



THE PUG PERIPHERAL



THE MONTHLY NEWSLETTER OF THE
PITTSBURGH USER'S GROUP
MARCH, 1988

CLUB NEWS - Gary Taylor - President

Election of officers is scheduled for the next meeting. At February's meeting all the incumbents were nominated for another term. All the nominees are running unopposed and, therefore, the election will be declared official by acclamation if the present nominees are uncontested.

I received a newsletter from RYTE DATA the day after I sent a letter complaining of the lack response from them. The club also received a copy as part of our newsletter exchange. I guess they are going to make good on our subscriptions after all.

We have changed the bulletin board program to a modified Techie board called DBT ver 7.1. It is a fairware program for which the author is asking \$20.00. We will be running it for the next month or so to see if the membership likes it before sending our money. So if you call 412-824-6779 you will find that you will have to sign up again and get a new user number. You will have to be validated to a higher status before you will be able to download as well. We have been trying to validate everyone within 24 hours. So bear with us until we shake it all out. It has a couple of online games and one of them was hanging the system. It has been taken off the board until we can fix it.

Marty Kroll has released his CATLIB COMPANION disk as FAIRWARE! We will be looking for volunteers to help in producing our library catalog. Look to Susan's article in this newsletter for details. The CATLIB COMPANION uses the library disk produced by CATLIB ver 1.5 and allows one to add descriptive information on each file in the library. Various reports are available as well as the printing of disk sleeves. I will try to have a software review next month if Susan doesn't beat me to it. Many user groups will find this disk valuable in producing their catalogs.

We have purchased a stand alone RS232 interface, an acoustically coupled modem and a TEII Cartridge that we will loan out to any member for a one month period. We still need a modem cable but we should have one before the March meeting. This setup will enable a user with the basic computer to dial in and browse through all the local bulletin boards. The total cost for this setup was \$35.00. So, those of you with just the basic system can get into communications for about the same price. You can call and reserve it ahead of time by calling me at 412-341-4074.

One of our members from South Carolina, Frank Legler, has donated two assembly language programs to the club library that he wrote to demonstrate the graphic capability of the 4A. I'll be demonstrating them in my class at the next meeting. Thanks FRANK! By the way, Frank is looking for a good assembly language paint routine. Can any of you help him out?

At the next hardware class, John Willforth will be assisting us in building SUPER CARTS. Only six people have signed up and there is room for two more. The cost is around \$13.00.

My demo class will include the TI writer article that appears in this newsletter. I will also be showing the PLATO cartridge and some of the software that is still available for it from Control Data Corp.



PUG PERIPHERAL

THE PRESIDENT'S PAGE

For those of you who have purchased EZ-KEYS from Asgard Software, they are publishing a quarterly journal called KEY NOTES. The first two issues will be free. Afterwards a decision will be made to continue with free or paid circulation.

I noticed a feedback column in the February issue of MicroPendium from Stephen C. Lamberti of Texaments, about Cursor speed control for TI ARTIST. He states " While in the drawing mode of TI Artist the cursor speed can be toggled between fast and slow mode by pressing the function and semicolon keys simultaneously (FCTN ;). Although it is difficult to find this speed control toggle in the TI Artist manual, it does appear on the page marked "Key Layout". This particular page also provides valuable information about controlling, color and pen mode" Thanks to Stephen for this helpful hint.

I would like to schedule a class to demonstrate the various graphic programs that are available for the TI. I don't use any graphic programs myself, so I am looking for one of you to share your knowledge with us. Someone purchased all the graphic disk from the library one month, so I know there is some interest in this. Do we have a resident artist in our midst? A starving artist would be OK too.

It appears that ORDER 99, a company that has sold TI products, is no longer supporting our machine. I would advise against ordering from this company. If you have an old catalog of theirs lying around you might want to get rid of it. This information was also published in the February MicroPendium.

I understand that our ambitious newsletter editor will be stepping up to the podium to present a question and answer class on MULTIPLAN at the March meeting. I would like to publicly acknowledge and thank AUDREY BUCHER for the super job she is doing as newsletter editor, without whose help this publication would be much poorer.

I failed to mention the raffle prize on the front page as I usually do. This months raffle prize will be a black and white console. That's right a TI-99/4A computer, complete with power transformer and RF modulator. The raffle tickets will remain only \$1.00.

Next month I will begin a series of articles on the Geneve 9460 computer. Much has been written in other club newsletters about it and MicroPendium is now publishing regular articles. I have refrained from including information here because I did not think there was enough interest in the club. However, John Willforth has promised to dig out his modem if I wrote an article, so that I could transfer it to him for publication in the West Penn 99'er Newsletter. Now, can I pass that up? I will be scheduling a demonstration class in the near future too, but it won't be until the April or May meeting. There appears to more interest in the machine here than I originally thought as more and more members are asking me about it. My reasons for buying it and my personal experiences with the machine and the company that makes it may give you some help in deciding if this move is for you.

A rather fantastic rumor is flying around that TI is getting back in the home computer market. This comes from an article written in the Mid South 99/4A User's Group newsletter dated January and February, 1988. I'll try to confirm or dispell this RUMOR by the next meeting.

"TIPS FOR BEGINNERS"
-BY FRANK N. ZIC

Here we go together-NO.10. Much controversy surrounds the merits of the PRBASE program written by William Warren. Part of the dilemma stems from problems found when trying to load the program or print out the data. I have concluded that most of these problems don't exist when using an unaltered copy of the original program, provided you follow the instructions. But, still you say, I am having trouble with it. Well, it seems that there are a number of altered copies floating around that are not correct or complete. So let's first of all begin with the most recent Ver 2.0. This program allows for use of double sided disks. It should contain files named PRBUTL/BAS and PRBUTL/DGC. On the modified working copy that I have, I added a Call Key program that is a loader for the Utility program. The load program was found in the Dec 1986 issue of BYTE-LINE.

Now let's start separating the apples from the oranges. First, let's give due credit to Mr. Warren for his novel approach to a long standing and difficult problem, that of authoring a really good Data Base program. He has indeed done this and more. The program is functional, versatile and fast (written in assembly language). It is written in a very unique manner that places all the header files in just the first ten sectors, thus leaving the rest of the sectors open for our data storage. Data disks developed in this manner can not be read using the Disk Manager cartridge, so mark these carefully. Then too, the sorting ability of the program is outstanding, recognizing both upper and lower case characters.

