

mini'app'les

apple computer user group newsletter

Vol IV No 2

FEBRUARY 1981

President Dan Buchler 890-5051
 13516 Grand
 Burnsville
 Mn 55337

Treasurer Marilyn Thomas 872-7669
 2735 Irving
 Minneapolis
 Mn 55408

Vice President Steve K Johnson 869-3447

Secretary A Michael Young 884-2841
 9319 Elliot
 Bloomington
 Mn 55420

MEMBERS-OF-THE-BOARD:

Newsletter Editor Chuck Thiesfeld 831-0009
 830-5020
 8416 Xerxes
 Bloomington
 Mn 55431

Bibliogr'er Chuck Boody 933-5290
 Prg.Editor Ken Slingsby 507-263-3715
 Sales Co'r Hugh Kurtzman 544-7303

Librarians:
 -Acquisition Keith Madonna 474-3876
 -Organization Terry Pinotti 786-7118

Consultants:
 -Communications Nelson Capes 483-0414
 -Technical Jim Henke 869-0361

NEXT MEETING

Wednesday Feb 18th, 1981
 Minnesota Federal Savings and Loan
 9th Avenue South, Hopkins.

Nat Forbes of Computerland has kindly volunteered to gave a demonstration of the Apple III.

Meeting starts at 7:30pm.

OPEN BOARD MEETING

There will be a general board meeting of Mini'app'les at the Zim Computer Store Brooklyn Center on Wednesday, March 11th at 7pm. Anyone interested in the running of the club is invited to attend. We will be discussing how the club will be structured in 1981/1982. (Confirmation of this date will be made at the Feb meeting. If you are interested, but cannot make it to the Feb meeting, please check before coming in case of last minute changes)

PASCAL SPECIAL INTEREST GROUP

March Meeting

Wednesday, March 4th, 1981, 7:30 pm at
 Minnesota Federal Savings and Loan
 All are welcome.

IN THIS ISSUE

| | |
|---|------------|
| DOS 3.2 & 3.3 On Single Controller by Terry Pinotti | 2,3 |
| Advertisement - Terry Pinotti | 3 |
| Notes from Your President | 4 |
| Classified Ads | 4 |
| DOM #3 by Ken Slingsby | 5,6 |
| DOM #2 by Ken Slingsby | 7,8,9 |
| Organizing your Disks by S.K.Johnson | 9 |
| Pondering PASCAL Run Time Errors by Daryl Hammond | 11 thru 15 |
| IAC/NCC Meeting Notice | 16 |
| Turning the Pages with Dave Laden | 16 |
| Disk Purchases for Members | 16 |
| IAC Newsletter by Bernie Urban | 17,18,19 |
| Do we need a Northern Tier? by Terry Pinotti | 20 |

DOS 3.2 & 3.3 ON SINGLE CONTROLLER

At the last meeting I had several inquiries into the non standard switches that I have on my Apple. There were also several people who didn't know about a modification where you can have both the DOS 3.2 and 3.3 boot proms on one controller card, and switch between them at your convenience.

This article will be an attempt to explain just how you can modify your disk controller card to do what is mentioned above. The first thing that you need is both the Apple P5 and P5A proms for the controller card. These proms contain the machine code that is used in the first stage of the boot process. This code appears at \$CN00 (N=disk slot #) and is accessed when you first turn on your machine, if you have the auto-start rom, or if you enter a "slot #" control (P or K) from the monitor.

When APPLE came out with DOS 3.3 they changed that boot program and it is not compatible with the DOS 3.2 version. They also changed the P6 prom, but the new version, the P6A prom, is compatible with both versions of DOS. So the first thing to do is to either upgrade your DOS to 3.3 or if you bought a new system that is already DOS 3.3, get one of the old P5 proms.

If you are upgrading your system install the P6A prom and discard the P6 prom. Then the additional parts that you will need are:

2 each 1/4 watt, 2k to 10k ohm resistors.

1 each single pole double throw toggle switch.

3 feet of 26 to 30 gauge wire.

You will also need a soldering iron. One that is used for electronic assembly and not one that is used by plumbers to solder copper pipe. Then follow these simple steps:

Step 1) Turn off the power to your Apple, and remove your disk controller card.

Step 2) Locate a convenient place on your Apple case to mount the toggle switch I put mine in front in that groove that we all use to hold our pencils. Others that have done this mod have put the switch in the back of their Apples.

Step 3) Remove your P5A or P5 prom and peggy back it with the other one. The bottom surface of the upper prom should be touching the top of the bottom prom. It makes no difference which is the top or bottom.

Step 4) Now bend pin 16 of both proms so that they are sticking out at a right angle from the other pins and parallel to each other.

Step 5) Now solder all the pins that are touching each other (NOTE: pin 1 of the top prom should be touching pin 1 of the bottom rom, as should all the pins.

Step 6) Insert a piece of wire in the pin 16 hole in the socket and solder the other end to the common point on the switch.

Step 7) Now solder the resistors to the two pin 16's of the piggy backed chips

Step 8) Next solder a piece of wire from the pin 16's of the piggy-backed chips to the two poles of the switch.

