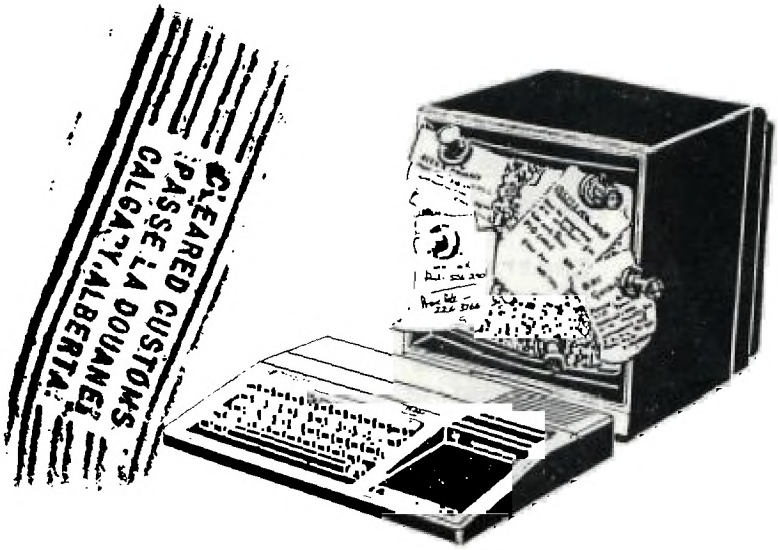
Spirit of 99

THE OFFICIAL NEWSLETTER OF THE CENTRAL OHIO NINETY-NINERS INC.
PUBLISHED MONTHLY IN COLUMBUS OHIO



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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

Nirij Shah has graduated and moved to California, & is working for Hughes Aircraft. However, we will still be seeing his tutorials and excellent articles from time to time, the first of which we could not print this issue for lack of space. You may contact him through this newsletter.....ED

ART MORGAN, Treas.
CENTRAL OHIO NINETY NINERS INC.
TREASURERS REPORT FOR SEPTEMBER 1984

NEW MEMBERS __ 8 __ =		120	
RENEWALS __ 5 __ =		75	
TOTAL MEMBERSHIP RECEIPTS =			195.00
MISCELLANEOUS INCOME	= $211 + 218.95	===	429.95
TOTAL INCOME THIS MONTH	=		$624.95 ++

POSTMASTER	=	55
PRINTING COSTS	=	350
NEWS GATHERING	=	74.22
TOTAL NEWSLETTER EXPENSES	=	479.22
SPECIAL EXPENSES FOR BULLETIN BOARD	=	278.18
TOTAL EXPENDITURES THIS MONTH	=	$757.40 --

-$132.45

PRESENT BALANCE ..... ========== $1,063.30

AGENDA

8.30 Doors Open

9.00 BUSINESS MEETING

- Acting President
- Membership
- Treasurers Report
- Librarians Report
- Meeting Place
- Open Forum

9.45 (1) BEGINNERS GROUP

-DALE SMITH

(2) LIBRARY OPEN

(3) OPEN MEETING

OCTOBER MEETING WILL BE AT THE ELECTRICAL WORKERS UNION HALL 23 WEST SECOND AVENUE..... WHITE CASTLE ON THE CORNER OF HIGH AND WEST SECOND... CALL 486-7262 OR 457-0472 IF YOU NEED DIRECTIONS

NOTE: If any of our members own a Gemini 10 or 10X Printer they can get a FREE TI99/4A addendum to the users manual.
write to:

Cherie Maddocks,tech support
Star Micronics Incorporated
3 Oldfield
Irvine Ca. 92714

This FREE addendum contains a 12 page list of special instructions and programs for the TI, along with DIP switch settings and tips for using italic style type plus information on Graphics and other features.

reprinted from LA 99'ers.

SPIRIT OF 99 TIBBS

By Gale S Ringley

The Spirit Of 99 TI BBS is now online 24 hours everyday. The modem number is (614)-451-0880. I guess many of you were expecting this article to be all about the trials and tribulations of starting and running a computer bulletin board.. but due to the trials and tribulations of running a computer bulletin board (hereafter refered to as "BBS") I have not had the time to write such an article. Hopefully I will have that ready by our next issue. The prime thrust of this article is a description of the BBS, and a simple method of how to call it from your home. First, the features.

A BBS is a place where you can leave public and private messages to other users of the BBS. We presently allow messages of 12 lines of 40 characters in size. We also offer text files on various subjects.These include all of the local BBS's all known BBS's in the world that are run on a TI99/4A, programming tips for the 4A, the list goes on and on.

There is the Micro Stuph Online Store, where you can order things for your TI-99 from your home.We will even be supporting direct file transfers using the TRANS feature of Terminal Emulator II! Now I bet you are saying all this must be difficult to learn and use, I bet more than a few of you who have modems have not even taken them out of the box yet!

To logon to the Spirit Of 99 (with a TI Phone Modem), do the following:

1 Connect the modem to your RS-232, and plug it in.

2 Insert the Terminal Emulator II module in to the module port.

3 Turn on the P-box, the monitor, and the computer

4 Press the [3] key twice. If you have a disk drive, the drive light will come on and the drive will spin. Don't worry about it.

5 You should now see a white screen with a green cursor in the upper left hand corner. If not, then redo the steps and insure that all is hooked together properly.

6 There are two switches on the modem. With the words"Phone Modem" facing you, reach across the modem and move both switches to the far right. You should always set them this way.

7 Dial 451-0880.If you get a busy signal, try again later. If the phone is answered, normally after the first ring, you will hear a high pitched tone.

8 Apply your phone handset to the modem cord to the rear just like the little picture below the ready light.

You will then see your cursor spring to life! Follow the online instructions and have fun!

