

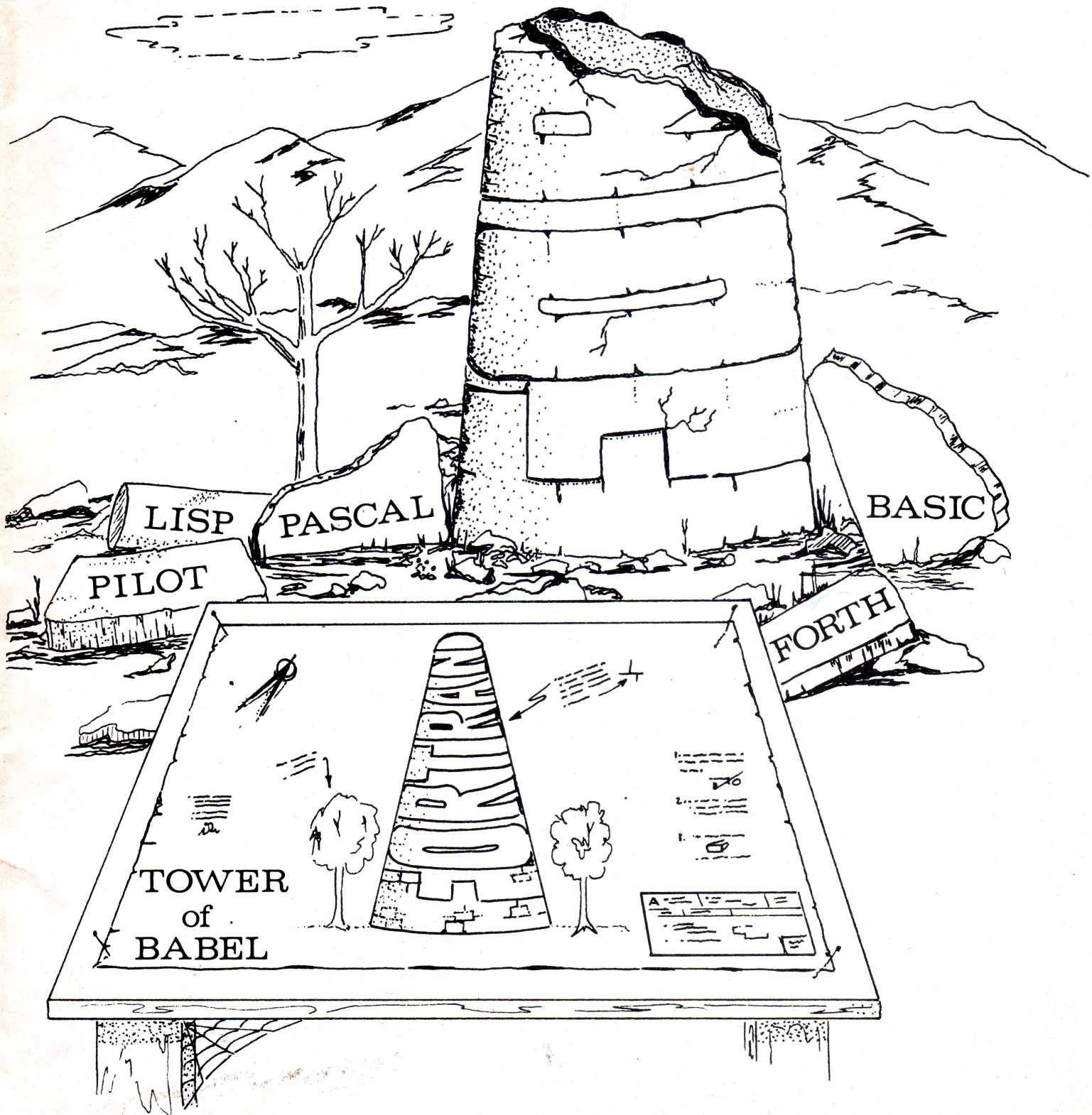
May · June 1981



PEELINGS IITM

THE MAGAZINE OF APPLE SOFTWARE EVALUATION

· Volume 2 · Number 3 · \$2.50 ·



BLUE LAKES SOFTWARE

ON-LINE DATABASE

BY MICHAEL DHUEY

The ON-LINE DATABASE is designed for high-speed retrieval of a large number of records. Retrieves records in 3 seconds with 1000 records on a disk. Maximum use is made of machine language routines and binary search keys. Data is compacted to a maximum and any deleted records are re-used for new entries. The ON-LINE DATABASE has been used for 1½ years at Blue Lakes keeping track of repairs, back orders, mailing lists, sales and other data.

Features:

- MENU DRIVEN
- ASSUMED FIELDS OPTION
- FLOATING CURSOR FULL SCREEN EDITING
- SCREEN PRINT
- EASY-TO-USE REPORT WRITER
- MAIL LABEL PRINT

Price \$100.00

ON-LINE UTILITIES DISK TWO

FEATURES:

- IS FULLY MENU DRIVEN
- FEATURES LIVE ARITHMETIC
- CAN MERGE FILES

Applications:

Math

This feature of the Utilities allows you to create Custom Reports with full math and auto-paging. You can write your own print routines in BASIC including titles, headers, subtotals, midtotals, and of course, grand totals. Breakouts of sub and midtotals are done automatically by the computer when the subsearch and major search change. It is currently being used to breakout a check book, handle purchase orders, and do job costing. The feature essentially gives you the ability to perform arithmetic operations utilizing differing fields within the DATABASE to produce a continuously changing file.

MERGE FILES

This feature allows you to use selected records from one DATABASE to create another.

\$75.00

SURVEYOR

The Surveyor performs many of the complex, repetitious and tedious computations encountered by surveyors, include:

- COMPUTATION OF POINT LOCATIONS
- AREA WITHIN A TRACE
- TRAPEZOIDS OF GIVEN AREA
- RADIUS FOR A GIVEN CIRCULAR AREA
- CURVE INVERSE



ON-LINE UTILITIES DISK ONE

Features:

- IS FULLY MENU DRIVEN
- LETS YOU ADD AND/OR DELETE SORT KEYS IN A PREVIOUSLY DEFINED DATABASE
- GIVES YOU GREATLY EXPANDED CAPABILITIES IN MAIL LABEL FORMATTING
- PROVIDES NINE VERSATILE MAIL LABEL FORMATS
- ALLOWS USE OF ALL SHAPES AND VARIETIES OF LABELS

MODIFY SORT KEY

Applications:

This feature of the utilities allows you to change your mind about what is important in a database you had created before. In most database, the sort keys you define when you create the original file are the ones you have to live with forever (or you can start over). Now you can sort and search on any part of any record in any established database without having to retype any information. Or you can delete any unneeded sort keys for faster operation. (Since a database must have at least one sort key in order to work, you can design your original file with only a single simple key, enter the records quickly, and later sort and search for any information as the need arises.) Everything changes these days: why not your DATABASE?

FLEXIBLE LABEL FORMAT

The built-in Mail Label Format of the ON-LINE DATABASE is very useful, but for voluminous output for a wide variety of users we recognized the need to provide additional capability. This Utility gives it! You can now combine as many as eight fields on one label. And you can accommodate any available sticky labels, any size and up to nine across.

CHANGE REPORT FORMATS

Allows changing reports already created by ON-LINE DATABASE.

RENTAL MANAGER

MONEY TREE SYSTEMS, INC.

The Rental Manager incorporates all of the features needed for rental management. The system is fully menu driven and can be operated easily by businessmen, or their office personnel, without a computer background. This system, designed and developed by a Madison property manager, has been profitably used by Realtors for two years. The Rental Manager Package includes user training software and an accompanying training manual. As with all Blue Lakes products, the system is fully supported by Blue Lakes Software.

Features:

- ACCOUNTS RECEIVABLE
- CHART OF ACCOUNTS AND BUILDINGS
- ACCOUNTS PAYABLE
- LISTING OF TENANTS AND FUTURE TENANTS
- GENERAL LEDGER
- PROBLEM ACCOUNT REPORTS AND NOTICES

EDUCATION PACK 1

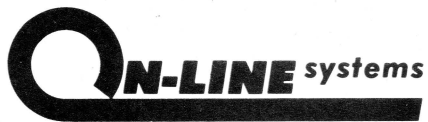
Features:

- ELEMENTS AND SYMBOL QUIZES
- MOLECULAR BALANCING EXERCISES
- QUANTUM THEORY DEMONSTRATIONS
- TESTS COVERING THE PERIODIC TABLE
- HIGH RESOLUTION DISPLAY OF ELECTRON CLOUDS
- GAMES FOR HAND/EYE COORDINATION DEVELOPMENT
- BAND EQUIPMENT DATABASE ROUTINE

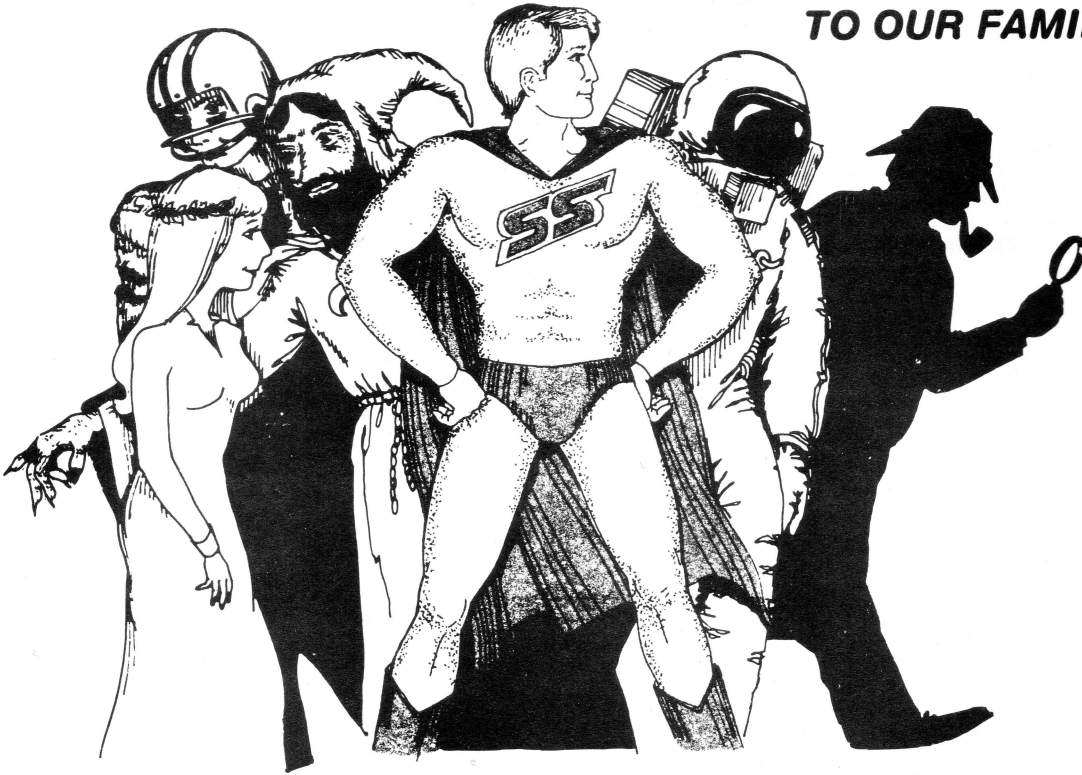
3240 University Ave. Madison, WI 53705
(608) 233-6502

DEALER INQUIRIES INVITED.





**IS PROUD TO ANNOUNCE A NEW ADDITION
TO OUR FAMILY!**



SUPERSCRIPT

SuperScript is the most powerful and easiest to use Word Processor available for your Apple II or II Plus computer. Besides leaping tall buildings in a single bound it:

- Gives true upper/lower case text on your screen with no additional hardware whatsoever.
- Works with documents larger than the amount of memory in your Apple - transparently to you!
- Edit not only letters but also any text or binary file, or even basic programs!
- Automatically generates up to 4 separate indices for your document!
- Save typing time through a unique ability to designate specified keys as commonly used words, phrases or even commands!
- Globally search for or replace character strings.
- SuperScript has a built-in instruction capability such that if you forget how to use a command and the manual is not close by - you may simply ask SuperScript!
- Supports multiple disk drives!
- Will support alternate character sets.
- Produces form letters using address files easily!
- Supports the shift key modification if made to your Apple.
- Lets you work with your text on a screen at a time basis - reducing typos and allowing you to see your document as you edit it.
- Works with any printer!
- Supports the language card or any 16K expansion Ram card to keep more of your document readily available in memory.

SuperScript is 100% machine language and requires only a 48K Apple II or II Plus with a disk drive. It may be purchased through your local computer store or direct from us by sending \$89.95 plus \$2.50 to cover shipping to:

ON-LINE SYSTEMS - 36575 Mudge Ranch Road - Coarsegold, CA 93614 - 209-683-6858

C.O.D., Master Charge or Visa accepted

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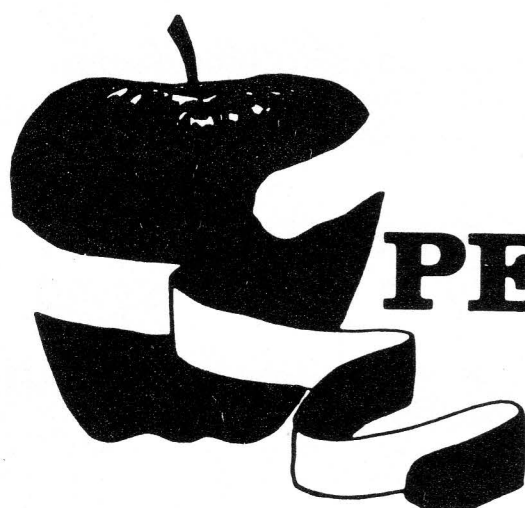
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PEELINGS II

THE MAGAZINE OF APPLE SOFTWARE EVALUATION

PEELINGS POLICIES

REVISED 17 MAY 81

ADVERTISING

Peelings II reserves the right to require that a copy of all software to be advertised be sent along with the ad. For now, this applies to every advertiser. This helps to assure the Peelings II reader that he/she can buy from our ads with confidence. We may not have a published review on every program advertised, but at least we have seen the software. Rejecting ads for software that is clearly of questionable value is a responsibility that Peelings II assumes and which most other magazines do not. Any software sent to Peelings II with advertising is considered subject to review and must be considered complimentary. The potential publicity of a good review should be considered adequate compensation. (Experience has shown that a good review generates more revenue than an ad).

We do not accept ads from mail order houses or computer stores selling thru the mail.

Advertisers may not quote Peelings Ratings in their Peelings II ads. Permission is not granted to do so for ads placed elsewhere.

REVIEW SOFTWARE

Peelings II tries to obtain new market software that needs to be assessed. If a request for a review copy does not succeed, Peelings II may buy the software anonymously.

In the event that a vendor feels that a published review is inadequate compensation for a very expensive program loaned to us for review, we will consider either sending it back, or paying wholesale for it.

We encourage small, independent producers of software to send us review copies of their software. This software is often ignored in the other publications that emphasize the larger software firms.

In general, material sent to Peelings II must be kept in our library for possible comparison to other programs. Software sent for possible review must be complimentary.

All software sent will be kept in the sole possession of Peelings II Inc. We are a business and wish to maintain our tradition of integrity. However, since locked diskettes are intended only to prevent retail customers from trading away the product, Peelings II requests that if possible, an UNLOCKED diskette be sent so that we can evaluate the product thoroughly.

READER SERVICES

If you feel you have been ripped-off by a bad product and have been unable to achieve satisfaction from the vendor, send Peelings II a letter describing in detail your problem. Be sure

to give full information about the program: publisher, address, program name etc. If we decide there is a case, we will pursue the matter ourselves.

Peelings maintains a list of most requested software for review. Send us your requests. Part of every issue from now on will be devoted to the readers' choice for software to be reviewed.

HARDWARE REVIEWS

Due to reader demand, Peelings II now actively seeks to review Apple II peripherals and hardware. Call us regarding policies if you have hardware you'd like to have reviewed.

OUTSIDE REVIEWS

We do not solicit reviews or articles from outside sources.

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PEELINGS RATINGS

The philosophy of rating software is somewhat akin to rating movies. The usefulness or entertainment value of a particular program may vary widely between users. The staff of Peelings II makes their best judgment about software based on the documentation and demonstrated performance of the program. They explain the features and weaknesses of the program in sufficient depth that you, the reader, can decide if a particular program meets your requirements.

In addition to a detailed description of the program, we feel that there is room for an overall, subjective judgment of the quality of a program. There will always be some degree of subjectivity in any review, and we have elected to express this as the PEELINGS RATING (PR). It is indicative of the reviewer's overall perception of the program.

Included in the Peelings Rating is the concept of price to performance ratio. Obviously, a program does not have to do as much for \$14.95 as it would for \$99.95.

We stress that you should not skip a review or disparage a program because it receives a low PR. There may be some features that you want or will need for your application. For this reason, the rating should never be quoted alone with out reference to the text of the review.

The principal reviewer assigned to a program has the final say on its rating; that is the rating that goes "into the books." In the event that there is a controversial program or a dissenting vote, other reviewers will add their opinion in an addendum. This again simply reflects differing attitudes towards programs. After the dust settles, you decide for yourself.

GO TO NEXT PAGE

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For First Class post add	\$ 5.00/yr.
Foreign airmail add	\$15.00/yr.
Current issue price	\$ 2.50
Back issues:	\$ 4.00

All foreign orders must be remitted in U.S. funds drawn on a U.S. bank. No drafts will be accepted.

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NO PART OF THIS MAGAZINE MAY BE COPIED, REPRODUCED, STORED IN ANY INFORMATION RETRIEVAL SYSTEM OR EXCERPTED WITHOUT THE EXPRESS WRITTEN CONSENT OF PEELINGS II, INC. PUBLISHERS OF SOFTWARE REVIEWED IN PEELINGS II MAY NOT USE ANY PART OF THE REVIEWS IN PEELINGS II TO PROMOTE OR ADVERTISE THEIR PROGRAMS WITHOUT WRITTEN PERMISSION FROM PEELINGS II, INC.

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The Peelings II rating categories follow. Some example criteria are given for the categories, but they are not meant to be all inclusive.

AAA - Absolutely astounding software. We have yet to see a software package that fits this category.

AA - Top notch, superb. Programs in this class generally have excellent documentation and use the most sophisticated programming techniques.

A - Very good. Software in this class is characterized by clear and informative documentation, and the program incorporates good programming techniques.

B - Good. Software in this class may have minor errors or be slightly flawed, it may be lacking in thorough documentation, or it may just be unexciting.

C - Average. Software of a mediocre nature. There may be lack of good programming concepts, lack of good error trapping, it may be a repeat of other work, or have a low performance/price ratio.

D - Below Average. Software with a blatant disregard for the user in terms of programming design, unacceptable documentation, or unacceptable price to performance ratio are example criteria.

F - Unacceptable. Software of such poor value that it should not be marketed.

P - Pending. The rating is on hold for comparison to other similar types or it is not yet appropriate to give a rating (e.g., mini-review).

N - No Rating. The reviewer abstains, or a rating is inappropriate.

PII

DISK U TOO !!

As most of you know by now, there was a completely bogus review in the last issue (Mar-Apr 1981) of Peelings II. We went to some trouble to make sure that it was clearly an April Fool review (1 April Street as address, Horace Schmedlap as author, read protected diskettes etc.) If you sent your \$299 to Wink Texas, we sincerely apologize.

CONTEST RESULTS

Last issue we offered a free subscription to the first individuals in Rhode Island and West Virginia to send in their money. The winner from Rhode Island is David and Benita Cook in Warwick. No one in West Virginia has taken us up on our offer. Hey West Virginia! Where are you?

EDITORIAL

We have several things to cover this month.

PIRACY

The first issue is piracy and copy protection. We feel that there is a fundamental difference between entertainment and utility software. Entertainment software must be locked to protect the software vendor from frenetic copying by unprincipled users. The buyer of a game pays his money and takes his chances. Actually, most software vendors will replace a defective diskette for a period of time. Business or major utility software is something else. Being able to back up software that runs your business is vital; microcomputer software companies that prevent users from having more than two copies of a vital word processor or data base program are out of line. If a licensing agreement (a contract between two entities) promises that no software will be distributed, then the user is entitled to an unlocked copy. Let the user bear both the consequences (in court) of unauthorized distribution and the benefits of the assurance that his vital microcomputer software can be backed up. This is the way it works on big systems. Either the dealers will have to take a more active role in collecting licenses, or preferably, an unlocked copy is returned upon receipt of the license supplied with the locked copy.

Also, the fact that a single individual is able to afford perhaps two or more microcomputers makes the restriction to the use of the software on a particular machine too severe.

We look forward to the maturity of the microcomputer software industry in which buyers take written responsibility for proper use of business software that can be backed up. As long as the situation remains the way it is, there will be a market for programs like Locksmith.

