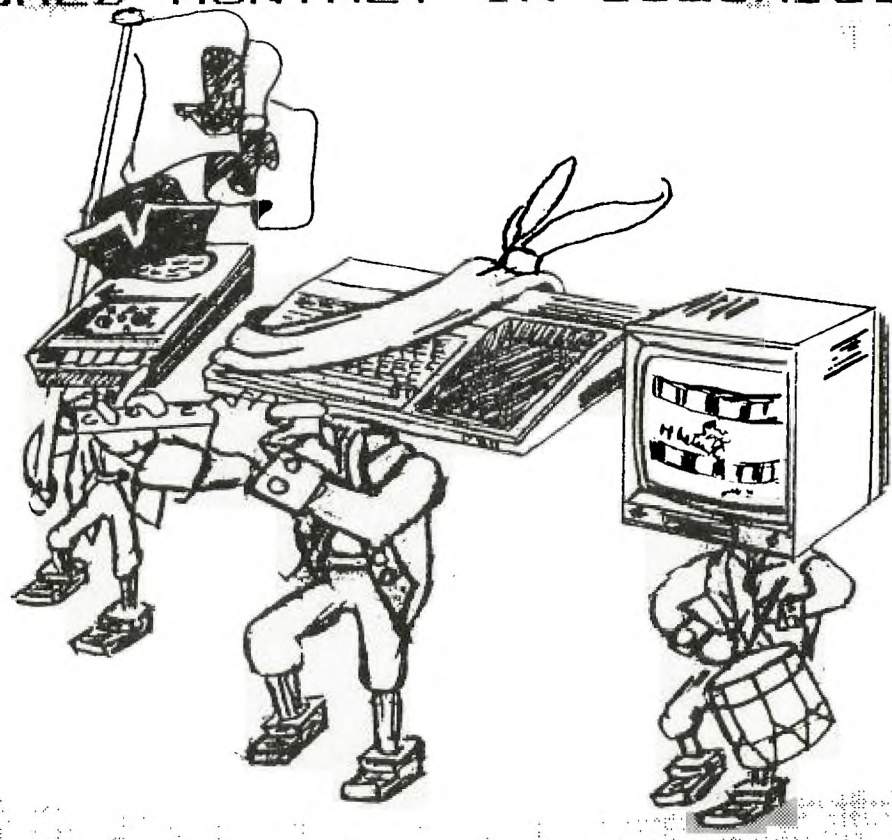
Spirit of 99

THE OFFICIAL NEWSLETTER OF THE CENTRAL OHIO NINETY-NINERS INC.

PUBLISHED MONTHLY IN COLUMBUS OHIO



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Spirit of 99

VOLUME 2 NUMBER 7 JULY 1984

THE OFFICIAL NEWSLETTER OF CENTRAL OHIO NINETY-NINERS

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Central Ohio Ninety-Niners Inc. is a non-profit organization comprised of MEMBERS who own or use the TI99/4A computer and it's related products and have paid a yearly membership fee of $15.00 and whose main objective is the exchange of Educational and Scientific information for the purpose of computer literacy.

C.O.N.N.I. meetings are held on the Second Saturday of each month at the Martin Janis Senior Center on East Eleventh Avenue at the Ohio State fairgrounds.

Meeting time is at 9:AM, Meetings are open to the public.

Membership dues ($15.00) are payable yearly to C.O.N.N.I. and cover the imeadiate family of the member. (an application has been placed in this news letter for your convenience). Please address it to Art Morgan, Treasurer 3087 Brandon Rd. Columbus Ohio 43221.

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IF YOU HAVE QUESTIONS, PLEASE CALL 486-7262 **WEDNESDAYS** ONLY 8AM-3PM. I WILL DO MY BEST TO HELP YOU.

PAT SATURN (ED)

NOTICE

THERE WILL BE NO NEWSLETTER FOR AUGUST::::: HOWEVER THERE MAY BE A MEETING .... SOMEWHERE

FOR SALE

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FROM THE PRESIDENT

Please help us to make this club the best club it can be!... and help yourself too!!!

First, complete my survey in this newsletter, and bring it to the meeting or mail it in...PLEASE!

Second, if you have questions and better yet, tips on the computer, write our newsletter so we can publish them!

Third, don't do nothing!! Fill in the survey and let us know what you want to see the club do. Make yourself heard!!

Some comments about our club:

NEWSLETTER- We apologize for the late issue last month. We are taking steps to avoid this in the future, and the first will probably be to give our newsletter editor, Pat Saturn, a much needed rest, and not issue a newsletter in August. During that time we will be looking for a lot more articles and making better plans for the newsletter!

RAFFLE- Last month (June) we planned a raffle, but since the newsletter was late a lot of you didn't get word about it...so we will be having the raffle on July 14th!! So be there for some really nice prizes!!

PROGRAM FOR JULY- Texas Instruments Representative, Linda Weaver, is scheduled to speak at our July meeting, and I for one am looking forward to her visit to our chapter! Come and help us welcome her to CONNI USERS GROUP!!!

SEE YOU ON JULY 14th!

PRESIDENT'S SURVEY & OPINION POLE
JULY 1, 1984

PLEASE RATE THE FOLLOWING: XLNT GOOD FAIR

1. MONTHLY MEETINGS.....
2. NEWSLETTER.....
3. LIBRARY.....

MAKE ANY COMMENTS REGARDING 1, 2, OR 3 ABOVE IF YOU WISH:

1.

2.

3.

COMPLETE THE FOLLOWING PHRASES:

4. THE CLUB WOULD BE BETTER IF
5. I AM LOOKING FOR MORE INFORMATION ABOUT
6. THE BEST THING ABOUT THE USER'S GROUP IS
7. THE WORST THING ABOUT THE USER'S GROUP IS
8. THIS SURVEY SHOULD ASK
9. I WOULD LIKE THE NEWSLETTER TO ANSWER THIS QUESTION
10. THIS SURVEY

The Very Best From The TAB Family To the Spirit of 99 Family.

A Message from Gordon Saturn,
Editor of the Spirit of 99

Dear TAB Books:

I don't make a practice of writing letters or testimonials, however, I feel that this one is long overdue. Each time I contacted your company, I've been treated with respect and my request was handled in a timely and professional manner. It is nice to know that in this day of "get the sucker to buy", there is still a company who cares what they sell to their customer.

