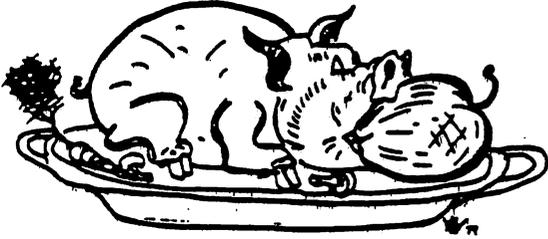


H.A.A.U.G.



HOUSTON AREA APPLE USERS GROUP

THE APPLE BARREL

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VOLUME 5 NO.1

FEBRUARY 1982

PRESIDENT, MIKE KRAMER

VICE PRESIDENT, BRIAN WHALEY

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Houston Area Apple Users Group
APPLE BARREL
2218 Running Springs
Kingwood, TX 77339

CLUB NOTES

The HOUSTON AREA APPLE USERS GROUP is an Apple user club, not affiliated with Apple, Inc., or any retail computer store. HAAUG is a member of the International Apple Core and supports its publications and purposes. General membership meetings are held on the second Thursday of each month in the rear chapel of Memorial Lutheran Church, 5800 Westheimer, between Chimney Rock and Jungman Library, beginning at 6:30 P.M. An additional general meeting is held at 2:00 P.M. the last Saturday of each month at the University of Texas School of Public Health in the Medical Center at 6905 Bertner at Holcomb. This meeting features tutorials, problem-solving sessions, and access to the HAAUG software library. The meeting is held in the main floor meeting room to the left of the entrance. Bring your Apples!!

MEMBERSHIP INFORMATION

Dues are \$18 per 12-month period for regular memberships, \$6 for students through high school where no adult member of the family is an Apple user. Please make checks payable to Houston Area Apple Users Group and mail to Robin Cox, 5401 Chimney Rock #607, Houston, TX, 77081.

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APPLE BARREL REPRINT POLICY

Unless otherwise noted within the program or article, any original material published herein may be reprinted without permission by any non-profit Apple club, group, or newsletter, provided proper credit is given to the Apple Barrel and the author

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APPLE HOTLINE

713-668-8685

The APPLE HOTLINE has been established to provide the members and prospective members with an easy means to learn of meeting topics, news, etc. It can also be used to obtain answers to puzzling Apple - related questions.

SPECIAL INTEREST GROUPS

Members who share common interest are encouraged to join or form Special Interest Groups to more fully explore their fields. These groups meet separately from the regular meetings at times convenient for the members. If you would like to become involved in a special interest group, either call the HOTLINE or contact one of the club officers. Lists of members with specific interests can be generated on request from the HAAUG MEMBERSHIP SURVEY data base.

HAAUG MEMBERSHIP SURVEY

First Name	Init.	Last Name	Home Phone	
Street Address	Apt.#	City	State	Zip
Occupation	Company		Work Phone	
Business Address	City		State	Zip

Prefer Mail To: Home / / Work / /

Ages of children using your Apple? -----

Childrens' areas of interest? -----

SPECIAL INTERESTS (Check all that apply)

- | | | | |
|------------------------|-------|-----------------------|-----|
| Science/Engineering | --- | Games/Puzzles | --- |
| Business Applications | --- | Data Base Systems | --- |
| CP/M | --- | Modems/Communications | --- |
| Education | --- | Hardware | --- |
| Assembly Language | --- | BASIC | --- |
| Pascal | --- | Forth | --- |
| FORTTRAN | --- | Graphics | --- |
| Music | --- | Stock Market | --- |
| Real Time Applications | --- | DOS | --- |
| OTHER | ----- | | |

CLUB PARTICIPATION AREAS (Check where you want to help)

- | | | | |
|----------------------------------|-----|---------------------------------|-------|
| Write articles for Apple Barrel | --- | Maintain hardcopy library | --- |
| Help prepare Apple Bbl for mail | --- | Write programs for library | --- |
| Evaluate programs for library | --- | Maintain program library | --- |
| Help run program copy session | --- | Bring Apple to copy session | --- |
| Coordinate hardware projects | --- | Coordinate group purchases | --- |
| Present lectures or tutorials | --- | Arrange vendor presentations | --- |
| Assist in new member orientation | --- | Assemble and label starter kits | --- |
| Copy starter kit disks/tapes | --- | Xerox starter kit material | --- |
| Hold office in club | --- | Other | ----- |

The HAAUG Membership survey provides a data base for use in getting members with similar interests together and in finding those who are willing to help in the running of the club. Please send in the completed form to the address below or hand it in at the meetings to the new member chairman.

