Central Texas

June 86

CENTRAL TEXAS 99-4A
USERS GROUP
THE PAPER PERIPHERIAL

From the Presidents Desk

Hello there again. We all gettin' ready for the faire? We need more volunteers for coverage. I also have gotten very little response on the BASIC SIG. I thought that there would be a lot more interest. This is to be a group to help people learn to use BASIC. Along with that we'll have to teach some programming techniques, because BASIC is a programming language. After a while in the course of the group, we'll get on to EXTENDED BASIC and some more advanced programming techinques as well. But right now we don't have enough response to even bother with getting one formally started. I will continue to keep the list at my house and I'll bring it to the faire. (It'll also be at the meeting, but by the time you read this, unless you're at the meeting it'll be too late for that.)

We put together the RAMDISK cards over the weekend. Boy are they fun! I got mine DSSD (720 sectors) and you can really keep a lot on that! And fast-wow! Verifying a Double-sided "disk" only takes 7-8 seconds! If you want to copy files from your friend and they have one - wow! It takes only 10 seconds to copy everything from one ram disk to another! Expect to see them at the meetings and at other get togethers.

Oh well, better be saying bye for now.

Joe

Central Texas 99/4A Users Group
General Membership Meeting
May 8, 1986

The May meeting of the Central Texas 99/4A Users Group was held on Thursday, May 8, 1986 at the Commissioner's Court Room of the Travis County Courthouse Annex building. The meeting was called to order at 7:39pm by the President, Joe Pizzi.

The minutes of the April meeting were read by the Secretary, Mike Schultz.

The Treasurer, Paul Dunn, made a treasury report. In the report, Paul noted that the current bank was starting to charge a service charge. He recommended that we consider changing banks. No decision was made at this time.

Joe Pizzi announced that there was a signup sheet for working the group's booth at the Austin Computer Faire in June. He also reminded everyone of the Faire's date.

Joe Pizzi discussed the BASIC SIG and said that there was a signup sheet available for it also.

Joe Fizzi announced CDC's offer to sell the group Plato software. There was discussion of this subject but nothing was decided.

Mark Milam discussed the Horizon RAMDISK card. Mark wished to buy one of the cards and wanted to know if others were interested. If enough people would buy a one, then the cards and parts could be purchased at a discount.

Mark Milam also announced that The Hideout bulletin board was up and running.

Mike Schultz discussed the situation with the Copperas Cove school.

There was discussion about the Austin Computer Faire tickets and activities.

The meeting adjourned at 8:30pm.

Mike Schultz
Secretary

Ask the Expert?

Someone asked me this question a couple of months ago, and I remember thinking at the time that it would make an excellent article. I haven't written anything about it yet because its such a large answer. So I think that I'll break the answer into two pieces and make two articles out of it.

The question was, "How do you use the TI assembly language debugger?" The reason that this is such a difficult answer is because it isn't easy to get the thing set up correctly to use. This is the subject that I'd like to tackle this month, with few hints on actually debugging to get you started. Then I'll try to get an article ready for next month to cover some advanced techniques.

The first thing that I am going to tell you is that I'm going to try and describe to you how to do this from three different environments: Editor/Assembler, BASIC, and Extended BASIC. In each step I'll describe the general idea, followed by any particulars that the different environments need.

The next thing that I need to tell you is that when debugging from Extended BASIC, you have additional problems. First, you don't have a debugger object yet. The debugger object that TI gave us is in compressed format, and the Extended BASIC loader won't touch it. But this isn't really a problem, just assemble the debugger again, this time without the C option. The source for the debugger is on Editor/Assembler diskette A. Use DEBUGS as the source file name, and have the diskette in drive 1. Place the object in its own file with a name like DEBUGO.

The second Extended BASIC problem is that you've got very little memory space to deal with. If your assembly language subroutine is very large, then it may be impossible to load both it and the debugger into the low part of the memory expansion. If this is a problem, then

you may have to debug the program from BASIC and convert it to Extended BASIC later. A straight forward task to be sure, but still a pain.