I am especially fond of your books on the 99/4A computer. I have found them to be of excellent quality and low risk. I choose the hardbound editions because I want them to last. They look as handsome on my library shelf as my more expensive volumes. I will continue to buy TAB books in the confidence that I will be getting top quality, well-written books.

Sincerely,
Pat

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By Brian Berry

A VERY POWERFUL GRAPHICS COMMAND

This month, I would like to talk about a very powerful graphics command that is often overlooked by programmers. It is the CALL COLOR statement.

Most programmers, when writing a game or other application that uses color graphics, use CALL COLOR at the beginning of the program and leave it at that. They don't realize that they can use CALL COLOR for vivid displays, animation, and lightning-fast screen changes.

First of all, you are able to make a sprite or color set seem to glow or radiate color. this is done by rapidly changing the color of the object:

```
100 CALL CLEAR :: CALL SCREEN(2)
110 CALL VCHAR(1,3,42,24)::
CALL VCHAR(1,28,42,24) :: CALL HCHAR(1,3,42,28) :: CALL HCHAR(24,3,42,28)
120 CALL CHAR(44,"80E0F8FEFFFFFFFFFFFFFFFFEF8E080000000000080E0F8FEFEF8E08000000000")
130 CALL SPRITE(#1,44,2,96,1,0,20)
140 FOR T=3 TO 16 :: CALL COLOR(#1,T,2,T,T) :: NEXT T
150 GOTO 140
```

The above method is very effective for explosions, laser beams, an emphasized bar in a bar graph, emphasized words of text, or anything else that needs to be emphasized.

Another use is in creating what I call "Placeholder Sprites." These are useful if you want several marked spots that will report when another sprite passes over them. While you can use the CALL COINC statement to test against each point, such as:

```
100 CALL SPRITE(#1,42,2,1,1,INT(RND*255)-128,INT(RND*255)-128)
110 CALL COINC(#1,20,30,16,N)::IF N THEN STOP
120 CALL COINC(#1,75,60,16,N)::IF N THEN STOP
130 CALL COINC(#1,121,14,16,N)::IF N THEN STOP
140 GOTO 110
```

,there is a better way. Set up sprites at all those locations:

```
100 CALL CLEAR::CALL SCREEN(15)
110 CALL SPRITE(#1,42,2,96,96)::CALL SPRITE(#2,42,1,12,65,#3,42,1,75,75,#4,42,1,30,30)
```

Notice that all of the sprites have the same pattern (42-the asterisk), but only one is visible. All of the other sprites can have their color changed in case of a coincidence.

```
115 CALL JOYST(1,X,Y):: CALL MOTION(#1,-Y*3,X*3)
120 CALL COINC(ALL,X):: IF X THEN 130 ELSE 115
130 FOR Z=2 TO 14 :: CALL COLOR(#2,Z,#3,Z,#4,Z)::NEXT Z
140 END
```

This is the routine that checks to see if the main sprite, steered by the joystick, has hit one of the invisible sprites. This can be done with only one CALL COINC, which will return a non-zero value if ANY sprites are touching.

If a coincidence is detected, all of the "Placeholders" will change color with the method described earlier in this column.

The Final use for CALL COLOR that I will describe this month is my personal favorite. It allows you to rapidly update the screen, making your graphics routines look a lot smoother.

```
100 CALL CLEAR::CALL SCREEN(2)
```

CONTINUED

X-BASIC FROM 5

```
110 A$=RPT$("F",16)::CALL CH
AR(36,A$,42,A$,48,A$,58,A$)
120 FOR T=1 TO 12:: DISPLAY
AT(T,1):RPT$(CHR$(36),T);RPT
$(CHR$(42),((13-T)+1)*2);RPT
$(CHR$(48),T) :: NEXT T
130 FOR T=24 TO 13 STEP -1::
DISPLAY AT(T,1):RPT$(CHR$(36
),25-T);RPT$(CHR$(58),26-((2
4-T)*2));RPT$(CHR$(48),25-T)
::NEXT T
140 FOR X=1 TO 4:: CALL COLO
R(X-1,1,1,X,11,1)
150 CALL KEY(0,K,S)::IF S<1
THEN 150
160 NEXT X::CALL COLOR(4,1,1
)::GOTO 140
```

Well, that's all for this month. If you have any questions about this column or the material presented in it, or if you have an idea or trick you would like to see here, or even if you just want to say "Write something about....", just write:

BRIAN BEERY
86 ERIE RD.
COLS.,OH 43214

Or, call me at (614)262-7769.

See you at the meeting!

WAYS & MEANS

Dianne Martin

The raffel planned for the June meeting, has been postponed until the July meeting.

Ticket prices are as follows:

$1.00 each or $2.00 for three (3) tickets.

I will be set up prior to the meeting anxiously awaiting to seperate you and your hard earneddollars. Of course, all proceeds from ticket sales will benefit the user group

Below is a partial list of donated items.

Extended Basic cartridge from Texas Instruments (Dayton off.)

$10. Gift certificate from Little Professor (Lane Ave.)

Software on Diskette from Tigercub Software

Profesional B&W Portrait from Grant Nichols Photographics

TI Invaders Cartridge from Zettler hardware (Kingsdale)

Turtleshel computer cover (clear Plex) from Otherware

We have several more **money-making projects;** but for any of them to be successful, we are going to need a few more people on this committee. I realize we all have full scheds, but we really need some of your time and ideas.

If you would like to become a part of this great financial empire (snicker, snicker), please see me at the July meeting, or call me at home after 7 pm. at 239-7223

NOTICE: Anyone interested in or currently doing Genealogy research. We feel we could share researching tips and information and of course have the desire to computerize the records.

Anyone who has information on any TI or other software for Genealogy records should contact any of the following persons either at the July meeting or by calling one of us....thanks

Dick Berry 262-7769
Joellen Roush 457-0900
Dianne Martin 239-7223

AGENDA

JULY MEETING AGENDA

9:00 DOORS OPEN
LIBRARY RETURNS
DEMO SET-UP

10:00 PROGRAM-TEXAS INSTRUMENTS
RAFFLE
OPEN FORUM

10:30 LIBRARY OPENS
PLAY COMPUTER SPECIAL INTEREST GROUPS MEET

12:00 MEETING CLOSES
HEAD FOR THE POOL!!!