My purpose in writing this article is, to give some hints on how we can all better load and use this program. So, first print out and read the DOCS (PRBASE and Utilities) included on the disk, several times and you're ready to experiment with, perhaps the best Data Base program written for the TI computer. An important new proposal has just been announced that would seem to add great importance to the value of the PRBASE program. A group called the Johnson Space Center Users Group in Texas have plans to start a nationwide news article reference publication. They would catalog User Group news letter articles thus providing us with a quick reference to previously written articles. With this listing, you could find information on just about any subject, just so long as it was published in a participating User's group newsletter. They will start with listings for January 1987. Both our PUG and WEST Penn 99'ers will be included in the first 30 groups represented. Aren't we lucky to have forward thinking officers in both our user's clubs? The Texas group has already sent out a sample disk of instructions along with a printed exhibit of how they would like the information prepared. They are asking that everyone that participates

should use the PRBASE as the standard. I must at this point give credit to Jerry Petruak for his help in making a working copy of the program available to the officers of our clubs.

Continuing, first use the Create portion of the program to set up your desired format, it offers plenty of flexibility provided you stay within the parameters set forth in the documentation. Once you have made up the format desired, this section is not needed again until you want to make up a different format for your next project. A printed copy of your arrangement is made by using FCTN-6. Note here that the hard copy will be shown twice. The first print out will have numbered Rows and Columns. The second will have the same numbered designations and also a (++) in all the non-used areas. This clever layout will help you should you want to modify this same format, or for a variation of it in your next layout. It should also be noted that any fancy border that you designed will appear with Asterisks in place of the fancy border you created. The data section allows you to insert all your important records, in areas called fields (32 max). While in this mode you can edit to your hearts content, using up to a maximum of 255 characters. So that this article is not too long, I'll give some short hints: (1) Make all Data disks PRBASE(important); (2) Calling up the initial data file is done by inserting the No.1 after BSK and replacing the (.) with a (?). Subsequent files are called up by simply depressing the enter key; (3) Using a Super Extended Basic cartridge doesn't load the Utility program since the space bar is used to by-pass the normal load feature on a disk; (4) There is no continuous erase or move function (FCTN 9 or B). Release and press the keys for each move desired. In this case, this restriction, looks like a good limiting condition; (5) To load the Utility portion of the disk, when the main computer title screen first comes on with No.1 Basic and No.2 Extended Basic, hold down the space bar before pressing No.2 and continue holding it down until you see the Utility screen come up. Check the listings presented for the functions they can provide; (6) All program loadings are in XB; (7) The letter H is used to bring up the HELP screen, COMMAND SUMMARY. When selecting a Command Option, press the desired key twice. The first press selects and the second press executes the command. Give the program a try, it is very good. If there is any interest expressed, I could have a class on using the PRBASE program. Let me know.

Well, I guess I've covered about as much as I should at one time. So once again let me give congratulations to William Warren for his fine work that should grow in stature as it is used more and better understood. Until next time may the good 4's be with you.

T. I. Writer (Part 3)
Stan Katzman

Up to now we have created a file and have made corrections of any errors produced. The next thing we have to do is save the file to a disk so we can use it in the future if we so desire. (Later when we get into the Text Formatter the document must be on a disk.)

To save a document to a disk do the following: 1)Get T. I. Writer Editor, 2)remove the program disk, 3)insert a formatted disk for your document, 4)compose your document. Now we will save your document and here is how.

At the end of your document go to the command mode (Fctn 9) and now type F <enter> for Files. You will now see a menu of "LoadF, SaveF, PrintF, DeleteF, Purge or ShowDirectory". Now type SF <enter> and you will now see "SAVE FILE, enter filename:" at this point for a one disk drive system type DSK1.filename <enter>. For "filename" type anything you want to call your document. Your document will now be saved to the disk. When the "saving" process is finished you are returned back to the Edit mode in your document. You can now add or change your document and when you go back to the "SAVE FILE, enter filename:" section you will see the last entered filename and all you have to do is press <enter> and your entire file will be saved under that name.

If you want a different filename you can change it, if you so desire.

We can also only save part of a file, if we so desire. This is done the following way: At the "SAVE FILE, enter filename:" enter the starting line number, a space, the stop line number, a space and then DSK1.filename. The starting and stop line numbers are obtained from those numbers you see on the left of the screen. For example you could enter 32 45 DSK1.LETTER and you will only save the material starting at line 32 and ending at line 45 to the disk.

By the way you can "get rid" of the line numbers on the left by pressing Fctn 0 (zero). To get the line numbers back press Fctn 0 again. This is called "toggling". We can now save documents to disk (very important). More next time.

FROM THE LIBRARIAN. . .

It's almost spring! And in honor of spring (and spring cleaning!) we will be using the new CATALOGING LIBRARY COMPANION to organize our new library catalog! I distinctly remember seeing the hands of volunteers at the February meeting, and at the March meeting. I will have for each volunteer a group of ten disks to catalog, as well as a format sheet for each of you. PLEASE if you don't have the time or the equipment, don't volunteer. If, on the other hand, you do have those and need some help, I will be glad to help you. We could even set up a session at my home. Let me know!

My special thanks to all of those people who gave me disks for the library at the February meeting. The only new addition in February was the December DUM, which was a graphics and songs display for Christmas. Very nice, but a bit out of season now! For March, however, the story is different.

Added to the library will be the programs from the January DDM, all utilities, including an Archiver, Trackcopy, Font programs, and more. From Marty Kroll Senior a program to help with your 1987 taxes, a program called Mastering Math donated by ATECO (a practice math program from preschool thru sixth grade), eleven games donated by Gary Groves, including America, Count/duck, Monopoly, and others, a disk of utilities donated by Bob Provins, including Smash, an Archiver and Unlist. Another addition is a program called Doubleprint, which is used to print documents in double columns.

Also reinstated to our library is PRBASE 2.0. As you may remember, 2.0 was demped at our January meeting, and 2.1 was available from the library. The files from the PUG of the newsletter articles was done with 2.0, but can be converted to 2.1 by following the directions with 2.1. However, Frank Zic, our resident PRBASE consultant has made some observations, which basically come down to: 2.0 is better for TI 99/4A, and 2.1 is better for BENEVE. With this in mind, 2.0 will be in the library and available, as well as 2.1. Remember, with either disk set, you must rename the disk PRBASE before you use it, or it will not work. As you can see, the more I get, the more you get! Let's keep it this way! See you at the meeting.

