950

Financier Investor Series is an investment portfolio record-keeping and management system that enables users to maintain a data base of information on every security, account, security position, and transaction. The program includes a time management tickler file and prepares full portfolio reports and tax summaries. User-defined portfolio reports are also available. *Financier Investor Series* integrates with the *Financier II* and *Tax Series* programs. Requirements: 96K, two disk drives.

Time Value of Money

People Literate Software
P.O. Box 2039
Bozeman, MT 59715
406/586-1581

Time Value of Money is an investment program that analyzes present/future worth, mortgage annuity, and gradient problems and accounts for the changing value of money over time. A units-conversion function computes figures for years, months, quarters, and days. Time-period breakdowns for each financial problem can be displayed, printed, or saved to disk. *Time Value of Money* includes a built-in help facility and error checking. List price: \$39.95. Requirements: 96K, one disk drive.

Financial Planning System

IFDS, Inc.
P.O. Box 888870
Atlanta, GA 30356
404/256-6447

Financial Planning System produces comprehensive plans for financial professionals. The menu-driven, modular program uses the ten-key numeric pad for simplified data entry and performs "what if" modeling. *Financial Planning System* includes on-screen instructions and error-trapping routines. List price: integrated packages \$2500 to \$6500, individual modules from \$250. Requirements: 128K, two disk drives.

=MONEY=TRACK=

MoneyTrack is an accounting system for entrepreneurial people. It lets you keep your own books—easily, quickly, perfectly!—even if you know nothing about bookkeeping.

MoneyTrack is uniquely right for you if you have multiple sources of income: investments, a small business, farm, real estate, partnerships, trusts, professional practice, etc. Because only **MoneyTrack** can handle all your personal finances and keep separate records for each of your interests.

A few of **MoneyTrack's** many features:

- 1,098-entry chart of accounts
- Whole year's transactions on file, easily modified and repeated
- Multiple distribution (up to 18 accounts)
- Detail and summary reports
- Single menu
- Efficient bank reconciliation
- 9 check-printing formats
- Disk backup with graphics
- Balances forward for new year

MoneyTrack costs under \$500. It runs on the IBM PC (dual 320K diskette drives), Compaq and other PC compatibles, Digital Rainbow 100. Interactive teaching/demo diskettes are available.

For full information call or write: Pacific Data Systems, Inc., 6090 Sepulveda Blvd., Culver City, CA 90230 (213) 559-8713

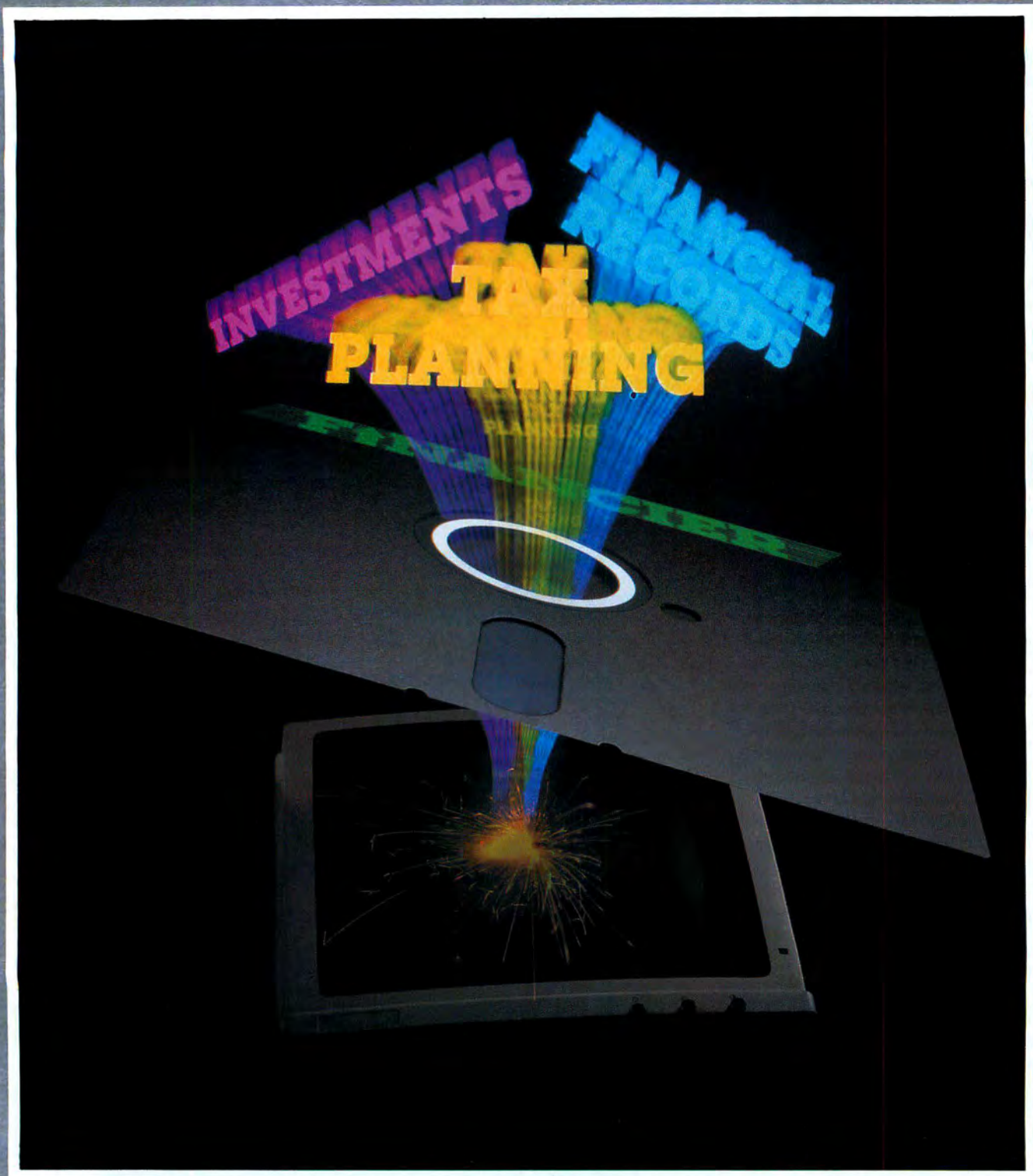


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Data Systems, Inc.

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**No other financial software
even comes close.**



Introducing Financier II

Now you can have
a completely integrated financial
software system.

Now Financier II

The financial software that has met with resounding approval from professional software reviewers just got even better. Now, the Financier Personal Series has been upgraded to Financier II. Combined with Financier's Tax Series and Investor's Series, it creates a totally integrated financial management system. Financier II is so easy to use that it is ideal for personal finance yet powerful enough, and flexible enough, to function as a small business system.

"It is clear that the Financier Personal Series is the most sophisticated and flexible of the financial programs under review here."

Burton Alpers, Ph.D.
Reviewer, SOFTALK
June, 1983

Financier II features enhanced graphics capabilities, and expansion of Financier's unique auto-checking capability which prints checks directly from a user-maintained database, while updating bank, budget and tax records. Additionally, it provides a full range of professional-caliber financial statements including net worth, and cash flow reports. You can even opt for double-entry accounting methods, if desired.

"Out of all these programs," the Financier Personal Series provides the best balance of extensive capabilities and ease of use. The manual is outstanding as an introduction to both the practice of bookkeeping, and the use of a personal computer to perform this task."

Steven Yoder and
Sherry Knight, CPA
PC Magazine, February, 1983

Financier II is remarkably easy to use.

You don't have to be a computer whiz-kid to use Financier II. That's because it's menu-driven. All you do to operate Financier II is select the function you want to perform from a list that appears on your CRT. When you need to enter data, just fill in the blanks on the preformatted screen. If you can use an automatic teller machine, you're well on your way to mastering this unique financial software.

"Within an hour of opening the software package, I was able to appreciate and understand the power of this financial package."

Eric R. Bedell
Reviewer PC REPORT

Another thing that puts Financier II so far

in front of any other financial software package is that it offers powerful tax and inventory functions. In fact, Financier II allows you to maintain literally thousands of these accounts, if you desire. And, each account is separately manageable.

All this adds up to make Financier II the most sophisticated, powerful, and cost-effective financial software you can buy. Combine Financier II with Financier's Tax Series and Investor's Series software, and the system becomes even more powerful.

"Thus far no other software company has matched Financier's interlocking combination of a powerful tax-planning package (Tax Series) and a year-round record-keeping program (Personal Series)."

Augustin Hedberg
Money, June, 1983

Financier Tax and Investor's Packages.

Financier's Tax and Investor's Series provide the perfect adjunct to Financier II's powerful capabilities. One of the major reasons for this is that they interface directly with the data stored in Financier II. This completely elimi-

nates the need for redundant data entry. Once you enter data, it is available to all Financier products.

Financier's Tax Series lets you create multiple tax cases, and store them for later adjustment. You can even perform "what-if" spreadsheet calculations, generate graphics and print charts.

"This set of programs interfaces with the financial ones, so you can use the Financier monthly, for instance, and then use the tax program at the year's end without as much as one redundant data entry."

Thomas V. Bonoma
Columnist
Microcomputing, August 1983

Financier's Investor Series is a comprehensive portfolio management system that lets you maintain a data base on each security account, each security position, and each security transaction.

Financier Offers Something for Everyone.

Individuals, businessmen, tax preparation specialists, investors or anyone who wants real financial control cannot afford to miss out on Financier's powerful software packages.

Get the most from your personal computer with the financial software that does the most. Financier II, and Financier's Tax and Investor's Series.

FINANCIER

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Financier, Inc., 2000 West Park Drive, Box 670, Westboro, MA 01581 (617) 366-0950

*Apparant Home Finance™, Perfin™, PC/PFP™, Home Accountant Plus™, Financier Personal Series™

**Bonus Accounting System™, Financier Personal Series™, FMS II™, Home Accountant Plus™, Money Maestro™
Financier software is available for IBM® PC, IBM® XT, Digital Rainbow™ and Wang® PC

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N-Squared Market Analyzer

N-Squared Computing
5318 Forest Ridge Rd.
Silverton, OR 97381
503/873-5906

N-Squared Market Analyzer monitors and compares market indicators with a data base included with the program. Keystroke functions include exponential smoothing, arithmetic averaging, ratios, sums, differences, transforms, de-trends, and time-lag analyses. The program generates and displays indicators such as the Trading Index (TRIN) and Advance Decline Line (ADL). List price: \$295. Requirements: 64K, one disk drive, color graphics board.

DataTrend

Sun Banks, Inc.
P.O. Box 3833
Orlando, FL 32897
305/237-4417

DataTrend is a financial statement analysis program that creates historical analyses and projections. The program prints historical balance sheet and income statement data, creates funds-flow statements, calculates 23 ratios, and enables users to make financial projections based on numerous assumptions. *DataTrend* is available as a spreadsheet program and as a projection program, each drawing from a common data base that lets users accumulate five years of data. List price: spreadsheet program \$3000, projection program \$1500. Requirements: 64K, one disk drive.

IRA Proposal

Insurance Sales Systems
8015 W. 63rd St. #4
Merriam, KS 66202
913/722-0065

IRA Proposal calculates the benefits of a tax-deductible Individual Retirement Account. The program produces a three-page report and is written for the nonspecialist. List price: \$200. Requirements: 64K, two disk drives, CP/M-86.



Dow Jones Market Analyzer

Dow Jones & Co.
P.O. Box 300
Princeton, NJ 08540
800/257-5114

Dow Jones Market Analyzer obtains stock price data from the Dow Jones News/Retrieval service. The program creates individual stock charts including bar charts, moving averages, relative strength, trend lines, oscillator charts, and volume indicators. List price: \$350. Requirements: 64K, one disk drive, color graphics board, modem, printer.

Stock Watch Software

Compubyte, Inc.
2906 S. Horseshoe
Naples, FL 33942
813/793-1656

Stock Watch Software records account information, posts customer transactions, and displays portfolios and client lists by securities. The program calculates and lists profit and loss for each client and can sort by security type, customer product interest, and tax bracket. *Stock Watch Software* generates mailing labels and includes a tickler file. List price: for IBM PC \$399, for IBM PC XT \$499. Requirements: 64K, two disk drives.

Strohl Stock System

Strohl Systems Group, Inc.
661 W. Germantown Pike
Plymouth Meeting, PA 19462
215/825-6220

Strohl Stock System analyzes market trends of up to 150 days of stock data and provides daily updated buy and sell recommendations. The program automatically logs on to the Dow Jones News/Retrieval service and includes a conversation feature that enables the program to use other Dow Jones data bases. *Strohl Stock System* creates price-volume charts for each stock and provides on-screen price graphics. List price: \$495. Requirements: 128K, two disk drives, RS-232C serial port, Hayes Smartmodem, subscription to Dow Jones News/Retrieval service.

Mortgage Acceleration

Insurance Sales Systems
8015 W. 63rd St. #4
Merriam, KS 66202
913/722-0065

Mortgage Acceleration compares mortgage payment plans with current payments and prepayments. The program prepares ledgers on a summary sheet for any loan prepayment. List price: \$200. Requirements: 64K, two disk drives, CP/M-86.

Loan Amortization and Depreciation

Insurance Sales Systems
8015 W. 63rd St. #4
Merriam, KS 66202
913/722-0065

Loan Amortization and Depreciation produces a loan amortization ledger and five depreciation methods. The program calculates loan payments, principal payments, and total and to-date interest payments. List price: \$100. Requirements: 64K, two disk drives, CP/M-86.

Investment TaxPac

SuperSoft
P.O. Box 1628
Champaign, IL 61820
217/359-2112

Investment TaxPac keeps investment and tax records, analyzes investments with respect to market values and performance, and prepares year-end reports. *Investment TaxPac* includes a report generator, a tax information file, and a message calendar. List price: \$200. Requirements: 48K, one disk drive, printer.

Financial Analyst

Syntax Systems—Software Products
921 Tilden Ave.
Kent, WA 98031
206/251-8438

Financial Analyst provides several commonly used financial planning and accounting applications in a menu-driven format. The program's investment analysis function compounds the value of investments and annuities and calculates minimum investments required to allow regular withdrawals, deposit amounts required to accumulate future sums, and the present value of a future amount. *Financial Analyst* provides straight line, double declining balance, sum of years digits, and accelerated cost recovery depreciation calculations. The program's loan analysis determines regular payment amounts required to repay a loan, total loan amount based on regular payments, and loan balance after a certain number of payments. The program creates a loan amortization table. Results of all analytical functions can be written to a disk file for inclusion in reports or other documents. List price: \$50. Requirements: 64K, one disk drive.

Payment Scheduler

SimSoft Associates
P.O. Box 7095
Port Huron, MI 48301
313/984-1570

Payment Scheduler is a loan amortization program that prints month-by-month payment schedules based on desired monthly payments. It calculates mortgage payments for loans that do not fit standard amortization schedules. List price: \$40. Requirements: 64K, one disk drive.

Stock Portfolio Reporter

Micro Investment Systems, Inc.
P.O. Box 8599
Atlanta, GA 30306
404/892-3194

Stock Portfolio Reporter is a reporting system for common stocks that gives current information on stock accounts. The program includes a sorting function that allows breakdown by yield, price/earnings, gain/loss, or any category in the package's eight reports. *Stock Portfolio Reporter* sorts stocks into groups defined by the investor and calculates totals and weighted averages for each group and the entire portfolio. List price: \$179. Requirements: 128K, two disk drives, RS-232C serial port, modem, subscription to Dow Jones News/Retrieval service.

Stockchart-II

Micro-Investment Software
9621 Bowie Way
Stockton, CA 95209
209/952-8833

Stockchart-II is a stock market graphics program designed for the stock investor interested in technical analysis. The program includes automatic retrieval of stock quotes from the Dow Jones News/Retrieval service. *Stockchart-II* charts daily price, trend lines, price channels, volume density, 1- to 264-day moving average plots, and on-balance volume plots. List price: \$350. Requirements: 128K, two disk drives, RS-232C serial port, modem, color graphics board.

N-Squared Market Illustrator

N-Squared Computing
5318 Forest Ridge Rd.
Silverton, OR 97381
503/873-5906

N-Squared Market Illustrator consists of two complementary programs for plotting, smoothing, and comparing financial data. One program provides price, volume, and on-balance volume charting for stocks and commodities. The second program uses split-screen displays for comparing data. *N-Squared Market Illustrator* includes program-generated indicators and a weekly historical data base comprising over 130 statistics compiled from *Baron's* since September 1980. List price: \$195. Requirements: 64K, one disk drive, color graphics board.

VIS/Bridge/DJ

Solutions, Inc.
13 State St.
P.O. Box 989
Montpelier, VT 05602
802/229-0368

VIS/Bridge/DJ extracts information from the Dow Jones News/Retrieval service and inserts it directly into a *VisiCalc* spreadsheet. The program provides an interactive logon; once properly configured for a particular system, the program executes the logon command, enters the data base, and extracts the requested information unattended. Available information includes current and past stock quotes as well as descriptions of corporations listed on the service. List price: \$295. Requirements: 64K, one disk drive, RS-232C serial port, subscription to Dow Jones.

Financial Reporting System

Prairie Data Systems, Inc.
626 Broadway Ave. #202
Saskatoon, Saskatchewan
S7N 1A9 Canada
306/384-7110

Financial Reporting System is a general ledger financial statement preparation program that allows users to define up to six financial statements for up to 500 accounts. The program supports previous-year data, current-year data, and budgets. *Financial Reporting System* posts the current and the following month, allowing users to manipulate two months of on-line data. The program provides audit trails by batch and line. Also available is the *Multiplan Spreadsheet Link*, which integrates Microsoft's *Multiplan* with *Financial Reporting System*. Users can enter financial statements directly into the spreadsheet for analysis and reporting. The link allows users to set up monthly journal entries or recurring entries in the spreadsheet; the entries can then be automatically posted to the general ledger. List price: \$825, with *Multiplan Spreadsheet Link* \$1040. Requirements: 64K, two disk drives.

Micro PMS

Information Resource Management
109 Fairfield Way #106
Bloomington, IL 60108
312/894-5598

Micro PMS prepares and maintains account portfolios, portfolios containing stock and asset valuations, and gain and loss reports. Designed for investment managers, the program provides real-time, interactive displays that allow users to update files continuously and to call up

stocks and portfolios using a cross-reference screen. *Micro PMS* prepares asset reports that include stock cost and current portfolio market value. The program's securities data base can be updated manually or automatically with a pricing update program available from the manufacturer. List price: \$495. Requirements: 256K, two disk drives.

The Personal Investor

PBL Corporation
P.O. Box 559
Wayzata, MN 55391
612/471-7644

The Personal Investor is a portfolio-management, news-terminal, and quotation system designed to help private investors manage investments. The system connects with the Dow Jones News/Retrieval service to update a portfolio, retrieve business news and information, and collect quotations.

The news-terminal mode automatically logs on to the Dow Jones service and enters a password. The portfolio manager records and reports on stock purchases, commissions, dividend yields, and sales transactions. *Personal Investor* automatically calculates splits, and each purchase is accounted for individually. The program creates individualized portfolio analyses and graphics using the Data Interchange Format (DIF) and programs such as *VisiCalc* and 1-2-3. *Personal Investor* entitles you to use the Dow Jones News/Retrieval service for 1 hour at no charge. List price: \$195. Requirements: 128K, one disk drive, modem, RS-232C serial port, printer.

Micro/Scan

Isys Corporation
P.O. Box 214
Cambridge, MA 02238
617/491-6221

Micro/Scan is an investment information and analysis service that provides subscribers with monthly disk updates of an investment data base and with software to review the data base and analyze portfolios. The program performs stock valuation studies, industry analyses, portfolio reports and restructuring, "what if" analyses, and investment and marketing strategy studies. List price: \$4500 to \$15,000. Requirements: 128K, two disk drives.

Strategic Planner

BSG Corporation
InTelTech Division
Minneapolis, MN 55344
612/944-8180

Strategic Planner provides financial feasibility studies that include pro forma statements and built-in calculations for net present value, amortization, and depreciation. The program analyzes working capital, revenue, production, taxes, tax credits, and variable and fixed costs. *Strategic Planner* prepares performance statements for up to 10 years and includes depreciation, interest, and investment tax credit tables. The program performs over 1500 calculations and has no memory limitations. List price: \$995. Requirements: 64K, two disk drives.

OptionVue-A

Star Value Software
12218 Scribe Dr.
Austin, TX 78759
512/837-5498

OptionVue-A is a spreadsheet program that is customized for financial uses. The program answers "what if" questions regarding stock options strategies. *OptionVue-A* handles put or call options purchased and covered, naked, and ratio writing. Fair value pricing models are used to identify undervalued and overvalued options. *OptionVue-A* contains built-in functions including an option expiration calendar through 1999, full service and discount commission schedules, and automatic dividend and interest calculations. List price: \$189. Requirements: 64K, one disk drive.

Stockplot

Cook Compusystems
309 Lincolnshire
Irving, TX 75061
214/253-6979

Stockplot stores stock price history and plots a stock's price record with bar, point, and figure charts. Designed for stock brokers, bankers, and individual stock market investors, the program plots a stock's moving average for an adjustable number of days and gives high, low, and closing prices for each entry. Up to 400 time intervals can be displayed. *Stockplot* scales graphs and information to fit printer paper of any size. List price: \$99. Requirements: 128K, one disk drive, Epson MX-80 printer with Grafrax Plus.

Financial Fastrax

Integrated Equity Planning
98-211 Pali Momi St. #302
Aiea, HI 96701
808/488-4766

Financial Fastrax includes 27 preformatted charts for rate of return, compound interest, and personal finance calculations. The program plans tuition and retirement and does cash flow calculations and stock computations. *Financial Fastrax* includes modules for mortgage loan qualification, foreign currency conversion, and precious metals portfolios. The 1-2-3 version includes 94 preformatted graphs integrated with spreadsheets. List price: *SuperCalc* version \$125, 1-2-3 version \$150. Requirements: 64K, one disk drive, *SuperCalc* 1.07 (or higher); or 128K, two disk drives, 1-2-3.

Invest

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
913/843-5863

Invest (version 3.0) is a securities tracking system that records transaction details and provides periodic interest-accrued reports, transaction histories, and liquid asset and maturity schedules. Calculations include future values, annuities, discount, loan discount amortization, municipal bond yield, discount commercial paper, variable interest rates, discount on principal yield, and simple and compound interest. *Invest* analyzes portfolio mix and answers hypothetical questions for up to 600 portfolios. List price: \$150. Requirements: 128K, two disk drives, printer.

Financial Applications

Financial Analysis Package

Aeronca, Inc.
Execuware Division
7415 Pineville-Matthews Rd.
Intercontinental Plaza #300 Box 10
Charlotte, NC 28211
704/541-1199

Financial Analysis Package produces amortization and depreciation schedules and provides IRR, net present value, and lease or purchase analyses. Amortization schedules handle balloon or purchase payments, allow for interest-only or switched loans, cover up to 45 years, and are printed on a monthly, quarterly, or annual basis. The program's eight types of depreciation schedules handle the accelerated cost-recovery provisions of the 1981 Economic Recovery Tax Act. *Financial Analysis Package* calculates the tax ramifications of leasing or purchasing and performs "what if" analyses for loans and leases. List price: \$92.95. Requirements: 64K, one disk drive, printer.

MicroForesight

Information Systems of America
6855 Jimmy Carter Blvd.
Atlanta, GA 30071
404/441-8800

MicroForesight is a FORTRAN-based financial modeling and planning program that uses a standard English command language. The program's modules consolidate data, generate and edit reports, and perform forecasting, statistical, sensitivity, and risk analyses. List price: \$2000. Requirements: 256K, 5M hard disk, Intel 8087 micro-processor, RS-232C serial port.

Micro Control

IMRS, Inc.
43 Old Logging Rd.
Stamford, CT 06903
203/322-9947

Micro Control performs complex financial calculations for budget preparation, forecasting, and management reporting. Designed as an alternative to time-sharing systems, *Micro Control* is a production-oriented multiuser system that generates reports, graphs, and narratives. The program includes built-in accounting functions and a text formatter. List price: corporate license \$25,000, initial installment fee \$10,000, per-copy fee \$1000. Requirements: 256K, two disk drives.

Project Management System

Michigan Evaluation Resource
Center
388 S. State St.
Ann Arbor, MI 48104
313/663-4219

Project Management System is a financial management program that works with the *Condor Data Base Management System*. It is intended for use by college and government grant managers. The program prepares separate budgets for an unlimited number of projects, programs, and departments, and tracks revenue and funding sources. *Project Management System* creates a check register and income statement as well as expense revenue, revenue and expense comparison, budget summary, and budget status reports. Report formats can be user-defined and can be produced for variable time periods such as 10, 30, or 90 days. List price: \$495. Requirements: CP/M-86, 64K, hard disk, *Condor DBMS*.

Advisor Portfolio Manager

Kate's Computers
P.O. Box 1675
Sausalito, CA 94965
415/332-9434

Advisor Portfolio Manager manages stocks, options, bonds, and commodities for up to 800 portfolios and allows access to the Dow Jones News/Retrieval service. The program creates profit profiles and provides cross-referencing between accounts for both symbols and conditions. Portfolios can be updated individually or as a group, and all information on file can be displayed on screen or printed in a variety of reports. *Advisor Portfolio Manager* includes built-in help features cross-referenced to the user manual. Options include an integrated mailing list and an industry group cross-reference. List price: \$795. Requirements: 64K, two disk drives.

CUPlan

Robert Eldridge & Associates
3184 Kingsley Pl.
Lafayette, CA 94549
415/284-2937

CUPlan is a financial reporting and forecasting program that provides a 5-year financial and statistical data base. Designed for credit union managers and controllers, the menu-driven program includes a complete set of nine preformatted monthly credit union financial reports. List price: \$950. Requirements: 64K, two disk drives, printer.

Commodity/Stock Chartmaster

Professional Farm Software
219 Parkade
Cedar Falls, IA 50613
319/277-1278

Commodity/Stock Chartmaster produces charts for up to 60 commodities or stocks. The program generates high, low, and close bar charts, moving averages, and point and figure charts. List price: \$400. Requirements: 128K, two disk drives, color graphics board.

Loancomp

Contract Services Associates
706 S. Euclid
Anaheim, CA 92802
714/635-4055

Loancomp is a loan calculations program for investors, real estate agents, and bankers. The program performs both single- and double-precision calculations. *Loancomp* handles mortgage loans with equal monthly payments, mortgage loans with monthly payments that equal principal plus interest, installment loans (ordinary annuities in general), installment loans with add-on interest-annual rates, payments required to amortize principal, true annual percentage rate computation, and rule of 78s. The program prints summary or month-by-month breakdown reports and shows monthly balance. *Loancomp* issues yearly reports showing the total interest and principal payments in addition to the remaining balance. List price: \$99.95. Requirements: 64K, one disk drive.

TK! SolverPack for Financial Management

Software Arts
27 Mica Ln.
Wellesley, MA 02181
617/237-4000

TK!SolverPack is an application package that provides equations, values, and tables to solve the most frequently encountered financial management problems. The program has 13 models, including option analysis, net present value, compound interest, convertible debt analysis, bond refunding, and cost-of-equity capital. The models have both built-in and user-defined functions that allow users to develop their own models. List price: \$100. Requirements: 128K, one disk drive, *TK!Solver*.

Financial Analyst

Analytical Software, Inc.
10939 McCree Rd.
Dallas, TX 75238
214/340-2564

Financial Analyst creates five-year plans or financial analyses that include income statements, balance sheets, and cash flow analyses. The menu-driven program provides "what if" calculations, goal-seeking consolidation, real estate and acquisition analysis, and discounted cash flows. Tax functions incorporate recent tax laws including depreciation and tax benefit schedules. *Financial Analyst* plots graphs from financial forecasts, complete with growth rates and automatic scaling. Financial statements can be tailored to specific needs by renaming and inserting lines and defining calculations. List price: \$180. Requirements: 64K, one disk drive, printer.

Pear Technical Analysis

Remote Computing
1044 Northern Blvd.
Roslyn, NY 11576
800/645-3120

Pear Technical Analysis retrieves and stores price, volume, and related data for publicly traded securities, financial futures, commodities, and options. The program has graphics, modeling, and evaluation capabilities. *Pear Technical Analysis* includes routines that create permanent data files, allowing users to add, delete, list, or modify time-period calculations. The system connects with Remote Computing's Merlin Data Base through its Dial/Data service, providing access to historical and daily prices of more than 12,000 issues. List price: \$995. Requirements: 128K, two disk drives, printer.

QuikCalc Loan Analyzer

Simple Soft, Inc.
480 Eagle Dr. #101
Elk Grove, IL 60007
312/364-0752

QuikCalc Loan Analyzer analyzes loans and mortgages and calculates interest rates over whole loan or early termination periods. Designed for users without prior computer experience, the program calculates interest rates, payments and interest between dates, balance at specific dates, net present value, net loan proceeds, and early term balloon payments. List price: \$99.95. Requirements: 64K, one disk drive, *SuperCalc* or *VisiCalc*.

Financial Applications

The Depreciator

SimSoft Associates
P.O. Box 7095
Port Huron, MI 48301
313/984-1570

The Depreciator prepares depreciation schedules according to the Accelerated Cost Recovery System (ACRS). The program has calculation and print routines for 3-, 5-, 10-, and 15-year tangible property. Schedules illustrate monthly details, showing totals for each year, and include monthly depreciation expense amounts, accumulated depreciation, and net book values. For depreciable property purchased before ACRS went into effect in 1981, *The Depreciator* has routines that calculate and print depreciation schedules using such traditional methods as straight line, double-declining balance, and sum-of-the-years digits. The program is menu driven and includes complete documentation. List price: \$40. Requirements: 64K, one disk drive, printer.

LIFE Goals

Kinnaird SoftPlans
2953 N.E. Brogden St.
Hillsboro, OR 97123
503/640-2875

LIFE (Life Insurance and Future Equity) is a modular program that produces a custom financial plan analyzing savings, life insurance, and investment strategies for each client of an investment advisor. The program computes federal income tax and Social Security benefits and prepares a 5-year tax plan showing the advantages of eight types of investments. List price: \$945. Requirements: 64K, two disk drives, *SuperCalc*, *WordStar*.

FairValue

Software Options, Inc.
19 Rector St.
New York, NY 10006
212/785-8285

FairValue provides option valuation and strategy analysis of options on stocks, futures, currencies, debt instruments, and indexes. Valuation and analysis can be based on a real-time price quotations ticker. The program includes implied volatility for "what if" analyses and physical/future and American/European models. Users can define underlying price distribution as lognormal or normal for futures calculations. List price: \$495. Requirements: 192K, two disk drives, color graphics board.

Quikcalc Depreciation Analyzer

Simple Soft, Inc.
480 Eagle Dr. #101
Elk Grove, IL 60007
312/364-0752

Quikcalc Depreciation Analyzer handles straight-line and declining-balance depreciation and Accelerated Cost Recovery System (ACRS) methods. Any type of property can be analyzed including personal property, real estate, low-income housing, and public utility property. The program considers all tax implications including depreciation expense, investment tax credits and taxes on disposition. The net ownership cost is computed on a monthly, annual, and net present value basis. List price: \$99.95. Requirements: 64K, one disk drive, *SuperCalc* or *VisiCalc*.

Bond Ware

Davidge Data Systems Corp.
55 Perry St.
New York, NY 10014
212/691-4410

Bond Ware is a bond calculator and swap evaluator that computes yields for all types of bonds and evaluates bond portfolios and swaps. The program evaluates short-term money market trading strategies. *Bond Ware* protects data with a block-mode screen and includes a filing system. List price: \$350. Requirements: 64K, two disk drives.

Stockcal

RLJ Software Applications
306 N. Wolcott St.
Hillsdale, MI 49242
517/439-9605

Stockcal stores and updates company information on disk, performs stock selection calculations, and permits data storage. List price: \$39.95. Requirements: 64K, one disk drive.

Business Finance Utility

First Release Software, Inc.
5814 Jester
Garland, TX 75042
214/495-1323

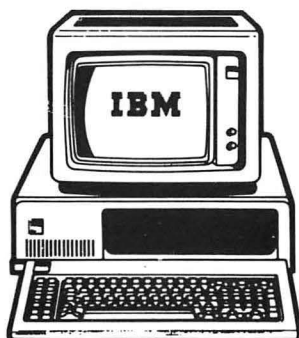
Business Finance Utility can handle accounts receivable, accounts payable, banking, and income statements. The program creates mailing lists, appointment books, and inventory statements. *Business Finance Utility* is designed for small businesses and personal accounting. List price: \$129.95. Requirements: 64K, one disk drive, printer.

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Accounting



Linda L. Duttenhaver

Accounting is a central function in every business, whether it is a small enterprise or a multimillion-dollar company. Accounting procedures keep track of the financial information a business person needs to manage a company effectively. Accounting involves processing orders; keeping track of inventory, receivables, and payables; writing checks; calculating payroll; providing management reports; and maintaining a complete financial picture in a general ledger. Accurate accounting information is critical to such activities as forecasting and cash flow management.

Accounting software provides one major advantage over traditional accounting methods: the programs save tremendous amounts of time and effort. Computerization eliminates tedious reentry and information processing, making it possible to obtain information instantly that was previously available only after hours, days, or even weeks of research and calculation. One example of sophisticated accounting software is a program that provides an income statement report with budget variances and that automatically compares actual costs to budgeted amounts and calculates a percentage difference. Another example is a program that produces an inventory performance report showing net sales in both quantity and dollar amount with computed inventory turnover and margins from cost to retail price. Such a report quickly provides essential information like the average amount of time inventory has been in the warehouse and the cost of the inventory.

The key to selecting optimal accounting software lies in carefully assessing your company's requirements: the reports that must be generated, the way payments are recorded and customers billed, and necessary special features. Carefully evaluate accounting packages to determine which ones best fulfill these requirements. Look for flexibility and integration. The program should work for several applications and provide both standard and customized reports. It should include as many options as

possible for ledger setup, open credit reconciliation, taxable computation, and report generation.

Computerized accounting systems should be capable of expanding as business requirements grow. With many systems, as an organization's needs change, new packages that work with the existing system can be added. If the system is fully integrated, you can avoid entering information over and over, since the components report to one another and automatically update data files. One example of integration is the ability to update accounts receivable transactions to the general ledger. Another is the ability to use data created by one program with another program, such as a word processor or a spreadsheet, to allow you to make maximum use of information.

You can expect microcomputer accounting software developments to continue in the direction of increased flexibility and integration. The first microcomputers had limited memory and disk storage capacities, and as a result early accounting programs could perform only the most basic operations and store a minimum of data. As the microcomputer industry developed, storage and memory capacities increased. Expanded capabilities now provide room to run complex programs and store detailed accounting information. Hard disk systems that store many programs and data base management systems that cross-reference information from various sources will become more prevalent.

With better software, accounting information will increasingly become a management tool, used for not only day-to-day accounting requirements, but also management reporting, analysis, and projections.

Linda L. Duttenhaver is marketing manager for TCS Software, Inc., in Houston.

Maxi Accountant

Business Division
155 Sabal Palm Dr.
Longwood, FL 32750
305/862-6917

Maxi Accountant is an integrated group of accounting programs that includes Order Entry, Fixed Assets, Accounts Payable, General Ledger, Accounts Receivable, and Payroll. Each program is menu driven, and users can define their own chart of accounts and other functions. The system holds up to 1000 accounts. Each program has a help screen and five levels of password protection. The fixed-asset module handles several methods of depreciation and produces tax data. A tutorial and reference guide is included. List price: \$795. Requirements: 128K, two disk drives (hard disk recommended).

Economic Order Quantity

Execuware
7415 Pineville-Matthews Rd. #300
Charlotte, NC 28226
704/541-1199

Economic Order Quantity is a menu-driven program that determines the most cost-effective levels for inventory. The program performs a variety of "what if" functions using seven types of merchandise information: lead time from supplier, average demand, number of items sold at a time, cost to carry in inventory, ordering cost, period to be analyzed, and acceptable probability of "stock out." Users can determine the cost of lead time and other factors. List price: \$92.95. Requirements: 64K, one disk drive.

Ledger 1

Soft Lab
P.O. Box 2186
2545 Perry Ave. N
Bremerton, WA 98310
206/479-3700

Ledger 1 is an accounting package that includes General Ledger, Accounts Receivable, and Accounts Payable programs. With the use of a hard disk the modules can support multicompartment accounting. Accounts Receivable and Accounts Payable require NEB forms. General Ledger can copy a chart of accounts to a new company. It allows consolidations but does not provide for previous-year comparisons. Accounts Receivable looks up customers alphabetically and numerically, and new customers can be set up from the invoice entry screen. The program requires the NEB statement format and does not print invoices. Accounts Payable allows vendors to be added from the invoice screen and provides alternate selections for payment. List price: \$195 per module. Requirements: 64K, two disk drives, RM/COBOL Runtime Package.

Fund Accountant

Computer Center
366 U.S. Rt. 1
Falmouth, ME 04105
207/781-2260

Fund Accountant is a menu-driven, multifund budgetary accounting system for nonprofit organizations. The program consists of Accounts Receivable, Accounts Payable, and Payroll modules, which automatically post to the general ledger, and

it has flexible account numbering that allows up to 22 alphanumeric digits. Several organizations can use the system, which is limited to 99 accounts per disk. The program has help screens, and the RM/COBOL source code is provided. List price: \$5700. Requirements: 64K, two disk drives.

"Fund Accountant is a comprehensive accounting system, modularized to fit the needs of both small and large agencies, but it does not focus on any federal or state reporting that might be required." Paul Rabenold, Allentown, Pennsylvania

Money Track

Pacific Data Systems Inc.
6090 Sepulveda Blvd.
Culver City, CA 90230
213/559-8713

Money Track is a financial record-keeping system that tracks up to 99 funds, 99 businesses, and 900 ledger accounts. Designed for investors, trustees, accountants, and small-business owners, the program records simple expense payments and complex financial transactions. *Money Track* files transactions for a fiscal year on one disk with a maximum file storage size of 4800 records or 400 per month. The menu-driven program prepares numerous types of reports including lists of transactions, balances, repeating items, and entry audit. *Money Track* prints checks following up to nine formats, copies transactions that are repeated periodically, flags checks that have cleared the bank, prepares a year-end transaction summary, and generates balances forward for each fund, asset, and liability. List price: \$295. Requirements: 64K, two disk drives, printer.

Tax Master

Lifeboat Associates
1651 Third Ave.
New York, NY 10028
212/860-0300

Tax Master automatically selects the most advantageous tax method and allows users to save clients' personal and tax information from year to year. The program calculates fixed assets; amortization; Form 1040; Schedules A-G, R, RP, and SE; and Forms 1040ES, 1116, 2106, 2119, 2210, 2441, 3468, 3903, 4136, 4255, 4625, 4684, 4784, 4797, 4952, 5695, 5884, and 6252. The program can be used with Lifeboat's *Tax Planner*. The documentation includes a cassette tutorial, a step-by-step workbook, and case studies. List price: \$595. Requirements: 48K, two disk drives.

Personal Computer/Fixed Asset System

Best Programs, Inc.
5134 Leesburg Pike
Alexandria, VA 22302
703/931-1300

Personal Computer/Fixed Asset System (PC/FAS) keeps records of assets for IRS and other reports and helps manage owned and leased property, equipment, and fleets. The program calculates ACRS and five other types of depreciation and investment tax credits, handles up to 99,999 fixed assets, and prints reports on each item by location, custodian, date, and manufacturer. *PC/FAS* includes on-screen prompts and a user manual. List price: \$395. Requirements: 128K and DOS 2.00 or 64K and DOS 1.10, one disk drive, printer.

Peachtree Accounting Software

Peachtree Software
3445 Peachtree Rd. NE
Atlanta, GA 30326
404/239-2045

Peachtree Accounting Software for the IBM PC produces a set of five menu-driven accounting programs that work together or separately. Modules consist of General Ledger, Accounts Receivable, Accounts Payable, Inventory, and Payroll. Programs automatically post to General Ledger at the end of each accounting period. There are two levels of password protection, and the forced-entry-balancing option helps prevent out-of-balance errors from being posted to master files. List price: \$595 per module (also distributed by IBM at \$595 per module). Requirements: 64K, two disk drives.

Graphic General Ledger 2.0

Datacount
P.O. Box 2312
Opelika, AL 36801
205/749-5641

Graphic General Ledger Rev. 2.0 is designed for certified public accountants. The program has a graph generator and an audit trail that enables users to trace any amount in a report to its source. Reports can be viewed on screen before printing, and users can produce a variety of line graphs. The program is written in Compiled BASIC. List price: \$299. Requirements: 64K, two disk drives.

PeachPak 4

Peachtree Software, Inc.
3445 Peachtree Rd. NE
Atlanta, GA 30326
404/239-3000

Peachpak 4 consists of three interactive business applications packages: accounts receivable, accounts payable, and general ledger. The program, which supports but does not require a hard disk drive, is designed for small businesses with limited computer capacities. List price: \$395. Requirements: 64K, two disk drives.

