

## MP/M-86™ Multi-User Operating System

MP/M-86, a high performance multi-user operating system, will be available for shipment in August. Based on the CP/M® and MP/M™ operating systems for 8-bit microcomputers, MP/M-86 adds new features that take advantage of the 16-bit microprocessor's increased power.

MP/M-86 maintains full compatibility with the CP/M-86™ single-user operating system. CP/M-86 programs can be operated immediately under MP/M-86. MP/M-86 is compact and efficient, allowing a maximum of space for user programs. Because the file system formats of MP/M-86, CP/M-86, CP/M and MP/M are compatible, conversion from 8-bit single-user application programs running under CP/M through multi-user 16-bit applications is greatly simplified.

MP/M-86 is designed for multiple users in a multi-tasking real-time environment. Its shared code facility allows multiple users to execute programs with only one copy of the object code resident in main memory. Other features include file and record lock-out, standard I/O, and internal queue mechanisms that support mutual exclusion, pipes, synchronization and communication between multiple tasks.

John Katsaros, Digital Research

(Cont. on Page 2 Col. 2)

## ISV PROFILE:

### Why Microcomputer Consultants Chose PL/I-80™ For Its Business Applications Programs

*Editorial Note: This is the first in a series of articles about the applications being developed for PL/I-80. If your company has an interesting application story to tell and you would like to be considered for the ISV Profile, please call Lori Forrest, our ISV Coordinator, to be considered.*

It can be a tough decision for a company successfully selling application programs to satisfied users to convert to a new language, but Microcomputer Consultants is doing that—and glad they are. The four-year-old software house is writing all its new programs in PL/I-80, abandoning the languages it used previously. The company has already written two new packages in PL/I-80, and plans to convert those it already offers to the more efficient language. Says President Charles C. Russell, "We're committed to convert everything to PL/I-80 from the other languages we have been using. In six months, we will have nothing but PL/I-80 programs."

The switch is a major project for the Davis, California, company, but one it already feels has paid off. "PL/I-80 is faster, uses less memory and has better error checking and control."

One reason that Russell has embraced PL/I-80 so enthusiastically is the market his firm serves. It sells software packages aimed at small businesses, especially first time users. The PL/I-80-based programs offer a number of advantages to the user, including faster response, more available memory, and fool-proof operation: "I've never had an error in a PL/I-80 program that caused a customer to have to re-enter hours of work," says Russell.

Most business users are sensitive to these problems, of course, but perhaps some of Russell's customers are even more concerned than some other users. The company offers not only the popular business software packages—general ledger, accounts payable, accounts receivable, wholesale and retail inventory—but hard-to-find manufacturing programs for small companies. These include Inventory Control for Manufacturers (ICM) and Job Cost Control (JCC). It is these last two that Microcomputer Consultants has already written in PL/I-80. All of the company's software runs under CP/M, the industry's most popular microcomputer operating system.

(Cont. on Page 2 Col. 3)

**ISV FORUM** is a quarterly publication for the benefit of Digital Research Independent Software Vendors to provide an information and communication source to this broad-ranging community. To receive a free subscription to **ISV FORUM**, contact the Marketing Department at:  
Digital Research  
P.O. Box 579  
Pacific Grove, CA 93950  
(408) 649-3896

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## Letter from the President

Through the years we've experienced a rewarding, but informal relationship with independent vendors of application software. Our Independent Software Vendor plan formalizes our relationship and commitment, and emphasizes our conviction that independently-produced software is the key to fulfilling computing needs in an endless variety of low-cost computer applications.

The ISV support plan has been active for over four months and I'm pleased by the overwhelming response we've received. Software vendors from all over the world are participating in various aspects of the program. Digital Research is dedicated to helping the ISV community of individuals and companies to dominate the software market.

The ISV FORUM newsletter is one of the resources provided by Digital Research in support of the ISV. The FORUM serves as a medium for communication—between the ISV and Digital Research, the ISV and our hardware OEM's, and between vendors.