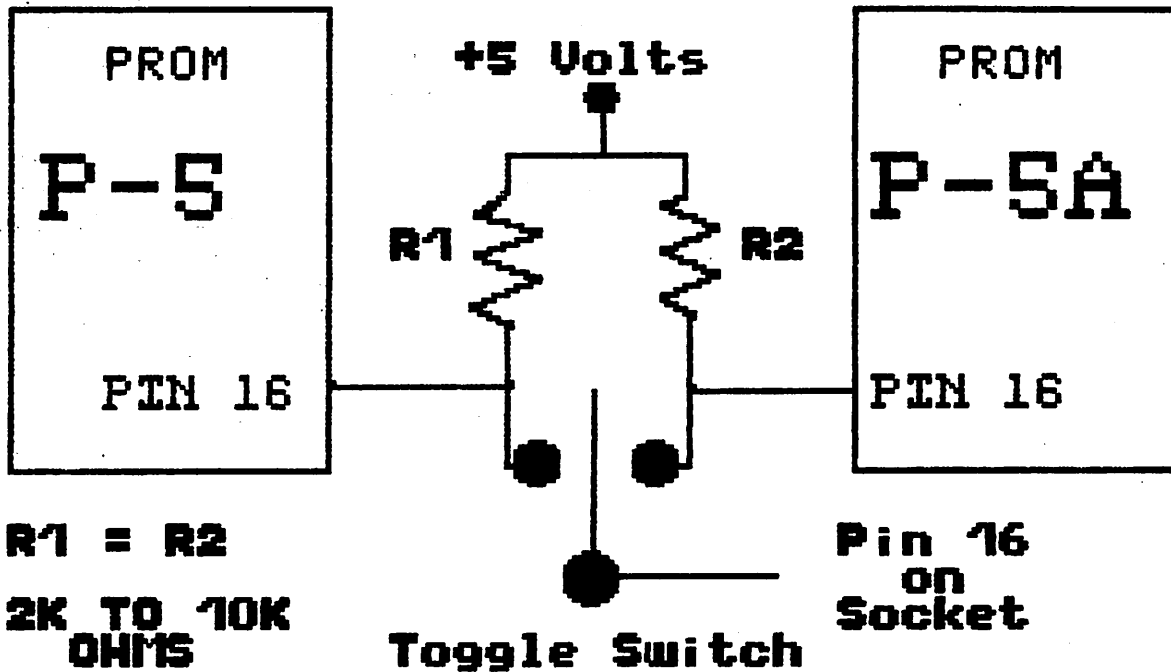
Step 9) Now insert the chips into the socket on the controller card and solder the free end of the resistors to the "+" end of the electrolytic capacitor in the upper left hand corner of the controller card. (that is looking at the component side of the card as it sits in the slot on the motherboard.)

You should now have everything wired as in the diagram that is part of this article. This modification doesn't give you both DOS'S in your Apple but allows you to boot either DOS at the flick of a switch.

For those of you who have the language system, you can now boot a DOS 3.3 master disk and get the basic that you don't have on your motherboard into your language card and then flip the switch to 3.2 and boot a disk and retain the basic in the language card.

It should be noted that not all programs can be muffed up to 3.3 and some, like backup copies of VISICALC, will not work even if you boot a BASICS DISK first. This mod will eliminate all those problems.

Terry L. Pinotti



Now You Can Have UPPER & lower case

If you have a Revision 7 motherboard this chip will give you lower case with all those PAYMAR compatible programs. (rev. 7 = no 16k blocks)

COST = \$35.00

**PLACE = ZIM COMPUTER STORE
 5717 XERXES AVE. N
 BROOKLYN CENTER, MN. 55429**

**IF YOU HAVE ANY QUESTIONS CALL:
 560-0336 OR 786-4514**

IAC ANNUAL MEETING/NCC 81

The Personal Computing Festival of the National Computer Conference will be held at McCormack Place in Chicago starting Monday May 4th. In conjunction with the NCC, there will be an annual meeting of the International Apple Corps (IAC) on Saturday and Sunday May 2nd and 3rd.

The first day will be a business meeting. However, the 2nd day should be of interest to all club members. It will be a sort of mini symposium with significant Apple personalities (perhaps Wozniak himself).

More details will be published as they become available. The IAC meeting will be in the Marriott (O'Hare ?).

!!!!!!!!!!!!!!!!!!!!!!!!!!!!
NOTES from your President

1. I am busy this month, so my inputs are brief (I can hear that big sigh of relief from all the members).

2. Don't expect a big newsletter like last months unless you the members contribute. Everyone has something to say. If you are a beginner, give us the beginner's point of view. If you are not a beginner, tell us something about what you do with the Apple!

3. Verbatim is trying very hard to erase their early image. The new sample diskettes they sent seem to work OK. They have announced a new product called DATALIFE which incorporates several improvements.

4. A company called Applied Engineering has a new clock board with battery backup. It retails for \$150 but can be purchased by club members for \$94 before March 1st. I have spec-sheets.

5. According to an unofficial count, there were 170 persons at the Jan meeting. I suspect the evening's topic had something to do with that. But whow!. I think Jim White and Steve Saliterman did an excellent job of presentation. My personal thanks to both of them.

6. Re MECC software. Several people came forward with offers to help. We are trying to get something worked out so the club has its own MECC software!

7. Competition - The National Science Foundation and Radio Shack are sponsoring a competition to develop aids for handicapped persons. The competition covers software for standard computers (Apples), written descriptions of System Concept/Design for ideas not yet implemented and hardware.

Handicaps relate to vision, hearing, language, mental retardation, learning disabilities, neuromuscular disorders and limitations of movement. An Entry Information Kit may be obtained from

Personal Computing to Aid the Handicapped

The John Hopkins University

P. O. Box 670

Laurel

Maryland 20810

Grand prize is \$10,000!

8. Computer Warehouse pointed out that the Epson MX-80 does not have pressure feed capability (i. e. single sheets of paper) as reported in Jan DAN-ON-PRINTERS

9. Apple will be buying 5 1/4" hard disks from Seagate technology for the short term, but plan to make their own later (1 year +). The hard disk from Seagate is a 6 megabyte.

10. There's a rumour of an Apple IV. but nobody seems to know what it is!

ADVERTISEMENT

For sale
APPLE II p us, 48k, 2 Disk Drive,
B+W Monitor, Interface card, IBM
Selectric II typewriter, Interface
between Apple card and Selectric,
Printer Cable.
Also Bunker Ramo 32.col printer and
interface card.
Will sell under list - make offer!
To see equipment, call
Gene Altstatt
5219 Wayzata Blvd, Suite #232,
St Louis Park, Mn, 55416. 545-4459

MINI'APP'LES DOM #3
Feb 1981 By Ken Slingsby

The Disk Of the Month for February contains many of the remainder of the business programs contributed by Mrs White. These are the programs that would not fit on the DOM for last month. In addition, there are several programs from the IAC Vol #4. These include several hi-res utility programs and some more excellent games from the Japanese user group. It is possible you may learn something from just running these programs. We also have included a text processor program donated by the Dallas Apple Corps.

*HGR PRINT

The routine HGR PRINT is repeated in this DOM because so many of the curve fit programs require it.

*MARGINAL REVENUE

This program plots a linear revenue curve of the form $Y = MX + B$.

*COST SCHEDULE

This program plots fixed and variable costs.

*CUBIC COST FUNCTION

Plots cost of making an object as a third degree polynomial.

*COPY HGR PRINT

This program was written to copy the HGR PRINT routine used by many of the plotting programs. With a few changes it could be used to copy other binary programs one at a time.