Business Accounting Control Systems

American Business Systems
3 Littleton Rd.
Westford, MA 01886
617/692-2600

Business Accounting Control Systems is a multiuser menu-driven accounting system available in color versions. The five modules work separately or together. An extensive audit trail reports any modifications to the data base. Multiuser versions allow up to 99 companies with up to 100 departments for each company and up to 100,000 accounts for each department. Users can display management reports on screen without printing them and decide which modules they wish to post automatically to General Ledger. The other modules are Order Entry and Inventory Management, Accounts Receivable, Accounts Payable, and Payroll. List price: \$1000 per module. Requirements: 128K, one floppy disk drive, hard disk.

Calc-Plus, Full System

Micro Instructional
3453 N.W. 55th St.
Fort Lauderdale, FL 33309
305/485-6880

Calc-Plus is a group of accounting templates for use with *SuperCalc* or *VisiCalc* that can be purchased separately or as a package called *Full System*. Each module includes audio instructions and documentation on disk. Accounts Receivable is designed for individual customer accounts. Payroll is formatted for hourly and salaried employees, computing FICA and net check amount and allowing entry of FIT. The payroll statement form allows the printing of period and year-to-date information taken from the payroll check. Depreciation includes schedules for four categories. There are also Accounts Payable, Cash Disbursement, and Cash Receipts Journal modules. Using the *Full System*, data is drawn from each module to construct a balance sheet and an income statement. List price: *Calc-Plus* \$29.95 to \$39.95 per module, *Full System* \$169.95. Requirements: 64K, two disk drives.

HAI*Line

Holland Automation
3400 W. MacArthur Blvd., Ste. D
Santa Ana, CA 92704
714/641-2844

*HAI*Line* is a comprehensive double-entry accounting package that has program options to change operations of separate applications. The applications work separately or together. Programs allow variable tax

rates, choice of costing methods in inventory, optional second reference on invoices, and optional posting descriptions. Invoice aging can be done by due or invoice date, items can be selected for printing by product group, and accounts receivable reports can print both name and address or name only. Transactions are not accepted into an applications module until the program certifies their validity, and each transaction generates and keeps its own reference for audit control. Written in BASIC, the modules consist of General Ledger, Accounts Receivable, Accounts Payable, Invoicing, Sales Analysis, Inventory, Manufacturing, and Filekeeper. List price: complete package except Manufacturing \$2500, individual modules \$495, Invoicing \$395. Requirements: 64K, two disk drives.

Versa Business Series

H & E Computronics, Inc.
50 N. Pascack Rd.
Spring Valley, NY 10977
914/425-1535

Versa Business Series is a group of menu-driven accounting programs that work together or independently. The modules consist of General Ledger, Accounts Receivable, Accounts Payable, Payroll, and Inventory. Modules automatically post to General Ledger, and users can either define their own chart of accounts or work with the one included in the program. General Ledger has a minimum of 615 accounts, and a source code for the program is included. List price: General Ledger \$149.95, other modules \$99.95 each. Requirements: 48K, two disk drives.

Infotory Management System

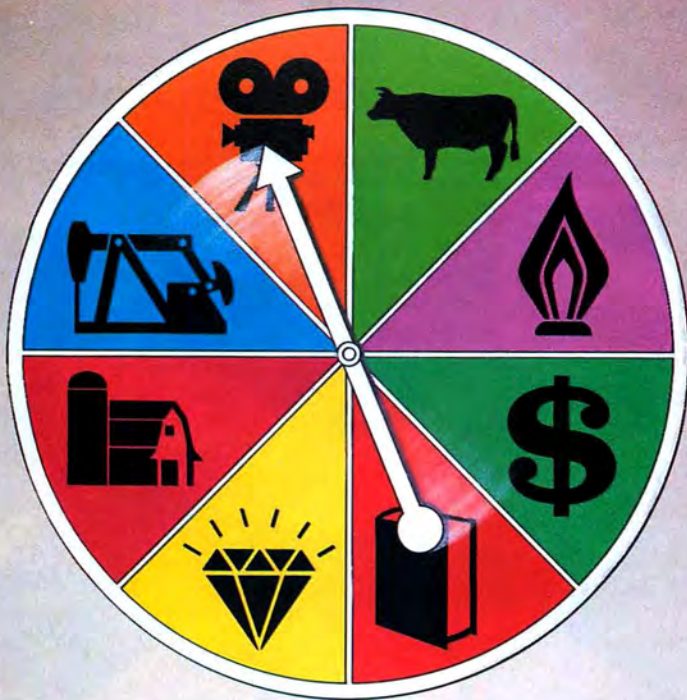
S.S.R. Corporation
1600 Lyell Ave.
Rochester, NY 14606
716/254-3200

Infotory Management System enables users to generate custom inventory reports. The program is available in an IBM PC or XT version. Depending on the version and system memory, from 5000 to 65,000 items can be held in inventory with 36 predefined fields for each item. The program has category code assignments and flags items out of stock. Sales cost and receiving can be done on a month-to-date or year-to-date basis, and the main menu produces four standard reports. List price: PC version \$425, XT version \$575. Requirements: PC version 64K, two disk drives; XT version 128K, one disk drive.

Electronic Checkbook

Courtland Data Systems
P.O. Box 14414
Chicago, IL 60614
312/549-2029

Electronic Checkbook is a menu-driven program that maintains a checkbook and does basic budgeting. Users can reduce data entry by abbreviating regular entries. The program prints checks in a standard format or enables users to design their own. It generates budget and audit reports in up to 100 categories. An extra disk with a sample program application is included. List price: \$120. Requirements: 64K, one disk drive.



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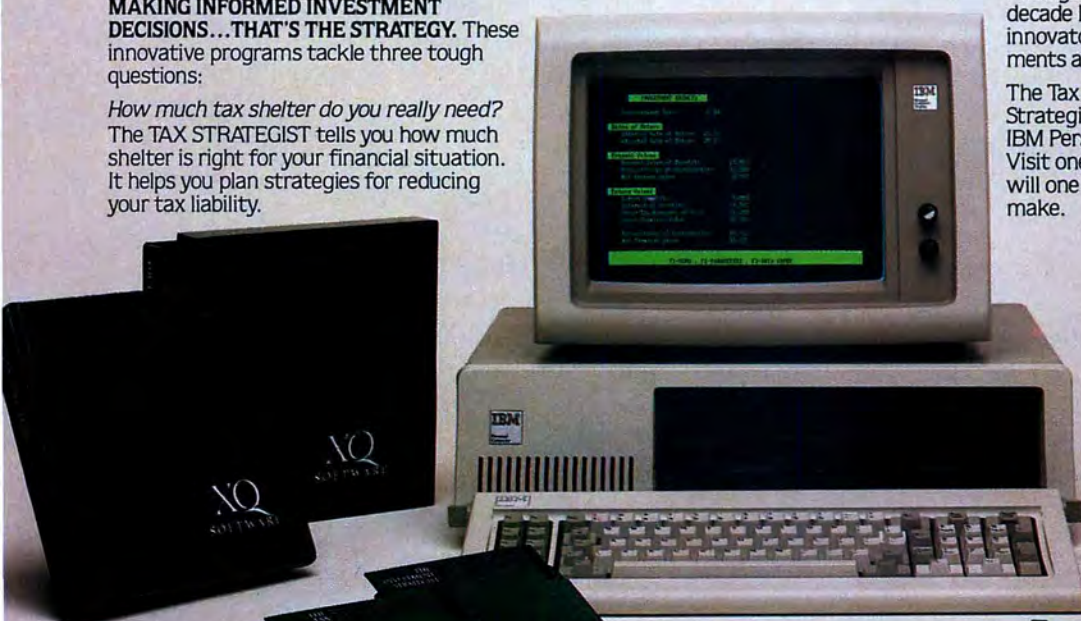
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DataWrite, Post Facto Payroll, Fixed Asset Management

Accountants Microsystems Inc.
3633 136th Pl. SE
Bellevue, WA 98006
206/643-2050

DataWrite is a menu-driven accounting system in three parts: Journalizing Data Entry, Client Set-Up, and DataWriter. DataWriter is a menu-designed report writer that includes eight standard reports and also allows users to create reports of their own. The user-definable chart of accounts provides up to 99 cost divisions, and the program can carry multiple sets of books. Two modules can be purchased separately and used with *DataWrite*. *Post Facto Payroll* integrates payroll into the general ledger. The other module is *Fixed Asset Management and Depreciation and Amortization*. A three-day training session is included in the purchase price of *DataWrite*. List price: *DataWrite* \$3495, *Post Facto Payroll* \$400, *Fixed Asset Management and Depreciation and Amortization* \$795. Requirements: 256K, one floppy disk drive, 5M hard disk.

CPAids Standard Tax

CPAids
1061 Fraternity Circle
Kent, OH 44240
216/678-9015

CPAids Standard Tax is a short version of *CPAids Master Tax* that has 17 forms and schedules but no pro forma or overflow schedules. List price: \$595. Requirements: 128K, two disk drives.

Real World General Accounting

Real World
Dover Rd., Willow Hill Bldg.
Chichester, NH 03263
603/798-5700

Real World Integrated General Accounting is a group of seven menu-driven, interactive programs written in RM/COBOL and Micro Focus Level II COBOL. All the modules are stand-alone programs except Sales Analysis, which requires the use of Accounts Receivable. Each program has password protection and help keys, and where applicable the user can make on-screen account inquiries. General Ledger handles up to 13 accounting periods, supports multiple profit centers, and allows users to define formats for printing financial statements. Order Entry enables users to invoice orders on entry or hold them open, and it prints picking tickets and invoices for all orders billed. Inventory Control provides for inventory costing by average or standard cost, or by last-in-first-out or first-in-first-out. It also has multi-warehousing capabilities. Accounts Receivable supports balance forward or open-item accounts and has flexible aging and open-item reports. Accounts Payable prints checks and the check register and provides partial and other payment selections. Payroll accommodates seven pay schedules with a wide variety of special deductions and earnings. The program also prints W-2 forms and year-end reports. Sales Analysis locates specific areas of increasing or decreasing sales and analyzes them by customer, customer type, customer sales, or volume. List price: with source code \$1000 per module, with object code \$650 per module. Requirements: 128K, two disk drives.



CPAids Master Tax

CPAids
1061 Fraternity Circle
Kent, OH 44240
216/678-9015

CPAids Master Tax provides 30 tax forms and schedules with a choice of print options and K-1 input. The program allows overflow and multiple scheduling. Also included are a built-in depreciation and loan amortization program and a pro forma tax organizer. List price: \$1695. Requirements: 128K, two disk drives.

Bonus Accounting

Programming Shop
1164 Umbarger Rd.
San Jose, CA 95121
408/226-2157

Bonus Accounting is a menu-driven, double-entry general ledger program with a user-definable chart of accounts. The program, which includes five standard accounting divisions and their subdivisions, provides for compound transactions and handles up to 500 accounts. *Bonus Accounting* can produce several reports including trial balance, profit and loss, a balance sheet, and a budget report. A help menu assists users in entering debits and credits. List price: \$150. Requirements: 64K, two disk drives.

CPAids Client Write-up

CPAids
1061 Fraternity Circle
Kent, OH 44240
216/678-9015

CPAids Client Write-up is a menu-driven accounting system that has error tracking and editing. The system includes a general ledger and a payroll program. A flexible report generator allows users to customize financial statements. The program accepts up to 999 accounts and up to 99 departments and branches. The chart of accounts can be reproduced for new clients. The program also generates Schedule C on the 1040 return. *Client Write-up's* word processor prepares disclaimer letters with footnotes and generates W-2 Forms, 1099s, and a payroll register. All of the written documentation is on disk. List price: \$995. Requirements: 128K, two disk drives.

TCS Total Accounting System

TCS Software, Inc.
3209 Fondren
Houston, TX 77063
713/977-7505

TCS Total Accounting System is a group of programs with a built-in data base that allows users to post information from one program to another without rekeying entries. Users can produce a variety of reports. Programs include Total Ledger, Total Receivables, Total Payables, Total Inventory, and Simple Filing System. They may be purchased separately. List price: \$350 per program. Requirements: 64K, two disk drives.

MACS

MACS
1581 N. Farris
Fresno, CA 93728
209/266-1769

MACS (Management Accounting Computer System) is a multiple-enterprise accounting program with income and expense reports for each enterprise and a combined profit/loss and balance sheet. The program produces a checkbook report with checks and deposits identified by enterprise, location, and tax classification and creates a complete audit trail with error correction. Data may be used as input for *dBASE II* and *1-2-3*. The program automatically analyzes users' business operations. List price: \$1000. Requirements: 256K, two disk drives.

Inventory Service, Inventory Stockroom

Fogle Computing Corporation
P.O. Box 5166
Spartanburg, SC 29304
800/845-7594, 803/574-4950

Inventory Service and *Inventory Stockroom* are menu-driven inventory control programs that provide 10 alphanumeric digits to define stock numbers. *Inventory Service* is a general inventory program that has a report writer and creates user-designed reports. The program also automatically invoices work in progress and prints invoices that include labor charges. *Inventory Stockroom* is a more specific inventory application that allocates inventory usage to departments for a corporate stockroom and allows billing of various departments. List price: \$800 each. Requirements: 128K, two disk drives.

Micro Ledger

Tiny Systems
660 N. Glenville Dr.
Richardson, TX 75081
214/699-0262

Micro Ledger is a set of programs that can operate independently or together. The program includes Payroll, General Ledger, Accounts Receivable, Accounts Payable, and Job Costing. Payroll can accommodate 250 to 1000 employees depending on disk storage capacity. The program handles hourly and salaried employees, varied pay frequencies, bonus checks, special payrolls, and multiple voluntary deductions. General Ledger permits post closing of entries (posting to the previous month). Transactions can be stored separately, so the same ledger program can be used for many companies or clients. Users can design financial reports that include year-to-date amounts and percentages. Users can update the ledger in either batch or interactive mode. Accounts Receivable uses two-digit user-defined codes for sales analysis, and specific procedures for returned checks, returns for credit, over/under charges, and over/under payment adjustments. Accounts Payable allows flexible scheduling of payments for best cash flow. All transaction activity can be displayed. An open-item system with automatic aging, Accounts Payable permits checks to be written manually. Job Costing can be used with General Ledger and Accounts Payable. List price: \$750 per module. Requirements: 56K, CP/M-86, two disk drives.

Micro-Tax

Microcomputer Taxsystems, Inc.
6279 Variel Ave., Ste. D
Woodland Hills, CA 91367
213/704-7800

Micro-Tax is a group of menu-driven programs for tax preparation that can be used separately or together. Each program is organized around the tax structure for federal or state returns and follows the IRS pre-defined rules for descriptive fields. Microcomputer Taxsystems places update files under its source account when changes need to be made in the various programs. Users without source accounts receive the same information in the mail. *Micro-Tax Level I* prepares 14 schedules and forms, provides for multiple clients, prints IRS forms, and automatically selects alternative tax methods. No batch printing is included, and the program cannot be used with the *Micro-Tax* state tax programs.

Micro-Tax Level II prepares individual or professional tax returns on 33 schedules. A depreciation module computes according to the Accelerated Cost Recovery System or non-recovery methods. *Micro-Tax Level III* prepares corporate or partnership returns, handles Subchapter S, and provides for depreciation on an asset-by-asset basis or for all assets on file. The number of K-1 partnership returns is limited only by disk capacity, and the program can be integrated with *Level I*. *Micro-Tax State Tax Packages* provides returns for 23 states with crossovers of common double filings (such as New York/New Jersey or Missouri/Kansas).

The programs require *Level II*. Repeated information from the federal forms is automatically transferred. Users are alerted to any information that may have to be changed for the state forms or to unique data that must be entered. All the programs allow batch printing and printing on IRS forms, substitute forms, or blank paper for use with overlays. List price: Level I \$195, Levels II and III \$1000 each, state packages \$250 to \$750. Requirements: 96K, two disk drives.

"Micro-Tax is comprehensive, but complex for a nonprofessional. The program has more options than are offered by many less expensive service bureaus." Scott Heinz, Goleta, Georgia

Estate Tax Plan

Aardvark Software
783 N. Water St.
Milwaukee, WI 53202
414/289-9988

Estate Tax Plan is designed for estate planning and permits simultaneous analysis of up to four different scenarios. The program analyzes estate tax liability, present value of taxes, deferred payment of estate tax liability, and liquidity and performs other calculations. Included among the types of input are marital deduction codes, growth rate assumptions, multiple businesses, and outright and split-interest bequests to charities. List price: \$750. Requirements: 64K, two disk drives.

Business Software Series

Spectrum Software
690 W. Fremont
Sunnyvale, CA 94087
408/738-4387

Business Software Series includes General Ledger, Accounts Receivable, and Personal Finance Master. General Ledger has an accounts manager and a journal. Accounts Receivable has a manager and a journal invoice, prints reports, and posts to General Ledger with update balances. The program handles up to 500 accounts per month, 500 transactions per account, 20 invoices per day, and 60 product codes and 250 journal entries per month. Each transaction has six data fields: number, day, description, amount, debit, and credit. Personal Finance Master is a check writing and bank account reconciliation program that prints checks and produces a net worth report. List price: Business Series \$250, General Ledger and Accounts Receivable \$150 each, Personal Finance Master \$75. Requirements: 64K, one disk drive.

Corporate 1120

CPAids
1061 Fraternity Circle
Kent, OH 44240
216/678-9015

Corporate 1120 is a corporate tax program that automatically completes pages 1 through 4 of the 1120 Form, Schedule D, and Forms 3468, 4562, 4797, 4874, 5884, and 2220. The program automatically calculates the alternative minimum tax. It can be used with CPAids' general ledger. List price: \$500. Requirements: 128K, two disk drives.

Software Fitness Program

Open Systems
430 Oak Grove
Minneapolis, MN 55403
612/870-3515

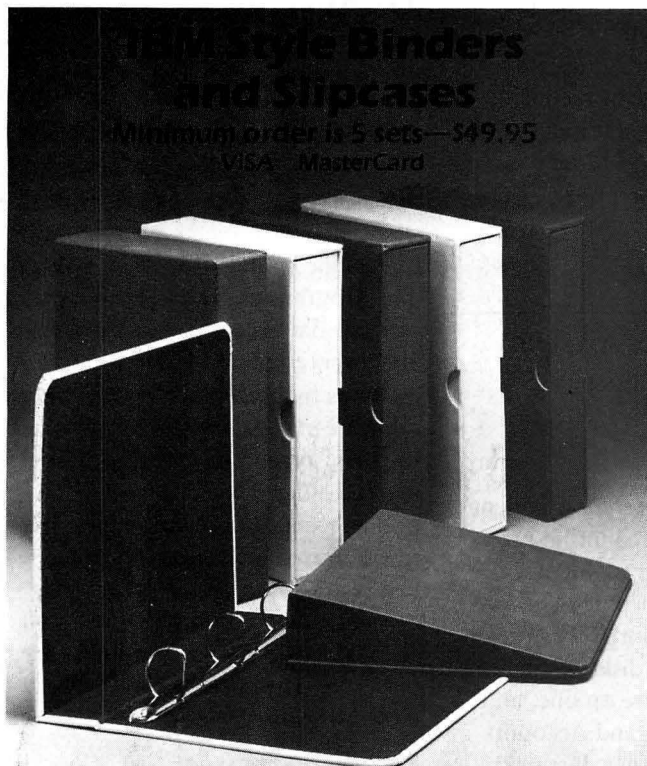
Software Fitness Program is a set of seven menu-driven, single- and multiuser accounting applications available in BASIC or RM/COBOL. The modules consist of Accounts Payable, Accounts Receivable, General Ledger, Inventory, Job Cost, Sales Order Processing, and Payroll. Designed for hard disk systems, the programs can hold the books of over 60 companies. Users decide which modules they wish to have posted automatically to General Ledger.

Each program provides on-screen error verification. Two additional programs can be used with *Software Fitness Program*. *Coach* teaches basic accounting as well as how to use each *Software Fitness* application. *Team Manager* can be used with any of the other modules to produce specific reports. Data can also be reformatted for use by word processors, spreadsheets, and data management programs. Sales Order Processing requires the use of Accounts Receivable. List price: \$525 per module. Requirements: 64K, one floppy disk drive, 5M hard disk.

Powerful Business Software

Distributed Computing Systems
157 S. Martha St.
P.O. Box 185
Lombard, IL 60148
312/495-0121

Powerful Business Software is an integrated Order Entry, Invoicing, Inventory Control, Accounts Receivable, and Sales Analysis package. All modules are interactive. The system handles large data bases and produces history and forecasting graphics. The modules cannot be used with a general ledger. List price: \$695. Requirements: 64K, two disk drives.

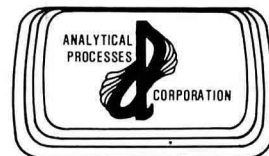


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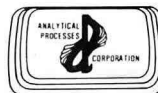
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Big One, Little Ledger

Software Solutions
P.O. Box 301
Muscatine, IA 52761
319/264-1384

Big One is a menu-driven general ledger system. Users can list multiple companies and multiple profit centers for each company on the same chart of accounts. Written in Pascal, the program provides for up to 24 months of profit and loss comparisons, does budgeting for all income and expense accounts, and produces other standard reports and journals. The other modules that can be integrated with General Ledger are Inventory, Accounts Receivable/Invoicing, Payroll, and Accounts Payable. A smaller version of *Big One, Little Ledger* allows for 100 general ledger accounts and multiple profit centers. List price: *Big One* \$895, additional modules purchased with system \$495 each, modules purchased separately \$595 each, *Little Ledger* \$595. Requirements: 64K, two disk drives (hard disk recommended), UCSD p-System.

MICA Accounting Series

Micro Associates, Inc.
2300 Highway 365 #510
Nederland, TX 77627
409/724-6583

MICA Accounting Series is a group of double-entry, menu-driven accounting programs that use the IBM PC function keys to perform similar operations in different modules. The modules work separately or together, and, except for Inventory, they automatically post to General Ledger. Other modules consist of Accounts Payable, Payroll, and Accounts Re-

ceivable. Users can choose to move up or down through prompts. General Ledger handles up to 500 accounts, and reports can be updated throughout each fiscal period. While processing partial payments, Accounts Payable retains records for prepaid invoices, credit memos, and returns and adjustments. Payroll handles up to 20 types of compensation, including commissions and nontaxable wages, and carries records of salaried and hourly employees for multiple payroll cycles. Inventory Control maintains location codes, maximum and minimum reordering levels, quantities in stock, unit costs, and four price levels for each unit. Accounts Receivable accommodates open-item and balance-forward customers simultaneously and provides detailed agings with auto-billing, open-credit reconciliation, finance charges, and sales commissions. List price: \$395 per module. Requirements: 64K, two disk drives.

Complete Business System

Omni Software Systems
146 N. Broad St.
Griffith, IN 46319
219/924-3522

Complete Business System is a menu-driven, interactive accounting program that handles up to 400 accounts in any sequence. Users can design their own reports. The programs come on two disks; General Ledger and Payroll are on one, and Accounts Receivable and Accounts Payable are on the other. List price: \$500. Requirements: 128K, two disk drives.

After-the-Fact Payroll

Omni Software Systems
146 N. Broad St.
Griffith, IN 46319
219/924-3522

After-the-Fact Payroll is a menu-driven, passive payroll system that handles records for up to 1000 employees and multiple employers on a single disk. Designed exclusively for accountants, the program prepares all necessary reports and maintains complete client payroll information. The program prints W-2 and other required forms. List price: \$250. Requirements: 128K, two disk drives.

Tax Mini-Miser

Sunrise Software
36 Palm Ct.
Menlo Park, CA 94025
415/441-2351

Tax Mini-Miser computes the effects of six alternative tax strategies for a single year or projects the tax effects of a single strategy for up to 6 years. The program uses a full-screen display for data entry. Special keys enable users to increase the data in columns by percentage or amount, replicate entries in columns, display the help screen, and return to the menu. Under the company's update policy licensed users are directly notified about new versions. Update prices are based on the complexity of legal changes but will not exceed 50 percent of the retail price. List price: \$295. Requirements: 64K, two disk drives.

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AMI

Automation Management

5718 Westheimer #410

Houston, TX 77057

800/231-0634, 713/781-5941

AMI is a group of menu-driven accounting programs sold as integrated systems or in separate modules. Each program has help menus and full-screen input that permit users to respond to a series of questions at once, eliminating repetitious pressing of the <Enter> key. Written in BASIC, the programs include source code. Though designed for the PC XT, they can also be used on the IBM PC. The separate modules are Inventory, Accounts Receivable, Accounts Payable, Client Accounting, General Ledger, Payroll, and Job Cost. List price: Accounts Receivable, Accounts Payable, Payroll \$450 each; Client Accounting \$750; General Ledger \$675; Job Cost \$375. Requirements: 128K, two disk drives.

AMI CPA System

Automation Management

5718 Westheimer #410

Houston, TX 77057

800/231-0634, 713/781-5941

AMI CPA System provides Time Accounting, Client Write-up, and an After-the-Fact Payroll system for certified public accountants. The program includes the standard AMI Accounts Receivable module and produces extensive reports, but it is limited to 99 clients on a disk at one time. List price: \$2195. Requirements: 128K, two disk drives.

AMI Manufacturing Package

Automation Management

5718 Westheimer #410

Houston, TX 77057

800/231-0634, 713/781-5941

AMI Manufacturing Package incorporates AMI's standard General Ledger, Accounts Payable, Accounts Receivable, Payroll, and Billing modules and also includes special manufacturing Job Cost and Inventory modules. List price: \$2995. Requirements: 128K, two disk drives.

Tax Relief II

Micro Vision

135 Herzel Blvd.

Lindenhurst, NY 11757

516/226-7130

Tax Relief II combines two independent menu-driven tax preparation programs. The more advanced version, Module II, calculates all lettered schedules; Form 1040; Schedules A-G, R, RP, SE, and W; and Forms 4625, 6251, 2106, 3903, 2441, 2210, 5695, 3468, 4562, 4972, and 1040ES. A help key gives on-line explanations for entering information. When more detail is required, users are referred to the appropriate page of the IRS tax guides. The program automatically calculates income average, minimum tax, and alternate minimum tax. Data can be entered or modified by entering the line number. Module II has batch printing.

Module I of *Tax Relief II* is identical to Module II except that it does not include batch printing and does not produce schedule RP, or forms 2210, 4972, and 1040ES. List price: Module I \$149, Module II \$299. Requirements: 64K, two disk drives.

Basic Accounting

Computer Systems Design, Inc.

P.O. Box 735

Yakima, WA 98907

509/453-2956

Basic Accounting consists of five menu-driven accounting programs that work independently or together. All the programs have help screens, and errors are indicated upon entry. General Ledger's chart of accounts holds up to 400 accounts and 99 departments. Payroll automatically posts to General Ledger and provides on-screen updating of taxes, multiple distribution of charges for hourly employees, and overriding of base pay rates. Accounts Receivable uses an open-item format allowing up to 200 customers. Job Cost provides at least 50 classes with 35 jobs each. Accounts Payable holds 300 vendors, updates to Job Cost and General Ledger, and produces checks. List price: \$485 per module. Requirements: 64K, two disk drives.

Tax Preparer

Howard Software Services

8008 Girard Ave.

La Jolla, CA 92037

619/454-0121

Tax Preparer is a menu-driven tax preparation and schedule program that requires verification of input. The program is written in BASIC. Yearly updates are available at additional cost. List price: \$250. Requirements: 64K, one disk drive.

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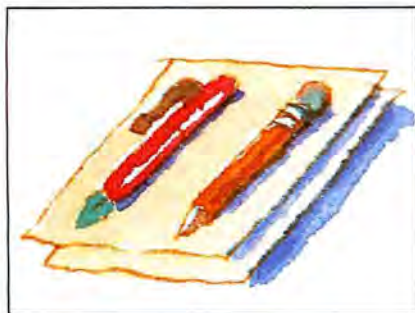
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PC Accounting Pack

Micro Business Applications
12281 Nicollet Ave. S
Burnsville, MN 55337
612/894-3470

PC Accounting Pack is a menu-driven economy package in Micro Business Applications' (MBA) line of accounting programs that run under Concurrent CP/M-86 so that users can perform up to four tasks simultaneously. The package includes Dig-



ital Research's Concurrent CP/M-86 operating system and MBA's General Ledger, Accounts Receivable, and Accounts Payable programs. The programs have help menus, and users choose options by positioning the cursor next to the desired selection and pressing <Enter>. The programs allow on-line inquiries about accounts.

MBA also produces a comprehensive series of independent accounting programs that can be used together. Separately sold interfaces enable MBA accounting applications to work with *dBASE II* and *SuperCalc*. The Multi-Company Option expands MBA's programs to hold several companies' sets of books on the same data disk. General Ledger with Financial Report Writer allows 12

accounting periods to be processed concurrently and has automatic audit trail printing, automatic journal posting from subsidiary ledgers, and automatic year-end closings. Accounts Receivable with Invoicing allows users to define aging periods and includes billing cycles for sales representatives, credit limits, and multiple-sales account distributions.

Accounts Payable with Check Writing provides full-screen invoice entry, allowing multiple general ledger expense distributions. It prints vendor lists by vendor code or name and contains an open voucher report and check register reports. Multi-State/Local Payroll with Check Writing provides detailed employee information for earnings, deductions, and personnel records. It calculates federal, state, and local taxes; prepares 941, 941-A, and W-2 forms; allows up to eight earnings and nine deduction categories; and does check processing or after-the-fact payroll.

Inventory Control with Invoicing permits users to select standard or average costing methods, provides for invoicing with multiple general ledger accounts, and allows for discounts and taxable/nontaxable items. The program has a transaction audit trail, provides performance and sales analyses, and allows part numbers to contain up to 15 alphanumeric characters. Purchase Orders and Requisitions is an optional extension of the Inventory Control package that permits generation and printing of both automatic and manual purchase orders, as well as producing extensive economic order quantity (EOQ) analysis.

Fixed Asset Accounting provides tracking and depreciation of a company's assets, including six methods of depreciation (which can be calculated automatically at any time) and a flexible numbering system that permits multiple locations, departments, and classes of assets.

Professional Time Accounting provides recording and billing information and keeps track of time and services for each client, maintaining up to five lines of work-in-progress notes per entry. The program can print detailed reports for open, closed, and billing files, and automatically prints client statements on standard computer paper or company letterhead. List price: *PC Accounting Pack* \$995, individual modules \$595, Fixed Asset Accounting \$395, Professional Time Accounting \$495, Multi-Company Option \$250, Accounting Application *dBASE II* interface \$100, General Ledger/*SuperCalc* interface \$100. Requirements: 256K, two disk drives.

Eazyacct

Miracle Computing
313 Clayton Ct.
Lawrence, KS 65044
913/843-5863

Eazyacct is a check writer and general ledger that produces reports in a variety of sequences. The program is written in BASIC and handles both interactive and batch processing.

Eazyacct does double-entry accounting and enables users to perform unlimited transactions. It handles 5000 accounts and can record 5000 transactions per disk. List price: \$100. Requirements: 128K, two disk drives.

Small Fortune Auto-Ledger

Emerald Software
2416 Warren Ave. N
Seattle, WA 98109
206/282-2100

Small Fortune Auto-Ledger is a general ledger, double-entry system with automatic balancing, flexible account numbering, and report numbering for up to eight departments. Users can design up to 20 reports and search past transactions on several transaction data fields. List price: interpreted \$200, compiled \$250. Requirements: interpreted 64K, compiled 96K, two disk drives.

Solomon III

Computech
Main Line Industrial Pk.
Lee Blvd.
Frazer, PA 19355
215/765-6666

Solomon III is a series of menu-driven accounting programs that store information in a single data base. The modules consist of General Ledger, Accounts Receivable, Accounts Payable, Payroll, Sales Order/Invoicing, Inventory, Purchasing and Receiving, and Job Costing. Batch balancing techniques at data entry sessions enable users to catch common entry errors. The program has password protection, and reports can be produced at any time during program operation. Users can define their own charts of accounts, and the number of accounts or journal types is limited only by disk space. List price: \$595 per module. Requirements: 256K, two disk drives.

Money Minder

Intelligent Software
4847 Mercury St.
San Diego, CA 92111
619/565-1236

Money Minder is an accounting package that has General Ledger, Accounts Payable, and Accounts Receivable modules that can operate independently or together. General Ledger provides input-auditing tests for accurate balancing before posting and provides complete transaction tracking.

Accounts Payable can produce eight report formats, including check printing, cash requirements, aging, balance, and check register reports. When printing checks, the program calculates discounts and due dates, allowing for partial payments.

Accounts Receivable produces eight reports, including statements, aging, sales productivity, credit limit, and sales tax reports. List price: \$220 per module. Requirements: 64K, two disk drives.

Point of Sales/ Inventory Control

Intelligent Software Systems
P.O. Box 308
Montgomery, WV 25131
304/442-5537

Point of Sales/Inventory Control is a menu-driven program that provides point of sales, sales invoicing, inventory control, and management reports. An added program provides accounts receivable functions, allowing for billing accounts aging and management reports. Each program is on a single disk, has 32,000-item limits, and requires custom forms. List price: \$995, with Accounts Receivable \$1495. Requirements: 128K, two disk drives.

CPAids Tax Planner

CPAids
1061 Fraternity Circle
Kent, OH 44240
216/678-9015

CPAids Tax Planner calculates long-range tax liability and performs "what if" analyses. The program prints customized reports for clients and computes and prints tax tables; sales tax tables; and Schedules G, 4625, 4726, 4972, and 6251. The program also does supplemental calculations for excess investment interest and charitable contributions limits. The program can be set up to account for all government tax guidelines. List price: \$300. Requirements: 128K, two disk drives.

General Ledger

P.B.H.
P.O. Box 485
Morrison, CO 80465
303/697-4750

General Ledger uses menus to produce profit, loss, and balance sheets, trial balances, and detail ledgers. The program uses ASCII sequential data files, enabling users to enter and manipulate information using standard PC-DOS commands. Because the program is not a data base system, mistakes are easy to correct, and reruns are not a problem. An old master ledger becomes the new one (May becomes June, for example). The program accommodates up to 1550 ledger accounts and journals, handles 99 departments, and carries numbers ten places to the left of the decimal. List price: \$250. Requirements: 128K, two disk drives.

Professional Tax Plan

Aardvark Software
783 N. Water St.
Milwaukee, WI 53202
414/289-9988

Professional Tax Plan is a menu-driven accounting program that calculates up to five fact situations simultaneously. The program automatically computes federal tax liability, tax planning, the new alternative minimum tax, 10-year averaging for lump-sum distributions, capital gains, and two-earner married-couple deductions. Using the appropriate rate tables users can calculate a 5-year projection. List price: \$350. Requirements: 64K, two disk drives.

Big Five Accounting System

Sunburst Software
2696 N. University Ave. #250
Provo, UT 84604
801/374-5223

Big Five Accounting System is a group of menu-driven, stand-alone accounting programs with record and file-locking capabilities. Modules consist of Inventory Control, Accounts Receivable, Accounts Payable, Payroll, and General Ledger. Each program has unlimited password protection, help screens, a training disk, and a tutorial. General Ledger has a 6-digit account scheme and holds up to 99 departments. Inventory Control allows 17 alphanumeric digits to define stock numbers and 30 characters to describe the item's name. The program

gives a history of sales by month and by year. With the ISAM file users can look up information alphabetically or numerically. There is also a full accrual payroll. Hours may be entered daily, and other modules are automatically posted to the General Ledger. *Point of Sale* is an additional stand-alone program that can be used with the other modules. List price: per module \$850, package of five \$3400. Requirements: 128K, 10M hard disk.

Star System 1 General Accounting

Star Software Systems
20600 Gramercy Pl. #103
Torrance, CA 90501
213/538-2511

Star System 1 General Accounting is a menu-driven general accounting system that has extensive error-checking capability. Its General Ledger, Accounts Payable, Accounts Receivable, and Payroll programs can be used separately or together. Data is entered from the numeric keypad. The system allows an infinite number of transactions and can run on a multiuser system, but only one user can enter data at a time. *Accounting Partner* is a menu-driven general accounting package that includes General Ledger, Accounts Payable, and Accounts Receivable. The program includes many elements of the *Star System 1 General Accounting* package, but the modules do not interact and General Ledger is limited to 400 accounts. List price: full system \$1250, modules \$400 each, *Accounting Partner* \$395. Requirements: 64K, two disk drives.

Bookkeeping System

Datasmith, Inc.
P.O. Box 8036
Shawnee Mission, KS 66208
913/381-9118

Bookkeeping System is a menu-driven, standard general ledger with fixed formats for easy use and learning. The program has a single journal and prints a chart of accounts listing, a journal listing, an audit trail, a balance sheet, and a profit and loss statement. Any two accounting periods can be compared. The program does out-of-balance checking on input, and repetitious entries such as dates or descriptions can be copied. Users can write checks and make entries at the same time. List price: \$300. Requirements: 64K, two disk drives.

Accounts Receivable Billing

Constructive Computing
5600 Inland Dr.
Kansas City, KS 66106
913/596-2113

Accounts Receivable Billing and Contract Analysis is a flexible program for calculating billings, printing invoices and statements, and controlling collections for sales and contracts. The contract billing system provides monthly billing worksheets and AIA Application and Certification for payment. The program handles up to nine billing locations and eight periodic charge groups for each customer. List price: \$1495. Requirements: 128K, two disk drives.

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ACCOUNTS RECEIVABLE provides instant, on-line customer account information (both current and aged), with complete, timely invoicing, including open-item (or balance forward) and statement capabilities. It makes the entire billing process fast, easy, and efficient. It quickly identifies your overdue accounts, helps speed collections, helps control your cash flow, and assists you in making better financial decisions. Both detailed and summary customer activity and aging reports are instantly available. • Preprinted forms available for invoices and statements • Detailed audit trail • Maintains comprehensive customer data files • Produces 8 reports and documents • Includes automatic periodic customer/client billing option which is ideal for service businesses • Itemized monthly transactions • Master File capacity: 400 Customers • Monthly Transactions capacity: 800 with 200K diskette; 3,500 with 500K diskette; 7,000 per Megabyte with a Hard Disk.

ACCOUNTS PAYABLE maintains complete vendor/voucher history and includes check-writing capabilities. Current and aged payable reports are available upon command. It prepares an extremely useful cash flow/cash requirements report that greatly improves management control of your most valuable resource—cash! It prints checks (on commercially available forms on which your company name, address and logo can be imprinted) with comprehensive check stubs that your vendors will appreciate. • Produces 11 reports and documents • Automatic pay selection program allows payment by due date or by discount date • Manual and automatic checkwriting • Check register • Detailed audit trail • Itemized monthly transactions • Master File capacity: 400 Vendors • Monthly Transactions capacity: 800 with 200K diskette; 3,500 with 500K diskette; 7,000 per Megabyte with a Hard Disk.

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Accounts Receivable 1. Daily Transactions Report 2. Invoices (with or without preprinted forms) 3. Statements (with or without preprinted forms) 4. Summary Aging Report 5. Detailed Aging Report 6. Itemized Monthly Transactions 7. Detailed Customer Activity Report 8. Summary Customer Account Report

Accounts Payable 1. Daily Voucher Report 2. Daily Credit Report 3. Checks with Detailed stubs 4. Check Register 5. General Ledger Transfer Report 6. Cash Requirements Report 7. Transaction Register 8. Open Voucher Report 9. Aged Payables Report 10. Detailed Vendor Activity Report 11. Summary Vendor Account Report

Payroll 1. Federal Tax Tables 2. State Tax Tables 3. Payroll checks with stubs 4. Payroll Check Register 5. Monthly Payroll Summary 6. Quarterly Payroll Summary 7. General Ledger Transfer Report 8. Detailed Employee File Listing 9. Produces 941 Worksheet 10. Prints annual W-2 Forms

System Requirements: Either CP/M® or MS-DOS (PC-DOS) • Microsoft BASIC • 64K RAM • Two disk drives or hard disk • 132 column wide carriage printer, or an 8 1/2" x 11" printer with compressed print mode (an Epson MX-80 or similar printer).

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Accounts Receivable enables users to customize statements, collection letters, and mailing labels. Customer accounts may be maintained on either an open-item or balance-forward basis within the same data base. Payroll tracks multiple deductions, vacation taken, sick time, and tips. Analysis may be made by department or function. The program automatically prints five register reports as well as annual earnings reports for tax purposes. Payroll also performs nonstandard earning cal-

culations and computes income taxes concurrently for hourly and salaried employees.

The General Ledger and Financial Reporter maintains 12 months of the previous year's balances by account for comparative reports and can do prior-year adjustment after a year-end closing. Users can select the chart of accounts with unlimited distributions. List price: \$595 per module; package with Inventory Control and Analysis, Accounts Receivable and Order Entry \$1495. Requirements: 64K, two disk drives.