Another part of our ISV program is the ISV Referral Catalog, which lists ISV's and gives a brief corporate description. We anticipate distribution of this catalog to over 20,000 potential end-users over the next twelve months. This catalog will increase the sales prospects for listed ISV's.

With this newsletter, we invite you to become active in our ISV program.

Gary Kildall

## Digital Research Exhibits

We hope you saw our booth at the West Coast Computer Faire in April, or at National Computer Conference in May. We had a good time and talked with many of our ISV's. Gary Kildall participated in a panel discussion at the Computer Faire, in which he discussed the future of CP/M. He pointed out the coming convergence between microcomputer and minicomputer hardware, and the part Digital Research could play, acting as the "operating systems department" for most personal computer manufacturers. At the same time, he pointed out the position Digital Research would be in to support independent vendors. Gary also submitted a paper for NCC entitled, "PL/I for Limited Resource Computers," in which he discussed ANSI's Subset G and the structure of PL/I-80.

If you missed us this year, make a point to stop by and say hello next time around.

## Letters to the Editor

### PL/I Textbooks

Thanks for your newsletter regarding PL/I-80™. My order is enclosed.

You solicited critiques of your reference books; I have one on your list, and two that are not listed.

Bates and Douglas was my "starter," mostly because it's used here at the University of Texas Computer Science Department at the undergraduate level. While I agree with most of your comments, you may have sold the book a little short, in that it is clearly written, and uses many varied examples. Its age probably accounts for its lack of structured programming information.

A book that is about the same vintage as Bates and Douglas is *A Guide to PL/I*, by S. V. Pollack and T. D. Sterling (Holt, Rinehart and Winston, New York, 1969). This book is a non-introductory reference book that is more oriented to the big machine PL/I. However, it has a very good index and serves me well for solutions to specific problems. Unfortunately, there are few examples so most topics are covered abstractly. I would guess this is a fair to good intermediate textbook.

Another book that is missing from your list is *PL/I for Programmers*, by Robert A. Barnes (Elsevier North Holland, Inc., New York, 1979). I highly recommend this book, which is a well organized and detailed trip through PL/I from "What is a computer," to chapter length discussions of list processing and recursion. Although computer basics are mentioned briefly, PL/I is started early, so it is not for the beginner. A broad spectrum of basics, for example record I/O, is followed by an intermediate section, which is followed by advanced topics. This book uses both abstract teaching tools and examples. I find this book easy to read and comprehensive in scope.

Bob Curry/Austin, Texas

Multi-User Operating-System (From Page 1) Marketing Manager, explains MP/M-86: "MP/M-86 is the most powerful operating system to be made available for the 16-bit microcomputer. Its state of the art queue system and high speed multi-tasking kernel, and its efficient use of memory, combine to give MP/M-86 users a fast operating system for business and scientific applications. OEM's and Independent Software Vendors will find it easy to convert existing application programs to the new system, making the world of CP/M based software quickly and economically available to the MP/M-86 user."

ISV Profile from Page 1

## Advantages of PL/I-80

Russell says that the language he had been using was the best on the market for his firm but that it has limitations. For one, its revisions created problems for users. "A couple of times a year, they made revisions. These solved some problems, but always created others in the process. So the customer had to worry about this, including purchasing the correct version of the BASIC interpreter."

By contrast, PL/I-80 is standardized. Digital Research's PL/I-80 is the American National Standards Institute (ANSI) Subset G of PL/I, the same version used by many minicomputers. As such, it is supported by Digital Equipment Corp., Data General, Wang, Prime and other suppliers.

Some of the biggest pluses of PL/I-80 become apparent as it is used. For one thing, it is much more efficient in operating speed than the popular BASIC language formerly used. Part of the reason is that Microcomputer Consultants has been able to implement very fast filing systems that don't require sorting. "Typically, the other language slows down with large files; you have to sort the files to use many programs. With the utilities I can integrate with my PL/I-80 programs, however, I can eliminate the sorting required by the programs written in BASIC. You don't need a half-empty disk for sorting, and the access time doesn't increase significantly as the file size grows," he adds.