*POWER ESTIMATOR

This program plots a set of points giving the slope and intercept of the linear curve.

*LINEAR PROGRAMMING EXAMPLE

This program is an experiment in linear programming. The author cautions that it is valid for a small number of points.

*MONOPOLY PROFITS

This program calculates the profits to be expected in a monopoly environment.

*MENU

This program is included again to allow easy selection of catalog items. the CATALOG MAINTENANCE and PROG.LIST are missing because this file and EDIT/CREATE FILES text processor can be used to get the same.

*SHOOTING ALIEN

Another of the great graphic programs from the Baked Apple Group in Japan via IAC #4. This program requires the use of the paddle to shoot down the endless stream of oncoming aliens. BRUN the program to get it going. One nice feature of their programs is that one gets back to basic when the program finishes.

*CHECK BOOK BALANCER

For those who have struggled with the bank statement, trying to figure where THEY went wrong, this program may help. It has plenty of prompts to help in the data entry and will print the results if wanted. Modify line 385 for the printer to be used.

*GAMBLER'S RUIN

This program points out the principle that keeps Los Vegas going - given enough chances, the gambler loses in the end. From IAC #4.

*BARN

Another hi-res picture drawing program. This one draws a boxy building - a barn - in three-d. It then allows the user to rotate it, change the view angle, and size. From IAC #4.

*LISSAJOUX

This program will plot a Lissajous figure, the composition of two harmonic motions at right angles. This is demonstrated by connecting sine wave inputs to

both the horizontal and vertical axis inputs of an oscilloscope. This program converts the Apple into a slow speed o'scope.

***EDIT/CREATE FILES**

***LC ADAPTER**

Here is a text processor. This program, written by Bob Matzinger of the Dallas Apple Corps, will allow you to type letters and reports. The material may be saved to disk in a text file. Through careful writing, the program proceeds smoothly and typing is easy. Instruction on how to use it are contained in the file INSTRUCTIONS. You may need to modify the print routine beginning on line 7000. if you want to watch the text as it loads from the disk, remove the REM from line 6150. The routine LC ADAPTER is used to convert the Apple's upper case only display to mixed upper/lower case for a printer. on the screen, upper case is displayed as inverse and lower case is displayed as normal characters. The file PROG.LIST, which normally is included with the DOM, was omitted from this disk. In its place is DOM #3. This file can be read and/or printed by EDIT/CREATE FILES.

As an added benefit, if you haven't already tried it with this program, EDIT/CREATE FILES makes a dandy means of creating EXEC files.

DOM #3

| | |
|------------------------------------|-----------------------------------|
| *A 026 BARN | *A 013 LINEAR PROGRAMMING EXAMPLE |
| *A 009 CHECK BOOK BALANCER | *A 006 LISSAJOUX |
| *A 004 COPY HGR PRINT | *A 006 MAKE RATIO |
| *A 016 COST SCHEDULE | *A 012 MARGINAL REVENUE |
| *A 016 CUBIC COST FUNCTION | *A 006 MENU |
| *T 020 DOM #3 | *A 019 MONOPOLY PROFITS |
| *A 031 EDIT/CREATE FILES | *A 008 MULTIPLE LINEAR REGRESSION |
| *A 012 GAMBLER'S RUIN | *A 005 POWER ESTIMATOR |
| *I 004 MINI'APP'LES | *B 034 RADIO |
| *B 006 HGR PRINT | *A 011 RADIOACTIVE |
| *A 004 HONEYCOMBS AND HERRINGBONES | *B 002 READ FILE |
| *T 028 INSTRUCTIONS | *B 080 SHOOTING ALIEN |
| *B 002 LC ADAPTER | *A 008 STRIP VISICALC |
| | *A 003 TRIANGLE ILLUSION |

***RADIOACTIVE**

***RADIO**

These two programs will graphically demonstrate the meaning of half life as it pertains to radioactive elements. The Basic program will load RADIO, a hi-res picture into the HGR screen and by its display show the concepts. This program was donated thru the IAC #4.

***MAKE RATIO**

This program can be used to convert decimal fractions to rational form.

***HONEYCOMBS AND HERRINGBONES**

This program creates patterns on the hi-res screen. It is from the Dallas Apple Corps.

***STRIP VISICALC**

***READ FILE**

If you have Visicalc, you may need this to 'reset' your files. This program will remove all numeric entries from a Visicalc data file, leaving the formats and fromulas. It was donated by the Dallas Apple Corps.

The binary READ FILE is used by this program.

MINI'APP'LES DOM #2

By Ken Slingsby

The Disk Of The Month returns in January. Unfortunately, the documentation did not get completed in time for the newsletter so it is being distributed now.

The DOM #2 concentrates on utilities with a few general use programs thrown in for good measure.

A WORD OF CAUTION!!

This disk contains more sectors of material than the normal disk. Some copy programs may not copy it correctly. Two programs, B.CATALOG and DISK SPACE are wholly or partly contained in "forbidden" sectors. Please BRUN or RUN these after copying the disk to insure they copied correctly. It may be necessary to copy them to another disk using more conventional methods. This was done as there was a lot of fine material available. It was felt that this would give you more for your money.

The IAC hasn't sent us any new material for some time, therefore they are not included in this DOM. Several programs were submitted by a graduate student in the U of M Business School. These are Managerial Economics and Accounting related utilities demonstrating several concepts of practical use in a business environment. They may not all be of direct use to each of us but they do include some very interesting high resolution graphics, especially plotting with annotation on the graph. The programs are given to the club as demonstrations and may not be valid in all cases.

SYMBOLIC MATH

This program is included in both Integer and Applesoft versions and is a demonstration of polynomial expansion.

SINGLE DRIVE COPY

This program allows the user to selectively copy files from one disk to another using a single drive. With a 48K machine, approximately 110 sectors of Integer, Applesoft, Binary or Text may be loaded before disk swapping is necessary. The program is well written and self prompting. Most error situations are handled without loss of data.

Just in time for those of us who need all the help we can get in filling out that Form 1040 is this program. It will calculate tax due after you have entered income, dividends, interest, deductions, number of dependants, etc. The program will also calculate Schedule G if you want to try Income Averaging. The program uses the binary routine READAT via the & command to read data statements. To change the tax tables for new years, modify lines 1570-1670 observing the cautions contained in the REMS.