"Easy Business Accounting Series is excellent but time-consuming to learn." Jeffrey M. Feldman, Torrington, Connecticut

TaxCalc

TaxCalc
4210 W. Vickery Blvd.
Fort Worth, TX 76107
817/738-3122

TaxCalc is a tax-planning template designed for use with 1-2-3, *VisiCalc*, *Multiplan*, or *SuperCalc* that displays and calculates three tax scenarios on screen simultaneously. The program calculates the new alternative minimum tax, income averaging, capital gains deduction, capital loss limitation, contribution limitation, and two-earner married-couple deduction. Using the spreadsheet window, users can lock in any part of the screen to show the effects of various tax alternatives. The program is currently available for federal and California taxes. A manual is included in written form and

on disk. The program will not compute self-employment tax or investment interest. List price: \$125.

Requirements: 64K, two disk drives, one of the following spreadsheets: *VisiCalc*, *Multiplan*, *SuperCalc*, or 1-2-3.

"TaxCalc is great for showing tax savings for specific tax-favored investments or any other changes."

Michael R. Ruff, Pampa, Texas

Hardisk Accounting Series

Great Plains Software
123 N. 15th St.
Fargo, ND 58102
701/293-8483

Hardisk Accounting Series is a menu-driven, integrated accounting system that includes help screens. General Ledger, Accounts Payable, Accounts Receivable, and Payroll modules can be used independently or together. Inventory and Point of Sales must be used with General Ledger, Accounts Payable, and Accounts Receivable. Up to 999 password assignments allow multi-terminal operations, but each of the five modules can be safely accessed by only a single user at a time. General Ledger maintains transactions for an entire year. Inventory and Point of Sales provide profit/loss analysis for specific items, customers, and departments. The program also keeps track of product serial numbers, specifying which should be sold first to maximize cash flow. List price: Inventory and Point of Sales \$595 each, other modules \$495 each. Requirements: 128K, hard disk.



Repeat it once more... "No manual tax preparation in '84"

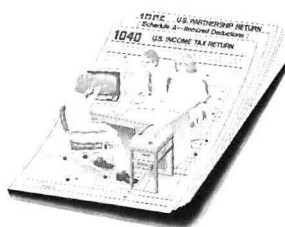
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Insoft Accountant

Insoft
P.O. Box 19208
Portland, OR 97219
503/244-4181

Insoft Accountant is a menu-driven accounting system that has check writing ability. The program consists of four modules: General Ledger, Accounts Payable, Accounts Receivable, and Payroll. The program produces a variety of reports and provides flexibility in framing the accounts chart, which can handle eight totaling levels and several hundred accounts. The program is written in BASIC, can be compiled, and supports a hard disk. *Insoft Accountant's* flexible configuration feature enables programs and data to be on any combination of drives. List price: \$365. Requirements: 64K, two disk drives.

"Insoft Accountant is for the small-business person who is familiar with financial records and IBM PC operation; but elementary bookkeeping knowledge is needed to organize accounts." Terry Grant, Manchester, Missouri

Micro Biz

Compumax
P.O. Box 7239
Menlo Park, CA 94025
415/854-6700

Micro Biz is a set of accounting programs that can be used separately or together. Payroll accounts can be figured with gross and net payments,

allowing for specific deductions. The programs include Bookkeeping, Payroll, Accounts Receivable, Accounts Payable, Inventory, Personnel Management, Order Entry, and Bill of Materials. *Maxiledger* is an enhanced, menu-driven version of *Micro Biz's* bookkeeping program, which allows user-definable detail and subtotal accounts. It automatically does all account matching, balancing, and totaling and generates reports. The program also has divisional reporting capabilities. List price: \$140 per module, *Maxiledger* \$350. Requirements: 64K, two disk drives.

Firm I

American Compusoft
23113 Plaza Pointe Dr.
Laguna Hills, CA 92653
714/472-8186

Firm I is a set of menu-driven general accounting programs that can be used separately or together. One of the product's unique applications is the Payroll program, which computes taxes for states, counties, and cities, allowing for pre-tax and post-tax deductions. The program also accommodates piecework. *Little General* is a menu-driven economy version of the *Firm I* line. The programs can be used with the manufacturer's *Bottom Line*, a billing and time management program for accountants that includes a calendar and a report generator. List price: complete package \$1495, Payroll \$795, other modules \$595 each, *Little General* \$195, *Bottom Line* \$950. Requirements: 48K, two disk drives.

Financier Tax Series

Financier, Inc.
2400 Computer Dr.
Westboro, MA 01581
617/366-0950

Financier Tax Series allows you to calculate federal income taxes for 1982, 1983, 1984, and 1985. The program performs spreadsheet-type "what if" calculations of income taxes and includes tax rates and laws. List price: \$195. Requirements: 64K, two disk drives.

"Financier Tax Series is for investors who have some control over their income and/or deductions. The program does not conform exactly to the 1040 Form line by line." Greg Dyer, Mill Valley, California

EZ Entry

Systemics Inc.
3050 Spring St.
West Bloomfield, MI 48033
313/851-2504

EZ Entry is an order-entry and invoicing program that displays product codes and prices on screen. Users can maintain a file of 200 product codes and prices and 500 orders per single-sided disk. Invoices and reports can be customized with a letterhead if they are printed on an IBM dot matrix printer. The program works with accounting software if a utility is used. List price: \$99.95. Requirements: 64K, two disk drives.

PC-Fund

Northwest Systems, Ltd.
P.O. Box 773028
1355 S. Lincoln
Steamboat Springs, CO 80477
303/879-5770

PC-Fund is a menu-driven accounting system designed for large non-profit organizations. The program is written in COBOL and includes help menus and General Ledger, Accounts Payable, Payroll, Purchase Order, Encumbrance, Budgeting, and Fixed Assets modules. The program supports up to 99 departments, 99,000 items in General Ledger, and 10,000 accounts in Accounts Payable. Each module includes documentation and sample data bases, such as a chart of accounts. List price: \$11,500. Requirements: 128K, one floppy disk drive, 10M hard disk.

SoftTax

Design Trends, Ltd.
P.O. Box G
644 Danbury Rd.
Wilton, CT 06897
603/834-1560

SoftTax prepares individual, partnership, corporate, and trust tax returns. By using *VisiCalc* for data entry, the program automatically integrates forms and provides simulation capability. Forms and schedules may be printed in a format that permits direct submission to the IRS, and the program also has a batch printing capability. List price: \$395. Requirements: 64K, two disk drives, *VisiCalc*.



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Business Management

Joe L. Miller

Business management software offers business professionals personal computer applications for project scheduling, accumulating and tracking information, statistical analysis, and decision analysis.

Some business management programs take the place of desk calendars by scheduling appointments and meetings on a daily, weekly, or monthly basis. Scheduling programs keep track of time for a group of people, displaying several schedules on screen at one time; they are able to find common free times for everyone who needs to attend meetings or events.

Other business management programs assist managers with accumulating and tracking information about business activity. Project managers who track the progress of one or more projects can use these programs to assist them in scheduling work, maintaining information about personnel work loads and employee performance, accumulating project cost information, and evaluating resource allocations. With this kind of information, managers can make changes as necessary during a project and make plans for supervising future projects.

Other programs help salespeople manage sales prospect information, maintain customer lists, and keep track of completed sales. The programs can organize the information by account type, client location, or follow-up date, and they can search for information and print out reports. Some programs generate master lists and mailing labels; others print letters and merge data files with word processing documents. For lawyers, accountants, and other professionals who bill their time, there are programs that keep track of expenses and time spent with clients, organize billing, and print out invoices.

Business management software can assist business professionals with decision making by helping them analyze information. Quantitative analysis software uses sta-

tistical and mathematical modeling techniques for decision making and forecasting. The methods used include regression analysis, time series analysis, exponential smoothing, and critical path analysis. Researchers use statistical analysis programs for analyzing responses to questions on questionnaires and for keeping track of information about respondents.

Decision analysis programs are another business management tool. These programs lead users through a series of questions about a problem. The programs then assign a weight to each solution and give a report showing the best alternative according to the statistics the program has compiled. Decision analysis programs can help managers select personnel, purchase new machinery or equipment, prioritize projects, and find price strategies. Individuals can also use these programs for making personal decisions such as choosing the best job, determining the best investment, and buying the right home or car.

When you buy business management software, you are paying for a license to use a package that cost from \$50,000 to \$250,000 or more to develop. You acquire the ability to do applications with your personal computer that a few years ago were done only on large mainframes by the most technically advanced companies in the world. The potential of business management software is exciting. Eventually, we will have software that will computerize tedious, manual tasks and enhance decision making—all without the need to know programming.

Joe L. Miller is chairman of the board of Aeronca, Inc. (Execuware).



Business Policy Planner

Softlink Corp.
3255-2 Scott Blvd.
Santa Clara, CA 95051
408/988-8011

Business Policy Planner helps companies develop a corporate personnel manual. The program is delivered on disk in an ASCII file format. Users edit and print the documents with a word processing program that can access standard ASCII files. The program includes drafts on employment policies, recruiting, compensation, employee benefits, and employee expenses. List price: \$199.95. Requirements: determined by user's word processing software.

Statpac

Walonick Associates
5624 Girard Ave.
Minneapolis, MN 55419
612/866-9022

Statpac is a statistical analysis package that helps researchers analyze raw data. The package computes frequencies, descriptive statistics (means and medians), cross tabs (with correlation, regression, and multiple regression tables), chi-squares, and t-tests. Data manipulation includes writing, listing, and sorting cases (a case is one record in the file). Up to 5000 cases (such as respondents to a questionnaire) and 255 columns of information (such as questions on a questionnaire) can be included in a file. The program includes two types of file formats, fixed and variable. Fixed files have standard field lengths whether or not all the space in the fields is used.

Variable files use commas to separate each field in a record. List price: \$400. Requirements: 128K, two disk drives, line printer.

"Statpac is an excellent software product." Reginald D. Smith,
Orlando, Florida

Business Pac I

Alphanetics
P.O. Box 339
Forestville, CA 95436
707/887-7237

Business Pac I consists of 15 menu-driven programs for handling daily business problems and record keeping. The programs include Term of Loan, Asset and Depreciation, Growth Rate and Projection, Cash-flow Analysis, Return on Investment, Stock Analysis, Lease/Buy, and Loan Status. List price: \$29.95. Requirements: 64K, one disk drive.

California Corporation Start-up Package

Softlink Corp.
3255-2 Scott Blvd.
Santa Clara, CA 95051
408/988-8011

California Corporation Start-up Package is an incorporation kit that lets users save 75 percent of the costs involved in forming a California "close corporation" (a corporation with up to ten shareholders). The files are delivered on disk in standard ASCII format and are edited and printed with users' word processing software. The package includes all required incorporation documents that must be completed and filed by the person forming the corporation. Other forms included in the package

are articles, bylaws, minutes, stock certificate journal, ledgers, and pre-printed forms required by various government agencies. List price: \$199.95. Requirements: determined by users' word processing software.

Executive Alert

Lifeboat Associates
1651 Third Ave.
New York, NY 10028
212/860-0300

By showing key indicators and projections, *Executive Alert* helps executives who are inexperienced with computers to evaluate their businesses and make crucial decisions. Indicators can be defined by users or selected from a library that includes sales by product line, sales versus forecast, product profitability, machine efficiency, inventory, overhead, and employee turnover. List price: \$250. Requirements: 64K, two disk drives.

Datebook II

Digital Marketing Corporation
2363 Boulevard Circle #8
Walnut Creek, CA 94595
800/826-2222, 415/947-1000

Datebook II is a professional appointment scheduling program designed for doctors, dentists, lawyers, and salespeople. The program can schedule appointments for up to 27 individual users with up to three schedules displayed on screen at one time. List price: \$295. Requirements: 128K, two disk drives, CP/M-86.

Number Cruncher Statistical System

Jerry L. Hintze
865 E. 400 North
Kaysville, UT 84037
801/546-0445

Number Cruncher Statistical System analyzes statistics and uses its own data base manager. The program offers various levels of sophistication, from simple analysis to more complex functions for users who have statistical expertise. List price: \$199.95. Requirements: 64K, two disk drives.

TEQ

Ventur-Com
215 First St.
Cambridge, MA 02142
617/661-1230

TEQ provides scientists, engineers, business planners, and teachers with mathematical techniques without requiring programming skills. The program plots mathematical functions and graphically displays parameter and assumption changes to reveal a function's behavior. *TEQ* solves differential equations, takes derivatives, computes finite integrals, and locates function zeroes. The program solves nonlinear differential equations as well as linear and polynomial regression for forecasting and data analysis. Templates can be created so that once a problem is set up it can be quickly reevaluated by changing appropriate parameters. List price: \$395. Requirements: 192K, one floppy disk drive, one hard disk, Venix, Intel 8087 coprocessor, floating point package.

Project Management System

Peachtree Software, Inc.
3445 Peachtree Rd. NE
Atlanta, GA 30326
404/239-3000

Project Management System schedules project tasks and allocates resources through an explicit spreadsheet or a Gantt chart. Designed for managers responsible for meeting project deadlines, the program features critical path analysis and a report generator that gives information by resource or project. The program tracks charges for material and actual time in three levels of detail.

Executive Package

Alpha Software Corp.
12 N.E. Executive Park
Burlington, MA 01803
800/451-1081, 617/229-2924

Executive Package offers solutions to 40 key business problems including those found in forecasting, planning, budgeting, scheduling, and decision making. The programs in *Executive Package* are written in BASIC and can be used with 1-2-3, *MultiPlan*, or *VisiCalc*. List price: \$145. Requirements: 64K, one disk drive.

Business Library

Software Libraries, Inc.
P.O. Box 844
Pasadena, CA 91102
213/793-1700

Business Library is a business management and accounting package. To use the package users must purchase a librarian program from the manufacturer. The librarian program sets up a password system for use with all of *Business Library's* optional

programs. An accounting program includes a general ledger with profit and loss statements, financial statements, a check writer, an income and expense summary, accounts receivable and payable, and a payroll system. Other options include an inventory program, a sales order entry program with purchase order tracking, a financial modeling program called *Profit Planner*, and a word processor for producing form letters and other documents. List price: librarian program \$195, accounting program \$595, inventory program \$695, sales order entry program \$695, financial modeling program \$695, word processing program \$495. Requirements: 192K, two disk drives.

Time Accounting and Billing

Automation Management, Inc.
5718 Westheimer #410
Houston, TX 77057
800/231-0634, 713/781-5941

Time Accounting and Billing is a time-tracking, billing, and reporting system for analyzing client project activities and employee work productivity. The program performs year-to-date analyses on how much and what type of work was done with each client. The program includes a tickler file for keeping track of in-house projects. Printed reports include transaction edit, trial posting journal and posting journal, month-to-date and year-to-date employee productivity analyses, and month-to-date and year-to-date client project progress analyses that include summaries and detailed itemization of work completed. List price: \$550. Requirements: 64K, two disk drives.

Tallymaster

Prosoft
P.O. Box 560
North Hollywood, CA 91603
213/764-3131

Tallymaster summarizes and analyzes budgets and expenses by totaling amounts from more than 700 user-defined categories. Designed for business or home use, the program performs many arithmetic and file operations but does not store formulas. All operations are done within user-defined ranges. List price: \$129.95. Requirements: 128K, one disk drive.

The Professional

American CompuSoft
23113 Plaza Pointe Dr.
Laguna Hills, CA 92653
714/472-8186

The Professional tracks the amount of time professionals spend on assigned projects and keeps records on expenses. It is designed to work with the *Firm* accounting package, and to be used by professionals who bill their time to client accounts. Other programs are available that perform similar functions for membership organizations, churches, and clubs (*Members Only*), service companies (*Service Billing*), and firms that bill by units, such as the ton or the mile (*Convoy*). List price: \$950. Requirements: 64K, two disk drives, CP/M-86.

Confidence Factor

Simple Software, Inc.
3188-A Airway Ave.
Costa Mesa, CA 92626
714/857-9179

Confidence Factor is a decision-making package that performs decision-tree and qualitative analysis. The program uses standard files so that you can transfer data between software programs. Designed for the manager or the executive, *Confidence Factor* requires minimum computer experience. The program provides standard report layouts only. List price: \$189. Requirements: 64K, one disk drive (two recommended).

Forwork

Percs Software
9734 Grant St.
P.O. Box 34357
Omaha, NE 68134
402/397-0361

Forwork combines a multilevel management scheme and visual programming to create a resource scheduling and project control system. Using best, average, and worst task-completion times, the program calculates true Program Evaluation and Review Technique and Critical Path Method (PERT/CPM) for up to 4096 active projects. *Forwork* is intended for corporate or institutional users and supports 16 management levels and more than 255 managers. Remote communications and mainframe access modules are also provided. List price: \$595. Requirements: 128K, two disk drives.

Quik Project Control System

Energy-Tek Software, Inc.
16 Academy St.
Skaneateles, NY 13152
315/685-3254

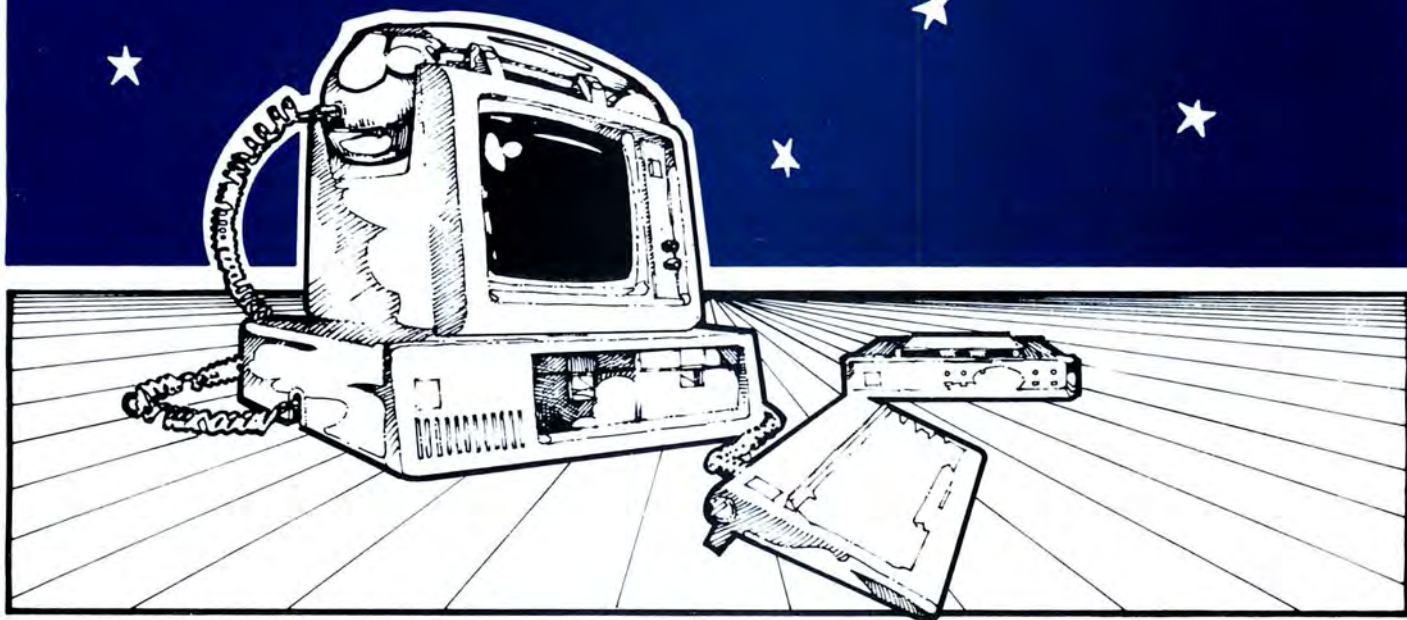
Quik Project Control System plans and tracks tasks, performs project control, prepares parameter-driven reports, and allocates costs. The program, designed for project managers such as bankers, auditors, and analysts, automatically generates Gantt charts and bar graphs for reporting task statuses. It features help screens users can modify. The number of tasks *Quik Project Control System* can handle is dependent on disk and memory capacities. List price: \$150, with source code \$1150. Requirements: 64K, two disk drives.

Prospecting

Key Systems, Inc.
512 Executive Park
Louisville, KY 40207
502/897-3332

Prospecting stores, searches, and analyzes prospect and product information for sales and marketing personnel. The program prints personalized letters, envelopes, labels, dossiers, and cards written with any word processing package. *Prospecting* produces reports that show the most successful lead sources, prospect purchases, and interests. List price: \$375. Requirements: 128K, two disk drives, the RM/COBOL Runtime package.

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- Reschedules busy/no answer calls
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- Wholesalers and distributors
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- Real estate agents
- Accounts receivables depts.
- Collection agencies, etc.

HARDWARE REQUIREMENTS

IBM Personal Computer with 128k, at least one diskette drive, 80 column monochrome or color monitor, and a Hayes Smartmodem or Novation Smart-Cat. Printer is recommended. Also available for Wang PC.

PCAT™ is a trademark of ARLINGTON Software+Systems; IBM is a trademark of International Business Machines; Hayes Stack Smartmodem is a trademark of Hayes Microcomputer Products, Inc. Smart-Cat Modem is a trademark of Novation Inc. Arlington Software+Systems, 97 Bartlett Ave. Arlington, MA 02174 (617) 641-0290

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STATE: _____ ZIP: _____

PHONE #: () _____

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Software+Systems
97 Bartlett Ave.
Arlington, MA 02174
(617) 641-0290

Business Planner

Duosoft Corp.
1803 Woodfield Dr.
Savoy, IL 61874
217/356-2818

Designed for entrepreneurs, small-business people, and middle managers, *Business Planner* projects financial ratios, tabular data, and information required in pro forma accounting statements for up to five years. For large models the program should be used with a hard disk drive. The program offers optional graphics capabilities. List price: \$395. Requirements: 64K, two disk drives.

Mr. Quartermaster

RJL Systems
106 New Haven Ave.
Milford, CT 06460
203/878-0376

Mr. Quartermaster is a non-sales-oriented management system that does receipts and issues updating, file maintenance, inventory, and reorder and usage listings. Written for any business or institution that maintains stock, the program accommodates up to 32,766 stock items in one file. Maximum, minimum, and reorder point levels are updated every 6 months or more based on usage and delivery time. The program comes with a manual and a sample inventory file for demonstrations. List price: \$125. Requirements: 64K, one disk drive.

Decision-Analyst

Executive Software, Inc.
Two N. State St.
Dover, DE 19901
705/722-3373

Decision-Analyst analyzes any decision that has more than one viable alternative. The program leads decision makers through a series of questions about a problem, weights each answer, and prints a report showing the best alternative according to the statistics the program has compiled. The program can help in selecting key personnel, buying new machinery or equipment, prioritizing projects, allocating resources, finding price strategies, and selecting the best computer hardware or software. It can also be used for personal decision making: choosing the best job, determining the best investment, or buying the right home or car. List price: \$139. Requirements: 52K, one disk drive.

Optimum Contribution Fund Tracking System

Logan & Davies
P.O. Box 28119
Lakewood, CO 80228
303/758-6760

Optimum Contribution Fund Tracking System keeps track of prospective contributors and contributions made to a particular concern. Intended for politicians or nonprofit organizations, the program maintains data on contributions and contributors and generates master lists and mailing labels. It can be used with *Spellbinder* and *WordStar*. List price: \$395. Requirements: 128K, two disk drives.

Sales Assistant

FINCOM, Inc.
1508 Cotner Ave.
Los Angeles, CA 90025
213/478-0191

Sales Assistant helps salespeople track clients and prospects from the first contact. Because the program can accommodate multiple files with individual passwords for each file, more than one person can use the system at one time. The program maintains information such as dates of first and last contact, client address, source, and salesperson involved. List price: \$175. Requirements: 128K, one disk drive.

Business Forecaster

SoftTalk, Inc.
3563 McKenzie Cove
Memphis, TN 38118
901/365-7929

Business Forecaster is an interactive data analysis and forecasting package that offers simple trend forecasting, exponential smoothing, sophisticated regression analysis, and the Box Jenkins method. The program gives managers a choice of 30 forecasting techniques. *Business Forecaster* comes with a manual that includes technical appendices and step-by-step explanations of all forecasting techniques in the package. Other features include Census X-11 seasonal adjustment, report generation, presentation and analytical graphics, and full-screen editing. List price: \$995. Requirements: 96K, one disk drive.

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Kwickin

H & H Enterprises, Inc.
946 Tennessee St., Box 1070
Lawrence, KS 66044
913/843-4793

Kwickin prepares invoices using short titles from product files, and totals invoice, shipping, postage, and discount expenses. Designed for small businesses, the program does not provide accounting operations and requires slight modification for each invoice format. It can be used as a backup for a main invoice production system. List price: \$69.50. Requirements: 64K, one disk drive.

Portfolio Professional

Advent Software, Inc.
109 Minna St., Box 483
San Francisco, CA 94105
415/543-7696

Portfolio Professional is an integrated system for money managers that provides portfolio bookkeeping, performance measurement, automatic billing, and client and management reporting. The system handles client and prospective-client information in addition to transaction records and has no preset limits on the number of clients or security transactions on file. Professional money managers can use the data they have stored to do mass mailings, transmit memos, and perform file searches. *Portfolio Professional* comes with a comprehensive tutorial, and customized reports are available at an additional charge. List price: \$2500. Requirements: 64K, two disk drives.



Business Analyst Series

Starsoft/Executec
4984 El Camino Real #125
Los Altos, CA 94022
415/966-1500

Business Analyst Series is a set of business applications that includes modules for data base management, word processing, graphics, spreadsheet, report generator, and communications. The *Execubus BASIC* program can use data from all modules. List price: Execumodel \$200, combined DBM/word processing/BUS module \$450. Requirements: 128K, two floppy disk drives or one hard disk drive.

Optimizer

SuperSoft, Inc.
P.O. Box 1628
Champaign, IL 61820
217/359-2112

Optimizer helps business people make quantitative decisions by limiting a subject to a number of constraints, such as budget and risk. *Optimizer* is based on the Simplex algorithm for solving linear programming problems and features 100 decision variables and 50 con-

straints. The program is intended for professional or home users. List price: \$200. Requirements: 48K, one disk drive.

Softtrend

SoftTalk, Inc.
3563 McKenzie Cove
Memphis, TN 38118
901/365-7929

Softtrend is a managerial forecasting program designed for business applications. The program includes numerous curve-fitting models and complex exponential smoothing methods. Data can be structured, previewed, and edited before reports are produced for presentation. Other *Softtrend* features include full-screen editing and results comparisons. List price: \$395. Requirements: 64K, one disk drive.

Hot Leads

Key Systems, Inc.
512 Executive Park
Louisville, KY 40207
502/897-3332

Hot Leads tracks the date and source of a lead, the call-back date and reason, the products of interest, and the call history. Designed for sales managers and salespeople, this program enables users to establish the names of two data items on file and to search files in several ways. *Hot Leads* does not store prospects' addresses or print customized letters or labels. List price: \$275. Requirements: 128K, two disk drives, the RM/COBOL Runtime package.

Administrative Assistant

American Planning Corporation
4600 Duke St. #423
Alexandria, VA 22304
800/368-2248, 703/751-2574

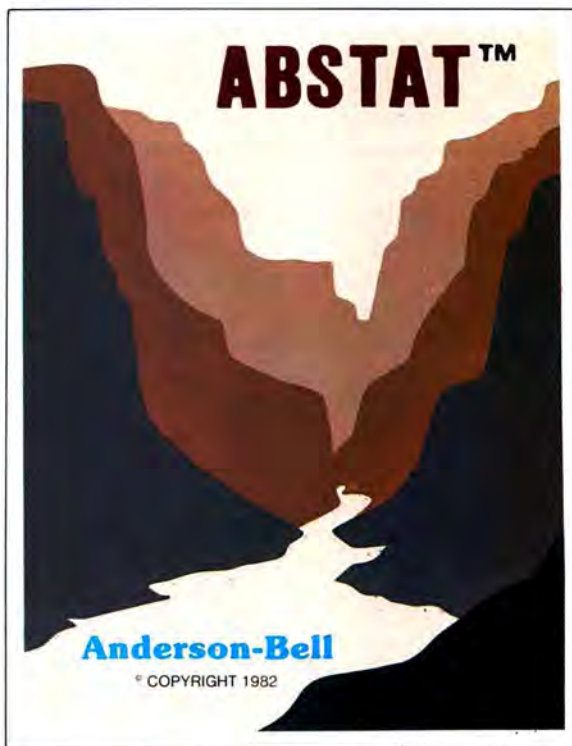
Administrative Assistant is a prospect management package that enables the user to organize prospects or leads, display records on screen, and print records on mailing labels. The system can sort records by name, location, identification code, account type and source, and follow-up date. Designed for salespeople, *Administrative Assistant* is menu-driven and features instructive user prompts. List price: \$295. Requirements: 64K, two disk drives.

Least Cost Formulator

Least Cost Formulations, Ltd.
1685 Chevron Way
Dunwoody, GA 30338
404/394-8125

Least Cost Formulator delivers all the benefits of linear programming without requiring users to know advanced mathematics. The package is menu-driven, has extensive data inputting and checking facilities, and performs single- and multiproduct analyses. Problem size is limited to 130 by 48, while the program is limited to 144 raw materials with 48 attributes each. *Least Cost Formulator* is designed for companies that prepare or use products manufactured with a blend of materials, such as feeds and processed meats. List price: \$6000. Requirements: 128K, two disk drives.

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Applied Operations Research, Inc.
22056 Saticoy St.
Canoga Park, CA 91303
213/340-1419

LP Master creates mathematical models of a business. By placing actual values on company resources, such as labor and machine time, the program makes the models behave as the company does. Managers of small businesses or of departments within a large corporation will find *LP Master* helpful in making critical business decisions. List price: \$495. Requirements: 128K, one disk drive.

Softregres

SoftTalk, Inc.
3563 McKenzie Cove
Memphis, TN 38118
901/365-7929

Softregres is an interactive regression analysis program designed for forecasting with time series data in business applications. The program offers managerial decision makers a variety of forecasting techniques that range from simple regression estimation to simulation with multiple regression models. Users can structure, review, and modify models before producing presentation-quality reports. Other program features include full-screen editing and correction for auto-correlation. The documentation includes technical appendices and step-by-step explanations of regression model application and interpretation. List price: \$495. Requirements: 64K, one disk drive.

BisyBase

International Microcomputer
Software, Inc.
633 Fifth St.
San Rafael, CA 94901
415/454-7101

BisyBase is a predefined data base for information storage, time organization, and time management. The program is designed for salespeople and corporate executives; it can be used to search a user-defined master file to extract pertinent information about contacts. The program reviews information by category, such as business type or area code, and maintains a running record of finances, including accounting balance and cash flow totals. Other *BisyBase* features include currency conversion and instant access to a dual record indexed sequential master file. List price: \$350. Requirements: 180K, one disk drive, CP/M-86.

Softseas

SoftTalk, Inc.
3563 McKenzie Cove
Memphis, TN 38118
901/365-7929

Softseas is a time series decomposition program modeled after the Census X-11 seasonal adjustment program. *Softsea's* decomposition method involves isolating and measuring the trend and cyclical, seasonal, and irregular components of a time series. Other program features include full-screen editing, graphics, and numerous report options. An accompanying manual includes technical appendices and step-by-step descriptions of the decomposition process. List price: \$225. Requirements: 64K, one disk drive.

Project Manager

Data*Easy Software
Data Consulting Group
877 Bounty Dr. #EE203
Foster City, CA 94404
415/571-8100, 415/349-4001

Project Manager is a business graphics program that displays the progress of a multitask project on a day-by-day basis. Up to seven tasks can be displayed on screen. The monitor shows the length of each task, whether it is in progress or proposed, and who has responsibility for it. The program keeps track of projects scheduled to last as long as 2 years. Up to 10 weeks of project information can be shown on the monitor at once. List price: \$35. Requirements: 64K, one disk drive.

Mathematical Programming Package II

Micro Vision
135 Herzel Blvd.
Lindenhurst, NY 11757
516/499-4010

Mathematical Programming Package II examines linear functions with linear constraints and is designed for people involved in operations research. Other likely users include mathematicians, business managers, industrial engineers, and hospital administrators. The package helps users solve problems and make decisions. For example, advertising researchers can use the program to determine the best way to advertise based on return on investment. Matrices can be as large as 100 rows by 100 columns. List price: \$89. Requirements: 128K, one disk drive.

Statpro™

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Years of research, development, and field testing have resulted in the most extensive statistics and graphics database program specifically designed for the personal computing environment. STATPRO™ provides the data analysis capabilities and flexibility previously available only on a large computer. Researchers, business professionals, and other data analysts will welcome the breadth yet simplicity of this program! STATPRO requires no previous computer experience, no special command language. Single keystrokes access all of the data manipulation, statistics, and graphics power of STATPRO.

STATPRO allows easy access to its extensive numerical data capabilities.

The strength of STATPRO is found in the functions of its user friendly, menu-driven database. You can easily learn to enter and edit, manipulate, transform, and print out data. STATPRO's searching capabilities allow these functions to be performed on all your data or a user defined subset of your data.

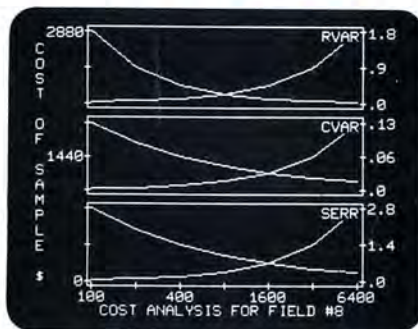
Statistics Modules Menu

- A) DESCRIPTION
- B) REGRESSION
- C) ANOVA
- D) TIME SERIES
- E) MULTIVAR

(ESC) Exit to Master Menu

Choice—[]

Transformations and over 400 conversions are available. You can place the results of these transformations into the same field or any other field in STATPRO's database.



STATPRO offers a comprehensive collection of statistical procedures.

The statistics component of STATPRO contains a multitude of procedures, grouped into the following modules:

Descriptive: Contingency analysis, cross tabulation, normality tests; descriptive, comparative, range and non-parametric statistics.

Regression: Linear, non-linear, stepwise, and multiple regressions; residual analysis and statistical matrices.

Analysis of Variance: Single and nested classifications, two and three way equal and unequal sample size and non-parametric ANOVA.

Time Series: Moving averages, multi-stage least squares, fitted polynomials and trig functions, additive and multiply forecasting.

Multivariate: Principal components, factor, orthogonal factor, oblique factor, pair-weighted cluster, discriminant function, multiple contingency, and canonical correlation analysis.

STATPRO provides graphic representation of your data in minutes.

STATPRO graphics plot all the results of your STATPRO statistical analyses including scatter, triangle regression, and box plots; pie-

charts, histograms, and dendograms. Further, with STATPRO you can custom edit with any of four character sets from the keyboard. You can also edit using paddles, joystick or special graphics commands. Mix text with data fields. Place multiple plots on each screen. Define your axis limits.

You can save your graphics on a disk for a multiple color "slide show" presentation, or print them out through a variety of compatible printers.

STATPRO documentation wraps up the package.

Although STATPRO software is essentially self-documenting, complete print documentation is provided. This includes a walk-through Introductory Tutorial, a Menu Chart, and a comprehensive User's Guide for each STATPRO component.

STATPRO currently runs on all versions of the Apple® II personal computers. It will be available for the IBM® PC in September.

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612/588-2685

MRP-II is a complete manufacturing program that offers material planning, shop floor control, and cost reporting. Designed for small manufacturing companies, it features emergency data base restoration, on-line help prompts, and optional batch processing capabilities. List price: \$800. Requirements: 128K, one hard disk drive.

Milestone

Digital Marketing Corporation
2363 Boulevard Circle #8
Walnut Creek, CA 94595
800/826-2222, 415/947-1000

Milestone is a project management and time scheduling program that plans the lifetime of any project. The program produces PERT charts but cannot do resource leveling or probabilistic scheduling. *Milestone* is ideal for a project manager who must detail labor requirements, profit margins, and contractual obligations before a project begins. List price: \$295. Requirements: 128K, two disk drives, CP/M-86.

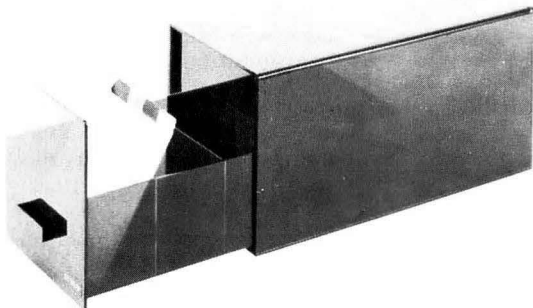
The Probe

System Vision Corporation
199 California Dr. #207
Millbrae, CA 94030
415/697-3861

The Probe is a sales prospecting tool that collects information on all sales contacts by name, item purchased, and purchase history. The program locates information using programmable function keys. It also helps organize the working day by automatically creating a "Things to Do Today" list on screen. List price: \$150. Requirements: 64K, one disk drive.

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- ☐ 2. **Physical Data Protection:** Are recovery and restart capabilities provided? Can you roll the data base back to a previous state?
- ☐ 3. **Data Security:** Does it provide separate "read" and "write" access controls? Down to the item level? Is data encryption provided?
- ☐ 4. **Data Independence:** Can the data base structure be modified without changing previous programs?
- ☐ 5. **Performance:** Can you tune performance by controlling physical storage? Can you eliminate data redundancy? Are variable length records and data compression provided? Are response times acceptable for large data bases?
- ☐ 6. **Multi-User:** Does it support concurrent multi-user access with passive and active locking at the record level?
- ☐ 7. **Ease of Use:** Can many-to-many and recursive relationships be directly defined? Can programs be written in any major programming language? Are instructions short and simple? Is quality documentation available?
- ☐ 8. **Query Report System:** Can ad hoc queries be easily made with non-procedural, English-like statements? Are sophisticated reports available from pre-defined queries? Are nested queries supported?
- ☐ 9. **Portability:** Does the DBMS run under CP/M™, MP/M, CP/M-86, MP/M-86, PCDOS™, UNIX™? On Z80™, 8086, 8088, 68000, and PDP-11™? Does it run with COBOL, Pascal, FORTRAN, PL-1, BASIC and C?
- ☐ 10. **Support:** Are professional training, regular product updates, enhancements, and professional consulting all available?

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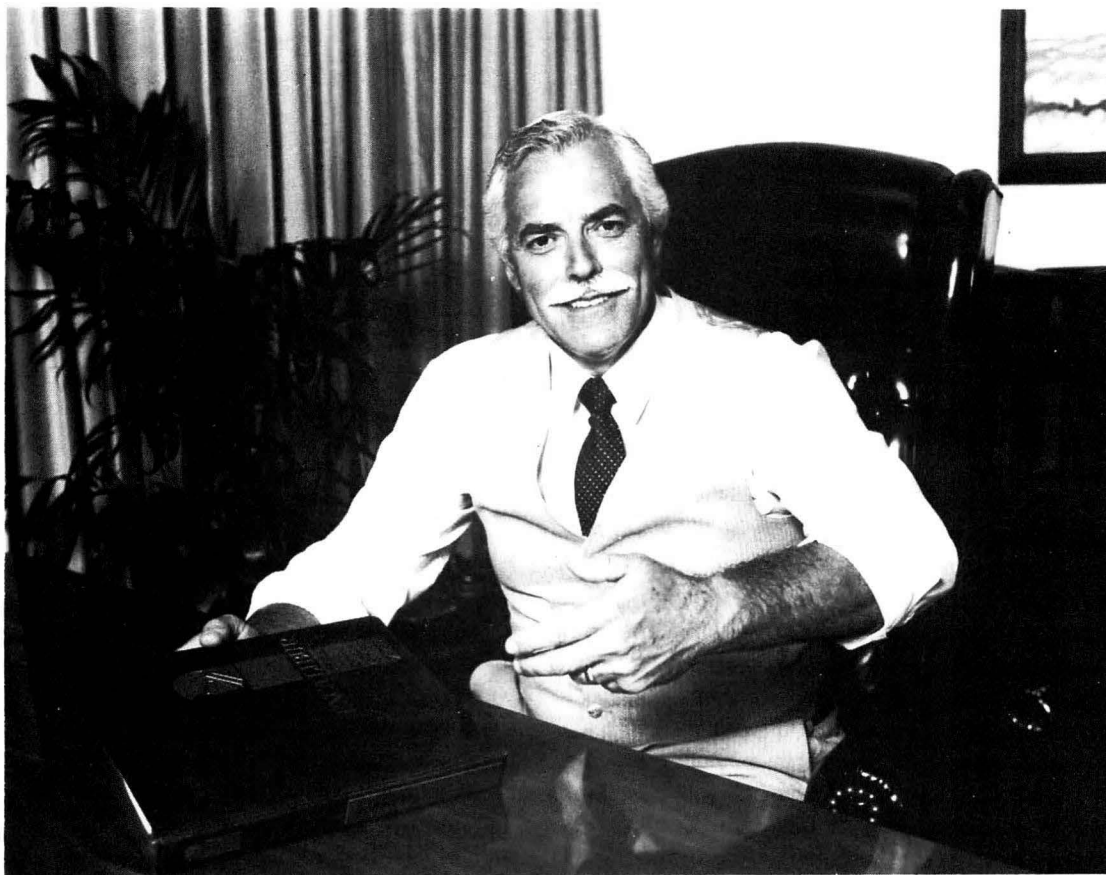
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Industrial Applications

Bill Grout

Until two years ago personal computer software publishers shied away from projects devoted to specific industries. Programmers writing with expertise in a special vertical market were in difficult straits when it came time to find distributors for their software.

