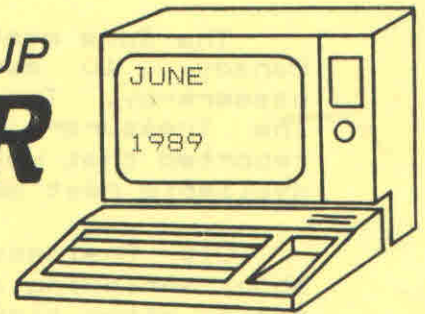


CEDAR VALLEY 99'ER USER GROUP

NEWSLETTER



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******NEWSLETTER TOPICS******

1. Future Meeting Dates
2. Next Meeting Notes
3. Minutes from the June Meeting
4. Annual Hamfest/Computerfest
5. The Library Blurb
6. Debugging, by Jim Peterson
7. Tips from the Tigercub #53
8. Saturday SIG

Please note that the group's mailing address will change Aug. 1st! (The editor is moving!) New address is 377 Cambridge Dr. NE, Cedar Rapids, 52402.

******FUTURE MEETING DATES******

Please mark the following dates on your calendar for future meetings: JULY 10, AUGUST 14, SEPTEMBER 11.

*******NEXT MEETING*******

The regular monthly meeting will be Monday, July 10, at West Music, Cedar Rapids. Opening is at 6:30 PM. Jerry and/or Jim will compare program speed between Extended Basic and Forth, using some library programs obtained from the Bluegrass 99ers.

*** MINUTES FROM THE JUNE MEETING ***

The June meeting was called to order at 6:38 PM by President Jerry Canady. 10 members were present, along with 7 or so wanderers and passers-by. The minutes as printed in the last newsletter were approved. The Treasurer was not present, so his report was not available. Jerry reported that we are in the black somewhere. The Treasurer will be available next meeting.

Old Business: Discussed John Johnson's assembly language program about shrinking and magnifying sprites. Jerry finally found the recipe again, after tinkering with the DM1000 program, and has it running again.

New Business: Gary Bishop will contact the Cedar Valley Amateur Radio Club about obtaining a table for the club at the upcoming hamfest. It is the first weekend in August. J. Johnson from Attleborough, MA wants to exchange libraries with us. He has about 100 disks available. Our library has over 350 disks, about 30 of them are flippies. The rest are SSSD. The Chicago User's Group is swamped concerning exchanging their library. They have many people on vacation, also. We shouldn't expect a response from them until fall. There was a discussion about library exchanges in general, about the possibility of becoming overwhelmed with software. Gary Bishop will contact Bruce Winter to transfer the library listing with comments from IBM dBase into TI format, hopefully in a form compatible with the CATLIB and CATCOM programs. Plato was discussed, and those in attendance agreed that Plato was of little interest to the club members. A TI get together was announced by Gary Bishop. He will have a session at his house on June 24, Saturday, from 10 AM until Noon. There is no agenda, just any hardware or software problems or examples will be addressed. He will have the club library there, so it will be possible to copy programs without the worry about time.

Most of the rest of the meeting was a discussion on how to improve the group, and also the meetings. We need to be listed in Computer Shopper as an active group. We also need to figure out how to advertise locally.

A quick demonstration of TRIS, written by Jim Reiss, concluded the meeting. It is a program patterned after an extremely popular one in the PC world. It involves moving various shaped blocks into a sequence such that a solid line is formed.

Gary Bishop, Secretary ad hoc.

*** * LOCAL HAMFEST/COMPUTER FEST * ***

The annual hamfest in Cedar Rapids is coming up the first weekend in August. I will have a table to sell some of my unused items, and I have made arrangements to have the TI club table next to mine. We must start thinking of what we want to do with the club table. What will we show, whose hardware will we use? We need volunteers to staff the table, etc. Because of my close proximity, I can keep an eye on things, but I can't do it alone. Contact me if you want to help. If I can't get enough volunteers, I will have to start calling for recruits!