PEELINGS RATINGS

Software continues to get astoundingly better. Programs that rated an A a year ago, are now average software. We would like to again remind you that the Peelings Rating is time dependent -- a measure of how the program rates compared to similar programs of its genre. As a result of the above phenomenon, we will henceforth strongly discourage advertisers from quoting a Peelings Rating in ads sent to Peelings II.

REVIEWING THE REVIEWERS

Peelings II solicits unlocked software even when it is sold locked to the public for only one reason, to more thoroughly assess the software. We started this when a company that shall remain unnamed criticized us for making assumptions about an algorithm that was very highly touted in the advertising, but which we could not verify because our review copy was locked. If Peelings II is going to be able to legitimately verify a vendor's advertising claims, it must be able to assess the product in its entirety.

Further, another vendor has made the accusation that since Peelings II authors have companies that sell software, they steal ideas and code from unlocked software sent to Peelings II. Not only is this not done, it never occurred to us. But now that it has been mentioned, we will state that we consider such activities immoral and unethical.

Movie critics are themselves criticized because they sit back and criticize those who have to go out and perform under the conditions of the industry. Anyone who (constructively) criticizes software can only be made more sensitive to the problems of the market place by himself being subject to those conditions. As mentioned last month, we will publish review references to any software written by Peelings authors. Let the other magazine reviewers state their opinions as to the quality and originality of this software.

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THE AUTHORS

Edward Burlbaw (EAB) is presently a Ph.D. candidate in physics at New Mexico State University specializing in applied physics. His background is in physics electronics and mathematics. He has a B.S. in physics, an M.S. in mathematics, and an M.S. in physics. Edward enjoys snow skiing and electronics.

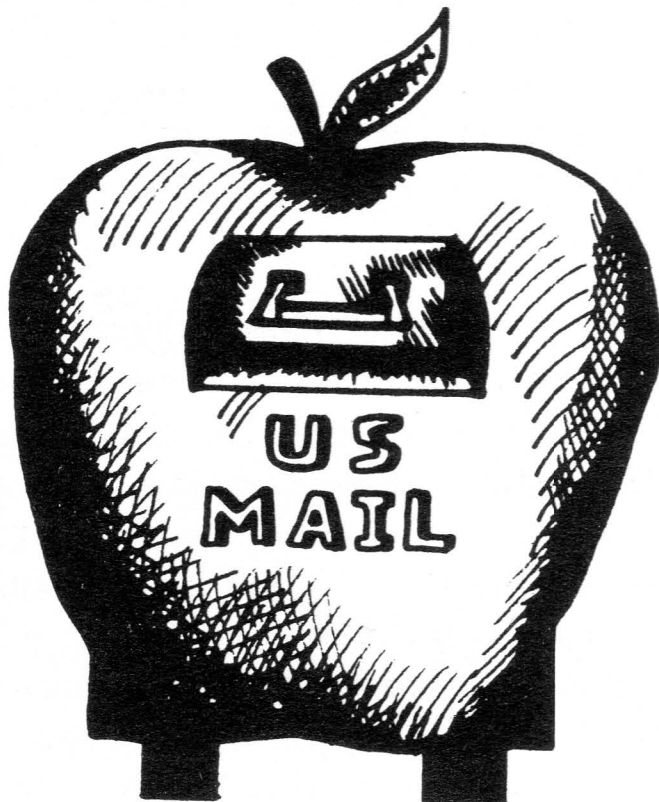
Howard de St. Germain (HDE) is a systems programmer for TRASANA (the U.S. Army's Training and Doctrine Systems Analysis Activity). He has worked on the UNIVAC 1108 for the last seven years and also on the RamTek 9000 graphics computer. His specialty is system processors and systems communication. He has a B.S. and an M.S. in mathematics. Howard's hobbies include Apple programming, soccer, and scuba diving.

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John Mitchener (JLM) is a Personnel Management Specialist at White Sands Missile Range and president of the Mesilla Valley Orchard (the local IAC Chapter). He is a former Electronics Warfare Analyst for the U.S. Army and has a B.S. in psychology. John's hobbies are ballooning, cooking, and ham radio.

Helena C. Martellaro is a Ph.D. candidate in Educational Management at New Mexico State University. She also currently works part-time for Applied Science Associates at Ft Bliss. She has a B.S. in Physics and a M.S. in Educational Management. "Lee" enjoys science fiction and tennis.

LETTERS



Dear Sir:

I was about to select a text editor when your publication (volume 1 number 4) reached me. It was a great help.

I thought I might share my experience with one text editor ...SUPER-TEXT. Being a novice at computers I sometimes rely on an attitude of "I don't care why it flies, just tell me how to get it off the ground."

The first problem encountered was that the instructions concerning finding the printer address didn't work. With a phone call to a friend that had Super-Text, I finally got it to recognize that there was a printer connected.

The second and the most frustrating was getting the margin set around an 8 1/2 x 11 sheet of paper. After numerous attempts, I decided to ask a Super-Text expert. On 13 November 1980 I called Muse in Baltimore, Maryland. The secretary said that the "expert" was on another line so I asked her to take down my problem and have him call me back (I figured that his knowing the problem before he called would lessen his time on the phone. Not receiving the requested return call, I called again about 3 hours later. I was then handed off to "Dave" (his last name was Fitz-something). I didn't get any information that helped in getting the margin set properly on the paper. In addition, when I asked him if the secretary had given him my message, he acknowledged receiving it, but then said in effect that HE didn't return calls. I feel that if a customer has paid \$100.00 for Super-Text (or \$150.00 for Super-Text II) the customer IS entitled to have his question(s) answered. Even if it requires Muse to return a call!!!

"Caveat emptor" (let the buyer beware) should be exercised when dealing with Muse in getting answers concerning Super-Text.

I now have Apple PIE by Programma and I am using it to write this letter.

Thanks for a very helpful publication.

Don Williams
White Sands Missile Range, NM

Gentlemen:

I have just renewed my subscription to Peelings II. I feel you have a super magazine & have provided many people like myself an insight into Apple II software & now hardware. You have a very difficult job, but you couldn't have done it better. Thanks again!

Alan Bishop
Grand Rapids, MI

BACK ISSUES

Peelings II is considering publishing an "ALL of PEELINGS II, VOLUME 1", which would contain all the 1980 issues. If you are interested in such a publication, send us a postcard letting us know. If the demand is great enough, we will publish it. Original copies of Peelings II V1 N1 and N2 are no longer available. If you must have the information contained therein, we offer photocopies of these two issues. Be aware that turnaround may be slower because of this. The other issues are still available as original printing copies. All back issues are \$4.00 each (ppd US).

Back issue requests should be sent to:

PEELINGS II
Back issues
P.O.Box 188
Las Cruces NM 88004

Air Mail postage overseas amounts to approximately \$2.75 per copy and must be included in your payment.

Note that the address given in the last issue for back issues was incorrect.

PII

READER REQUEST DEPT

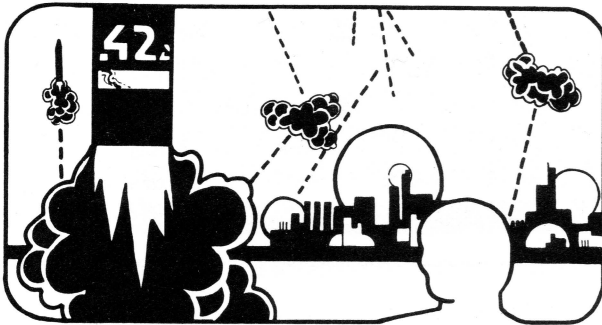
With this issue, we kick off a new department: Reader Requests. In each future issue, we will devote a certain number of reviews to the programs most requested by the readers. If, for example, there is a particular program you have been anxiously waiting for us to review, drop us a postcard with the name and publisher. Each issue, we will compile a list of the most asked for programs, acquire them, and parcel them out to the reviewers. We'll also publish the list. Here is your chance to get involved in the review process.

SUBSCRIBE FOR 2 YEARS. ONLY \$2.08 PER ISSUE

CAN YOU AFFORD NOT TO HAVE PEELINGS II?

ON-LINE systems

PRESENTS



Missile Defense

THRILOGY

OF GAMES

\$24.95

The object of BUSTOUT is to bust through the wall of bricks to get behind the wall and eliminate the wall of bricks. Behind the wall, eliminating the bricks is much faster. The ball starts slow but will soon go faster than you may be able to handle also when you get behind the wall, your paddle will get smaller! A beginner's mode is provided for less experienced players.

BUSTOUT loads Integer BASIC and transfers all important subroutines into Assembly Language. Since BUSTOUT utilizes both Hi-Res pages and Assembly Language programming, its graphics are very fast and very smooth.

The object of SMASHUP is to run over all of the dots on the track before the computers car smashes into your car. Beware! He is out to get you!

Begin the game by choosing one of the four skill levels and then slip behind the steering wheel of your car. Get the feel of the throttle, and then really start to rack up the points.

SMASHUP loads into Integer BASIC and then transfers all important subroutines into Assembly Language, making it's Hi-Res graphics very fast. SMASHUP has unique sound effects also in Assembly language making it even more lively.

You are WILLIAM TELL. You only have five arrows with you and to get a perfect score you must shoot the two apples off the tree and you must also shoot the apple on the boy's head three times. Don't aim too low! You might kill him and not receive any points!

The flight of the arrow depends on the tension on the bow when the arrow is launched. After each shot, the boy will comment about your shooting. Did you kill the boy? Well push the paddle switch and start over.

WILLIAM TELL is an Integer BASIC game using Hi-Res graphics and is fun for all ages.



Sabotage

An Apple Arcade

Three Great Products for your Apple II or II Plus

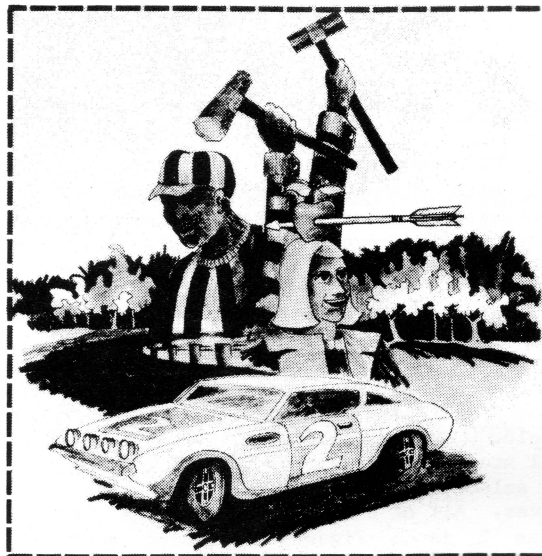


\$29.95

In this arcade-quality action game you command the Nation's missile defense center to defend against a foreign missile attack. As missiles drop from the sky, you must shoot them while trying to protect your six cities and three missile bases. An automatically escalated skill level ensures that the better you get the tougher Missile Defense gets!

- Fast machine language. Hi-Res animation and sound!
- Rapid fire capability - mark and shoot at many targets simultaneously!
- Works great with keyboard only, paddles or joystick!
- Separate controls for all three missile bases!
- Bonus cities awarded for high scoring!

WARNING: This game has been known to cause addiction and should be used with extreme caution!!!



Thrilogy

SABOTAGE

\$24.95

In this innovative game, you take command of a powerful gun base to shoot helicopters and aircraft out of the air. Beware! The opposing have plans to Sabotage your base. Can you defend yourself from the rain of bombs and paratroopers and keep your base in action?

- Written in Machine Language - quick animation and sound effects.
- Hi-Res color graphics.
- Works great with paddle or keyboard control.
- Conventional and controlled missiles.
- Rapid fire capability - mark and shoot at many targets simultaneously.
- Automatically escalated skill level - the better you get, the tougher "they" get.

All of these Arcade Games are available now at your local computer store. They will run on any 48K Apple II or II Plus with a disk drive. To order direct, send the purchase price plus one dollar for shipping to: **ON-LINE SYSTEMS • 36575 Mudge Ranch Road • Coarsegold, CA 93614**

Visa, Master Charge, C.O.D. or Checks Accepted

209-683-6858

Dealer Inquiries Invited

ULTRA CHECKERS

Author unknown
 Malibu Microcomputing
 23910A De Ville Way
 Malibu CA 90265
 213-456-1137
 \$29.95 diskette
 Machine Language
 32k required
 Locked

PR=A- (GAME)
 PR=C- (DOCUMENTATION)
 Howard J. de St. Germain

INTRODUCTION

Ultracheckers (UC) uses the Apple's HIRES color graphics to depict a 10x10 checker board and plays checkers according to the international rules of checkers. Two principal modes of operation are permitted: play and problem. In "play", it's you against the computer. "Problem" mode allows you to set the board to a desired configuration and then "UC" will tell you what move to make. There is a third mode in which "UC" will play itself while you watch.

DOCUMENTATION

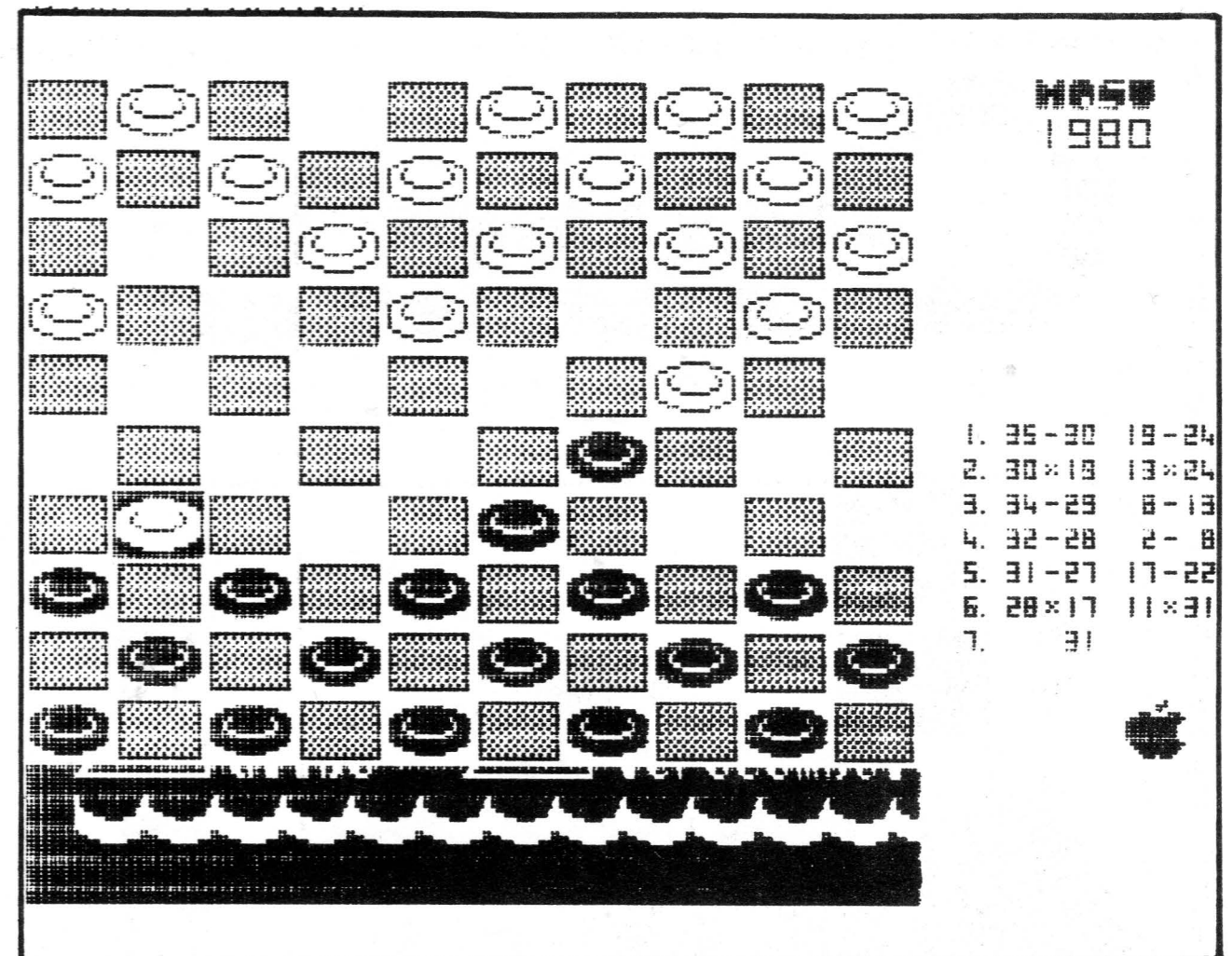
"UC" comes with a 20 page booklet (9x11.5 in.) with high quality print on only one side of each page. The documentation includes a table of contents and covers the following major topics: getting to know "UC", game rules, game modes, and problem demonstration. Also an appendix explaining the international rules is provided.

Now comes the problem. The organization of this document is poor. First you are told how to begin a self-demo mode in which the Apple plays itself. You are told that any key (or space bar) will stop this demo. Now you are informed of how to select white or black and how to move your pieces. All of this on the 1st and 3rd pages. (Page 2 is a Figure describing some of the important "UC" display features.) It is not until page 6 that you come across the fact that "Q" followed by "ctrl A" will restart the game! For me this was particularly frustrating since I was very anxious to begin my first game against "UC".

KEYBOARD CONTROL

Several methods are available to the user for selecting a move. The left and right arrows permit you to move the cursor to the desired square. An arrangement of 8 keys permits horizontal, vertical and diagonal cursor movement. And finally, all squares are numbered so that by merely typing in the desired square's number and pressing return the cursor will be positioned at the correct location.

It is unfortunate that "UC" does not take advantage of Apple's game paddle and allow you to control the cursor via this device.



GRAPHICS AND SOUND

"UC" displays an attractive checkerboard grid on the HIRES screen with 20 checkers given to each player (according to the international rules). A directional arrow precedes each move showing exactly where the moving checker will go. Along with the arrow, "UC" generates a "buzzer" type sound which creates a nice overall effect.

One problem with the HIRES display is the size of the numbers used to identify each square. Unless you have an exceptional TV or high quality monitor, it is rather difficult to distinguish the numbers used. Perhaps they should have been made larger since with the stroke of a key one can erase or recall them. Thus when these numbers are not desired they can be easily removed.

PLAY

"UC" has nine levels of difficulty. At the lowest levels (1 & 2) I had no problem in winning. I skipped level 3 and tried my hand at level 4. After 30 moves the game was a tie and I made a move to set up a triple jump. To my chagrin, on its very next move "UC" devastated me by capturing 5 of my checkers in one sweep. I still have not been able to get past level 4.

SUMMARY

In spite of the fairly poor documentation, I feel that "UC" is a quality game. If you have any interest in checkers and don't mind playing according to the international rules you probably will find Ultracheckers an enjoyable and challenging game.

PII

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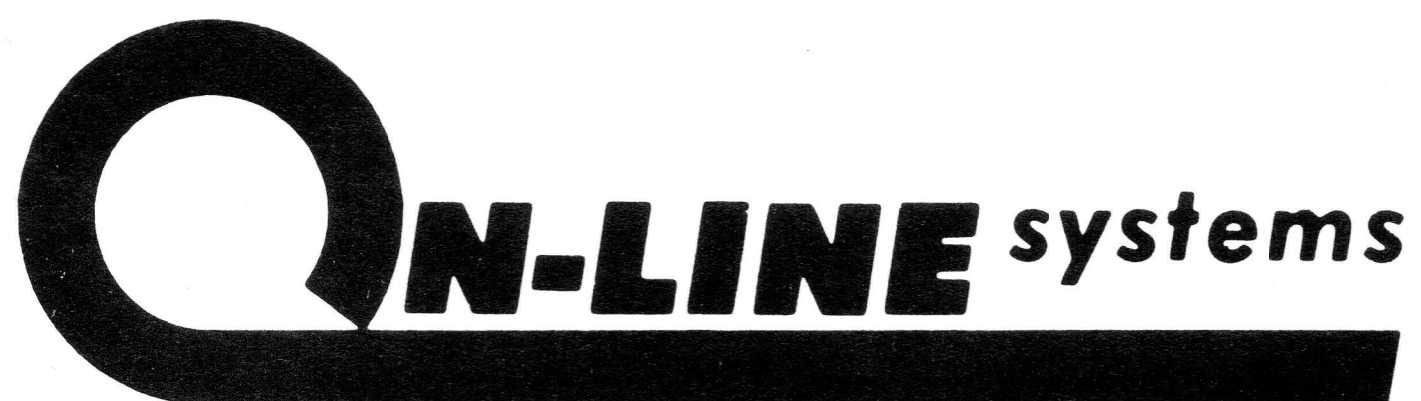
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36575 Mudge Ranch Road
Coarsegold, CA 93614
209-683-6858

GOLDEN MOUNTAIN

Author: unknown
 Broderbund Software
 Box 3266
 Eugene OR 97403
 503 343-9024
 \$19.95 diskette
 Applesoft
 32K required
 Locked
 Boots on 3.2 or 3.3 DOS

PR=B-
 Howard J. de St. Germain

THE GAME

Golden Mountain (GM) is a LORES graphics game in which a single player tries to excavate precious minerals from the Golden Mountain. There are five different minerals in the Golden Mountain as listed below in order of weight.