MULTIPLAN

By Audrey Bucher
Part 5

In this article, we are going to concentrate on the Print Command. One word of caution, be sure you recalculate your spreadsheet before printing. If you are saving the spreadsheet, Multiplan will automatically recalculate if you have made any entries, but this is not true with the Print command. There are four subcommands under Print...Printer, File, Margins and Options. Printer will begin printing if printer is turned on. File is used to print the record to disk. This way then be loaded into TI Writer and edited or included in a document.

The other two subcommands are the ones you will mostly be dealing with. I usually set the Options first. The command line when you select O is as follows:

```
area:R1:255
```

```
setup:
```

```
formulas Yes (No) r-c nums: Yes (No)
```

I usually change the area to print only the rows and columns that my spreadsheet occupies. For instance, R1:16C1:11 in our sample check balance sheet. When the sheet is saved, the changes are saved with it. On some of my spreadsheets that are quite lengthy, I usually only print the bottom four lines that give me totals at various times during the month and then at the end of the month, I will print the entire sheet to have a copy of the month's activities. Another option to enter in the area section is a Name. This would be used to print only a specific part of your worksheet that you have named. (More about that next month)

In the setup area you will put your printer configuration. Ex. I use P10 here.

The defaults for printing the formulas and row column numbers are both No. However if there is a reason you would like to have them printed, just change these to Y. If you choose to print formulas, the listing will display the actual formulas that appear in each cell, rather than the calculated values of the formulas as it

normally would. This feature is useful when you want a record of the logic behind the worksheet. Column widths are doubled when formulas is set to Yes. Next, I usually set the Margins. When choosing M, the command line will be as follows:

```
left:15 top:4
```

```
width:70 print length:54
```

```
page length:66
```

The left margin and top margin are given as number of characters, the print length and page length are given in number of lines. You may change these defaults to anything you like in order to center your printout on the page if you choose. Multiplan will print as many columns across the page as will fit within the margins you set. Any columns left over will be printed on a second page with row and column numbers continued. This method of printing permits you to cut and attach the printed pages to form a worksheet with the same dimensions you set up on the screen. Most of my spreadsheets have at least 15 columns in them and I prefer to print them all on one sheet of paper, so I use condensed print. I use the TAMP Print program by J&B Mathis that allows you to set printer controls from within Multiplan using the external copy command. It is a firmware program and is in our library. It has files for many different kinds of printers, select the one that applies to your printer and copy it to your MP disk so it can be accessed. Because I use condensed print, I set my width to 132. Again, I usually adjust my print length and page length to suit the particular spreadsheet that I am working with at the time. Saves the printer from putting a lot of blank lines on the paper if it is a short spread sheet.

Now that you have all the margins and options set, just hit P for print and the printer will start to hum away. If you wish to cancel printing just hit FCTN 4 (Print Cancel). During printing, the Print Cancel key is the only key that is functional and it is only effective while "PRINT on printer" is displayed on the command line. If the printing is cancelled, MP will display the "Printer error" message.

Next month we'll talk about the Name command. Any questions, feel free to call at 881-5244.

CHECKS FOR JANUARY 1988

CHECK #	PAID TO	DEPOSIT	FD00	RENT	UTILITIES	INSURANCE	CHARGES	WTD	MISC	BALANCE
	FORWARD									1009.09
1294	SUD LIGHT				65.00					975.09
1295	BELL 36WK			100.00						875.09
	DEPOSIT	815.00								1400.00
1292	CITY BANK				174.00					1226.00
1237	G EABLE		65.25							1206.75
1218	MASTERCARD						99.72	11.50		1105.03
1239	AMCO							28.11		1077.92
1210	BELL TEL				51.16					1026.76
1241	FOXLAND		55.30							971.46
	DEPOSIT	200.00								1271.46
TOTALS		1185.00	119.55	440.90	116.16	130.00	89.72	39.11	0.00	

WELCOMEWELCOME***WELCOME***

The PUG would like to extend a warm welcome to our newest members...Cliff Peasler, Matthew Chatham, and Dave Silvers. We would also like to convey our continued welcome to Mike Fleming, Bill Krieger, and Bob Hicks who have recently renewed their memberships.

PUG PERIPHERAL

BETTING THE MOST FROM YOUR CASSETTE SYSTEM
 BY NICKY SCHMITT
 NUMBER 12
 UNDERSTANDING - CREATING - AND USING - CASSETTE FILES
 PART I

This month's article has been an extremely hard article for me to write for a number of reasons:

First, this is an area that I have not had very much experience with in the past. At least not enough experience with that I feel comfortable or confident enough to be writing this article with the hope and expectation of passing along some of my own computer knowledge, so that others may learn from my own experiences!

Second, this is an area that very seldom pops up during any of the various discussions that take place at any of the club meetings. I assume that either the idea of data files must be a terribly boring subject or... no one wants to admit that they really don't understand data files either!

Third, and possibly the funniest of all reasons... I have found out that many of the so-called "instruction manuals" that talk about data files, assume that you already know all there is to know about data files, from some other "source" of information. Personally, that makes about as much sense to me as looking a word up in the dictionary 'cause you don't know how to spell it!

Fourth, and I must admit, the most truthful of all reasons... nothing scares me more about the T.I. than those two very haunting words... "FILE PROCESSING". For some reason I would rather have to listen to the sound of chalk "squeaking" on a blackboard for an entire day than to have to deal with the thoughts of having to write this particular article! Mouse-the-lace, I am going to try and face this fear of mine by giving this topic the attention it deserves! As most fellow T.I. users will agree... with just the use of a monitor or a television screen... the T.I. Personal Home Computer is one of the most impressive... powerful... and versatile home computers ever to be built for your money. Not only has this particular "fact" been recognized by other computer

manufacturers, but it continues to stand the "test of time"... even though Texas Instruments stopped marketing the T.I. 99/4A Personal Home Computer back in 1983! However, as I'm sure that most fellow T.I. users will also agree... The T.I. Personal Home Computer can be greatly expanded in that power and versatility through the use of additional accessory devices, such as the cassette recorder. Until now, we have only acknowledged the cassette recorder as an accessory device through which we have the ability to "save" and "load" programs... and although this may be the cassette recorder's primary purpose, we must not fail to acknowledge the cassette recorder's ability to "save" and "load" data files as well! With this thought in mind... I have decided to examine and explain the differences between "programs" and "data files", so that we may all have a firm basis on which to build our knowledge of our computer system. First, let us examine the computer definition of a "program":

A "program" is a set of statements which tell the computer how to perform and complete a specific task. Each statement must begin with a line number and will be executed by the computer in a sequential order, beginning with the smallest line number and continuing until all the line numbers have been executed. Now, let us examine the computer definition of a "data file":

A "data file" is a collection of related data records which are processed or produced by the computer. A "data file" must be used in conjunction with a "program" that has been specifically designed to accept that particular "data file". A "data file" is useless by itself, as it will not "load" into the computer's memory. In other words... a "program" can "run" without a "data file" - but a "data file" cannot "run" without a "program"!