READAT

This machine program from the Denver Apple Seed Group is called via the & command from TAX.79. The utility will read data statements into the arrays provided that ALL the required data is in one statement. This is pointed out in the TAX.79 program in REMS.

FILE CABINET.REV4.1

This is a revision of the Apple Data Base Management program done by the Dallas Apple Corps. There are many improvements made to the program such as incorporation of Gary Foot's sort algorithm, inclusion of either 'OR' or 'AND' data in reports and prettied up displays. One nice feature of the reports is that if the selected report is too large for the screen, the printer can be automatically selected. Many REMS have been

added to make understanding of the program much easier. We have made some minor revisions to the received program. Lines 2000-2075 control the printer.

FID

This is the Apple utility written for DOS 3.3. We have found that it can be used for DOS 3.2 as well. This utility allows you to selectively copy, lock, unlock files, check space remaining on the disk. To selectively copy multiple files, the user must enter an '=' for the file name when the programs prompts for it. This will cause the program to list each of the files in the current catalog in turn asking if the user wants to copy, lock, unlock or whatever the file. Otherwise one file at a time is worked upon. If the user has a single drive system, ignore the references to two drives, however a disk swap is required for each file copied. For those of us who do not have DOS 3.3 the Single Drive Copy program above may be just as useful.

DEMUFFIN

Again for those with DOS 3.3 this utility will let you convert back to DOS 3.2. The utility was written by the folks at Call-Apple with corrections made by others to make it run. The screen prompts should make the program self explanatory.

B.CATALOG

This routine will list the remaining disk space at the top of a catalog listing. BRUN the program to get it going. In my experience with DOS 3.2, it is necessary to RESET after this routine to gain use of the computer again.

The following programs were written by a U of M professor in the Business School. Each of them requires the use of the HGR PRINT routine to place text material on the graphs. Not all the donated programs could be

placed on this DOM, so the remainder will be first in line for the next.

HGR PRINT

This binary routine places text on the hi-res screen according to the position of the invisible cursor positioned with VTAB and HTAB. Thus graphs can have axis, titles and other helpful text on them. Examine the several plotting programs described below for further information.

PLOT SUB

This routine will plot a curve fitted to data points entered by the user. An option allows the points to be plotted without the connecting curve.

SCALE PLOT III

This routine plots operator entered functions of T, each having a different color, scaling the axis as needed.

SCALE PLOT IV

This routine will plot operator entered relations with each curve optionally colored differently.

SCALE PLOT V

This routine will plot a function of two variables such as

$$Z(X,Y) = 3X + 2Y$$

One variable is held constant as the other is varied to produce a graph. This can be repeated to produce a family of curves.

SHORT RUN PROFITS

This routine evaluates short run cost, balancing the price and quantity to find the maximum profit. The routine will do a Mad Hen Crosshatch of the selected area where the horizontal lines indicate cost and the vertical lines indicate revenue, giving the resultant profit.

DEMAND SCHEDULE

This routine evaluates price verses demand in a production environment. It is assumed that as the price rises the demand will decrease. The user enters values for price and demand and the program will plot the resultant curve.

ELASTICITY CHECK

This routine plots a linear demand function verses elasticity where elasticity is defined to be the percent change in demand as price increases.

I hope the above descriptions of the business programs are reasonably accurate. They are from a graduate level course, somewhat beyond my understanding. My apologies if I have misinterpreted or mislead you the users.

DISK OF MONTH

We have sold about 120 Nov DCMs and, the 80 Jan DCM's, were all sold by 7:30pm at the last meeting. We do solicit comments from the membership on the DCMs so we can improve the quality of the Product and the way it is sold.

There are just about enough diskettes left over from 'the deal' to satisfy anticipated Feb demand and demand for back issues. We plan to make 125 Feb diskettes and 50 each of Nov and Jan issues.

Because of the amount of paper work, we will no longer accept orders in advance, paid or unpaid. Then we can sell the diskettes at the meeting by simply collecting \$3 and handing out the diskette. Sounds simple, doesn't it? Well it is'nt. You get those diskettes thanks to alot of work by Ken Slingsby (Program Editor), Hugh Kurtzmann (Sales coordinator), Marilyn Thomas (Treasurer), Chuck Thiesfeld and Peter Gilles (Copiers).

ORGANIZING YOUR DISKS

by S. K. JOHNSON

After acquiring 50 or so disks full of programs, there comes a time when one must STOP and CONSIDER "HOW CAN I ORGANIZE THIS 'MESS'?" This is when you realize that a system, that you can quickly identify which disk has the program you want, is needed. The following is a list of alpha codes that could be used to categorize your disks according to the type of programs that they would contain. This alpha character would be followed by a volume number. Volume numbers could be assigned sequentially throughout all categories or started over for each one.

A-APPLESOFT MISC.

Store a copy of disk floating point on these disks as well as Applesoft programs that are in the process of being written. Also used to store programs that don't fit into any other category yet.

B-BINARY MISC.

Used for storing uncategorized binary files. Working disk for machine language program generation.

C-COMUNICATION

Store programs for interfacing printers, modems, etc on this disk.

D-DISPLAY

Programs that draw pictures or use the graphics capabilities of your machine, but don't fit better into any other category belong here on this disk.

E-EDUCATION

Programs that teach or have educational value (MECC programs for example) should be put on these disks.

F-FINANCE

Checkbook and budget type programs fit into this category.

G-GAMES

This is going to be your biggest category, and it could be broken down into sub-categorys (See H and L).

H-HIRES GAMES

Games that use hires graphics could be placed in this category.

I-INTEGGER MISC.

Programs in the process of being created using Integer basic or Integer programs that don't fit into any other category belong here.

J-JUNK

Programs that arn't worth categorizing but you havn't the heart to throw away can be left here.

K-KATALOG (Catalog)

A good place to store a master catalog of all your programs and where to find them.

L-LORES GAMES

Games that use lores graphics could be placed here.

M-MUSIC/SOUND

Programs that generate sounds or play songs should reside on these disks.

N-NEWSLETTER

This disk should have a copy of Dan's Edit on it and should be used to write articles for this newsletter.

O-OOPS

Programs that don't work but you may want to fix "someday".

P- PRIVATE

This disk is reserved for stuff you don't want anyone else to see.