MINERAL	VALUE	COLOR
1. Gold (heaviest)	300 pts	gold
2. Silver	200 pts	grey
3. Copper	100 pts	brown
4. Diamond	500 pts	blue
5. Grass(no weight)	no pts	green

These minerals are represented as rectangular LORES blocks stacked in a pyramid structure with a small cabin built on top. The object of the game is to earn as many points as possible by removing as many blocks as you can without causing the cabin to collapse.

MOVING

A cursor is controlled from the keyboard by the left and right arrows as well as the "U" (up) and "D" (down) keys. Selective bricks can be removed by positioning the cursor on top of the desired brick and pressing the "X" key. Fortunately the game is complicated (and hence more interesting) by the following additional constraints. According to the single instruction sheet that comes with "GM", "When you remove a block from the mountain the blocks above it will also fall unless they are pinned by a heavier weight or unless they are grass with no weight above them." And "between each of your turns the mountain will be robbed by bandits. If you play the game right, the bandits will be forced to remove the block which causes the mountain to fall." You only earn points for a given round if the bandits cause the mountain to collapse.

A diagram is provided which explains exactly the relationship between the various blocks as far as falling is concerned.

SUMMARY

Even though LORES graphics are used it is an interesting game and fun to play. "GM" is not arcade quality (by today's standards) but does have good sound effects and colorful graphics. This game will certainly have appeal to some and is well written with no obvious errors.

APPLE - OIDS

by Tom Luhrs
 California Pacific Computers
 221 Jalisco Place
 Davis, CA 95616
 916 756 2921
 \$29.95 diskette
 Machine Language
 32K, Disk II, Paddles
 DOS 3.2 or 3.3
 Locked

PR=A
 John Mitchener

INTRODUCTION

Apple-oids is an Apple version of the popular arcade game known as Asteroids. I well remember the first time I saw the arcade version. I thought, now if someone can just come up with a version for the Apple. California Pacific and Tom Luhrs have come very close to matching the arcade quality. In addition, a second game called Chipout is included on the disk. This game is similar to the Breakout game that was furnished on many of the Apple system disks. It is, however, a more sophisticated version.

DESCRIPTION

Rather than having asteroids flying toward your space cruiser, there are apple-oids. Indeed, these are shaped like apples (the fruit). It is a bit surrealistic at first but not particularly objectionable. The object of the game is to score points by hitting the apple-oids or an occasional flying saucer with projectiles fired from your spacecraft. The game begins with only a few large apples on the screen and then when they are hit, they separate into two medium sized apples. When the medium ones are hit, they separate into two smaller apples. Contact between your ship and the apple-oids, regardless of size, results in your immediate destruction. After all of the apple-oids have been destroyed, a new set of large apple-oids is presented only this time there are more. It can get fairly hectic trying to keep out of the way.

CONTROLS

Firing and movement controls are a bit awkward for the way this pilot flies. Paddle 1 controls the direction of fire and the ship's direction. Projectiles are fired by hitting any of the number keys.

Should you find yourself in the path of an oncoming apple-oid, there are two alternatives. You may use the ship's thrusters to move out of the way or jump to hyperspace. Both of these options offer a degree of risk. Since the universe is wrap-around, you may fly off one edge to come in on the other side and run into an apple-oid. With the hyperspace option, there is a possibility of winking back in on top of an apple-oid or sometimes the strain of coming out of hyperspace causes the ship to disintegrate. The thrusters are fired with the Paddle 1 button and the jump to

hyperspace is initiated by pressing any key other than one of the number keys. In the opinion of this pilot, it would be better if the firing control were the paddle button and the thruster controls were the number keys, but part of the training at the academy was the ability to adapt to change.

EVALUATION

Apple-oids is close to the arcade game that many of us have come to love. About the only thing missing is the music that accompanies the arcade version. The use of the apple shape in space is distracting to the purist but shouldn't be too objectionable after the game is played for some time. On-screen scoring is provided and the highest score since the disk was booted is also shown. The number of ships that are left in space is distracting to the purist but shouldn't be too objectionable after the game is played for some time. On-screen scoring is provided and the highest score since the disk was booted is also shown. The number of ships that are left in space is displayed in the lower right corner of the screen. (You get an extra ship for each 10,000 points.) As mentioned above, the layout of the controls is somewhat different and required an adjustment period.

PII

REVERSAL

by Dan & Kathe Spracklen

Hayden Book Co
50 Essex Street
Rochelle Park, NJ 07662
201 843-0550
\$34.95 diskette
Machine language
32K RAM, Disk II
DOS 3.2 or 3.3
Locked

PR=A
Edward Burlbaw

Reversal is a computer implementation of the ancient game of strategy, Reversi. Reversal has 3 levels of strategy and 9 levels of play. It is possible to play against the computer, have the computer monitor two opponents, or set up the board to play special situations.

FEATURES

The Reversal playing board is implemented on the HIRES screen in crisp clean graphics. The playing pieces are black and white with (optional) faces on the pieces.

AVANT GARDE

DE CREATIONS

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- User formatted fields
- Prints out sorted 80-column (or more) formatted address lists, phone lists, or user formatted lists, in file, zip code or alphabetical order
- Update, read, or insert into, either the zip code or alphabetical directory
- Multiple (or 2 level) COUNT/SORTS

*Apple II is a trademark of Apple Computer, Inc.



WRITTEN FOR THE LAY PERSON

(12-6pm/7 days)

Sargon users will recognize some of the same features in Reversal. The three levels of strategy are beginner, intermediate, and advanced. The levels of play affect the computer's response time from 2 sec to 30 minutes with corresponding difficulty. Hitting ESC switches between the playing board and TEXT page on which the plays are displayed.

When it is time to move, a blinking cursor appears on the board. It may be moved around the board through the possible legal moves by the left and right arrows. When a move has been selected hitting RETURN will place your piece on the square and do all the flipping of pieces. There is a kibitz feature (CTRL-K) that shows what the computer considers as the best move. If you are not satisfied with a move it is possible to retract one or more moves and continue playing. It is also possible to return to the initial menu at any time during play to restart, rearrange the board or exit. The running score is shown at all times during play.

Hitting CTRL-F clears the smiling or sad faces from the pieces (winning or losing team) and CTRL-C stops the flashing cursor.

A COMPLAINT OR TWO

There were a couple of features that provided an amount of irritation. The use of the left and right arrows to cycle the cursor through the possible moves is a good idea except that the right arrow cycles counterclockwise and to the left; backwards from what I expected. The relative positions of the arrows and the RETURN has also caused a few accidents but the take back feature takes care of this. I think that a feature that allowed using the game paddles instead of the keyboard would have been a convenience.

Hitting CTRL-R to return to the initial menu can ONLY be done from the TEXT page. If hit from the game board display the program leaves you in limbo, wherever that is.

LOCKED DISK

Reversal comes on a protected disk that boots on either 3.2 or 3.3 DOS. Hayden has a 90 day free replacement policy and \$5.00 fee thereafter.

CONCLUSION

Reversal was winner of the software division of the First International Man-Machine OTHELLO Tournament and has been able to consistently beat me on the higher levels of strategy. I suspect that even the better players will find it a challenging opponent.

PII

HIRES CRIBBAGE

Warren Schwader
On-Line Systems
36575 Mudge Ranch Road
Coarsegold, CA 93614
209 683 6858
\$24.95 diskette
Applesoft or Integer
48K RAM, Disk II
DOS 3.2 or 3.2
Locked

PR=B
Edward Burlbaw

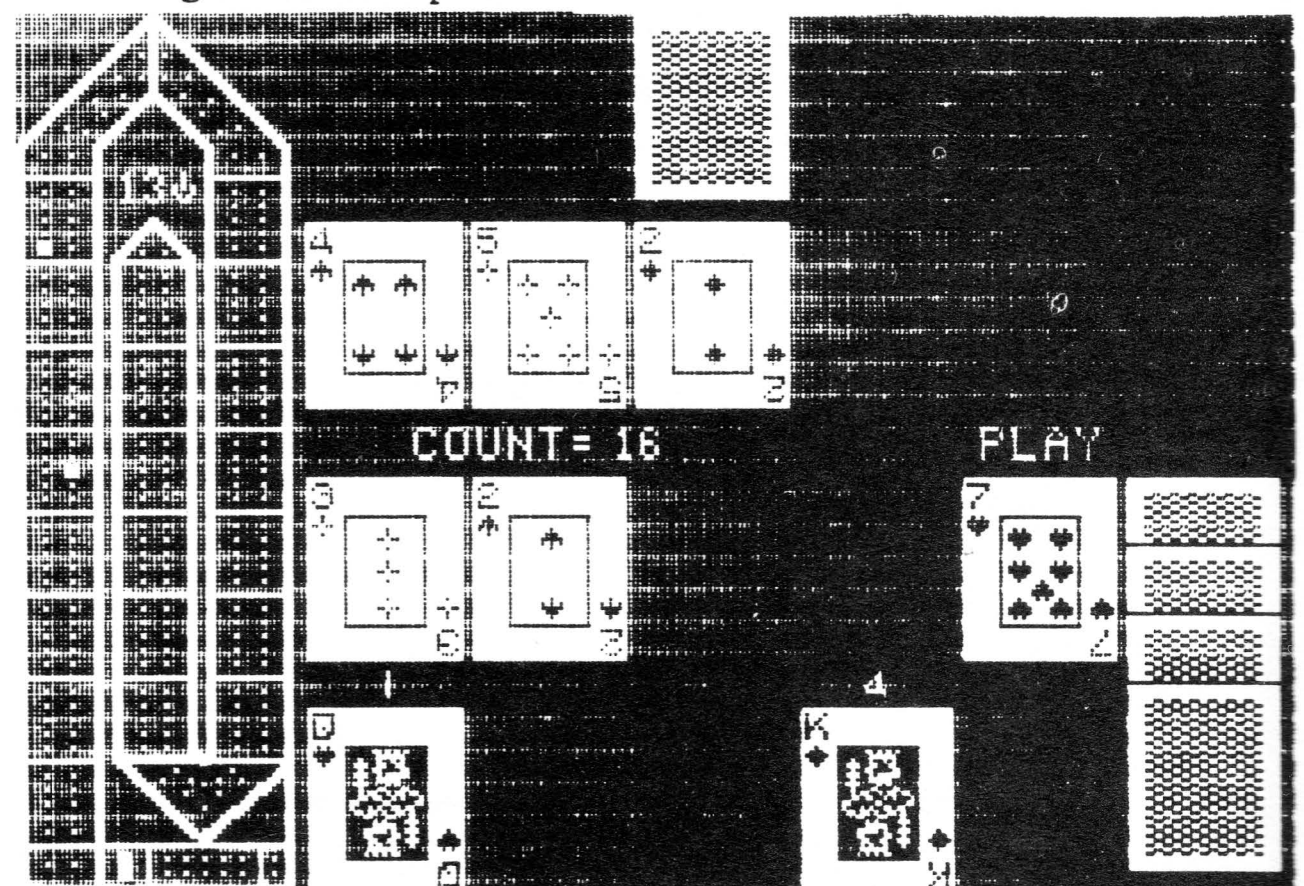
THE PROGRAM

Hi-Res Cribbage is played against the computer. The scoring board is displayed on the HIRES screen along with the cards. The cards are dealt by the computer: his face-down, yours face-up. The cards are nicely done and look like cards with all the usual markings. The game is played by the normal rules and you must choose by number (appearing above card) the two to discard. The first card may be retracted until the second card is discarded. The play is done by card number, also. As in the normal game, the show occurs after the play. The program keeps track of the points and scores them on the HIRES board with accompanying sound effects. While the sounds were cute, I found them to be equally as distracting. Particularly obnoxious was the sound occurring when the program won.

At any time during the play the match may be stored on your own blank disk. When choosing the save match option the program asks if you want to initialize a disk. After initializing, it is possible to save up to 10 matches on a disk. There are six games to a match.

There are two paces of play available--the slow paced game requires that the RETURN be hit after each counting and the fast paced game pauses momentarily. This allows one to see exactly how the counting is done and is helpful to the learner.

Cribbage comes with a short booklet containing program directions and an explanation of the rules and strategy of the game. Plenty of information to get any beginner started playing cribbage like a pro.



REPLACEMENT

If the disk ever fails, On-Line Systems guarantees free replacement if it is within 90 days of purchase and \$5 fee after that.

COMMENTS

Hi-Res Cribbage is a very nicely done program and a formidable opponent. With the computer's ability to quickly evaluate all the possible combinations of its hand any mistake on the human's part can become fatal. The two levels of play make it possible for the beginner to enjoy and learn the game, but also allows the advanced player to complete many games in a short time. I found no problems with this package and would recommend this program to anyone wanting to learn cribbage or increase their skills at the game.

PII

DB MASTER

by Barney Stone and Alpine Software, Inc
Stoneware Microcomputer Products
50 Belvedere Street
San Rafael, CA 94901
415 454 6500
\$189.00 diskette
Applesoft
48K, Disk II, optional printer
DOS 3.3
Locked

PR=P

John Mitchener

INTRODUCTION

DB Master (DBM) is a menu driven data management system with the capability of generating and using files which are larger than the RAM capacity of the Apple and which contain more information than may be stored on one disk. There is a very flexible report generator that allows any of the fields to be placed anywhere on a report. This degree of flexibility is a feature not found in the data management systems we have reviewed to date.

SYSTEM REQUIREMENTS

Although the hardware requirements are specified above, some additional comments are necessary. The documentation suggests that two drives are strongly recommended to avoid frequent disk swapping. This is excellent advice because each file takes a minimum of two disks and large files can take many more. On a single drive system, the swapping of disks could cause a lot of frustration. DBM can support up to four disk drives.

The Apple printer interface cards are supported as well as the California Computer Systems parallel and asynchronous serial cards. You should be aware that there is no provision for linking user printer drivers, such as those that use the game I/O.

DBM will also recognize a Mountain Hardware, California Computer Systems, or Thunderware clock. The clock is used to determine the date used in the creation and update of a file. Of course, if you don't have a clock, the date may be entered manually.

RECORDS AND FILES

Unlike the data management systems we have reviewed to date, DBM has the capability to handle large records and files. The maximum record length is 1020 characters with up to 100 fields per record. Each file takes at least two disks, one "Utility" disk and one "Master" disk. The master or data disks contain the actual data and a volume number assigned by the program. On large files, you may have many data disks. The utility disk(s) contains the secondary key files, report formats, and printer control info. According to the documentation the number of records that may be contained in a file is dependent on four things. These are the length of the primary key, the total length of the field names, the record length, and the number of secondary keys. A chart included in the documentation shows the approximate number of records which may be contained in a file based on the above factors. For example, a file with a record length of 100, 15 fields, a primary key length of 15 and no secondary keys could contain about 387000 records on 252 data disks and 1 utility disk. A file with a record length of 750, 75 fields, key length of 35, and no secondary keys would handle about 7000 records on 34 data disks and one utility disk. No attempt was made to verify these figures.

FILE STRUCTURE

The file structure used in DBM is the indexed sequential access method (ISAM). In this method order is maintained by the primary keys. This allows rapid access to data when the search is based on the primary key. The primary key may be up to 35 characters in length and may be contained in up to four fields. Faster access may be achieved by using shorter primary keys.

Secondary keys can be created upon establishing a new file or they may be added using the file maintenance routines. Secondary keys are used for screen and/or printer retrieval. They should only be used for those fields which will often be used as a basis for retrieval and are not included in the primary key. Secondary keys are linked to the primary key in an additional file on the utility disk. The search with a secondary key first looks up the secondary key and its associated primary key(s), then the search is transferred to the primary keys. The secondary key search is somewhat slower than a primary key search.

Any of the fields may be searched even if they are not designated primary or secondary keys. The method of search in this case is sequential, that is, the data file is searched from the beginning until a match is found or the end of file is reached.

DB SETUP

Data base setup is a straight-forward procedure but, as in any application, preplanning is necessary to be sure that the entry format is such that the system operator will find it logical. The first step is to determine the level of password protection desired in the file. Three levels of protection are available. The master password has full access to the system, a Read/Write password has full access but cannot change passwords, and a read only password can only display records without being able to add, delete, or edit records. The file is then constructed by defining the record format. This is accomplished by setting up a form on the screen using the various field types described below. About the only constraint is that the primary key fields must appear first. Location of the fields on the screen is user determined by specifying the horizontal and vertical location. In many cases it would be possible to duplicate the format of the input document. Each record may have up to nine screens of data. All options are shown on the screen and the program is very well error protected.

FIELD TYPES

DBM offers ten different field types. There are three numeric types which are floating point, large integer (+/-32767), and small integer (0-255). Alphanumeric fields are non-formatted and may be up to 30 characters long. Additional fields may be added if you have a need for fields of more than 30 characters. Dollars/Cents fields are pre-formatted with two decimal places. Yes/No fields are limited to either Y or N. The other field types are pre-formatted and are Social Security Number, telephone number, and date. A special type of date field, the autodate, is of considerable value in keeping track of when a record was last updated or when it was added. The autodate field may not be altered directly by the user, but rather is automatically changed by the system. The date is the one retrieved from the system clock if one is available or the one entered when the system is booted.

SEARCHING

DBM offers a very powerful set of search functions. These include range, wild card, includes, ?/don't care/ character, plus all of the relational searches, <, >, =, <=, >=, and <>. In addition to all of these types, an "and" or an "or" condition may be entered. The maximum number of search criteria is twenty. This is an impressive array of capabilities and works very well in actual use. One problem noted was the use of an "includes" search on the primary key. Although the documentation states that this type of search can't be used, it is still available and causes the data to be at least temporarily scrambled. While I was able to recover the test data, it is not a comforting situation.

SHORT FORMS

A short form is a subset of the fields on the main record. The primary use for the short form is for quick updates of selected fields without having to go through the entire record. You must specify enough of the primary key fields to be certain that the record being updated is the one that you mean to update. The short form is also used to emulate a hierarchical data base structure. The short form or multiple short forms for different purposes may be created at any time. The maximum number of fields in the short form is limited to 24.

REPORT GENERATOR

The report generator included in DBM is one of the most powerful that is presently available for a microcomputer. There is a tremendous amount of flexibility built into the system. The ease of use is decreased because of this flexibility. Printer layout sheets are included as a part of the DBM documentation and are almost essential to first time success in laying out a report format.

A Master Report Format contains the instructions to generate a report from the data. Each Master Report Format is made up of four sub-formats:

- Page Format- gives information about the page numbering, lines/page, and record spacing.
- Data Format- contains heading & footing info, column titles, the actual data, and computed fields with the associated positioning info.
- Sort Format- information for determining the order of the records in the report.
- Select Format- determines which records will be printed based on user selection criteria.

Each of the sub-formats are independently developed and the different sub-formats may be combined to generate new master reports.

Reports may be designed to go to either the screen or to a printer. Maximum print width is 132 columns.

Reports may have up to 24 computed fields based on the data in the data base. The computed fields are independent, that is, all of the computed fields do not need to be printed in the report.

Column titles are user specified and so if you have specified some shortened field name, it is possible to spell out a complete column header for readability.

Horizontal totals, column subtotals, and column totals are supported by DBM. You may ask for a summary report which includes only the headings and the subtotals and totals. This is most useful for many management functions where there is no requirement or desire to view the individual transactions.

SORTING

The sort sub-format allows a report to be printed in order of any of the fields. If the report is to be in primary key order, no sorting is necessary. If, however, it is to be in some other order the selected records must be sorted before printing the report. The sorting is accomplished using a separate blank diskette to create a temporary sorted print file. The temporary print file is not saved after the report is printed and it must be resorted to print the report at a later time.

FILE MAINTENANCE

The file maintenance menu is entered from the main menu and provides the functions necessary to back up your data files and other maintenance features.

The file reblocking option is used to back up files and to reestablish the optimum space utilization on the disks.

A file statistics option is used to determine the number of records in the present file and the information about field names, types, lengths, which fields are in the primary key, and which have secondary keys.

Another option in the file maintenance menu is the ability to add or delete secondary keys. If secondary keys become necessary, they may be established with this option rather than being built in during file creation.

The code field description option is used to set up, modify, or delete long names associated with some shortened code that is stored in the record. At report time the long description may be printed in response to a short code that is stored in the data. The primary use of this feature is in saving disk space for actual storage of the records. It is not necessary to store a long name just for printing a report.

Other file maintenance functions are the changing of passwords and setting up printer parameters.

DOCUMENTATION

The DBM documentation is 120 6X9 pages in a padded loose-leaf binder. Included are printer and screen layout forms for defining the way that the reports will appear. The printer layout forms are for 10 characters per inch so if you are using a 12 character per inch printer some adjustments will be necessary.