Gary Bishop 377-9574

THE LIBRARY BLURB

Hopefully, I will get one of these out every two months (with luck). The most popular item in the library lately has been the pictures from RLE etc. Thanks to the efforts of many of you, all the programs in the library are in the library listings. I called Nick Iacovelli Jr. of the Chicago users group and he said the library exchange is still on but it won't happen until after their summer break is over. A letter is on the way to Marty Kroll Jr. with a check and an explanation of my Catlib and Catcom problems.

Several new programs have come into the library lately that I think are worth special mention. The first is my maxisprite extended basic assembly subprogram that allows sprites four times as large as before to be used. Next is a release from no less than TI itself called SINGINGTI. The original program will have the computer sing some songs that we already have in the library. But, this program's docs show you how to use the files (more assmy subprograms) from the program to get FULL SPEECH CAPABILITIES IN EXTENDED BASIC. This looks very very good to me. TI has reserved some copy write restrictions so contact them before you use these subprograms in any program you intend to distribute. The docs tell you who to contact. Finally an improved version of another TI program called SUPER BUG II is here. It is an assembly language debugger with a built in disassembler, a single step mode and more. (thanks Ed)

The voice in XB may not work if you have Myarc 128 or 512k card or the Foundation 128k card. There is more info about this in the May issue of the Central Ohio 99 newsletter from Washington, Ohio. Also the MAXSPR program is in the Other Graphics section and the SINGINGTI PROGRAM is in the Oldies But Goodies section of the TIABS board at (614) 442-1852. I had a very enjoyable evening getting the SINGINTI program from them. With full voice available in XB I look for more use and improvements in this area in the future.

In the last news letter Gary Bishop mentioned some improvements in our meetings could be in order. To prevent spending time at the next meeting I will present an idea that had occurred to me since the last meeting. The first meeting of each quarter of the year would have its order reversed. The program demonstration would be first and the program name would be in the preceding news letter. This would insure a complete and unhurried presentation every third meeting. Also the club system would be at the side of the room for all meetings so that copying etc. would not interfere with the business meeting and discussions so much.

Finally to the best of my knowledge Sister Pat does not have a speech synthesizer. There may be one available for \$15. Would it be a good gesture on our part to purchase it for her?

J Johnson CR, librarian

WANTED: TI Video Chess cartridge. Will pay any reasonable amount. Write or call me at the address or phone number on the front page of this newsletter.

John Johnson

During the presentation of these techniques the question was raised concerning the pause before the last note of each melody. It was suggested that a very high note (22222) be programmed as the last note so we wouldn't hear the pause. This was done in line 210, and then discovered that it isn't necessary to play that last note as long as it is in the data statement. Note that line 110 has only 13 steps while line 210 has 14 data values. Now the melody plays without a pause.

Now run this short program in basic or Extended basic:

```
100 REM MARY HAD A LITTLE LAMB
110 FOR I=1 TO 13
120 READ N
130 REM SIMPLE MELODY
150 CALL SOUND(400,N,1)
200 NEXT I
210 DATA 659,587,523,587,659,659,659,659,
      587,587,659,587,523,22222
```

Now use the edit features to try the following sounds. For low-low notes, change:

```
130 REM LOW-LOW
150 CALL SOUND(400,440,30,440,30,N*2,30,-4,1)
```

For a simple organ sound, change:

```
130 REM ORGAN
150 CALL SOUND(400,N,1,N*2,4)
```

For a better organ sound, change:

```
130 REM BETTER ORGAN
140 FOR V=5 TO 25 STEP 5
150 CALL SOUND(-400,N,V,N*2,V,N*7.5,30,-4,V)
170 NEXT V
```

For a harpsicord sound, change:

```
130 REM HARPSICORD
140 FOR V=0 TO 30 STEP 7
150 CALL SOUND(-400,N,V,N*2,V)
170 NEXT V
```

For a tremola sound, change:

```
130 REM TREMOLA SOUND
140 FOR J=1 TO 8
150 CALL SOUND(-50,N,1)
160 CALL SOUND(-50,N*1.03,1)
170 NEXT J
```

You may want to SAVE each of these programs. Then, by changing the data in line 210 (see appendix on page III-7 of the Reference Guide) and adding more data in lines 220 etc., and by changing the 13 in line 110 to the number of notes you want to play, you can write your own songs. Remember to put one more note in your data that you have in line 110 so the computer won't pause. Have fun!!!"