Software publishing companies were in a hurry to score big by bringing out applications appealing to a broad base of large and small businesses. But now, with electronic spreadsheets, word processors, data bases and accounting programs mining the mass market mother lode to capacity, software developers are prospecting the less exploited pockets of the software market. With the increased attention, industrial applications software has experienced a jump in value.

An overview of industrial applications software shows construction and engineering applications dominating the field, followed by architectural and general manufacturing applications. Applications for the construction industry include programs for general accounting, job cost and project estimating, general ledger, payroll, contract bidding, and project management.

Much more diversified are the engineering applications, which include analysis of lighting, heating, and air conditioning requirements of buildings; calculation of the U-factor of roofing materials; stress analysis of planes, beams, and trusses; calculation of air duct sizes; analysis of force and moment applied to rigid bodies; calculation of pipe friction losses; design of retaining walls; concrete quality control; and general programs that provide cost and profit projections, project tracking, and computer-aided design.

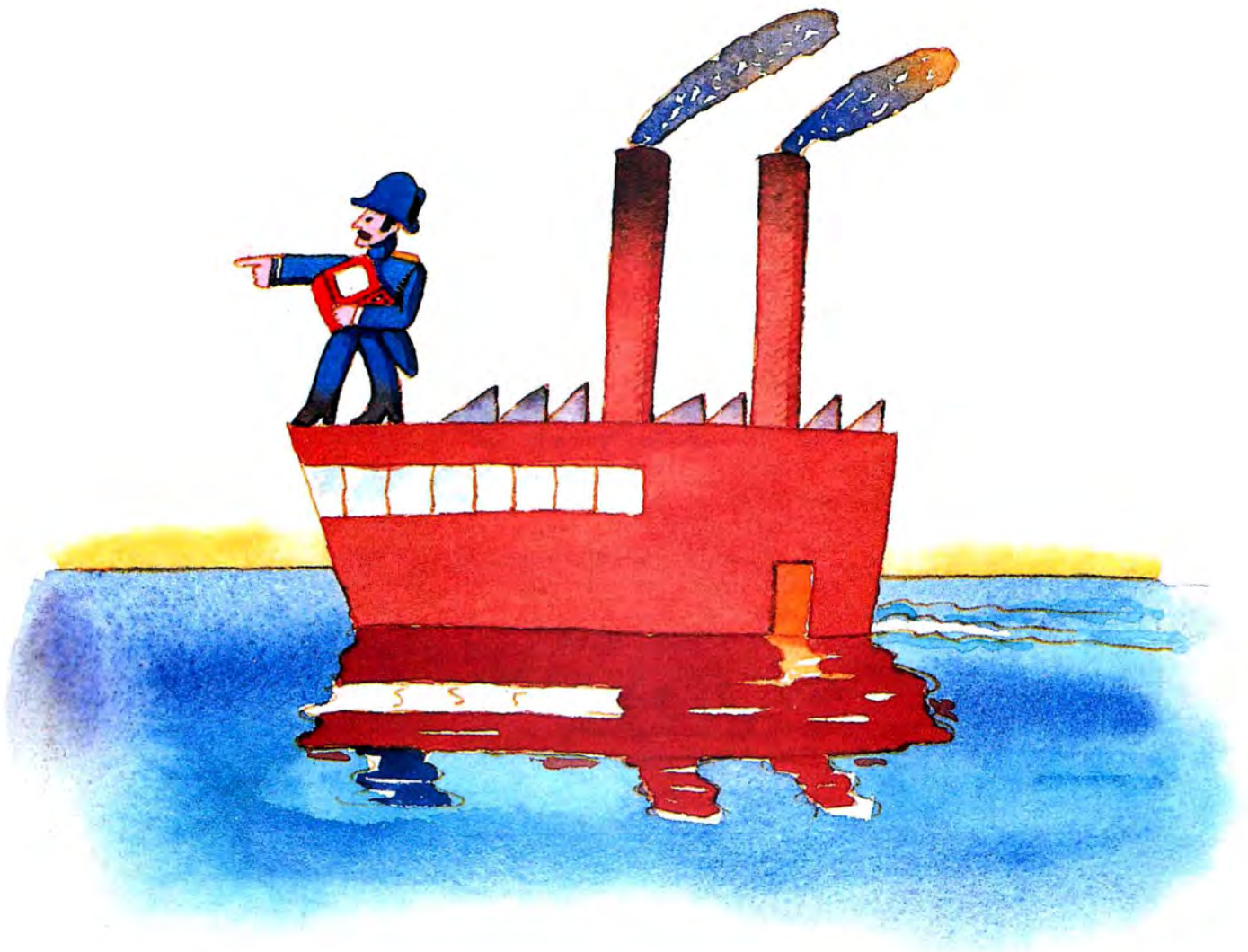
Examples of applications software for other industries are programs for oil and gas operation accounting, tool manufacturing, and timber-cutting price and wood-truss production.

Development of these programs for the IBM PC can be traced to two sources. On the one hand, systems houses with staffs of industry experts and programmers are developing software for select groups of clients and making their products available on the public market as well. In general, these systems houses transport sophisticated computer applications from mainframe and mini-computer environments to the IBM PC, enabling users to avoid the high cost of time on large computers.

Industrial applications software is also created by individuals who, in the process of computerizing their businesses, themselves develop the applications they require. Thus, they find themselves in a leading position to provide software designed specifically for their industry when little else is available.

These developers often have a background in computers, and although now working in a different industry, they took an interest in integrating the IBM PC into their business when the computer appeared on the market. Hence, programs not produced by systems houses cannot necessarily be stigmatized as amateurish. In fact, such software is often created with an in-depth understanding of user needs and requirements. Because individual developers within an industry also use language native to that industry, new computer users feel comfortable and learn the programs more quickly.

When you shop for industrial applications software, make sure to define your needs. Salespeople in retail computer stores are likely to be unfamiliar with your business and may be unable to discern if a program will do the job. You must describe the types of information the program should produce and how much information



is to be processed. In the case of an inventory program, explain the types of reports you need and the size of your inventory. Also take into account whether the amount of information the program is to handle will remain static or increase with time. The program should be able to grow with your business.

Whenever possible, ask for a demonstration of the program and try to determine how easy it is to understand and use. Your best bet may be to call up the manufacturer and discuss your specific requirements. The manufacturer may be able to refer you to a client who purchased the program and who might oblige you with a demonstration. Talking to the manufacturer can also provide information on what the program can and can't do as well as give you an idea about the manufacturer's

willingness to support the product. Don't forget to inquire about the need for additional equipment used with the program and about whether training is available.

Because many of the programs found in this group are for a limited audience, prices are often as high as \$1000 to \$4000. That is a sizable investment, equaling a good portion of the purchase price of the IBM PC itself. Carry out as much research about programs in your field as you can. And if you need to, search out the advice of computer consultants who have dealt with your type of application before.

Bill Grout reviews business software for the San Francisco Chronicle. He is writing a book on word processing to be published by John Wiley and Sons.

Statics

Kern Publications
P.O. Box 1029CA
Duxbury, MA 02332
617/934-0445

Statics is a collection of programs that graphically display forces and moments, enabling users to solve statics problems. This feature enables engineers to visualize the mechanics of a problem. Two main programs solve two- and three-dimensional statics problems. When forces and moments applied to a rigid body at specified points are input, *Statics* automatically sets up and solves equations of equilibrium using the Gauss-Jordan technique for solving simultaneous equations. The result appears graphically on screen showing the applied loads and reactions. Forces and moments are displayed as vectors. List price: \$45. Requirements: 64K, one disk drive, color graphics board.

Stress and Strain

Kern Publications
P.O. Box 1029CA
Duxbury, MA 02332
617/934-0445

Stress and Strain is a package of programs for solving two- and three-dimensional combined stress problems. The programs graphically display elements in loaded bodies and show the stress resultants on each face drawn to scale. Users can change the elements' orientations and watch the stress resultants change accordingly. List price: \$45. Requirements: 64K, one disk drive, color graphics board.

Builder

Software Solutions, Inc.
P.O. Box 301
Muscatine, IA 52761
319/264-1384

Builder estimates and tracks job costs and schedules for building contractors. A file is maintained on each job in process. You can create and estimate a job before bidding it and afterward use the same file for keeping track of the job in progress. *Builder* does not calculate percentage of completion, but reports show variances as well as actual costs. Several representative jobs can be kept on file and tailored and renamed to form new files as needed. List price: \$595. Requirements: 64K, two disk drives, UCSD p-System.

Engineering Software for Micros

Kern Publications
P.O. Box 1029CA
Duxbury, MA 02332
617/934-0445

Engineering Software for Micros is a package of 25 programs for computer-aided design (CAD). The programs show how to write modern CAD software and how to use a microcomputer for professional engineering work. All 25 programs combine graphics with engineering problem solving. Some programs interactively create engineering drawings, store them on disk, recall, update, merge, and produce three-dimensional isometric views. Physical properties such as weight, electrical resistance, and thermal capacity may be added to the components in the drawing. After the drawings are stored on disk, they may be recalled

by applications programs that perform mechanism analysis, heat transfer analysis, circuit analysis, and matrix operations. Programs are also included that perform Fourier series and transform analysis. List price: \$48.45. Requirements: 64K, one disk drive, color graphics board.

MicroCAD

Computer Aided Design
764 24th Ave.
San Francisco, CA 94121
415/387-0263

MicroCAD is a vector-oriented, three-dimensional graphics modeling system that allows users to design objects on the screen with the cursor or a light pen. An unlimited number of points can be plotted on a grid constructed by the users, and the points can be connected by lines. Objects can be rotated, appended, moved, viewed in perspective, edited, stored, and recalled. Perspective can be switched from plan to elevation view, or to side view in architectural or engineering parlance. Objects can also be drawn in the elevation view mode. An add-on option allows users to label any part of an object. The label can be rotated with the object and viewed in perspective. Spreadsheet data from *MicroCAD*'s electronic spreadsheet or from *VisiCalc* files can be displayed in the form of high-resolution graphics. List price: \$500, add-on option \$150. Requirements: 64K, one disk drive, color graphics board (light pen optional).

Structural Analysis Software for Micros

Kern Publications
P.O. Box 1029CA
Duxbury, MA 02332
617/934-0445

Structural Analysis Software for Micros is a package of 11 programs that combines interactive computer graphics with linear and nonlinear finite element truss and frame analysis. The programs can be used to create a three-dimensional finite element mesh, rotate it in three dimensions, store it on disk, recall material properties from disk, and perform truss and frame analyses. The original mesh can then be recalled and the deflected structure overplotted. *Structural Analysis Software* analyzes linear trusses and frames, trusses with large deflections, and nonlinear material properties. The programs carry out combined stress analyses and determine the properties of beam cross-sections that have arbitrary shape. The programs are written in BASIC and are documented. List price: \$85. Requirements: 64K, one disk drive, color graphics board.

CAPPS

National N/C Applications, Inc.
2830 Main St.
Buffalo, NY 14214
716/834-2588

CAPPS (Computer Aided Part Programming System) is an interactive, automated numerical control (N/C) programming system. The menu-driven program creates complex machining routines by asking basic machine-shop questions as well as

specific questions about tooling and fixturing. Standard operational procedures such as facing, turning, grooving, threading, and milling reside in the program to provide information needed to produce a finished N/C program. Speeds and feeds are computer selected to ensure program consistency and optimum metal removal based on commonsense machining practices. *CAPPS* can be used with machine tools by either of two methods: indirectly through a punched-tape system or directly by communicating with the tool itself through remote dial loading. It is machine independent and can create the same workpiece on a variety of machine tools without time-consuming program modification. List price: With one subroutine/post-processor \$6000. Requirements: 64K, two disk drives.

Images 2-D

Celestial Software, Inc.
125 University Ave.
Berkeley, CA 94710
415/841-7175

Images 2-D is an engineering analysis program that performs two-dimensional static and dynamic analyses of plane frames, beams, and trusses. The program is menu driven and prompts users for necessary input, including structural geometry, joint and member properties, material properties, and load configuration. The program performs stress analyses and gives results of loads, deflections, and beam stresses. By inputting the response spectra of an

earthquake, *Images 2-D* (when used in conjunction with dynamic analysis) can also perform seismic analyses. *Images 2-D* is strictly a linear analysis program; it does not tell you when a structure will break, but where it will break. List price: \$1699. Requirements: 128K, two disk drives, color graphics board.

A/E Integrated Project Management

ACCI Business Systems, Inc.
4625 N. Freeway #109
Houston, TX 77022
713/697-3566

A/E Integrated Project Management is an accounting system for architectural and engineering firms. It can handle a wide variety of accounting functions: time sheets; income statements; multistate payroll; city, state, and federal taxes; and invoices on hourly as well as percentage jobs. The program computes all job reports in-house, eliminating the cost and turnaround time of the Service Bureau, compares budgeted to effective rates, and keeps records on 5 to 75 employees per firm. The number of jobs you can input is limited only by disk space. The *A/E Integrated Project Management* program handles up to 14 phases and up to 10 tasks per phase. Its preliminary cost estimating feature gives cost estimates on any of 36 building types, based on figures from Dodge, R.S. Means, and Marshall. The program can also perform an income property analysis in an eight-page pro forma, detailing the financial feasibility of an income-producing property. List price: \$6250. Requirements: 64K, one floppy disk drive, 5M hard disk, DOS 2.00.

Phase-Cost

Elite Software Development, Inc.
421 Hwy. 30 #121
College Station, TX 77840
409/696-3328

Phase-Cost is a multiple-phased life-cycle cost analysis program that aids engineers in determining lowest cost project alternatives. Cash flow, projected savings, and net present cost reports are provided. The program is interactive and menu driven, allowing easy input and revision of project data. List price: \$295. Requirements: 56K, two disk drives.

Lighting Fixture Calculation

Elite Software Development, Inc.
421 Hwy. 30 #121
College Station, TX 77840
409/696-3328

Lighting Fixture Calculation calculates the number of lighting fixtures required for a given building zone using the IES zonal cavity lighting fixture method. The program handles projects containing up to 165 rooms and includes a file containing photometric data for 250 different lighting fixtures. *Lighting Fixture Calculation* provides a lighting fixtures schedule report as well as an energy use report. The program is interactive and menu driven. Tabular input sheets with headings and columns are provided to simplify transferring take-offs from blueprints to the computer. List price: \$495. Requirements: 56K, two disk drives.

Short Circuit Calculations

Elite Software Development, Inc.
421 Hwy. 30 #121
College Station, TX 77840
409/696-3328

Short Circuit Calculations computes maximum available short circuit currents at all nodes of a power distribution network. The program uses the per-unit method, and it allows motor contributions anywhere in the network and various types of electrical components: switches, circuit breakers, cables, bus ducts, and transformers. Voltage drop calculations are also provided at each node of the network. *Short Circuit Calculations* is menu driven and allows easy revision of project data. Tabular input sheets with headings and columns are provided to simplify transferring take-offs from blueprints to the computer. List price: \$495. Requirements: 56K, two disk drives.

SR-DUCT Program

Elite Software Development, Inc.
421 Hwy. 30 #121
College Station, TX 77840
409/696-3328

SR-DUCT Program uses the static regain method for computing the optimal air duct sizes for heating and air conditioning systems. A duct system containing as many as 200 trunks and 200 runouts can be entered. The program also produces complete bill-of-materials reports that show such things as insulation and sheet metal requirements. *SR-DUCT* is an interactive, menu-driven program that allows easy revision of project data. List price: \$495. Requirements: 56K, two disk drives.

ACI-214 Analysis

Systemics
3050 Spring St.
West Bloomfield, MI 48033
313/851-2504

ACI-214 Analysis is a program for concrete producers and engineering firms that computes and plots quality control information based on concrete strengths. *ACI-214 Analysis* follows the American Concrete Institute's guideline 214 to prepare reports and graphs based on the breaking strength of concrete samples. Set up in screen format, the program asks for each data item and checks to make sure the answer fits the proper category. List price: \$995. Requirements: 64K, two disk drives.

CPM-PERT

Elite Software Development, Inc.
421 Hwy. 30 #121
College Station, TX 77840
409/696-3328

CPM-PERT is a critical path analysis program that allows you to evaluate the relative importance of various tasks in a given project. The user may define a project network to include up to 400 activities. The program also allows specification of three working modes: weekend, holiday, and weekday. The output provides Gantt chart, critical path link, early and late start dates, and early and late finish dates. *CPM-PERT* is menu driven and interactive and comes with input sheets. List price: \$249. Requirements: 56K, two disk drives.

Metro Estimator/1

Metrosoft, Inc.
11333 Iowa Ave.
Los Angeles, CA 90025
213/473-0972

Metro Estimator/1 is a menu-driven job-estimating program that assists contractors, subcontractors, builders, and developers in establishing an updatable master item-and-cost file. It keeps track of construction categories and provides error-free cost analysis reports for bank, client, and office use. The program produces reports that show estimated or bid costs of every item, relates these costs to the total job estimate, and shows the cost per square foot for each item. The program is designed to work alone or as the base for a job-tracking program and related accounting programs manufactured by Metrosoft. List price: \$595. Requirements: 64K, two disk drives.

Metro Tracker/1

Metrosoft, Inc.
11333 Iowa Ave.
Los Angeles, CA 90025
213/473-0972

Metro Tracker/1 is a menu-driven program that assists contractors, builders, and developers in keeping track of the flow of on-line jobs. The program details actual versus budgeted costs, vendor expenses, extras, and other expenses, as well as income and other job status information, and prints out reports on all the above categories. List price: \$595. Requirements: 64K, two disk drives.

QuickEST

Constructive Computing
5600 Inland Dr.
Kansas City, KS 66106
913/596-2113

QuickEST is an estimating program that enables users to assemble costs of labor, material, equipment, suppliers, and subcontractors in order to arrive at an estimated price for any job. The program lets you use a mouse for high-precision measurement and menu selection. A simple programming language for implementing a company's own estimating logic and a complete data base for estimate and cost data are included. A maintenance contract and a 1-day training seminar for the system are available. List price: \$1995, maintenance contract and seminar \$500. Requirements: 96K, two disk drives.

QuickACCOUNT

Constructive Computing
5600 Inland Dr.
Kansas City, KS 66106
913/596-2113

QuickACCOUNT is an accounting program for contractors that is designed to work with payroll, job costing, and accounts receivable packages. *QuickACCOUNT* avoids accounting terminology and uses simple menus and consolidated financial statements to provide complete reporting. Historical accounting information is retained to provide traditional controls and quick access to job, subcontract, or purchase order information. The system can be controlled by either a mouse or the keyboard, and an annual maintenance contract is available. List price: \$1195, maintenance contract \$300. Requirements: 128K, two disk drives.

Metro Builder/1

Metrosoft, Inc.
11333 Iowa Ave.
Los Angeles, CA 90025
213/473-0972

Metro Builder/1 is a menu-driven construction management system for the large contractor/builder. The program is an integrated system of over 40 programs that covers all work done by a construction company from estimating and bidding to billing payroll, general ledger, accounts payable/receivable, and check register needs. List price: \$4995. Requirements: 64K, two disk drives.

U-Factor Calculation

Elite Software Development, Inc.
421 Hwy. 30 #121
College Station, TX 77840
409/696-3328

U-Factor Calculation is a designing tool that helps engineers to determine the U-factor of any roof or wall. R-values for all building materials as listed in the ASHRAE manual are stored on disk and accessed by the program, which also provides U-factor reports exactly like those in the ASHRAE manual. These reports may be stored on disk, then called up and tailored for subsequent projects to avoid having to create a new report for each project. *U-Factor Calculation* is menu driven and interactive. Tabular input sheets with headings and columns are provided to simplify transferring take-offs from blueprints to the computer. List price: \$99. Requirements: 56K, two disk drives.

Industrial Applications

Energy

Elite Software Development, Inc.
421 Hwy. 30 #121
College Station, TX 77840
409/696-3328

Energy evaluates the average energy use requirements of commercial buildings, such as heating, air conditioning, and process loads. It offers multizone, detailed hourly calculation and simulates all types of heating and air-conditioning plants, including the closed-loop water-source heat pump type. The calculation method is based on 1981 ASHRAE procedures. *Energy* is limited only by disk capacity and number of zones. The menu-driven program is interactive and provides help screens. List price: \$695. Requirements: 56K, two disk drives.

C-HVAC

Elite Software Development, Inc.
421 Hwy. 30 #121
College Station, TX 77840
409/696-3328

The C-HVAC program calculates peak heating and air-conditioning loads using the latest 1981 ASHRAE procedures on buildings that have as many as 1000 zones and 100 air systems. The program calculates the size of a cooling plant and determines correct air supply quantities. A complete psychrometric analysis of each air system is also provided. C-HVAC allows engineers and other planners to change the N-S/E-W orientation of all internal walls and structures of a building. C-HVAC and *Energy* may be purchased together and use the same data files.

The program is interactive and menu driven and comes with master input sheets to aid in revisions. List price: 2-zone limit \$295, 50-zone limit \$595, unlimited capacity \$1495. Requirements: 56K, two disk drives.

Solar Heating by F-Chart

E. Jessup, Mechanical Engineers
4977 Canoga Ave.
Woodland Hills, CA 91364
213/883-9021

Solar Heating by F-Chart is a program for solar heating designers and engineers that calculates solar heating system performance using the F-Chart method. The program analyzes air or water solar heating systems. Program output includes the annual percentage of heating load supplied by the solar heating system. List price: \$60. Requirements: 128K, one disk drive.

Duct & Piping Design

E. Jessup, Mechanical Engineers
4977 Canoga Ave.
Woodland Hills, CA 91364
213/883-9021

Duct & Piping Design is a package of two programs for mechanical designers and engineers. The duct program calculates duct size, static loss or regain, and total pressure loss. The piping program sizes pipe and calculates pressure drop for commonly used piping materials, valves, and fitting types. Input and output data are presented in an easy to check format. List price: \$40. Requirements: 128K, one disk drive.

PMS-II

North America Mica, Inc.
11772 Sorrento Valley Rd.
San Diego, CA 92121
619/481-6998

PMS-II: A Critical Path Project Management System for Microcomputers is a CP/M-86 system that has unlimited project size and can print activity-on-arc diagrams on 132-column printers. The program meets U.S. Corps of Engineers Specification ER 1-1-11 and is designed for anyone involved in construction, engineering, manufacturing, or research and development. Although *PMS-II* has no plotter interface, it features resource management and batch processor add-on modules. List price: \$1295. Requirements: 128K, two floppy disk drives or one 1M hard disk drive, CP/M-86.

Psychrometric Charts

B & E Software Consultants, Inc.
2172 Donner St. NW
North Canton, OH 44720
216/497-1221

Psychrometric Charts helps design heating and air conditioning systems. The program uses American Society of Heating, Refrigeration, and Air Conditioning Engineers equations to solve for eight moist air properties when barometric pressure and any two known properties, such as dry bulb temperature or relative humidity, are entered. *Psychrometric Charts* does not have standard value default settings but calculates using any barometric pressure. The program can use SI or English unit measurements. List price: \$44.95. Requirements: 64K, one disk drive.

TModel

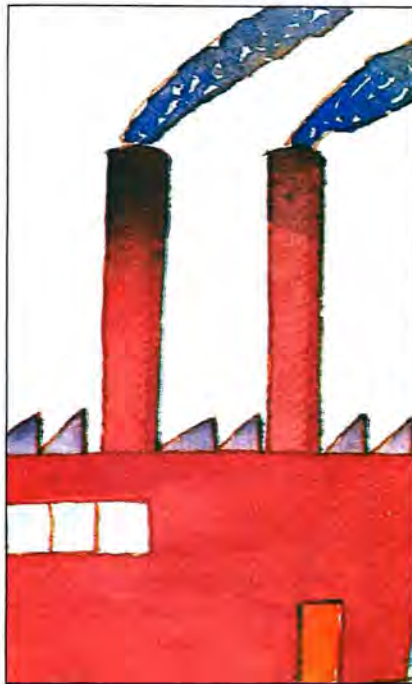
Professional Solutions, Inc.
3765 N.W. 173rd Pl.
Beaverton, OR 97006
503/645-4422

TModel—Transportation Modeling System projects long-range roadway needs for transportation engineers or planners. The program uses expectant land-use planning to analyze the hourly traffic volumes of either an existing or a future roadway network. *TModel* uses dynamic node modeling, including one- to three-way stop signs and traffic signals, and will model up to 80 zones, 350 nodes, 1200 links, and 28 turn-movement locations. *TModel* has no link category restrictions or artificial link weighting, and the program's distribution and assignment operations are performed in RAM. List price: \$1200. Requirements: 128K, one disk drive.

SST

Nodal Point Engineering
P.O. Box 370
Berkeley, CA 94701
415/525-0870

SST: AISC Steel Section Tables Database and Design Aids is a data base of AISC steel section tables that enables you to access and view properties of a single section or group of sections to satisfy user-defined design criteria. You can add to and delete sections from the data base. Program source code is provided, and you may customize it to meet your specific needs. List price: \$150. Requirements: 64K, one disk drive.



Exbidite

Grout and Associates
380 Channing Way #171
San Rafael, CA 94903
415/472-7183

Exbidite compiles cost estimates and contract bids. Salespeople can create itemized estimates based on inventory items and services requested by customers. The estimates list services, quantities, prices, and totals, as well as information identifying company, customer, annotations, terms, and type of project. Contract bids can be created, starting from lists of materials requested by customers. Prices can be updated and the margin of profit for each estimate adjusted by individual items or across the entire estimate. *Exbidite* handles an unlimited number of inventory items. A program is included that creates inventory tables that help build an inventory data base. List price: \$69.95. Requirements: 96K, one disk drive, printer.

Architectural Engineering Master Accounting

Data-Basics, Inc.
11000 Cedar Rd. #110
Cleveland, OH 44106
216/721-3400

Architectural Engineering Master Accounting System (AEMAS) is a set of financial and job cost accounting programs for professional, civil engineering, architectural engineering, mechanical engineering, and consulting firms. The modules are written according to American Institute of Architects guidelines and include Accounts Receivable, Accounts Payable, General Ledger, Job Costing, and Payroll. The programs are menu driven, offer on-line error checking and single-entry accounting, and include an on-line user manual that has help key access. *AEMAS* offers password security, complete accounting audit trails, and accounting flow through. The program has a log of all system users and keeps extensive history files for financial analysis and job reporting. Each module can be purchased separately. List price: \$4500. Requirements: 128K, 10M hard disk.

Heating/Cooling Load

E. Jessup, Mechanical Engineers
4977 Canoga Ave.
Woodland Hills, CA 91364
213/883-9021

Heating/Cooling Load is a program for HVAC engineers that calculates building heating and cooling loads. The program can simulate rotations of a building's dimensions or parameters to any compass orientation to find which is most energy-efficient. List price: \$60. Requirements: 128K, one disk drive.

Industrial Applications

Construction Payroll and Job Costing

Constructive Computing
5600 Inland Dr.
Kansas City, KS 66106
913/596-2113

Construction Payroll and Job Costing is a set of programs that enables contractors and subcontractors to calculate payroll, automatically produce paychecks, and help produce reports to meet government and union requirements. Job cost management reports, produced from the same information used to calculate payroll, help control costs and improve job profitability. The program can handle up to 999 employees and a maximum of \$99,999 per check. A 1-year maintenance and support contract is available for an additional \$300. List price: \$1195. Requirements: 128K, two disk drives.

Construction Payroll

Construction Data Control, Inc.
6410 Northbelt Pkwy., Ste. A
Norcross, GA 30071
404/448-4722

Construction Payroll operates independently or while linked to the manufacturer's *General Ledger* and *Job Cost* systems. The program performs all necessary payroll tasks, such as maintaining employee information, pay amounts, hour entry, and verification; computing employee pay, miscellaneous deductions, miscellaneous pay, and employer contributions; and printing management reports. *Construction Payroll* handles records for both sal-

aried and hourly employees. Pay types range from regular to vacation, holiday, and overtime pay, and lump sum payments such as bonuses can also be entered. The program accounts for individual state tax rates, health insurance rates, and miscellaneous deductions such as stock plans and savings bonds. Payroll checks can be printed from calculations of pay and deductions. The program includes management reports on all monthly, quarterly, and yearly payroll totals for each employee and prints payroll journals and information for state and federal unemployment tax reports. List price: \$1500. Requirements: 64K, one floppy disk drive, hard disk, CP/M-86, 132-column printer.



Construction General Ledger

Construction Data Control, Inc.
6410 Northbelt Pkwy., Ste. A
Norcross, GA 30071
404/448-4722

Construction General Ledger uses double-entry accounting procedures to produce a full range of accounting reports with detailed audit trails that show the origin of each posting. Automatic proof totals ensure that separate books of the chart of accounts are always in balance. The program

accommodates both percent complete and completed contract accounting methods and maintains information at two levels, such as company/division or division/departments. *Construction General Ledger* automatically receives and posts information from other integrated systems and allows new period input prior to closing the present period. Budgets for each month of the year may be assigned to all accounts to provide variance reporting. List price: \$1500. Requirements: 64K, hard disk, CP/M-86, 132-column printer.

Construction Materials Management System

Small Business Management Systems
Rt. 2, Box 521
Highland Lakes, NJ 07422
201/764-4296

Construction Materials Management System is a program designed for residential and commercial contracting businesses. It helps users estimate and track a building project through its life cycle. The program provides complete, detailed reports and screen inquiry of project activity and materials requirements. It generates subcontractor, supplier, and materials reports as well as bill of materials lists and purchase orders. The system works with the accounting system through the accounts payable interface. Using a standard accounting system, the *Construction Materials Management System* helps users make flexible preliminary project estimates. List price: \$1495. Requirements: 64K, one floppy disk drive, hard disk.

pc-CUT

The Lumbermate Company
10443 Baur Blvd.
St. Louis, MO 63132
314/991-4410

pc-CUT is a computer-aided manufacturing program that computes cutting, pricing, and inventory information for standard and nonstandard wood truss configurations. *pc-CUT* handles the four most common saws in the industry and uses graphics to aid in input. The program defines the geometry of the truss; the amount of interaction needed between program and user depends on the complexity of the truss. The initial cost covers the complete program and one day of installation and personal instruction; a monthly \$250 fee is charged for software updates and continuing technical support. List price: installation \$950, software maintenance \$250 per month. Requirements: 128K, one disk drive.

TK!Solver Pack for Mechanical Engineering

Software Arts
27 Mica Ln.
Wellesley, MA 02181
617/237-1000

TK!Solver Pack for Mechanical Engineering is an applications package that has equations, values, and tables to help solve some of the most frequently encountered problems in mechanical engineering, including heat transfer, stress/strain, moment of inertia, hydraulics system analysis, fluid flow in pipes, helical spring, and natural frequency of vibration. List price: \$100. Requirements: 128K, one disk drive.

Job Cost System

Peachtree Software, Inc.
3445 Peachtree Rd. NE
Atlanta, GA 30326
404/239-3000

Job Cost System is an accounting program that tracks actual versus estimated costs in two levels of detail on a job-by-job basis. The program is applicable to any small company that provides products or services, such as advertising agencies, construction companies, print shops, and landscape architects. Users enter costs for labor, equipment, materials, subcontractors, and other overhead expenses as they occur, and the program generates management reports as often as needed. *Job Cost System* produces the following reports: job estimate worksheet, pre-billing worksheet, job inquiry, change order, job cost summary, job cost detail, employees by job, and equipment by job. The program also totals by job, face code, and cost code reports. The reports enable users to compare estimates with actual costs for specific tasks within selected areas, identify the most profitable tasks and jobs, pinpoint unprofitable areas for corrective action, meet deadlines by tracking the progress of particular jobs, and outbid competitors by estimating more accurately. *Job Cost System* is menu driven, has two levels of password security and two levels of cost categories within each job, and offers control reports to verify that estimates and cost transactions have been entered correctly. The program also updates and lists important resource files. List price: \$750. Requirements: 128K, two disk drives.

MFG-I

Twin Oaks
2650 Colfax N
Minneapolis, MN 55411
612/588-2685

MFG-I is a system for basic materials and capacity planning that performs inventory control, materials billing, capacity and materials planning and costing, and work order production. Designed for small manufacturing operations, *MFG-I* does not work with Twin Oaks' other manufacturing program, *MRP-II*. *MFG-I* is available on a 30-day trial basis. List price: \$1395. Requirements: 256K, one disk drive, printer.

PMS-II

AHA, Inc.
1475 Rodriguez St.
Santa Cruz, CA 95062
408/475-8705, 408/475-7247

PMS-II is a project management system and critical path network analyzer designed for construction management, engineering and planning, research and development, high-tech manufacturing, government subcontracting, and education. *PMS-II* uses the activity on arc method to calculate critical path. The program has extensive budgeting features, such as a funding chart for comparing actual to budgeted expenses, and an earned value analysis, which calculates the cost of certain tasks based on the cost to date of performing those tasks. *PMS-II*'s report-making abilities are extensive; for example, the program can provide separate reports for each subcontractor between any two dates and sort and select. List price: \$1295. Requirements: 64K, two disk drives (hard disk recommended).

Construction Job Cost

Construction Data Control, Inc.
6410 Northbelt Pkwy., Ste. A
Norcross, GA 30071
404/448-4722

Construction Job Cost is a job-cost tracking program that operates independently or while linked to the manufacturer's *Accounts Payable* and *Payroll* systems for automatic tracking. All supplier, subcontractor, and direct labor costs are segregated and can be entered automatically from other systems. *Construction Job Cost* can update estimated completion costs based on field percentage complete reporting. The built-in flexibility of the report writer enables users to select reports by detail or summary. Specific jobs or portions of jobs may be selected for printing. Using original cost budgets, the program monitors actual expenditures and provides cost-to-complete projections for forecasting profit or overrun. It allows management to detect overruns early enough to take corrective action. List price: \$1500. Requirements: 64K, one floppy disk drive, hard disk, CP/M-86, 132-column printer.

Construction Accounts Payable/Receivable

Construction Data Control, Inc.
6410 Northbelt Pkwy., Ste. A
Norcross, GA 30071
404/448-4722

Construction Accounts Payable/Receivable operates independently or while linked to the manufacturer's *General Ledger* and *Job Cost* systems. The program can distribute the amount of a single invoice to ten separate general ledger accounts and jobs and automatically post to cash

and accounts payable, as well as maintain vendor activity totals. The Accounts Payable segment calculates supplier checks based on invoices selected for payments. Users enter discounts as a percentage along with the date the discount expires. Invoices may be selected for payment individually or based on due date, and the appropriate discount is calculated. Accounts Payable revokes discounts based on check issue date, a feature that can be overridden manually. It also prints checks and provides a paid or unpaid item listing and an aging summary for all items.

The Accounts Receivable segment posts directly to various general ledger accounts. It allows an invoice to be entered at any time during the cycle and keeps track of contract deposits made before the invoice is billed. Accounts Receivable prints reports that list invoices not yet billed, paid and unpaid items, an aging summary of all items, and customer statements and invoices. This segment of the program also separates current receivables from those retained to provide an accurate basis for cash flow analysis. List price: \$1500. Requirements: 64K, one floppy disk drive, hard disk, CP/M-86, 132-column printer.

Heatcool

J. J. Jordan, Architect-Engineer
5236 Overbrook Way
Sacramento, CA 95841
916/332-6610

Heatcool determines the BTUH and CMF of heating and cooling units required for any building. The pro-

gram asks for the input of major design factors such as outside and inside design temperatures, solar and shading data, and U-values. Users must also enter data on individual room characteristics such as areas of external walls, windows, doors, and ceilings; number of people; heat producing equipment; and outside ventilation. The program records these factors and can print or revise them. *Heatcool* provides 16 options for individualizing reports, maintains a running total for all data, and performs all calculations needed to achieve the most efficient building design. Printouts can be directly submitted for building permits or can be reviewed by others. List price: \$84.76. Requirements: 48K, two disk drives.

SolidCosts Contractors On Site Tracking

Solid Software, Inc.
5500 Interstate N. Pkwy. #501
Atlanta, GA 30328
404/952-7709

SolidCosts Contractors On Site Tracking is a cost-tracking system for contractors, manufacturers, or other businesses that figure costs by job. The program consists of two modules: Job Cost Payroll, which figures labor costs by job, and Job Cost Accounting, which adds up material, subcontractors, and overhead costs by job. The program then analyzes the profitability of the job. The Job Cost Accounting files act as a set of subsidiary ledger files that can be integrated into the Solid Software general ledger program for company-wide reporting. List price: \$1495. Requirements: 64K, hard disk.

Sheet Metal Estimating

Esccomate
5084 S. 107th St.
Omaha, NE 68127
402/331-8250

Sheet Metal Estimating is a system that enters simple data and prices duct systems for construction. The program has a patented, single-key parts description that lets you input data without having to key in parts numbers or select from a series of menus. The master parts file is preloaded with 6000 items and has a capacity of approximately 11,000 items. List price: *Sheet Metal Estimating* \$4900, with *Piping/DMV Estimating* \$7350. Requirements: 128K, two disk drives.

QualityAlert

Penton Software, Inc.
420 Lexington Ave. # 2846
New York, NY 10017
212/878-9693

QualityAlert is a statistical quality control system. It analyzes variable and attribute data generated from samples selected from continuous manufacturing processes. The program analyzes process capability, features eight types of control charts, and determines when quality deviations occur. *QualityAlert* produces numerical data, statistics, and graphics displays on screen or on a graphics printer. The program is primarily intended for use by quality control and manufacturing personnel. List price: \$795. Requirements: 64K, one disk drive, color graphics board.

Jobtrax

Omicron Software
57 Executive Park South NE
Atlanta, GA 30329
404/325-0124

Jobtrax is a menu-driven, PERT (I-J) node-type, critical-path scheduler, costing system, and resource planner. It produces all the standard project planning and status reports of traditional PERT systems and is a planning and monitoring tool for engineering, architectural, and construction projects. Users divide each project into tasks, allocate fixed costs and labor requirements for them, and assign beginning and ending dates. The program then sets up a budget. Users perform periodic updates, and the program automatically compares actual project expenses to the projected expenses to help monitor profits and costs. List price: \$325. Requirements: 256K, two disk drives, color graphics board.

Piping/DWV Estimating

Esccomate
5084 S. 107th St.
Omaha, NE 68127
402/331-8250

Piping/DWV Estimating is a system that enters simple data and prices piping systems for construction. The program has a patented, single-key parts description that enables you to input data without having to key in parts numbers or select from a series of menus. The master parts file is preloaded with 5700 items and has a capacity of approximately 11,000 items. List price: *Piping/DWV Estimating* \$4900, with *Sheet Metal Estimating* \$7350. Requirements: 128K, two disk drives.

Beamjois

J.J. Jordan, Architect-Engineer
5236 Overbrook Way
Sacramento, CA 95841
916/332-6610

Beamjois is designed to select a Douglas fir wood member or a pre-fabricated truss-joist to take imposed loads (in accordance with the 1980 Uniform Building Code) for either a simple or cantilevered span. The program asks questions regarding type of structure, distribution of loads, moisture content, and span. *Beamjois* uses the answers to calculate the moment, shear, and reactions, and checks the member against a data bank of allowable stresses for different grades of lumber under various conditions. The process can be repeated with as many different sized members as desired until the optimum size is reached. List price: \$108.32. Requirements: 64K, two disk drives.

Preliminary Cost Estimating

ACCI Business Systems, Inc.
4625 North Frwy. #109
Houston, TX 77022
713/697-3566

Preliminary Cost Estimating is a program for architects and contractors that produces preliminary estimates of construction costs on 36 building types or combinations. Costs are adjusted for factors such as inflation, topography, and building type. Cost figures are derived from a combination of Dodge, Means, and Marshall figures. List price: \$1995. Requirements: 64K, one disk drive.