WARRANTY AND LICENSING AGREEMENT

The warranty for DBM is similar to that of other software products. DBM is sold "as is" and Stoneware assumes no responsibility for the use of the program. Purchasers will receive free updates to the current revision number for 90 days. A free backup disk is sent upon receipt of the registration card.

The licensing agreement contains a portion entitled "Liquidated Damages" which states that the purchaser agrees to pay upon demand by the licensor, \$2500, for each instance of unauthorized use or copy. In addition to this, the licensor also reserves the right to take the matter to court.

While this is an extreme attempt to protect some very valuable and well written software, it is questionable whether the approach is desirable. The question of what is an appropriate licensing agreement will not be resolved in this review and has been a topic of many editorials and articles in the popular publications without resolution.

STOCK MARKET UTILITIES

4 STOCK MARKET PROGRAMS ON DISK

Four programs provide a complete programming system for entry and storage of stock data, data correction, autoscaling Hi-Res graphical display of performance, and building historical data files electronically (program to download data not included).

STK.1 (39 Sectors) provides complete utilities for manual entry of stock data. **Features:** names stored alphabetically by exchange, easy addition and deletion of names, automatic prompting and extensive error trapping for data entry (date, volume, price), numerous entry points for data correction, all data displayed prior to updating stock files with further option for data correction, input historical data to a single data file, display contents of individual stock files from disk, option to reduce files to last 260 entries for high-res graphics. All data files are fully accessible.

DATA CORRECTOR (31 Sectors) used to correct and rewrite stock data files. **Features:** option for general data correction - correct any entry, option for stock splits - all prices and volumes prior to split scaled by split ratio (transaction dollars constant) to provide continuous momentum and price curves, also correct for incomplete updating due, for example, to a power outage.

EVAL (22 Sectors) provides comparative evaluation of stock performance. **Features:** synchronizes NYSE index ave with first stock entry, option to evaluate all stocks automatically or just one, simultaneous high-res display of momentum, price, and price relative to NYSE index, auto scaling graphics, numerical figure of merit for performance relative to NYSE index ave.

MICROQ (12 Sectors) is used to build historical data files electronically by converting downloaded stock price data obtained from CompuServe's Micro-Quote financial data base to data files compatible with these programs.

Programs written by H. S. PILLOFF.

Requires Apple II,™ ROM Applesoft,™ 48K and Disk

Price \$59.95

MD residents add 5%

H&H SCIENTIFIC

13507 Perdleton Street
Oxon Hill, MD 20022
Tel (301) 292-3100



EMULATING A HIERARCHICAL DATABASE

Such a structure may be emulated by use of the short form to emulate the files associated with the higher level file. The method is explained in the documentation and it appears that it should work very well.

EVALUATION

Overall, DBM is a relatively complete data management system. In the documentation it is stated that DBM is more closely related to File Cabinet than to a true relational, hierarchical, or network database management system; however, the hierarchical structure may be emulated with DBM.

Only a few negative features are readily apparent while working with the program. First, there is no built-in function to allow a query regarding the number of selected records for a given set of criteria. A second problem that I feel is not particularly serious, but one that could present frustrations to the inattentive user, is that when disk swapping prompts are given, the drive number is not as prominently displayed as it could be. Third, the present version of DBM that we have does not support the use of DBM files by other programs, nor can it use files created by other programs. A fourth problem which is a problem common to all of the previously reviewed data management systems is the inability to add, change, or delete fields once the data has been entered.

Stoneware has announced that solutions to the last two cited shortcomings will be available soon in the DB Master Utility Pak #1.

DBM is probably at the top of the line for its price range at the present time. We have not seen another system with the diversity, features, and capacity for the price.

PII

CCA DATA MANAGEMENT SYSTEM

by Helmar Ben Herman, Creative Computer

Applications, and Colin G. Jameson

Personal Software Inc.

1330 Bordeaux Drive

Sunnyvale, CA 94086

408 745 7841

\$99.50 diskette

Applesoft

32K, Disk II, optional printer

DOS 3.2, may be muffed to DOS 3.3

Unlocked

PR=P

John Mitchener

INTRODUCTION

CCA Data Management System (DMS) is a general purpose data management system. It offers a number of features not found in other systems in its price range. DMS has a report generator that prints fields in any order. There is the capability to generate index files of the data to

use the faster retrieval facilities inherent in the ISAM file structure. It is not necessary to use this unless the application calls for it.

RECORD AND FILE SIZES

The maximum record size in DMS is 232 bytes. The record may be divided into a maximum of 24 fields. An entire file must fit on one data disk.

FILE DEFINITION

File definition in DMS is a function from the main menu. Each field has three basic characteristics: a field ID, a field name, and a field length. The field ID is a 1-5 character short identifier used during any of the operations with DMS. The field name is a more descriptive name that is printed on reports. The field name may be from 1-15 characters. The field length specifies the number of characters reserved for that particular field.

If you want numeric totals and editing of numeric values, you must identify fields as numeric during the definition by putting an asterisk in the first position of the field ID.

Any computed fields that you wish to have in a record must be specified with the appropriate formulae at the time of definition. Computations are performed from left to right without regard for standard algebraic hierarchical considerations. Parentheses may not be used.

FILE MAINTENANCE

The file maintenance function is used to add, update, delete, search for, or inspect a record. During all file maintenance operations, a status line is present at the top of the screen showing the file name, the number of the current record, the number of records in the file, and if DMS is waiting for you to input data to a field, the field type (alpha or numeric), and the field length.

The Scan function is used to find a record based on the information in a given field. The scan looks for the occurrence of the specified string anywhere within the field, so any of the following would be selected based on a criteria of 'ele': elephant, elegant, delete. There is no facility for range or logical searches such as <, >, <>, or "and" or "or" searches.

A Scan and Mark function creates an index file containing the record numbers of records meeting user specified criteria in a certain field. This file can be used by the report generator to print labels or reports. For example, if you have a mailing list and wish to print labels for all entries from California, a scan and mark file would be one way to do it. The same thing could be done using the range option in the report generator, but it would probably be slower.

The Update function operates by replacing the information in the appropriate field with the new data. The record to be updated is called by the

record number. I find this method of updating to be tedious and would prefer to be able to update based on some criteria. As written you must use the scan to find the record number, then call the update function with the record number of the record that you wish to update.

The Delete function of DMS is one that only marks a record for deletion. This offers the ability to go back and recover deleted records should you have an application that needs that function. The records marked for deletion are not available to the Scan function, but may be printed out in a report or "undeleted" through an update operation. The actual removal of records from a file is accomplished through the file compaction routine.

REPORTS AND LABELS

The report generator will generate either reports or mailing labels with user specified fields in any order. The parameters entered can include the fields to be printed, a range of record numbers or a range of values in a field. Reports can contain subtotal breaks and overall totals. Only one break can be established in a report. The program uses the field name for the column heading. The default width of a column on the report is the defined field length. This may be forced to a different size by user command. Included as a part of the mailing label routine is a label alignment test which is useful to keep

from wasting labels. Commonly used report formats may be saved to disk and then retrieved as part of the setup of the report, eliminating much of the work associated with generating one-time reports.

One characteristic that I found irritating in the report generator was that the "PR#1" was always printed at the beginning of the report or set of labels. At the end, the "PR#0" was printed.

DMS allows incorporation of a user printer driver routine. The area of memory page 3 available is \$31A to \$3D0; \$313 through \$319 are used by DMS.

SORTING

Sorting a file can be a fairly slow process in DMS. While we did not test it with a large number of records, the documentation states that a file of 200 records may take 10 to 15 minutes. Sorting may be done on up to 10 fields with the first field specified as the primary sort key and the other fields as lower order keys. Each key may be sorted in either ascending or descending order. If the file that is to be sorted is longer than will fit into RAM, a work file will be used. In this situation a two disk system will eliminate a lot of disk swapping.



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INDEXED SEQUENTIAL ACCESS METHOD (ISAM)

Unlike DB Master which requires the use of ISAM file structure or other data management systems which could only use an ordered total record, DMS offers the option to use either method or a combination of both.

The ISAM index file for a data file is created by using the sort routine and specifying the input file name with an apostrophe as the first character. An index file may be created for more than one field. The effect is that the same data file may be indexed by different fields without requiring a complete sort of the data file. Disk space is also conserved, necessary to save the total data file in each of the different orders.

All of the functions of DMS can be used with the ISAM files including the report generator and file maintenance. When using the file maintenance with ISAM indexing, the default is to update the index automatically. This can be somewhat time consuming as the index is updated with each entry. It is possible to turn off the automatic updating of the index and go back and update the index later.

INTERFACE WITH THE OUTSIDE WORLD

DMS was unlocked at the time we purchased ours. The documentation explains in detail the file structure for the data files and the ISAM index files. Included on the disk is a sample interface program. If you are a programmer, there are virtually no limits to the types of processing that can be accomplished with the files generated by DMS.

An inventory control application is included on the disk to demonstrate the concepts of programming using the DMS files.

A set of conversion programs are included which allow conversion of DMS files to VisiCalc files and vice versa. The programs convert using the DIF (Data Interchange Format) which has become somewhat standard for moving data from VisiCalc to another program and vice versa.

EVALUATION

DMS is a program that can be used in a variety of ways and will be very flexible to those who are programmers. Even those who need only a standard data management system will be relatively satisfied with DMS. The major shortcomings of the program are the limited number of characters per record (232), a limited number of fields (24), the files must fit on one diskette, and the slow sorting routine. The ISAM indexing capability must be regarded as a plus.

The user of DMS should be familiar with DOS commands as it is sometimes necessary to drop out of the program to execute commands such as RENAME and DELETE. The need to do this is not that frequent in simpler applications, but obviously, there is more opportunity for error if you're not careful.

PII

VISICALC

by Dan Bricklin and Bob Frankston
Personal Software, Inc.

1330 Bordeaux Drive
Sunnyvale, CA 94086
408 745 7841
\$150.00 diskette
Machine Language
32K, Disk II, optional printer
DOS 3.2
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PR=AA
John Mitchener

OVERVIEW

VisiCalc is one of the most popular programs ever written for the Apple II and it is also one of the most useful. VisiCalc is the tool to solve many types of problems which are normally solved using prodigious amounts of paper and a calculator.

The VisiCalc screen layout is essentially a "columnar pad", consisting of 63 columns and 255 rows. Because of memory constraints in the Apple, data cannot be entered in each column/row intersection. Your application can be confined to a few rows and extend over many of the columns, or it may be limited to a few columns and extend over many rows. This is a result of dynamic reconfiguration of the electronic sheet. VisiCalc will not allow the entry of data which would exceed memory capacity. There is an on-screen prompt which shows the memory left. According to the documentation, there is approximately 9K available on a sheet in a 32K machine, 25K in a 48K machine, and 35K with a language system. Memory usage for the actual entry of data is also dynamically allocated so that a long label or formula may be entered without causing each of the other positions on the sheet to change in size.

If the program were limited to just entering labels and numbers on the sheet, it would not be of much value. The true power and usefulness of VisiCalc lies in the computational and formatting features.

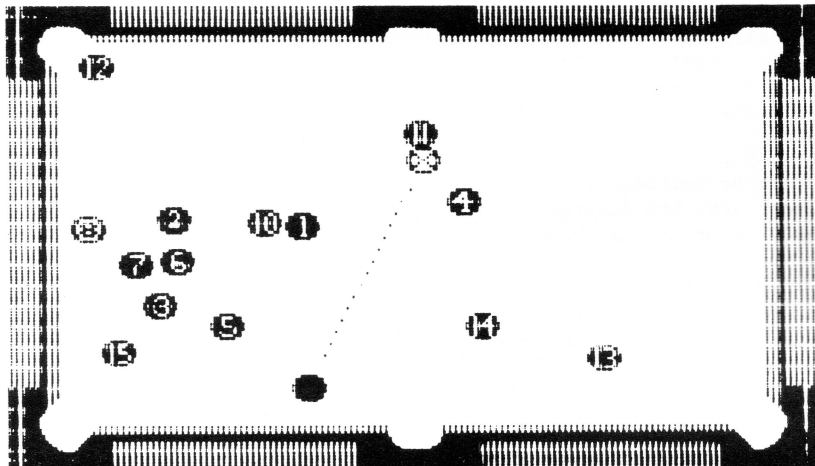
COMPUTATIONS

The columns of VisiCalc are labeled with alphabetic characters A-Z, AA-BK; the rows are numeric, 1-255. The intersections where data is entered are referenced by a combination such as A1 or BK10. A label, a number, or a formula may be entered at the intersection points. The formula may be a simple one such as adding a constant to the previous field or it may be complex, referencing several other locations on the sheet. After entering the formula, the result is displayed in the field. The power comes when you change a field that is later referenced by a formula. The result of the formula is recalculated based on the new value that was entered in the sheet. No need to get out the eraser and go through all of the calculations again. With the basic information for your

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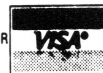
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business, many different types of financial or production models may be built and then "played with" to determine which budget mix or production mix would be the most beneficial for the company.

FORMATS

Since the Apple screen is only 40 columns wide, it isn't always possible to see all of your electronic sheet on the screen at once. The default column width is 9. If you want to watch two different parts of the sheet, there is a window feature which may be set up either horizontally or vertically and may display totally different parts of the page. Commands are available to change column widths between 3 and 37, display values as integer, dollars and cents, left or right justified, or simple graph (with asterisks). For additional flexibility, commands may be entered to insert, delete, or move rows or columns.

All or portions of the electronic sheet may be sent to the printer or to the disk as a text file.

BUILT-IN FUNCTIONS

VisiCalc offers a substantial number of built in functions that save time. Formulae for these functions do not have to be entered. These functions include, sum, minimum, maximum, count, average, net present value, lookup, Pi, absolute value, and integer value. Other calculations are available such as square root, log(10), and trig functions.

DOCUMENTATION

The VisiCalc documentation consists of 77 pages divided into four lessons. The first lesson provides an introduction to using VisiCalc and presents the commands necessary to begin using the program. Each subsequent lesson builds on the previous material and introduces the more complicated commands and techniques. The manual is indexed and a quick reference card is provided so that after you have gone through the lessons once, the reference card is all that is needed.

WEAKNESSES

It would be possible to go on at great length about the features of this program. It truly is worthy of all of the admiration that has been bestowed on it. However, there are some operational characteristics and shortcomings that have caused me to deny the program that elusive AAA rating.

The first problem noted is in the cursor movement. Most of us who have had Apples for some time have become used to hitting the left arrow key to correct a mistake. In VisiCalc the arrow keys are used to move the cursor from field to field. So if you are typing in a long formula and happen to make a mistake, then hit the left arrow key, the cursor pops back to the previous field. Upon returning to the field where you were entering the formula, you find it blank because the formula had not been set with the return key.

One of our readers pointed this out as a major irritation, and it does require that some thought must be given to what you are doing. The way to correct a typo is to use the ESC key.

A second and probably more significant problem is the lack of a routine to print out the formulae that have been entered on the sheet. The formula is displayed at the top of the screen when the cursor is on the field but it is inconvenient to review a formula in that manner, particularly when it extends off the edge of the screen. There are several programs on the market to take care of some of the omissions in VisiCalc.

A third area which is not handled well by VisiCalc is in the printing format. Long, descriptive labels are often truncated because of the need to reduce the field width to get more columns on a printed report. This lack of descriptive labels diminishes the usefulness for business reports and may result in the need to retype a report using the appropriate labels.

Perhaps the most irritating feature of the program is the requirement to turn the Apple off before another program can be run. I find this to be a real hassle, particularly with the language system.

STRENGTHS

The ability to build a model and then make changes and get the results immediately recalculated is the strongest feature of the program.

A second strength is not necessarily associated with VisiCalc itself but more to a philosophy which seems to be emerging in some corners of the software market. The ability to have data that is usable by different programs to accomplish different tasks. While I mention the problem with the truncation of long labels if the column width must be reduced, there is at least one program to deal with that situation. We all hate to spend money on numerous programs but given the memory limitations on the Apple, it is a benefit to be able to buy programs that will perform specialized functions on the same data. (See reviews on VISI-CAIDS and CCA DMS elsewhere in this issue). As the popularity of VisiCalc grows, more software is becoming available that is able to use the information built by VisiCalc or to create files that can be used by VisiCalc.

This is the type of program that makes the personal computer a worthwhile investment and if you do modeling, I highly recommend going to your dealer for a demonstration.

PII

APPLE OWNERS HAVE PEELINGS II

VISICAIDS

by Charlie Harrison
Data Security Concepts
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PR=B-
John Mitchener

INTRODUCTION

VISI-CAIDS is a set of three utility programs to be used with VisiCalc from Personal Software, Inc. (See review elsewhere in this issue.) The three programs are used to perform functions not presently supported by VisiCalc.

LABEL SPLITTER

One of the disadvantages of VisiCalc is that, although any length label may be entered into a VisiCalc field, the only characters displayed on the sheet are those that fall within the column width. Sometimes long labels must be truncated because of a need to get more columns on a sheet of paper by shortening column width. It is possible to avoid truncating by putting only as much of a label in one column as would be displayed and then moving to the next column. Of course, this takes time and extra effort because it must be done for each row. With the Label Splitter program you can let the computer generate these fields for you and write a new text file which contains the changes. The original file remains unmodified.

Some preliminary set up of the VisiCalc file is needed to insure that there are enough blank columns for the total length of the labels. This is quite a simple matter with the /IC (Insert column) command in VisiCalc. You must know what the VisiCalc file looks like in order to effectively use this program. The results of the program are displayed on the screen but only the affected columns, so you are not able to determine exactly how the report will appear.

The result of using the Label Splitter program is that the truncated portions of your labels are placed in the blank columns and your reports can have quite long meaningful labels that fully describe the data on each row and still maintain enough room on the page to print the data.

Error trapping is fairly good, although if you enter a number for column, instead of an alphabetic column identifier, the program does not put the display on the screen.

FORMULA READER

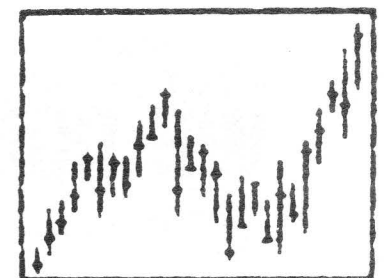
A weakness of the current VisiCalc version is the inability to print out the formulae that are entered into the sheet for computations. In the last issue I reviewed VisiList which listed the contents of a VisiCalc text file, including the formulae. That program listed the data just as it was stored by VisiCalc which is in reverse row order. The VISI-CAIDS Formula Reader sorts the entries into ascending row order. You may either list a single column or the whole sheet. Output can be directed to either the screen or to a printer.

Contrary to VisiList, this formula reader is more than just a text file reader. It includes the sort to make the data more meaningful. If you are not inclined toward writing your own program for this, Formula Reader can be a valuable assistant for those who make extensive use of VisiCalc.

PD READER

PD Reader is designed to display files created by the VisiCalc Print to Disk (/PD) command. This is essentially the same as sending the data to the printer but the receiving device is the disk. PD files are generally smaller than the full text file. With PD Reader it is possible to display the PD file on the screen or on a printer without booting VisiCalc. This is

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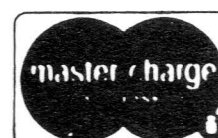


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particularly useful if you must use a 16K machine to view data. Of course, a PD file may not have any calculations done on it without VisiCalc.

On the review copy of the program we received there was a bug in the routine to send the data to the printer that prevented printing. We expect that the bug will be corrected for copies shipped to customers.

EVALUATION

These three programs offer additional capabilities to users of VisiCalc. The most significant program is the Label Splitter. The other two are almost bonuses and, if you have a need for these utilities, they are probably worth the money for those not inclined to do this type of programming.