MIKE KRAMER
2218 RUNNING SPRINGS
KINGWOOD, TX 77339

HOUSTON AREA APPLE USERS GROUP
MIKE KRAMER
2218 RUNNING SPRINGS
KINGWOOD, TX 77339

CALL FOR ARTICLES

Many HAAUG members have complained about either the quality of the articles in the Apple Barrel or the irregularity of its publication. The cold, hard truth of the matter is that you, the HAAUG members are the source of articles, and, without articles there can be no newsletter. The common response is "I'm a new Apple owner and don't know enough about it to write anything worth while". Articles do not have to be based on some original program or piece of hardware. The new Apple owner tends to buy a good deal of software and hardware once the shock of the initial purchase is forgotten. What better service can he perform than to write reviews giving his impressions of the usefulness of the products or problems he may have had due to poor documentation, design flaws, etc. The experienced members, however, are better prepared to write articles on programming techniques, hardware modifications, etc. You are all urged to help make the Apple Barrel a publication of which we can all be proud.

Articles and program listings should be submitted in hardcopy form, and, if possible, on disk in Applewriter, Professional Easywriter, Palantir, or Pascal compatible files. If not submitted on disk, articles must be relatively free of typing or spelling errors as they cannot be retyped. Diskettes will be returned to the author provided his name and address are on them. Printed material should be printed using normal size characters, a new ribbon and enhanced print if your printer is so equipped. Margins should be set at 10 and 70 for articles. Listings should be printed in 40 column mode and may be printed in compressed print. Thermal paper should be avoided because it does not reproduce well. Articles should be submitted to:

Houston Area Apple Users Group
Apple Barrel
2218 Running Springs
Kingwood, TX 77339

ADVERTISING RATES

Full Page	- \$50	Half Page	- \$25
Quarter Page	- \$15	Business Card	- \$5

Advertisements should be submitted in camera-ready form. Charges will be billed and will be accompanied by the copy of Apple Barrel.

FEBRUARY SATURDAY PROGRAM

Dan Pote of Applied Engineering of Dallas and a member of the Dallas Apple Corps will present his company's line of peripheral cards for the Apple II at the February 27 meeting. These cards, which are advertised in this issue, include an analog/digital interface, clock/calendar card, and a music synthesizer. A limited number of the cards will be available to HAAUG members at a 10% discount.

** WANT / DON'T WANT ADS **

For sale: Apple Language System Complete - \$400
Heuristics Speech Lab - \$150
Call A.P.Novak Days at 522-1781

For sale: T.I. Terminal with thermal printer and built-in acoustic coupler. - \$1000 or best offer
T.I. 59 Calculator with extras - \$170 or offer
Call J.Totten evenings at 644-4824

For sale: Micro Lab Data Factory - \$50
Wanted: Videx Keyboard Enhancer (pre-Version 7)
Call Mike Kramer evenings at 358-6687

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APPLE PERIPHERALS ARE OUR ONLY BUSINESS

Beagle Bros. Software

A Review by Guy Neill

If you haven't had a look at the software offerings from Beagle Bros., you are missing some innovative programming. Besides the obvious value of the programs themselves, Beagle Bros. programs are unprotected to allow studying their programming techniques.

I feel that their efforts should be applauded and further supported by purchase of their programs. The programming techniques serve as a deep insight to the Apple and it's capabilities. Particularly, newcomers to the Apple (as well as many old-timers) can learn much through studying the program listings.

To date I have their "DOS BOSS" disk and their earlier "TEXTTRAIN". "DOS BOSS" is a utility allowing customizing most of the output features of DOS 3.3. With it you may:

1. Change DOS commands
2. Change DOS error messages
3. Format the "CATALOG" listing
4. Customize the "DISK VOLUME" message.

Thus, if you "CATALOG" frequently you may find it of benefit by changing "CATALOG" to "CAT". If you are plagued by "SYNTAX ERROR" perhaps "YOU GOOFED" would be friendlier. How about replacing the "DISK VOLUME" message with your name, or the disk number, providing you number your disks.

The possibilities are many. Changes are accomplished in memory only at the outset, but there are two methods by which you may make them a part of your DOS.

The first method allows creation of a "EXEC" Text file which will make the changes each time you Exec it. Here you may have your "HELLO" program automatically "EXEC" the file upon booting so that your DOS modifications are available. Of course these files take disk space away from other uses.

The second way, and probably the better if you have made numerous changes to the DOS, is to "INIT" new disks with the modified DOS. This way no excess disk space is consumed and you still have your own custom DOS every time you boot.

One word of warning, however. If you modify DOS you may have to change your programs to run with the modifications. For instance, if you change "CATALOG" to "CAT" and have a "HELLO" program which catalogs upon boot, you will get a "SYNTAX ERROR" (or whatever message you changed it to) upon boot since "CATALOG" is no longer a recognized command.

At this point you may see the possibilities of guarding your disks from unauthorized use. If you extensively modify DOS it will prevent many (not all) people from being able to run the programs it contains. Just don't forget the commands yourself. Write them down.