PRESCAN: A WELL-KEPT SECRET?

by Irwin Hott

Prescan is one of the options available in TI Extended Basic. When you "RUN" a program the computer will check each line to see if there are arrays, variables etc. that need to have memory space allocated. Since many of the lines in a program do not have such items the prescan command is available, to skip lines that do not have to be checked. Your program will begin to execute more quickly if the prescan commands are used.

The prescan commands are; (prescan on !@P+) (prescan off !@P-) The following items must be included before the prescan is turned off: first references to: call sub programs data statements strings and variables other items: all def statements dim and option base statements sub and subend statements (note that a variable in a user-written subprogram is unique from any other variable used elsewhere in the program) To use the prescan commands: first make sure your program runs properly. If a variable is not included when prescan is on, and is encountered later in the program, you will get a syntax error in a line that appears to be correct. If you would like more information about prescan, consult the addendum to the TI Extended Basic manual.

Here are a couple of examples showing how prescan could be used: The simplest example is that of a music program with no variables. Just add the prescan off command after the first call sound statement.

Remember, if there are varialbes in the program, they must be included before the prescan is turned off.

Here is a more complex example:

```
2 CALL LINK("SETUP","DSK1.DATABASE")
4 ON ERROR 5 :: PITCH=43 :: SLOPE=128 :: GOTO 50
5 CALL ERR(CODE,TYPE,SEVER,LINE):: CALL SOUND(75,220,5):: PRINT CODE;TYPE;SEVER; LINE
6 SP$="ERROR IN LINE"STR$(LINE)&" :: TYPE"&STR$(TYPE)&" :: CODE"&STR$(CODE):: GOSUB 20 :: STOP
7 DIM T$(5),M$(180):: AA$ :: B$ :: PHO$ :: S$ :: A,DE,DEL,I,II,J,K,L,KEY,KY,M,N,O,R,S,SS,ST :: CALL CLEAR :: CALL ERR :: CALL KEY :: !@P-
20 CALL LINK("XLAT",SP$,PHO$):: CALL LINK("SPEAK",PHO$,PITCH,SLOPE):: RETURN
50 T$(1)="DIS/FIX" :: T$(2)="DIS/VAR" :: T$(3)="INT/FIX" :: T$(4)="INT/VAR" :: $(5)="PROGRAM"
60 II=1 :: GOTO 80
70 SP$="MASTER DISK 1 TO 3" :: GOSUB 20 :: PRINT "MASTER DISK (1-3) " :: ACCEPT AT(12,12)BEEP VALIDATE("123")SIZE(1):II
80 CALL CLEAR :: A=1 :: I=0 :: L=10 :: OPEN #3:"DSK"&STR$(II)&".",INPUT,RELATIVE,INTERNAL :: INPUT #3:AA$,J,J,
90 PRINT "DISK";STR$(II);"-DISK NAME = ";AA$:"AVAILABLE = ";K;"USED = ";J-K 100 SP$="DISK"&STR$(II)&":DISK NAME="&AA$&":AVAILABLE="&STR$(K)&":USED="&STR$(J-K):: GOSUB 20 :: GOSUB 200
```

This is part of a disk catalog program using text-to-speech. Lines 2-6 are part of the speech routine, and are not included in the prescan list in line 7. Line 7 contains a list of variables and key words occurring in the remainder of the program.

The statements are not performed, but memory space is allocated

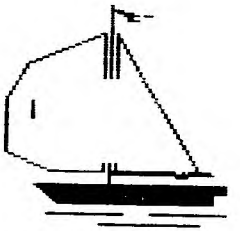
This is the most efficient use of PRESCAN

I used "programming aids iii" to get a list of the variables and key words in the program. If you are adding prescan to an existing program, remember to remove the idm statement, if it occures later in the program. The other alternative in using prescan is to turn it on and off at the appropriate points in a program.

Just run prescan off after lines that contain variables, and on again at the next line that needs to be prescanned. Give prescan a try, i think you will find it useful.

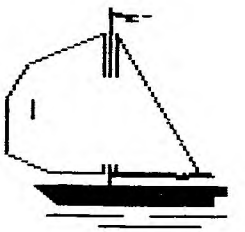
BIGGIES BITS


```
50 !sailboat converted to
    extended basic from a
    program by Terry E.
    Manning of A9CUG 2/84
60 FOR SET=9 TO 12 :: CALL C
OLOR(SET,13,1):: NEXT SET ::
 CALL SCREEN(5)
70 CALL CLEAR
80 ! Some of these lines are
    edited for more charac-
    ters..Character Codes
    follow...
90 CALL CHAR(96,"00000000101
0101E17",97,"00000000000000C0"
,98,"11101010101010D4",99,"F
7C0F",100,"0000000030C30C0"
)
100 CALL CHAR(101,"030C30C0"
,102,"5456565555545454",103,
"0000000000808040",104,"0000
0000000000001",105,"030C30404
08080")
110 CALL CHAR(106,"545454545
4545454",107,"40202010100808
04",108,"0102020404080810",1
09,"0402020101",110,"0000000
00080804",111,"1010101010101
010")
120 CALL CHAR(112,"101010101
00C03",113,"000000000000000C"
,114,"300C03",115,"000000FF"
,116,"545454DF1F101010",117,
"000000FFFF",118,"0402022FFF
F")
130 CALL CHAR(119,"000000E0F
",120,"0F070301",121,"FFFFFF
FFFF7F3F1F",122,"FFFFFFFFFFF
```



```
FFFFF",123,"FFFFFFFFF0F0F0F"
)
140 CALL CHAR(124,"000000FF0
00000FF",125,"0000000000000
FF")
150 !The next two lines will
    draw the sailboat on
    the screen in the fast-
    est posible way for Ex-
    tended Basic...
160 !Remove the periods when
    you are done, they are
    for space counting...
    also remove the rems
    you may choose to put a
170 !message next to the
    sailboat...this can be
    done with uppercase
    letters only....I'll
    let you figure it out..
180 DISPLAY AT(10,9):"'a":TA
B(9);"bc":TAB(7);"defg":TAB(
5);"hi..jk":TAB(5);"l....mn"
:TAB(5);"oo....k":TAB(5);"o.
....mn":TAB(5);"pq.....k"
190 DISPLAY AT(18,6):"rsstuu
vw":TAB(6);"xyzzzzz{":TAB(7)
;"ss|}!!s"
200 GOTO 200 !or to another
    part of the program....
210 !Here is the challenge..
    make the sailboat with
    sprites so it can move
    also color the water
    and sky different.....B
```

I LIKE BOATS



TIGERCUB TIPS #12

Tigercub Software specializes in low-cost quality software for the TI-99/4A computer. I have over 130 absolutely original programs for only $3.00 each. Catalog $1.00, refunded on your first order.