Q-QUALITY

If a program is exceptional and you want to use it to demonstrate your Apple II to your friends, then it belongs under this category.

R-REJECTS

This is stuff you think will never work, but maybe somebody else might like to take a stab at fixing it.

S-SCIENCE/ENG.

Engineering or scientific type programs go on these disks.

T-TEST

Programs that test the system hardware fit into this category.

U-UTILITY

All the good utility programs for your disk system go on these disks.

V-VISITOR

This disk is for your friends, relatives etc. to use. (If they destroy it nothing is lost.)

W-WORD PROCESSING

Word processing programs can all be placed in one category.

X-EXCHANGE

This disk is for bringing programs you have written to the club for exchange with other club members. (example Programs for DOM).

Y-YOUTH

Programs for young kids can be placed here in this category.

Z-Z80

People with a Z80 board should have a place to put there special stuff.

I hope this list will help you resolve the problem of how to organize all of your software. If it gives you ideas then it was worth sharing my ideas with you.

GOOD LUCK AND HAPPY PROGRAMING

Pondering Pascal: Run Time Errors
by Daryl Hammond

The idea for this article came about at the first monthly meeting of the Pascal special interest group on January 7, 1981. This is an attempt to answer some of the questions that came up at that meeting. What I would like to do here and in future articles is to provide a step by step guide leading you through some area of Pascal.

To start off with, I recommend that you spend some time reading through the Pascal manuals that came with your Language Card. I also highly recommend Kenneth L. Bowles "Beginner's Guide for the UCSD Pascal System". This book thoroughly explains how to use the UCSD Pascal system's Editor and Filer. Knowing how to use the system is necessary before you can start learning Pascal.

I am going to keep this as simple as possible to appeal to as many people as possible. Some of the instructions that follow might appear ridiculously obvious to you, but I have many times been left in the dark as to how an author got from one step to another. Keeping this in mind, I have provided the following example to run under Pascal 1.0 on a two drive system. All references to volumes will be to those used on a two drive system, and all references to pressing a specific key will have the form: <Key to press>. Examples: <RESET> means to press the reset key; <E> means to press the 'E' key. (Note: if you have a single drive system see comments at the end of this article.)

One of the questions that came up at our meeting was how to track down a run time error. That is an error that occurs while you are running the program after it has been compiled. To do this you need to have a compiled listing of the program. This is accomplished through the use of the 'L' compile option. The complete example now follows:

1. Insert disk APPLE1: into drive #4 and disk APPLE2: into drive #5 and turn on the APPLE II.
2. When the drives stop spinning press <E>, and press <RETURN>.
3. We are now in the Editor. Press <I> to begin entering the Pascal program (see listing 1). Note, each line of the program is followed by a <RETURN>.
4. If you are a poor typist, I would recommend that you code the first line as follows: (* \$L #5:INCH.LIST.TEXT*) The space between the '*' and '\$' makes this a comment instead of a compiler directive. Without the '\$L' option, the program will compile in thirty seconds. With the '\$L' option, the compilation takes two minutes. After you have removed all the typing errors, type the first line without the space.
5. We have now entered in all the program text. Press <CTRL-C>, press <Q>, press <U>, and we are back at the primary command line.
6. We are now ready to compile the program. Press <C>. After two minutes the compilation will be complete and we will have two new files. SYSTEM.WRK.CODE will be on disk APPLE1: and INCH.LIST.TEXT will be on disk APPLE2: (see listing 2). This second file is the one necessary for solving run time errors.
7. Press <R> to run the program. The program clears the screen and prints two text lines: ENTER NUMBER OF INCHES.; and INCHES =.

8. Enter 24 and press <RETURN>. The system responds with three text lines: DIVIDE BY ZERO; S# 1, P# 4, I# 8; and TYPE <SPACE> TO CONTINUE.
9. Remember the above message, it is the key to finding and correcting the error. Press <SPACE> and the system responds with: SYSTEM RE-INITIALIZED.
10. We now want to look at file INCH.LIST.TEXT, but we have to do some housekeeping first. Press <F> for Filer, press <C> for change, and then type in the following line: SYSTEM.WRK=,SAVE.WRK= and press <RETURN>. This will save the program code and text files and allow us to edit INCH.LIST.TEXT to see if we can find the error. Press <N>, press <Y>, and then press <Q>. We are now back to the primary command line.
11. Press <E> for edit and type the following line: #5:INCH.LIST.TEXT and press <RETURN>. We are now in edit looking at the compiled program listing. There are five columns in front of the program text. These correspond to Line Number, Segment Number, Procedure Number followed by a colon, Nesting Level (or a 'D' for data), and finally Instruction Number which is really the byte offset into the procedure.
12. Looking back at the error message we see that it is telling us that the error occurred in Segment #1, Procedure #4, and Instruction #8. We need to find the line in this file that contains the same (or almost the same) information. We can see from the listing that the Segment Number is 1, so we need to find Procedure Number 4. Press <P> three times. This brings us to Procedure Number 4. Press <CTRL-Z> and then press <RIGHT ARROW> and <REPT> together and hold them down until the full program line comes into view.
13. Looking at Procedure Number 4, we see that BEGIN is Instruction #0; FEET := INCHES / INPERFT is also Instruction #0; and END is Instruction #11. This means that the error occurred in some of the code generated for FEET := INCHES / INPERFT. From the error message, we also know that the problem is a DIVIDE BY ZERO error. By looking at the procedure we see that I set the constant INPERFT to 0 instead of the proper value of 12. This is the error!
14. Now to correct the error and try again. Press <Q>, press <E>, press <CTRL-A>. We are back to the primary command line.
15. Press <F>, press <C> and enter the line: SAVE.WRK=,SYSTEM.WRK= and press <RETURN>. This restores the text and code files for our use.
16. Press <Q>, press <E> and enter the line: SYSTEM.WRK.TEXT followed by <RETURN>.
17. Press <P> three times and position the cursor to line: INPERFT = 0. Change the 0 to 12.
18. Press <CTRL-C>, press <Q>, press <U>, and press <C> to compile the program again.
19. Press <R> to run the corrected program. The program clears the screen and prints two text lines: ENTER NUMBER OF INCHES.; and INCHES =.
20. Enter 24 and press <RETURN>. The system responds with: THE ANSWER IS 2.00000 FEET.