CADTRS

Cadtec Software Company
P.O. Box 28959
St. Louis, MO 63132-0959
314/991-5356

CADTRS offers a selection of six truss types via a graphics menu. The program can perform member design by using double-angle cross sections or more general cross sections such as wide flanges, channels, and single angles. *CADTRS* lets the engineer try multiple-load cases without reentering the truss geometry, or multiple truss geometries without reentering the loading data. The program automatically computes all coordinate and member connectivity data based on three parameters supplied by the engineer: span, chord slope, and apex location. *CADTRS* graphically displays geometry and loading data to scale to facilitate verification of input data as well as results of the structural analysis. The program plots the truss to scale, showing tension members in blue, compression members in red, and the deflected shape superimposed in green. *CADTRS* also displays a report listing the analysis results and a printed summary of loading, geometry, and analysis data. The program checks all member selections against the 1978 edition of the American Institute of Steel Construction Specifications (AISC). Design summaries generated by *CADTRS* indicate the AISC equations used and, if the design fails, the program provides the reasons. List price: \$235. Requirements: 64K, one disk drive, color graphics board.

LP Gas Management System

On/Trak Data Systems, Inc.
2974 LBJ Frwy. #200
Dallas, TX 75234
214/620-8000

LP Gas Management System is an accounts receivable program designed for LP gas dealers. The program organizes and keeps track of all facets of an LP gas operation: delivery ticket control, cash receipts, and tank control. *LP Gas Management System* performs automatic statement printing and check writing and works with the manufacturer's general ledger program. It can be purchased with optional Predictive Demands and Metering modules, which are used for estimating runout times. List price: \$3000, optional modules sold separately. Requirements: 128K, hard disk.

Oil & Gas Investor Accounting System

Enertech Information Systems
601 N. Loraine #216
Midland, TX 79701
915/685-1753

Oil & Gas Investor Accounting System is designed for oil and gas investors and nonoperators and performs accounting operations for the oil and gas-related revenue and expenses of properties. The program cross-references and verifies purchaser run stubs against the investor's property file. The *Oil & Gas Investor Accounting System* maintains records on 100 properties per floppy disk, uses function keys, is menu driven, and provides help screens. List price: \$1500. Requirements: 128K, two disk drives.

Cadbeam

Cadtec Software Company
P.O. Box 28959
St. Louis, MO 63132-0959
314/991-5356

Cadbeam permits users to design continuous beams of up to six bays, each with a particular span, moment of inertia, uniform load, and up to two concentrated loads. The engineer can try multiple-load cases without reentering the geometry of the structure, or multiple-beam geometries without reentering loading data. To help verify input data the program graphically displays all geometry and loading data to scale. *Cadbeam* also displays results of the structural analysis in the form of shear, bending moment, and deflected shape diagrams and presents a report summarizing the geometry, loading, and analysis results. *Cadbeam* checks member selections—which must be compact, I-shaped cross sections—against the 1978 edition of the American Institute of Steel Construction Specifications (AISC). *Cadbeam* generates design summaries that indicate which AISC equations were used, and if the design fails, the program gives the reasons. *Cadbeam* is ideally suited for generating the data required to construct influence lines for shear forces, bending moments, and support reactions. List price: \$235. Requirements: 64K, one disk drive, color graphics board.

Pipeline Friction Loss Calculator

B & E Software Consultants, Inc.
2172 Donner St. NW
North Canton, OH 44720
216/497-1221

Pipeline Friction Loss Calculator is a program for engineers and piping designers that calculates pipe friction losses and other system properties when nominal diameter, length, schedule, temperature, and flow rate are entered. A menu lists common pipe fittings and the program indicates fitting losses within the total pipe loss. *Pipeline Friction Loss Calculator* can only perform pipe friction loss computations that apply to water or fluids with the same properties as water, but the program works with actual water temperatures and enables users to revise input data easily without restarting the program. List price: \$49.95. Requirements: 64K, one disk drive.

H-MRP

Helmsman Systems, Inc.
1030 S. Winchester Blvd. #205
San Jose, CA 95128
408/246-8300

H-MRP (Material Requirements Planning) is a set of integrated manufacturing inventory management programs. It comprises Purchasing, Bills of Material, Inventory Control, Shop Floor Control, Master Scheduling, and Material Requirements Planning. Several report generator programs are included to allow hundreds of customized reports. *H-MRP* is a combination of all six Helmsman material requirements planning programs. List price: \$9995. Requirements: 256K, 10M hard disk.

Retwalls

J. J. Jordan, Architect-Engineer
5236 Overbrook Way
Sacramento, CA 95841
916/332-6610

Retwalls determines the construction requirements of a poured concrete or concrete block retaining wall, the size of the various concrete elements, and the necessary size and spacing of steel reinforcing. Users receive this information after entering the amount of applied load and wall height. The program is designed primarily for basement walls or those built against earth but can also be used for uncomplicated free-standing walls. *Retwalls* lists preset soil factors such as weight, bearing capacity, angle of repose, and preset concrete and steel stress limits. These preset factors can be kept or changed for any of the above, either permanently or just for the wall being designed. The program then requests site conditions such as wall height and thickness, footing size, and surcharge load and distance. With this information *Retwalls* shows a diagram of the wall and footing with all the pertinent data, including moments, and states whether the wall is satisfactory. If the overturning moment is too great for the loads or soil bearing, the program asks users to choose vertical or horizontal steel size or spacing and calculates each selection until a satisfactory design is obtained. List price: \$76.83. Requirements: 32K, two disk drives.

Pertmaster

AHA, Inc.
1475 Rodriguez St.
Santa Cruz, CA 95062
408/475-7247, 408/475-8705

Pertmaster is a project management system that provides critical path scheduling. It uses either the precedence or activity-on-arrow method for up to 700 activities (1500 with a 128K system) and 29 resources. *Pertmaster* displays and prints bar charts, resource histograms, and tabular reports. Data from the program may be transferred into other spreadsheet or data base programs running under the same operating system to produce customized reports. *Pertmaster* allows projects to be divided into subnetworks and reported individually or combined into a summary-level management report. List price: \$695. Requirements: 64K, two disk drives.

H-Champ

Helmsman Systems, Inc.
1030 S. Winchester Blvd. #205
San Jose, CA 95128
408/246-8300

H-Champ is an applications environment program of three main parts: a front end consisting of a UNIX-like shell and menu system, a back end containing batch scheduling and report scheduling productivity tools, and a utility package of 40 UNIX-like utilities such as text formatting and report manipulation. List price: \$695. Requirements: 256K, 10M hard disk.

Espri Estimating

Contractors Management Systems
1760 Reston Ave. #101
Reston, VA 22090
703/435-3172

Espri Estimating is a menu-driven, interactive construction cost estimating system that enables you to build your own data base and tailor the system to suit your needs or method of estimating. The program uses a preassigned work assembly that permits either checklist or simultaneous takeoff of multiple items and automatic computation of components. *Espri Estimating* can give a sum total cost or cost breakdown. List price: \$2690. Requirements: 128K, two disk drives.

"The Espri Estimating system was designed with a builder in mind."
Kenneth W. French, Houston, Texas

"The program has the feel of a contractor's approach rather than the accountant's approach typical of many so-called estimating systems." Milton B. Shenk, Sarasota, Florida

"Espri Estimating cuts estimating time by 80 percent and increases accuracy substantially." A. DiSarro
Construction Co., Schenectady, New York

Construction Estimating

Construction Data Control, Inc.
6410 Northbelt Pkwy., Ste. A
Norcross, GA 30071
404/448-4722

Construction Estimating—Data Base Assembly is an estimating program that allows you to record and store a catalog of up to 16,000 construction items. The estimator then performs a take-off and enters the

quantities into the system. Using formulas and "assemblies" (groups of items put together in a similar manner throughout a building) that the estimator has defined previously, the estimating program calculates quantities and costs of all required items. The estimator can enter the required number of linear feet of wall and compute quantities and costs of dry wall, studs, tape, and other items automatically. Within the data base each item may be classified as labor, material, subcontractor, equipment, or miscellaneous and coded by a user-defined structure of 16 major divisions and 160 subdivisions. For global labor pricing, the system permits crew costs to be maintained in a table that can be revised easily. List price: \$2990. Requirements: 64K, one disk drive, CP/M-86, 132-column printer.

Structural Analysis Software for Micros

Kern Publications
P.O. Box 1029
Duxbury, MA 02332
617/934-0445

Structural Analysis Software for Micros is a package of 11 structural analysis programs. The program listings are provided in BASIC, documented in detail, and easily modified. The programs handle linear and nonlinear three-dimensional trusses with large deflection and nonlinear material properties. They also can handle three-dimensional linear rigid frames. Analyses are based on the direct stiffness method. *Structural Analysis Software for Mi-*

*cro*s also makes use of graphics to create finite element mesh. Output consists of member loads and deflections, and deflections are plotted over the original structure. The programs come with a textbook that lists them and discusses the theory and equations used. List price: \$85. Requirements: 64K, one disk drive.

"This package is particularly good for analyzing two-dimensional and three-dimensional frame structures."
Hung-Yi Pao, Indianapolis, Indiana

Construction Management Accounting System

Data-Basics, Inc.
11000 Cedar Rd. #110
Cleveland, OH 44106
216/721-3400

Construction Management Accounting System (CMAS) is a job costing system designed for commercial construction contractors. The system includes Accounts Payable and Receivable (including retainage); General Ledger; Job Costing; and Payroll, including multiunion, multi-state, and multicurrency reporting. It also provides purchase order and subcontractor control. The menu-driven programs offer on-line error checking, single-entry accounting, and an on-line user manual with help key access. *CMAS* offers password security, complete accounting audit trails, and accounting flow through. The program has a log of all system users and keeps extensive history files for financial analysis and job reporting. Each module can be purchased separately. List price: \$4500. Requirements: 128K, 10M hard disk.

AMI Construction Package

Automation Management, Inc.

5718 Westheimer #410

Houston, TX 77057

800/231-0634, 713/781-5941

AMI Construction Package is an accounting system for the small or medium-sized company. It figures job costs and handles accounts payable and receivable, payroll and union payroll reporting, and general ledger. Specifically designed for the IBM PC XT, the menu-driven *AMI Construction Package* provides job tracking of income, expenses, and percentages and complete reports by job and job type. List price: \$1995. Requirements: 64K, one disk drive.

RTNWALL

Cadtec Software Company

P.O. Box 28959

St. Louis, MO 63132-0959

314/991-5356

RTNWALL allows engineers to analyze and design the geometry and steel requirements of a typical retaining wall quickly. Users enter the preliminary geometry, allowable stresses, and soil type. *RTNWALL* then evaluates the wall geometry necessary to satisfy the requirements for overturning, bearing pressure, and sliding resistance. The program designs the geometry of the footing and wall at critical sections according to the Ultimate Strength Method of the American Concrete Institute Specification 318-77. *RTNWALL* displays steel requirements for flexure and temperature at critical sections as well as bar size and minimum spacing requirements. List price: \$150. Requirements: 64K, one disk drive.

Construction Estimating Templates

Software Models

P.O. Box 1029

Crestline, CA 92325

800/824-7888 (operator 583),

714/338-1238

Construction Estimating Templates is designed for general contractors and architects to use for residential construction purposes. The 18-template program enables users to estimate the cost of building a home from start to finish, allowing for contingencies, overhead, and profit margin. *Construction Estimating Templates* is designed to work with *VisiCalc*, *Multiplan*, and *SuperCalc*. All data files and formulas are automatically keyed into the spreadsheet program. Users may overlay files or save them separately. The program can be backed up and modified for specific needs. List price: \$59.95. Requirements: 64K; one disk drive; *Multiplan*, *VisiCalc*, or *SuperCalc*.

Cost-Acumen

Computer Applications Corporation

2400 Poplar #318

Memphis, TN 38112

901/458-8630

Cost-Acumen is a cost accounting and project management program designed for architectural and engineering firms. The program collects and collates all project-related expense information including employee time and out-of-pocket expenses such as travel and subcontractors' expenses. It also tracks

billing and income information.

Cost-Acumen performs an extensive cross-check on information entered and updates both the project and the employee-related master file. From these files, the program produces a wide variety of management reports such as project status reports in which past and current total expenditures on a job are reported and compared to a budget. Using a fill-in-the-blank process, *Cost-Acumen* can be customized for specific project and accounting procedures. The software can be purchased as a demonstration program for \$95 and later upgraded. The demonstration performs all the functions of the complete package but is limited to four projects or employees and a total of 150 detailed transactions. List price: \$995. Requirements: 128K, one floppy disk drive, one hard disk drive.

H-BOMM

Helmsman Systems, Inc.

1030 S. Winchester Blvd. #205

San Jose, CA 95128

408/246-8300

H-BOMM (Bills of Material Management) is a product structure tool that provides all typical product structure functions and has many extra features such as engineering change control, drawing control, and bill-of-materials algebra for combining bills of materials. The program has spreadsheet planning capabilities and is designed to operate as an engineer's work station in conjunction with a mainframe computer system. List price: \$1495. Requirements: 256K, 10M hard disk.



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Job Specific Applications

Ellen Rony

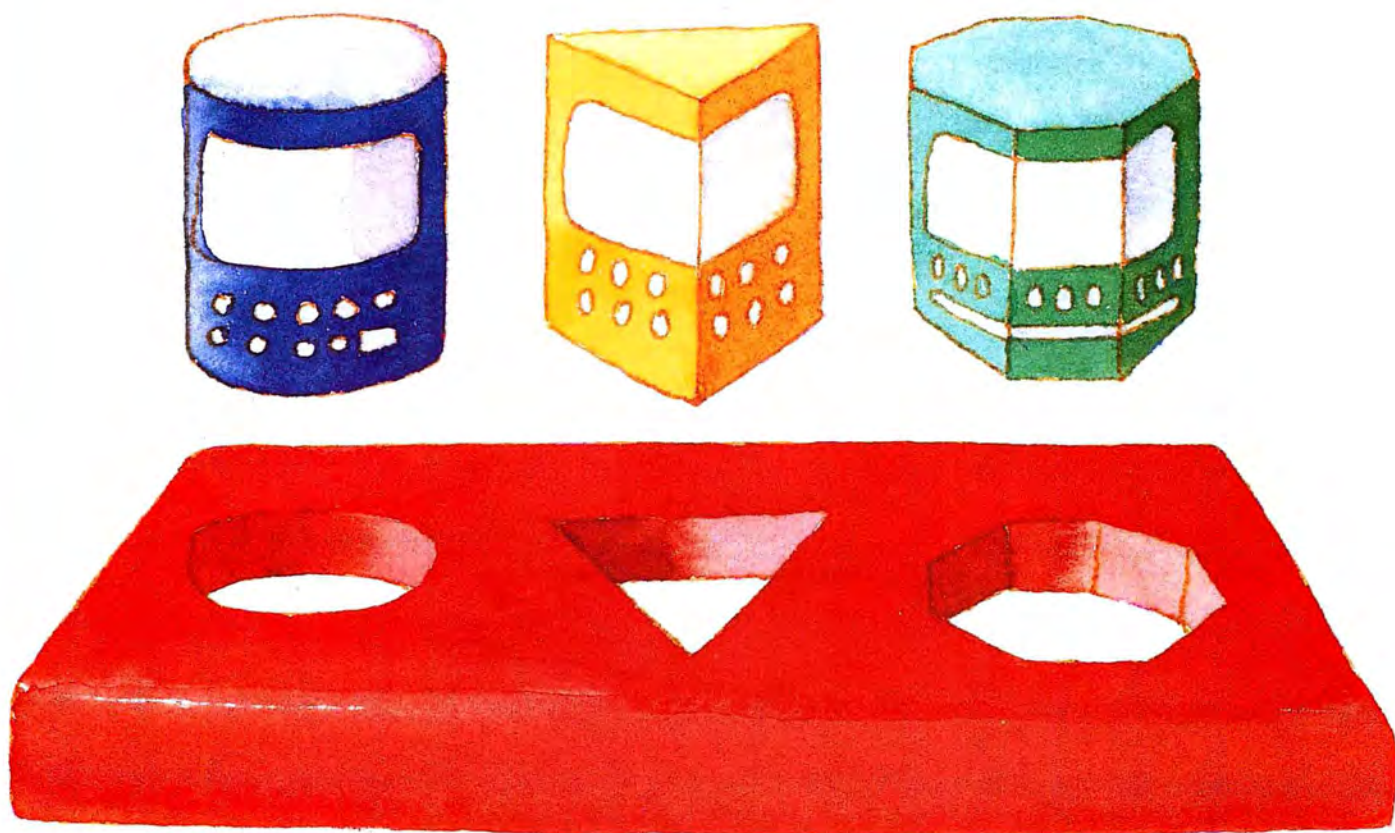
Job specific applications software handles specialized computing tasks for professionals in business and industry. Unlike generic software such as word processors or spreadsheets, which serve the common needs of many people, job specific software is designed for particular audiences.

The programs in this category are often called vertical market applications. They perform such diverse tasks as cost estimation, church management, agricultural pro-

duction control, property analysis, lease classification, insurance processing, and energy resource allocation.

These customized applications transform the computer into a loan analyzer, medical records keeper, legal billing system, apartment manager, or even a point-of-sale cash register.

Much job specific software has migrated from mini-computer environments. In the past, dedicated machines,



service bureaus, and time-sharing systems provided solutions to vertical market needs. But today's microcomputers are more cost effective than their minicomputer predecessors.

Software for special applications may be difficult to locate. Because shelf space in computer stores is at a premium, retailers tend to stock only a limited number of popular programs. Job specific software often requires more expertise than retail salespeople can provide, because the task or industry in question must be thoroughly understood in order to evaluate the programs. Developers often sell and distribute vertical applications through industry magazines that focus on a particular audience and through value-added retailers who market dedicated systems.

Selecting the right software is like choosing any important business tool. The program must do what you want it to, so evaluate several before making a choice. One design may be more useful than another for your application. When judging a demonstrated program, consider its features, efficiency, overall capability, and, of course, performance. The product should reflect its developer's thorough knowledge of a particular task and awareness of its purpose. The program should be easy to use from the start. It should give feedback and on-screen assistance and enable you to recover from mistakes. Documentation is an essential part of the system. Instructions should use language native to the field, and you should not be required to learn unessential technical concepts.

Find out if the program is compatible with existing software. Integration with other programs in the same environment makes a product more useful. Check on the developer's plans for updating and expanding the program. If the program can accommodate a business' growth and industry changes, it will be useful for many years.

Job specific software will continue to flourish. Established companies are considering adapting generic programs for specialized use. Vertical market software is likely to follow the industry movement away from single-function programs like data management or word processing and replace individual applications with integrated packages. Job specific software from apartment management applications to window ads will play an increasingly important role in the computerization of professions and industries.

Ellen Rony is an independent technical writer in Marin County, California, whose specialty is vertical market software.

Job Specific Applications

Medical Office Management PC

CMA Micro Computer
55722 Santa Fe Trail
Yucca Valley, CA 92284
619/365-9718

Medical Office Management PC handles bookkeeping chores and appointment scheduling for up to ten doctors. The program prepares and separates patient claim forms and accounts receivable by practitioner. It displays and prints patients' complete medical and payment records. *Medical Office Management PC* issues fee productivity analyses by medical procedure. List price: \$895.95. Requirements: 128K, two disk drives, 130-column printer.

MUNIS

Computer Center
366 U.S. Rt. 1
Falmouth, ME 04105
207/781-2260

MUNIS (Municipal Information System) is a modular billing and accounting system for towns and cities with populations of 2000 to 40,000 people. *MUNIS* is divided into three parts that can be purchased separately. Accounts payable, accounts receivable, payroll, general ledger, budget preparation, purchase orders with encumbrancing, and voters list are included in one \$6000 package. The tax billing and receivables package and the utility billing and receivables package are \$1500 each. List price: complete package \$9000. Requirements: 64K, one floppy disk drive, 10M hard disk.

Real Realtor

Software Solutions, Inc.
P.O. Box 301
Muscataine, IA 52761
319/264-1384

Real Realtor performs "what if" analyses on one piece of commercial real estate. The program calculates the cash flow, purchase cost, selling cost, and rate of return for a property as small as a rental house or as large as a factory. *Real Realtor* can calculate up to six mortgages and loans with different types of maturities for each property. The program can calculate fixed rate, graduated payment, wraparound, and interest-only loans and mortgages. List price: \$595. Requirements: 64K (128K recommended), two disk drives.

Sell-a-House

Software Solutions, Inc.
P.O. Box 301
Muscataine, IA 52761
319/264-1384

Sell-a-House helps a realtor to use information about a prospective homeowner in order to determine the buyer's borrowing power and price range. The program handles up to three concurrent loans or mortgages. *Sell-a-House* estimates closing costs, monthly payments, and amortization schedules that show monthly equity growth for each house. The program can use fixed rate, graduated payment, and wraparound loans in its calculations. List price: \$295. Requirements: 64K, two disk drives.

Slumlord

Software Solutions, Inc.
P.O. Box 301
Muscataine, IA 52761
319/264-1384

Slumlord helps owners or managers track cash flow for up to 99 rental properties. It keeps property listing data and tenant history information such as move-in and move-out dates. The program charts cash flow for one, several, or all rental units. List price: \$395. Requirements: 64K, two disk drives.

Medical Office Management PCH

CMA Micro Computer
55722 Santa Fe Trail
Yucca Valley, CA 92284
619/365-9718

Medical Office Management PCH has all the features of *Medical Office Management PC* but is designed to run with a hard disk. The program can handle up to 18,000 patient records per 5 megabytes of storage. List price: \$1295.95. Requirements: 128K, one disk drive, 5M hard disk, 130-column printer.

Medical Office Management PCE

CMA Micro Computer
55722 Santa Fe Trail
Yucca Valley, CA 92284
619/365-9718

Medical Office Management PCE has the features of *Medical Office Management PC* and includes word processing and editing facilities and a free-form data base system. The

program produces letters and reports and edits chart records. The data base system keeps track of patient medical histories and maintains patient statement and payment records. List price: \$1195. Requirements: 128K, two disk drives, 132-column printer.

MediCard

CMA Micro Computer
55722 Santa Fe Trail
Yucca Valley, CA 92284
619/365-9718

MediCard is a template for *VisiCalc* that prepares patient bills and American Medical Association claim forms for doctors. *MediCard* is designed for use in single-physician offices that process less than 100 claim forms per month. The program allows transaction entry at any point during the month. *MediCard* displays and prints patient financial status statements. List price: \$249.95. Requirements: 96K, one disk drive, *VisiCalc*.

Dental Office Management PC

CMA Micro Computer
55722 Santa Fe Trail
Yucca Valley, CA 92284
619/365-9718

Dental Office Management PC is designed for a dental office with one to ten practitioners. It includes accounts receivable and insurance claims management systems. The appointment management system includes patient recall. The program prints statements and claim forms and produces account reviews, daily journals, and monthly aged accounts

receivable reports. It can produce cost-, time-, and revenue-comparison and productivity reports. List price: \$1295. Requirements: 128K, two disk drives, 130-column printer.

General Electric Credit Auto Lease

Heritage Computers, Inc.
624 Holcomb Bridge Rd.
Roswell, GA 30076
404/998-8994

General Electric Credit Auto Lease Package is a forms-generating program for automobile dealers and independent leasing companies. The menu-driven program produces and prepares the forms for renting new automobiles. The manufacturer will customize the program for state forms such as tax, tag, and title. List price: \$195. Requirements: 128K, one disk drive, printer.

Workload Reporting

Laboratory Consulting, Inc.
2702 International Ln.
Madison, WI 53701
608/241-4151

Workload Reporting works with *VisiCalc* to measure productivity using workload guidelines defined by the College of American Pathologists. Designed for laboratory administrators, *Workload Reporting* displays and prints test and employee lists, work and staffing worksheets, and recording, work unit, staffing, productivity, and revenue reports. List price: \$695. Requirements: 64K, two disk drives, *VisiCalc*.

Nutritionist

N-Squared Computing
5318 Forest Ridge Rd.
Silverton, OR 97381
503/873-5906

Nutritionist graphically displays nutritive analyses of single foods, recipes, meals, daily menus, and complete diets. Designed for dietitians, physicians, hospital nutritionists, home economics teachers, and homemakers, the program calculates the optimum caloric intake for an individual based on age, sex, weight, height, and activity level. Analyses include weight and percent of recommended daily allowances for 19 nutrients. *Nutritionist* comes with a data base disk documented by the U. S. Department of Agriculture that contains a nutritive breakdown of 730 foods. Utilities for updating, expanding, and changing data on nutrients, food items, and recommended daily allowances are included. List price: \$145. Requirements: 64K, one disk drive.

Patient Files

Professional Medical Software, Inc.
650 Foothill Blvd.
La Canada, CA 91011
213/790-9054

Patient Files maintains medical records for up to 300 patients. Designed for use in a single-physician office, the program records diagnosis, treatment, and vital statistics such as blood pressure, height, and weight. *Patient Files* provides space for physician notes in each person's file. List price: \$149. Requirements: 64K, two disk drives.

Gradebook

Cook Compusystems
309 Lincolnshire
Irving, TX 75061
214/253-6979

Gradebook helps teachers keep grade records for up to 35 students in one or several classes. As many as 28 numerical grades can be entered for each student; *Gradebook* averages these marks and assigns letter grades using modifiable preset averages. Teachers can add and delete student names at any time. *Gradebook* produces records for an entire class or individual students. List price: \$99. Requirements: 128K, one disk drive.

Comsen's Gasoline Energy Distribution System

Comsen, Inc.
20-A Erford Rd. #103
Lemoyne, PA 17043
717/737-2049

Comsen's Gasoline Energy Distribution System is an inventory and distribution program for gasoline delivery and trucking firms. The program keeps track of multiple locations and multiple fuel product inventories as well as providing space for nonfuel items such as batteries, mufflers, and tires. The program includes an accounts receivable module. *Comsen's Gasoline Energy Distribution System* generates customer tickets and produces accounts receivable reports. The program performs preproduct and prelocation sales reporting analyses. List price: \$7000. Requirements: 128K, 5M hard disk.

Superval

Real Estate Applications Software
12 Manor Rd.
Smithtown, NY 11787
800/645-4660, 516/360-8833
in New York

Superval is a real estate investment analysis program that makes cash flow projections for up to 50 years. Designed for real estate appraisers, owners, managers, and consultants, the program handles multiple lease, multiple property, and multiple mortgage analyses. *Superval* automatically calculates the costs of leasing commissions, tenant improvements, new escalations, and percentage rents. Reports can be prepared in dollars, dollars per square foot, foreign currency, or other scales defined by investors, and can show investment assumptions, investment yield components, return on investment, and cash flow. List price: \$1495. Requirements: 128K, one disk drive (two recommended).

Real Estate Models for the '80s

Commercial Software Systems, Inc.
7689 W. Frost Dr.
Littleton, CO 80123
303/761-8062

Real Estate Models for the '80s is a set of 16 templates used with *VisiCalc* for real estate analysis. The templates offer many creative financing options including wraparound mortgages, shared equity appreciations, adjustable rate mortgages, supplementary financing, no-interest mortgages, assumptions, and loan buydown analyses. The company is producing similar templates for *Multiplan* and *1-2-3*. List price: \$65. Requirements: 64K, one disk drive, *VisiCalc*.

GINA

System Vision Corporation
199 California Dr. #207
Millbrae, CA 94030
415/697-3861

GINA is a sales aid that is designed to be used by customers of retail computer stores. The program is divided into a tutorial section that describes hardware and software items and a questionnaire section that asks customers about their computer needs. From the questionnaire information, the program generates a printed report for each customer. The report includes the cost and system requirements of the computer that fits the customer's needs. List price: \$295. Requirements: 128K, one disk drive, CP/M-86.

GINA +

System Vision Corporation
199 California Dr. #207
Millbrae, CA 94030
415/697-3861

GINA + is an advanced version of System Vision Corporation's *GINA*. *GINA +* allows retail store owners and managers to specify computer brand names from the store's inventory in the tutorial and questionnaire information. *GINA +* helps keep inventory in balance by allowing the store personnel to promote available merchandise through the program. List price: \$495. Requirements: 128K, one disk drive, CP/M-86.

Comsen's Fuel Oil Distribution System

Comsen, Inc.
20-A Erford Rd. #103
Lemoyne, PA 17043
717/737-2049

Comsen's Fuel Oil Distribution System is an inventory and distribution program for fuel oil delivery and trucking firms. In addition to accounts receivable and inventory tracking, the program performs degree-day accounting and automatically lists a day's deliveries, showing each customer's credit limit and current balance. The program generates tickets in proper zone sequence.

Comsen's Fuel Oil Energy Distribution System produces prelist, degree-day usage, aging accounts, and burner service contracting reports. List price: \$7000. Requirements: 128K, 5M hard disk.

Comsen's LP Distribution System

Comsen, Inc.
20-A Erford Rd. #103
Lemoyne, PA 17043
717/737-2049

Comsen's LP Distribution System is an inventory and distribution program for liquid propane delivery and trucking firms. Like Comsen's other distribution programs, *LP Distribution System* handles accounts receivable and inventory tracking. The program prints both zone and will-call tickets and performs degree-day accounting. It produces degree-day usage, customer deviation, zone list, tank repaint, and tank rental reports. List price: \$7000. Requirements: 128K, 5M hard disk.

Comsen's Trucking System for Truckload

Comsen, Inc.
20-A Erford Rd. #103
Lemoyne, PA 17043
717/737-2049

Comsen's Trucking System for Truckload does dispatching, freight billing, and automatic rating for any kind of trucking firm. The program allows firms to add accessorial charges to customers' bills. It produces shipper and sales analysis reports that include comparisons by revenue, tonnage, and commodity. Fuel and mileage reporting are done by state. *Comsen's Trucking System for Truckload* produces vendor, vehicle maintenance, accounts payable, general ledger, and shop inventory reports. The payroll module processes checks and records for staff and salaried drivers as well as owner/operator/driver settlements. List price: \$14,000. Requirements: 128K, 10M hard disk.

Comsen's Trucking System

Comsen, Inc.
20-A Erford Rd. #103
Lemoyne, PA 17043
717/737-2049

Comsen's Trucking System LTL includes all the features and capabilities of *Comsen's Trucking System for Truckload* but is designed for LTL (less than load) truckers. The program generates freight bills quicker than the *Truckload* program. List price: \$14,000. Requirements: 128K, 10M hard disk.

Apartment House Manager

User-Friendly Software Inc.
P.O. Box 1192
Melville, NY 11747
516/643-6618

Apartment House Manager is a collection of five programs that assist owners and managers with their monthly and yearly bookkeeping chores. It provides a master file and status reports for all apartments and prints a rent roll and form letters. The program maintains a journal of all rent payments and building expenses and issues a monthly and year-to-date profit and loss statement. A sort program lets managers rearrange the master file and status report information by tenant last name, apartment number, or lease expiration date. This information can then be printed. List price: \$395. Requirements: 64K, one disk drive.

QuikCalc Real Estate Investor

Simple Soft, Inc.
480 Eagle Dr. #101
Elk Grove, IL 60007
312/364-0752

QuikCalc Real Estate Investor is a property analysis program designed to run with *VisiCalc* or *SuperCalc*. The program analyzes one property at a time to determine the effects over a 5-year period of either a sale or purchase. Designed for realtors, *Real Estate Investor* works for both income-producing and residential properties and can be customized for each project. The program prints reports for presentations. List price: \$129.95. Requirements: 64K, one disk drive, *VisiCalc* or *SuperCalc*.

Automated Dental Accounting & Management

DSW, Ltd.

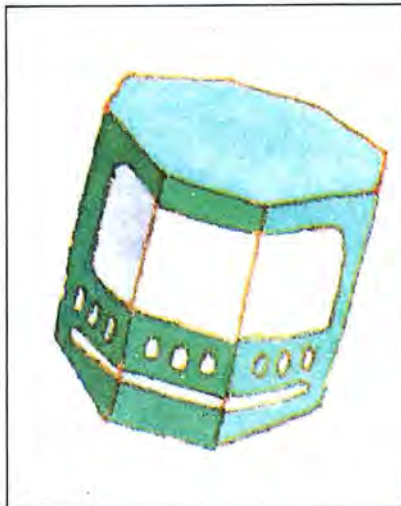
Three Piedmont Center #408

Atlanta, GA 30305

404/231-1221

Automated Dental Accounting & Management System (ADAM) handles bookkeeping and scheduling duties for dental offices with up to 8000 patients. ADAM stores information, patient insurance, dependents, and contacts; prints insurance claims; and generates patient statements. The program maintains appointment schedules and produces recall notices. ADAM displays performance provider analyses using American Dental Association service codes. The analyses can be shown in bar charts or printed reports. List price: \$6500. Requirements: 256K, 10M hard disk (color graphics board recommended).

property and generates reports by individual properties. The program also prints monthly tenant statements and past due, lease expiration, and cash flow reports. The program integrates with *Solid Accounts Payable*. List price: \$1995. Requirements: 64K, 5M hard disk.



Solid Commercial Property Management

Solid Software

5500 Interstate North Pkwy. #501

Atlanta, GA 30328

404/952-7709

Solid Commercial Property Management is an accounts receivable and general ledger package for companies that manage office buildings, enclosed shopping centers, and strip malls. *Solid Commercial Property Management* maintains records for up to 99 properties with up to 99 tenants per property. The program keeps a chart of accounts for each

Solid Residential Property Management

Solid Software

5500 Interstate North Pkwy. #501

Atlanta, GA 30328

404/952-7709

Solid Residential Property Management has the same accounts receivable and general ledger features as Solid Software's commercial property management system. *Solid Residential Property Management* handles up to 999 residential properties that can range in size from single-family dwellings to multitenant apartment houses. The program interfaces with *Solid Accounts Payable*. List price: \$1995. Requirements: 64K, 5M hard disk.

Denti-Log

Colwell Systems, Inc.

201 Kenyon Rd.

Champaign, IL 61820

217/351-5400

Denti-Log handles scheduling and patient recall and accounts receivable for dental offices of up to ten practitioners. Designed to handle up to 10,000 accounts, 25,000 patients, and 75,000 transactions, *Denti-Log* generates monthly statements and prints insurance claim forms in standard American Dental Association (ADA) format. The program can also produce "walk-out superbills" that double as patient statements and insurance information forms. *Denti-Log* generates family bills and calculates interest on overdue accounts. *Denti-Log* produces "charge tickets," data forms with ADA service codes, and has procedures that allow easier data entry and billing. The program generates diagnostic and financial analyses for dental practices. List price: \$3500. Requirements: 128K, one floppy disk drive, 5M hard disk.

Medi-Log

Colwell Systems, Inc.

201 Kenyon Rd.

Champaign, IL 61820

217/351-5400

Medi-Log is a menu-driven program designed for doctors' offices of up to ten physicians. *Medi-Log* matches the features and capabilities of the manufacturer's *Denti-Log* but is programmed with CPT (current procedural terminology) and ICDA

(international classification of diseases adapted) service codes. *Medi-Log* prints three insurance claim forms, including Medicaid, in CPT/ICDA format. List price: \$3500. Requirements: 128K, one floppy disk drive, 5M hard disk.

Star System 7, Property Management

Star Software Systems
20600 Gramercy Pl.
Torrance, CA 90501
213/538-2511

Star System 7, Property Management combines accounting with property management bookkeeping. The program is designed for owners and managers with up to 500 properties (the company will release an upgrade to 1000 properties this year). *Star System 7, Property Management's* general ledger function maintains a chart of accounts, draws up balance sheets, produces income statements, and writes checks. The program produces tenant, vacancy, and delinquent payment reports and prints tenant statements, which can include a late charge plus up to three miscellaneous charges. *Star System 7, Property Management* calculates revenue per square foot for each property. The program charts the cash flow for the previous 12 months of one, several, and all properties. List price: \$950. Requirements: 64K, two disk drives, 132-column printer.

Tenant Information Management System

Small Business Management Systems, Inc.
RR2 Box 521
Highland Lakes, NJ 07422
201/764-4296

Tenant Information Management System is designed for owners and managers of residential and small commercial properties. The program maintains records for an unlimited number of individual units in up to 99 buildings. *Tenant Information Management System* keeps track of tenant and building information, lease and renewal agreements, and monthly and annual rent roll reports. Rent roll reports are issued for individual units and buildings or for all buildings. The program prints tenant statements and delinquency reports. The bank information function maintains separate accounts for each property owner and each building. List price: \$995. Requirements: 64K, two disk drives, Ryan-McFarland Runtime COBOL.

Mixit-2

Agricultural Software Consultants
1706 Santa Fe
Kingsville, TX 78363
512/595-1937

Mixit-2 is a nutrition and feed blending program for farmers, feed mill operators, nutritionists, and veterinarians. The menu-driven program allows up to 57 nutrients and hundreds of ingredients to be included in calculations that determine the

least expensive and most nutritious feed blend for a particular type of animal. The output, which is normally shown in dollars per 100 pounds and dollars per ton, can also be displayed in metric weight and non-American currency. *Mixit-2* issues nutritional breakdowns that include protein, carbohydrate, calcium, magnesium, and phosphorus percentages for each feed mixture. The program's batch weight feature displays feed-mix formulas in weight increments set by farmers or mill operators. Agricultural Software Consultants produces two supplementary data disks, one for beef and dairy cattle and the other for swine and poultry farming. List price: \$395, supplementary data disks \$50 each. Requirements: 64K, one disk drive.

Question-Writer

Orchard Associates, Inc.
1131 Central Ave.
Wilmette, IL 60091
312/251-4144

Question-Writer is a questionnaire authoring system for researchers and telephone marketing professionals. *Question-Writer* handles complex questionnaires with skip patterns and randomization. The program can support a local area network. Researchers can input questions to create surveys that are up to 30 minutes long and can use the program for computer-aided telephone interviewing. *Question-Writer* includes a screen editor and works with *Answer-Tabs*. List price: \$15,000. Requirements: 64K, two disk drives.

Real Estate Property Management

Tomar Productions
P.O. Box 740871
Dallas, TX 75374
214/363-3059

Real Estate Property Management maintains income records for various types of rental property: apartments, single-family houses, office buildings, marinas, warehouses, and shopping centers. The program records expenditures for tax purposes in 13 preset categories such as landscaping, plumbing, and electrical supplies. *Real Estate Property Management* displays and prints the cash flow figures for one or all properties. A remark field enables property owners to keep track of slow-paying tenants and reminds owners of lease expiration dates. List price: \$149.95. Requirements: 48K, one disk drive.

DFP Real Estate Investment Analysis

Dominion Financial Projection
P.O. Box 846
Virginia Beach, VA 23451
804/855-2398

DFP Real Estate Investment Analysis is a menu-driven program for real estate syndicators, appraisers, developers, and underwriters. The program handles up to three mortgages per project and combines mortgage and depreciation information to produce real estate projections of up to 40 years. It generates tax shelter, net present value, and return on investment tables. *Real Estate Investment Analysis* automatically compensates for low-income, residential, and commercial property and applies appropriate IRS

tax regulations for construction period, front end, and other costs. Once an investor has entered the projected price and year of sale for a property, the program shows the predicted effects of the capital gains tax and recapture liability, as well as the internal rate of return on investment. List price: \$585. Requirements: 128K, two disk drives.

Police Operations Support System—Elementary

Cisco, Inc.
8032 Jumpers Mall #507
Pasadena, MD 21122
301/760-0780

Police Operations Support System—Elementary (POSSE) is one of four Cisco, Inc. programs designed for law enforcement agencies. The four data base packages are integrated, but each program stands alone. *POSSE* provides law enforcement agencies with a flexible system for storing and retrieving records and producing a variety of administrative reports. The *POSSE* system stores and automatically indexes detailed information about calls for service, offenses, arrests, juvenile contacts, suspect persons and vehicles, wants and warrants, property and evidence, and police personnel. The program prints reports for department personnel and monthly Uniform Crime Reports in FBI or state format. Information such as agency division and ranking titles within reports can be customized by each agency. List price: \$3500. Requirements: 64K, one disk drive, Ryan-McFarland Runtime COBOL.

Crop Management System

PD, Inc.
2750 N. Texas St. #110
Fairfield, CA 94533
707/422-0572

Crop Management System is an analysis program that produces custom reports for any crop on a per acre or a total field basis. *Crop Management System* is divided into three programs: worksheet, field problems, and reports. The worksheet program contains conversion tables for units of metric and U.S. measure and equations for calculating pump station efficiency, motor horsepower, and overall plant efficiency factors. The field problems program builds a history file of problems for a field; the field can be an entire farm or a subdivision of a farm. The third program produces reports for banking information, budget projections, cost accounting, income tax information, and yearly cost comparisons. List price: \$500. Requirements: 64K, one disk drive.

Menu Forecasting

IPC Datadiet
350 N. Lantana #565
Camarillo, CA 93011
805/484-1616

Menu Forecasting allows hospitals and rest homes to keep track of patient food request cycles for advance meal planning and food purchasing. *Menu Forecasting* projects the number of patient orders for each food item. List price: \$600. Requirements: 128K, two disk drives.