Another advantage to the user is PL/I-80's efficient use of memory. Like any programmer, Russell likes to have as much memory available as possible. In one case, he notes, a PL/I-80 program fit with 12 kilobytes left over. "The other program filled up the memory available all by itself."

Russell also finds PL/I-80's block structure very easy to use, but he reserves some of his greatest praise for the way PL/I-80 handles errors. "Its exception processing is a great aid to the programmer. This is a feature that is not available on most microcomputer-based systems," he says.

With PL/I-80, Russell finds that he can create programs that are largely crash proof. "I could crash the other programs quickly. In seconds I can lose stored data. This is much harder to do with PL/I-80 programs." Perhaps even more significant, he finds that it's easy to correct errors in the program. "In a typical

(Cont. on Page 4 Col. 3)



## SOFTWARE TOOLS:

### Micro Data Base Systems, Inc.

Micro Data Base Systems, Inc. was founded in mid-1979 by a group of leading researchers in the field of data base management and decision support systems, and practitioners in the application of microcomputers. The company was founded to develop quality DBMS software to facilitate the rapid development of flexible and integrated applications and bridge the software gap in the microcomputer industry.

The core of the company's product line is a technically advanced data base management system (MDBS) consisting of a Data Definition Language (DDL) and a Data Manipulation Language (DML). The system supports hierarchical and network structures, explicit specification of many-to-many set relationships, and multiple levels of read/write access at the item, record and set levels. The DML incorporates a simple command structure which is imple-

mented through function or subroutine calls from different host languages like BASIC, COBOL, FORTRAN, PASCAL, PL/I, etc. The combination of MDBS with PL/I provides an especially powerful application development tool kit.

The flexibility and power of the MDBS system is enhanced considerably by the Query/Report Writer System (QRS), a non-procedural, English-like query language that allows ad-hoc interrogation of any MDBS data base, the Dynamic Restructuring System (DRS), which allows the user to dynamically alter the logical structure of an existing data base without the need for dumping and reloading the data base, and the Recovery/Transaction Logging System (RTL), which logs transactions to the data base, so that in the event of a crash, the data base can be recovered with minimal loss of information.

The company has over 600 systems in use in over 20 countries worldwide. MDBS is used by small businesses, organizational units in large corporations, systems consultants, and hardware and software OEM's who use

MDBS as a tool for developing application systems for end users. Typically, these applications facilitate the management of large, complex files of data in a simple and flexible manner. With the use of the MDBS system, data redundancy is wholly user-controllable, and program development time is reduced by 80% in typical cases.

MDBS has been used to develop diverse applications such as inventory control systems, order entry systems, integrated accounting systems, educational administration systems, insurance office management, manufacturing resource planning, vertical office systems, etc.

The MDBS system is available directly from the company or through distributors and dealers throughout the country, including computer stores. For more information about the MDBS system, write, call or TWX:

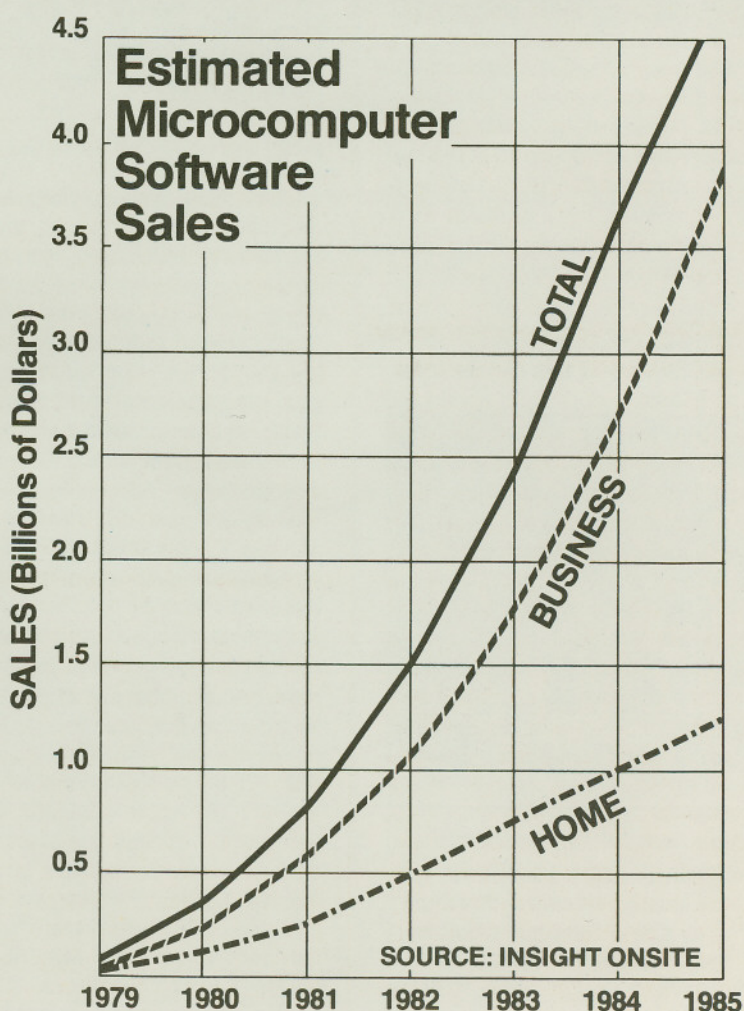
MICRO DATA BASE SYSTEMS, INC.  
P.O. Box 248  
Lafayette, IN 47902  
317-448-1616  
TWX: 810-342-1881

## The Microcomputer Software Market

The microcomputer software market is expected to grow at a phenomenal rate over the next five years, from a current level of approximately \$300 million to more than ten times that amount, over \$5 billion. This market estimate from Insight-Onsight, a market research firm, was developed in the following manner.

First, the baseline for sales of desktop computers—those selling for \$1,000 to \$30,000—was used to develop the forecast under the theory that this market has been very well studied by a number of market research firms. The hardware data is derived from IDC. Next, an assumption was made regarding the tradeoff between hardware versus software content, as a percentage of the computer's list price. It has been assumed that about 10% of the system's price is software, and that this will rise to about 25% by 1985. Considering that hardware prices are dropping at a very rapid rate, and that the demand for software packages is large, this is a conservative estimate. Next, add-on software purchases—those computer software products that are purchased during subsequent years of ownership—were estimated for each system. Finally, a prediction was made about the tradeoff of personal applications (home) to that

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# The ISV Seminar

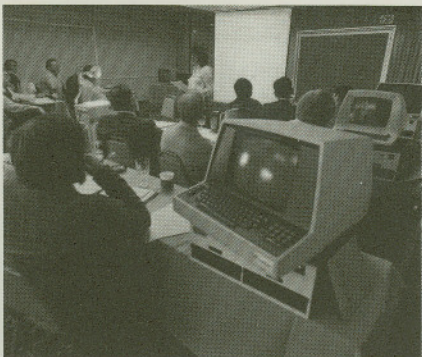
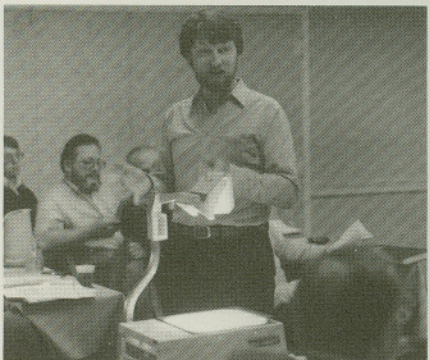
Our recent ISV Seminar was an overwhelming success. Topics included PL/I programming techniques, presented by Daniel Davis and myself, with an introduction to our new BT-80™ record retrieval system given by Doug Huskey of our technical staff. We went through a complete example of inventory control and point-of-sale, which illustrated programming through step-wise refinement in generating the final product. The menu-driven program also illustrated multi-level overlays and was well received and understood by all attendees.