Next month I will continue with the topic of understanding - creating - and using - cassette files. More specifically, I will be concentrating on creating your own specific cassette files - in order to meet your own specific needs. In the mean time... if you need any help or have any questions concerning your cassette system - just give me a call (412-335-0147) and I'll try to help.

 ATTENTION: CREATIVE FILING SYSTEM USERS

Mark Beck, the author of Creative Filing System, a database program has written asking our help. He is in the process of completely rebuilding the CFS by including the best ideas of other databases. He would like the addresses of all CFS users so he may add their names to his update notification list. He would also like to have their ideas and inputs. If you would like to send him your ideas on what you consider the ultimate database, he would appreciate it. The address is Mark Beck, 8 Forrestridge Circle, Valdosta, GA 31602.

LET'S TALK RAM DISKS PART IV

By JOHN F. WILLFORTH

THE MYARC RAM DISK IS ONE OF THE MOST POPULAR AND VERSATILE UNITS ON THE MARKET. MY THANKS TO SCOTT COLEMAN FOR HIS INPUT TO THE PREPARATION OF THIS ARTICLE. SCOTT HAS THE 512K VERSION, AND THIS IS THE MODEL THAT MOST OF YOU WOULD PROBABLY MIGRATE TO IN TIME.

THE MEMORY EXPANSION CARD (AS MYARC CALLS IT), COMES IN THREE SIZES, THE BASIC 32K UNIT, THE 128K MODEL, AND THE 512K RAM DISK. THE CARD IS ARCHITECTURALLY SIMILAR TO THE 128K CARD FROM FOUNDATION, IN THAT IT USES 32K RAM SPACE. IT HAS UP TO 16 BANKS OF 32K, WITH THE ENTIRE 32K BLOCK BEING SWITCHED AT ONCE, VERSUS THE 2K BANK SWITCHING OCCURRING IN THE HRD.

THE MYARC UNIT IS SUPPORTED BETWEEN POWER FAILURES (INTENTIONAL AND NORMAL SHUT DOWNS) BY A 9 VDC SUPPLY WHICH IS PLUGGED INTO YOUR AC OUTLET. THIS IS WHY THE UNIT IS RELIABLE UNTIL THE AC POWER TO THE HOUSE DROPS.

SINCE THE MYARC UNIT HAS THE BASIC 32K EXPANSION MEMORY ALREADY A PART OF ITSELF, THE 32K CARD IN THE PEB, OR A SIMILAR 32K IN THE CONSOLE, IN A SIDE CAR TYPE UNIT, STANDALONE, OR IN THE SPEECH UNIT, WILL HAVE TO GO.

THE MYARC UNIT WILL FUNCTION WITH MYARC'S XBII TO ALLOW BASIC PROGRAMS UP TO 128K IN LENGTH. THIS COULD BE A MAJOR ADVANTAGE TO SOMEONE WHO WANTS TO WRITE A VERY LARGE PROGRAM IN BASIC AND UP TILL NOW BEEN FRUSTRATED IN THE ATTEMPT. REMEMBER ALSO THAT YOU WILL HAVE TREMENDOUS ENHANCEMENTS AT YOUR FINGER TIPS WITH THAT XBII, WHICH DOES REQUIRE THE 128K MEMORY, AND WITH THIS ADVANTAGE ALSO COMES THE WARNING THAT THERE ARE STILL SOME BUGS IN THAT XBII PROGRAM, AND THAT IF YOU DO DECIDE TO USE THIS PACKAGE, THE EFFORT SHOULD BE FOR YOURSELF, SINCE THERE IS NOT AN ABUNDANCE OF USERS WITH THIS SAME SET UP.

THE SPOOLING FEATURE IS REALLY A BIG PLUS FOR THIS RAM DISK. THE UNIT WILL ALWAYS HAVE AT LEAST 80K OF THE 512K SET ASIDE FOR THE SPOOLER. SCOTT TELLS ME THAT THIS LEAVES 400K FOR A RAMDISK (512K - 32K - 80K = 400K). IT WILL DECREASE IN AVAILABILITY, AS THE SIZE OF THE SPOOLER INCREASES.

THE PRINT SPOOLER IS USED BY REPLACING THE USUAL DEVICE NAMES "PIO" OR "RS232" WITH "SPPIO" AND "SPRS232". NO CONNECTION EXISTS BETWEEN THE TWO CARDS INVOLVED IN THE PRINTING PROCESS, THE RAM DISK AND THE RS232 CARD. THE MYARC CARD SPOOLS THE DATA TO BE PRINTED WHEN INSTRUCTED TO DO SO BY EITHER COMMAND ABOVE, AND SENDS IT TO THE RS232/PIO CARD ON AN INTERRUPT DRIVEN BASIS. THIS MEANS THAT DISK ACCESSES WILL SLOW DOWN THIS SPOOLING PROCESS. NOTE THAT IF YOUR PRINTER IS EQUIPPED WITH A SMALL PRINTER BUFFER INTERNALLY, YOU WILL NEVER NOTICE A PAUSE. IN ANY CASE THE MACHINE WILL FUNCTION ESSENTIALLY AS IF IT WERE USED IN CONJUNCTION WITH A LARGE PRINT SPOOLER. THE CORCOMP RS232 UNIT IS NOT COMPATIBLE WITH THE MYARC RAMDISK.

THE RAMDISK CAN SUPERSEDE ANY OTHER DRIVE BY EXECUTING CALL EMDK(N) WHERE "N" IS THE DRIVE NUMBER. CALL EMDK(0) WILL DISABLE DISK EMULATION. THE RAM DISK CAN ALWAYS BE ACCESSED THROUGH DEVICE NAME "RD"

OTHER CALLS INCLUDE CALL RDIR, TO LIST THE RAM DISK DIRECTORY, CALL PART (400,80) OR CALL PART (0,480) AS EX. TO PARTITION MEMORY BETWEEN THE RAM DISK AND THE PRINT SPOOLER, WHERE THE NUMBERS REPRESENT THOUSANDS (K) BYTES. CALL VOL ("NAME") TO RENAME THE VOLUME AS WELL AS OTHER USEFUL CALLS.