In addition to the DOS BOSS program, the DOS BOSS disk contains what is probably the finest auto-menu program I have seen to date. It is titled "KEY-CAT" and, if used as your "HELLO" program provides single keystroke running of programs. It is super. As is usual for such programs it only works for the last 20 or so programs of your catalog.

Besides some other programs on the disk you receive their "TIP BOOK" which is filled with obscure, interesting, nonsensical, and otherwise unknown tips on using (or abusing?) your Apple. It is very amusing and provides some additional insights to the workings of the Apple.

Last, but not least is the inclusion of the "APPLE COMMAND CHART". This is a poster-type chart containing all known BASIC commands (and DOS) for the Apple. It shows what languages each function is and gives a brief description of its function.

The last offering from Beagle Bros. are "UTILITY CITY" and "ALPHA PLOT". The first is a group of utilities for easier Applesoft programming while ALPHA PLOT is a graphics utility. I have not seen either yet, but as the budget allows I will get them.

One last item. I received a bulletin from Beagle Bros. earlier this week and it asks for help in gathering information for their next TIP BOOK. What Beagle Bros. wants is to compile a list of what values different peripherals yield when their driver ROM's are PEEKed. These values can be used to determine what slot a particular card is in from within your program. Although Beagle Bros. indicated that the various interfaces will yield a unique value in the first byte, it is easy to show that it is necessary to PEEK at least the first four bytes to assure a unique match. The program at the end of this article can be used to easily determine the values of the first four bytes in each slot. Immediately below are the values displayed for a "full" Apple:

If you like, key in the program and run it and let me know what values you get for what peripherals. I will sort through and send a list of the results to Beagle Bros. as well as list them in a future Apple Barrel. Call or mail your results to:

Guy Neill
P.O.Box 7218
Woodlands, Texas 77380
363-4701 Home
449-2000 Ext. 2766 (Work)

LIST

```
100 HOME : VTAB 4
110 HTAB 12: PRINT ">> I/O ROM B
    YTE VALUES <<": PRINT
120 PRINT TAB( 11)"BYTE 1 BYTE
    2 BYTE 3 BYTE 4": PRINT
130 FOR SL = 1 TO 7
140 SM = SL * 256 + 49152
150 PRINT "SLOT ";SL;": "; TAB( 1
    3) PEEK (SM); TAB( 20) PEEK
    (SM + 1); TAB( 27) PEEK (SM +
    2); TAB( 34) PEEK (SM + 3): PRINT

160 NEXT SL
65535 REM
65535 REM *****
65535 REM * I/O ROM PEEKER *
65535 REM * WRITTEN BY *
65535 REM * MIKE KRAMER *
65535 REM * HOUSTON AREA *
65535 REM * APPLE USERS GROUP *
65535 REM *****
```

IRUN

>> I/O ROM BYTE VALUES <<

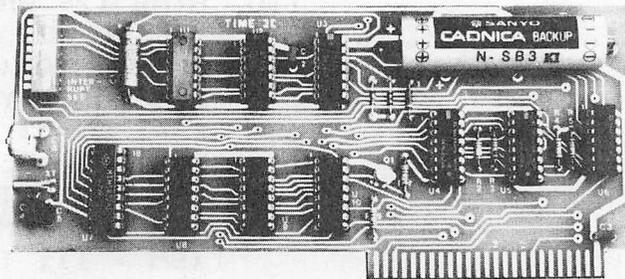
BYTE 1 BYTE 2 BYTE 3 BYTE 4

SLOT 1:	24	176	56	72	Epson Parallel
SLOT 2:	44	88	255	112	SSM AIO
SLOT 3:	44	203	255	112	Videx Videoterm
SLOT 4:	8	120	44	255	Mtn. Hardware Clock
SLOT 5:	44	88	255	56	Mtn. Hardware ROMplus
SLOT 6:	162	32	160	0	Apple Disk
SLOT 7:	160	160	0	160	Microsoft Softcard

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- AUTOMATIC SHUTOFF ON POWER-UP, OR IF RESET IS PUSHED.
- MANY, MANY MORE FEATURES.

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DB MASTER 3.0

DB Master 3.0 is an electronic file cabinet. Although advertised as a data base manager it does not allow for user-defined connections or "relations" between records containing different kinds of data. Nor does it support "hierarchal" data structures. It is more accurately described as a record or list manager. DB Master uses the term "data base management" to mean the creation, storage, editing and manipulation of data in a file, and the preparation of reports based on data in the file. Typical applications might be an inventory file, a personnel file or a magazine articles file.