Property Management

Continental Software
11223 S. Hindry Ave.
Los Angeles, CA 90045
213/410-3977

Property Management is a menu-driven program for residential and commercial property owners and managers. The program handles bookkeeping chores for up to 1000 units. In addition to keeping track of rent payments, security and cleaning deposits, and building maintenance costs, *Property Management* produces individual tenant statements and prints mailing labels for monthly bills. List price: \$495. Requirements: 128K, two disk drives, 132-column printer.

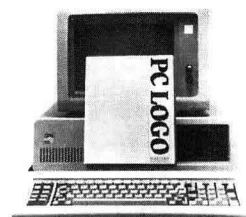
Track

Tiny Systems, Inc.
660 N. Glenville Dr.
Richardson, TX 75081
214/699-0262

Track is a sales analysis program for manufacturers' representatives and sales department and sales agency personnel. *Track* provides sales reporting, call reporting, and commission settlement, and it maintains files on up to 999 factories and 99 salespeople. The program can store invoices, sales history records, and files for up to 100,000 customers. *Track* generates reports on account listings, commissions, and factory summaries. Other reports include customers by city, leading accounts, unpaid invoice listings, and year-to-date analysis. List price: \$3500. Requirements: CP/M-86, 56K, one floppy disk drive, 5M hard disk, 132-column printer.

PC LOGO IS HERE!

The Logo language for the IBM-PC® is here. **PC LOGO** is a full implementation of Logo including word and list capability as well as turtle graphics. Since **PC LOGO** incorporates much of the syntax of Logos available on other computers, it is easy to learn. Yet **PC LOGO** goes far beyond other versions of Logo by taking advantage of the extra features of the IBM PC including function and arrow keys and provides a greatly enhanced editor.



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PC LOGO features include:

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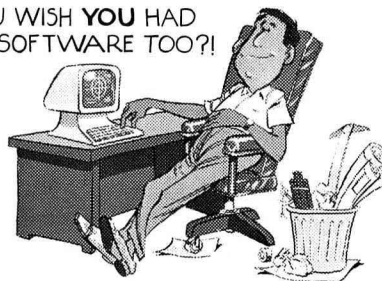
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Real Estate Analysis Package

Aeronca, Inc.
Execuware Division
7415 Pineville-Matthews Rd.
Charlotte, NC 28226
704/541-1199

Real Estate Analysis Package is designed for real estate agents, brokers, investors, syndicators, bankers, and accountants. The program analyzes one commercial property at a time and can display and print 5-, 10-, 15-, and 20-year projection reports for up to 54 elements, such as cash flow, tax sheltering, effect of liquidation, and equity and income revenue. *Real Estate Analysis* handles such analysis factors as interest-only loans and multiple growth rates, as well as more complicated factors such as rule of 78s financing. List price: \$149.95. Requirements: 64K, one disk drive.

Real Estate Consultant

Consultant System Inc.
3704 State St. #311
Santa Barbara, CA 93105
805/682-8927

Real Estate Consultant analyzes property investments, from single-family homes to large, multitenant commercial buildings. Designed for real estate agents, investors, and developers, *Real Estate Consultant* analyzes one property at a time and makes financial projections for up to 8 years. The program can calculate partnership and syndication property transactions as well as single-owner sales and purchases. *Real Estate Consultant* can handle variable interest rate, balloon, and interest-only mortgages, and as many as

eight wraparound mortgages. The program provides amortization and depreciation schedules and displays the internal rate of return for each property. List price: \$275. Requirements: 64K, one disk drive.

Sales Management System

MicroVenture
2111 Business Center Dr. #220
Irvine, CA 92715
714/975-0963

Sales Management System provides agent productivity statistics, listing inventory reports, and information on sales and projected income for real estate firms. It ranks up to 100 agents by sales dollar volume and shows the number of properties sold by each agent. The program displays a record of agents' monthly commissions and compares the current year with the previous year. Key performance areas such as new listings, valid offers from buyers, property closings, and cancelled listings are shown on each agent's report. Up to 100 listings showing the list price, features, financing, property type, age, approximate square feet, agent name, and comments for each property can be displayed and printed. The program can generate reports on pending and closing sales, display expiring and cancelled inventory listings, and provide sales and income analysis reports. List price: \$400. Requirements: 128K, two disk drives, RS-232C serial port, serial printer.

Real Estate Office Accounting

MicroVenture
211 Business Center Dr. #220
Irvine, CA 92715
714/975-0963

Real Estate Office Accounting is a general ledger system for real estate offices. The program uses the "company dollar" format for financial statements and generates reports and charts of accounts that conform to the National Association of Realtors recommended standards. *Real Estate Office Accounting* generates income statement, balance sheet, expense analysis, chart of accounts, and transaction listing reports. The program allows journal transactions for a future period to be entered and posted even though the current period has not been closed. The program displays and prints budget and year-to-date comparison reports. List price: \$500. Requirements: 128K, two disk drives, RS-232C serial port, serial printer.

Investment Property Cash Flow Analysis

Distributed Computing Systems
P.O. Box 185
Lombard, IL 60148

Investment Property Cash Flow Analysis provides real estate investors and realtors with cash flow analyses that include depreciation, net income, and tax considerations. The program, which can compute up to a 10-year period, graphically depicts internal rate of return. List price: \$49.95. Requirements: 128K, one disk drive.

Travel Accounting System Interfaced

Solution Software Systems
117 S. Main St.
Mount Prospect, IL 60056
312/259-1803

Travel Accounting System Interfaced includes the features of Solution Software Systems' travel accounting program and interfaces with the Sabre and Apollo reservation systems. The program can also be used with Solution Software Systems' accounts payable, accounts receivable, and general ledger. List price: \$995. Requirements: 64K, two disk drives.

Food Inventory Control

IPC Datadiet
350 N. Lantana #565
Camarillo, CA 93011
805/484-1616

Food Inventory Control maintains a data base of 1000 ingredients kept in perpetual inventory. Hospital food service personnel can enter up to 500 recipes in the program's second data base. *Food Inventory Control* calculates a recipe's total cost as well as the cost per serving. The program's recipe-deduct feature automatically lists the ingredients in each recipe chosen by the cook or dietitian and checks the hospital's inventory. When the ingredients are at a prescribed low, the program issues a warning and prints vendor orders. *Food Inventory Control* displays restocking costs based on the most recent purchase of an item. Inventory checks are performed daily or weekly. List price: \$1200. Requirements: 128K, two disk drives.

Solid Med

Solid Software
5500 Interstate North Pkwy. #501
Atlanta, GA 30328
404/952-7709

Solid Med is a data management system for medical offices with up to 50 doctors. The program maintains patient information and payment records and produces patient statements. It enables office personnel to create up to 99 insurance-format files for printing patient statements. This program can also produce individual or family bills. *Solid Med* generates physician transaction analysis reports, displays and prints standard accounts receivable reports, and maintains a patient appointment schedule. *Solid Med* works with Solid Software's general ledger, payroll, and accounts payable programs. List price: \$1995. Requirements: 64K, one floppy disk drive, 5M hard disk.

Residential Financial Analysis

MicroVenture
2111 Business Center Dr. #220
Irvine, CA 92715
714/975-0963

Residential Financial Analysis is designed to handle many of the computations customarily performed by real estate agents. The program calculates loan payments and constructs amortization schedules for eight loan types including balloon payment, interest only, and veteran. It calculates the cumulative equity

buildup and annual breakdown of projected yearly income tax deductions for up to 10 years. *Residential Financial Analysis* reports the buyer's closing costs, the seller's closing costs, and net cash from a sale under various financing alternatives. The program allows real estate agents and their clients to perform "what if" calculations with projected cash flow, tax shelters, and appreciation values. List price: \$300. Requirements: 128K, two disk drives, RS-232C serial port, serial printer.

U.S. Congressional Directory

American Planning Corporation
4600 Duke St. #423
Alexandria, VA 22304
800/368-2248, 703/751-2574

U.S. Congressional Directory is the computerized form of the *U.S. Congress Handbook*. The program produces mailing lists, labels, and envelopes for all Congress, committee, and subcommittee members, administrative and legislative aides, office managers, and press secretaries. Record sorting and selecting can be done in a number of ways, including by committee and subcommittee membership. The program contains each member's biography, home area demographics, and top campaign contributors. Profile information can be printed. Annual updates are available from the manufacturer for \$25. List price: \$295. Requirements: 64K, two disk drives.

Lumber Dealers Record System

Johnson Associates Software
P.O. Box 3069
Redding, CA 96049
916/221-0740

Lumber Dealers Record System is an accounts receivable and inventory management system for lumberyard owners and managers. The accounts receivable module can convert lumber pieces and wholesale prices to board-foot and unit pricing, and it maintains a record of custom bid prices for contractor building commitments. *Lumber Dealers Record System* produces picking tickets and customer invoices, and the inventory module can be set to maintain minimum-order and economical-order quantities. *Lumber Dealers Record System* produces monthly sales analyses. List price: \$3000. Requirements: 128K, one floppy disk drive, 5M hard disk.

Medical Record System

Johnson Associates Software
P.O. Box 3069
Redding, CA 96049
916/221-0740

Medical Record System maintains patient records for a medical office with up to nine doctors. The program handles accounts receivable and produces third-party insurance billing in standard American Medical Association, Medi-Cal, and Medicare formats. Johnson Associates Software will customize *Medical*

Record System to produce insurance bills according to individual state specifications. The first customization is free. *Medical Record System* generates practice analyses by patient or patient number, diagnosis, and treatment. List price: \$2000. Requirements: 128K, 5M hard disk.

Legal Tender

American CompuSoft
23113 Plaza Pointe Dr.
Laguna Hills, CA 92653
714/472-8186

Legal Tender is a time and billing program for law firms of up to 30 attorneys. Law firms set flat-rate and hourly-rate fees for each attorney so that the program can automatically bill clients. *Legal Tender* generates lawyer work load, daily transaction, client status, and client trust account reports. The program includes a calendar system with space for up to 2400 memos for trial and posting dates. Reports for one or several dates can be generated. *Legal Tender* integrates with FIRM accounting programs. List price: \$950. Requirements: 48K, two disk drives.

Data Management System for Eye Care Professionals

Professional Data Management Systems

P.O. Box 421
River Falls, WI 54022
715/425-0140

Data Management System for Eye Care Professionals keeps patient records and handles accounts receivable for up to 99 optometrists in 99 offices. The program maintains records

for up to 4500 patients per 5 megabytes of storage. In the patient records the program stores diagnostic and drug reaction information and prescription values for glasses and contact lenses, as well as current balance and insurance information. The Accounts Receivable module prints insurance forms and patient statements and produces revenue reports such as daily payment and aged accounts. The program lists all services performed by a particular doctor, at a particular clinic, or within a particular insurance classification. *Data Management System for Eye Care Professionals* produces reports comparing current period revenues to year-to-date revenues and generates a comparative analysis of services performed in the current period by different doctors and clinics, and under different insurance classifications. List price: \$2495. Requirements: 128K, one floppy disk drive, 5M hard disk.

Nutrient Analysis

IPC Datadiet
350 N. Lantana #565
Camarillo, CA 93011
805/484-1616

Nutrient Analysis is one of five integrated IPC Datadiet programs designed for dietitians and hospital and rest home food service personnel. Each program stands alone. *Nutrient Analysis* comes with a data base, documented by the U.S. Department of Agriculture, of 1000 foods. The data base can be expanded to 4000 foods. Once a patient's sex and age

group are entered, *Nutrient Analysis* determines the patient's optimum intake of cholesterol and 14 nutrients. The program analyzes individual food items, meals, and daily, weekly, and monthly menus. All IPC Datadiet customers receive a free subscription to *Backup*, a bimonthly newsletter that discusses computers in medicine and IPC Datadiet software. List price: \$800. Requirements: 128K, two disk drives.

Collection

File Maintenance, Inc.
11059 E. Bethany Dr. #107
Aurora, CO 80014
303/755-2890

Collection is designed for attorneys who have a debt-collection practice. The menu-driven system maintains accounts with ledgers, performs mathematical calculations, and produces standardized collection documents. Users enter pertinent client information in a data base, and the program automatically generates collection reports. *Collection* monitors all documents produced as well as other collection activities including individual defendants' files and daily client-summary reports. The program includes a tickler system so that cases can be reviewed automatically. *Collection* also monitors and records current balances, costs, and payments to produce a final billing summary. List price: \$6000. Requirements: 128K, one floppy disk drive, 5M hard disk.

Insurance Package

Mirror Images Software
504 Broadway
Troy, NY 12180
518/274-2335

Insurance Package is a data base system for independent insurance agents. The menu-driven program includes accounts payable, accounts receivable, and general ledger. *Insurance Package* produces marketing and sales analysis reports using client and client policy information stored in the data base. The program prints on six Agency, Company Operations Research and Development (ACORD) forms and includes a word processing module. List price: \$3700. Requirements: 128K, one floppy disk drive, 5M hard disk.

Threshold

Physicians Practice Management
1810 S. Lynhurst, Ste. Q
Indianapolis, IN 46241
317/248-0357

Threshold is a menu-driven financial management and insurance-filing program for medical offices with up to six doctors. The program prepares patient statements and insurance claim forms for medical personnel who treat up to 80 patients per day. The program can telecommunicate insurance forms to Blue Shield and Medicare for processing. The accounts receivable module displays and prints financial records and provides financial tracking and auditing. List price: \$5500. Requirements: 128K, one floppy disk drive, 20M hard disk, modem.

Sigma Module I and II

Sigma Software
248 Columbia Turnpike
Florham Park, NJ 07932
201/966-1633

Sigma Module I and *Sigma Module II* are life insurance proposal systems. Module I can be used separately, but Module II requires Module I. Each module is made up of menu-driven programs that allow multiple dividend and payment options. On many of the programs, users can change tax brackets up to five times or make reruns. *Sigma Module I* programs include Variable Pay, Term, Universal Life, Side Fund, Split Dollar, Split Dollar with Borrowing, Split Dollar Rollout, Executive Bonus, Vanishing Premium, Vanishing Premium with Borrowing, Term/Whole Life Comparison, and Rate File Maintenance. *Sigma Module II* programs include Family Needs Analysis, Flexible Premium Annuity, Cost per Dollar Comparison, Business Valuation, Compound Interest, Loan Amortization, Insurance Return on Investment, Cost of Funding a Buy/Sell Agreement, Use of Money Comparison, Estate Planning, Multipolicy Analysis, and Flip-Flop. List price: Module I \$7000, Module II \$6000. Requirements: 128K, two disk drives.

Real Estate Investment Comparisons

Software Models

P.O. Box 1029

Crestline, CA 92325

800/824-7888 operator 583,

714/338-1238

Real Estate Investment Comparisons is a collection of spreadsheet templates designed for real estate sales personnel selling investment and commercial property. Users can analyze the impact on an owner's income of different types of financing for single properties. The comparative investment analysis template can then be used to summarize and compare the financial data of alternative investments. Users summarize and compare the projected taxes on various types of taxable income with the individual tax analysis template. The excess depreciation template determines the gain on sales subject to income tax. The internal rate of return template is used to calculate the true rate of return of a real estate investment and to express it as a percentage. List price: \$59.95. Requirements: 64K, one disk drive, *Multiplan*, *VisiCalc*, or *SuperCalc*.

SuperMarket Industry Performance Analysis

W.H. Redman Associates, Inc.

26 Thunder Rd.

Sudbury, MA 01776

617/443-3361

SuperMarket Industry Performance Analysis is designed for product distributors and provides market analyses of the northeastern United States' supermarket industry. The program comes with a data base that includes

this-year and last-year figures for total sales, number of stores, average weekly volume, market share, and annual growth rate of various supermarket chains. The program lets users modify data in any of the above fields and also create their own fields. Information can be sorted quickly; users can specify up to 18 criteria. The program also allows generation of summary and ranking reports and pie chart graphs for particular geographic regions within the northeastern United States. List price: \$195. Requirements: 128K, two disk drives.

Personal Computer Pricer

Multisoft Corporation

14025 S.W. Farmington Rd.

Beaverton, OR 94005

800/322-4110

Personal Computer Pricer allows computer retailers to track the prices of various hardware and software products in their inventory. The menu-driven program can also be used by sales personnel to create price quotations for customers, including itemized lists of product totals and subtotals. The program provides screen displays and printouts of pie and bar charts. Included with *Personal Computer Pricer* is Multisoft's *StretchCalc* spreadsheet program, which allows users to display six additional types of graphs. List price: \$149. Requirements: 128K, one disk drive, color graphics board, *VisiCalc*.

Checkmate

Cooperative Library Agency

for Systems and Service

1415 Koll Circle #101

San Jose, CA 95122

408/289-1756

Checkmate provides accurate monitoring and processing of periodicals and journals for libraries and business information centers. The program enables users to design their own data bases and to search for and retrieve records, check in periodicals and journals, and claim periodicals from vendors. During sorting, *Checkmate* recognizes up to 30 user-defined keywords and allows user-defined indexing. The program also prints out routing slips as libraries receive periodicals. List price: \$2500. Requirements: 128K, one floppy disk drive, 10M hard disk.

Client Policy Information System

Sigma Software

248 Columbia Turnpike

Florham Park, NJ 07932

201/966-1633

Client Policy Information System provides life insurance agents with a filing system for information on clients. Screens and other elements of the program can be specified by the user. When used with Softword's word processor, *Multimate* (which Sigma is licensed to sell), data from the client file can be merged into a *Multimate* word processing file. List price: *Client Policy Information System* \$1600, *Multimate* \$495. Requirements: 128K, two disk drives.

TIP

P.B.H.
P.O. Box 485
Morrison, CO 80465
303/697-4750

TIP (Title Insurance Programs) produces commitment and policy schedules in standard ALTA form on letter-quality or blank stock paper after users have entered the variable data. The menu-driven program uses a legal verbiage (requirements and exceptions) file to produce normal requirements and exceptions. Standard data is held in a case file. While only one case can be processed at a time, users can create an unlimited number of legal verbiage files. List price: \$3000. Requirements: 128K, two disk drives.

Comparative Policy Analysis

Insurance Micro Software, Inc.
1611 W. Harry
Wichita, KS 67213
316/265-5695

Comparative Policy Analysis compares the benefits of nine existing insurance policies with those of a new insurance product. Users make comparisons with various charts and tables. Straight line calculations are done on current policies to compare them to a proposed policy. The program does not automatically determine the most beneficial policy. List price: \$395. Requirements: 64K, two disk drives.

Estate Liquidity Analysis

Insurance Micro Software, Inc.
1611 W. Harry
Wichita, KS 67213
316/265-5695

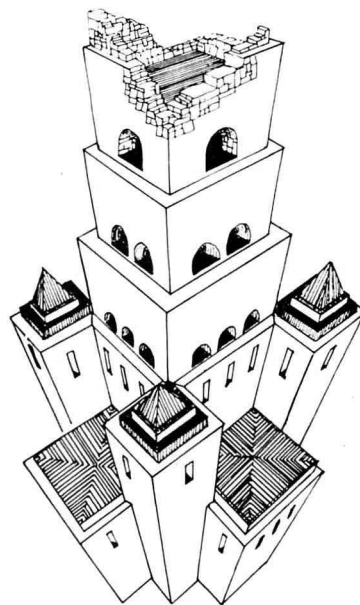
Estate Liquidity Analysis makes forecasts of the cash demands that would be made on the estate of a husband and wife if one of them died. The program also tracks the cash demands that would be incurred in the event of a second death. It forecasts the value of real estate, marketable security, personal life insurance, business interests, cash, and other assets. Liabilities such as taxes, mortgages, and loans are computed, as well as such costs as administrative fees and federal and state death taxes. List price: \$99.50. Requirements: 64K, one disk drive.

Integrated Project Accounting

MicroMaps
1010 Doyle St.
Menlo Park, CA 94025
415/326-7759

Integrated Project Accounting is a multiuser, integrated project accounting program for architects, engineers, and advertisers. An additional Job Costing module can be added to the four basic modules—General Ledger, Payroll, Accounts Receivable, and Accounts Payable. Extensive error checking validates accounts and vendor-code job numbers. Password protection and full-screen entry are included. List price: \$5000. Requirements: 64K, one floppy disk drive, 5M hard disk.

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Investigative Management Information System

Cisco, Inc.

8032 Jumpers Mall #507

Pasadena, MD 21122

301/760-0780

Investigative Management Information System (IMIS) assists law enforcement agencies in managing investigative workloads, assessing unit and individual performances, and monitoring case statuses. The file inquiry feature enables officers to search up to ten data elements simultaneously in the master case file.

IMIS provides a set of administrative reports including case analysis, investigative work load summary, case listing by offense number or by victim, and prosecution outcome assessment. List price: \$2500. Requirements: 64K, one disk drive, Ryan-McFarland Runtime COBOL.

Traffic Information and Enforcement System

Cisco, Inc.

8032 Jumpers Mall #507

Pasadena, MD 21122

301/760-0780

Traffic Information and Enforcement System (TIES) is a menu-driven program for law enforcement agencies. Designed to store and retrieve traffic information, *TIES* allows officers to define their own codes to describe violations, severity and type of accident, road and weather information, and physical condition of persons and vehicles. The program uses a geobase-type file to pinpoint locations by intersection, street, and common place names. *TIES* reports traffic

and accident patterns by isolating locations that attract the most accidents and by pinpointing the time of day and day of the week that show the most activity. The program produces daily, monthly, and annual reports. List price: \$2500. Requirements: 64K, one disk drive, Ryan-McFarland Runtime COBOL.

Crime Analysis System Support

Cisco, Inc.

8032 Jumpers Mall #507

Pasadena, MD 21122

301/760-0780

Crime Analysis System Support (CASS) is a menu-driven data base program designed for law enforcement agencies. *CASS* enables crime analysts to do crime pattern detection, crime and suspect correlation, target profiles, crime potential, exception reporting, crime trend forecasting, and extensive resource allocation studies. Analysts may retrieve records by individual record number or search an entire file using any of the data elements contained in the files as search criteria. Each search can contain up to 15 search criteria. *CASS* can perform searches of even partial data fields so that information like incomplete license numbers or sketchy suspect descriptions can be stored and used in investigations. List price: \$3000. Requirements: 64K, one disk drive, Ryan-McFarland Runtime COBOL.

Physical Exam

Professional Medical Software, Inc.
650 Foothill Blvd.

La Canada, CA 91011

213/790-9054

Physical Exam is designed to speed up and organize the physical examination process by providing a listing format for vital statistics and 50 organ systems. Each organ system listing has space for normal values and a descriptive paragraph to be written and entered by the doctor. Once entered, normal values can be used as default values for all patients or can be disregarded and written over. Physicians can include a summation paragraph on each patient's report. *Physical Exam* prints reports that can be used by insurance companies. List price: \$99. Requirements: 64K, one disk drive.

Property Manager

Miracle Computing

313 Clayton Ct.

Lawrence, KS 66044

913/843-5863

Property Manager is a collection of three interactive programs designed for rental property owners and managers. The package consists of *Eazyacct*, a general ledger program; *Easymail*, a mail merge program; and *Owners*, a property management program. *Property Manager* lists multiple owners, tenants, units, and properties. The program summarizes tenant payments and deposits and produces delinquent payment summaries. *Property Manager* prints tenant bills and can write checks. List price: \$250. Requirements: 128K, two disk drives.

Nutritional Assessment

IPC Datadiet

350 N. Lantana #565

Camarillo, CA 93011

805/484-1616

Nutritional Assessment accepts up to 23 physical measurements and laboratory test results for an individual patient and calculates nutritional assessments. The program uses height and weight measurements, white and red blood cell counts, the total number of lymphocytes, the serum albumin level, and iron binding and serum transferring capacities. The assessments are used to diagnose, treat, and monitor nutritional deficiencies. List price: \$800. Requirements: 128K, two disk drives.

Physician's Accounts Receivable & Insurance

Parker Computer Systems

P.O. Box 16386

Fort Worth, TX 76133

817/429-6482

Physician's Accounts Receivable & Insurance System (PARIS) handles bookkeeping and scheduling duties for from 1 to 99 physicians or dentists. *PARIS* issues patient statements and aged accounts receivable lists and processes up to nine types of insurance claim forms. The program performs patient and practice analyses by diagnosis or type of payment. List price: \$1995. Requirements: 128K, one disk drive, 5M hard disk.

Cook's Recipe Conversion

IPC Datadiet

350 N. Lantana #565

Camarillo, CA 93011

805/484-1616

Cook's Recipe Conversion allows chefs and kitchen workers to enter and store recipes and instructions. Using the recipe data base, *Cook's Recipe Conversion* recalculates the amount of each ingredient needed for a prescribed number of servings. As serving amounts increase, the program changes measurement units; for example, tablespoons become cups and cups become pints. List price: \$600. Requirements: 128K, two disk drives.

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Computer Corporation

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Agri-Management

Software Techniques
405 E. 4th Ave.
Longmont, CO 80501
303/651-1193

Agri-Management is an accounting package designed for farmers and ranchers. The menu-driven program provides double-entry bookkeeping and includes a user-definable chart of accounts created for agricultural operations. Short-term, intermediate-term, and long-term assets and liabilities can be recorded. *Agri-Management* separates farm or ranch assets from other assets. The check register and the deposit register automatically credit and debit specified accounts. *Agri-Management* produces monthly reports of tax-deductible expenses. List price: \$695. Requirements: 64K, two disk drives.

Survey System

Creative Research Systems
1864 Larkin St.
San Francisco, CA 94109
415/771-0912

Survey System assists market research professionals in compiling questionnaire data. *Survey System* produces cross-tabulations, scored variable tables, and camera-ready bar charts with solid or outlined bars instead of asterisks. The program accepts up to 1000 variables and can be customized to accept more. *Survey System* prints tables and charts on many dot matrix and letter quality printers, and the manufacturer can customize the program for any daisy wheel and most dot matrix printers. List price: \$95. Requirements: 128K, one disk drive.

Customer-Info

Learning Tools
686 Massachusetts Ave.
Cambridge, MA 02139
617/864-8086

Customer-Info is a marketing tool designed for retail computer stores. *Customer-Info* provides prices of and information about a store's hardware and software products and can be viewed by customers as they wait for help from salespeople. Product files can be edited for price and inventory changes. List price: \$395. Requirements: 128K, two disk drives.

Mainsaver

J B Systems, Inc.
21600 Oxnard St. #640
Woodland Hills, CA 91367
213/340-9430

Mainsaver is a management system designed for plant and maintenance managers that consists of five modules: work order, budget, maintenance history, inventory history, and preventive maintenance. The modules produce year-to-date maintenance expense records by machine name and number, keep track of total maintenance costs, prepare schedules for preventive maintenance, and produce work orders and year-to-date listings of all parts used for maintenance. *Mainsaver* generates manpower forecasts, morning status, monthly management summary, and budget versus actual cost reports. List price: \$27,800. Requirements: 256K, one floppy disk drive, 10M hard disk.

Commercial Credit Analysis

Integrated Management Services
500 S. Main #1009
Orange, CA 92668
714/558-7128

Commercial Credit Analysis System helps personnel in banks, savings and loans, and insurance companies make and monitor commercial loans. The program produces short- and long-term projections and does individual statement and historical business analyses. It generates RMA data submission forms and includes a term loan compliance feature. List price: \$7500 including training. Requirements: 128K, two disk drives.

Customer Account Profitability Analysis

Integrated Management Services
500 S. Main #1009
Orange, CA 92668
714/558-7128

Customer Account Profitability Analysis is a menu-driven program for banks and other financial institutions that make loans. The program takes information about a client and bank relationship such as the history of savings and checking account deposits and withdrawals, and analyzes the profitability of a client loan. The program generates reports and projections that help loan managers decide on loan type and size, and on the monthly payments best suited for clients. List price: \$2000. Requirements: 128K, two disk drives.

Gradebook 3.0

DEC Computing
609 Oakleaf Dr.
Garrett, IN 46738

Gradebook 3.0 is a menu-driven program for elementary school through university teachers. The program keeps grade records for up to 200 pupils. As many as 60 numeric grades can be entered for each student. *Gradebook* displays and prints records for one or all students. List price: \$36.95. Requirements: 64K, one disk drive.

Real Estate Tools I

Ansonn Software Inc.
2801 N. Surrey Dr.
Carrollton, TX 75006
214/446-4340, 214/867-2760

Real Estate Tools I analyzes mortgages and other cash flow situations for realtors, appraisers, brokers, mortgage bankers, and certified public accountants. Eleven major applications such as graduated payment and wrap-around mortgages, uneven payment leases, and amortization schedules can be used together to perform more than 45 specific analyses. All calculations are in double precision, and cash flows with up to 12 digits are allowed. For variable or grouped cash flow applications, the program computes the internal rate of return, present value, net present value, and financial management rate of return. Investors can begin amortization schedules at any month of the year and prepare monthly or annual schedules for both screen and printer display. List price: \$299. Requirements: 128K, two disk drives.

Time Accounting

Automation Management, Inc.
5718 Westheimer #410
Houston, TX 77057
800/231-0634, 713/781-5941

Time Accounting is an invoicing and expense management system for small- to medium-size law firms. The program keeps track of lawyers' working hours and billable and non-billable expenses, and produces client invoices. It creates client and in-house project listings and a monthly transactions listing. *Time Accounting* generates attorney productivity reports and year-to-date employee productivity, employee summary, and client analysis reports. The program has a trial-posting journal. *Time Accounting's* invoicing feature produces monthly or daily invoices and can accumulate charges until a legal matter is settled. The program works with Automation Management's accounts receivable, accounts payable, general ledger, payroll, and client write-up programs. List price: \$550. Requirements: 64K, two disk drives (hard disk recommended).

Drapery Business System

Sydney Development Corporation
600-1385 W. Eighth Ave.
Vancouver, B.C.
V6H 3V9 Canada
604/734-8822

Drapery Business System is an accounts receivable, accounts payable, and inventory system designed for drapery store owners. It calculates the size and cost of drapes to assist in sales. The program generates customer invoices as well as monthly and year-to-date profit and loss reports. List price: \$5000. Requirements: 128K, two disk drives (hard disk recommended).

CCases

Computility Information Services, Inc.
Colonial Court #4
107 Rutgers Ave.
Swarthmore, PA 19081
215/328-4164

CCases is a record-keeping and file-tracking system for court administrators. The program maintains records of current civil cases in county, municipal, or state courthouses. Separate files (for cases in progress and another for attorneys) contain historical and scheduling information as well as status of current cases. Closed cases can be stored on an archive disk. *CCases* generates monthly statistical analysis reports on current cases. List price: \$3000. Requirements: 64K, two floppy disk drives (hard disk recommended).

Club Manager

Mysel Data Systems
6417 Loisdale Rd. #307
Springfield, VA 22150
703/569-9388

Club Manager is a membership and accounting system for racquetball, tennis, health, and country clubs. *Club Manager* handles accounts receivable and general ledger accounting and billing and maintains records for up to 3000 members. The program provides automatic monthly billing and tracks members' interests so that clubs can do special mailings for events and tournaments. List price: \$1975. Requirements: 128K, two floppy disk drives (hard disk recommended).

Tom Wolff FNA, Tom Wolff CNA

Sigma Software
248 Columbia Turnpike
Florham Park, NJ 07932
201/966-1633

Tom Wolff FNA (Financial Needs Analysis) and *Tom Wolff CNA (Capital Needs Analysis)* calculate the financial needs of a life insurance prospect. Each program comes with printed material on disk that includes an instruction manual. Audio tapes are also included with the program. List price: \$250 per module, \$450 for both modules. Requirements: 128K, two disk drives.

Tom Wolff FNA II, Client File Transfer, Solution and Proposal for FNA II

Sigma Software
248 Columbia Turnpike
Florham Park, NJ 07932
201/966-1633

Tom Wolff FNA II is a financial planning program for insurance agents. The program takes into account cash and income needs, educational funding, retirement analysis, and disability income analysis. Using this information, insurance agents can produce plans for general financial security. The program comes with audio tapes and an instruction manual. When purchased with the *Client File Transfer* program, *Tom Wolff FNA II* client data can be transferred automatically into Sigma's *Client Policy Information System*. *Solution and Proposal for FNA II* can also be purchased separately for use with *Tom Wolff FNA II*. This program automatically generates a ledger to satisfy the financial need calculated in *Tom Wolff FNA II*. The ledger can

be generated for whole life, term, annuities, or universal life, and combinations of these products. List price: *Tom Wolff FNA II* \$900, *Client File Transfer* \$1500, *Solution and Proposal for FNA II* \$2000, all three programs \$3900. Requirements: 128K, two disk drives.

Night Auditor

Santa Fe Software
1107 Early St.
Santa Fe, NM 87501
505/982-2367

Designed for hotels and restaurants, *Night Auditor* is a menu-driven program that provides daily accounts summary, accounts receivable, and cash summary reports. The daily accounts summary enables users to monitor many cash flow areas including revenues, taxes, and reimbursements. The accounts summary report provides an account number, a title, and an amount for each separate account. The accounts receivable report categorizes individual credit card expense data into types of credit cards and types of charges made. Users can track the amounts paid for each account. The daily cash summary report automates the reconciliation process. Beginning cash, cash received, and cash disbursed figures are combined to provide users with the end-of-day receipt balances. *Night Auditor* enables users to delete data from the screen while maintaining it in a buffer file for later use. List price: \$625, hard disk version \$725. Requirements: 96K, two disk drives, printer.

AMI Restaurant Accounting Package

Automation Management, Inc.
5718 Westheimer #410
Houston, TX 77057
800/231-0634

AMI Restaurant Accounting Package is an integrated accounting system that has inventory control, general ledger, accounts receivable, accounts payable, and payroll features. The menu-driven program generates a daily purchases journal, an average cost variance report, a daily requisitions register, and a requisitions recap by item and department. The program enables you to make over- and short-comparison reports, month-to-date cost distribution reports, and item cost, item usage, and item class analyses. The restaurant payroll system processes tip reporting and FUTA and SUTA reporting requirements. *AMI Restaurant Accounting Package* prints W-2 and 941A forms and quarter-to-date/ year-to-date earnings reports. In all, 75 reports can be generated. List price: \$2495. Requirements: 128K, two disk drives.

Water Utility Billing System

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
913/843-5863

Water Utility Billing System performs billing and accounts receivable for water utility companies that serve areas with less than 50,000 inhabitants. Charge codes and routes are user definable. List price: \$495. Requirements: 64K, two disk drives.

The Resume Bank

System Vision Corporation
199 California Dr. #207
Millbrae, CA 94030
415/697-3861

The Resume Bank is a resume management system for search firms, employment agencies, and personnel departments. By using definable keywords, the program quickly accesses any section of a resume on file for on-screen viewing or printing. Resume searches are limited to individual disks, so a search command must be given for each disk. List price: \$495. Requirements: 128K, two disk drives.

Church Membership and Contributions

Cook Compusystems
309 Lincolnshire
Irving, TX 75061

Church Membership and Contributions is a menu-driven program that maintains an integrated mailing and contributions list for church members. Listings include family relationships, church involvement, commitments to four church support categories such as building or mission funds, and weekly contribution information. Records of marriages and baptisms can be included in family records. Family contribution totals can be issued at any time, and the program prints yearly family contribution records for tax purposes. List price: \$700. Requirements: 128K, two disk drives.

Golf Tournament

Systemics
3050 Spring St.
West Bloomfield, MI 48033
313/851-2504

Golf Tournament is a tournament record and handicapping program for golf leagues, golf courses, and country clubs. *Golf Tournament* uses one of three handicapping methods: callaway, Peoria, or established. The program generates prize lists and can divide contestants into four flights. The program produces listings by best front nine, best back nine, and best overall scores. List price: \$99.95. Requirements: 64K, two disk drives.

Window-Ads

ATC Software
Rt. 2, Box 448
Estill Springs, TN 37330
205/837-4718

Window-Ads produces large-type window ads for retail stores. The largest character size is 8 inches, and ads are printed on regular printer paper. List price: \$49.50. Requirements: 64K, one disk drive, printer.

Liquor Guard

Alphacomp Data Services, Inc.
6120 Bristol Pkwy. #206
Culver City, CA 90230
213/215-9471

Liquor Guard is an inventory, purchasing, and employee theft control program for liquor store managers and owners. The program maintains records for up to 20 liquor stores and can be used to keep purchase or-

ders and stock transfers up to date. *Liquor Guard* can also be used as a point-of-sale program by connecting the IBM PC to Data Terminal Systems cash registers with an RS-232C serial port cable. The program generates clerk activity and stock reports and performs sales and price analyses. List price: \$1950. Requirements: 64K, two disk drives (hard disk recommended).

Data Management for Legal Professionals

Professional Data Management
Systems

P.O. Box 421
River Falls, WI 54022
715/425-0140

Data Management System for Legal Professionals maintains client records and handles accounts receivable for groups of attorneys in as many as 99 offices. The program maintains records for up to 5000 clients per 5 megabytes of storage. The accounts receivable module produces client billings and generates revenue and productivity reports. One report is an engagement bid worksheet, which calculates the cost of a legal action or case for bidding purposes and then maintains a record of work hours, fees, and expenses for the office handling the matter. A report comparing the bid to the actual costs may be generated. The program produces aged accounts and aged work-in-progress reports and generates current and year-to-date time and billing analyses. List price: \$2495. Requirements: 128K, 5M hard disk.

MicroMed

ARTiculate Publications, Inc.
402 N. Larchmont Blvd.
Los Angeles, CA 90004
213/871-1350

MicroMed is one of seven stand-alone medical software packages. The program is an accounting and practice management system for doctors and medical office personnel that keeps patient histories, including diagnoses, chart notes, and dependent information. The system performs cycle billings, cross-references service and place of service codes, produces customized reports and patient statements, and prints out information on most insurance forms. A multilocation version of *MicroMed* accommodates up to 20 office locations and 99 doctors.

The other five programs in the ARTiculate software line perform the same accounting and management functions as *MicroMed*, but each program includes features for a particular medical specialty. *MicroDent* provides predetermination and preauthorization of insurance benefits for dentists' and oral surgeons' offices. *MicroMed—Veterinarian Version* registers pets by breed, species, gender, and whether or not the pet has been spayed or neutered. *MicroMed—Radiology Version* handles multilocation entries. The program allows high-volume patient turnover and purges all accounts with a zero balance.

MicroMed—Chiropractic Version allows space in each statement for a description of patient injuries, treatment, progress, and doctor's notes. The program produces a nonactive

patient listing. *MicroMed—Anesthesiology Version* generates bills based on time unit fees that include base, risk, and elapsed time units. The program computes bills using different time unit fees for each doctor.

ARTiculate Publications manufactures two communications programs that integrate with the *MicroMed* software line. *Intercomm Utilities* provides file transfer capabilities. *Intercomm Complete* includes an electronic claims submission feature that allows doctors to send medicare insurance claims to and receive information from some insurance companies.

List price: *MicroMed* \$2400, *MicroMed* multilocation version \$3000, *MicroDent* \$2400, *MicroMed—Veterinarian Version* \$2500, *MicroMed—Radiology Version* \$3000, *MicroMed—Chiropractic Version* \$2400, *MicroMed—Anesthesiology Version* \$3200, *Intercomm Utilities* \$325, *Intercomm Complete* \$750. Requirements: 96K, two disk drives (hard disk recommended), CP/M-86.



Church Membership

Ensign Software
7337 Northview Rd.
Boise, ID 83704
208/378-8086

Church Membership is a data base program for churches and can track up to 64,000 members. The program maintains 16,000 records by family name. Each record includes family phone number, address, and financial data, as well as family members' names, sexes, birth dates, church staffing positions, and talents. Church personnel can add or delete names from the program at any time. *Church Membership* produces printed records of financial contributions for tax purposes. List price: \$99.95. Requirements: 64K, one disk drive.

Solid Search

Solid Software
5500 Interstate North Pkwy. #501
Atlanta, GA 30328
404/952-7709

Solid Search is a search and cross-reference system for personnel agencies. The program maintains a client, candidate, and job order file. Personnel agency employees can use *Solid Search* to match qualified candidates with clients' job openings. Up to 14 criteria can be used for each search. Users can define five skill codes, and five specialty codes can be included in each candidate and job order file listing. List price: \$895. Requirements: 64K, one floppy disk drive, 5M hard disk.

Medaccount

Software Products International
10343 Roselle St., Ste. A
San Diego, CA 92121
619/450-1526

Medaccount is an accounts receivable package designed for a single- or multilocation medical practice. *Medaccount* keeps patient files that contain historic data, diagnosis, treatment, charges, and method of payment. Patient records can be adjusted at any time. *Medaccount* supports two insurance companies per patient and can run complete billings on any claim form as often as required for insurance company reporting or private party billing. On-the-spot bills can be printed for one patient at a time. *Medaccount* produces daily activity reports for each doctor, monthly and quarterly patient activity reports, and drug, lab, diagnosis, and insurance company reports for each office. List price: \$2500. Requirements: 128K, two disk drives, UCSD p-System.