I WOULD LIKE TO BE ABLE TO TELL YOU ALL THE SOFTWARE THAT WILL RUN ON THIS CARD AS WELL AS ANY OTHER HARDWARE IT WILL NOT COOPERATE WITH, BUT IN TRYING TO KEEP THESE ARTICLES TO ONE PAGE AND COVER THE ESSENTIALS, I'VE DECIDED TO STOP HERE BEFORE I HAVE THE OPPORTUNITY TO GIVE YOU TOO MUCH INCORRECT INFO.

THE MYARC RAM DISK HAS BEEN VERY WELL RECEIVED BY THE T.I. COMMUNITY, AND YOU CAN'T GO WRONG IN GETTING ONE. THE INTENT IN THESE ARTICLES IS TO GIVE YOU AN OVERALL VIEW OF THE VARIOUS UNITS, SO YOU MAY BE A LITTLE BETTER INFORMED WHEN YOU DO BUY.

NEXT MONTH I'LL TRY TO COVER THE CORCOMP "MEMORY PLUS". THAT IS IF ONE OF THE PEOPLE USING ONE CAN GIVE ME SOME FEED-BACK ON THE UNIT.

UNTIL NEXT MONTH, KEEP THE TIME.

FROM THE MAILBOX

REPRINTED FROM THE WEST JAX 99ER NEWS...FEB 1987

TI-WRITER PRINTER CODES by Alice Cassidy, SFV 77er

One evening as I was bragging that I had complete control of my printer by using the transliterate command, Ken Johnson (our fine editor), asked me why I went to all that trouble? He told me about page 146.

Have you read and understood page 146 of the TI WRITER manual? If you answered **Y E S** then skip this article. If you answered **no** then read on. If the only reason that you use the Formatter is for printer codes then read on. Look at page 146 to get an idea what it looks like. Go to page 98 and read that. If you still don't understand what it says don't worry. Below and on the next page are charts that show what keys to push for different printer commands. If you would like to print your letter in Continuous Expanded (Double-width mode) but don't want to leave TI WRITER to change the printer, just do the following on the top line of your letter.

PRESS: CTRL U, FCTN R, CTRL U, W, CTRL U, SHIFT A, CTRL U.

Both the Epson and the Gemini would use the above. The codes are CHR\$(27);"W" or CHR\$(27)&LHK\$(07)&CHR\$(1). At the end of the letter you would turn the Double-width mode (Continuous Expanded) off.

PRESS: CTRL U, FCTN R, CTRL U, W, CTRL U, SHIFT 2, CTRL U.

All codes can be embedded in the body of your letter but be sure that you take into account the space(s) used by the codes.

BY AN EPSON PRINTER CODES FOR TI-WRITER

SCREEN DISPLAY	DESCRIPTION	CTRL	FCTN	CTRL	KEY	CTRL	SHIFT	CTRL
^	Condensed On					U	Q	U
^	Condensed Off					U	R	U
^B	Double Strike On	U	R	U	A			
^H	Double Strike Off	U	R	U	H			
^M	Elite On	U	R	U	M			
^P	Elite Off	U	R	U	P			
^E	Emphasized On	U	R	U	E			
^F	Emphasized Off	U	R	U	F			
^	Expanded One Line					U	N	U
^W_1	Expanded On	U	R	U	W	U	W	U
^W_0	Expanded Off	U	R	U	W	U	2	U
^S_1	Half Speed Mode	U	R	U	S	U	A	U
^4	Italics On	U	R	U	4			
^5	Italics Off	U	R	U	5			
^B	Master Reset	U	R	U	B			
^S_0	Normal Speed Mode	U	R	U	S	U	2	U
^T	Script Mode Off	U	R	U	T			
^S_1	Subscript On	U	R	U	S	U	A	U
^S_0	Superscript On	U	R	U	S	U	2	U
^_1	Underline On	U	R	U	-	U	A	U
^_0	Underline Off	U	R	U	-	U	2	U
^2	1/6" Line Spacing	U	R	U	2			
^0	1/8" Line Spacing	U	R	U	0			
^3	7/72" Line Spacing	U	R	U	3			
^A_0	5/72" Line Spacing	U	R	U	A	U	E	U

(more)

GEMINI-10X PRINTER CODES FOR TI-WRITER

SCREEN DISPLAY	DISCRIPTION	CTRL	FCTN	CTRL	KEY	CTRL	SHIFT	CTRL
'A-	Condensed On	U	R	U	B	U	C	U
'B-	Condensed Off	U	R	U	B	U	A	U
'G	Double Strike On	U	R	U	G			
'H	Double Strike Off	U	R	U	H			
'B-	Elite On	U	R	U	B	U	B	U
'B-	Elite Off	U	R	U	B	U	A	U
'E	Emphasized On	U	R	U	E			
'F	Emphasized Off	U	R	U	F			
'-	Expanded One Line					U	N	U
'W-	Expanded On	U	R	U	W	U	A	U
'W-	Expanded Off	U	R	U	W	U	2	U
'4	Italics On	U	R	U	4			
'5	Italics Off	U	R	U	5			
'@	Master Reset	U	R	U	@			
'T	Script Mode Off	U	R	U	T			
'S-	Subscript On	U	R	U	S	U	A	U
'S-	Superscript On	U	R	U	S	U	2	U
'--	Underline On	U	R	U	-	U	A	U
'--	Underline Off	U	R	U	-	U	2	U
'2	1/6" Line Spacing	U	R	U	2			
'0	1/8" Line Spacing	U	R	U	0			
'3	7/72" Line Spacing	U	R	U	3			
'A-	5/72" Line Spacing	U	R	U	A	U	E	U

EXAMPLE CODE:

In order to find the code for 5/72" Line Spacing look in your printer manual for the Line Feed Controls. The RX 80 Copier, and the Gemini-10X show this code as ESC "A" n or CHR\$(27);"A";CHR\$(n) or CHR\$(27)&CHR\$(65) &CHR\$(n), where n is as n/72 for the CHR\$(n). On page 98 we are told to press CTRL U to enter the Special Character Mode. Now go to page 146 and look for the ascii code for escape which is ascii code 27. In looking across the page it shows that the key press of FCTN R is the same as CHR\$(27). So we now know that we need to press CTRL U FCTN R CTRL U, to send CHR\$(27) to our printer. Next we need to tell the printer what to do. We do this by pressing the key A, which is the paper feed command for n/72 inch spacing. Next we have to tell the printer what the value of n is. So back to page 146. We know that we want to move the paper 5/72 inch so we go down the ascii code column until we come to the 5. In the press key column we are told to press SHIFT E. We now have the entire code necessary to tell the printer to set the line feed at 5/72" line spacing. Be sure to remember that you must press CTRL U before and after each key press from the Special Character Mode (page 146).