**** HELPLINE ****

The Atlanta 99/4A Computer User's Group Call Newsletter also provides us with information pertaining to a new service offered to TI owners called HELPLINE.

This service provides technical support and information pertaining to the TI 99/4A. It is manned by Mr. Guy-Stefan Romano (he use to write articles for the 'Enthusiast 99') on a volunteer basis Monday through Saturday, 9 a.m. to 3 p.m. Pacific time. The service is free, except for the price of the phone call. Mr. Romano's service is in no way connected with the TI-CARES organization. All serious computer users should keep the following phone number handy: (415) 753-5581.

**** TI TROUBLESHOOTING ****

How many times have you sat down with your TI joysticks to play a game and the darn things refuse to work properly? Don't dispare! If you can use a screwdriver, and are patient, repairs can be made.

Determine the joystick that is giving you all the problems. Then, carefully remove the bottom cover from the base of the joystick assembly by removing two phillips head screws. Once the bottom cover is removed you can remove the joystick handle assembly from the bottom of the base assembly. There should be a piece of black foam pressed in the bottom of the base assembly. Carefully remove the foam. The only thing remaining is a plastic sheet with copper runs (lines) on the sheet. Would you believe this is the heart of the joystick? Now, carefully insert the joystick handle through the bottom of the base assembly. Ensure the round-base portion of the joystick handle is against the plastic sheet. Hold the joystick in this position while you turn the computer back on. Load a program that requires the use of the joysticks (use the same one you were using when you noticed the problem). With the program in motion, slowly move the joystick handle to various positions to determine the area in which the joystick refuses to operate properly. Once this is determined, look at the position of the joystick base on the plastic sheet. Keep this position in mind while you remove the joystick from the base. Carefully observe the area on the plastic sheet and check for a crack or other damage on the copper run (line). Once this is determined, press the area with the eraser end of a pencil or carefully with the tip of a butter knife. Some results should be noticed.

When a program runs, even though it crashes or is stopped by FCTN 4 or a BREAK, the values assigned by the program to variables up to that point will remain in memory until you RUN again, or make a change to the program, or clear the memory with NEW. This can be very useful. For instance, if the program crashes with BAD VALUE IN 680, and you bring line 680 to the screen and find it reads
 CALL HCHAR(R,C,CH)
 just type PRINT R;C;CH and you will get the values of R, C and CH at the time of the crash. You will find that R is less than 1 or more than 24, or C is less than 1 or more than 32, or CH is out of range.

In Extended Basic, you can even enter and run a multi-statement line in immediate mode (that is, without a line number), if no reference is made to a line number. So, you can dump the current contents of an array to the screen by
 FOR J=1 TO 100::PRINT A(J)::
 : NEXT J - or you can even open a disk file or a printer to dump it to.

You can also test a program by assigning a value to a variable from the immediate mode. If you BREAK a program, enter A=100 and then enter CON, the program will continue from where it stopped but A will have a value of 100.

You can temporarily stop a program at any time with FCTN 4, of course (the manual says SHIFT C, but it was written for the old 99/4), and restart it from that point with CON. Or you can insert a temporary line at any point, such as 971 BREAK if you want a break after line 970. Or, you can put a line at the beginning of the program listing the line numbers before which you want breaks to occur, such as 1 BREAK 960,970,980

Note that in this case the program breaks just BEFORE those listed line numbers. You can also use BREAK followed by one or more line numbers as a command in the immediate mode.

The problem with using BREAK and CON is that BREAK upsets your screen display format, resets redefined characters and colors to the default, and deletes sprites. So, it is sometimes better to trace the assignment of values to your variables by adding a temporary line to DISPLAY AT their values on some unused part of the screen. If you want to trace them through several statements, it will be better to GOSUB to a DISPLAY AT. And if you need to slow up the resulting display, just add a CALL KEY routine to the subroutine.