A file is a group of records with similiar information organized in a manner unique to that file. There is virtually no limit to the number of records since a file may span multiple diskettes. (However if a file grows above two or three data disks the amount of disk swapping may become tedious.) A record can hold 1020 characters in 100 fields. Fields can be laid out in any manner on up to 9 video screen pages. The program supports ten field types: alphanumeric, numeric (four different types), manual date, automatic date, social security number, telephone number and yes/no. Defaults can be set up for any field to speed data entry. A field may be computed from the values in two or more other fields. Fields can be read protected (more on this later).

Data storage and retrieval is efficient. Data is stored in a packed form so multiple occurances of a character (such as blanks in a long, empty, alphanumeric field) are stored in two or three characters. This decreases the amount of storage needed for each record. The program uses an indexed sequential access meathod (ISAM) filing system which allows access to any record in three to five seconds. Searches can be done on data in up to twenty fields. You can look for records which have a range of values in a field, which include a certain alphanumeric string in a field, or which have a field which is less-than, equal-to or greater-than a value. This value may be numeric or alphanumeric. Multiple sets of criteria may be specified so the search will be done for records which meet one set of criteria OR another. (For example in a personnel file you might want to search for all engineers that have between 3 and 5 years of experience in gas plant design, and would accept an assignment to Alaska OR California.)

Three levels of passwords may be defined for each file: read only, read/write and master. In read only you cannot add, delete or change records or define or print reports. In addition you can not see read-protected fields. In the read/write mode you have full access to the program and data but cannot change the passwords. The master level is like the read/write with the ability to change passwords. A master password is always needed, The others are optional.

At each point in the program the available options are displayed on two prompt lines on the bottom of the screen. When entering

data you can use the defaults set up when the file was defined, or set up temporary defaults for that entry session. You can also specify the "last record entered" default mode for entering records which vary in only a few fields. A short form, a subset of the normal record, may be used for entering a data in a few widely separated fields.

DB Master has a powerful report generator. Each Master Report format made up of several sub-formats (specifying the output media, the data to be reported, and the record selection and sort criteria). You can create variations on a given report by changing the sub-formats. Reports can be 132 columns wide. You can have nine lines for column titles. Reports can have up to nine lines of data for each record output. Totals and sub-totals, with or without page break, and computed fields (twenty four) are supported. Nine lines of comments are allowed on a page, which can be split between the top and bottom of the page. Numeric fields are aligned on the decimal point. Numbers may be output in scientific notation. The output can be sorted on six fields.

In the DB Master Utility Pack #1 (available separately) there are utilities to restructure a file, to merge two files together, to create a copy of the file with no data, to recover as much data as possible from a damaged file, and to output or input data in the Data Interchange Format (DIF). In restructuring a file you can add, delete or move fields, add a new page, or change a field's attributes (type, length and default value). The DIF capability will allow the program to exchange data with a growing number of software packages (including Visicalc, Visitrend and Visiplot).

DB Master will run on an Apple II+, on an Apple II with an Applesoft ROM card or a RAM card, or on Apple III in the Apple II emulation mode. Two drives with DOS 3.3 are recommended and four drives are supported. DB Master must be booted from slot 6, drive 1. A printer is needed for reports. You must have a printer interface card as there is no provision for a user supplied printer driver. The program supports Apple's Parallel, High Speed Serial and Communications cards, CCS's Parallel and Asynchronous Serial cards and the Apple Silentyper. Other interface cards designed for the Apple will probably work if they can be turned on with a PR# command. I have been using SSM's AIO card in the serial mode. The program also supports the Mountain Hardware, CCS and Thunderware clock cards.

The program is copy protected but you are sent a free backup when you return the license agreement. A damaged disk will be replaced for a \$15 fee. The licensing agreement is unusual as it states that by opening the package you agree to all its terms. These terms say in part that you agree to pay Stoneware \$2500 if they find your serial number on anyone else's disk.

Support from Stoneware has been excellent. I did not receive my backup copy for several weeks so I called them. They said they were behind due to an unusually large number of sales and that I should receive it within the week. I did. I bought an early copy of Utility Pack #1 that had a bug in it (version 1.4). I

was notified by mail to return it and I received a free updated version (1.6) in a week. I have always been able to reach Stoneware by phone for advice. Someone was either available to answer my questions or they returned my call later that same day. The people on the technical hot-line are quite knowledgeable about the program.

My two biggest criticisms of DB Master, the inability to redefine the file and the inability to exchange data with other programs, were answered by Utility Pack #1. More Utility Packs are in development and Stoneware seems very receptive to suggestions. The file set-up, data entry and search functions of the program are excellent. The report generator is powerful but defining a report is tedious. This module is not nearly as user friendly as the others. For instance it is difficult to get a print out of the definition of each sub-format; it is impossible to get a listing of which sub-formats make up a master report. There is no global change function but one is in development and will be included in a future Utility Pack. I would like to see another level of password which would allow one to add new records and change selected fields but not to delete records or to see read/write protected fields. The documentation is fairly well done but is best read while at the terminal, working examples.