Our attorney, Gerry Davis, presented an interesting discussion on software protection, trademarks, copyrights, process patent law and software licensing. Staff members—Marilyn Darling, Dorothy McEwen, John Katsaros and Susan Raab—discussed advertising, small business administration, marketing and technical writing.

## Roundtable Discussions

Although this was our first ISV Seminar,



we've been offering an Operating Systems Seminar, covering CP/M, MP/M and CP/NET™, for some time. We dedicate one evening during each seminar to a "roundtable discussion," where we gain valuable feedback from attendees. These discussions help us in shaping our new products, policies, licensing and support practices.



At the ISV Seminar, several significant discussions took place during the roundtable. Discussions centered around an ISV User's Group, which we are developing now, and a standardization society independent of Digital Research for application software. Licensing alternatives, including educational discounts, were also discussed, and an educational discount program is now underway. (More information about that can be obtained by writing Maureen Minnes of the Marketing Department.)

Again, we were very happy with the success of our first ISV seminar. A sense of community cooperation in organizing the application software effort was evident, and we look forward to supporting this effort in the future.

Gary Kildall

The Microcomputer Software Market  
(From Page 3)

of business applications.

The estimate shows that the microcomputer market will grow from a 1980 level of close to a 50/50 split between business and personal applications to a 1985 position of dominance for business applications. Business applications are defined as those that are either for use by a business or by a business professional in a large company.

**Conclusion**—The microcomputer marketplace will be running at a fairly strong level over the next five years—an encouraging sign for both microcomputer systems and applications software manufacturers. Also, a significant after-market for add-on software has been forecasted, suggesting that software prices will remain strong over the next few years. Independent Software Vendors will find a ready market for their programs, with many new vendors entering the market because of its growing opportunity.

ISV Profile (From Page 2)

program, errors can arise that the user has to take steps to correct. With PL/I-80, the program can solve it for him. We don't need a user who is an expert in CP/M."

PL/I-80 isn't a panacea, however. Russell has considerable experience, including graduate study in software, and he points out that PL/I-80 isn't a good beginner's language. "It's a programmer's language, ideal for the experienced programmer, just as PASCAL and BASIC are good for beginners."

One of the least expected benefits of using PL/I-80 didn't even occur to Russell until recently. He found that mentioning PL/I-80, CP/M or Digital Research in his news releases resulted in better pickup from the press, and that it enhanced his product's credibility. "It helps raise us out of the noise in the crowded software market."

## Why Microcomputer Consultants Chose CP/M

Even before its recent conversion to PL/I-80, Microcomputer Consultants chose CP/M for all its applications software. It wasn't a hard choice, for CP/M is the overwhelming choice for independent microcomputer manufacturers, and it is even available on the popular Radio Shack and Apple computers. "With CP/M, we can market to everyone. It's very flexible and is available on many machines. We've even had two manufacturers of computers we use go

### Upcoming Seminars

Operating Systems Seminar	June 15, 16, 17	Japan
Operating Systems Seminar	August 5, 6, 7	Monterey
ISV Seminar	Sept. 28, 29, 30	Monterey

Write the Marketing Department, Digital Research, for details.



## New ISV Products

If you would like to have your new product included in our next ISV FORUM, please send a press release to:

Editor

ISV FORUM

Digital Research

P.O. Box 579

Pacific Grove, CA 93950

### ■Panel Screen Editor for PL/I-80

Roundhill Computer Systems Limited has announced a unique new programming aid to boost PL/I-80 application development productivity. The "Panel" system allows the user to design and modify screen layouts interactively at a terminal, and automatically generates PL/I-80 code to describe the layout and content of the screen. Supplied subroutines allow input and output at full-screen or field level and permit your programs to run on most terminals without modification. Sample screens can also be generated for documenting your

applications. "Panel" comes with a 70-page reference guide.