PII

INTROSTAT

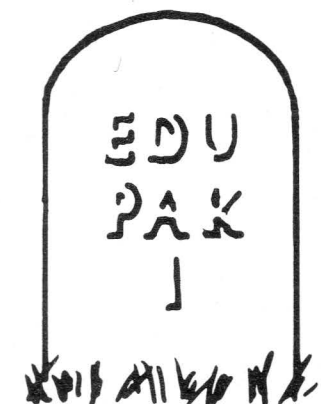
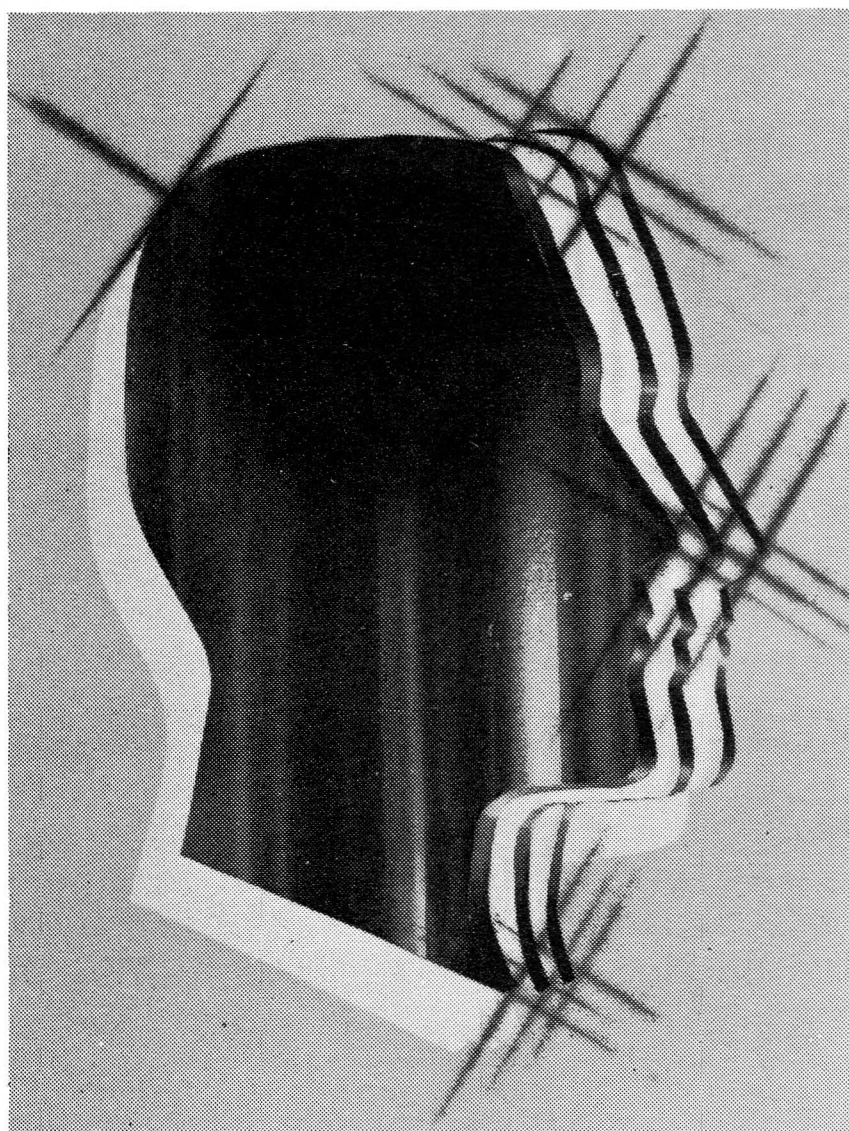
by Scott Herriott
 MicroStat Software
 P.O. Box 10741
 Stanford, CA 94305
 \$75.00 disk
 (Limited version available on cassette for \$35.00)
 16K (extremely limited capability)
 32K (most capability, limited graphics)
 48K (full capability)
 Applesoft
 Applesoft ROM, Disk II
 DOS 3.3
 Unlocked

PR=C-
 Helena C. Martellaro

INTRODUCTION

Statistics is a tool that is used a great deal in the social sciences, educational research, engineering, and other fields. Until recently there have been no statistical packages for the Apple II that gave researchers the power to perform certain needed tests. Most users had to go to the large mainframe computers to get packages (SPSS, SAS, or BMDP) that fulfilled their

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needs. Now, certain packages are becoming available for the Apple II that meet some of the statistical needs of the researchers.

Introstat is such a package. It is a statistical package for the behavioral sciences. This does not mean that it cannot be used in other fields, only that the statistics are directed toward the behavioral sciences.

THE PROGRAM

To use this program effectively, you must understand the statistics that are used. This program does not teach you statistics; it assumes that you fully understand all the analyses that are presented. The approach taken is from a behavioral science standpoint, which means that if you learned your statistics in a math class, it may take a few minutes to figure out what is going on and how to set up your data correctly for this program.

One very nice aspect of the program is the way data is handled. Like the programs for larger computers, the data is first read into a file and then saved to a disk. The Introstat program has the capability to handle missing data, modify labels, modify the data, and recode a categorical variable. One problem with this data handling system is that if you want to look at the data, you can only look at each individual case one at a time. If you have a large amount of data, this can be very time consuming.

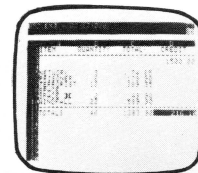
The examination or testing of the data is done with two programs on the disk. The first program looks at descriptive statistics and does tests of differences. The second program looks at relationships such as Pearson correlation and simple linear regression.

The options available on the first program are as follows: 1) Descriptive statistics for one variable, with minimum, maximums, mean, standard deviation, standard error of the mean, and a limited optional frequency table. 2) Contingency table of two variable with Chi-square. 3) Student's t-test (pooled and not pooled) for simple or matched-pairs. 4) Mann-Whitney U test 5) Wilcoxon Matched-Pairs Signed-Ranks Test. 6) One-way Analysis of Variance 7) Two-way Analysis of Variance

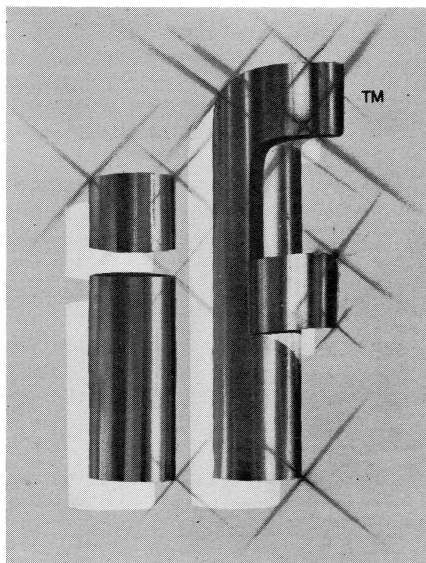
The options available on the second program are: 1) Two-variable scatterplot in high-resolution graphics (without labels) 2) Pearson correlation matrix for up to 6 variables 3) Simple linear regression (one independent and one dependent variable only). Multiple regression is not included in this program and was intentionally omitted.

The Introstat disk also contains a sample data set that is used for examples of sample runs for the above tests.

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DOCUMENTATION

The user's manual is 40 pages long and assumes that all statistical procedures are completely understood by the user. The documentation is somewhat poor; it leaves a great deal for the user to figure out for himself. In many places it assumes that the reader already knows how to run the program. There are not enough examples scattered through out the documentation, although there is one long example at the end which creates sample runs for the user.

EVALUATION

Overall the program does what it says it will do. I ran almost all the programs with problems

COMPUTING

DESCRIPTIVE STATS FOR ONE VARIABLE
A

MIN= 1 MEAN= 1.5
MAX= 2 SD= .51
 SE= .1

N= 24 0 MISSING
PRESS RETURN FOR PROGRAM MENU

COMPUTING

ONE-WAY ANALYSIS OF VARIANCE

EFFECT OF B ON Y

B	SIZE	MEAN	SD	SUM OF SQ DEV
1	8	33.38	14.39	1449.88
2	8	51.5	13.82	1336
3	8	66.63	11.54	931.88
GRAND:	24	50.5	18.83	
	0 OUT OF BOUNDS		0 MISSING	

SUMMARY

SOURCE	SUM SQR	DF	EST. VAR.
AMONG	4434.25	2	2217.13
WITHIN	3717.75	21	177.04
TOTAL	8152		

F = 12.52 $\text{ETA}^2 = .54$
PRESS RETURN FOR PROGRAM MENU

COMPUTING

TWO-WAY ANALYSIS OF VARIANCE
EFFECTS OF A AND B ON Y

CELL MEANS (SIZES)

B->	=1	=2	=3	ROW
A				
=1	35.25 (4)	52.25 (4)	71.5 (4)	53 (12)
=2	31.5 (4)	50.75 (4)	61.75 (4)	48 (12)
COL ->	33.38 (8)	51.5 (8)	66.63 (8)	

GRAND MEAN= 50.5

TOTAL N= 24 0 OUT OF BNDS

PRESS RETURN FOR SUMMARY
EFFECTS OF A AND B ON Y

SUMMARY OF VARIANCE

SOURCE	SS	DF	EST VAR	F
WITHIN	3495	18	194.17	
A	150	1	150	.77
B	4434.25	2	2217.13	11.42
INTRXN	72.75	2	36.37	.19
TOTAL	8152			

'REGRESSION OF VAR# Y ON VAR# X',

ENTER THE VAR#'S Y,X: 1,2

REGRESSION OF Y ON XB

COMPUTING

REGRESSION OF Y ON XB

$Y = 13.62 + -.08 * X$

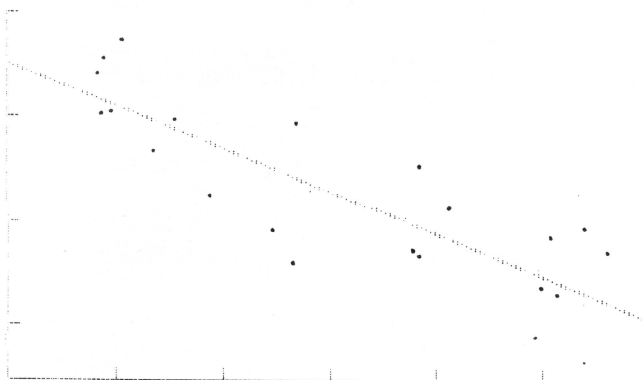
RESIDUAL STANDARD ERROR= .89

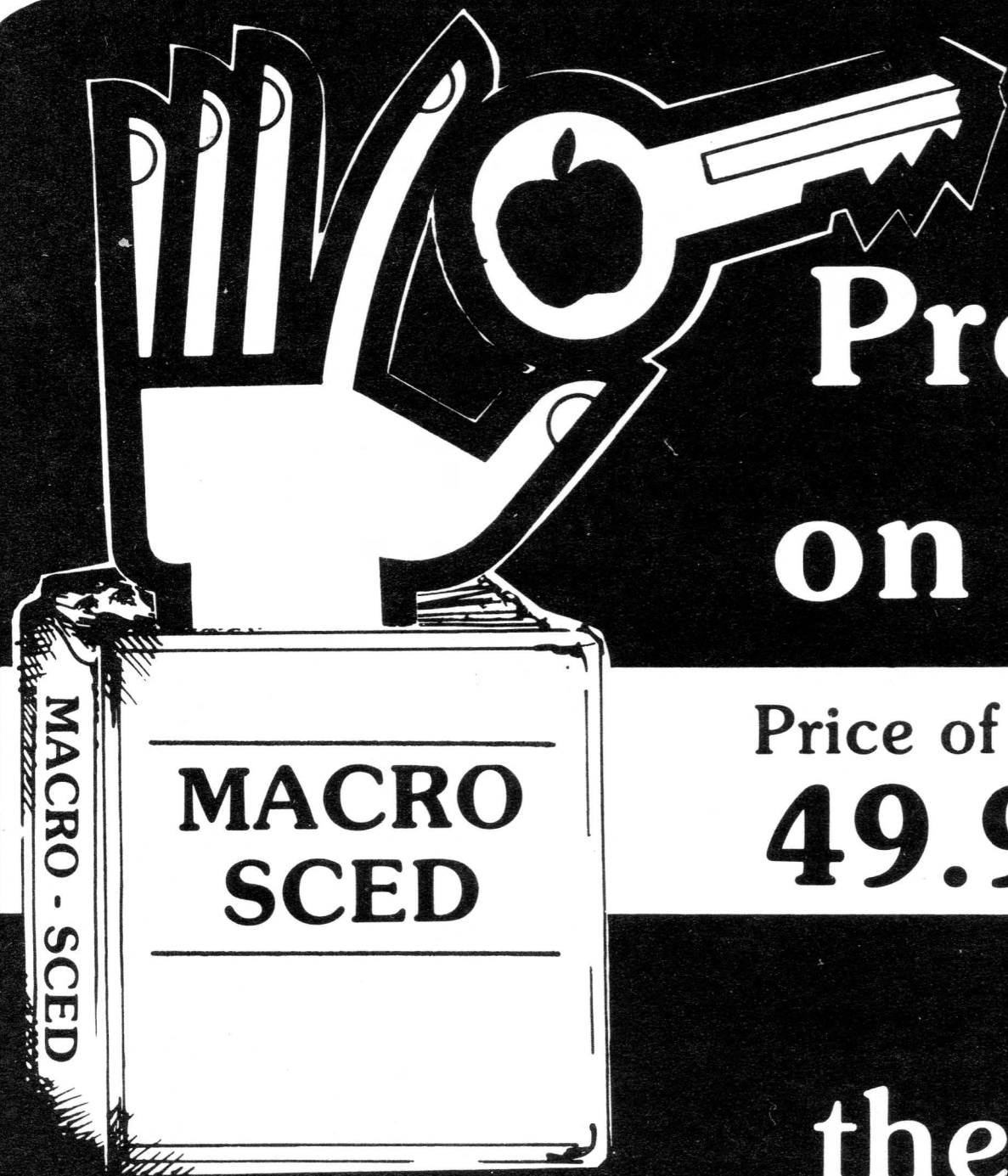
EXPLAINED/TOTAL VARIATION (R^2)= .71

S.E. OF SLOPE= .01

out of statistical books and the answers checked out. This does not mean that bugs may not exist, only that if the data stays within reasonable limits, the programs will run correctly.

There are some bugs in the program that are not in the analysis of the data, but in the programming. One bug that I found is: if you enter the data and then put a space on the end of the number, the program will not take this as a number. Another problem is that once the file directory is used you can not use it again without running another program. This can be very frustrating if you want to know what is in all the files. (However, the file is a standard sequential text file, and if you have a word processor that can read it, you can look at it at any time.) And a major problem can occur if you mistype something





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Save cursor position on screen	YES	—
Non-flashing cursor option	YES	—
Edit screen text other than Basic program	YES	—
OUTPUT CONTROL		
List one screen page at a time	YES	—
Slow-list in both Basic	YES	—
KEYBOARD-MACROS		
Editing commands within a macro	YES	—
Automatic chain to another macro	YES	—
Macros available in edit mode	YES	—
Add/Change macros without destroying current Basic program in memory	YES	—
LOWER CASE CAPABILITY		
Lower Case entry from keyboard	YES	YES
L/C mode on/off also under program control	YES	—
OTHER FEATURES		
Dump screen contents to printer (in edit mode or under program control)	YES	—
Search/Replace any string in FP Basic program	YES	—

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11610 Page Service Dr.
St. Louis, MO. 63141
(314) 432-7019

or hit a return when you shouldn't. The program will bomb and dump you back to Applesoft. I have had this happen many times when I was just learning how to use the program, and in some cases I lost all my data that was in memory. This package has minimal error trapping so that when you make a mistake, you could be in real trouble.

Another thing that is disturbing is that the package expects the user to go into the program and change the code listing in order to get more than two decimal places in the answers. Also, the code must be changed if the user wants a different equation for the variance and standard deviation.

Another problem is that the program does not give the probability for the F values or the T values. Some people are of the mistaken belief that these values are hard to calculate and that tables must be used to find critical values. According to the author... "tables of the critical values of the various statistics produced by PROGRAM 1 and PROGRAM 2 have not been included in the package because that would take up too much room in the computer's temporary memory". Yet it is very easy to write a short program to calculate the exact probabilities (even my HP-55 can do it in 48 steps) and then you don't need any tables. If there is not enough room for this program, then it could be an option on the kept on disk, at least.

CONCLUSION

In conclusion, for those who are constantly using these types of programs and do not handle large amounts of data, INTROSTAT may be very useful. But be aware that the program can be very frustrating in the beginning and does have some user interface problems. For \$75, one would expect more refined programming, but if you need the programs provided and are willing to put up with the above mentioned shortcomings, then it is a usable program.

PII

LANGUAGE INTRO

One of the reasons for implementing various languages on a microcomputer is to allow many more users exposure to these languages. The author of the program that supports the language must surely be involved in a labor of love to cram everything he wants into a 48K or 64K environment.

Presumably, experts in the language who daily use their super mainframes with 8 Megabytes of RAM will not get overly excited about stripped down, integer versions on a microcomputer. But the mini versions do serve a purpose. They allow people who otherwise wouldn't have access to the language to experience it - to dabble. Therefore, these mini versions of the language have a particular responsibility to have super documentation. It should be easy to read, have plenty of simple examples, have an index and summaries of commands, and particular attention should be paid to the mechanical details of I/O and compilation/running of the programs. And if the author can manage it, a little humor helps allay some of the beginner's frustration.

There is another major use for these languages: guided instruction at the high school or university level. Perhaps a small institution cannot afford massive license fees or hardware costs to run major software packages. However, a few Apples equipped with Pascal or Lisp might be affordable. If the instructor already is familiar with the language, then the documentation isn't quite so important as the usability of the program. Nevertheless, any materials that the vendor can supply that make learning easier (great documentation) certainly helps.

The conclusion is that nowhere is great documentation more sorely needed than in a language implementation. If, in the following reviews, a lot of attention is paid to that, it is because it is the most accessible window to getting involved with the program. Finding errors, subtle limitations, and quirks of the language implementation takes the combined efforts of many users supplying feedback to the vendor over many months. So what we'll be telling you a lot about is: how easy is it for the reasonably experienced Apple user to get going with the package being reviewed.

PII

DYNASOFT PASCAL

by Allan Jost
Dynasoft Systems Ltd.
POB 51
Windsor Jct, Nova Scotia
Canada B02 2V0
902 861 2202
\$50.00 cassette (ppd)
16K
-
Unlocked

PR=B
John Martellaro

INTRODUCTION

This Pascal was primarily designed for those people with a 16K cassette based system. While the introduction to the manual implies that memory and disks are artifacts of "large and expensive systems", thus dating the effort a little, the program might still be very useful for those on a limited budget or foreign owners without ready access to memory & disks.

Despite the fact that the entire system uses about 12K bytes of RAM, it is a powerful and usable system.

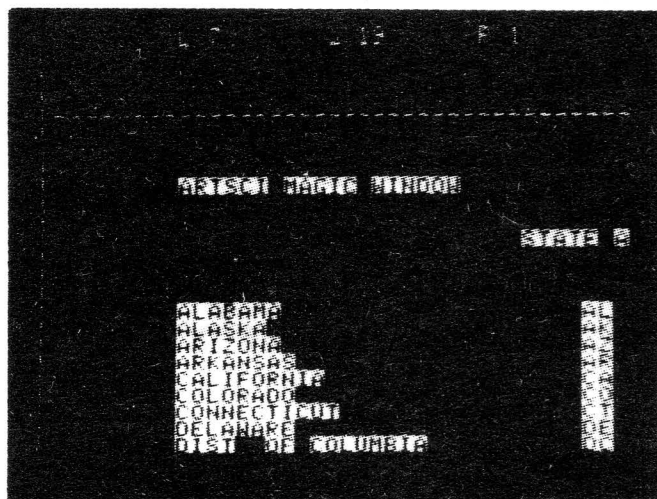
PREVIOUS REVIEWS

For additional background material, see the review of Programma's TINY PASCAL in Peelings II, V1 N3. Like the other Tiny Pascals, this is a subset of Pascal as defined by Chung and Yuen.

MAGIC WINDOW

word processing system

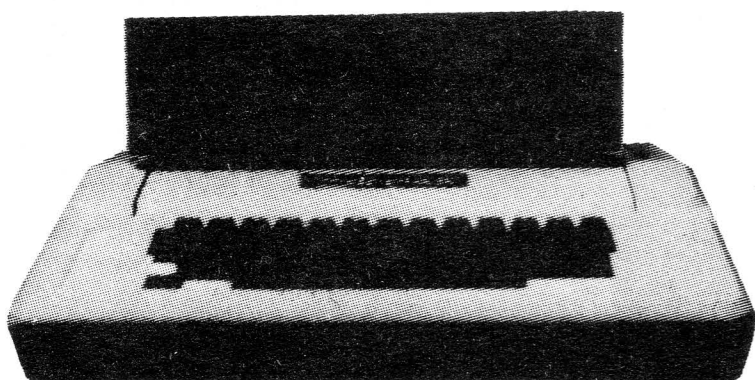
The MAGIC WINDOW transforms your Apple Computer into a sophisticated Word Processor/Text Editor. All types of documents can quickly be written, revised, edited, and printed. MAGIC WINDOW typing is so simple you can perform any editing task with a simple key stroke, from correcting typographical errors to moving paragraphs.



MAGIC WINDOW uses a new and creative software function to allow you to see 80 column paper on your video screen. Four way scrolling gives you the ability to view your full sized letter from any position.

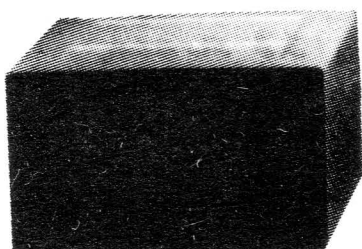
A Closer Look

The most impressive feature of the WINDOW is the way it emulates a standard typewriter. You actually can see the edges of the paper you are typing on. This feature lets you position your text on the paper when you type it. You don't need to review your text and insert formatting commands.