   Step 1 - Preparation:There is a little preparation that will be necessary before debugging. First it is very important to have a paper listing of your program. This debugger doesn't have a disassembler and it will be impossible to understand where you are in your program without a listing. Assemble the program and use the L option. For Editor/Assembler this i all you'll need to do. For BASIC and Extended BASIC, I recommend that you write a simple BASIC or Extended BASIC program that sets up any necessary parameters and then calls the program to be debugged. This program can also be used to load the objects and call the debugger the first time (see below).

   Step 2 - Loading:This is perhaps the easiest step. Load the assembly language programs that you want to debug into memory. From Editor/Assembler select option 3 (LOAD AND RUN), then put in the filenames one at a time. From BASIC and Extended BASIC use CALL INIT, followed by CALL LOADs.

   Step 3 - Load Debugger:The TI debugger is on the TI Editor/Assembler diskette A and is called DEBUG. I recommended that you load the TI debugger last. This will make it easier to find your programs in memory later. From E/A LOAD AND RUN option, enter the name of the TI debugger's file. From BASIC use the name of the compressed object debugger and from Extended BASIC use the uncompressed object.

   Step 4 - Enter Debugger:The debugger must execute before your program, in order for you to set somethings up. From E/A LOAD AND RUN option, press <ENTER> at the blank FILE NAME prompt. The PROGRAM NAME prompt will appear. Enter DEBUG and press <ENTER>. From BASIC and Extended BASIC, use a CALL LINK("DEBUG").

   Step 5 - BASIC Debugger Setup:From E/A you'll now see a . on line 24 of the screen. This is the debugger's prompt character, and everything is fine. From BASIC and Extended BASIC however, things are a little different. You'll see the screen scroll once and nothing more. That is because the debugger doesn't realize that it has been called from BASIC and is using the wrong character set for the screen. Enter the letter U and press <ENTER>. The . prompt for the debugger will display on the bottom of the screen.

   Step 6 - Screen Setup:The debugger will need to know how the screen will be handled by the program that is being debugged. For E/A programs that don't change the screen width, location, or character offset, the debugger is already setup for these. For BASIC and Extended BASIC, you'll need to tell the debugger that the screen width will be smaller and the character (or screen) offset is different. Use the I command to do this. Unless you're changing the screen location, leave it at 0, set the screen offset to 60, and the screen width to 20.

   Step 7 - Setting the X Offset:Up to now, all these steps have been fairly obvious, but this one is not. If you'll examine your program's listing, you'll see that there are several numbers next to each line. The second column of these is the memory location of each instruction. They are rather like the line numbers in a BASIC program. Now the assembler has no way of knowing where this program will finally be loaded in memory, so it just 0 as the starting memory location. Now

the loader may actually place the program at any place in memory, depending on what was loaded before it, so to find the actual memory location for an instruction, we have to take the memory location that the assembler produced and add it to the actual memory location that the loader started loading the program at. For example, if the desired program memory location is 156 and the program was loaded at A000, the A156 would be the actual memory location for that instruction. (Still with me?) Now it gets to be a big bore to add that A000 everytime. And its not an easy number like A000 everytime either. Fortunately, the TI debugger provides us with a little help here. The X offset is a value that the TI debugger will add to any number that it sees that ends in X. So, in the above example, if we want to look at memory location 156, we'd type 156X. Orginally, the X offset has the value of 0, but be can change that with the X command. Just type an X as a command. The current value of the X offset (or bias) will be displayed. Enter the new value and return. What should this new value be? As stated before, it should be the beginning memory location of the program. How do we find this? Well, for Editor/Assembler and BASIC, the first program is always loaded at A000, so this makes life a little easier. For Extended BASIC however, life is harder, because the program is loaded in different places of the low memory expansion, depending on the version of your cartridge. So we have the additional problem of locating the program.