For more details contact:

Roundhill Computer Systems Ltd.

P.O. Box 14

Marlborough, Wiltshire, SN8 1LG, ENGLAND.

Tel 0672 54459

Telex 444416 ADVEST G

### ■CIS COBOL on CP/M-86

Micro Focus has announced the availability of CIS COBOL on CP/M-86. This is a 16-bit implementation of the standard CIS COBOL which has had a certificate of validation from the general services administration in Washington for two consecutive years. It has been available under CP/M on Z-80 for the past three years.

The underlying design of CIS COBOL means that it can be made easily available on any environment.

In addition to the CIS COBOL compiler itself, the Forms-2 source code generator utility is also available on CP/M-86. Because it was written in CIS

COBOL, it was immediately transferrable as soon as the compiler had been transferred.

Micro Focus has many CP/M customers and is aware of the growing demand for a genuinely multi-user shared file system under MP/M on both Z-80 and 8086. Product announcements in these areas are expected from Micro Focus during 1981.

For more information contact:

Micro Focus, Inc.

1601 Civic Center Drive

Santa Clara, CA 95050

(408) 496-0176

### ■Innovative Software Applications Announces SPELLGUARD

Innovative Software Applications recently announced the release of SPELLGUARD, a new computer program to check spelling in documents prepared with word processors and text editors. A 10,000 word document (20 pages) can be checked for spelling and typographical errors in under one minute.

SPELLGUARD checks spelling using a dictionary supplied with the SPELLGUARD package. This dictionary initially contains 20,000 of the most commonly used words in the English language, and is easily expanded by users. Maximum dictionary size is limited only by maximum disk file size. SPELLGUARD has been designed to be compatible with any computer using the CP/M operating system.

A special program feature allows the creation of multiple personalized dictionaries, in any language using a Roman alphabet. One of SPELLGUARD's software maintenance features determines whether the copy of the program being used has been damaged. Another software maintenance feature allows non-technical users to make revisions in their program if such revisions become necessary.

SPELLGUARD has been designed to work with most of the currently popular CP/M based word processors. Currently tested processors include Wordstar™, Magic Wand™, Electric Pencil™ and Spellbinder™. SPELLGUARD requires an 8080, 8085A or Z-80® based computer system, at least 32K of memory, one 8" floppy disk drive capable of reading CP/M compatible single density disks, CP/M (release 1.4, 2.0 or later version), and a word processor.

For more information contact:

ISA

915 Timothy Lane

Menlo Park, CA 94025.

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**BT-80™.** A Record Retrieval System for PL/I-80 applications is available separately to help you manage your large files.

**PL/I-80 from Digital Research.** Fast. Economical. Refined. With the programming power of minicomputer PL/I. The package includes compiler, run-time library, linkage editor and relocating macro-assembler, plus three comprehensive manuals. All for only \$500. (Domestic USA price only)

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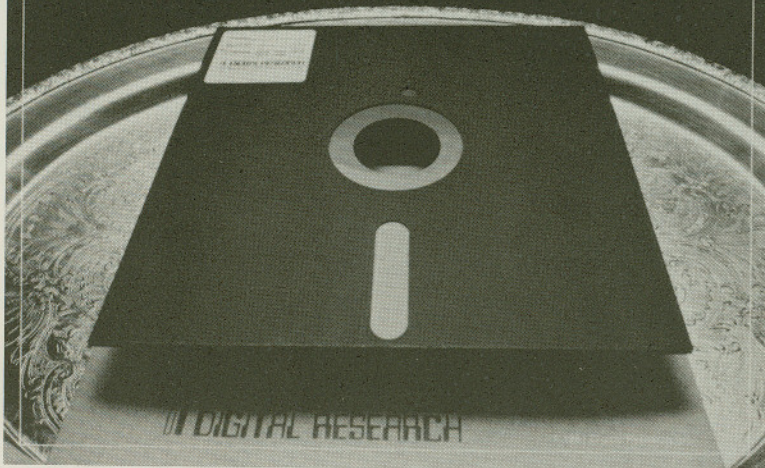
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Research Park  
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Belgium  
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Telex 26202 VECTOR