P.S. This entire article was printed using the TEXT EDITOR and in some places I used 17 printer codes to print the Screen Display Column.

TI Writer Tip from HUG

If you are writing a long paper which includes a long word or complex name, used several times, don't type it over and over. Instead, pick an abbreviation such as xx. Pick a couple of letters which you can type quickly and which will never appear together in your letter. Use the abbreviation in place of your long word. Then, when you are finished, use Replace String to substitute the long word for your abbreviation. TI Writer will replace a dozen such words in seconds. The RS entry might be: /xx/National Geographic/

TIPS FROM THE TIGERCUB

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TIGERCUB SOFTWARE

156 Collingwood Ave.
Columbus, OH 43213

Thanks to Steve Chapman and Bill Wallbank of Stone & Webster Engineering Corp. TIOB for this one. If V=21 you are in Extended Basic, otherwise you are in Basic. I am not sure it will work with all consoles and modules. -

```
100 RANDOMIZE 10)
110 V=INT(RND*100)
```

How can you input a blank (CHR\$(32)) with ACCEPT AT? As far as I know, you can't. With INPUT, just hit the space bar, and with INPUT, type " ". But with ACCEPT AT the space bar gives a null string and " " gives " ". However, you can code around it -

```
X$=CHR$(34)&CHR$(32)&CHR$(32)
IF ACCEPT AT(1,1);T$ IF T$=X$ THEN T$=CHR$(32)
```

And, to clear up the puzzling behavior of the "quote marks" -

```
100 CALL CHARPAT(34,CH$): C
ALL CHAR(35,CH$):written by
Jim Peterson
110 DISPLAY AT(1,1);ERASE ALL
:"THE # PUZZLE:" You can't
enter PRINT # or PRINT ## -
the computer demands an
even number of #.
```

```
120 DISPLAY AT(5,1);"1 PRINT
## :prints a null string (in
othing);"2 PRINT ## :print
s #"
```

```
130 DISPLAY AT(8,1);"3 PRINT
#### :prints #;"4 PRINT ##
### :crashes as STRING-NUM
BER MISMATCH"
```

```
140 DISPLAY AT(11,1);"5 PRIN
T ##### :crashes as SYNTAX
ERROR"
```

```
150 DISPLAY AT(13,1);"6 PRIN
T ##### :prints ##;"7 PRIN
T ##### :prints ##;"8 PR
INT ##### :print ###"
160 DISPLAY AT(16,1);"9 PRIN
T ##### :prints ###;"10
PRINT ##### :crashes as
STRING-NUMBER MISMATCH"
170 DISPLAY AT(19,1);"11 PRIN
T ##### :crashes as SY
NTAX ERROR;"12 PRINT #####
### :###"
```

```
180 DISPLAY AT(22,1);"13 PRIN
T ##### :crashes;"14 P
RINT ##### :crashes"
190 DISPLAY AT(24,1);"TRY IT
! LINE NO.(1-14)?" : ACCEPT
```

```
AT(24,25)VALIDATE(IDIGIT)SIZ
E(2)BEEP:LN : IF LN<1 OR LN
>14 THEN 190
200 CALL CLEAR : ON LN GOSU
B 230,240,250,260,280,290,30
0,310,320,330,340,350,360,37
0
```

```
210 PRINT ;:;:"Press any ke
y"
220 CALL KEY(0,K,S): IF S=0
THEN 220 ELSE 110
230 PRINT " " : RETURN
240 PRINT " " : RETURN
250 PRINT "" : RETURN
260 PRINT "" :crashes as
STRING-NUMBER MISMATCH - the
# is misinterpreted as a mu
ltiplier!Same with +,-,/
270 !with anything else, inc
luding numerals, crashes as
SYNTAX ERROR - but inserts a
space before the character!
```

```
280 PRINT "" :crashes
290 PRINT "" : RETURN
300 PRINT "" : RETURN
310 PRINT "" : RETURN
320 PRINT "" : RETURN
330 PRINT "" :crash
340 PRINT "" :crash
350 PRINT "" : RETU
RN
360 PRINT "" : RET
URN
370 PRINT "" : RE
TURN
```

```
280 PRINT "" :crashes
290 PRINT "" : RETURN
300 PRINT "" : RETURN
310 PRINT "" : RETURN
320 PRINT "" : RETURN
330 PRINT "" :crash
340 PRINT "" :crash
350 PRINT "" : RETU
RN
360 PRINT "" : RET
URN
370 PRINT "" : RE
TURN
```

The method of closing an "ajar" file, described in Tip# 28, doesn't always work, but this one seems to be reliable -

```
100 ON ERROR 500 : OPEN #1:
```

```
"DSK1.TEST" : INPUT #1:A$ :
PRINT A$ : STOP
500 ON ERROR 510 : CLOSE #1
510 INPUT "CHECK DISK AND DR
IVE, PRESS ANY KEY":DUMMY$ :
RETURN 100
```