Locating a program is something that occasionally even has to be done with Editor/Assembler and BASIC programs, so I'll cover it here. Its not really hard, you just have to locate the DEF/REF table in memory and read it. Recall that the entry point to your program must be declared in the program with a DEF statement. When the loader sees this command, it knows that the label START or whatever is special, and it saves that label and its actual memory address in the DEF table in memory. Then when a CALL LINK is executed, this table is searched for the name of the program and the actual memory location to "call". We can use this table to find the program. The memory location that starts the table can be found at >202A from E/A and BASIC and >200A from Extended BASIC. By using a debugger M command and dumping this memory location and the next, we'll see the memory location that starts the table. Using that address and dumping from it to >3FFF, we can see the whole table. Use the M command to pause the output at anytime, especially when you see the name of the program that you want to debug scroll past. When you see it, look to the left at the hexidecimal dump of memory. Each entry in the DEF/REF table has 6 bytes for the name, followed by 2 bytes for the address. You can find the characters of the name in the hexidecimal dump to the right (remember two hex digits to one character) and then find the address following it. This address is what you use in the X command. (And you should write it down for later reference, unless you like reading hexdecimal dumps.)

Step 8 - Setting the Initial Breakpoint :Find a convient location in your program and set a breakpoint using the debugger's breakpoint command. For example if the first executable instruction in your program is at 80, then command is B 80X.

Step 9 - Exiting the Debugger:Enter the command Q and the debugger will return to the calling program. From E/A this will be the Editor/Assember menu. From BASIC and Extended BASIC, this will be the BASIC or Extended BASIC program.

Step 10 - Executing the Program:Finally execute your program.
From E/A select the LOAD AND RUN option again. Don't enter a filename.
Instead go directly to the program name prompt, enter your program's
name and press <ENTER>. From BASIC or Extended BASIC, use a CALL LINK
to the program following the CALL LINK to DEBUG. You should then see
the WP PC and ST display that the debugger displays when a breakpoint
is encountered.

     From this point debugging take place using techniques similiar to
the BASIC debuggers. You set a breakpoint in the program at a point
where it is having problems. Use the M command to inspect or change
memory locations. Then set another breakpoint further in the program
to then see if the program changed them as expected.

     I know that this process seems quite long, but if you write down
the debugger commands that you need to enter to set up, you'll see that
there aren't many and having a BASIC or Extended BASIC program to do
the loading for you, it makes things go a little faster.

     I promise to complete this article next month with a more through
discussion of debugging techniques. Till then, happy debugging.

     Mike Schultz

The Lightpole's Hideout

     Ladies and gentlemen, we are proud to present "The Lightpole's
Hideout," a bulletin board system running on a TI 99/4A computer. The
Hideout has ten separate bulletin boards, each capable of holding 99
messages. The Hideout also can support up to 200 users with bulletin
board and Electronic Mail service. There is also a Chat feature for
conversing with the System Operator while on line with the board.

     So how do you find The Hideout? First you start up your 99/4A with
your favorite terminal emulation program, then you set the
configuration parameters to even parity, with 7 data bits and 1 stop
bit. Next, you fire up your 2400 baud, 1200 baud, or 300 baud modem
and call (512) 339-1822. When the US Robotics 2400/1200/300 modem
answers the phone, you're there!

     The service is free, so when you see the request for User ID, type
NEW and you'll be inside. The Hideout will take your name, address and
phone number for our records. You'll also be asked to give a handle.
This is the name that others on the board will know you by. If you
like, you may use a made up name or your real one. You also get to
give us a password. This will prevent others from getting into the
Hideout and pretending to be you. Finally, the Hideout will give you a
User ID. It is very important that you write this down so that you can
log-in to the system directly next time.

     Once inside, there are many bulletin boards to look at including
the main board, the Lightpole Garage, the 99/4A Users Group, Atari
Corner, and Apple Cellar.