New programs available this month are WHITE KNIGHT, a fun game for the kids available in Basic and XBasic, and BARS AND BALLS, a strategy game.

If you have taken a course in computer programming, one of your homework assignments was probably to write a program that would find all possible combinations of letters in a 5-letter word. The following version can handle words of 3 to 6 letters, lists the combinations alphabetically, eliminates duplicates (when the word has two of the same letter), does not require a DIM statement, and is fast. It also works with numbers. If you work those scrambled-word puzzles in the newspapers, you'll find it handy.

```
100 CALL CLEAR :: PRINT TAB(
5);"TIGERCUB ANAGRAMMER": :!
 by Jim Peterson
110 INPUT "TYPE A 3-,4-,5- O
R 6-LETTER WORD  ":A$ :: W=L
EN(A$):: IF (W<3)+(W>6)THEN
110
120 PRINT :: FOR J=1 TO W ::
 B$(J)=SEG$(A$,J,1):: NEXT J
 :: FOR J=2 TO W :: IF B$(J)
>=B$(J-1)THEN 160
130 T$=B$(J):: FOR L=J-1 TO
1 STEP -1 :: B$(L+1)=B$(L)
140 IF B$(L-1)>=T$ THEN 150
:: B$(L)=T$ :: GOTO 160
150 NEXT L
160 NEXT J
170 FOR A=1 TO W :: FOR B=1
TO W :: IF B=A THEN 340
180 FOR C=1 TO W :: IF (C=A)
+(C=B)THEN 330
190 IF W=3 THEN 250
200 FOR D=1 TO W :: IF (D=A)
+(D=B)+(D=C)THEN 320
210 IF W=4 THEN 260
220 FOR E=1 TO W :: IF (E=A)
+(E=B)+(E=C)+(E=D)THEN 310
230 IF W=5 THEN 270
240 FOR F=1 TO W :: IF (F=A)
+(F=B)+(F=C)+(F=D)+(F=E)THEN
 300 ELSE 280
250 W$=B$(A)&B$(B)&B$(C):: I
F W$<=V$ THEN 330 ELSE 290
260 W$=B$(A)&B$(B)&B$(C)&B$(
D):: IF W$<=V$ THEN 320 ELSE
 290
270 W$=B$(A)&B$(B)&B$(C)&B$(
D)&B$(E):: IF W$<=V$ THEN 31
0 ELSE 290
280 W$=B$(A)&B$(B)&B$(C)&B$(
D)&B$(E)&B$(F):: IF W$<=V$ T
HEN 310
290 PRINT W$&" ";:: G=G+1 ::
 V$=W$ :: ON W-2 GOTO 330,32
0,310,300
300 NEXT F
310 NEXT E
320 NEXT D
330 NEXT C
340 NEXT B
350 NEXT A
360 PRINT : :"  ";G;"TOTAL C
OMBINATIONS.": : :: G=0 :: V
$="" :: GOTO 110
```

And still another automatic music-maker. This one doodles around the keyboard in the key of A, with autmatic bass accompaniment.

```
100 RANDOMIZE
110 DIM N(30)
120 F=220
130 FOR J=0 TO 36
140 X=X+1+(X=12)*12
150 IF (X=2)+(X=5)+(X=7)+(X=
10)+(X=12)THEN 180
160 Y=Y+1
170 N(Y)=INT(F*1.059463094^J
)
180 NEXT J
190 K=8
200 K=K-INT(5*RND+1)+INT(5*R
ND+1)+(K>21)*2-(K<1)*2
210 IF (K<1)+(K>21)THEN 200
220 CALL SOUND(-999,N(K),0,N
(K)*2,0,N(K)*3.75,30,-4,5)
230 GOTO 200
```

The following program will explain itself.

```
100 CALL CLEAR
110 REM - programmed by Jim Peterson May 20,1984
120 PRINT "TIGERCUB MAGIC SQUARE MAKER": :" A magic square is a conse-":"cutive series of numbers":"arranged in a square in such"
130 PRINT "a way that each horizontal":"row, vertical row, and long":"diagonal row will add up to":"the same total.": :
140 PRINT " This little program will":"create an odd-order magic":"square of any desired size,":"starting with any desired":"number.": :
150 PRINT " Squares of 3,5,7 or 9 size":"will be printed on the":"screen. The program can be":"modified to output larger"
160 PRINT "sizes to a printer.": :
170 INPUT "SIZE OF SQUARE?(odd number) ":S
180 IF (S<3)+(S/2=INT(S/2))THEN 170
190 INPUT "STARTING NUMBER? ":SN
200 N=SN-1
210 CALL CLEAR
220 DIM G(31,31)
230 R=1
240 C=INT(S/2)+1
250 N=N+1
260 IF N=S^2+SN THEN 450
270 G(R,C)=N
280 IF (R-1=0)+(C+1>S)THEN 350
290 IF G(R-1,C+1)<>0 THEN 330
300 R=R-1
310 C=C+1
320 GOTO 250
330 R=R+1
340 GOTO 250
350 IF (R=1)*(C=S)THEN 400
360 IF (R>1)*(C=S)THEN 420
370 R=S
380 C=C+1
390 GOTO 250
400 R=2
410 GOTO 250
420 R=R-1
430 C=1
440 GOTO 250
450 IF (LEN(STR$(SN+S^2))+1)*S>28 THEN 530
460 FOR R=1 TO S
470 FOR C=1 TO S
480 PRINT STR$(G(R,C));" ";
490 NEXT C
500 PRINT : :
510 NEXT R
520 GOTO 550
530 PRINT "TOO LARGE FOR SCREEN."
540 REM - ADD PRINTER ROUTINE HERE
550 PRINT : :"PRESS ANY KEY TO CHECK"
560 CALL KEY(0,K,ST)
570 IF ST=0 THEN 560
580 FOR R=1 TO S
590 FOR C=1 TO S
600 X=X+G(R,C)
610 NEXT C
620 PRINT "ROW #";STR$(R);"=";X
630 X=0
640 NEXT R
650 FOR C=1 TO S
660 FOR R=1 TO S
670 X=X+G(R,C)
680 NEXT R
690 PRINT "COLUMN #";STR$(C);" =";X
700 X=0
710 NEXT C
720 R=1
730 C=1
740 FOR J=1 TO S
750 X=X+G(R,C)
760 R=R+1
770 C=C+1
780 NEXT J
790 PRINT "RIGHT DIAGONAL=";X
800 X=0
810 R=1
820 C=S
830 FOR J=1 TO S
840 X=X+G(R,C)
850 R=R+1
860 C=C-1
870 NEXT J
880 PRINT "LEFT DIAGONAL=";X
```