This one is just for the fun of it - it uses the contents of computer memory to create designs -

```
100 DISPLAY AT(3,10)ERASE AL
L:"COLORPEEK":TAB(7)"by J
im Peterson": : " Watch the
computer's memory": "displ
ayed in color."
```

```
110 DISPLAY AT(12,1);"Choose
" : "1) plain colors" : "2
) bars & checks" : "3) patt
erns" : ACCEPT AT(12,8)VALI
DATE("123")SIZE(1);@ : CALL
CLEAR : IF @=1 THEN 170
120 DISPLAY AT(12,5)"wait,
please" : IF @=3 THEN 140
130 FOR CH=32 TO 143 : CALL
CHAR(1,CH,"FO",B): NEX
T CH : GOTO 160
140 RANDOMIZE : FOR CH=32 T
O 80 : FOR J=1 TO 4 : X$=S
EG$("001B243C425A667E8199A5B
DC3DBE7FF",INT(164RND+1)*2-1
,2): B$=B&X$: C$=X&C$:
NEXT J : CALL CHAR(1,B&C$
C$)
150 CALL CHAR(1,55,B&C$):
B$,C$="" : NEXT CH
160 FOR SET=0 TO 14 : CALL
COLOR(SET,SET+1,16-SET): NE
XT SET : CALL SCREEN(2): G
OTO 180
170 FOR SET=0 TO 14 : CALL
COLOR(SET,SET+2,SET+2): NEX
T SET : CALL BSCREEN(16)
180 FOR J=-1 TO -2000 STEP -
1 : CALL PEEK(J,A): A=A-(A
<33)*(A+32): A=A+(A)143)*(A
/2): R=R+(R=24)*24 : CAL
L NCHAR(1,A,32)
190 C=C+(C=32)*32 : CALL
VCHAR(1,C,A,24): NEXT J :
GOTO 100
```

```
110 DISPLAY AT(12,1);"Choose
" : "1) plain colors" : "2
) bars & checks" : "3) patt
erns" : ACCEPT AT(12,8)VALI
DATE("123")SIZE(1);@ : CALL
CLEAR : IF @=1 THEN 170
120 DISPLAY AT(12,5)"wait,
please" : IF @=3 THEN 140
130 FOR CH=32 TO 143 : CALL
CHAR(1,CH,"FO",B): NEX
T CH : GOTO 160
140 RANDOMIZE : FOR CH=32 T
O 80 : FOR J=1 TO 4 : X$=S
EG$("001B243C425A667E8199A5B
DC3DBE7FF",INT(164RND+1)*2-1
,2): B$=B&X$: C$=X&C$:
NEXT J : CALL CHAR(1,B&C$
C$)
150 CALL CHAR(1,55,B&C$):
B$,C$="" : NEXT CH
160 FOR SET=0 TO 14 : CALL
COLOR(SET,SET+1,16-SET): NE
XT SET : CALL SCREEN(2): G
OTO 180
170 FOR SET=0 TO 14 : CALL
COLOR(SET,SET+2,SET+2): NEX
T SET : CALL BSCREEN(16)
180 FOR J=-1 TO -2000 STEP -
1 : CALL PEEK(J,A): A=A-(A
<33)*(A+32): A=A+(A)143)*(A
/2): R=R+(R=24)*24 : CAL
L NCHAR(1,A,32)
190 C=C+(C=32)*32 : CALL
VCHAR(1,C,A,24): NEXT J :
GOTO 100
```

Unlike most of the number games played against the computer, you can win this one -

```
100 CALL CLEAR : CALL SCREE
N(16): DISPLAY AT(3,8)"THE
'37' GAME" !by Jim Peterson
```

```
110 DISPLAY AT(5,1);" We wil
l take turns picking:" a num
ber from 1 to 5, but:" not t
he number that was just:" pi
cked."
```

```
120 DISPLAY AT(10,1);" The n
umbers we pick will be:" add
ed to the total count."
130 DISPLAY AT(13,1);" Whoev
er reaches 37 is the:" winne
r, but if you go over:" 37 y
ou lose."
```

```
140 CALL SHOW(20,1,"Press an
y key to start")
150 CALL KEY(0,K,S): IF S=0
THEN 150
```

```
160 DATA 4,11,17,24,30,37
170 DATA 262,330,392,523,523
180 DATA 1047,784,659,523,52
3
```

```
190 C,P=0 : CALL CLEAR : C
ALL MAGNIFY(2): R=10 : FOR
J=1 TO 5 : CALL SPRITE(4J,
48+J,5,R,10): R=R+30 : NEX
T J
200 CALL SHOW(24,1,"(Y)ou or
(C)omputer first?"): ACCEP
T AT(24,20)VALIDATE("YC")SIZ
E(1);@ : DISPLAY AT(24,1):
""
```

```
210 IF @="C" THEN CALL SHOW
(22,8,"I pick 4"): CALL COL
OR(4,1): P=4 : C=4 : CAL
L SHOW(3,10,"COUNT=4")
220 CALL SHOW(20,8,"Pick you
r number"): ACCEPT AT(20,26
)VALIDATE("12345"): M : IF M
#P THEN 220
230 IF P>0 THEN CALL COLOR(4
P,5)
```

```
240 CALL COLOR(4M,1): P=M :
C=C+M : CALL SHOW(3,10,"C
OUNT="&STR$(C)): IF C=37 T
HEN 320 ELSE IF C>37 THEN 34
0
```

```
250 RESTORE 160
260 READ X : IF C<X THEN B=
X-C ELSE IF X<37 THEN 260
270 CALL SHOW(22,8,"I'm thin
king..."): FOR Y=1 TO 700 :
NEXT Y
280 IF B>5 AND B/2=INT(B/2) T
HEN B=B/2
290 IF B>5 OR B#P THEN B=1-(
P=1)
```

```
300 CALL SHOW(22,8,"I pick "
&STR$(B)): CALL COLOR(4P,5)
: CALL COLOR(4B,1): P=B :
C=C+B : CALL SHOW(3,10,"CO
UNT="&STR$(C))
```

```

310 IF C=37 THEN 340 ELSE IF
  C>37 THEN 320 ELSE 320
320 RESTORE 170 : FOR J=1 T
  O 5 : READ F : CALL SOUND(
  100,F,5,F*1.03,5): NEXT J :
  : CALL SHOW(12,8,"YOU WIN!")
330 CALL SHOW(15,8,"Play aga
  in? (Y/N)"): ACCEPT AT(15,2
  6)VALIDATE("YN"):IF @@
  ="N" THEN STOP ELSE 190
340 RESTORE 180 : FOR J=1 T
  O 5 : READ F : CALL SOUND(
  300,30000,30,30000,30,F,30,-
  4,5): NEXT J : CALL SHOW(1
  2,8,"YOU LOSE!"): GOTO 330
350 SUB SHOW(R,C,T): FOR J
  =1 TO 10 : DISPLAY AT(R,C):
  " " : DISPLAY AT(R,C):T: :
  NEXT J : SUBEND