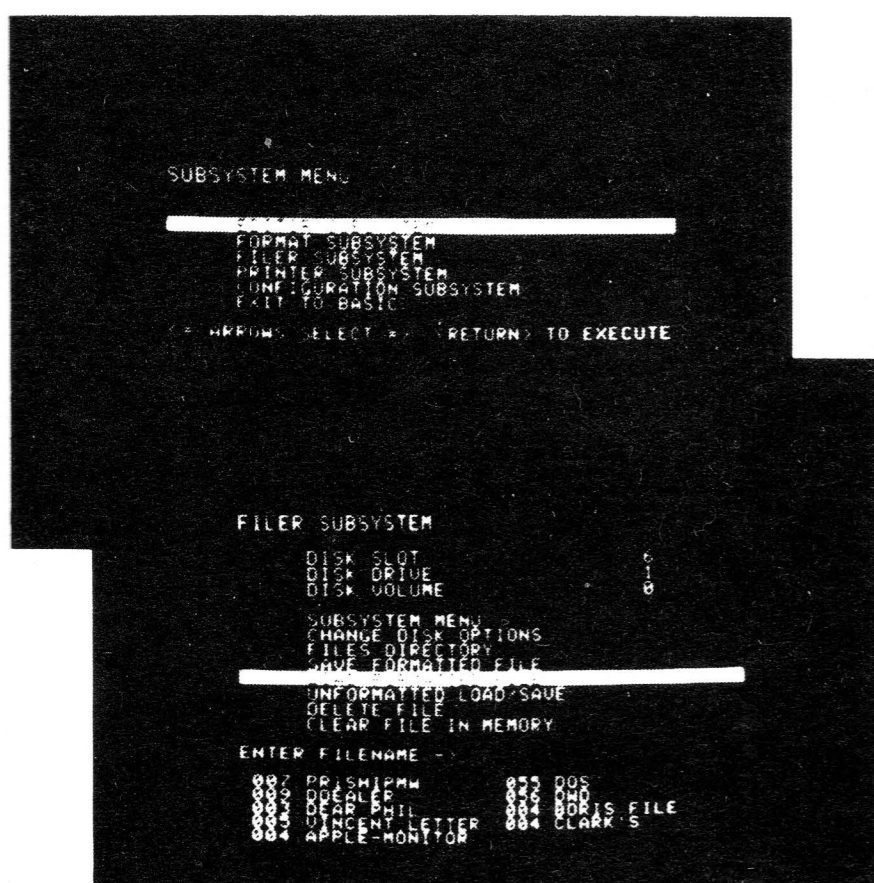
You have probably purchased one or more of the peripheral products available for you Apple (language system, lower case adapter, printer, etc.) The MAGIC WINDOW will automatically use these new products if you have them. MAGIC WINDOW will boot on 3.2 or 3.3 DOS systems. And if you have a language system it will use the extra memory.

Expandability



MAGIC WINDOW uses two types of disk storage, binary files and text files. The text file gives you the ability to load and save files that can be used by other programs. Binary files are used to store your documents, page size and tab stops quickly and completely.

Storage



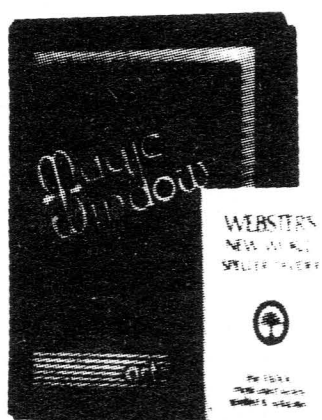
With the MAGIC WINDOW you may never need to hit return. When your text touches the right margin the last word will automatically be picked up and placed on the next line allowing you to continue typing. When you reach the bottom of the page the WINDOW will jump to the top of the next page without causing any interruptions. The search function will help you find any occurrence of a word for correction or deletion.

Efficiency

Text storage, printing, and system configuration are controlled by a unique menu structure. This avoids complicated command sequences. Function selection is simple and syntax free.

Centering and justification is simplified by your being able to see text on the screen. There is no need to print out a work copy of your text.

Unlike other systems that separate the tasks of editing text and formatting for printing, MAGIC WINDOW shows you the exact placement of your text as you type it.



Along with the MAGIC WINDOW you receive:

- Full color keyboard poster showing all the keystroke commands.
- 33,000 word Webster Speller/Divider to help you spell correctly.
- 50 page easy to read manual and padded binder.
- Text file of post office approved state abbreviations for quick reference.
- Personal phone service for any problems or questions you may have.
- Lifetime media warranty.

Extras

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10432 Burbank Boulevard, North Hollywood, California 91601

(213) 985-2922

IMPLEMENTATION

Dynasoft Pascal Release 1.2 supports most of the control structures of Pascal and omits some of the "sophisticated data structuring and floating point arithmetic." Noteworthy however is the existence of enumerated types, one of the nicest things about Pascal. (Neither of the other two Tiny Pascals reviewed has this.) Enumerated types allow one to do things like:

```
TYPE DAYS = (SU,MO,TU,WE,TH,FR,SA);
```

and later define a subrange:

```
WEEKDAY = MO..FR;
```

This allows program structures like: IF DAY = WEEKDAY THEN ...

The process explained in the Apple II addendum for switching over to a disk system is not simplistic. It more or less assumes a pretty firm knowledge of the Apple II. In fact the whole manual and system are directed towards someone of reasonably high level of understanding; so you should know about machine language, BSAVES, and zero page pointers if you intend to upgrade this program to a disk system.

Speaking of that, the cassette based system has no interface to a printer. If you want hard copy of your source codes, you'll have to dabble with the editor code to direct the output to your printer output address.

DYNASOFT Pascal has calls to machine language and includes special resident "PROCEDURES" that support LORES and HIRES graphics, and paddle input. (These are essentially calls to ROM routines with arguments suitably passed.) Explanations are given on how to relocate the code on larger systems to make the HIRES pages available.

THE SUPERVISOR AND EDITOR

A simple supervisor allows you to L)oad, S)ave files, enter the E)ditor, C)ompile, and execute the P-code (G).

The editor is similar to the one on Programma's Tiny Pascal. Since writing that review, I have become less sympathetic with obtuse editors intended for use with a single program. It definitely is a dilemma when marketing software whether or not to provide an editor or require an outside word processor. Fears that the product may not be bought usually end up producing a primitive, difficult editor. The editor with this program is too simple and balky. It is a line oriented editor with no line numbers. That causes problems. (The editor supplied with the Abacus Tiny Pascal Plus is much better.) Considering, however, that it started as a cassette based system limited to less than 16K, it wasn't a bad decision.

DOCUMENTATION

There are two kinds of manuals for languages: those that presume familiarity with the language and those that take the trouble to teach (and maybe, if they're lucky, entertain). The DYNASOFT

manual presumes familiarity. Extensive use is made of syntax diagrams.

While the manual is clearly written and makes good use of bold face type to emphasize points, it is all too short. It simply does not compare to Programma's which gives text examples for most every one of the reserved words (DO, TYPE etc.) This manual is sprinkled with a few examples and has a sample program which comes with a recommendation to type it all in. No spoon feeding folks.

THE COMPILER AND INTERPRETER

The compiler is going to be difficult to use on a cassette system because the source code is destroyed during compilation. You must save your file to cassette, run the compiler, and pray for no mistakes. If there are, you'll have to reload from tape and re-edit.

A sample test program similar to the one used with Programma's TINY PASCAL was run with similar results: about 8 sec for a count from 1 to 1000, with PRINT, (compared to 28 sec for Applesoft).

CONCLUSION

DYNASOFT Pascal 1.2 has some limitations. The editor is poor, it is cassette based and not a full fledged system with printer interface, and the manual is short and at a reasonably high level. Because of these deficiencies, \$50 seems a little much. On the other hand, it interfaces to HIRES graphics and has enumerated types. In summary, I would recommend this program only to those stout of heart who know their system (and Pascal) well, cannot afford a disk drive, and need enumerated types.

PII

TINY PASCAL

by Arnie Lee
Abacus Software
POB 7211
Grand Rapids MI 49510
616 452 0750
\$50.00 diskette
Machine Language
32K, 1 disk
DOS 3.2 or 3.3 (specify)
Unlocked

PR=B
John Martellaro

INTRODUCTION

You should read the review of Dynasoft Pascal first so that your friendly reviewer doesn't have to wear out his Apple II keyboard.

Tiny Pascal Plus is essentially the standard Tiny Pascal with HIRES graphics support. Nothing more. What the program makes up for by adding graphics, it loses in the documentation in comparison to Programma's Tiny Pascal.

CRAE 2.0

A fast co-resident Applesoft editor for Applesoft programmers. Now perform global CHANGES & FINDS to anything in your program (no restrictions on the global CHANGE & FIND).

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MCAT 2.0 IS A FAST BINARY UTILITY WHICH CREATES A SORTED MASTER CATALOG WHICH IS SAVED ON DISK AS A BINARY FILE (FAST). THE MASTER CATALOG CAN BE EASILY UPDATED A WHOLE DISKETTE AT A TIME (ADD, DELETE, REPLACE). LIST/PRINT HAVE GLOBAL SEARCH CAPABILITY AND ONE OR TWO COLUMNS. PROVISIONS FOR DUPLICATE VOLUME NUMBERS. APPROXIMATELY 1200 FILE NAMES, 48K OR 32K, 13 OR 16 SECTORS DOS SUPPORTED.

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IMPLEMENTATION

The program structure of this package is nicely set up. Unlike some new language implementations that fail to make use of the Apple's screen capabilities, this system is nicely refined. The boot menu allows entry to the editor, compiler, or interpreter.

The editor, written in Applesoft, is a line oriented text file editor. It is considerably better than the Programma or Dynasoft editors. It turns out that it saves to disk a standard text file, and I was able to use Apple PIE to generate source code. The manual should have mentioned this compatibility. The filing system is clean and easy to use.

The printer interface seems "hardwired" to slot 1 and no information is given how to change it. However, if you have your printer in other than slot 1, you probably also sleep hanging by your feet in the closet and drive a 1953 Nash Neopolitan.

The compiler is more refined than the other two. It pinpoints the first occurrence of an error with a caret (^) and gives not only the error code number, but the English statement (like "END expected"). It did, however, seem to run more slowly than the DYNASOFT compiler. Despite that, however, my test program ran just as fast as the other two versions.

One peculiarity that confused me for a while was the absence of the PROG or PROGRAM leader for the main section. One only needs to start with his declarations and then a BEGIN.

DOCUMENTATION

The most disappointing thing about this package is the documentation. It is one thing to assume that the user knows Pascal (it does), it is quite another to not be explicit about syntax conventions. Programma's version takes great pains to point out the various syntactical conventions that make each implementation different. I was forced to cull through sample programs and syntax charts to piece together what I needed to write some test programs. This is quite unacceptable and does not quite make up for the better editor and text file compatibility. There are no program fragments illustrating the functions, and the manual serves both the PET/CBM and Apple II version which is distracting. Further, the documentation is printed with a dot matrix printer, reduced, and thinly printed. When a program costs \$50, the vendor can afford to spend more than a buck on printing the manual.

For those not familiar with the flavor of Pascal, I'll show here a small program that prints all the numbers from 1 to 1000.

```
VAR I: INTEGER
BEGIN
  CALL(-936); (* CLEAR SCREEN *)
  FOR I :=1 TO 1000 DO
    BEGIN
      WRITE(I#);
    END;
  END.
```

Note: you have to declare each variable ahead of time and its type, the misuse of the = sign is eliminated by making the assignment statement ":= " and indentation is strongly encouraged to clearly define the program logic.

CONCLUSION

I worry that had I not had the advantage of previous exposure to Pascal, I might have had a tougher time with the documentation. I don't recommend it for anyone completely new to Pascal. The best documentation for beginners is Programma's.

If you want HIRES graphics with a disk based Tiny Pascal and are familiar with Pascal, then you'll be able to struggle through the Abacus program without too much trouble. I think the manual should be redone, however.

PII

FORTH 1.7

by John Draper (and others)
 Information Unlimited Software
 281 Arlington Ave
 Berkeley CA 94707
 415 525 9452
 \$140.00
 Machine Language
 48K, 1 Disk
 DOS 3.2
 Unlocked

PR=A
 John Martellaro

VENTURING FORTH

Forth was invented by Charles H. Moore at the National Radio Astronomy Observatory in 1969. It was designed primarily for computer control of mechanical equipment (radio telescopes). It uses Reverse Polish Notation and a stack, a well known system on Hewlett Packard calculators.

(Reverse Polish Notation, so named in honor of Jan Lukasiewicz, uses a post-fix notation. Instead of $2 + 2 =$, the numbers are written (or entered) and then the operator is given. $2\ 2\ +.$)

A most complete discussion of FORTH is in the August 1980 BYTE including an article by Charles H. Moore.

IUS AND FORTH

The title page for this package lists many people who were responsible for the effort. It shows. First of all, the documentation is incredibly good. Since FORTH is well suited for small computers, full utilization is the name of the game, and the optimistic, hands on attitude of the author(s) comes through.

A friendly historical introduction is followed by a thorough explanation of how to get the system up and running. Next, making a back up is discussed. With the amenities out of the way, stacks and post-fix notation are discussed.

Of more importance here than the details of programming in FORTH is the style and friendliness of the instructions. Everything is explained. There are sprinklings of humor. Examples are given. The manual is thoroughly enjoyable reading, and you can follow along on your keyboard trying out the examples.

In addition to the text, there are lesson pages that stand alone and provide tutorials of examples. Also, flowcharts illustrate the logic of the program structures.

Before you know it, you are into programming. FORTH is a very straight forward language. I would say that it is more operation oriented than symbol oriented. That is, the emphasis is on structured solutions to mathematical problems than in the manipulation of abstract symbols. It is akin to programming a pocket calculator. The emphasis is on the user defining operations that he needs and adding them to his "dictionary" of functions.

FEATURES

There are almost too many nice things about this package to mention. First, you can write a program and execute a system function called SAVETURNKEY. This creates a diskette that has the executable program on it without requiring the end user to have the FORTH system. No licensing agreements, no hassles. Terrific.

A screen oriented editor is provided that is extremely easy to use. Programming is done on pages. Each text page is a 1024 byte working area that is moved to and from disk. You normally have access to about 70 of these pages per diskette. If your program extends beyond a page, you link it to the next.

When you like your program, you can save it to disk as the page image. One simple command <pg# LOAD> brings in the program, compiles it, and executes it. Very elegant.

Forth is fast. Characteristic of RPN logic on stacks, much of the thinking and reasoning is already supplied by the programmer. This makes FORTH code very compact and elegant. When then compiled into machine language, it really zips along. A counting loop to 30,000 takes about 4 sec -- 10 times faster than integer BASIC.

The explanations on output to a printer are clear and easy to use. One wonders whether it is the usability of the language or the experience of the authors or both that makes things so easy to do. In most every case, the practical, everyday kinds of things one wants to do (get a listing of his program) are clearly discussed and examples given.

A special assembler is provided that allows the writing of more time efficient programs. This is an area that I did not get into, but its existence is indicative of a genuine interest in providing a complete program development package for the user.

Approximately half of the manual's 133 full size pages consist of: a 30 page glossary of functions, 18 pages on the assembler, 15 pages of program examples ranging from tone generators to mathematics to LORES graphics. Also included are a quick reference sheet, error messages, and a bibliography.

With some work, you can handle double precision numbers (9 digits) with decimal points.

A demo program is supplied that both demonstrates some programs (kaleidoscope, Morse code, encryption) and allows you to look at the code that generated the programs.

CONCLUSION

There are just a few things missing that should be mentioned. The ability to catalog the used "pages" would be nice. Interfacing with HIRES graphics is not explicitly mentioned nor is the calling of existing machine language routines. (I recently saw that a graphics version is available at extra cost.) Other than these



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\$30 screen versions are for Apple II+ with Applesoft, 32K RAM, single disk. \$200 printout versions require 48K RAM and dual disks; price includes higher accuracy and a license to print and use commercially.

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observations, this is a highly recommended package. The documentation is superb. The operating system and editor are fine. The user is encouraged to get in and do some programming, and he is given the wherewithal to do it.

PII

SUPER FORTH

by Larry Bugbee
Hayden Book Company
50 Essex Street
Rochelle Park NJ 07662
201 843 0550
\$49.95 diskette
Machine Language
48K, 1 disk
DOS 3.2
Unlocked

PR=F
John Martellaro

BACK AND FORTH

You should read the other FORTH review first so that you get the necessary background information about FORTH.

INTRODUCTION

Super FORTH was an agonizing program to review. It could have been very good, but it falls short in important areas very badly.

Some of the positive features of this program are:

1. Dual integer and floating point stacks. Numbers can be popped off the FP stack, "FIXed" and pushed onto the Integer stack. Conversely, integers can be FLOATed and pushed onto the FP stack.

2. Along with this FP capability are the attendant functions for operating on these numbers: SQRT, SIN, COS, LOG, EXP, RND to name just a few. With this feature, some powerful number crunching could be done except.... More later.

3. String Handling. There are some reasonably good string handling functions like concatenation and MID.

4. Super FORTH supports machine language calls. This is nice if you have some favorite routines that you want to integrate into your programs.

5. HIRES graphics. All the Applesoft HIRES routines are supported: an HCOLOR equivalent, HPLLOT, LINE, SCALE, ROT, SHAPE, HGR, TEXT, and some specialty functions for creating rectangles optionally filled with solid colors.

THE BAD NEWS

Unfortunately, all the above is negated by some very serious flaws. The first is the documentation. If the Apple II Applesoft manual were as terse as this, users would have been very upset indeed. There is a minimum of information in every area; very few of the functions are explained with examples, and quirks of the language are not explained. For example, DO loops cannot have floating point loop counters, so if you try a DO loop with a floating point argument, the program will not work. This should be explained clearly.

While on the subject, the Super FORTH equivalent of:

```
10 FOR T = 1 TO 100
20 PRINT SQRT (T):NEXT
```

is:

```
: TEST 100 1 DO I FLOAT #SQRT #. LOOP ;
```

The loop variable above (I) must be floated before the square root can be taken and then printed (#.). And this doesn't happen particularly fast. The Applesoft routine above takes about 8 seconds to execute, the Super FORTH version requires 12 sec.

A test of the following floating point arithmetic function showed that it was impossible to push constants onto the floating point stack from within a function:

```
: TEST # 1 # 2 #+ #. ;
```

This should push a 1 and a 2 onto the FP stack, add them and print the result, but it fails. Immediate mode is okay.

Another test by a friend consisted of the implementation of the BASIC program:

```
10 FOR I = 1 to 30000
20 J = J+1
30 NEXT I: PRINT J
```

This required about a minute and a half in Applesoft and 17 minutes in Super-FORTH.

Another signal of lack of supervision of the documentation is a code listing for a simple program that runs on Hewlett Packard calculators. The intent was to show how a simple program that computes the pythagorean theorem on a stack oriented programmable calculator can be implemented in Super FORTH. Unfortunately, the author's enthusiasm for HP calculators has seduced him into giving an example specific to the HP-19C with its esoteric display of key codes. Not every FORTH user understands what a GSB or LBL command is, and he cares even less that the key code for a RETURN is 25 13. As much as I love my HP calculators and as much as I laud Bugbee's (or Hayden's) efforts to create a correspondence between the Hewlett Packard's Reverse Polish Notation/Stack and FORTH, this kind of specifism and esoteric usage is just showing off. Much more effort should have been spent explaining how to exploit the (limited capability) product at hand.

The documentation is a scant 34 pages.

Undoubtedly, the worst non-feature of this program is the loss of your source code after compilation and the extremely primitive programming power. Virtually no support is given to the process of writing lengthy programs either by the language structure or the documentation. There are none of the conventional tests for equality or transfer of program flow. The most complex expression is of the form:

```
NN IF AA ELSE BB THEN CC
```

Without the ability to do extensive tests, and major branching, only small limited commands can be given. (There is a GO-TAG, but it is merely and unconditional backwards (only) branch within a command.)

The bottom line is that you can create small "functions" which are stored internally as machine language calls, but you can't edit them because the source code is not preserved. This would be like a BASIC that had no editor and had the programs erase themselves after running, restricting you to typing RUN to run the (unseen) program. Everytime you wanted to change the program, you'd have to re-enter the whole thing again.

The inability to save the source code was probably influenced by the primitive program structuring ability; nevertheless the duo makes the package, in this reviewer's opinion, virtually useless for anything but minor dabbling. The full intent and maturity of the FORTH language is not evident, as it is in the FORTH 1.7 by IUS.

CONCLUSION

For all the flash with floating point math, graphics, strings, the basic premise and ability of the FORTH language has not been carried out. You cannot write serious programs for resale as with the IUS package. Program development is non-existent. And the documentation is unacceptable because it is merely a list of function definitions.