Almost OUT OF MEMORY, so Happy hackin' Jim Peterson

ASSEMBLY PROGRAM SCREEN DUMP

```
*****************************************
*
*  SINGLE-LINE DOUBLE-DENSITY GRAPHICS
*  SCREEN DUMP for TI IMPACT PRINTER
*
*  This routine is based on a screen
*  dump program by P. Swift appearing
*  in Vol. 2, No. 1 of 99er Magazine.
*
*  This DUMP routine differs from the
*  99er Magazine routine in several
*  respects. 1) It may be utilized from
*  Ext BASIC (with DSRLNK), 2) It dumps
*  a single screen line at a time which
*  allows the user to place the graphics
*  output at any location on the page by
*  preceeding the CALL with a PRINT to
*  position the head, 3) It dumps in
*  double density graphics format, and
*  4) It dumps an entire graphics line
*  at once rather than only one charac-
*  ter at a time.
*
*  Modified by J. Clulow, 1982, 1984
*****************************************
*
*  EQUATES FOR EXT BASIC AND MINI MEM
*
*     VSBR       >2028          >602C
*     VSBW       >2020          >6024
*     VMBR       >202C          >6030
*     VMBW       >2024          >6028
*     NUMREF     >200C          >6044
*     STRREF     >2014          >604C
*     ERR        >2034          >6050
*     ERCODE     >1E1C          >1316
*     DSRLNK     >2532          >6038
*
*  NOTES:
*
*  NUMREF, STRREF, AND ERR FOR EDIASSM
*  ARE IN THE BSCSUP UTILITY.
*
*  FOR EXT BASIC USE THE ROUTINE DSRLNK
*  MUST BE LOADED FIRST!
*                 -----
*  To access the routine use...
*  CALL LINK("DUMP",L,"RS232.CR")
*  or other printer file specification.
*
*
       DEF  DUMP
*
VSBR   EQU  >2028     (
VSBW   EQU  >2020     (
VMBR   EQU  >202C     (
VMBW   EQU  >2024     ( EXT BASIC EQUATES
NUMREF EQU  >200C     (
STRREF EQU  >2014     (
ERR    EQU  >2034     (
ERCODE EQU  >1E1C     (
DSRLNK EQU  >2532     (
WS     BSS  32
S1     BSS  2
IN     BSS  8
DO     BSS  512
SAVRTN DATA 0
MK     DATA >001F
PD     DATA >0012,>1E00,>FF00,>0000
SP     DATA 0
       BSS  24
CR     DATA >0D0A
E1     DATA >1B4C,>0002
E2     DATA >001B,>4108
D6     DATA >4019
DUMP   MOV  R11,@SAVRTN
       LWPI WS
*
* GET PRINTER SPEC
*
       LI   R0,>0017
       MOV  R0,@SP            23 BYTES MAXIMUM
       CLR  R0
       LI   R1,2              SECOND PARAMETER
       LI   R2,SP+1
       BLWP @STRREF           GET PRINTER SPEC.
*
* GET SCREEN LINE NO TO DUMP
*
       CLR  R8
       CLR  R9                STARTING SCREEN POSITION
       CLR  R0
       LI   R1,1              READ PARAMETER PASSED FROM BASIC
       BLWP @NUMREF
       CB   @>834A,@D6        IS IT OUT OF RANGE (1-24)?
       JEQ  L7
       LI   R0,ERCODE         ERROR
       BLWP @ERR
L7     C    @>834A,@D6
       JL   L6
       LI   R0,ERCODE         ERROR
       BLWP @ERR
L6     MOVB @>834B,R9
       SWPB R9                CALCULATE STARTING POSITION
       AI   R9,-1
       SLA  R9,5
       MOVB @>9802,@S1
```