DB Master and Utility Pack #1 are available at most computer stores or may be ordered from Stoneware Microcomputer Products, 50 Belvedere, San Rafael, CA 94901. DB Master is \$229 and Utility Pack #1 is \$99.

Steve Knouse

BUSINESS GROUP MEETING HELD

The Business Applications Special Interest Group met Thursday, January 21, 1982, at EBASCO Services, 3137 Briarpark (corner of Westpark and Briarpark) in a review of Visifile, recently acquired by Rudge Allen. About 10 of us had a chance to see and hear Rudge's show and tell on this successor to CCA DBMS, Personal Software's initial offering of a database program.

We saw a vast change over ole CCA. Only the file structure remained the same, which is, of course, the salvation for those who built up large files under CCA earlier. (Rudge explained that there is an attempt nowadays to standardize all database programs to use the same DIF format.)* VISIFILE is much more screen oriented now. We had a chance to redefine field sizes, change math formulas, and play around with report structures. We experimented with the search and sort capabilities, and, in general, had a true to life review of this new program by a bonafide user!

Our next meeting is tentatively scheduled for 7:00 PM, February 18, at the same location. The subject will be announced at the next club meeting.

*Editor's note: DIF stands for Data Interchange Format

DISK USER REPORT - FILE BACKUP

BY DAN HERRON

File backup of computer data sets is a critical consideration. Backup is purely insurance against risk; back-up is only needed when you NEED! it. So you must think about what you are going to need in the future and provide it now. Like any insurance risk, some of us have to experience a loss before we "purchase" the risk policy.

Prudent data processing policy states that you can locate and use your backup files in a timely manner whenever you have a need. These backup data sets must be created BEFORE a catastrophe. Let's take a simple example. You go to your favorite software vendor and buy the game diskette named NIFTY. Your family really enjoys playing this game, but the teenager spills a glass of iced tea on the desk and the NIFTY diskette floats away. You are sure that a wet diskette won't work in your drive so you begin looking for another copy of the NIFTY program. Do you have a copy or not? If you do not, you cannot play anymore. You must suffer the wrath of a mad family which is unable to enjoy NIFTY (you probably don't even get to scream at the teenager who caused the immediate problem in the first place). If a NIFTY backup exists, you can immediately begin playing; or better yet, get a fresh diskette and make a copy of NIFTY. Of course you will play with the copy and put the backup in a safe place where it will await another teenager's "accident".

This "accident" brings up the next topic....what are some of the things that happen to diskettes? A physically damaged diskette just will not spin in the drive. Fire or smoke damages diskettes beyond useability. Theft, or loss by misplacing a diskette (or box of them) makes diskettes unavailable. Power failures while writing data to diskettes causes scrambled, incomplete files. Sometimes people write over your data set or program. On rare occasions, people actually INIT your disk volume. More frequently, "new" software effectively INITs your diskette. All of these situations, and more, cause only one result; DATA AND PROGRAMS ARE NO LONGER AVAILABLE FOR USE.

Enough of these problems. Let's discuss some solutions. Full volume copy backups of diskettes are easy to come by. It is easy to copy individual programs and text files by using some of the tools that come with DOS. COPYA copies entire volumes; MUFFIN copies 13 sector diskettes to 16 sector (newer) diskettes on a file by file selection. FID copies any file to another diskette. LOAD and SAVE work well for programs if you remember to change disks before the SAVE. There are other tools available for you to copy or move things around.

The first consideration is where to store a backup set. You really need TWO backups of critical data sets. Let me explain why. Suppose that you make a backup of your programs every Monday night, copying USE diskette to BACKUP diskette. Things are just fine for weeks on end until one Monday night while you are copying from USE to BACKUP the Apple peels back and says "I/O ERROR" on USE diskette. Well, the USE diskette must be bad. Since BACKUP is in the process of being created, IT IS NO GOOD EITHER. Surprise! So your carefully planned and carefully executed strategy of backup failed to provide you with any backup at all. (I suspect that this scenario is rare, but remember Murphy's Law... "Whatever can go wrong will go wrong"; and his cousin Edsel Murphy's corollary, "Yes, and the results will be far worse than predicted"). I know that the Murphys were optimists. I have had the good fortune to have experienced just this situation while employing a strategy of one volume of backup. So I began to think (on my new job) how to insure that my backups work in all situation. I stumbled onto a neat way to prevent lost data catastrophe...

USE gets copied to BACKUP; BACKUP gets sent to another building, usually Mom's house. Next Monday night, on schedule, I copy USE to OTHERB; OTHERB gets sent to Mom's house and Mom sends me BACKUP. Next Monday I copy USE to BACKUP, and you can see I am in a familiar loop.

Some people call this the "FATHER - SON - GRANDFATHER" method of backup in order to keep things controllable in one family with everyone having something named after them.