     Now the first time that you call, you'll only be able to read
messages on the boards. This is only temporary though. If you left
the Lightpole a valid name and phone number, he'll validate your User

ID and you'll be able to post messages.

     You will also be able to send mail to your friends and they'll be able to read it the next time they log-in.

     We'd like this board to be a meeting place for members of the Users Group between meetings. In the future we plan to add the ability to upload and download files, making it possible for us to place programs and articles from the newsletter on the board.

     You why don't ya'll come on by the Hideout for a visit. Like I said, its free and I think that you'll find it fun.

     Mike Schultz

From the Editors Keyboard

     I am sorry that the newsletter is so short this month, but a very close friend of mine passed away, and I really didn't feel like doing this.
     Chuck Holmes was quite a nice guy, and I know he will be missed by all. He had a heart that was as big as his army stories, I know that I will miss him. Although he was a member in our group, he could not attend the meetings on a regular basis (because of his vision). I would like to suggest that the group send flowers to Chuck's family.

     As a few of you noticed, I included a questionaire in your newsletter (month before last). The problem is that I have to date only received three of those questionaires back! Now come on people, I know that you are there, don't you want something from this group! We are not mind readers!!

     Are you doing your part?

     When was the last time that you helped in any of the activities, or how about the last time that you hosted the presentation at the meeting? Or even gave an article for the newsletter?
     Well, this question you will have to live with.
     I AM doing my share, PLUS more!
     I don't have to bring my equipment, BUT I always do, and I try to help all of you in any way that I can! Ask yourself what you have done for the users group, I know that EVERYONE is busy, so am I!
     I would like to have more time to do the things that I want to do, because I like this machine, and I think that it is a long way from dead. I do not know what you (the users of the group) want from the club, I know that I came to this club because it was the only way to get the information that I needed to get started (yes, once I was computer-illiterate too!!) There is an ever increasing need upon the club to provide software and information for the people who have TI's stuck in their closets, that are just now beginning to get interested in them! We cannot turn these peole away with a clear conscience, so what do YOU have to say?
     Drop a note to the Editor if you don't agree. This is why I sent out the questionaires.

                    MARK MILAM

Central Texas 99/4a Users Group

WHO WE ARE:
We are a non profit organization whose membership is open to anyone interested in the activities of the group. All members pay annual dues of $15 . The membership year is one calendar year from recipt of your dues. You are invited to attend a couple of meetings before deciding if you wish to join.

OUR MEETINGS: Our meetings are on the second Thursday of each month, at 7:30 PM, in the County Courthouse at the corner of 10th and San Antonio, on the second floor. Each meeting starts with club business and is followed by a demonstration or talk. The second meeting of the month is our special interest group, the Assembly Language SIG. Everyone is urged to share information on topics related to the TI 99/4A -- software review, hardware availability, programming tips, etc.

MEMBERSHIP: You may join at any tme of the year. Each membership "unit" has one vote in club matters and only one person from a "unit" may hold club office (on the other hand your entire family is invited to serve on club committees and participate at meetings and in meeting planning!). Our monthly newsletter is available to members at the first monthly meeting and is sent to those who don't attend. At meetings, you may buy 5 1/4 " disks for $7 each box. We buy these items in bulk quantity and charge cost plus enough to keep several of each item in our library.

OUR LIBRARY: Currently, our library is located at the librarian's house and will be available at each of our meetings. Our library has some 350 programs on disk and tape. Roughly half of the library's programs will run on just the console (some may require joysticks) and most of the others only require the Extended Basic module. We have programs of all types (games, education, scientific, and business and household management) and we poll the membership's interests before purchasing more. Above all, we are a membership organization. We depend on everyone for directions the group should go and activities we should undertake. Join our group and share your ideas!

MEMBERSHIP STUFF
WELCOME

I wish to welcome to our group the following new members:
(none)
I wish to thank the following persons for renewing their membership:

Barry Six

I hope that all of this information is correct, but if it is not I am sure somebody will let me know.