Sometimes, your program will appear to be not flowing through the sequence of lines you intended (perhaps because it dropped out of an IF statement to the next line!) and you will want to trace the line number flow. This can be done with TRACE, either as a command from the immediate mode or as a program statement, which will cause each line number to print to the screen as it is executed. If used as a command, it will trace everything from the beginning of the program, so it is usually better to insert a temporary line with TRACE at the point where you really want to start. Once you have implemented TRACE, the only way to get rid of it is with UNTRACE.

TRACE has its limitations because it can't tell you what is going on within a multi-statement line, and it will certainly mess up any screen display. Sometimes it is better to insert temporary program lines to display line numbers. I use CALL TRACE() with the line number between the parentheses, and a subprogram after everything else

```
30000 SUB TRACE(X)::DISPLAY
      AT(24,1):X :: SUBEND
```

Some programmers use ON ERROR combined with CALL ERR as a debugging tool, but I can't tell you much about that because I have never used it. ON ERROR can give more trouble than help if not used very carefully, and I cannot see that CALL ERR gives any information not available by other means.

Sometimes you can debug a line by simply retyping it. It is only very rarely that the computer is actually interpreting a line differently than it appears on the screen, but retyping may result in correcting a typo error that you just could not see. In fact, most bugs turn out to be very simple errors.

When you are debugging a string-handling routine, don't take it for granted that a string is really as it appears on the screen - it may have invisible characters at one or both ends. Try PRINT LEN(M\$) to see if it contains more characters than are showing; or PRINT "*"&M\$&"*" to see if any blanks appear between the asterisks and the string.

There is no standard way to debug a program. Each problem presents a challenge to figure out what is going wrong, to devise a test to find out what is really happening.

Don't debug by experimenting, by changing variable values just to see what will happen, etc. Even if you succeed, you will not have learned what was wrong so you will not have learned anything - and if your program contains lines that you didn't understand when you wrote them, you will have real problems if you ever try to modify the program. (Believe me, I speak from experience!)

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programming. No. 4 contains Tips newsletters Nos. 46-52. These were prepared for user group newsletter editors but are available to anyone else for \$5 each postpaid.

Someone wanted a program to teach how to make change.

```

100 CALL CLEAR
110 DEF I$(X)="*%&SE$(STR$(X),1,POS(STR$(X),".",1)+2)
120 CALL COLOR(1,2,8,2,2,8,3,2,8,4,2,8,5,2,8,6,2,8,7,2,8,8,2,8,9,2,8,10,2,8,11,2,8,12,2,8)
130 CALL SCREEN(5):: D$=RPT$(" ",112)!programmed by Jim Peterson Apr. 1988 for the public domain
140 GOTO 180
150 CALL KEY :: CALL CLEAR :: CALL SOUND
160 A,P,C,B,T,F,O,D,N,S,TT,X,B$,QB,K,M$,J
170 !@P-
180 DISPLAY AT(2,8)ERASE ALL : "MAKING CHANGE";; " by Jim Peterson" :: RANDOMIZE :: CALL KEY(3,K,S)
190 DISPLAY AT(6,1): "Do you want to";; " (1) Input amounts";; " (2) Use random amounts" :: ACCEPT AT(6,16)SIZE(1)VALIDATE("12")BEEP:A :: CALL CLEAR
200 IF A=2 THEN 240 :: DISPLAY AT(2,1): "Price of item? $" ;; ;; ;; :: ACCEPT AT(2,17)VALIDATE(NUMERIC)BEEP:P :: IF P<0 THEN 200
210 DISPLAY AT(4,1): "Amount offered by customer?";;"$ " :: ACCEPT AT(5,2)VALIDATE(NUMERIC)BEEP:C
220 IF C<>INT(C)AND P-INT(P)<>C-INT(C)THEN DISPLAY AT(23,1): "Even dollars please!" :: GOTO 210
230 IF C<P THEN DISPLAY AT(2,3,1): "Not enough!" :: GOTO 210 ELSE IF C=P THEN DISPLAY AT(23,1): "No change needed!" :: GOTO 200 ELSE GOTO 260
240 RANDOMIZE :: P=20*RND+.01 :: P=INT(P*100)/100 :: DISPLAY AT(2,1): "Price of item" :: DISPLAY AT(2,16): I$(P+.001)
250 C=INT(4*RND+1)*5 :: IF C