FAR EAST  
**MICROSOFTWARE ASSOCIATES**  
102 Plasada  
3-16-14 Minami Aoyama  
Minato-ku  
Tokyo 107, Japan  
03-403-2120 Telex 2426875 MSA





## ■Structured Systems Group Announces Two New Software Packages

### The New Analyst Data Base System

Analyst is an easy-to-use data base system that enables the user to store, sort and arrange information into useful, customized reports. The Analyst's powerful Extract program enables the user to select records according to a variety of conditions and create new specialized files and report formats. An optional interface with SSG's QSORT Sort/Merge system enhances Analyst's sorting abilities. The system computes sub-totals, totals and cross footings across rows or down columns, and can serve to create a simple accounts payable or accounts receivable system.

### The Order Entry System

SSG's Order Entry System unites accounts receivable, inventory and order processing into one solid financial management system. The system reduces processing time, increases data accuracy, and provides greater flexibility and control in all phases of the order processing cycle.

The system interfaces with SSG's Accounts Receivable System. Features include an optional Inventory Control interface; detailed order management information on the order report; a choice of open item or balance forward billing; automatic depletion of inventory and accounting transaction with each invoice; numbered and documented error messages; the ability to process up to 99 line items per order, to calculate a separate percentage discount for each line item, to assign separate line items to independent sales and receivables

accounts, and to note held items. The system's Order Report provides complete, current information on every order transaction and status for all customers.

For more information contact:  
Structured Systems Group  
5204 Claremont Ave.  
Oakland, CA 94618  
(415) 547-1567

## ■CBASIC/86 Supports CP/M-86

Compiler Systems, Inc. has announced the release of CBASIC/86 for microcomputer-based systems running under CP/M-86, according to Gordon Eubanks, Jr., president of the Sierra Madre-based firm.

Supporting the complete CBASIC language, the new release permits applications programs—written in CBASIC for 8080 and Z-80 based systems—to be transferred to 8086-based systems without modification. Configured as a CP/M-86 compact memory model, it provides 64K bytes for data areas.

"CBASIC/86 will further enhance the development of marketable applications packages for 8086-based systems," predicted Eubanks. "It reflects our commitment to provide OEM's with fully transportable software support packages, and allows them to upgrade to even more powerful hardware systems without losing their initial software investment."

For more information contact:  
Compiler Systems, Inc.  
37 No. Auburn Ave.  
P.O. Box 145  
Sierra Madre, CA 91024  
(213) 355-1063.

## CP/M Compatible Software Catalog

The first edition of the **CP/M Compatible Software Catalog** for software written by Digital Research ISV's will be available for sale this month, with a 50% discount for ISV's available. Please see page 7 for ordering information.

If you would like to be included in the next edition, please write Lori Forrest at Digital Research. She will send you the appropriate forms a month before production to ensure that the information about your products is as up-to-date as possible.

## ISV Marketplace

In future issues of the ISV FORUM, we will be running this column as a free service to ISV's. The ISV Marketplace is intended to provide a communications vehicle for ISV's. If you would like to insert an advertisement for needed software, or about available software, free of charge, send it, typed double spaced, to: ISV Marketplace  
Digital Research  
P.O. Box 579  
Pacific Grove, CA 93950

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## ISV CP/M Compatible Software Catalog Order Form

I would like \_\_\_\_\_ catalogs at \$2.50 Canada, U.S., Mexico; \$2.75 Overseas.

California residents please add 6% sales tax. Overseas orders must be prepaid and include \$1.00 per book for shipping.

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