TIME AGAIN
FOR THE RENEWALS

The following memberships will be expiring this month, and will not be getting a newsletter next month.

Austin Resource Center for Independant living
Keith A. Walkup
Editor

Commercial Ads

Commercial advertisements are welcomed by our newsletter. This newsletter can provide a select, specialized audience for advertisers. Advertisements also help our group by offsetting the printing and mailing costs of the monthly newsletter. Any advertisment must arrive by the first of the month to be included in that month's newsletter.

The cost of placing a full-page ad is $20. The cost of a half-page ad is $10. The ad should be photocopy ready. Some flexibility is allowed in the size of half- and full-page ads--but let's not overdo it!

Classified ads are free to individuals both members and non-members. Send your ads to Central Texas 99/4A Users Group; Box 200246; Austin, Texas 78720-0246

Classified Ads

WANT TO ADD 32K BUT DON'T HAVE A P-BOX? For a mere $35.00 I'll put 32k directly into your console or your speech-synthesizer. You supply console or speech, and cash and I'll do the rest. Call Mark at 836-3301 after 6:00 PM or drop me a note,
Mark Milam ,4203 Yucatan, Austin, Texas 78727-5967

Equipment for sale!!

Brian K. Neidig
Rt. 2 BOX 157cc
Taylor, Texas 76574
TI 99/4a System for sale-includes console, 2 disk drives, 32k memory, RS232, PEB, and a Star Gemini 10x printer. All in EXCELENT condition. I also have 20 modules, 40 diskettes, magazines, and several books. This entire system cost me over $2200. I am asking $800 (NEGOTIABLE). I will consider offers on pieces. Call Brian at (512) 352-8132 (Taylor) after 6 p.m.
Zack Swenson   836-2726   Black console, speech, PE Box, 32k, RS-232, 2 disk drives, software, and a printer (needs repair)
Rick Prekap   255-1065   Console, game carts (3 ea)
Mike Green   251-3684   1604 Magic Hill, Pflugerville, TX.
Complete TI system for $550.00
call or write for more details.
John   258-2134 Console, P-box, 32k, RS-232, Epson RX-80 printer, TI-Writer, E/A, ExBASIC, Forth, and games.
Whole system : $625.00, W/O printer, $475.00, Also has TI-LOGO;$30
TE-2; $10.00
Well that seems to be all this month, if I have made any errors, please let me know, also let me know if the equipment you have listed is sold, or if you want it run in the newsletter next month.
Editor

Current Officers

President   Joe Pizzi   444-6829
          1300 S.Pleasant Valley Rd.,#121,Austin, Texas 78741
Vice President   Al Caldwell   327-8462
Treasurer   Paul Dunn   258-4308
Secretary   Mike Schultz   835-2377
Librarian   Mark Milam   836-3301
Newsletter Editor Mark Milam   836-3301

     Correspondence for the Users Group can be sent to the address given for the President, or to the Central Texas 99/4A Users Group; Box 200246; Austin, Texas 78720.

Meetings Calendar

     The following is a list of the currently scheduled meetings.

     June 12   July 10   August 14   September 11
     October 9   November 13   December 11

     The meeting is scheduled to be held in the County Commissioner's Courtroom on the second floor of the Travis County Courthouse annex, which is at 10th and San Antonio, in Austin Texas.
     Meetings start at 7:30 PM and last until they throw us out!

     The Assembly Language SIG is held the Wednesday following the general meeting.

Newsletter Exchange

     Our users group exchanges newsletters with several other recognized 99/4A Users Groups. The exchange is made with the understanding that, with proper credit to both the newsletter and author (if listed), your users group can reprint articles from our newsletter and, with proper credit, we can reprint articles from exchanged newsletters. (Please feel free to correct any typos, misspelling, bad grammar, etc.; we will do the same.)

     Please send your exchange newsletters to:

               Central Texas 99/4A Users Group
                    P.O. Box 200246
               Austin, Texas 78720-0246

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TEX.

USA 22