```

A couple more peculiarities of the computer -

```

100 DISPLAY AT(3,8)ERASE ALL
:"POS PUZZLE #1": :      f
rom TigerCub"
110 DISPLAY AT(7,1):"Why doe
s the computer say:"that X=
1 if you answer the:"prompt
with the Enter key":(null-
string) ?"
120 DISPLAY AT(14,1):"110 IN
PUT M?"
130 DISPLAY AT(13,1):"120 X=
POS("TESTING",M,1):"PR
INT X : GOTO 100"
140 !POS PUZZLE #1 - why doe
s the computer say that X=1
if you answer the prompt wit
h Enter (null-string) ?
- Jim Peterson
150 INPUT M
160 X=POS("TESTING",M,1):
PRINT X : GOTO 140

```

And -

```

100 DISPLAY AT(3,8)ERASE ALL
:"POS PUZZLE #2": :      f
rom TigerCub"
110 DISPLAY AT(7,1):"Why doe
s the computer say:"that th
e first position of:"null-s
tring is at whatever:"posit
ion it is told to start:"we
arch at?"
120 DISPLAY AT(13,1):"100 M#
-----
130 DISPLAY AT(14,1):"110 DI
SPLAY AT(20,1):"POS?" : A

```

```

CEPT AT(20,6):P"
110 DISPLAY AT(14,1):"120 X=
POS("TESTING",M,1): DISPL
LAY AT(22,1):"X=":X : GOT
O 110"
150 M#=""
160 DISPLAY AT(21,1):"POS?"
: ACCEPT AT(21,6):P
170 X=POS("TESTING",M,1):
DISPLAY AT(23,1):"X=":X : G
OTO 160

```

Here is an improvement to the PRINTSPEAKER in Tips #40 - in lines 130 and 160, change the CHR\$(1)&"1" to CHR\$(3)&"255". This will avoid problems if the program being converted opens FILE #1.

Irwin Hott informs me that assembly routines which have been imbedded into XBasic programs, using ALSAVE or SYSTEX, can be saved to cassette and rebound. This could be very useful for those who have a stand-alone or "matchbox" 32k.

And, a mini-game for you to have fun with or improve on -

```

1 : 2-LINE GAME
by Jim Peterson
- use S&D keys to paint the
white line on the highway
2 !if it is too easy, change
the 6 in A=RPT$(CHR$(143),6
) to 5 and the 5 in C>T+5 to
4
100 CALL CLEAR : A=RPT$(CHR
R$(143),6): CALL COLOR(14,2
,2,2,16,16): CALL SCREEN(4)
: T=1 : C=14 : CALL HCHA
R(22,C+2,42): RANDOMIZE
110 T=T+INT(30RND-1)+(T=21)-
(T=1): PRINT TAB(T);A: : C
ALL KEY(3,K,S): C=C+(K=63)-
(K=68): CALL HCHAR(22,C+2,4
2): IF E<T OR C>T+5 THEN ST
OP ELSE 110

```

Memory full
Jim Peterson

RECAP OF MEETING MINUTES OF PITTSBURGH USERS GROUP

Date: Feb. 21, 1988

Librarian Harper gave a Report. 35 DOM's were sold at this meeting. Catalogue of the Library has been up-dated. Program "BP" might be missing from the Funnelweb disc. If so, it will be added to the discs already purchased. The 2.1 version of PR Base in the Library will be supplemented by the 2.0 version. Any copies of the 2.1 version purchased from the Library will be converted to 2.0 at no charge if desired.

Cartridge Librarian Rokke reported that there were 2 sizable donations given to the Library--one by Rick Kepler & one by Bill Krieger. Both numbers were given a round of applause. John Willforth announced that he is donating Logo & Logo II.

Treasurer Shoemaker gave a Report:

Total in bank at end of Jan., 1988 = \$655.16 Approx.
Balance as of start of meeting = \$405.00 There are 12 joysticks available at price of \$5.00 ea.

SYSGOP Kelly reported that a new BBS program has been put into operation. It will accept 300 & 1200 baud rates. All users will have to log-on as first time users. Users will have to use Y-modes to upload or download.

Newsletter Editor Bucher reported that there will be a TI meeting in Ottawa, Canada on 3/5/88. Johnson Space Center Group has catalogued articles of many newsletters and that catalogue is available. Articles of our Peripheral are in the catalogue thanks to our Editor. We were No. 1 all over the country for completeness of our catalogue. Editor needs help forming a data base of articles from Newsletters she is receiving.

Pres. Taylor gave his Report:

Letter to Ryte Data has been written & will be written shortly. The Pug monitor has been purchased & is on hand.

Progress is being made towards a loaner program for communications work. Pug now has a modem & a TE-2 cartridge to loan. We now need an RS-232 stand alone unit.

New members Cliff Keeper & Dave Silver were introduced.

At the March meeting, there will be a hardware class during which Supercart modules will be built. Members who wish to do so will reimburse the PUG \$11.00 for parts needed which will be ordered by John Willforth. Member will have to bring cartridge of Tomb City, TI Invader or Pursac. Pres. Taylor took the names of 6 members who want to participate. Parts for 8 will be ordered.

No additional nominations for officers for the coming year were offered. Nominations were closed.

The one-dollar raffle, Bit-mac, was won by Jim Peters. A 2nd drawing was held for a set of dust covers which had been donated by John Willforth.

Marty Kroll, Sr. announced that he has written an X-basic program for doing the 1040A Tax form & was donating it to the Library.

Marty Kroll, Jr. noted his BA Writer program to the Library.

Demonstrations were given: Marty Kroll, Jr.-- Cat Lib companion program. It is for sale.

Joe & Robb Eki--an expansion box which they built. it contains 2 disc drives, Bran Kracker, Ram disc, disc controller, expanded memory & a IBM style keyboard.

Respectfully Submitted
Herbert H. Reich, Rec. Secy.

MARCH 1988						
S	M	T	W	T	F	S
	1	2	3	4	5	
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		
NEXT MEETING						

APRIL 1988						
S	M	T	W	T	F	S
				1	2	
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
888 824-6777						

CCAC

SOUTH CAMPUS

3PM

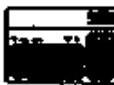
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SCHEDULE OF EVENTS

3-4:30 TI Writer, Questions & Demos with Gary...Ra. 401
 Demo of Plato featured.
 4:30-6 Hardware Class with John Wilforth.....Ra. 475
 Build a Supercart
 4:30-6 Questions and (hopefully) answers.....Ra. 401
 Multiplan, PRBase or whatever
 6:00-? General Meeting

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