Residential Property Analysis

Distributed Computing Systems
P.O. Box 185
Lombard, IL 60148
312/495-0121

Residential Property Analysis is a menu-driven program for real estate agents and private investors. It is an input/output system that helps you make a 10-year forecast of the value, equity, tax payment, tax savings, and net cost of owning a single residential property. List price: \$29.95. Requirements: 64K, one disk drive.

Community Pharmacy Prescription Profile

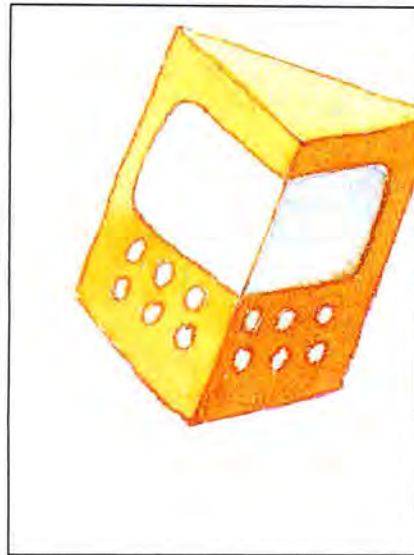
Signature Software Systems Inc.
5602 Stouder Pl. NW
Pickerington, OH 43147
614/862-8622

Community Pharmacy Prescription Profile System is an accounts receivable, inventory control, and patient and prescription record management system. It is designed for independent pharmacies that fill from 75 to 150 prescriptions a day, and it can handle up to 18 months of records. The program produces daily log records, prints prescription labels, and generates third-party claims. List price: \$3995. Requirements: 192K, 10M hard disk.

Real Estate Analysis

Sydney Development Corporation
600-1385 W. Eighth Ave.
Vancouver, B.C.
V6H 3V9 Canada
604/734-8822

Real Estate Analysis System is made up of six interactive programs that may be purchased separately. The programs are intended for use by real estate agents, investors, bankers, and developers, and are designed to help investors make buy-and-sell decisions and analyze mortgages. List price: complete package \$2529, Contemporary Loan Plans \$189, Mortgage Portfolio Analysis \$165, Development Quick Analysis \$500, Development Pro Forma \$425, Property Cash Flow and Yield Analysis \$625, Property Income/Expense Analysis \$625. Requirements: 128K, two disk drives (hard disk recommended).



Travel Accounting System Regulatory Reports

Solution Software Systems
117 S. Main St.
Mount Prospect, IL 60056
312/259-1803

Travel Accounting System Regulatory Reports is designed to help travel agents keep track of airline and train ticket sales. The program produces weekly Air Traffic Command (ATC) reports and monthly Amtrak reports. Some accounts receivable and customer prepayment reports are also generated. The program works with Solution Software Systems' reservation system and the company's customized travel agency accounts receivable, accounts payable, and general ledger programs. List price: \$495. Requirements: 64K, two disk drives.

WISC-R Report Writer

Bertamax Inc.
101 Nickerson St. #202
Seattle, WA 98109
206/547-4056

WISC-R Report Writer is designed to help school psychologists and counselors analyze test results and produce reports based on children's scores on the Weschler Intelligence Scale for Children—Revised. Analysis of the test scores indicates each child's academic strengths and weaknesses. The program is menu-driven, and reports include the child's address and other identifying information along with the analysis results. List price: \$125. Requirements: 64K, one disk drive.

Dental Practice Management

CYMA Corporation
2160 E. Brown Rd.
Mesa, AZ 85203
602/835-8880

Dental Practice Management is a program for dental offices that have up to six dentists. The program automatically generates standard American Dental Association insurance forms. Patient accounts can be assigned 1 of 26 billing codes that can be used for classification, cyclical billing, or separation of certain accounts. *Dental Practice Management* generates practice analyses, patient lists, and procedure and diagnosis codes. It provides patient recall that can be used in conjunction with word processing for patient communication. List price: \$1695. Requirements: 48K, one disk drive (5M hard disk recommended).

Club Membership System

On/Trak Data Systems
1335 Valwood Pkwy. #108
Carrollton, TX 75006
214/620-8000

Club Membership System is a general accounts receivable and billing system designed for sports and country clubs. The program provides detailed statements of recurring club charges such as monthly dues and liquor bills as well as random charges such as meal and merchandise costs. It produces itemized statements for member billings using classification codes that identify types of club memberships. The classification codes are linked directly with billing codes to produce accurate monthly statements automatically. *Club Membership System* produces mailing labels from the membership data base and can be interfaced with other general accounting packages. List price: \$5000. Requirements: 128K, two disk drives.

Publiphile

WPL Associates
1105-F9 Spring St.
Silver Spring, MD 20910
301/589-8588

Publiphile is designed for small publishers and provides a complete subscription-management information system. The menu-driven program generates labels, invoices, renewal notices, and billing statements. Allowing up to 64,000 records, the program generates earned income, renewal analysis, and source code reports. *Publiphile* includes a help screen with user prompts and a 155-page manual. List price: \$2450. Requirements: 128K, two disk drives, dBASE II.

Club Scheduler

Mysel Data Systems
6417 Loisdale Rd. #307
Springfield, VA 22150
703/569-9388

Club Scheduler helps racquetball, tennis, health, and country club personnel manage court and course reservations. *Club Scheduler* maintains court reservations and tee-off times and matches players who need tennis or racketball partners or golf foursomes. The program can also schedule classes. *Club Scheduler* generates daily court and course reports. List price: \$395. Requirements: 64K, one disk drive.

Medical Practice Management

CYMA Corporation
2160 E. Brown Rd.
Mesa, AZ 85203
602/835-8880

Medical Practice Management provides patient and third-party billing, practice analysis, and patient recall for medical offices that have up to six doctors. The program allows patient files to be set up as balance-forward or open-item accounts. Patient accounts can be assigned 1 of 26 billing codes. *Medical Practice Management* generates standard American Medical Association forms and insurance forms for Blue Cross, Blue Shield, and Medicare. The program analyzes practice activity by doctor and by procedure. List price: \$1695. Requirements: 48K, one disk drive (5M hard disk recommended).

BarGen

New Wave Systems
12123 Washington Pl.
Mar Vista, CA 90066
213/475-8545

BarGen generates bar-code labels for supermarkets, grocery stores, and libraries. It prints bars of varying heights and can print text above and below the bar-code labels. List price: \$345. Requirements: 64K, one disk drive, Epson printer with Graftrax.

PDS: Type

Verni Communications, Inc.
106 Juniper Ridge Rd.
Westwood, MA 02090
617/329-4692

PDS (Professional Design Series): Type provides typesetting companies with time, cost, and space estimations for typesetting jobs. The package consists of two programs, TypeQuote and TypeSpec, which can be purchased individually. TypeQuote helps users calculate the cost and time needed for each portion of a manuscript, including text, tables, display, layout, pasteup, and design. The program also maintains a client file that can be used later for job billing. TypeSpec enables users to calculate either how much space a manuscript will occupy in galley form or how many words an article must have to fill a blank space in a magazine layout. *PDS: Type* makes printed reports of all calculations and enables users to perform "what if" calculations. List price: both programs \$895, \$495 each. Requirements: 64K, two disk drives.

Metamorphics Insurance System

Metamorphics, Inc.
Two Bala Plaza #719
Bala Cynwyd, PA 19004
800/523-0206, 215/668-9000

Metamorphics Insurance System is a group of programs that help to manage an insurance agency. The system links accounting functions, word processing, and list management. The accounting functions include invoicing, cash receipts/aged accounts receivable, accounts current/payable, and general ledger. Additional modules such as Risk Analysis, Claims, and Rating can be purchased and used with the system. *Metamorphics Insurance System* was the first insurance product available for the IBM PC. List price: PC version \$2650, XT version \$3650. Requirements: PC version 64K, two disk drives; XT version 128K, one floppy disk drive, 10M hard disk.

EasyPost

Advanced Business Systems, Inc.
P.O. Box 596
Montezuma, GA 31063

EasyPost Insurance Agency Management System is a multiuser system that helps property and casualty insurance agencies manage marketing, accounting, and information. The menu-driven programs include a letter processor, market profiles, and a prospecting module. The accounting module includes accounts receivable

and a general ledger. Written in RM/COBOL, the system includes screens for customer inquiry, coverages, transactions, and claims. List price: \$3600. Requirements: 128K, one floppy disk drive, 5M hard disk, RM/COBOL operating system.

City Fund Accounting System

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
913/843-5863

City Fund Accounting System (CFAST) handles the billing and accounting needs of cities with less than 50,000 inhabitants. The program handles accounts payable, accounts receivable, general ledger, budget, and payroll. *CFAST* works with Miracle Computing's two other utility billing programs. List price: \$2500. Requirements: 128K, one floppy disk drive, 5M hard disk.

All in One Utility Billing System

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
913/843-5863

All in One Utility Billing System performs calculations for electric, gas, and water billing and accounts receivable for cities with less than 50,000 inhabitants. The program allows specialty billing, multiple routes, and up to 15 charge codes for each utility. *All in One Utility Billing System* creates worksheets that meter readers can use on their routes. List price: \$895. Requirements: 128K, two disk drives.

AQS Commercial Rating System

AQS

The Executive Center
810 Cardinal Ln.
Hartland, WI 53029
414/367-5495

AQS Commercial Rating System is a self-prompting insurance commercial rating system designed for raters and underwriters. The menu-driven programs are adapted to each client-company method and are licensed to users with payment of an installation fee and a monthly maintenance charge. The program does rating, coding, and schedules for the following quotations and policies: property and liability, workers' compensation, commercial auto, personal auto, and homeowners. List price: \$7000 plus a development fee of \$450 per month. Requirements: 128K, one floppy disk drive, 10M hard disk.

Group Policy Insurance Analysis

R.R. James & Associates, Ltd.
920 Davis Rd. #305
Elgin, IL 60120
312/742-4703

Group Policy Insurance Analysis generates quick group medical insurance quotes and reports on several companies, in a format suitable for showing to clients. The menu-driven program enables users to obtain a census and produce group insurance illustrations that show many options such as dental, maternity, or prescription card service. Users can create custom displays and reports, and password protection is included. Twenty-four major insurance company rates are included. An auto-

matic rate updating service can be purchased at additional cost to keep track of rate and plan changes. List price: for three companies \$450, per additional company \$45, per additional company after original order \$145. Requirements: 64K, one disk drive, CP/M-86.

"Group Policy Insurance Analysis allows us to easily generate more than 50 quotes a week without any additional help. The manufacturer is very helpful and responsive to questions."
Don Smith, Kettering, Ohio

Retail Point of Sale System

Small Business Management

Systems, Inc.

Rt. 2, Box 194B
Highland Lakes, NJ 07422
201/764-4296

Retail Point of Sale System is a fully integrated single- or multiuser system with inventory information, accounting history, vendor information, and order-processing features. Designed for use in a retail inventory sales environment, the program processes cash sales, credit card sales, and customer account sales. That information as well as account payments or inventory returns may be processed at the point-of-sale terminal or at any active terminal within the system. The system generates accounting reports and monthly statements from any system terminal. List price: \$1795. Requirements: 64K, two disk drives, RM/COBOL Runtime package.

Retail Florist Management System

Small Business Management

Systems, Inc.

Rt. 2, Box 194B
Highland Lakes, NJ 07422
201/764-4296

Retail Florist Management System, a spin-off of the *Retail Point of Sale System*, offers complete point-of-sale service and telephone processing of florist orders. The program provides inventory control, accounts receivable and payable, and a calendar to monitor events of repeat customers. *Retail Florist Management System* supports the FTD system and provides detailed report generation. List price: \$1795. Requirements: 64K, two disk drives, RM/COBOL Runtime package.

Pharmacy Blue

Information Access Corporation
P.O. Box 871
Shalimar, FL 32579
904/651-3108

Pharmacy Blue is a data management, billing, and accounts receivable program for retail pharmacies. The program maintains a client/customer data base that includes prescription and payment information. Another data base maintains drug inventory records. The program generates forms for third-party billing. A separate data base module that works with *Pharmacy Blue* maintains prescription records and produces bills for nursing homes. List price: \$5500, nursing home module \$500. Requirements: 128K, one floppy disk drive, 10M hard disk.

Star's Legal Billing

Star Software Systems
20600 Gramercy Pl. #103
Torrance, CA 90501
213/538-2511

Star's Legal Billing is an automated billing transaction system for law offices. The program provides prebilling summaries and prints invoices. It maintains client and case data including billing, insurance, balance forward, and accounts receivable and attorney information such as multiple billing rates. *Star's Legal Billing* tracks billable and nonbillable time as well as reimbursable costs and payments with user-defined work codes. It can write up or write down fees and costs. The program produces complete audit trails, client statements, accounts receivable agings, and management reports. List price: \$950. Requirements: 64K, two disk drives, 132-column printer.

Star's Property Management

Star Software Systems
20600 Gramercy Pl. #103
Torrance, CA 90501
213/538-2511

Star's Property Management is designed for residential or commercial property managers and includes a full general ledger with user-defined chart of accounts, trial balance, and operating statements. The program lets users forecast budgets, issue cash receipts, monitor cash disbursements, and produce audit trails. It

generates reports on tenant status, rent rolls, tenant delinquencies, vacancies, rent loss, and vendor history. The program also creates tenant receipt statements and vendor checks. List price: \$950. Requirements: 64K, two disk drives.

Specialist

Digital Marketing Corporation
2363 Boulevard Circle #8
Walnut Creek, CA 94595
800/826-2222, 415/947-1000

Specialist is a menu-driven billing and accounts receivable program for medical offices that have up to nine doctors. Five versions are available: anesthesiology, family practice, internal medicine, radiology, and surgery. Each one is customized for the billing and procedural codes of the particular specialty. *Specialist* generates 25 reports and produces mailing labels. List price: single practice \$995, group practice \$1495. Requirements: 128K, two disk drives, CP/M-86.

GolfCap

Systemics
3050 Spring St.
West Bloomfield, MI 48033
313/851-2504

GolfCap calculates and records golf handicap information for golf courses, leagues, and country clubs. *GolfCap* stores records for up to 500 golfers per disk and can store up to 20 scores per golfer. The program generates reports by name or handicap and prints wallet-sized cards or bag stickers for each golfer. List price: \$49.95. Requirements: 64K, two disk drives.

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**WE HAVE THE
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SOFTWARE
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SPECIFICALLY
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MUNICIPALITIES**

MUNIS:
(Municipal Information
System)

MUNIS is a complete municipal accounting package, developed in R/M COBOL, that will run on the IBM PC with hard disk as well as most other hard disk micro systems. The software fully conforms to GAAFR standards, and is the end result of over 20 years experience with municipalities. MUNIS is a proven success and is currently being used by several municipalities. MUNIS is available now, and each license includes complete source code and documentation.

Get the jump on your competition and tap the booming municipal market that has been created thanks to micro-computer technology.

For a FREE MUNIS brochure and more information write or call (207) 781-2260 today.



366 U.S. Route 1,
Falmouth, Maine 04105

Circle 322 on reader service card

Medical Office Management System

Windham Software, Inc.
29/31 Ivanhill St.
Willimantic, CT 06226
203/456-3530

Medical Office Management System is a billing and accounts receivable system for medical offices of up to ten practitioners. The program maintains financial records for up to 15,000 patients. *Medical Office Management System* produces insurance claim forms in American Medical Association format. Windham Software will customize the program to work with some state insurance forms. List price: \$799. Requirements: 128K, one floppy disk drive (hard disk recommended).

Computer Programs for Cognitive Rehabilitation

Life Science Associates
1 Fenimore Rd.
Bayport, NY 11705
516/472-2111

Computer Programs for Cognitive Rehabilitation is a collection of exercises for patients who have brain damage from strokes or head injuries. The programs help psychologists and rehabilitation therapists test and evaluate patients' visual perception and memory. Also included is a record-keeping program called Log that maintains patient history files. List price: \$195. Requirements: 64K, one disk drive.

Optimum Search Package

Logan & Davies
P.O. Box 28119
Lakewood, CO 80228
303/758-6760

Optimum Search Package is a multi-user program that maintains candidate, client, job order, and placement data for recruiters or companies making executive searches. Files have about 300 prestructured fields with 1500 characters for each candidate entry. Files and fields can be password protected or designated as private or public for access protection. Entries are placed in three basic files: a company file, a job order file, and a transaction placement file. Users can select specific candidates to match job orders. Sorting can be done by zip code, city, company, or name fields. A report generator prints labels and Rolodex cards, or the files can be used with word processing programs such as *Spellbinder* and *WordStar*. List price: \$2500. Requirements: 128K, one floppy disk drive, 10M hard disk.

TeloFacts 1

Dilithium Press
8285 S.W. Nimbus St. #151
Beaverton, OR 97005
800/547-1842, 503/646-2713

TeloFacts 1 is a survey and questionnaire tabulation program for marketing, research, and advertising professionals. Up to 100 questions with up to five choices or responses each can be input for each questionnaire. *TeloFacts 1* tabulates the responses and generates reports. List price: \$49.95. Requirements: 64K, one disk drive.

Real Estate Investor

Omni Software Systems, Inc.
146 N. Broad St.
Griffith, IN 46319
219/924-3522

Real Estate Investor enables prospective buyers of real estate to calculate the internal rate of return and to compute the depreciation of an investment using several input variables. By changing an input variable, users can project the potential capital gain, resultant cash flow, or depreciation for a variety of investment situations. The program prepares an amortization schedule and cash flow statement and computes the capital gains and the tax due based on a client's tax rate. The inflation rate's effect can also be computed. List price: \$275. Requirements: 64K, two disk drives.

AMI Ad Agency Billing

Automation Management, Inc.
5718 Westheimer #410
Houston, TX 77057
800/231-0634

AMI Ad Agency Billing is a complete invoicing system for advertising and public relations companies. The program tracks each media or production job from its initial setup to the invoice printing. Production charges can be budgeted and tracked by up to 128 user-defined classes, and charges can be classified by multiple clients, subclients, or jobs. The program lets companies summarize the month's production and media bill-

ing by client, recap billings by department, and analyze the to-date costs by category for each job. The program offers full-screen processing and works with AMI's *General Ledger*. List price: \$1300. Requirements: 128K, one disk drive.

Banner

Sam Wilson and Associates, Inc.
7500 Bellaire Blvd.
Houston, TX 77036
713/270-8450

Banner prints banners, window advertisements, and signs. The program prints 3-inch characters and works with any size computer paper. List price: \$32.95. Requirements: 64K, one disk drive.

Solid Commercial Property Analysis

Solid Software, Inc.
5500 Interstate N. Parkway #501
Atlanta, GA 30328
404/952-7709

Solid Commercial Property Analysis is designed to help investors and commercial property managers decide whether to buy or sell a property. The program analyzes apartment houses, shopping centers, and office buildings. Up to 20 user-defined expense categories can be included in each property's 10-year cash flow statements. *Solid Commercial Property Analysis* shows tax benefits, internal rate of return, Ellwood analysis, and Accelerated Cost Recovery System calculations for each property. List price: \$895. Requirements: 64K, two disk drives.

Cash Needs Analysis, Personal Needs Analysis

Insurance Micro Software, Inc.
1611 W. Harry
Wichita, KS 67213
316/265-5695

Cash Needs Analysis uses a simplified, one-page display to project the financial position of a family in the event of the death of a working spouse. The program can compute plans that would provide for the financial needs of the remaining spouse. *Personal Needs Analysis* analyzes the projected financial position of a family in the event of the death, disability, or retirement of a working spouse. The program projects social security and other retirement benefits. The information can be used to explore coverage provided by different insurance policies. List price: *Cash Needs Analysis* \$75, *Personal Needs Analysis* \$99.50. Requirements: 64K, one disk drive.

Best-Crop

Agricultural Software Systems, Inc.
1216 Dawson Rd. #109
Albany, GA 31707
912/431-1113

Best-Crop is an agricultural management program designed for multiple-farm owners. The modular system includes farm setup, field setup, soil test, fertilizer recommendations, field notes, crop histories, budget cost, and utilities. The program maintains up to 3 years of farm data. List price: \$695. Requirements: 128K, two disk drives.

Law Search

Direct.aid
P.O. Box 4420
Boulder, CO 80306
303/442-8080

Law Search is a communications package for lawyers that accesses Westlaw, a legal data base offered by West Publishing Company of St. Paul, Minnesota. The program downloads and converts files to ASCII text format for word processing and features forward and reverse scrolling. *Law Search* also emulates the Hazeltine 1520 terminal. List price: \$350. Requirements: 96K, one disk drive, RS-232C serial port.

Hospital Materials Management

Small Business Management
Systems, Inc.
Rt. 2, Box 521
Highland Lakes, NJ 07422
201/764-4296

Hospital Materials Management System is designed for materials managers of 100- to 500-bed hospitals. The menu-driven program maintains a list of vendors and an inventory record of all hospital items and performs order tracking, financial analysis, and materials assignments. *Hospital Materials Management System* generates room order, purchase order, purchase order tracking, and departmental budget reports and performs budget versus actual cost analyses. List price: \$1795. Requirements: 64K, two disk drives (hard disk recommended), RM/COBOL Runtime package.

Dental Information System

Business Operating Support Group
4584 Austin Blvd.
Island Park, NY 11558
516/889-8779

Dental Information System is a menu-driven system that provides on-line patient record handling. The program allows preregistration of patients and features automatic scanning of American Dental Association procedure codes. It prints bills on both universal insurance claims and medicaid forms and produces one bill for all members of the same family. *Dental Information System* produces daily charges and receipts logs, aged accounts receivable lists, file listings, and patient cross-references. The program prints mailing labels for patient bills and recalls. A simple word processor is included. List price: \$2995. Requirements: 64K, two disk drives (hard disk recommended), Rand-McFarland Runtime COBOL.

Gapmanager I

Distributed Planning Systems Corp.
22533 Jameson Dr.
Woodland Hills, CA 91364
213/992-4447

Gapmanager I is a comprehensive asset and liability system that interfaces with any general ledger or other software pertinent to banking operations. Designed for bank, savings and loan, or credit union use, the program accommodates up to 400 accounts and comes with communications software and an interface for mainframe connection. List price: \$3500. Requirements: 256K, two disk drives.

Bankreporter I

Distributed Planning Systems Corp.
22533 Jameson Dr.
Woodland Hills, CA 91364
213/992-4447

Bankreporter I provides planning, reporting, budgeting, and "what if" analyses for all sizes of banks, savings and loans, and credit unions. The program's 50 planning accounts can be expanded to 400 by using *Bankreporter I* with *Gapmanager I*. *Bankreporter I* also works with any general ledger or prepackaged applications system to allow automatic data transfer from mainframes into *Bankreporter I* spreadsheet formats. List price: \$3500. Requirements: 256K, two disk drives.

Dental Office Management System

Windham Software, Inc.
29/31 Ivanhill St.
Willimantic, CT 06226
203/456-3530

Dental Office Management System is a billing and accounts receivable system for dental offices of up to ten practitioners. The program maintains financial records for up to 15,000 patients. *Dental Office Management System* produces insurance claim forms in American Dental Association format. Windham Software will customize the program to work with some state insurance forms. List price: \$799. Requirements: 128K, one floppy disk drive (hard disk recommended).

The Landlord

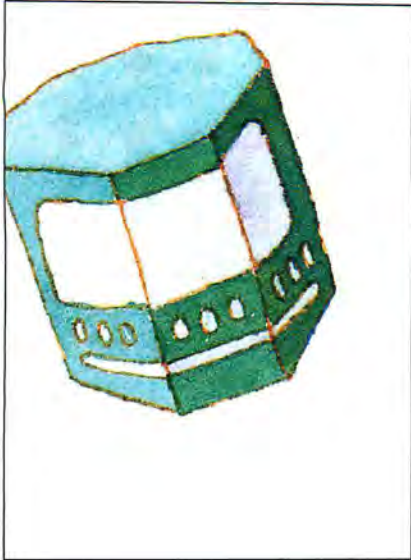
Systems Plus, Inc.
1120 San Antonio Rd.
Palo Alto, CA 94303
415/969-7047

The Landlord is a property and financial management system for real estate agents, property management firms, and individual investors. Designed for residential property management, the program can handle 20 properties with a total of 590 tenants or 100 properties with a total of 370 tenants. *The Landlord* maintains a tenant-information and a tenant-payment file and generates monthly tenant statements as well as tenant payment and delinquency reports. It also produces property and tax analysis reports and can generate reports by property owner, individual property, or total properties. The program's financial management module includes a journal entry feature that adjusts accounts and records nonrent payments. List price: \$595. Requirements: 128K, two disk drives.

MDCStat 2.0

Micro Data Collection Inc.
P.O. Box 115
Novato, CA 94948
415/883-9255

MDCStat 2.0 is a statistical analysis program for scientists, engineers, and industry specialists. *MDCStat 2.0* allows users to change, delete, and manipulate variables. The program includes a frequency distribution plotting system and can perform both linear and multiple regressions. List price: \$49.95. Requirements: 48K, one disk drive.



Flexsystem

International Small Business

Computers

5711 Slauson Ave. #210

Culver City, CA 90230

213/641-3723

Flexsystem is an insurance office management system for independent property and casualty insurance agents. The program provides open-item accounting, client/policy files management, marketing, and forms printing. List price: \$6800. Requirements: 128K, one floppy disk drive, 10M hard disk.

Systems Aided Manufacturing Management

A. Eric Eastman Company

620 W. 1950 N

West Bountiful, UT 84087

801/292-0664

Systems Aided Manufacturing Management is a full material requirements planning system for manufacturers. Inventory, master schedule, shop floor control, purchase order control, capacity planning and control, bill of material, and financial control modules are included. List price: \$4000. Requirements: 128K, one floppy disk drive, 5M hard disk.

Pension Illustration and Administration

Sigma Software

248 Columbia Turnpike

Florham Park, NJ 07932

201/966-1633

Pension Illustration and Administration is an advanced program for the illustration and administration of defined benefits, defined contributions, and profit-sharing plans. An on-screen help key provides users with documentation for any query. The program computes the values of ancillary benefits with a full range of actuarial assumptions (J and S and graded assumptions). All IRS-approved funding methods are accommodated, including ILP, EAN, collective aggregate, modified aggregate, FIL, and accrued benefit. List price: \$20,000. Requirements: 256K, one floppy disk drive, 10M hard disk.

Answer-Tabs

Orchard Associates, Inc.

1131 Central Ave.

Wilmette, IL 60091

312/251-4144

Answer-Tabs performs cross-tabulation and statistical analysis for marketing researchers. The menu-driven program allows nets, weighted and rotated data, chi-squares, means, medians, and regression. *Answer-Tabs* works with *Question-Writer* to provide accurate survey results. List price: \$6200. Requirements: 256K, two disk drives.

Star System 5 Legal Timekeeping

Star Software Systems

20600 Gramercy Pl. #103

Torrance, CA 90501

213/538-2511

Star System 5 Legal Timekeeping is an accounts payable system for law firms of up to 99 attorneys. It can handle as many as 1500 client and case records. The program keeps track of attorney fees and time, charges, and expenses, as well as contingency and court-defined payments for all cases and legal matters. It can generate monthly statements or produce a single bill at the close of a legal action. List price: \$950. Requirements: 128K, two disk drives (hard disk recommended).

Accountability Retailer

Key Systems, Inc.

512 Executive Park

Louisville, KY 40207

502/897-3332

Accountability Retailer, Level I is a retail accounting system that accepts work on sales, payments, returns, discounts, payroll deductions, bad debt write-offs, down payments, adjustments, and warranties. The package includes inventory control, accounts payable and receivable, general ledger, salesperson statistics, job costing, and passive payroll programs. Intended for equipment dealers and retail store owners and managers, the package handles up to 4000 inventory parts with 1000 customers and 2000 invoices per month. List price: \$2500. Requirements: 128K, two disk drives, RM/COBOL Runtime package.

Main Truk

Main Data
844 Stevens Ave.
Portland, ME 04103
207/773-1051

Main Truk computes freight charges for intrastate and some interstate trucking operations. The program computes point-to-point as well as depot-to-point charges and produces commodity, rate, and point-to-point tables. It also generates monthly and quarterly mileage and tax reports. *Main Truk* is sold only through OEMs. List price: approximately \$2500. Requirements: 128K, one floppy disk drive, 5M hard disk, Oasis-16.

Fuel Pak

Main Data
844 Stevens Ave.
Portland, ME 04103
207/773-1051

Fuel Pak is an accounting and scheduling package for wholesale and retail dealers who manage bulk products such as fuel oils, chemicals, and grains. The program handles billing and accounts receivable and can be used with two-component mixes. It can accommodate up to 50,000 customers and permits unlimited drops per customer. The program is sold only through OEMs. List price: approximately \$2500. Requirements: 128K, one floppy disk drive, 5M hard disk, Oasis-16, RM/COBOL Runtime package.

The Advocate

Alta Sierra Software, Inc.
681 Main St. #207
Placerville, CA 95667
916/621-1161

The Advocate is designed for attorneys, engineers, architects, and other professionals who bill their time. The program consists of seven accounting modules: time billing, accounts receivable, trust fund accounting, calendar keeping, accounts payable, payroll, checking account, and income and expense ledger. These packages offer user-definable operating parameters and can be used individually or in any combination. List price: \$2495. Requirements: 128K, two disk drives.

The Agency Manager

Applied Systems
Pauling Rd.
Monee, IL 60449
312/534-5575

The Agency Manager is a customer accounting insurance program. The hard disk system includes word processing, a general ledger, and files for customer retrieval and legal verbiage (requirements and exceptions). *The Agency Manager* produces 100 marketing reports and sales tools, including Acord forms. The program has utilities and telecommunications options. List price: \$3750. Requirements: 64K, one floppy disk drive, 5M hard disk.

Legal Office Manager

Applied Software Technology
170 Knowles Dr.
Los Gatos, CA 95030
408/370-2662

Legal Office Manager is a template for use with *VersaForm*. The program handles billing, scheduling, and record storing and reporting for law firms with one to ten attorneys. It also handles accounts receivable and prints monthly client statements. *Legal Office Manager* produces whole-office or individual-attorney schedules for important dates such as court appearances and filing deadlines. The program generates case reports by type, client, and date opened. It also reports on attorney hours versus type of service. *Legal Office Manager* maintains 350 to 400 active case records per disk. List price: \$249. Requirements: 128K, two disk drives, *VersaForm*.

Amsched

Information Access Corporation
P.O. Box 871
Shalimar, FL 32579
904/651-3108

Amsched prepares amortization tables for users such as real estate agents, accountants, and investors. The menu-driven program shows monthly, quarterly, and yearly breakdowns of principal and interest payments as well as payments-to-date figures for one loan or mortgage. All tables can be printed. List price: \$30. Requirements: 64K, one disk drive, printer.

Insure

Prodata, Inc.
P.O. Box 1312
Hickory, NC 28603
704/324-4777

Insure is a menu-driven, independent insurance agency automation system that has word processing and general accounting functions. The Phase 1 Oasis operating system enables users to operate the system in both multi-terminal and multitasking modes. *Insure* retrieves customer files and creates customer profiles, and word processing can be integrated with any of the files. General accounting consists of invoices, accounts receivable, accounts payable, and brokers' and producers' commissions. The program produces Acord forms. In selected states users can buy a personal lines writing feature for an additional \$1000. List price: \$4000 including the Phase 1 Oasis operating system. Requirements: 128K, one floppy disk drive, 10M hard disk.

Trash Hauler's Billing System

Miracle Computing
313 Clayton Ct.
Lawrence, KS 66044
913/843-5863

Trash Hauler's Billing System performs billings and accounts receivable for trash hauling and sewage companies. All charge codes are user definable. List price: \$495. Requirements: 64K, two disk drives.

Orthodontic Practice Management

CYMA Corporation
2160 E. Brown Rd.
Mesa, AZ 85203
602/835-8880

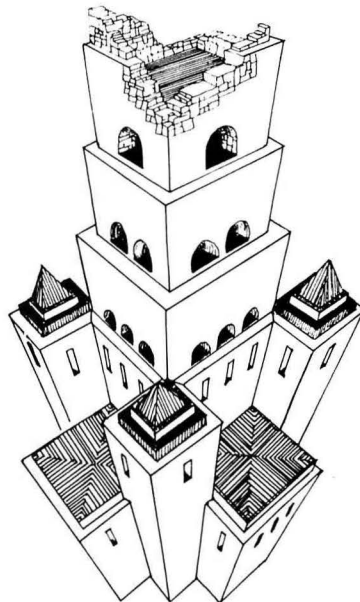
Orthodontic Practice Management is a patient and third-party billing, patient recall, and practice analysis system for offices that have up to six orthodontists. Designed similarly to the manufacturer's other medical practice management programs, *Orthodontic Practice Management* automatically generates standard insurance forms and financial and analytical reports. List price: \$1695. Requirements: 48K, one disk drive (5M hard disk recommended).

Chiropractic Practice Management

CYMA Corporation
2160 E. Brown Rd.
Mesa, AZ 85203
602/835-8880

Chiropractic Practice Management is a patient and third-party billing, patient recall, and practice analysis system for chiropractic offices that have up to six practitioners. The program automatically generates standard health insurance claim forms as well as those for Blue Cross, Blue Shield, and Medicare. *Chiropractic Practice Management* produces financial and analytical reports. List price: \$1695. Requirements: 48K, one disk drive (5M hard disk recommended).

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Personal Management

Denny Mosier

When people discuss "personal management software" they can be talking about many different types of programs. They may mean programs that help you manage household records or software that keeps track of personal finances. Financial record keeping and management programs are used for such things as credit cards, loans, bank records, and taxes. Some programs even write checks.

Personal finance programs are probably among the most practical personal computer programs because they help put your financial records in order and let you store them in one convenient place on disk. These programs can help do your taxes, calculate net worth, monitor current spending, or estimate future expenses based on past records.

Nonfinancial personal software is made up of record keeping and data management programs. These programs can help maintain lists of wedding invitations or record collections. Or they can keep track of your fishing trips with information about the number of fish caught or the bait used.

Whatever personal management software you need, shop carefully before buying. Look at the back of the package. Find out what competing brands are available for your applications. Especially in the area of personal management software, you have to understand your needs—know exactly what you want to do with the program.

If you want to keep financial records, look for a program that can budget expenses and write checks. How many budget accounts can the program work with? Does it require special forms for printing checks? How many transactions can be recorded on one disk? What are the hardware requirements? Does the program run with standard printers? Perhaps the most important question is, how quickly can you learn to use the program?

Another important factor in personal management software is flexibility. You should imagine not only how you plan to use the program for the present but how you might want to use it in the future. When looking for a mailing list program, for example, try to think of how you would want to sort names and addresses: by zip code? in alphabetical order by last name?

A third feature to consider is power. Just how much do you want your new program to do for you? If you're looking at a file management program, for example, how many records can the program keep? What types of graphics does it produce? Can the program work with other programs?

The first personal management programs appeared just a few years ago. Many of the early programs were awkward, difficult to use, or not very powerful. As consumer demand increased, a great need for more and better home and small-business-oriented software arose. Software publishers responded quickly with major improvements. Now many good programs exist in the areas of personal record keeping and financial management.

In the future we can expect even better programs for personal management. One of the keys to success in publishing personal management software has been designing new programs from the user's point of view. As software publishers become more concerned with user-friendliness and programs take advantage of increasingly more powerful machines, personal management software will continue to be used by greater portions of the population.

Denny Mosier is marketing manager for Continental Software of Los Angeles, a publisher of applications software for personal computer users.



Personal Payables

Sundex Software Corp.
3000 Pearl St.
Boulder, CO 80301
303/440-3600

Personal Payables keeps track of up to ten personal finance accounts by writing checks, paying bills, and reconciling balances. The program keeps records and is part of a financial product line. Designed for home finances, *Personal Payables* provides on-screen, step-by-step directions and a help key that gives detailed information on the program's operation. List price: \$49.95. Requirements: 64K, one disk drive, printer.

Certified Personal Accountant

Sundex Software Corp.
3000 Pearl St.
Boulder, CO 80301
303/440-3600

Certified Personal Accountant organizes, analyzes, and manages personal financial affairs. Program features include tax planning and record keeping, cash flow analysis, income and net worth reporting, budgeting, check writing, and bill paying. The program accommodates split transactions for up to ten checking and money market accounts. It also maintains personal accounts on assets, liabilities, and up to 20 credit cards. List price: \$149.95. Requirements: 64K, one disk drive, printer.



Auto Dialer

Alphanetics Software
P.O. Box 339
Forestville, CA 95436
707/887-7237

Auto Dialer is a telephone data base that stores over 1800 names and telephone numbers on a double-sided disk and works with any Hayes Smartmodem to dial the numbers automatically. Designed for home or office, the program needs only a partial description to search for an entry. *Auto Dialer* also alphabetizes names and stores and dials outside-line access codes and SPRINT or MCI numbers. List price: \$39.95. Requirements: 64K, one disk drive.

InShape

DEG Software
11999 Katy Frwy. #150
Houston, TX 77079
713/531-6100

InShape monitors aerobic exercise performance and personal diet, reporting and plotting daily and weekly trends over a 1-year period. The program is designed for anyone interested in good exercise and eating habits. *InShape* lists 24 aerobic exercises and has a large food library that shows nutritional values. List price: \$95. Requirements: 64K, one disk drive.

PerFin

DEG Software
11999 Katy Frwy. #150
Houston, TX 77079
713/531-6100

PerFin is a personal finance record-keeping program with editing, budgeting, and reporting utilities. The program is designed for home users with no computer or accounting experience. *PerFin* accommodates a single checkbook of up to 40 accounts and stores up to 4300 transactions on a single-sided disk. The program also handles credit card and installment debts. List price: \$65. Requirements: 64K, one disk drive.

Master Control Diet and Exercise Program

Healthware
San Gabriel Clinic
1504 Leander Rd.
Georgetown, TX 78626
512/863-7812

Master Control Diet and Exercise Program is a physician-designed diet and exercise package that helps set weight-loss goals and monitors progress. Intended for use by individuals who wish to begin a serious weight-loss program, the package analyzes foods eaten and exercise performed to determine whether users meet pre-established caloric goals. This instant feedback on caloric intake and expenditure enables users to adjust their diets or exercise patterns. List price: \$49.95. Requirements: 128K, one disk drive.

Certified Personal Investor

Sundex Software Corp.
3000 Pearl St.
Boulder, CO 80301
303/440-3600

Certified Personal Investor is a portfolio-management package that handles a single portfolio and is designed for investors or stock-brokers. Program features include tax preparation and handling, spreadsheet examination and alternative testing, built-in simple analysis, and user-definable function keys. List price: \$149.95. Requirements: 64K, one disk drive, printer.

Maxi CRAS

Scott Adams, Inc.
Business Division
155 Sabal Palm Dr.
Longwood, FL 32708
305/862-6917

Maxi CRAS is a check writing and recording system for individuals or small businesses. *Maxi CRAS* works with all popular spreadsheet programs to produce a wide range of reports and statements. The program prints checks, balances accounts, and reconciles bank statements. Checkbook balances are automatically updated and are always accessible. *Maxi CRAS* supports up to 223 user-defined income and expense accounts, and transactions can be distributed to any number of recorded accounts. The *Maxi CRAS* data base also keeps track of up to 75 addresses and can automatically print them on the correct checks. List price: \$99.95. Requirements: 64K, two disk drives.

Money Maestro

Softlink Corporation
3255-2 Scott Blvd.
Santa Clara, CA 95051
408/988-8011

Money Maestro is a personal banking system designed to simplify financial record keeping and provide the information needed to manage personal, family, and small-business financial transactions. *Money Maestro* handles basic financial records such as budget status, monthly income reports, checking account balance, records of income and expenses by category, reports of monthly income and expenses year-to-date versus anticipated amounts, a full history of payments to selected companies or individuals, and a year-end report for tax purposes. *Money Maestro* is a single-entry, self-instructing system that has prompting and a help facility. The program is written in the FORTH programming language. List price: \$125. Requirements: 64K, one disk drive.

Personal Finance Utility

First Release Software, Inc.
5814 Jester
Garland, TX 75042
214/495-1323

Personal Finance Utility provides personal accounts receivable, accounts payable, banking, inventory, net worth, mailing list, and appointment calendar functions for home or small-business users. Menu-driven and with full cursor control, the program can direct all reports to monitor or printer. *Personal Finance Utility* does not print checks or invoices. List price: \$99.95. Requirements: 64K, one disk drive.

Home Accountant

Continental Software Co.
11223 S. Hindry Ave.
Los Angeles, CA 90045
213/410-3977

Home Accountant manages up to 200 budget categories and 5 checkbooks, prints checks, reconciles bank statements, and monitors cash, credit card, and checkbook transactions. The program is intended for individuals, small businesses, and charitable organizations and has search and edit functions. Modules for graphing or forecasting are also included. List price: \$74.95. Requirements: 48K, one disk drive.