21. Success! (Well almost.) Press <R>, enter 12345678, and press <RETURN>. The program responds with: THE ANSWER IS 1.02881E6 FEET. All looks correct in spite of the scientific notation for the answer. Now press <R> again, enter ABCD, and then press <RETURN>. The program responds with: THE ANSWER IS 1.58417E3 FEET.
22. The problem is in Procedure GETINCHES. It does not check to see if the characters entered are numeric. It uses the ordinal value of any character entered. I will correct this problem next month, or you can do it yourself as an exercise.

Note to Single Drive Users: I originally intended to write this article for use on a one drive system. However, I quickly discovered Pascal release 1.0 will not work properly when you try to write two files to a single drive. (ie. SYSTEM.WRK.CODE and INCH.LIST.TEXT). You can get around this problem by compiling the program twice. Do the following:

1. Insert disk APPLE3: into drive #4 and turn on the APPLE II.
2. When the drive stops spinning remove disk APPLE3:, insert disk APPLE0:, and press <RESET>.
3. When the drive stops spinning press <E>, press <RETURN>, press <I>, and enter in the program from listing 1. Note: the first line of the program should be changed to: (*\$L #4:INCH.LIST.TEXT*).
4. After entering in the program text, press <CTRL-C>, press <Q>, press <U> and we are back at the primary command line.
5. Press <C> to compile the program. After two minutes you will see the following message: IO ERROR: FILE LOST IN DIR. This means we have lost file SYSTEM.WRK.CODE.
6. Now we have some housekeeping to do. Press <F> for filer, press <R>, enter SYSTEM.WRK? and press <RETURN>.
7. Press <Y> to the prompt to remove SYSTEM.WRK.CODE, and press <N> to the prompt to remove SYSTEM.WRK.TEXT. Press <Y> to update the directory. Remember, we only want to remove the CODE file.
8. Press <K>, enter #4 and then press <RETURN>, press <Y>, and press <Q> to return to the primary command line. We are now through with housekeeping.
9. Press <E>, insert a space on the first program line between the '*' and '\$' to make this line a comment, press <CTRL- C>, press <Q>, press <U>.
10. Press <C> to compile the program again. This time file INCH.LIST.TEXT will not be created, but it still exists from the prior compilation.
11. Go to line 7 in the two drive instructions. You should be able to follow along by remembering to change all references to volume #5 to volume #4.

Note to potential newsletter contributors: This article was prepared using the Pascal editor. I have Dan Paymar's Lower Case Adapter chip and program LCMOD from Southeastern Software which modified the Pascal BIOS to accept lower case data entry.

```

1:D 1 (*$L #5:INCH.LIST.TEXT*)
1:D 1
1:D 1 PROGRAM INCHESTOFEET;
1:D 3
1:D 3 (*****
1:D 3 (*
1:D 3 (* PROGRAM : INCHESTOFEET
1:D 3 (* WRITTEN : 01-19-81
1:D 3 (* BY : DARYL HAMMOND
1:D 3 (* PHONE : (612) 487-1002
1:D 3 (*
1:D 3 (* THIS PROGRAM WILL CONVERT INCHES
1:D 3 (* TO FEET. HOWEVER, THERE IS A BUG
1:D 3 (* IN THE PROGRAM THAT WILL CAUSE
1:D 3 (* A RUN TIME ERROR. WE WILL MAKE
1:D 3 (* USE OF THE $L COMPILER OPTION TO
1:D 3 (* ALLOW US TO FIND AND CORRECT THIS
1:D 3 (* BUG.
1:D 3 (*
1:D 3 (*****
1:D 3
1:D 3 VAR
1:D 3 INCHES,
1:D 3 FEET : REAL;
1:D 7
1:D 7
1:D 7
2:D 1 PROCEDURE INSTRUCT;
2:D 1
2:D 1 (*****
2:D 1 (*
2:D 1 (* THIS ROUTINE WILL PRINT
2:D 1 (* INSTRUCTIONS ON THE SCREEN.
2:D 1 (*
2:D 1 (*****
2:D 1
2:0 0 BEGIN (* INSTRUCT *)
2:1 0 PAGE(OUTPUT);
2:1 10 GOTOXY(0,5);
2:1 15 Writeln('ENTER NUMBER OF INCHES. ');
2:1 58 GOTOXY(0,8);
2:1 63 WRITE('INCHES = ');
2:0 84 END; (* INSTRUCT *)
2:0 96

```

```

3:D 1 PROCEDURE GETINCHES;
3:D 1
3:D 1 (*****
3:D 1 (*
3:D 1 (* THIS ROUTINE GETS A CHARACTER
3:D 1 (* STRING AND CONVERTS IT TO A REAL
3:D 1 (* NUMBER.
3:D 1 (*
3:D 1 (*****
3:D 1
3:D 1 VAR
3:D 1 GETSTR : STRING[255];
3:D 129 I : INTEGER;
3:D 130
3:0 0 BEGIN (* GETINCHES *)
3:1 0 GETSTR := '';
3:1 7 READLN(GETSTR);
3:1 28 I := 0;
3:1 32 INCHES := 0;
3:1 38 WHILE I < LENGTH(GETSTR) DO
3:2 48 BEGIN (* STEP THRU STRING *)
3:3 48 I := I+1;
3:3 56 INCHES := (10 * INCHES) +
3:2 78 END; (* STEP THRU STRING *)
3:0 80 END; (* GETINCHES *)
3:0 94
3:0 94
4:D 1 PROCEDURE CONVERTIT;
4:D 1
4:D 1 (*****
4:D 1 (*
4:D 1 (* THIS ROUTINE WILL CONVERT THE
4:D 1 (* VALUE IN INCHES TO FEET.
4:D 1 (*
4:D 1 (*****
4:D 1
4:D 1 CONST
4:D 1 INPERFT = 0;
4:D 1
4:0 0 BEGIN (* CONVERTIT *)
4:1 0 FEET := INCHES / INPERFT;
4:0 11 END; (* CONVERTIT *)
4:0 24