Please note that with the two level backup strategy I always have one copy, possibly two copies, and probably three copies of a data set. If Mom's house is smoky, my copy is good; if my house gets smoky, Mom's copy is good. If someone makes my Apple and supplies a new candidate for the new "HOT APPLE TURNOVER" program, Mom's copy of the disk is good.

I listed some of the things that can happen to data and backup data in a paragraph above. Please test my method and strategy to see if it works for ALL cases. If this procedure is fallible, let me know that Mr. Murphy is byte-ing me again. My boss would like to know also because this method of file backup is used in our business. I'm getting tired of changing jobs and would like to prevent the need to move on.

There is one additional area of concern. If you have a power failure, a lights out situation, or a program failure while updating in a place any disk file, you do have a potential problem. Before update of important files (programs) you should make a work copy backup. If anything happens you have the ability to start again. This kind of backup does not usually go "off-site". It provides a working copy of master data sets to be used in case something goes wrong.

Where do you put backup files? At the HAAUG meeting in January, several users discussed using the reverse side of diskettes. One excellent usage of the back side is for occasional backups. One user stated that at least one third of his diskettes were backups. Another user said that two thirds of his volumes were backups. My family method leans in favor of the two thirds; it also costs more money for diskettes. But, it always works. And, after you have copied the files, consider sending the diskettes to another location; parents like to get regular visits and be included in your hobbies.

In summary, it is prudent to make timely backups of critical (all) computer files and programs. This costs budget dollars; this budget expenditure is easy to allocate because of the alternatives...lost data, lost profitability, and lost enjoyment. One copy of a backup file is not enough; it takes two copies at a minimum. Spend some time studying your "business risk", and I am sure that you will be able to provide a more reliable backup strategy. If you use these principles in your business, jot a note to your auditor. Auditors and bosses are very happy indeed to know that you are thinking about them now and that you won't have to say, "SURPRISE! WE CANNOT RUN THE BUSINESS TODAY!"

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GAME COMPETITION

Susan Wettling will coordinate a game competition for younger members through high school age at the February 27 Saturday session. Several local stores, including Computercraft on Chimney Rock, the Compushop on Bellaire, and Computer Technique at Alameda Mall, have donated prizes. Sorry, no hints can be given, but be sure to practice your favorites.

EXEC FILES ON THE APPLE II

BY MIKE KRAMER

One very useful and somewhat unique feature of the Apple II is the EXECutable file. The EXEC file is designated on a catalog listing as a "T" or data file. The EXEC file, however, is not a data file in the strict sense of the word. Rather, it can contain either lines of BASIC program code or executable keyboard commands.

CREATION OF EXEC FILES

Once a file is OPENed and a WRITE is specified, any output to the screen is written to the disk as well. The desired output usually results from PRINT statements. It is possible, however, for output resulting from TRACE or LIST commands or from error messages to also be written onto the disk. This should be kept in mind whenever writing to the disk.

SAVING BASIC CODE IN EXEC FILES

The DOS 3.3 Master diskette contains a utility program which permits appending one Applesoft program to another in memory without destroying the first program. This is a worthwhile program, but the instructions are lengthy and somewhat involved. Another technique for appending one block of Applesoft code to another is to use EXEC files.

The steps required to append a block of code using EXEC files are:

1. Load the program containing the code to be appended.
2. Delete any lines which are not desired.
3. Renumber the program to start with a line number higher than the highest line to which it will be appended.
4. Type in the following code:

```
0 D$=CHR$(13)+CHR$(4):PRINT D$"OPEN PROGR
AM NAME"D$"WRITE PROGRAM NAME":LIST 1,
63000:PRINT D$"CLOSE":END
```
5. Type RUN to save the code specified in the LIST command as an EXEC file.

The obvious first program code to save as an EXEC file is the code in Step 4. You must change the LIST command to "LIST 0,0", however. Then there is no longer a need to type in Line 0 since it can be EXEC'd into any program at any time.

Whenever you want to append an exec file to a program in memory, just place the disk containing the EXEC file into a drive and type EXEC followed by the file name. The contents of the EXEC file will then be "typed" in from disk as though typed in from the keyboard. The EXEC'd code can then be renumbered as necessary using a renumber utility such as Program Global Editor.

If you write much code that uses the same routines from program to program, you should consider preparing a diskette of EXEC files containing them. Typical routines could include printer activation, file access, error handling, titling, copyright notice, etc.