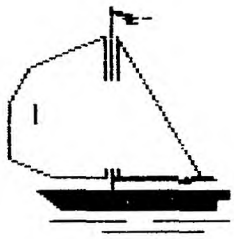
CONTINUED

ASSEMBLY CONTINUED

```
       SWPB @S1
       MOVB @>9802,@S1
       SWPB @S1
       DEC  @S1
*
* SET UP PAB
*
       LI   R0,>1D00
       LI   R1,PD
       MOV  @SP,R2
       AI   R2,10              NO OF PAB BYTES TO MOVE
       BLWP @VMBW              WRITE PAB TO VDP RAM
       LI   R6,>1D09
       MOV  R6,@>8356          POINT TO DEVICE NAME LENGTH
       BLWP @DSRLNK            DSRLNK TO OPEN PRINTER
       DATA 8
       JNE  GO
       MOVB @S1,@>9C02
       SWPB @S1
       MOVB @S1,@>9C02
       LI   R0,ERCODE
       SWPB R0
       BLWP @ERR
       JNE  GO                 CHECK FOR PRINTER SPEC ERROR
       BLWP @ERR               RETURN I/O ERROR
GO     LI   R0,>1D00
       LI   R1,>0300
       BLWP @VSBW              PUT WRITE OP CODE IN PAB
       LI   R0,>1D05
       LI   R1,>0400
       BLWP @VSBW              PUT LENGTH OF 4 IN PAB
       LI   R0,>1E00
       LI   R1,E2              PUT CODE FOR CARRIAGE RTN &
       LI   R2,4               8/72" VERTICAL LINE SPACING
       BLWP @VMBW              IN DATA BUFFER.
       MOV  R6,@>8356          POINT TO DEVICE NAME LENGTH
       BLWP @DSRLNK            DSRLNK-CHANGE VERT SPACING
       DATA 8
L0     MOV  R9,R0
       BLWP @VSBR              PUT BYTE OF SCREEN RAM IN R1
       SRL  R1,8               SHIFT TO LSB OF R1
       AI   R1,-128            ADJUST FOR BASIC
       SLA  R1,3               *8
       AI   R1,1024            PTRN ADDR=1024+(CHAR#-32)*8
       MOV  R1,R0
       LI   R1,IN
       LI   R2,8
       BLWP @VMBR              PUT PATTERN INTO IN
       LI   R5,128             R5 = BIT#
L3     LI   R6,128             R6 = BYTE#
       CLR  R3                 R3 = OFFSET FOR IN
       CLR  R4                 R4 FOR BUILDING NEXT CHAR
L2     CLR  R7
       MOVB @IN(3),R7          R7 HOLDS BYTE BEING DECODED
       SWPB R7                 PUT BYTE IN LSB OF R7
       C    R7,R5              IS BIT ON?
       JLT  L1                 NO
       A    R6,R4              YES, TURN OUTPUT BIT ON
       S    R5,R7              TURN OFF INPUT BIT
       SWPB R7                 PUT BYTE IN MSB OF R7
       MOVB R7,@IN(3)          REWRITE TO IN
L1     INC  R3                 POINT TO NEXT BYTE
       SRA  R6,1               /2
       JGT  L2                 DO NEXT BYTE IF MORE
       SWPB R4                 PUT OUTPUT BYTE IN MSB OF R4
       MOVB R4,@DO(8)
       INC  R8
       MOVB R4,@DO(8)          STORE AT DO
       INC  R8                 POINT TO NEXT BYTE OF DO
       SRA  R5,1               /2
       JGT  L3                 CONSTRUCT NEXT OUTPUT BYTE
       INC  R9                 NEXT SCREEN POS
       CZC  @MK,R9             EOL?
       JNE  L0                 NO, NEXT POSITION
       LI   R3,4               COUNTER
       LI   R0,>1D05           ONLY ESC K WRITE
       LI   R1,>0400
       BLWP @VSBW              PUT LENGTH OF 4 IN PAB
       LI   R0,>1E00           VDP BUFFER
       LI   R1,E1
       LI   R2,4
       BLWP @VMBW              PUT ESC K SEQ IN DATA BUFF
       LI   R6,>1D09
       MOV  R6,@>8356          POINT TO DEVICE NAME LENGTH
       BLWP @DSRLNK            DSR TO WRITE ESC K SEQUENCE
       DATA 8
       LI   R4,DO              START OF CPU GRAPHICS BUFFER
L5     LI   R2,128             QUARTER OF GRAPHICS STRING
       MOV  R4,R1
       LI   R0,>1E00           VDP ADDR
       BLWP @VMBW              PUT DO IN DATA BUFFER
       LI   R0,>1D05
       LI   R1,>8000           128 BYTES
       BLWP @VSBW
       MOV  R6,@>8356          POINT TO DEVICE NAME LENGTH
       BLWP @DSRLNK            DSR TO OUTPUT 8 CHARS
       DATA 8
       AI   R4,128             POINT TO START OF NEXT QUARTER
       DEC  R3
       JNE  L5                 DO IT AGAIN FOR LAST HALF
       LI   R0,>1D05           OUTPUT CR/LF
       LI   R1,>0200
       BLWP @VSBW              PUT LENGTH OF 2 IN PAB
       LI   R0,>1E00
       LI   R1,CR
       LI   R2,2
       BLWP @VMBW
```

CONTINUED

```
        MOV   R6,@>8356
        BLWP  @DSRLNK           DSRLNK TO OUTPUT CRLF
        DATA  8
L4      LI    R0,>1D00
        LI    R1,>0100
        BLWP  @VSBW             PUT CLOSE IN PAB
        MOV   R6,@>8356
        BLWP  @DSRLNK
        DATA  8
        LI    R0,4              DELAY
DEL1    LI    R1,20000
DEL2    NOP
        DEC   R1
        JNE   DEL2
        DEC   R0
        JNE   DEL1
        MOVB  @S1,@>9C02
        SWPB  @S1
```



THIS WILL DEMO THE ABOVE SCREEN DUMP. THE ASSEMBLY PROGRAM ABOVE IS IN OUR LIBRARY.

```
50 !sailboat
60 CALL CLEAR
70 CALL CHAR(96,"0000000010101E17",97,"00000000000000C0",98,"1110101010101
9,"F7C0F",100,"0000000030C30C0")
80 CALL CHAR(101,"030C30C0",102,"5456565555545454",103,"0000000000808040",104,"
00000000000001",105,"030C3040408080")
90 CALL CHAR(106,"5454545454545454",107,"4020201010080804",108,"0102020404080
",109,"0402020101",110,"0000000000808040",111,"1010101010101010")
100 CALL CHAR(112,"1010101010C03",113,"00000000000000C",114,"300C03",115,"0000
0FF",116,"545454DF1F101010",117,"000000FFFF",118,"0402022FFFF")
110 CALL CHAR(119,"000000E0F",120,"0F070301",121,"FFFFFFFFFF7F3F1F",122,"FFFFFF
FFFFFFFFFF",123,"FFFFFFFFF0F0F0F0")
120 CALL CHAR(124,"000000FF000000FF",125,"00000000000000FF")
130 DISPLAY AT(10,9):"a":TAB(9);"bc":TAB(7);"defg":TAB(5);"hi   jk":TAB(5);"l
 mn":TAB(5);"oo     k":TAB(5);"p     mn":TAB(5);"pq      k"
140 DISPLAY AT(18,6):"rsstuuvw":TAB(6);"xyzzzz{":TAB(7);"ss|}~!!s"
141 L=10
150 CALL LOAD("DSK1.DSRLNK","DSK1.DUMP")
151 OPEN #2:"PIO"
160 CALL LINK("DUMP",L,"PIO.CR")
170 L=L+1 :: IF L=21 THEN 171 ELSE 160
171 END
```

CONVERSION OF NUMBERS FROM BASE 16 (HEXADECIMAL) TO BASE 10 (DECIMAL)
BY: SAM MORABITO

As many of you know, the computer uses numbers like >F89A, >123F, and >00FD. This can be very intimidating, and still is for me, but with a little help it is an easy process to convert these different number systems to ones we more readily understand.