```

```

<=P OR C=15 THEN 250 :: DISF
LAY AT(4,1): "Customer offers $" :: DISPLAY AT(4,18): STR$(C)
260 B=C :: C=C-P :: T=INT(C/10):: C=C-T*10 :: F=INT(C/5) :: C=C-F*5 :: O=INT(C):: C=C-O :: Q=INT(C/.25):: C=C-Q*.25 :: D=INT(C/.1):: C=C-D*.1 :: N=INT(C/.05)
270 C=C-N*.05 :: X=C*100 :: TT=0
280 DISPLAY AT(7,1): "OK, start adding change from the price until you reach the customer's amount." :: TT=P+.001
290 IF X=0 THEN 330 :: GOSUB 640 :: IF B<>"P" THEN M$="No, give pennies to reach "&I$(TT+X*.01):: GOSUB 670
300 DISPLAY AT(11,1): "How many pennies?" :: ACCEPT AT(11,19)VALIDATE(NUMERIC)BEEP:QB
310 IF QB=X THEN 320 ELSE IF TT+QB*.01>B THEN GOSUB 680 :: GOTO 300 ELSE GOSUB 690 :: GOTO 300
320 DISPLAY AT(7,1): "You have reached "&I$(TT+X*.01):: ;; ;; :: TT=TT+X*.01
330 IF N=0 THEN 380 :: GOSUB 640
340 IF B<>"N" THEN M$="No, if the cents portion is .10 or .20 or .35 or .45 or .60 or .70 or .85, add a nickel" :: GOSUB 670
350 DISPLAY AT(11,1): "How many nickels?" :: ACCEPT AT(11,19)VALIDATE(NUMERIC)BEEP:QB
360 IF QB=N THEN 370 ELSE IF TT+QB*.05>B THEN GOSUB 680 :: GOTO 350 ELSE GOSUB 690 :: GOTO 350
370 DISPLAY AT(7,1): "You have reached "&I$(TT+N*.05):: ;; ;; :: TT=TT+N*.05
380 IF D=0 THEN 430 :: GOSUB 640
390 IF B<>"D" THEN M$="No, add dimes to reach .25 or .50 or .75 or .00" :: GOSUB 670
400 DISPLAY AT(11,1): "How many dimes?" :: ACCEPT AT(11,19)VALIDATE(NUMERIC)BEEP:QB
410 IF QB=D THEN 420 ELSE IF TT+QB*.1>B THEN GOSUB 680 :: GOTO 400 ELSE GOSUB 690 ::

```


Saturday, June 24, I hosted an intimate gathering for the purpose of doing any kind of TI stuff the attendees desired. One member came all the way from Manchester. Now, we only have one member in Manchester, so you might be able to figure out who he is! Anyway, our gathering helped in configuring Funnelweb, and poked around in FORTH, running many screens, and just being generally delighted. I had two complete systems available, because I was checking out one from Sister Pat at the time. The entire club library was available for perusal, but it drew little interest. I even copied Morse code and teletype with my Kantronics interface for the TI. The zesty fruit punch was a hit, and everyone that came had a hoot! If you did not attend, you missed an opportunity to compute in an unhurried and relaxed atmosphere, with assistance and advice readily available. We should do it again somewhere. If you have suggestions as to another time or place, contact one of the officers. I would be willing to host the gathering again soon, but not necessarily on a monthly basis.

I have received permission from Sister Pat Taylor to sell some of her extra hardware and software. I have a list of items available, and will have all of the equipment at the next meeting. She has come into quite an extensive collection of TI equipment, and does not need all of it. Also at the next meeting, I will have some full height DS Tandon drives for sale. These have all been checked out, and will be backed by my usual rock-solid 30 feet/30 second guarantee.

Gary

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EXCHANGE NEWSLETTER EDITORS!
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EFFECTIVE AUGUST 1st

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