SAVING KEYBOARD COMMANDS IN EXEC FILES

EXEC files can be used to execute often-used sequences of keyboard commands, saving the effort of remembering the commands and that of typing them in. The following example would permit changing a locked INTEGER BASIC HELLO program to an Applesoft HELLO, LOCKing it, and CATALOGing the diskette to verify the change.

```
100 D$=CHR$(13)+CHR$(4):FI$="CHANGE"
110 PRINT D$"OPEN"FI$D$"WRITE"FI$
120 PRINT "UNLOCK HELLO,D1"
130 PRINT "DELETE HELLO"
140 PRINT "SAVE HELLO"
150 PRIQU!#MOCK!IEMMO#
160 PRINT "CATALOG"
170 PRINT D$"CLOSE"FI$
```

Once the program has been typed in, RUN it to save the EXEC file on disk. To use the EXEC, LOAD the new Applesoft HELLO into memory, insert the diskette to be changed into Drive 1, and insert the diskette containing the EXEC file into Drive 2. Then type "EXEC CHANGE".

The second example below would activate an Epson printer in Slot 1, shift the printer into compressed print, list the program in memory with a width of 120 characters, return the printer to normal print size, and deactivate the printer.

```
100 D$=CHR$(13)+CHR$(4):FI$="LISTER"
110 PRINT D$"OPEN"FI$D$"WRITE"FI$
120 PRINT"PR#1"
130 PRINT"PRINTCHR$(15)CHR$(9)CHR$(34)
      CHR$(49)CHR$(50)CHR$(48)CHR$(78)
      CHR$(34):LIST"
140 PRINT "PRINT CHR$(12)"
150 PRINT "PR#0"
160 PRINT D$"CLOSE"FI$
```

The advantage of using this EXEC to list the program in memory is that the printer commands are not printed on the printer.

SELF-GENERATING CODE USING EXEC FILES

An interesting application of EXEC files is in programs which write other programs. This is illustrated on Page 77 of the DOS 3.3 Manual by a program which writes a program that POKES a machine language program into memory. A somewhat more involved program which provides a similar capability, AUTOMATIC POKE MAKER, is included below and is available in the HAAUG Software Library. Note that all that is needed to create a BASIC program using EXEC files is to PRINT line numbers followed by valid Applesoft commands to a disk file.

ILIST

```

10 REM *****
20 REM *
30 REM * AUTOMATIC POKE MAKER *
40 REM * WRITTEN BY *
50 REM * MIKE KRAMER *
60 REM * HOUSTON AREA *
70 REM * APPLE USERS GROUP *
80 REM *
90 REM *****
100 D$ = CHR$ (13) + CHR$ (4): PRINT
    D$"MON,C,I,0"
110 HOME : LIST 10,90: POKE 33,8
    : HOME : TEXT
120 VTAB 22: HTAB 14: PRINT "INS
    TRUCTIONS? "; GET A$: PRINT
    : IF A$ < > "Y" AND A$ < >
    "N" GOTO 195
130 IF A$ = "Y" GOTO 560
140 HOME : PRINT "USE LAST BLOAD
    ED PROGRAM? ";; GET A$: PRINT
    : IF A$ < > "Y" AND A$ < >
    "N" GOTO 140
150 IF A$ = "N" GOTO 230
160 SA = PEEK (43634) + 256 * PEEK
    (43635)
170 BC = PEEK (43616) + 256 * PEEK
    (43617)
180 PRINT : PRINT "LOAD ADDRESS
    = ";SA
190 PRINT : PRINT "BYTE COUNT =
    ";BC
200 PRINT : PRINT "OK? ";; GET A
    $: PRINT : IF A$ < > "Y" AND
    A$ < > "N" GOTO 200
210 IF A$ = "N" THEN HOME : GOTO
    140
220 GOTO 320
230 PRINT : INPUT "STARTING ADDR
    ESS? (DEC) ";A$:SA = VAL (A
    $)
240 IF SA < 0 THEN SA = 65536 +
    SA
250 PRINT : INVERSE : PRINT "B";
    : NORMAL : PRINT "YTE COUNT
    OR ";; INVERSE : PRINT "E";:
    NORMAL : PRINT "ENDING ADDRE
    SS? ";; GET A$: PRINT : IF A
    $ < > "B" AND A$ < > "E" THEN
    PRINT : PRINT "INVALID CHOI
    CE.": GOTO 250
260 IF A$ = "B" GOTO 310