This will be the subject of this article, and if the response is favorable we will produce more on this subject in future issues of "SPIRIT OF 99" newsletter.

First, we are all familiar with our BASE 10 system with the digits (0-9)...at least we think so! When we see 0, 1, 24, 9, 999, we immediately recognize the "number" for what it is without much thought at all. In fact, we add, subtract, multiply, and divide these numbers readily, again without much thought, thanks to some tricks drilled into our minds by those dear and patient teachers throughout school. But what are we really doing when we add say the number 9 and the number 1? Ah yes, that's 10 ("ten")! and we do this automatically. But what is "10" anyhow? Well I'll tell you.....we are saying that take 1 X 10 to the first power and add it to 0 X 10 to the zero power!

Huh? What's that again, Sam?! I know, I've lost you already! Let's take a good look at a number (BASE 10) like 6,427:

* The "7" we say is holding the "units" place.
* The "2" we say is holding the "tens" place.
* The "4" we say is holding the "hundreds" place.
* The "6" we say is holding the "thousands" place.

```
In other words we have 7 units or 7 times 1=              7
                       2 units or 2 times 10=            20
                       4 units or 4 times 100=          400
                       6 units or 6 times 1000=        6000
We add them all up for a total of                      ----
six thousand four hundred twenty seven!                6427
```

Numbers with a BASE 10 have the digits (0,1,2,3,4,5,6,7,8,and 9). So when we add one (1) and nine (9) we write "10" which is saying:

```
* 1 times 10 to the first power= 1 times 10=   10
* 0 times 10 to the zero  power= 0 times  1=    0
add them up, and we get "ten"                   --
                                                10
```

You might start to see that each digit in any number is holding a "place" which is a power of ten (10). And with the "symbols "0,1,2,3,4,5,6,7,8,9" we can represent an infinite number of numbers 1, 2, 3...so on and so on!

What is the "power of a number?", you ask. Simply stated, the power of any number is that number times itself "n times" where "n" is the "power" of the number or how many times you multiply the number times itself. For example:

```
10 to the second power is 10 times 10 or 100
10 to the third  power is 10 times 10 times 10 or 1000
 2 to the second power is  2 times  2 or 4
 2 to the third  power is  2 times  2 times  2 or 8
```

By defifition in mathematics any number to the zero power is one (1)
and any number to the first power is the number itself
so for example:
999 to the zero power is (1) and...
999 to the first power is (999)
10 to the zero power is (1) and...
10 to the first power is (10)

NUMBER CONVERSIONS CONTINUED...

So, back to our number 6427...starting with the first position (number "7") we have each position as the next power of 10, starting with zero or:

```
7 times 10 to the zero power=   7 times 1    =    7
2 times 10 to the first power=  2 times 10   =   20
4 times 10 to the second power= 4 times 100  =  400
6 times 10 to the third power=  6 times 1000 = 6000
now add them all up and you get...              6427
```

In other words each position starting with the place to the left of the decimal place as the zero power of ten is the next higher power of ten so a number like 1,000,000 is really 1 times 10 to the sixth power or 10 x 10 x 10 x 10 x 10 x 10 = 1,000,000 one million.

Now the numbers to the BASE 16 or hexadecimal number system.
First we have some new symbols namely A, B, C, D, E, and F. These symbols, and the digits (0,1,2,3,4,5,6,7,8,9) represent all numbers in the BASE 16 number system:

```
 0 = zero    A = ten
 1 = one     B = eleven
 2 = two     C = twelve
 3 = three   D = thirteen
 4 = four    E = fourteen
 5 = five    F = fifteen
 6 = six
 7 = seven
 8 = eight
 9 = nine
```

Notice how each symbol represents the numbers as we know them until we get to ten. Then, we have a single symbol to represent the value of ten as we know it. This is also true for eleven which is represented by the "B". Same for the next numbers until we get to sixteen. Then, we don't have a single character for the number sixteen. So, we put a "0" there to hold the place and write "10"...This is not ten, but is sixteen!!! Now, I've got you, don't I?

Remember what you did when you got to nine and added one...You wrote "10". Now the situation is the same. That is when you get to fifteen ("F") and add 1 you will write "10". This is saying that you have zero units, and 1 unit of sixteen.

With the number system BASE 16 the first position is units or 16 to the zero power.
The second position is 16 to the first power or 16.
The third position is 16 to the second power or 16 times 16 or 256.
The fourth position is 16 to the third power or 16 times 16 times 16 or 4096
For example the number 21 in BASE 16 is:

```
1 times 16 to the zero power  or 1 times 1 = 1
2 times 16 to the first power or 2 times 16=32
Now add them up and the number is          33 (thirty three-BASE 10)
```

So, if you see a number to the BASE 16 like 111F this notation means that:

```
F units of 1 (16 to the zero power)    or 15 x 1    =    15
1 unit  of 16(16 to the first power)   or 1  x 16   =    16
1 unit of 256(16 to the second power) or 1  x 256  =   256
1 unit of4096(16 to the third power)   or 1  x 4096= 4096
Now add them up and you have the BASE 10 number    = 4383 four thousand three
                                                          hundred eighty three
```

There, we have just converted a hexadecimal number(111F) to it's BASE 10 equivilent!! Now wasn't that easy?

LETTERS

SOMETIMES WE GET LETTERS

A word about a local business....this is not a solicitation.

As many of you are aware, Zettler hardware is selling TI computers and software. Yes the prices are a bit high but, we are not being gouged. Zettler has paid a high wholesale so in turn his customers may pay a high retail.

They do carry a lot of things and we do need the outlet they are not as many they once were.

The reason for my two cents is I have had many calls that start with "they're prices are too high". now you know why.