Those who buy this program with the idea of having an extra-powerful FORTH that includes HIRES graphics and floating point math will be astounded and profoundly disappointed to find that they cannot write, edit, and save major FORTH programs in the usual and intended sense.

PII

```
=====
=
=          NOTICE
=
= SUBSCRIPTION CALLS OR ANY PEELINGS BUSINESS
=
=      8 am - 5 pm Mountain Time
=
=      (505) 526-8364 Answering Device
=
=      5 pm - 10 pm Mountain Time
=
=      (505) 526-8364 John Mitchener
=
=====
```

APP-L-ISP

author unspecified
DataSoft, Inc.
19519 Business Center Drive
Northridge CA 91324
213 701 5161
800 423 5916
\$124.95
Machine Language
48K, 1 Disk
DOS 3.2
Unlocked

PR=B (Program)
PR=D- (Documentation)

PR=C- (Overall)
John Martellaro

INTRODUCTION

LISP is short for List Processing. It was invented by John McCarthy at M.I.T. in 1960. As the name implies, it is a symbol manipulation language; it is considered the language to use for non-numeric work (some SNOBOL fanatics might disagree). While arithmetic can be done, and done quite thoroughly, it is somewhat tedious. For example, the routine to compute a factorial is:

```
(LAMBDA (N)
  (COND ((EQ N 0)
    1)
    (T (* N (! (SUB N))))))
```

That is, on the condition that N is equal to zero, return a 1, else recursively multiply N by the factorial of N-1.

APP-L-ISP is to the full LISP as Tiny Pascal is to Pascal. That is, it supports only integer arithmetic and has a smaller repertoire. The lack of floating point numbers is not as big a problem in LISP, because LISP's forte is not numerical processing. However, normal LISP is capable by its design of "infinite precision" arithmetic. Microsoft's MicroLISP for the TRS-80 has a limit of 611 integer digits. So this implementation is not all it could be on a micro.

DETAILS

The manual advises that you should be familiar with LISP and the tenor of the documentation indicates precisely that. Even though I spent several weeks with two different books on LISP before booting the diskette, the result was that I was merely able to exercise some of the elementary functions provided. Getting a workable program running turned out to be surprisingly difficult. Part of the problem was inexperience with the language, but most of the problem was a considerable lack of examples in the documentation.

Now I have seen a lot of languages, and I am into the study of languages. I must conclude that if you have less than a few year's experience in programming (only in BASIC), you will be well over your head and not able to exploit this product. However, if you have quite a bit of programming experience including a working knowledge of LISP, then this package will allow you to do small scale projects in LISP on your Apple.

INTEGRATION

APP-L-ISP, like other good language implementations on the Apple II, is integrated into the Apple II system. Examples are:

1. PEEK, POKE, and CALL
2. RND for random number generation
3. PDL for game paddle input
4. Sequential disk file operations
5. Normal cursor control
6. TAB and PAGE (= HOME)

Certain convenient commands similar to those in Applesoft and DOS can be entered. For example, (CATALOG) catalogs the disk and (PLOT X Y) plots a LORES point.

DOCUMENTATION

A very thorough reference book is supplied with the package: LISP by Patrick Winston and Berthold Horn (Addison Wesley 1981). It has the virtue of being extremely thorough and detailed. It amounts to a complete course on LISP that would require months of study to master. It has the undeniable disadvantage of being an absolutely awful book for first time learners. Given the fact that familiarity with the language is advised, and the intended market seems to be precisely those who are already familiar with LISP, a book of this type was a reasonable choice.

It so happened that in the course of my preparation, I happened to find a book that may be of interest to beginners in LISP. It is a humorous, wry, charming introductory book that helped me a lot: LET'S TALK LISP by Laurent Siklossy, Prentice Hall, 1976 (\$17.95). If your taste runs to amusing books that teach a language (the only way to go!) then this is it.

The text of the App-L-ISP documentation (in a three ring binder) is a case of beauty and the beast. It is hard to imagine how documentation this physically beautiful could be so hard to read. I had a friend who is familiar with LISP bring his Microsoft LISP manual over and look at this package with me. The both of us who program for a living had an extremely difficult time figuring out what the App-L-LISP implementation (not the language) is doing. Even someone experienced a LISP would appreciate examples of how this particular version operates.

While there are charming historical enlightenments, it would have been better to have spent some time discussing the development of programs. It makes no sense to advise familiarity, then define elementary functions like CAR and CDR

with elementary examples, and then totally omit simple program examples. (The examples in Winston & Horn start off at too high a level and are in a different dialect.)

For example, not until we realized that the expression name was the same as the file name (not explained in the documentation) were we able to load and look at some of the programs supplied.

SOFTWARE

There is an editor that facilitates the writing and editing of LISP programs. The documentation for this is so short and terse that an addendum was supplied with an example. However, it was sparsely annotated. As an after thought, it does not do the job of giving the user the kernels of knowledge he needs to build on experience. For example, it is not at all clear how to clear the editor to start over. Error messages in the editor are cryptic, and that is inexcusable.

Also supplied are two programs: HANOI and DOCTOR. HANOI is a program that solves the Tower of Hanoi problem visually on the LORES screen. DOCTOR is a mini-version of Weizenbaum's ELIZA, a well known attempt at artificial intelligence. My version did not seem very friendly to talk to and wanted to quit the session early. Upon looking at the code, we found out why: it is so short a program that it fits on one screen.

ERROR HANDLING

The error handling is atrocious. Every time you make an error, you are bumped out of either LISP or the editor. Error messages are cryptic. We even managed to get a new prompt not explained anywhere: "<".

SUMMARY

I will not go into an explanation of the LISP language. It is unique and quite a learning experience in itself. It is designed to handle lists and symbols, find relationships, interact in English with users, and make work in Artificial Intelligence easier. Some are put off by the many parentheses; don't let that bother you. Some are upset by the obtuse handling of arithmetic; don't let that bother you either.

If you have an interest and ability in computer languages, and have exercised LISP on large computers, you will probably be able to entertain yourself with this package (if you can handle very poor documentation).

While the quality of the materials is extraordinary, the package seems mildly contradictory. It almost seems that it was supposed that since a very thorough reference book was supplied, not too much effort needed to be put into the manual. Elementary functions are explained, but the editor documentation and the details of using the program related functions were cut short. In this respect, the documentation for Programma's Tiny Pascal (Peelings II V1 N3) and Information Unlimited's FORTH (this issue) while not as pretty, use a

short program example to illustrate many of the functions.

This package looks good and a lot of effort seems to be in it. However, if the intention is ever to acquaint newcomers to LISP and make them comfortable and have an enjoyable learning experience, then much more work will have to be done on the documentation. As it stands, it is unacceptable, in my opinion, because even someone familiar with LISP will have tough sledding figuring out this implementation and the editor.

PII

APPILOT II

by Silas Warner
Muse Software
330 N Charles St
Baltimore MD 21201
301 659 7212
\$99.95 diskette
Integer BASIC
48K, 1 Disk
DOS 3.2
Locked

PR=C
John Martellaro

INTRODUCTION

Pilot is a language especially designed to assist in the development of Computer Aided Instruction (CAI). It allows the user (author/instructor) to develop programs that present text to the student, ask him questions, key on certain responses, and branch to other subprograms based on student input. Since the major task is question and analysis of answer, the I/O commands have been shortened and simplified. For example, the following is a sample Pilot program:

```
T:ARE YOU AN ARDVARK?
A:
M:NO!NO WAY!GET LOST!
TY: I DIDN'T THINK SO.
JY: *END
M: YES!YOU BET!YEP!AARK!
TY: I THOUGHT YOU LOOKED FAMILIAR.
JY: *END
T: HOW ABOUT A DATE?
*END E:
```

The T command prints text on the screen to the student, and the A command accepts the input into a system string variable. Next a match is looked for with any of the key words separated by a ! symbol. If a match is found, the true/false flag is 1 (Yes) and the first TY statement is printed. Then since the flag is Yes, a jump is made (JY = "jump if yes") to the label *END. If no match is found, the program falls through to

the next match. Finally, if there is no match at all, the respondee must have said something else, so we ask him/her/it for a date and end. There is more, but this should give you an idea of the flavor of the language.

MUSE APPILOT II

Muse's implementation is a minimum Pilot written in Integer BASIC. The package consists of an interpreter (in BASIC) to analyze the editor files, an editor to create them, and a utility to generate curriculum diskettes.

The documentation starts out with a discussion of how to use the editor to generate lessons. The editor is easy to use and reasonably well written. It has functions for printing a page or line at a time or making block moves of text. Facilities are also provided for loading and saving programs with cassette or disk.

A whole page is devoted to getting the printer interfaced to the program. For someone who is supposed to be allergic to BASIC, the discussion gets a little technical. But at least it's there. Some people (Bless 'em) use printer drivers.

LEM LANDER

By Barry Cox



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Next a discussion ensues of the basic commands of the language. It is easy to follow and gives examples at every stage, slowly building on the knowledge gained at each stage.

The program is interfaced to the speaker with commands that produce specific notes. LORES and HIRES graphics are also supported. (Although it is this reviewer's opinion that one might as well do what he has to do in Applesoft; getting to HIRES in APPILOT II is, if anything, more tedious than Applesoft.)

Since the program is written in Integer BASIC which has minimal error handling capabilities, it is all too easy to bomb the system. I wrote a sample program with a computed statement dividing by zero. The program crashed back into BASIC with an illegal quantity error in LINE XXXXX. Not too encouraging. Considering that students and amateur Pilot programmers are going to make weird mistakes, error handling should be strong -- it isn't.

Other than the complaint about the above error trapping, the only other objection is the price. The documentation is short and sweet and simple. The program runs well, has a nice editor, but is a minimum implementation. A \$100 price tag is totally unjustified. We have a copy of Apple Computer's Pilot and it is very impressive indeed. A review couldn't be completed for this issue, but it has much, much more than APPILOT. Better documentation for a more thorough implementation, and it is only \$150. If you intend to do serious work in Pilot, it would be a better choice. A more reasonable price for APPILOT II based on comparative software efforts and utility would be about \$50. In this context, see the review of Cook's Computer Co Pilot in Peelings II (V1 N3). For \$25, you get a high quality program that is well documented.

CONCLUSION

Pilot is an easy language to learn, but then so is BASIC. Unfortunately, the level of effort required to handle a complete Pilot is comparable to learning BASIC. If APPILOT II were, say \$50, I would strongly recommend it as a beginner Pilot. The implementation of the language at a low enough level and the documentation is clear enough and short enough that it would be a good starter system. But at \$100, it is not exactly a "best buy", and the C rating reflects a low performance to price ratio.

PII

CALLER FROM PAGE 41

attempt has been made to present astrology as a reputable psychological tool. The program does what it says it will do and does it well. Obviously, lengthier interpretations of the chart could be found in a good book on astrology, but these descriptions are more indepth than those appearing in newspapers. This program may be useful as an introduction to astrology or as an interesting way to "scope-out" your friends and relatives.

PII

APPLEDOC

By Roger Wagner
Southwest Data Systems
P.O. Box 582
Santee CA 92071
714-562-3670
\$34.95 diskette
Machine Language/Applesoft
32k required
Unlocked

PR=A-
Howard J. de St. Germain

INTRODUCTION

Apple-Doc is a machine language and Applesoft utility that provides the Applesoft programmer with several useful tools which can be employed during program development. The two main features of Apple-Doc are the variable summary list and the line number cross reference list. You can also rename variables and do local and global replacements.

PROGRAM USASGE

Usually it is very easy to use Apple-Doc -- merely load the program you wish to analyze and then "EXEC" the appropriate Apple-Doc utility. From that point on you will be prompted as to the various options available in that particular routine. When Apple-Doc is done, your program will still be intact in memory. See the section on "OTHER FEATURES" below for the the exception to "easy to use."

VARIABLE SUMMARY

Under this option, all variables are listed in alphabetic order together with each line number in which they are found. Array variables are distinguished by an "*" as in A(*). As a program grows it is important to be able to obtain a list of variables used so far. In Applesoft, only the first two letters of a variable are unique and this cuts down your choice of identifying names for new variables. This list is very handy.

LINE NUMBER CROSS REFERENCE

This summary lists all line numbers which can be reached via "GOTO'S" and "GOSUB'S" and their corresponding line numbers.

For Example: 20

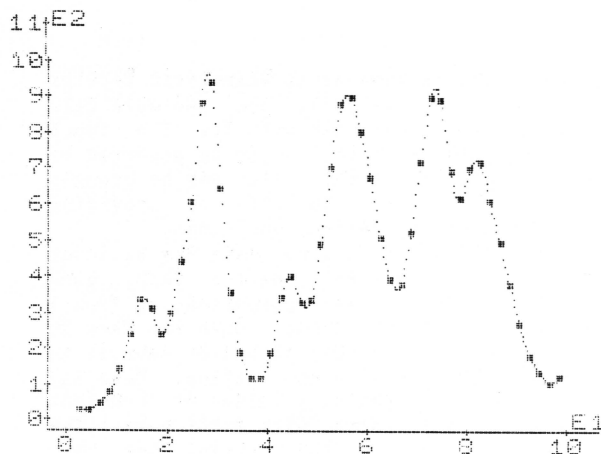
100,130,140

means that line number 20 can be reached from lines 100, 130 and 140 via a "GOTO" or a "GOSUB" statement found in these lines. This list is useful in tracing the "flow" of the program.

SCREEN AND PRINTER

All lists generated by Apple-Doc can be directed to the screen or your printer. When the text screen is used, the rate at which the variables are displayed is deliberately slowed down. I have an earlier version of Apple-Doc and

[illegible]



The data may now be averaged to reduce the number of data points or smoothed to reduce random variations in the data. If you prefer the averaged and/or smoothed data to the original, it is possible to select those as the new standard points.

It is now possible to have a curve fit to the data and plotted on the HIRES screen. There are several options available. The methods fall under two main types: interpolation and least squares fitting. The interpolation option has three methods to choose from: polynomial to degree 6, cubic spline, and Stineman method. If you select the least squares fitting, there are four methods to choose from: linear, geometric, exponential and polynomial to degree 6. These methods are probably familiar to anyone interested in scientific data reduction, although there is a brief but complete description in the documentation.

Once the user is satisfied with the fitted curve, it is then possible to evaluate unknowns from the curve. Either x or y values may be entered and the complementary y or x value will be interpolated from the curve. Of course, the accuracy is dependent on the goodness of fit. The unknowns and their associated value may then be listed.

Any of the files created may be saved for later use with SP or some other program. These include the standards file, fitted file, unknown file and format file.

DOCUMENTATION

There are 30 8.5 X 11 double sided sheets of accompanying documentation. Included is a description of each of the features, flow charts of the various parts of the program, example plots of the sample data included on the disk, and a four page section covering theoretical aspects of curve fitting with references. The layout follows the order in which the options are presented in the program.

OVERALL IMPRESSION

Curve Fitter is a well done utility package that would be very useful to the scientific user. The user interface is nicely done and the performance to price ratio is exceptionally high.

This package along with Scientific Plotter takes the labor out of plotting and curve fitting scientific data.

PII

SUPER SHAPE DRAW

Author unknown
 Avant-Garde Creations
 P. O. Box 30161
 Eugene, OR 97403
 503 345 3043
 \$19.95 diskette
 Applesoft with shape tables
 48K, ROM Applesoft, Disk II
 Locked

PR=B
 Edward Burlbaw

INTRODUCTION

Super Shape Draw (SSD) is a shape drawing and table creation program to facilitate the use of shapes in BASIC programs. There are several shape tables included with the programs on the disk.

THE PROGRAMS

SSD consists of several programs for creating, editing, and viewing shape tables. The primary programs are Shape Draw and Shape Draw Choose Where. Single key commands allow one to turn plot on or off, erase last point plotted, wipe out last byte, erase shape and start over, close shape and go on to next one, or stop and save shape table. The "Choose Where" program allows one to choose the memory location of the shape table. This is convenient for addition of shapes to your own programs.

"Continue" allows one to continue adding to a shape table that has not been filled yet. It does not allow adding more to a table once it has been filled; by the very nature of shape tables it is impossible for it to contain more than the originally specified number of shapes.

"Edit Shapes" is designed to let you change a shape in an already completed table. There is one restriction--the new shape must be no longer than the shape it replaces. This is also a restriction of the shape table, not the program.

The above programs have an on screen record of the shape number you are on, the number of bytes used and the amount of memory left. The "Edit" program indicates the remaining bytes left in the edited shape to prevent running over the next shape.

"View Shapes" is a program to view shapes

from a selected table in a specified position, color, rotation, scale, and on any background. It is also possible to view the shape DRAWn or XDRAWn.

UNIQUE FEATURES

SSD is similar to other shape table generation programs in the table handling and manipulating commands but is quite different in the actual plotting. For one thing, there exist four true diagonal directions in addition to the horizontal and perpendicular directions. The 8 key commands are grouped around the I, J, K, M keys with U, O, N, and ', ' being the diagonal keys. This grouping is very easy to use especially for anyone used to the auto-start ROM editing features. Unlike some other packages, SSD allows multiple vertical non-plot moves without problems or ending the shape.

The other major difference between SSD and other packages is the use of the cursor. Whereas others use the cursor to indicate the present position and do not plot the point until the next move, SSD indicates the arrow of the shape-drawing vector and not the plot point. This feature allows you to see the actual dot that will be plotted if the plot is on. It is this feature that allows single key diagonal commands.

SSD does not have the HIREs screen create abilities that some graphics utilities programs have; however, there is an example program listing included in the documentation for manipulating shapes on the screen.

DOCUMENTATION

SSD comes with a 15 page (half size) booklet that thoroughly explains the use of the various commands. There are also helpful hints for creating better shapes and some information on the differences between DRAW and XDRAW and when to use each. There is also included a short program for manipulating your shapes after you have created them.

OVERALL IMPRESSION

The features unique to SSD were particularly impressive and I felt set it apart from other packages. The ability to see exactly "where you are at" is very nice and the diagonal moves are a big plus. Not having a "screen create" type of function is a drawback; although, that is not an intended feature of the package.

PII

Note to foreign subscribers:

PEELINGS II will no longer accept bank drafts for payment of subscriptions or back issues because of the excessive collections costs.

Payment should be made by check in US currency drawn on a US bank.

HIGHER GRAPHICS II

by Robert Clardy
Synergestic Software
5221 120th Ave. S.E.
Bellevue, WA 98006
206 226 3216
\$35.00 diskette
Applesoft or Integer
48K RAM, Disk II
Unlocked

PR=B
Edward Burlbaw

INTRODUCTION

Higher Graphics (HG) is a set of shape generation, manipulation, and utilization tools for the graphics programmer. There are 3 utilities and a demo on the disk.

SHAPE MAKER

Shape Maker is the basic utility that allows the user to draw shapes to be included in a shape table. The shapes may be added to an existing shape table or a new table started. There are several commands associated with this section of the program. One may load or save an existing shape table, view shapes in table, delete shapes, clear out the whole table, or add a shape. The add option is the "meat" of this utility. One key commands allow turning on/off plot mode, moving the cursor up, down, left, and right, backing up the last byte, or erasing the current shape. There is also a command to display the current X and Y coordinate. More than one up move with the plot off is not allowed; there are some programs that internally compensate for this restriction. Plot status is displayed at all times along with the number of shapes and bytes used and remaining. The memory location used is also shown.

As with all shape tables, the number of shapes must be preselected; once started the number of shapes cannot be more than originally selected. Combining one or more shape table to create a larger one is the purpose of the next utility.

TABLE COMBINER

With this utility the user may have two shape tables in memory at the same time. Shapes from either table may be displayed and any shape from table 1 may be transferred to table 2. New table 1's may be loaded to build up a table 2 of selected shapes from many other tables. Table 2 may be erased or saved to disk without much effort, but not accidentally.

LET YOUR PEELINGS SHOW

THE SCREEN CREATOR

This utility allows one to use the shapes tables created by the previous programs to create a HIRES display for a multitude of purposes. The program allows you to place any shape in any color, rotation, or scale at any location on the HIRES screen. Using one of the shape tables included on the disk you can add text to the display for labeling graphs or creating HIRES program introductions. The expected load, save, and clear commands are included, but the display mode is the workhorse of the utility. From this mode the selected shape may be moved around the screen and placed in any color, rotation and size at any desired location. There are commands and procedures to correct the screen if, for example, a shape was placed erroneously.

In addition to the shape manipulation, there are also draw modes that one may use. Using the game paddles and buttons, there is an "etch-a-sketch" mode and a connect the cursor position to the last plotted point mode. This last mode allows straight diagonal lines to be plotted easily.

A type mode allows printing the normal ASCII character set in any size, color and 4 rotations.