```

```

270 PRINT : INPUT "ENDING ADDRES
    S? ";A$:EA = VAL (A$)
280 IF EA < 0 THEN EA = 65536 +
    EA
290 IF SA > (EA) THEN PRINT : PRINT
    "ENDING ADDRESS MUST BE GREA
    TER THAN": PRINT "STARTING A
    DDRESS. TRY AGAIN.": GOTO 23
    0
300 GOTO 330
310 PRINT : INPUT "BYTE COUNT? (
    DEC) ";A$:BC = VAL (A$): IF
    BC < 1 GOTO 310
320 EA = SA + BC - 1
330 PRINT : INPUT "FILE NAME OR
    CATALOG? ";FI$
340 IF LEFT$ (FI$,3) = "CAT" THEN
    PRINT D$"CATALOG": GOTO 330
350 IF LEN (FI$) = 0 THEN PRINT
    : PRINT "NO NAME ENTERED. TR
    Y AGAIN.": GOTO 330
360 IF LEN (FI$) > 30 THEN PRINT
    : PRINT "FILE NAME CANNOT HA
    VE > 30 CHARACTERS.": GOTO 3
    30
370 IF ASC ( LEFT$ (FI$,1)) < 6
    5 OR ASC ( LEFT$ (FI$,1)) >
    90 THEN PRINT : PRINT "FILE
    NAME MUST START WITH A LETT
    ER.": GOTO 330
380 PRINT : INPUT "STARTING LINE
    NUMBER? ";A$:LN = VAL (A$)
    : IF LN < 0 GOTO 380
390 PRINT : INPUT "LINE NUMBER I
    NCREMENT? ";A$:IC = VAL (A$
    ): IF IC < 1 GOTO 390
400 PRINT D$"OPEN"FI$D$"DELETE"FI
    $
410 PRINT D$"OPEN"FI$D$"WRITE"FI
    $
420 PRINT LN;" FOR XX=";SA;"TO";
    EA:LN = LN + IC: GOSUB 550
430 PRINT LN;" READ BYTE:POKE XX
    ,BYTE":LN = LN + IC: GOSUB 5
    50
440 PRINT LN;" NEXT XX":LN = LN +
    IC: GOSUB 550
450 SS$ = "" : COMMA$ = ""
460 FOR XX = SA TO EA
470 IF LEN (SS$) < > 0 THEN CO
    MMA$ = ","
480 SS$ = SS$ + COMMA$ + STR$ ( PEEK
    (XX))

```



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LIST

```
10 HOME :CH = 1: HGR
20 VTAB 22: HTAB 8: PRINT "HI-RES HAS ONLY 8 COLORS?"
30 FOR H = 0 TO 279 STEP CH
40 HCOLOR= INT ( RND (1) * 8)
50 H PLOT H,0 TO H,191
60 NEXT H
70 FOR N = 1 TO 1500: NEXT
80 POKE - 16302,0
90 REM
```

WRITTEN BY MIKE KRAMER

```
490 IF LEN (SS$) = > 200 OR XX
= (EA) THEN PRINT LN;" DAT
A ";SS$:SS$ = "":COMMA$ = ""
:LN = LN + IC
500 NEXT XX
510 PRINT D$"CLOSE"D$"NOMON"
520 PRINT : INPUT "ANOTHER? ";A$
:A$ = LEFT$ (A$,1)
530 IF A$ = "Y" GOTO 230
540 HOME : END
550 LN = LN + IC: RETURN
560 HOME : PRINT " >> AUTOM
ATIC POKE MAKER <<"
570 PRINT
580 PRINT "THIS PROGRAM GENERATE
S AN EXEC FILE"
590 PRINT "CONTAINING BASIC PROG
RAM LINES THAT POKE";
600 PRINT "MACHINE LANGUAGE INTO
MEMORY. DATA"
610 PRINT "STATEMENTS CONTAINING
THE BINARY CODE"
620 PRINT "ARE GENERATED AUTOMAT
ICALLY. THE BASIC"
630 PRINT "CODE CAN BE APPENDED
TO YOUR BASIC"
640 PRINT "PROGRAM BY EXEC'ING I
T."
650 PRINT
660 PRINT "YOU MUST FIRST BLOAD
THE BINARY PROGRAM"
670 PRINT "BEFORE RUNNING AUTO P
OKE MAKER. YOU THEN";
680 PRINT "HAVE THE OPTION OF GE
NERATING CODE FOR"
690 PRINT "THE LAST BINARY PROGR
AM LOADED OR THE"
700 PRINT "BINARY MEMORY RANGE O
F YOUR CHOICE."
710 PRINT
720 PRINT "THE DISK MONITOR WILL
BE TURNED ON SO"
730 PRINT "YOU CAN WATCH WHAT'S
GOING ON."
740 PRINT
750 PRINT
760 PRINT "PRESS <ESC> TO EXIT O
R <RETURN> TO RUN";: GET A$:
PRINT
770 IF A$ = CHR$ (27) THEN HOME
: END
780 HOME : GOTO 140
```

1



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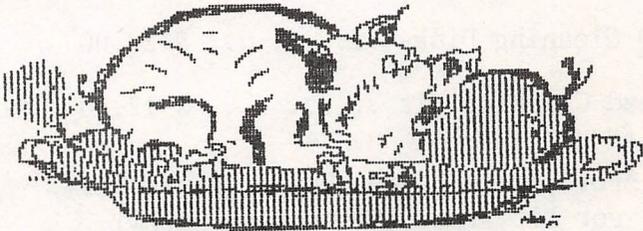
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