Zettler's has indicated that they would like to work with us and our group officers are presently trying to work out something with them.

The days of the fire sale computer hardware and software are over.....consider your self fortunate to have gotten such a good price in the first place. I paid $385.79 for my TI.....

BIGGIE

I am having some trouble keeping regular meetings going because I would rather be setting behind a computer than in front of a group of people. If you want a formal meeting grab me by the arm and drag me to it.
If you have any questions on anything write them down; give them to me and I will try to answer them.

After waiting eight hours for the disassembly program that was in the 99 HCM to disassemble a small (4K) program; I rewrote the thing using different logic. This program runs under XB and makes extensive use of the logic "AND" function. logic AND is used with binary numbers and yields a number that is equal to all the corrosponding ones in the pair of numbers. An AND function is written 1*1=1 and read "one and one". Other logic functions included in XB are "NOT" 1*1=0, 0*1=1, 0*0=0; "OR" 1+1=1, 1+0=1, 0+0=0; "NOT" 0*0=1, 1*0=1, 1*1=0; "XOR" 1+1=0, 1+0=1, 0+0=0.

This program is much faster than the original version because of the logic and the fact that I have not included anything except the disasembler. The program will be in the library or you can see me to get a copy..... (bring a formated disk). When run this program asks for an output device name, type in any valid name. Now you are asked for a start location, enter a 4 digit hex number. Then for the ending address, again a 4 digit hex number. The program now runs displaying on the screen and the output device the code.

If you find any errors please let me know. The program will disassemble everything as if it were code; so if it does not make sense it is probably text or graphics.

If you don't want the TI TEXT-FORMATER to formfeed it can be changed with the "DISK FIXER" program from NAVARONE INDS. This is a very good program to have. It comes in an 8 K cartridge & requires the 32K memory expantion. It cost about $40.00 and is easy to use. See one of the newsletters for the address and ordering information. Please mention where you saw the ad; it won't get you anything but will maybe get the club some more advertizements from them.

MIKE B.

Note from the library: At the June meeting we were forty (40) tapes short in our program library.

If you have seen any of these wayward tapes or know of their where abouts, Please... call number below to turn them in.

All callers will be given a code number to insure their annonimity. CALL >>475-6207<< after 5pm.

I must ask those who are late in returning tapes to do so, and pay the late return fine accordingly. To be very truthfull, this trend could result in the library closing until the missing tapes are returned.

THE AXIOM CONNECTION

By T.D. Bell

The big brown truck pulled up in front of the house a tall thin happy person clad in brown jumped to the curb, it's the UPS man (can you say that?), My dog started barking (something he only does when it's safe)..

As the UPS man approached the house he said "COD for $139.83 (not really) I asked where are they from today? "All over" he said...here's your change, sign on 23... As he started back to the truck I yelled "see you later"... *mpfh!* was his reply.

The truck left, I opened the one that didn't say COD first. ...The phone rang... It was Biggie...Did it come? I was just getting the box open when you called... Well we haven't got all day..hurry up and try it out...Can you write a review before friday?...Friday is tomorow...Right!, get it to Saturn right away...click! OK fine I'll do that.

I pulled a small black module from the box, then a power supply, huh! no prize, no crackerjacks,

It was the AXIOM PARALAX TI CONNECTION. Let's see plug this into here, that into there...get the instruction book...OK, I was ready...For self test turn on the computer wth the space bar depressed..got it...

Whirr whirr The printer jumped to atention and printed it's normal character set..I let the space bar go click... it stoped...Impressive! Next I tried all the standard print commands I knew, each time the printer answered without fail. I'll get TI Writer, the real test. Every thing I tried worked, The Paralax TI could not be fooled...I tried Jimmy Schwallers "Typwriter" with a few line changes it worked just fine.

You know what I dis covered? The poor mans word processor. It goes like this...

You have the computer. All you need are a tape recorder, typwriter, (by Extended Software), the Par alax TI (by Axiom) A printer (your choice, there are no inexpensive ones), and something to write (for the news letter).

A small booklet comes with the Paralax telling you how it operates, also how to select options for RS232 (it normally answers to "PIO" or "AXIOM") if you have an RS232 then you must call it "AXIOM".

No P-Box is required you can get a standalone disk drive, and be in business. All this will however cost you something, that's right Bunky, MEMORY.

In any case I have made a list of the possible combinations for word processing.

1. Console, Tape recorder, Ex-Basic, Paralax TI, Printer, and one of the following WP programs.

   TYPWRITER
   TEXTTIGER
   TEX-SCRIBE
   99-TYPWRITER (runs in Basic)

2. A stand alone disk drive will enhance any of the above

3. A stand alone 32K Memory will further enhance the above and you can add another disk.

4. if you got an empty P-box you can get two drives (1/2 height) and a power card from Compstuff.

I could go on for several pages but I didn't get that many.

On page 7 are the ads for Axiom and a special printer offer. they will be at the meeting for your hands on experience along with someone to answer questions.

In my humble opinion the Paralax is one heck of a bargan for low budgets....See you there...T.D.Bell

C.O.N.N.I. Membership Questionnair...

Name:_____
Phone:_____
Address:_____

Spirit of 99

THE OFFICIAL NEWSLETTER OF CENTRAL OHIO NINETY-NINERS

PUBLISHED MONTHLY IN COLUMBUS OHIO

I own the following hardware:

_____
_____
_____
_____

I own the following software:

_____
_____
_____
_____

I intend to purchase the folowing hardware within the next year

_____
_____
_____
_____

I intend to purchase the following software within the next year

_____
_____
_____
_____
_____

I will help the User's Group the following ways.

_____
_____
_____
_____

****
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games []
reviews []
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****
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_____
_____
_____
_____

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I grant permission for this information to be made available to other user group members.

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Date:_____

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*** MEMBERSHIP APPLICATION ***

NAME _____ AGE ____
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CITY _____ STATE _____ ZIP _____
AREA CODE _____ HOME PHONE _____ BUSINESS PHONE _____ EXT# _____
WHAT IS YOUR PROFESSION/VOCATION _____
HOW LONG HAVE YOU OWNED YOUR COMPUTER _____
DATE OF APPLICATION _____ ACCEPTED BY _____