```

```

5:D      1  PROCEDURE PRINTIT;
5:D      1
5:D      1  (*****
5:D      1  (*
5:D      1  (*  THIS ROUTINE WILL PRINT THE
5:D      1  (*  ANSWER IN FEET.
5:D      1  (*
5:D      1  (*****
5:D      1
5:0      0  BEGIN  (* PRINTIT *)
5:1      0  GOTOXY(0,11);
5:1      5  WRITELN('THE ANSWER IS ',FEET,' FEET. ');
5:0     71  END;   (* PRINTIT *)
5:0     84
5:0     84
5:0     84
5:0     84  (*****
5:0     84  (*
5:0     84  (*  THIS IS THE MAIN DRIVER FOR
5:0     84  (*  PROGRAM INCHESTOFEET.
5:0     84  (*
5:0     84  (*****
5:0     84
1:0      0  BEGIN  (* INCHESTOFEET *)
1:1      0  INSTRUCT;
1:1      4  GETINCHES;
1:1      6  CONVERTIT;
1:1      8  PRINTIT;
1:0     10  END    (* INCHESTOFEET *).
    
```

GAME PADDLE PORT MODIFICATION

Another modification that I have made to my Apple is to make it easier to install and remove the game paddles. Till now I have had to always remove the cover of my Apple when I wanted to change from game paddles to the joy stick. To eliminate this problem I installed a ZIF socket in the side of my Apple. ZIF stands for Zero Insertion Force socket. A lever on the socket releases all pressure on the pins of the plug and allows easy removal. This also eliminates wear and tear on the pins of the plug.

If you want to make this modification you will need a 16 conductor cable with a 16 pin plug on the end similiar to the game paddle plug. You will also need a 16 pin ZIF. The cable can be gotten at Radio Shack and the ZIF can be ordered through the mail.

I cut a hole in the side of my Apple and glued the ZIF in place. Others that I know have mounted the ZIF in a small metal box that they also got at Radio Shack, and didn't have to cut into their Apple case.

Then all you have to do is solder the cable to the pins of the ZIF and your home free.

If you use the external metal box method you can also mount a switch to turn off your speaker or a pot to reduce its volume. If you are also installing the modification mentioned in the article "DOS 3.2 & 3.3 ON A SINGLE CONTROLLER", you can mount that switch in the metal box

To make the job look professional use dry transfer press on letters to label the various switches, sockets and pots.

TERRY L PINOTTI

Ad rates for 1981 are as follows:

| | |
|---------------|-------------------|
| Full page | \$30/issue |
| Half Page | \$20/issue |
| Double column | \$4/inch/issue |
| Single column | \$2.75/inch/issue |

Classified ads for members are free

TURNING THE PAGES with DAVE LADEN

BYTE -- February 1981

A Pascal Library Unit for the Micromodem II
by Thomas H. Woteki. Pages 106- 136.

COMPUTE! -- January 1981

Load PET Program Tapes Into The Apple II by
Keith Falkner. Pages 50- 59.

The Musicsystem by Keith Harrell. Page
60. This is a review of Mountain
Hardware's Musicsystem.

Programming And Interfacing The Apple, With
Experiments by Marvin L. DeJong. Pages 61-
66.

CREATIVE COMPUTING -- January 1981

The Apple Graphics Tablet by George
Sternecker. Pages 28-29. The author
reviews Apple's graphics tablet.

Dithering Heights by Ken Recters. Page
108. This is a review of the Dithertizer
II digitizer board for the Apple.

Apple-Sketch by David Miller. Pages 110-
118. This program, written in Applesoft,
allows you to draw high-res pictures with
Apple's paddles.

Apple II Lo- Res Shape Tables by David
Lubar. Pages 120- 124. A machine language
subroutine is included.

Hi-Res Text For The Apple by Paul
Hitchcock. Pages 126-129. Shape table,
Applesoft subroutine, and demo program
listings included.

Lit'l Red Bug by Bish Bobhop. Pages 130-
131. This is a lo-res game written in
Integer BASIC and machine language.

How to Solve It - With the Computer Part
Four by Donald T. Piele. Pages 142-151.

Apple-Cart by Chuck Carpenter. Pages 170-
175. This month, Mr. Carpenter takes a
look at DOS 3.3 and the Z80 Softcard among
other things.

INTERFACE AGE -- February 1981

Microcomputing -- At the Speed of Light by
Eric T. Lane, Ph. D. Pages 74-76 and
136. Includes an Applesoft program called
"Relativistic shapes. "

Amortization Schedule by Gary A. Stotts.
Pages 90-91. This program is written in
Applesoft BASIC.

Information Source for Home and School by
Keith N. Schlarb. Pages 94-95 and 138-
140. This is a program, written in
Applesoft, for the storage and retrieval of
articles.

MICRO -- January 1981

A Better Apple Search/Change by J. D.
Childress. Pages 17-19.

Make a Clear Plastic Cover For Your Apple
by E. J. Neiburger, D. D. S. Page
53.

Searching String Arrays by Gary B.
Little. Pages 57- 59 A Program to search
Applesoft String arrays.

DISK PURCHASES for MEMBERS

Currently 3 Twin Cities merchants are
offering special purchase deals for
diskettes. -

Audio King, Southdale - Maxell at \$3.25

Digital Den, Maplewood- 3M at \$3.

Personal Business Syst- Memorex at \$3.

In case you were not at the Nov meeting,
the bulk purchase of disks made by the club
for Verbatim and Nashuas at \$1. 00 and
\$1. 25 repectively has been reserved for
use for DCMs. This was the result of a
motion and vote on the floor during that
meeting.



Happy 1981! Take a byte from your APPLE for good cheer. Perhaps a little APPLE jack...

A quick fill-in on the plans and activities of some of our SIGs and committees.

Ted Perry, Chairman of our Education SIG, is in the process of collecting project information from all State funding offices and is inventorying educational software developed with the support of Federal grants. These include projects funded under Title 4C, Bureau of Education for the Handicapped, National Science Foundation and others. He says that Greg Vanderheisen with TRACE, University of Madison, Wisconsin can input BLISS symbols which are a standardized set of symbols for sign language communication.

James E. Hassler's Ham Radio SIG meets every Sunday night on 14.329 MHZ at 0100 ZULU (8 PM East Coast time) net control WB7TRQ located in Cheyenne, Wyoming. His group boasts a membership of over 200 Ham's. He's getting calls from Sweden, Africa, etc. They run an exchange library and will exchange with any club.

Dave McFarling of Lincoln, Nebraska, (402) 467-1878, has generously picked up the ball I dropped and is now the Chairman of the Handicapped SIG. Dave was one of the feature writers in the October issue of Softalk. He's a quadraplegic who runs a computer business in his home. He's very interested in getting volunteers to handle areas dealing with specific special needs, e.g. deaf/hearing impaired, blind, learning disabled, etc.