"Excellent customer service. Program updates mailed to you automatically." Robert D. Barclay, Fredericksburg, Virginia

Horoscopes

Zephyr Services
306 S. Homewood Ave.
Pittsburgh, PA 15208
412/241-3459

Horoscopes calculates and prints a horoscope chart and provides an astrological reading for any birthdate within 300 years of the present. The large, circular horoscope chart shows conjunctions, oppositions, and ascendants. The astrological reading describes the positions and influences of the heavenly bodies for any date requested. List price: \$24.95. Requirements: 64K, one disk drive.

EnerVision Checkbook Accounting

EnerVision Corp.
7106 Harvest Trail Dr.
Austin, TX 78736
512/288-2326

EnerVision Checkbook Accounting is a checkbook management package that provides ledger, bank statement, and accounts totals. For personal or limited business applications, the program has a bill management facility that stores due bills and allows payment by check. The program's source code is provided in BASIC. List price: \$89. Requirements: 64K, one disk drive.

Calc Aid

Soft Lab, Inc.
P.O. Box 2186
Bremerton, WA 98310
206/479-3700

Calc Aid is a calculator program that divides the screen into two sections. The top part displays the current tape total, memory, last entry, current page number, and current option statuses. The bottom part, in tape mode, lists all entries and their operators. When the program is not in tape mode, entries are displayed in the total. *Calc Aid* produces sub-totals and multiple tapes, and tapes may be labeled alphanumerically. Output and load functions enable you to save and retrieve tape from disk. You can delete or correct any entry or insert a new one, select different formats such as number of decimal places or dollars and cents,

and create a profile by setting format, auto-decimal, and tape or line mode. *Calc Aid* also offers a help-line prompt and automatic decimal insertion. The program computes using algebraic logic, including levels of parentheses, and can maintain 680 entries. All pages may be selectively displayed, and you can label and access up to 26 memories. List price: \$39. Requirements: 128K, one disk drive.

Dollars & Sense

Tronix Publishing, Inc.
8295 La Cienega Blvd.
Inglewood, CA 90301
213/215-0529

Dollars & Sense is a personal financial management program that maintains budgets, records income and expenses, and keeps track of the growth of assets and liabilities. A user can review his or her financial status through a complete set of graphs and reports that the program displays on screen or prints in color or black and white. List price: \$165. Requirements: 64K, one disk drive.

Personal Calendar

Peachtree Software, Inc.
3445 Peachtree Rd. NE
Atlanta, GA 30326
404/239-3000

Personal Calendar tracks and manages time for individuals, groups, or facilities by using reminders and priority and flexible-time analyses. Designed for professionals and managers, the program schedules meetings in the first available time slots and automatically schedules recurring appointments or activities.

Appointment length is set in time intervals determined by users. *Personal Calendar* accommodates up to 98 persons or facilities. List price: \$195. Requirements: 128K, one disk drive.

Bowling League Secretary

Ensign Software
7337 Northview
Boise, ID 83704
208/378-8086

Bowling League Secretary maintains bowling league statistics and membership records. Bowling lanes personnel and league secretaries can compute individual handicaps and team standings with the program. *Bowling League Secretary* handles up to a three-game series. List price: \$99.95. Requirements: 64K, two disk drives.

Dream House

Percs Software
9734 Grant St.
P.O. Box 34357
Omaha, NE 68134
402/397-0361

Dream House creates preliminary architectural drawings, remodeling plans, and even furniture rearrangements using an electronic blueprint format. A variable-scaling feature helps home owners, interior designers, and realtors to design rooms or houses, although sketches lack the detail for actual construction. Room layouts are stored as ASCII files for communications purposes. List price: \$195. Requirements: 64K, one disk drive, color graphics board.

Expense Track I

Sapana Micro Software
1305 S. Rouse
Pittsburg, KS 66762
316/231-5023

Expense Track I is a financial management program for homes or small businesses that keeps track of expenses and produces reports for tax and other purposes. The program's error-trap routines ensure accurate entry of dates, descriptions, category codes, methods of payment, tax statuses, and expenses. *Expense Track* can display and print all the expenses in all of its categories for a given period. The program handles 2300 entries on a single-sided disk, and users can view, change, or delete entries. List price: \$29.95. Requirements: 64K, one disk drive.

Wealth Watcher

Personal Software Company
P.O. Box 776
Salt Lake City, UT 84110
801/277-3174

Wealth Watcher is similar to a general ledger program and summarizes and helps maintain user-defined files of financial data for home or business use. Up to 120 rows of data may be entered into 13 columns labeled January through December and Year-to-Date. A sorting routine sorts records by sequence code and key, enabling users to record subsidiary or detailed information. The program recognizes three types of files: planned, actual, and expected. These files help users make projections and revisions of profits and expenses. List price: \$49.95. Requirements: 64K, two disk drives.

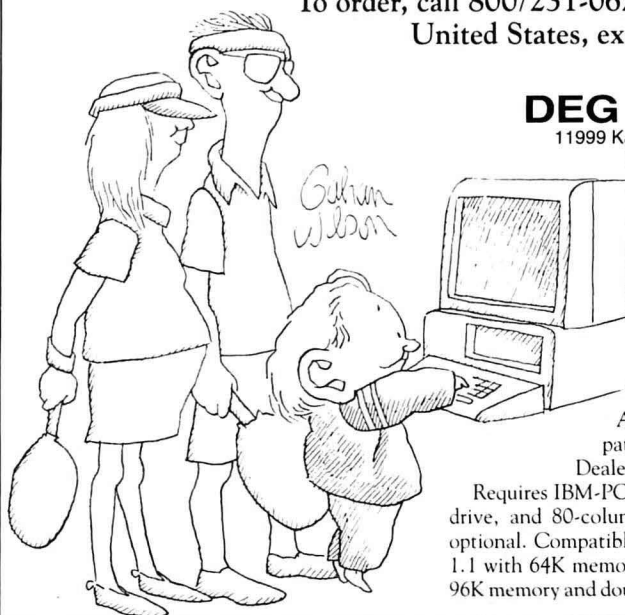
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800/231-0627.

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Requires IBM-PC, minimum one disk drive, and 80-column monitor. Printer optional. Compatible with DOS 1.0 and 1.1 with 64K memory, or DOS 2.0 with 96K memory and double-sided disk drive.

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ColorBiz BioRhythm

ColorCorp
208 N. Berkshire
Bloomfield Hills, MI 48013
800/521-0793, 313/335-2255
ColorBiz BioRhythm gives a complete biorhythm analysis based on your personal data. The program also keeps track of additional names and birthdates so you can create charts for friends and relatives. After you enter your name, birthdate, and a starting and ending date, the program shows a graph divided into days and predicts the levels of your mental, physical, and emotional cycles for each day. The results can be printed. *ColorBiz BioRhythm* can also show two charts side by side for comparison. Documentation provided with the program explains biorhythms and theories about their significance. List price: \$29.95. Requirements: 32K, one disk drive.

Gridstar

Grid Soft, Inc.
7777 Keele St. #8
Concord, Ontario
L4K 1Y7 Canada
416/738-1700
Gridstar is a comprehensive software system for researching and handicapping professional football. The program consists of a data base of 2184 regular season football games played in the years 1973 to 1983. Users update the information using the edit function of the data base manager and the *Gridstar* pro football handicapping strategy. The program enables users to research and analyze professional football statistics. List price: \$195. Requirements: 64K, one disk drive.

Savings Certificate: Interest Calculator

B & E Software Consultants, Inc.
2172 Donner St. NW
North Canton, OH 44720
216/497-1221
Savings Certificate: Interest Calculator analyzes investment opportunities and annuities such as IRAs to determine where you can most profitably invest your money. The program uses the amount of deposit, interest rate, frequency of compounding, and length of investment in its calculations. *Savings Certificate: Interest Calculator* lists all required inputs, such as present worth, future worth, and present value, for each selected investment category. List price: \$34.95. Requirements: 64K, one disk drive.

Evrydiet: A Nutrition and Diet Guide

Evryware
1950 Cooley Ave. #6208
Palo Alto, CA 94303
415/321-2708
Evrydiet: A Nutrition and Diet Guide stores 60 days of diet and nutrition information for up to 22 people and compares the data to recommended daily allowance (RDA) figures. Using a data base that lists 24 nutrients in over 1000 foods, the program calculates each individual's nutrition excesses and deficiencies. Intended for personal health analysts and professional dietitians, *Evrydiet* provides graphic representations of the data. List price: \$59.95. Requirements: 64K, one disk drive.

Preflight Planner

B & E Software Consultants, Inc.
2172 Donner St. NW
North Canton, OH 44720
216/497-1221
Preflight Planner is a flight-planning assistant that generates preflight data such as fuel use, time en route, weight and balance, and wind effects for light Cessna aircraft. The program, designed for pilots, calculates the conditions for each leg of a flight and summarizes all legs and total flight data. List price: \$24.95. Requirements: 64K, one disk drive.

DesKit!

Systemics
3050 Spring St.
West Bloomfield, MI 48033
313/851-2504
DesKit! is a general productivity program designed for daily desktop microcomputer use by salespeople, small businesses, and individuals. The program has such functions as a printing calculator, a word processor, and a mailmerge feature to speed up routine tasks and reduce the need to insert and remove disks. List price: \$149.95. Requirements: 64K, two disk drives.

Catman

Zephyr Services
306 S. Homewood Ave.
Pittsburgh, PA 15208
412/241-3459
Catman generates catalogs of books, tapes, and records in a simplified data base format. Users can prepare listings and perform special sorts on up to 5000 items by category or title. List price: \$19.95. Requirements: 64K, one disk drive.

Micro Cookbook

Virtual Combinatics
P.O. Box 755
Rockport, MA 01966
617/546-6553

Micro Cookbook manages, stores, searches for, and retrieves hundreds of recipes for the home cook or gourmet. The program, which comes with 150 international recipes on file, produces a shopping list of needed ingredients and shows recipes for ingredients already purchased. Cooks can add or delete recipes. List price: \$40. Requirements: 64K, one disk drive.

Diet Analyzer

SimSoft, Inc.
P.O. Box 7095
Port Huron, MI 48301
313/984-1570

Diet Analyzer helps you monitor daily food consumption for vitamin, mineral, calorie, fat, sodium, carbohydrate, and protein content. The program has a data base containing information on over 500 foods and can record up to 800 foods. The *Diet Analyzer* lets you add, delete, revise, and display all information for each food. You can also print a list of all foods in the data base. With the help of on-screen prompts, you enter the amounts and types of food consumed that day. The foods you enter are analyzed using the information in the data base, and a printed report is prepared showing the nutritional value of your diet. List price: \$50. Requirements: 64K, one disk drive.

CASH

Omni Software Systems, Inc.
146 N. Broad St.
Griffith, IN 46319
219/924-3522

CASH is a personal finance system that keeps records of all checks written for the year and recapitulates checks by month, payee, or category. With *CASH*, you can print a snapshot graph to compare various categories, such as medical expenses, interest, and taxes by category or payee. You can also print a comparison recapitulation or a monthly histogram. *CASH* keeps records of medical expenses, interest, taxes, charitable contributions, and miscellaneous deductions for income tax records and helps you track expenses for automobiles, clothing, insurance, and utilities. The program also compares these expenses with your budget. List price: \$125. Requirements: 128K, two disk drives.

CALI/FSS College Financial Aid Advisory

FSS Consulting Corp.
100 Park Ave. #2201
New York, NY 07828
212/661-1370

CALI/FSS College Financial Aid Advisory computes federal financial aid eligibility for college-bound students. A tutorial, a user manual, and interactive help screens help students or their parents determine eligibility. If a student is found ineligible, the program explains why and offers several possible solutions. List price: \$59. Requirements: 64K, one disk drive.



Household Inventory Track I

Sapana Micro Software
1305 S. Rouse
Pittsburg, KS 66762
316/231-5023

Household Inventory Track I inventories and reports on up to 32,767 household items. Each entry has room for category, date of purchase, purchase price, current value, and depreciation information. List price: \$49.95. Requirements: 64K, one disk drive.

M-65-A Astrological Chart Service

Matrix Software
315 Marion Ave.
Big Rapids, MI 49307
616/796-2483

M-65-A Astrological Chart Service is a completely automated chart service and file system for professional astrologers. The program can be used alone or with the optional *M-65-B Research System* data base module, which greatly expands the capabilities of the *M-65-A* program. *M-65-A Astrological Chart Service* enables you to store and retrieve any number of natal charts and store secondary charts and notes for each chart as part of the individual file. Up to 40 jobs (e.g., natal charts, progressions, composites, printed wheels, and paged analysis reports) can be processed at one time. List price: \$300. Requirements: 128K, two disk drives.

Astro Talk

Matrix Software
315 Marion Ave.
Big Rapids, MI 49307
616/796-2483

Astro Talk generates the complete natal horoscope that professional astrologers use in personal interviews or readings. The program generates a chart based on birth information (date, time, and place) entered by users, and then interprets it through a detailed text written by professional astrologers. *Astro Talk* also features a student astroguide that helps users learn astrology by questioning the program. For example, users can ask what a Scorpio rising sign means or what Mercury in the third house signifies. List price: \$39.95. Requirements: 64K, one disk drive.

Tax Manager

Micro Lab
2310 Skokie Valley Rd.
Highland Park, IL 60035
312/433-7550

Tax Manager is a tax preparation program for individual taxpayers, educators, and accountants. You enter all tax data into the computer, and the program directs you to the proper forms and schedules. The program prints IRS-approved tax form facsimiles and places individual data entries in the correct spaces of all tax schedules. *Tax Manager* lets you enter deductions or any tax data year-round. The program enables you to detail deductions, such as medical expenses, instead of merely listing totals, and automatically enters new information from any schedule into all other schedules requiring that information. The program is menu driven, and it pages

rather than scrolls text. List price: \$250. Requirements: 64K, two disk drives.

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Coins

Compu-Quote
6914 Berquist Ave.
Canoga Park, CA 91307
213/348-3662

Coins inventories any United States coin collection for owners interested in knowing the value of their collections. The program prepares special sorted reports on a collection's current value using the latest market retail prices for 1600 common United States coins in eight grades. Updated price data is available every 3 months for \$25. List price: \$95. Requirements: 64K, two disk drives, printer.

Shoebox

Techland Systems, Inc.
25 Waterside Plaza
New York, NY 10010
212/684-7788

Shoebox is a comprehensive personal management package that keeps track of three areas: appointments, activities, and expenses associated with either of the first two categories. Using *Shoebox* you need enter regular appointments only once, and you can enter one-time-only appointments to any point in the future. The program handles different types of recurring events, including those that occur daily; one or more times per week, month, or year; or even at ir-

regular intervals. The program can remind you of appointments up to 120 days ahead of time. *Shoebox* has a history function that lists all appointments or activities that match certain key words in the descriptions of the two categories. The program can be set up for one or more users or a person managing a group of users, with optional passwords to ensure privacy. *Shoebox* is menu driven and offers help levels to guide users through the program. List price: \$125. Requirements: 128K, one disk drive.

Routemaster

Applied Operations Research, Inc.
22056 Satcoy St.
Canoga Park, CA 91303
213/340-1419

Routemaster aids drivers by computing the best route for minimizing distance and traveling time. The program handles up to 30 locations at once, enabling you to consider several legs of a long journey. A self-teaching manual comes with the program. List price: \$195. Requirements: 64K, one disk drive.

Bearings

Zephyr Services
306 S. Homewood Ave.
Pittsburgh, PA 15208
412/241-3459

Bearings calculates great-circle bearings and distances for any location. Designed for amateur radio enthusiasts and navigators, the program generates data for over 500 cities worldwide. *Bearings* also includes amateur call sign prefixes. List price: \$19.95. Requirements: 64K, one disk drive, printer.

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Personal Computer/Personal Finance Program

Best Programs, Inc.
5134 Leesburg Pike
Alexandria, VA 22302
703/931-1300

Personal Computer/Personal Finance Program is a financial package for individuals or small businesses that keeps track of income, expenses, and checkbook transactions. The program provides detailed checkbook, income, expense, and cash flow reports. *Personal Computer/Personal Finance Program* can hold up to 400 transactions per month. List price: \$95. Requirements: 64K, one disk drive.

Personal Computer/Professional Finance II

Best Programs, Inc.
5134 Leesburg Pike
Alexandria, VA 22302
703/931-1300

Personal Computer/Professional Finance Program II is a financial package for individuals or small businesses that maintains records of assets and debts and provides income expense and net worth reports. The program performs all book-keeping functions and does not require a knowledge of accounting. *Personal Computer/Professional Finance Program II* requires only one entry per transaction and prints

checks and reports, including net worth statements, income and expense distributions, and summaries. The program has functions for automatic monthly bill paying and transaction entry. List price: \$245. Requirements: 128K, two disk drives.

Home Finance

Apparat Inc.
4401 S. Tamarac
Denver, CO 80237
303/741-1778

Home Finance is a home checkbook and budget manager with several automatic functions and up to 48 categories. The program tracks expenses by category and chronological range, details expenses, and calculates the percentage of income spent. *Home Finance* controls one checking account that uses a maximum of 2200 checks per year. List price: \$34.95. Requirements: 64K, two disk drives.

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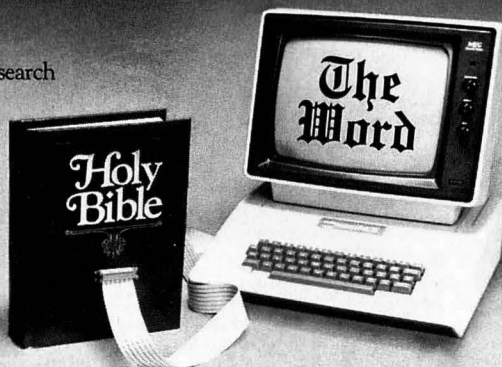
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Information Techniques, Inc.
3 First National Plaza #1400
Chicago, IL 60670
312/938-0263

Calendar is a personal or professional work station guide for people who want to keep track of personal schedules. The program can divide each day into 20 half-hour time intervals with 33 positions available for describing each interval. *Calendar* uses multiple alarms and text blinking to remind users of deadlines and appointments. *Calendar* can be scheduled for any future date and uses single-key controls for all functions. List price: \$50, discounts available for volume purchases. Requirements: 64K, one disk drive.

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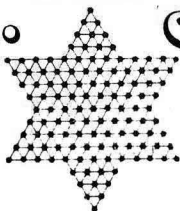
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Integrated Applications

Mitchell Kapor

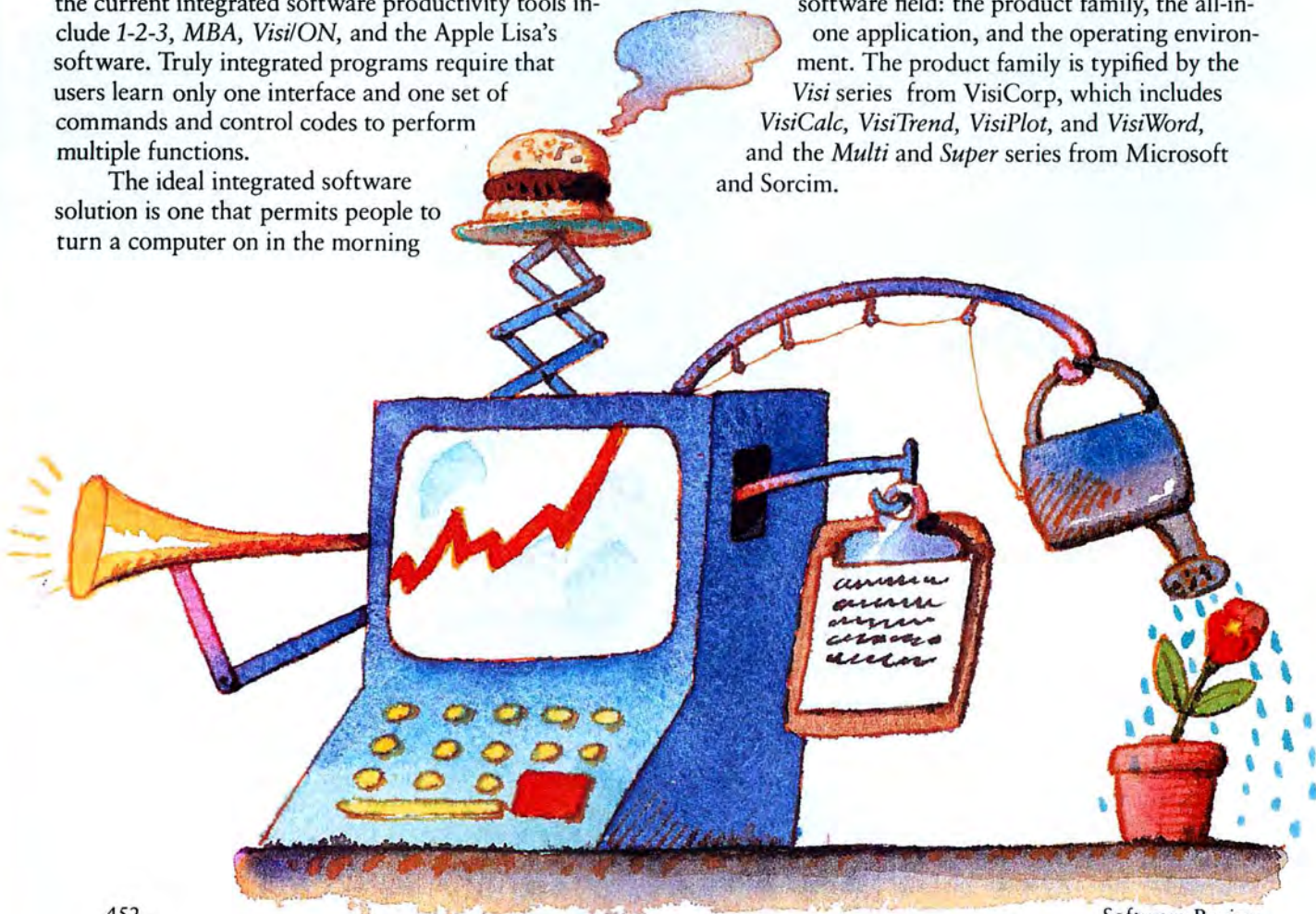
Integrated software, a much-used term in today's micro-computer industry, represents an important step in the evolution of productivity tools for business and professional use. Simply put, productivity tools help users become more efficient, work faster, and think smarter.

One working definition of a software productivity tool is a package that has several of the following capabilities: spreadsheet, data base, word processing, graphics, and communications. According to this definition, the current integrated software productivity tools include 1-2-3, MBA, Visi/ON, and the Apple Lisa's software. Truly integrated programs require that users learn only one interface and one set of commands and control codes to perform multiple functions.

The ideal integrated software solution is one that permits people to turn a computer on in the morning

and leave it on all day with one all-encompassing software package installed to answer every data and word processing need. Although we're not quite at that point in software development, it is interesting to note how far software has come from the days when multiple functions, such as creating a spreadsheet and producing a graph from the data, necessitated constant switching of floppy disks and the accompanying delays.

Three strategies have emerged in the productivity software field: the product family, the all-in-one application, and the operating environment. The product family is typified by the Visi series from VisiCorp, which includes VisiCalc, VisiTrend, VisiPlot, and VisiWord, and the Multi and Super series from Microsoft and Sorcim.



The advantages of the product family approach are that all the products come from a single source, so applications packages can be added to the product line to suit the needs of a special audience.

The all-in-one applications packages, represented by *1-2-3* from Lotus Development and *MBA* from Context Management Systems, offer a unified user interface and data structure. The advantages of such systems are the integrated operations that stem from combining multiple applications into one package. One disadvantage is that such systems are not regarded as “open-ended”—adding a new application to the package is difficult. Some developers of integrated programs, however, are making the systems more open by including macro language features that allow people to add customized applications to the integrated system.

The third approach to productivity tool software, the operating environment, is represented by *Visi/ON* from VisiCorp, *DesQ* from Quarterdeck, and the Apple Lisa software. These systems consist of a central operating environment program to which applications are added. All such applications are integrated by the central program. Some open environments use a window metaphor and a mouse controller to improve the user interface.

The advantages of operating environments are their open-endedness and improved user interface compared with the product family approach. The disadvantage is slow performance speed due to the memory space required by the central operating environment program.

As 16-bit personal computers become accepted by major corporations, the demand for improved software productivity tools will continue to increase. Integrated programs help reduce the waiting time caused by swapping disks and loading and reloading data when using separate programs.

Although *1-2-3*, *MBA*, and other programs have made great advances, improvements in integrated applications packages will continue. User interfaces will become simpler, and power and functionality will increase as programs take advantage of technological advance.

The most important task for those who are developing integrated programs is improving user interfaces. Developers are looking for alternatives to programs that use different commands, control codes, and function keys to perform similar operations. The goal is to combine program functions under one user interface and create software that is easy to use.

Mitchell Kapor is the founder and president of Lotus Development Corporation and the developer of 1-2-3. Before founding Lotus in April 1982, Kapor developed VisiPlot and VisiTrend/Plot for VisiCorp (then called Personal Software).

Integrated Applications

1-2-3

Lotus Development Corp.
161 First St.
Cambridge, MA 02142
617/492-7171

1-2-3 combines electronic spreadsheet, data management, and graphics functions in one program. The spreadsheet function handles files of up to 256 columns and 2048 rows. Spreadsheet data can be converted to graphs and displayed on screen if the IBM PC is equipped with a color graphics board. Graphs include scatter plots, pie charts, and bar and line graphs. Data files can hold up to 2048 records and 256 fields per record. (Spreadsheet and data base file structures are the same.) A program report generator prints master lists and mailing labels from information in the data base. A macro feature provides programming with DO loops, GOTO branching, and conditional statements for menu and sub-menu design. All files are transportable as standard ASCII files. List price: \$495. Requirements: 192K, two disk drives, color graphics board or dot matrix printer for graphics.

"1-2-3 has great graphics but a clumsy data management function and limited statistical functions. The program is fast, however." Patricia Turk, Fairfield, California

"1-2-3 can create beautiful graphs with data stored in spreadsheet and data management files. It is the most helpful software I have ever used." David Seidman, Reston, Virginia

"The program has limited printer support for graphics output (I was unable to utilize my C. Itoh printer)." T. Reichenbach, Campbell, California

"In graphs, the Y-axis defaults to 'thousands' with no way to change. The integrated applications list should include a programming language." Edwin Iwata, Seabrook, Maryland

"The program does an excellent job when you finally know how to use it. Spreadsheet and graphics are superb." Howard Sachor, Redondo Beach, California

"Simply the finest, fastest, and most formidable product of its kind." Mark D. Dobervich, Palo Alto, California

Personal Computer Data Interface

Applied MicroSystems, Inc.
P.O. Box 832
Roswell, GA 30077
404/475-0832, 404/371-0832
Personal Computer Data Interface (PCDI) combines telecommunications, data management, and graphics. The telecommunications function enables an IBM PC to access data from on-line, mainframe data bases on computers that use the IBM VM/370 operating system, or to retrieve data from the Compustat data base from Standard & Poor's. The software can be modified to access data from other mainframe operating systems. The program can operate in automatic or manual terminal modes and can transmit data at 300/1200 bps in ASCII or EBCDIC formats. PCDI provides automatic searching for available line/port, user-defined port descriptions and logon procedures, and an optional APL terminal feature. The data management function includes up to 500 variables with 125 categories per data base, statistical functions, and a full-screen editor that

has scrolling and global edit commands. The graphics feature enables users to display two charts per screen, and it produces pie charts, exploded pie charts, histograms, line charts, area fill charts, scatter plots, and memos. List price: \$250. Requirements: 256K, one floppy disk drive, 5M hard disk, color graphics board, modem.

Metafile

Sensor-based Systems
15 E. Second St.
Chatfield, MN 55923
507/867-4440

Metafile consists of several functions, including high-level programming, data base management, word processing, report generation, and communications. The menu-driven program is recommended for beginning or advanced applications developers. Each component can be used to develop applications and can become part of a finished application. The communications feature transfers data between computers using *Metafile*. Other capabilities enable developers to build software protection into applications through encryption and decryption. The program also includes data file recovery features, automatic data validation, keyed record access, syntax parsing facilities, screen windowing/partitioning, panning and scrolling, multiple-level sorting, printer control language, relational data base capabilities, text move-copy-delete functions, word wrap, and on-line documentation and reference information. List price: \$1995. Requirements: 128K, two disk drives.

"After seven years of working with computers, this is the best software I

have seen for data manipulation."

Jim Morton, Chicago, Illinois

"Excellent debugging and step-through features." Mike Bergman, Westmont, Illinois

"Metafile is the most exciting tool I have come across for improving productivity of MIS professionals in developing micro-based systems."

Martin D. Donaldson, Philadelphia, Pennsylvania

"The report generator is somewhat limiting, though excellent for simple reporting." Contrax Systems, Arlington Heights, Illinois

"Metafile is a very efficient piece of software. It is easy, flexible, powerful, and fast. Word processing features are adequate but not the best."

Steven T. Pennock, Philadelphia, Pennsylvania

"This product gave me at least five to ten times increased productivity over BASIC coding." Tom Speaker, Oak Forest, Illinois

"The program is limited in that it is not multiuser, which is needed for networking." T. V. Huguelot, Chicago, Illinois

Officeware

Century Analysis, Inc.

114 Center Ave.

Pacheco, CA 94553

415/930-7240

Officeware combines capabilities for writing, planning, communicating, and creating graphics. It is intended for systems integrators and OEMs. One of Officeware's programs, Officeware Script, is similar to a commercial-quality word processor.

Officeware Plan creates spreadsheets, and Officeware Graphics represents them graphically. Officeware Forms is a data management program that inputs, edits, and validates data. For personal business management, the system includes a program called Officeware Desk that keeps dates, files, phone lists, calendars, and other information for a private rather than shared office environment. Officeware Terminal emulates various host terminal protocols and allows a work station to operate as an entry point or applications device to mainframe machines. Officeware Network provides information sharing in a network environment. Requirements: 384K, two disk drives.

T/Maker III

T/Maker Co.

1742 Willow Rd. #206

Palo Alto, CA 94304

415/326-6103

T/Maker III has text and word processing, electronic spreadsheet, list processing, and bar-charting functions. Text processing features include scroll, search and replace, copy or move for lines or columns, and frame mode for creating and editing large tables. Users can define macro files for up to 150 keystrokes. The word processing function includes centering, margin justifying, pagination, headings, boldfacing, and underscoring. The list processor enables users to sort and total entries. With the file manager, users can create, save, delete, merge, and insert files. The program's spreadsheets can be edited with the text or word processors and can include projections, percentages, and calculations between two tables. The graphics function turns data from

the spreadsheet files into bar charts. A data transfer function loads and unloads text and numbers from one file to another. List price: \$275. Requirements: 128K, two disk drives.

MBA

Context Management Systems

23868 Hawthorne Blvd.

Torrance, CA 90505

213/378-8277

MBA integrates five computing functions: electronic spreadsheet, word processing, data management and forms generation, business graphics, and telecommunications. All use common commands, and the screen splits into four windows for viewing and editing data in files. The word processing function includes word wrap, block or column moving and copying, and printing that merges text and graphics. Data files can fill 16M of space with up to 95 fields per record. Users can sort up to 6 fields at once and can design report forms and data entry formats. The graphics function produces bar graphs, pie charts, scatter plots, and line graphs from spreadsheet or data file information. The asynchronous telecommunications program enables users to send data in ASCII or EBCDIC formats. List price: \$695. Requirements: 256K, two disk drives, color graphics board.

"MBA does not allow you to use color. It is, however, a powerful program." Andrew Washburn, San Pedro, California

"The program is amazingly simple to learn and use. It produces professional-looking graphics that allow you to show complex relationships and trends." Hugh F. McColl, Burnsville, Minnesota

Deduction and Reasoning

Kearney Rietmann

The Deduction and Reasoning category represents *PC World's* hopes and predictions for the future of software. From looking at the programs now running on the IBM PC and talking to innovative software developers, we see three exciting new kinds of software entering the marketplace: equation solvers, programs that process natural language, and expert systems. This year two programs fit into this category—an equation solver and a program that contains elements of natural language processing.

The equation solver is Software Arts' *TK!Solver*. Much as *VisiCalc* and *SuperCalc* brought personal computing to people who use spreadsheets, equation solvers bring an application to scientists, engineers, students, and other people who work with complex equations. An equation solver frees you from having to remember the mechanics of algebra to be able to manipulate and solve equations. You're spared from worrying about details of controlling plus and minus signs, repositioning values, and performing mathematics operations. Instead, you can concentrate on using the equations as tools for solving work-related problems.

Natural language processing programs simplify and personalize the task of controlling computer software. These programs, most of which are still in development, free you from learning computer languages and assigned program commands and allow you to input information with everyday language. *Savvy*, the second product we've listed in the Deduction and Reasoning category, is a data management system that contains elements of natural language processing. Using pattern recognition techniques, the program associates new phrases entered as commands with those already existing in its memory.

The program matches the language patterns and "learns" to respond to a command system that is unique to each person who inputs information.

To our knowledge, expert systems are not yet commercially available for the IBM PC. Because of memory and processing speed requirements, the programs still run mostly on large computers. Expert systems imitate the decision-making processes used by experts and professionals in disciplines such as medicine, meteorology, and geology. Made up of large knowledge bases, expert systems are able to assist professionals in diagnosing illnesses, making weather forecasts, and exploring the earth's crust for oil and minerals. Expert system researchers predict that we will soon be able to run these programs on the PC to plan investments, seek medical and legal advice, diagnose house plant diseases, and get information about repairing cars and household appliances.

Although we've found only two programs for the Deduction and Reasoning category this year, we're certain that next year the category will be a full one, with more programs that solve equations, programs that truly understand you when you communicate in everyday language, and expert systems that assist in work and leisure-time activities. We're also sure that exciting new programs not yet available to the public are running today on the personal computers of creative researchers. We're looking forward to including these programs in next year's *Software Review*.

Kearney Rietmann is the Editor of PC World Special Editions.





Savvy

Excalibur Technologies Corporation
800 Rio Grande Blvd. NW
21 Mercado Plaza
Albuquerque, NM 87104
505/242-3333

Savvy combines a pattern recognition system, a programming language, a program generator for data base management, and a set of business applications that include accounting functions, a mailing list, and a document writer. The system's pattern recognition system enables you to communicate with your computer using your own words and phrases. *Savvy* scans each input and determines whether an entry is understandable or similar to anything already known by the program. Misspellings and other errors are corrected in the program's interpretation. New words or phrases can be used as synonyms for existing names. *Savvy*'s programming language uses a basic vocabulary of 50 words that can be expanded with user-defined words. Line numbering, syntax checking, loop indentation, and memory allocation are automatic. *Savvy* writes and edits programs or tasks automatically and includes a data base generation program. List price: \$500. Requirements: 64K, one disk drive.

TK!Solver

Software Arts
27 Mica Ln.
Wellesley, MA 02181
617/237-4000

TK!Solver is an equation-solving program for engineering, business, education, and science. You enter equations defining a problem, type in known values, and press the exclamation point key; *TK!Solver* finds the unknown values. The program converts units of measurement and has built-in functions such as sine, cosine, net present value, and internal rate of return. You can define other functions. *TK!Solver*'s back-solving feature enables you to solve for all unknown variables by exchanging known with unknown variables without reformulating equations. The program solves for individual values and lists of values. If a model cannot be solved directly, you can provide an estimate and *TK!Solver* will use successive approximations to converge on the solution. The program displays data as numbers, tables, or graphs. List price: \$299. Requirements: 96K, one disk drive.

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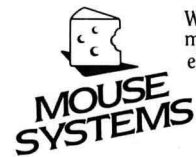
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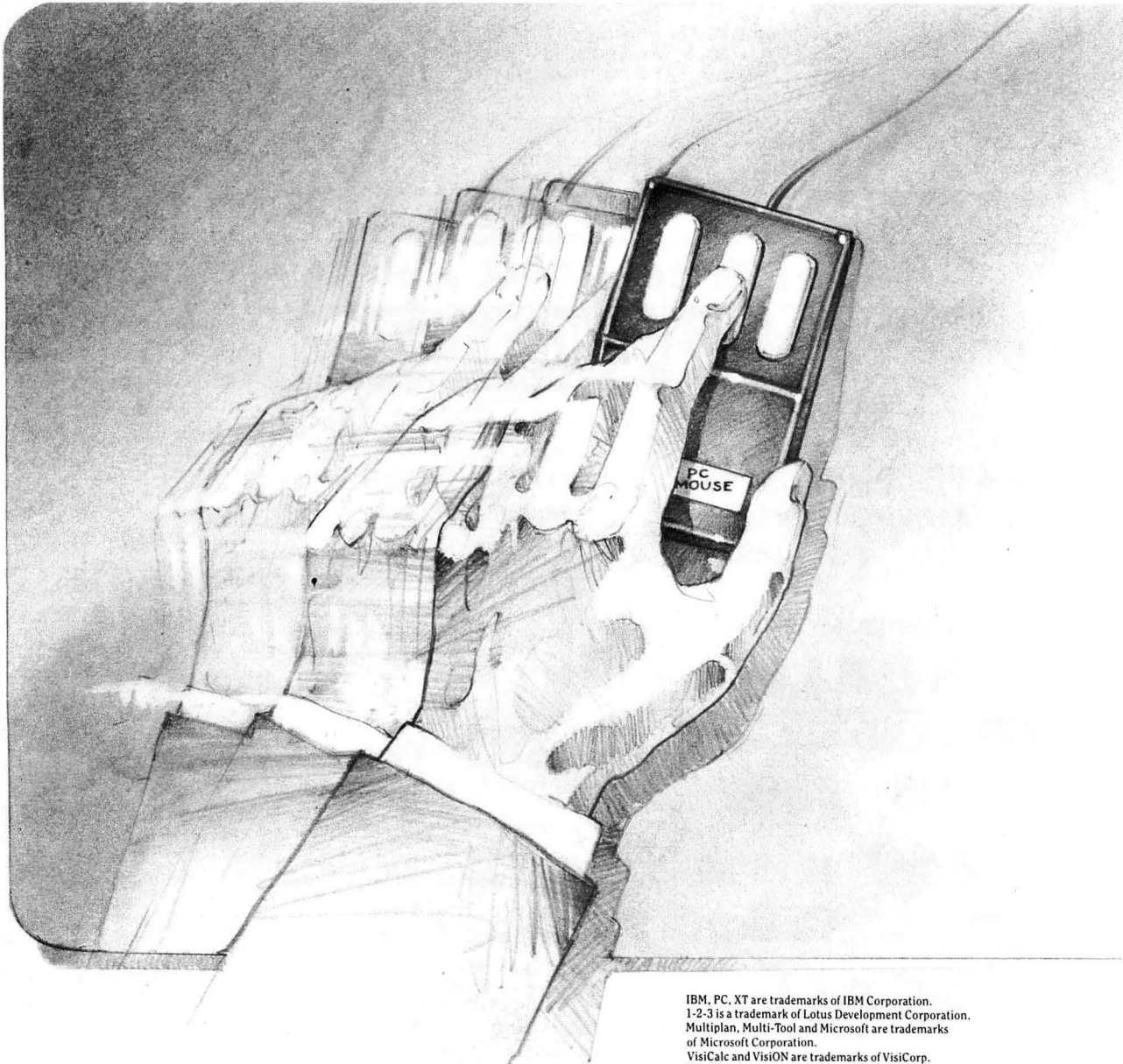
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PC World received such an overwhelming response to the *Software Review* that we're following it with the *PC World Hardware Review* in the spring of 1984.

The *Hardware Review* will describe all kinds of hardware products available for the IBM PC and compatibles, from compatible computers and expansion boards to modems, monitors, and printers. The *Hardware Review* will be a complete product guide to the complex hardware marketplace. It will reflect the experience of the community of PC users by including comments from readers who have used and tested the hardware.

Hardware manufacturers are encouraged to submit press releases and technical data regarding their products. Product reports will be written and edited by the expert *PC World Hardware Review* editorial staff.

Submit information by using the review form provided with this announcement. *PC World* must receive all submissions by December 1, 1983.



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About Our Gatefold

The image inside the gatefold cover was created by artist Mike Sullivan using an IBM PC, the Plantronics COLORPLUS card, and the *Color-Magic* graphics processor. Mike chose this month's subject matter for a variety of reasons. His objective was to show how detailed objects with similar color saturation can be used together. He faced the greatest challenge while working on the New York quarterback clad in green jersey against a green background. For the football field Mike went into the combination mode. Although the field may look green, it is really a combination of dark grey and green with a checkerboard pattern. The zoom feature was another valuable tool that Mike used to add detail to skin and clothing. Mike used the block mirror command on a single goalpost to produce its exact replica.

Mike expressed his continued pleasure in working with *ColorMagic*. "The more I use it, the more I improve."

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