DOCUMENTATION

We have one of the earlier versions of the documentation and some of the commands are not described in it; however, I had no difficulty figuring out how to use them. The three utilities and their commands are carefully and thoroughly covered. In addition, there is a section on using HIRES graphics. This section includes a table of the graphics control POKES, a list of CALLs to the machine language graphics routines, information on loading shape tables and HIRES screens, a memory usage table in the Apple, and a discussion with examples of animation techniques. The documentation is written with the beginner in mind and is quite helpful.

OVERALL IMPRESSION

This set of programs could be very useful to someone interested in learning to use shape tables. The Apple manual method of creating shapes is tedious enough to make these programs worth \$35 just in the time savings to someone needing shape tables. For this same reason, there are probably as many shape table generation programs around as there are programmers. And each with a slightly different philosophy and orientation. I did not like the fact that the shape drawing cursor was not directly over the point to be plotted and not being able to move up more than one position with the plot on was an inconvenience. On the other hand, the screen creator was an added feature that the Avant-Garde package did not have.

PII

Memominder

A software appointment calendar
and memo manager

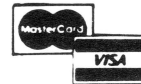
for

Apple III*

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memos for ten persons,
using the Apple /// na-
tive mode. A floating
cursor scans a twenty-
year calendar and a
clock to enter and lo-
cate memos.*

SOFTWARE SOURCES
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789 E. Market St.
Harrisonburg, VA 22801
(703) 434-1120

\$ 55.00



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ASTRO-SCOPE

Robert Hand and Steve Blake

AGS Software

Box 28

Orleans, MA 02653

617 255-0510

\$30.00 diskette

Applesoft

ROM Applesoft, 32K RAM, Disk II

DOS 3.2 (3.3 Boot 16)

Unlocked

PR=B

Edward Burlbaw

THE PROGRAM

Astroscope (AS) will cast accurate natal horoscopes for those born between 1880 and 2000 A.D. Further the program will tell you the meaning of the placement of the planets (except the slow-moving ones) in the zodiac as well as the relationships between the planets. This interpretation is presented on the TEXT screen, double spaced.

Upon running, the program solicits the necessary information about the person whose horoscope is to be cast: date, time, latitude and longitude of birth. It then takes about one minute to calculate the horoscope and output the

positions of the planets and house cusps on the screen. When the screen is full it waits until a key is hit before going on giving all the time necessary to record this information. After this the aspects the planets make with each other are presented, again waiting for a key to be struck before presenting another screen full.

The program now begins to interpret the horoscope just cast. One at a time, TEXT files are read from the disk that pertain to the positions of the planets, i.e., Sun in Aquarius, etc. After the planet positions have been interpreted the program goes through the positions of the planets by House, and finally, the aspects are interpreted; Sun square Mars indicates.... At any time it is possible to restart the program by hitting ESC.

The interpretations are generally one page, double spaced, concise descriptions of the overall personality of a person with a certain aspect. In some cases, the positive and negative qualities of an aspect are given. The interpretations are written from a psychological rather than a mystical point of view. The copyright expressly forbids making any hard-copy reproduction of the text from the screen.

DOCUMENTATION

AS comes with 15 half size pages of documentation. About half is devoted to the actual running of the program with the remaining pages containing charts of time zones, correction

to time zones, latitudes and longitudes of major cities in the US, birth data of important people, definitions of astrological terms, a brief description of meanings of the planets, signs, houses and aspects. There is a section on getting the most out of your horoscope reading which points the shortcomings of computer interpretation of charts and some hints of how to handle contradictions in the interpretation.

BUGS, ERRORS, AND SO FORTH...

The input of birth data section was error trapped only to the extent that Applesoft INPUT statements are; that is not to say that it is insufficient. The user is responsible for the validity of the data. By comparing the results with those from an independent source, I would say that the program casts horoscopes accurate to a tenth of a degree, as it claims. One thing that was lacking was the use of retrograde motion of the planets, both in the casting and interpretation of the chart.

CONCLUSION

A quote from the Preface to the documentation expresses my opinion. "...no computer program, including this one, can synthesize astrological symbolism in quite the way a human astrologer can." The usefulness of this program is strongly dependent on the beliefs of the user. The creators are qualified in their field and every

GOSUB PAGE 36

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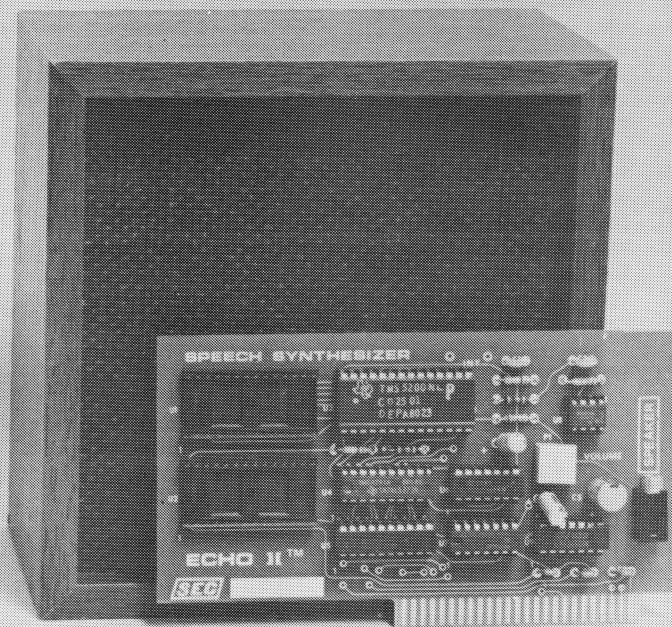


**STREET ELECTRONICS
CORPORATION**

*Trademark of Apple Computer

**3152 E. La Palma Ave., Suite C
Anaheim, CA 92806 (714) 632-9950**

**Trademark of Texas Instruments



BY NAME

AA	V1N3	A2-FS1 FLIGHT SIM/DISK	SUBLOGIC	AA	V1N1	HIRES TEXT GENERATOR	A.P.P.L.E.
AA	V1N2	A2-FS1 FLIGHT SIM/TAPE	SUBLOGIC	B+	V2N1	HYPER HEAD-ON	BRODERBUND SOFTWARE
A+	V2N1	ABM	MUSE SOFTWARE	A-	V2N1	HYPERSORT	JEW & KILK
A	V2N1	ACTION SOUNDS & HIRES SCROLL	AVANT-GARDE CREATIONS	P	V1N4	INDEX FILE	PROGRAMMA
B+	V1N3	ACTIVE FILTER DESIGN	HAYDEN BOOK CO	B	V1N2	INTERLUDE	SYNTOIC SOFTWARE CORP
A	V1N1	ACTS MODEM PRGM	N.E. OHIO BULTN BOARD SYS.	C	V2N3	INTROSTAT	MICROSTAT SOFTWARE
A	V1N1	ALIEN INVASION	PROGRAMMA	A	V1N1	KEYBOARD EXPANDOR	C&H MICRO
C-	V2N3	APP-L-ISP	DATASOFT, INC	D	V1N1	KORSMEYER ELEC DESIGN	KORSMEYER ELECTRONICS
C	V2N3	APPILOT II	MUSE	A+	V1N2	LEM LANDER	BARRY COX
A	V1N1	APPLE 21	SOFTAPE	B+	V1N2	MACRO ASSEMBLER	EASTERN HOUSE SOFTWARE
A	V1N1	APPLE BOWL	APPLE COMPUTER, INC	A	V2N1	MACRO-SCED	COMPUTER STATION
AA	V1N1	APPLE INVADER	PROGRAMMA	A+	V1N4	MAGIC WINDOW	ARTSCI, INC
AA	V1N4	APPLE PIE	PROGRAMMA	C	V1N1	MATHEMATICIAN, THE	SPECTRUM SOFTWARE
A-	V2N1	APPLE PLOT	APPLE COMPUTER CO	C	V2N2	MCAP	HAYDEN BOOK CO
B	V1N4	APPLE WRITER	APPLE COMPUTER, INC	A	V2N2	MCAT 2.0	HIGHLANDS COMP SERV
A	V2N3	APPLE-OIDS	CALIFORNIA PACIFIC	A-	V2N2	MICRO PAINTER	DATASOFT
A	V2N3	APPLEDOC	S.W. DATA SYSTEMS	B	V1N4	MICRO TYPING	HAYDEN BOOK CO
A	V2N2	ASCII EXPRESS II	SOUTHWESTERN DATA SYSTEMS	P	V1N3	MODIFIABLE DATA BASE	SYNERGISTIC SOFTWARE
B	V2N3	ASTRO-SCOPE	AGS SOFTWARE	A	V2N2	MOTHER GOOSE RHYMES	GEORGE EARL
B	V2N2	ASTRONOMY I/II	EDUCATIONAL COURSEWARE	B+	V1N4	NAPOLEONIC	STRATEGIC SIMULATIONS
A	V1N1	AVS COM-PAK	APPLE VALLEY SOFTWARE	A+	V1N3	ODYSSEY	SYNERGISTIC SOFTWARE
B	V1N1	B.I.T.S.	PERIPHERALS UNLTD	P	V1N3	ON-LINE DATA BASE	BLUE LAKES SOFTWARE
AA	V1N1	BASEBALL	PROGRAMMA	P	V1N3	PADDLE GRAPHICS	ON-LINE SYSTEMS
B+	V1N2	BAZOOKA	PROGRAMMA	P	V1N4	PFS	SOFTWARE PUBLISHING CORP
D	V2N2	BEGINNING BASIC	APPLIED MICRO SYSTEMS	P	V1N3	PILOT	COOK'S COMPUTER CO
AA	V1N1	BILL BUDGE'S TRILOGY	CALIFORNIA PACIFIC	A+	V2N1	PRISONER, THE (VER 1.3)	EDU-WARE, INC
A-	V1N3	BOXING	PROGRAMMA	A+	V2N1	PRISONER, THE (VER 1.6)	EDU-WARE, INC
AA	V1N2	BUDGE'S SPACE ALBUM	CALIFORNIA PACIFIC	B	V2N1	PROG IN APPLE INT BASIC	HAYDEN BOOK CO
C	V1N2	C&H TEXTPAGE	C&H MICRO	A-	V1N4	PROGRAM LINE EDITOR	SYNERGISTIC SOFTWARE
P	V2N3	CCA DATA MGMT SYSTEM	PERSONAL SOFTWARE	A-	V2N1	PROGRAMMING AIDS 3.3	DAKINS CORP
A	V1N2	CHESS CONNECTION	TELEPHONE SOFTWARE COMM.	C+	V1N4	PSEUDODISK	HAYDEN BOOK CO
AA	V1N2	CO-RESIDENT APPLESOFT EDITOR	HIGHLANDS COMP SERVICES	A	V1N1	RACER	SOFTAPE
B	V2N2	COMPU-MATH ARITHMETIC SKILLS	EDU-WARE	A	V2N2	READINGS IN LITERATURE	GEORGE EARL
A	V1N3	COMPUTER BISMARCK	STRATEGIC SIMULATIONS	A	V2N3	REVERSAL	HAYDEN BOOK CO
B+	V2N1	COMPUTER QUARTERBACK	STRATEGIC SIMULATIONS	A-	V2N1	ROGER'S EASEL	S.W. DATA SYSTEMS
A	V1N3	CONDITIONING LIFE DYNAMIC	AVANT-GARDE CREATIONS	AA	V1N2	S-C ASSEMBLER II VER 3.2	S-C SOFTWARE
A-	V1N4	CORRESPONDENT	S.W. DATA SYSTEMS	AA	V1N3	S-C ASSEMBLER II VER 4.0	S-C SOFTWARE
A	V1N2	CREATIVITY LIFE DYNAMIC	AVANT-GARDE CREATIONS	A-	V2N1	SCIENTIFIC PLOTTER	INTERACTIVE MICROWARE
A	V1N4	CRYSTAL CAT	JDEL ELECTRICWARE, INC	A	V2N2	SENTENCE DIAGRAMMING	AVANT-GARDE
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A	V1N1	DATA CAPTURE 3.0	SOUTHEASTERN SOFTWARE	A-	V1N3	SPACE II	EDU-WARE, INC
P	V1N3	DATA MANAGER	HAYDEN BOOK CO	A	V1N4	SPANISH HANGMAN, THE	GEORGE EARL
A	V2N2	DATACAPTURE 4.0	SOUTHEASTERN SOFTWARE	A	V2N2	STAR GAZER'S GUIDE	SYNERGISTIC SOFTWARE
A+	V1N4	DATACOPE SCRIBE	DATACOPE	F	V2N3	SUPER FORTH	HAYDEN BOOK CO
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B	V2N3	DYNASOFT PASCAL	DYNASOFT SYSTEMS LTD	A	V1N2	TERRORIST	EDU-WARE, INC
A	V1N4	EASYWRITER	INFORMATION UNLTD SOFTWARE	A+	V1N3	TEXTFILE COPY	DATACOPE
C-	V2N2	ELEMENTARY MATH	MUSE	A	V2N2	THE TERMINAL	MICHAEL KOSS
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C	V1N2	ENGINEERING MATHEMATICS I	HAYDEN BOOK CO	B	V2N3	TINY PASCAL PLUS	ABACUS SOFTWARE
B	V2N1	ENVIRONMENT LIFE DYNAMIC	AVANT-GARDE CREATIONS	A	V1N2	TRACK & SECTOR LIST	SOFTAGON
P	V2N1	FILEMASTER II	RAINBOW COMPUTING	B	V1N1	TUESDAY NIGHT FOOTBALL	SHOESTRING SOFTWARE
C-	V1N1	FLIGHT SIMULATOR	DYNACOMP, INC	A-	V1N2	TYPING	COOK'S COMPUTER CO
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A	V1N4	FRENCH HANGMAN, THE	GEORGE EARL	B-	V2N3	VISICAIDS	DATA SECURITY CONCEPTS
AA	V2N1	GALAXIAN	BRODERBUND SOFTWARE	AA	V2N3	VISICALC	PERSONAL SOFTWARE
C+	V1N2	GENERAL MATHEMATICS	HAYDEN BOOK CO	C	V2N2	VISILIST	COMPUTER STATION
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B	V2N3	HIGHER GRAPHICS II	SYNERGISTIC SOFTWARE	A-	V1N3	WILDERNESS CAMPAIGN	SYNERGISTIC SOFTWARE
B	V2N3	HIRES CRIBBAGE	ONLINE SYSTEMS	A	V1N2	WINDFALL	EDU-WARE, INC
B+	V2N1	HIRES FOOTBALL	ON-LINE SYSTEMS	A	V2N1	WIZARD AND THE PRINCESS	ON-LINE SYSTEMS
A	V1N2	HIRES MYSTERY HOUSE	ON-LINE SYSTEMS	A	V2N2	Z-TERM	SOUTHWESTERN DATA SYS

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A	V1N1	ACTS MODERN PRGM	N.E. OHIO BULTN BOARD SYS.
A	V1N1	ALIEN INVASION	PROGRAMMA
A	V1N1	APPLE 21	SOFTAPE
A	V1N1	APPLE BOWL	APPLE COMPUTER, INC
AA	V1N1	APPLE INVADER	PROGRAMMA
A	V1N1	AVS COM-PAK	APPLE VALLEY SOFTWARE
B	V1N1	B.I.T.S.	PERIPHERALS UNLTD
AA	V1N1	BASEBALL	PROGRAMMA
AA	V1N1	BILL BUDGE'S TRILOGY	CALIFORNIA PACIFIC
A	V1N1	DATA CAPTURE 3.0	SOUTHEASTERN SOFTWARE
C-	V1N1	FLIGHT SIMULATOR	DYNACOMP, INC
AA	V1N1	FORTE	SOFTAPE
AA	V1N1	HIRES TEXT GENERATOR	A.P.P.L.E.
A	V1N1	KEYBOARD EXPANDOR	C&H MICRO
D	V1N1	KORSMEYER ELEC DESIGN	KORSMEYER ELECTRONICS
C	V1N1	MATHEMATICIAN, THE	SPECTRUM SOFTWARE
A	V1N1	RACER	SOFTAPE
C	V1N1	SONGS IN THE KEY OF APPLE	HAYDEN BOOK CO
AA	V1N1	SUPER INVADER	ASTAR INTERNATIONAL
B	V1N1	TUESDAY NIGHT FOOTBALL	SHOESTRING SOFTWARE
AA	V1N2	A2-FS1 FLIGHT SIM/TAPE	SUBLOGIC
B+	V1N2	BAZOOKA	PROGRAMMA
AA	V1N2	BUDGE'S SPACE ALBUM	CALIFORNIA PACIFIC
C	V1N2	C&H TEXTPAGE	C&H MICRO
A	V1N2	CHESSE CONNECTION	TELEPHONE SOFTWARE COMM.
AA	V1N2	CO-RESIDENT APPLESOFT EDITOR	HIGHLANDS COMP SERVICES
A	V1N2	CREATIVITY LIFE DYNAMIC	AVANT-GARDE CREATIONS
A	V1N2	DARTROOM	PROGRAMMA
C	V1N2	ENGINEERING MATHEMATICS I	HAYDEN BOOK CO
C+	V1N2	GENERAL MATHEMATICS	HAYDEN BOOK CO
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B	V1N2	INTERLUDE	SYNTONIC SOFTWARE CORP
A+	V1N2	LEM LANDER	BARRY COX
B+	V1N2	MACRO ASSEMBLER	EASTERN HOUSE SOFTWARE
AA	V1N2	S-C ASSEMBLER II VER 3.2	S-C SOFTWARE
A	V1N2	TELE-CHESS	APPLE VALLEY SOFTWARE
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A	V1N2	TRACK & SECTOR LIST	SOFTAGON
A-	V1N2	TYPING	COOK'S COMPUTER CO
A	V1N2	WHAT'S THAT SONG	JDEL ELECTRICWARE INC
A	V1N2	WINDFALL	EDU-WARE, INC
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P	V1N3	DATA MANAGER	HAYDEN BOOK CO
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P	V1N3	MODIFIABLE DATA BASE	SYNERGISTIC SOFTWARE
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P	V1N3	ON-LINE DATA BASE	BLUE LAKES SOFTWARE
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P	V1N3	PILOT	COOK'S COMPUTER CO
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A	V1N4	EASYWRITER	INFORMATION UNLTD SOFTWARE
A	V1N4	FRENCH HANGMAN, THE	GEORGE EARL
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P	V1N4	PFS	SOFTWARE PUBLISHING CORP
A-	V1N4	PROGRAM LINE EDITOR	SYNERGISTIC SOFTWARE
C+	V1N4	PSEUDODISK	HAYDEN BOOK CO
A	V1N4	SPANISH HANGMAN, THE	GEORGE EARL
B	V1N4	SUPER-TEXT VER 2.0	MUSE SOFTWARE
A	V2N1	ACTION SOUNDS & HIRES SCROLLI	AVANT-GARDE CREATIONS
A-	V2N1	APPLE PLOT	APPLE COMPUTER CO
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B+	V2N1	CYBER STRIKE	CALIFORNIA PACIFIC COMP.
C	V2N1	DOGFIGHT	MICRO LAB
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B+	V2N1	HIRES FOOTBALL	ON-LINE SYSTEMS
B+	V2N1	HYPER HEAD-ON	BRODERBUND SOFTWARE
A-	V2N1	HYPERSORT	JEW & KILK
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C-	V2N2	ELEMENTARY MATH	MUSE
C	V2N2	MCAP	HAYDEN BOOK CO
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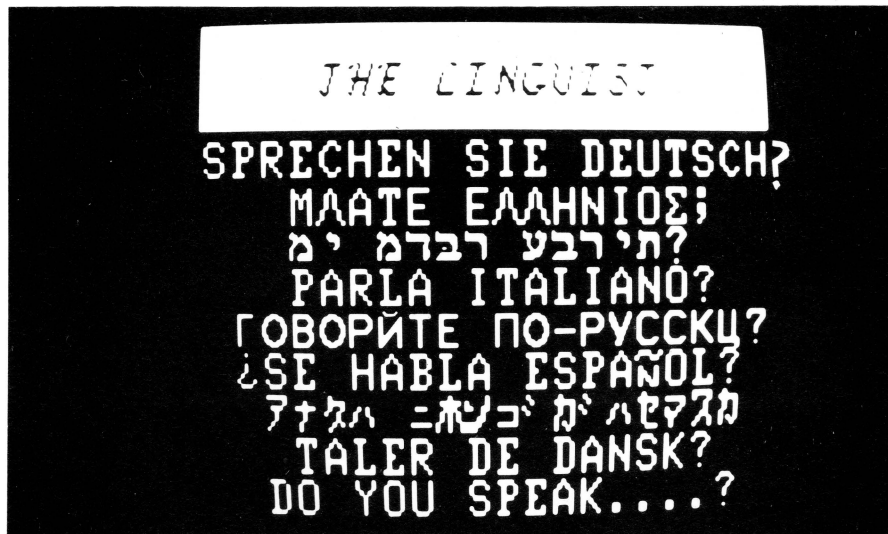
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