Neil Lipson, who is responsible for the IAC Software Exchange, tells me that the software submissions are getting better. Next to come will be an education disk with math and engineering programs. Joe Budge, our Secretary, confirms that this IAC Disk No. 4 has gone to the "mailing house". This will be followed shortly with another utilities disk. Neil needs public domain software with documentation on the disks.

Major Terry N. Taylor, who runs the IAC Newsletter library, reports that the newsletter portion of the library has over 650 newsletters representing some 9000 pages of APPLE material. He's averaging about 3 - 4 requests per week for information from the library. Also available are 305 different articles (1400 pages worth). Listings are available to member clubs and he will provide copies at 6 cents per page. Present address is 1646 Harper Ave., Redondo Beach, Colo. 90278. In his capacity as librarian for the Denver Apple Pi, he will help new clubs by providing them public domain programs recorded on their two blank diskettes. These should be sent either to: Denver Apple Pi Librarian, P.O. Box 17467, Denver, Colo. 80217, or to Terry Taylor at his address listed above.

P. O. BOX 976, DALY CITY, CALIFORNIA 94017 USA

Randy Field, Chairman for New Club Assistance, will provide some materials, starting this month, and lots more in February. There will be a sample constitution and by-laws, club organization recommendations, suggested officers and committees, as well as ideas for activities and ways to attract new members.

Craig Vaughan of Telecommunications is working together with Mark Robbins' Standards Committee on the development of standards for transferring files. He also reports that SAUG (Source Apple Users Group) is working on the development of on-line libraries with the capability to transfer articles. They are considering publishing an electronic magazine.

Tom Woteki of Washington Apple Pi, (202) 547-0984, has started a Languages SIG. He writes our Pascal "Blaise Away" articles under the pseudonym "Dr. Wo". He's looking for volunteers who will handle APPLE Forth, Pilot, Fortran or whatever. Hopes to have a series of lectures or panels prepared in time for the IAC annual meeting in May in Chicago.

To get additional information on these or other committee activities, check your Winter 1980-1981 Apple Orchard, page 4, for their phone numbers.

Have you heard...?

....We are now officially incorporated within the State of California. Our membership continues to grow - latest count is 200 clubs.

....New subscription address - please note that all subscription requests for the Apple Orchard should now be sent to P.O. Box 1493, Beaverton, Oregon 97075, rather than to Seattle.

....Pascal 1.1 is rumored to be out and available to new Pascal purchasers. Be sure to ask for 1.1, otherwise you may end up with the old version. Manuals are being sent to all Pascal 1.0 registered owners, i.e. those who sent in their warranty cards. Send your master and \$15 to Apple, Inc. to get your updated software. The update and manuals will be available for \$65 at your local dealers for non-registered owners. Apropos of this is the following summary of the differences between versions 1.0 and 1.1, excerpted with permission from the Apple Pascal Update, Apple Part #030-1084-00.

CHANGES THAT AFFECT OVERALL OPERATION:

- All files from 1.0 are included within 1.1 but are not necessarily interchangeable.
- Text files with more than 40 blocks must be divided using the old Editor prior to being used by Version 1.1.
- All read commands will work much more quickly with 1.1.

VERSION 1.1:

- Includes a system swapping option that allows you to maximize available memory space.

- Allows you to shift the keyboard into lower case.
- Sets up consistent rules on uses of suffix .TEXT or .CODE.
- Modifies the one-drive startup.
- Allows you to create Exec files.
- Provides a SAVE command other than through the Filer.
- Provides new editor prompts.
- Includes expanded find and replace commands.
- Adds optional automatic spacing and improves hyphenation.
- Corrects and improves COPY From and WRITE commands and will no longer clobber your file when the buffer is nearly full.

CHANGES THAT AFFECT USER PROGRAMS:

- Upper and lower case letters are interchangeable.
- A new "V" option to check the length VAR parameters of type STRING.
- Program code file can contain up to 16 segments.
- New "Next Segment" and "SWAPPING" options.
- Automatic return to text mode on termination while in graphics mode.
- Improved LIBRARY utility prompt lines.
- A new UNIT called "CHAINSTUFF" to "chain" to another program.
- LIBRARY.CODE used instead of FORTLIB.CODE.

All this and lots more (witness 31. listed problems for 1.0 which have been fixed in 1.1) which suggests that your \$15 buys quite a bit.

....M&R Enterprises says that Supr-Fan is just about ready for marketing and distribution. It's supposed to be whisper quiet.

....RAM card wars - Last summer Andromeda introduced its 16K Expansion Board. Microsoft has just announced a similar board but as of now none have been shipped. We've heard rumors that Apple is about to unbundle the Language Card from Pascal so that it can be purchased separately for about \$250.

....Is there a DOS 4.0 in your future? A new APPLE motherboard?

Bernie Urban - Ed.
January 10, 1981

DO WE NEED A NORTHERN TIER?

For all those that were present at the last meeting it is evident that WE have a problem. By "WE" I mean Mini'App'Les. This club has grown at such a fast rate that it is getting out of hand. The meetings are crowded beyond the capabilities of our present meeting place. This limits the good that the club can do for its members and increases the now difficult job of those who organize the meetings. I would like to say that I am in no way displeased with the job that is being done, but I am afraid of what might come of our club if something is not done soon.

What I propose is that a committee be set up to investigate what other clubs have done when presented with this problem and take the appropriate action. One suggestion might be to form a northern tier of the club that would have a meeting

MARCH MEETING

Wednesday, March 18th, 1981

Topic is undetermined at this time.

MINI'APP'LES
13516 Grand Avenue South,
Burnsville
Minnesota, 55337.

on a different night of the month but have the same content. All members would get the same news letter and have the same board of directors and president. We would add to the board of directors to include a group that lives in the northern area and it would be their job to organize that area.

This action would add personnel that would have the responsibility of copying the Disk of the Month for their area members for sale at the meetings, collect articles for the newsletter from northern tier members and submit them to the general membership newsletter, and in general handle all those tasks that are now handled by Dan and his helpers.

At the next meeting I will bring this point up again for discussion so please come to the meeting with some ideas.

Terry L. Piontti

Bulk Rate
U.S. Postage
PAID
Hopkins, MN
Permit 631