See You Later

END OF LINE

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WE HAVE IT ALL !

TIPS FROM THE TIGERCUB

Copyright 1984, Tigercub Software, 156 Collingwood Ave., Columbus Ohio 43213. May be reprinted by non-profit users' groups, with credit to Tigercub Software.

These Tips are distributed to Users' Groups in exchange for their newsletters - and in the faint hope that someday, somewhere, someone may buy some of my original programs. I have over 130 of them, at only $3 each - some of the users'groups charge their own members almost that much for public domain programs! My catalog costs a dollar, refundable on your first order, or refundable anyway if you ask. I give one-day service by 1st Cl. mail, I give bonus programs for repeat orders, I give free programs on disk orders, and I'm still not getting any orders!

I'm told that someone actually found a practical use for my number-scrambling rutine, so here is an ex-panded version. It will scramble any sequence beginning with 1 and ending with any number less than 256 or any number greater than 256 which is evenly divisible by any number less than 256 and greater than 1, within the limits of computer memory. In Extended Basic with Memory Expan- nsion, the limit is about 10,700; if you reformat it to Basic and run it bare bones, you might get close to 13,000.

```
100 CALL CLEAR :: OPEN #1:"P
IO",OUTPUT
110 INPUT "HIGHEST NUMBER? "
:HN :: IF HN<256 THEN TN=HN
:: XX=1 :: GOTO 150
120 FOR TN=255 TO 2 STEP -1
:: IF HN/TN=INT(HN/TN)THEN 1
40
130 NEXT TN :: PRINT HN;"IS
NOT DIVISIBLE BY":"ANYTHING
LESS THAN 256  - ":"CANNOT U
SE" :: GOTO 110
140 XX=HN/TN
150 DIM M$(50)
160 CALL CLEAR :: FOR J=1 TO
 TN :: M$(1)=M$(1)&CHR$(J)::
 NEXT J :: FOR J=1 TO XX ::
M$(J)=M$(1):: NEXT J :: FOR
J=1 TO HN :: TT=1+INT((J-1)/
255)
170 RANDOMIZE :: X=INT(XX*RN
D+1):: IF LEN(M$(X))=0 THEN
170
180 Y=INT(LEN(M$(X))*RND+1)
190 PRINT #1:ASC(SEG$(M$(X),
Y,1))+TN*(X-1);
200 M$(X)=SEG$(M$(X),1,Y-1)&
SEG$(M$(X),Y+1,LEN(M$(X))):::
 NEXT J
```

Here's a little routine you can use to jazz up your title screen or text.

```
100 CALL CLEAR
110 DATA "THIS IS A DEMONSTR
ATION","OF THE","TIGERCUB SO
FTWARE","TWO-WAY PRINT ROUTI
NE"
112 FOR T=1 TO 4
113 READ M$
120 IF LEN(M$)/2=INT(LEN(M$)
/2)THEN 135
130 M$=M$&" "
131 GOTO 140
135 M$=M$&"  "
140 L=LEN(M$)
150 C=16-L/2
160 FOR J=L/2 TO 1 STEP -1
170 CALL HCHAR(10+T*2,C+J,AS
C(SEG$(M$,J,1)))
180 CALL HCHAR(10+T*2,16+L/2
-J,ASC(SEG$(M$,L-J,1)))
190 NEXT J
200 NEXT T
```

Did you ever go through your checkbook 5 times in order to add up your gas bill, then your electric bill, etc.? With this little handy- dandy, you can do it all in one pass.

```
100 CALL CLEAR
110 REM -  ADDER-UPPER by Ji
m Peterson
120 A$="ABCDEFGHIJKLMNOPQRST
UVWXYZ"
130 DIM C$(26),T(26)
140 PRINT "         ADDER-UPP
```

CONTINUED

```
ER": : :
150 PRINT "WITH THIS PROGRAM
 YOU CAN GO THROUGH YOUR CHE
CKBOOK, OR ANYTHING ELSE, AN
D ADD UP   AMOUNTS IN SEVERA
L CATE-"
160 PRINT "GORIES ALL AT ONE
 TIME.": :
170 PRINT " FIRST, LIST THE
CATEGORIES":"YOU WANT TO ADD
 UP.":" TYPE 'END' WHEN FINI
SHED.": :
180 PRINT " NEXT, ENTER THE
CATEGORY":"CODE AND AMOUNT F
OR EACH":"BILL."
190 PRINT : :"WHEN YOU HAVE
ENTERED ALL":"THE BILLS, TYP
E =": :
200 N=N+1
210 PRINT "CATEGORY #";N
220 INPUT "             ":C$(N
)
230 IF C$(N)="END" THEN 340
240 W$=SEG$(C$(N),1,1)
250 IF POS(A$,W$,1)<>0 THEN
290
260 PRINT :"CODE LETTER ";W$
;" ALREADY  USED - PICK A CO
DE LETTER."
270 INPUT W$
280 GOTO 250
290 X=POS(A$,W$,1)
300 A$=SEG$(A$,1,X-1)&SEG$(A
$,X+1,LEN(A$))
310 X$=X$&W$
320 PRINT :"CODE LETTER FOR
";C$(N);" WILL BE ";W$: :
330 GOTO 200
340 C$(N)=""
350 N=N-1
360 X$=X$&"="
370 IF FLAG=1 THEN 420
380 FLAG=1
390 PRINT : :"READY TO START
 - ": : :
400 PRINT "WHEN FINISHED, TY
PE =": :
410 INPUT "DO YOU WANT TO VE
RIFY EACH  INPUT? ":V$
420 PRINT :"CODE (";X$;")"
430 INPUT Q$
440 IF Q$="=" THEN 600
450 IF POS(X$,Q$,1)<>0 THEN
510
460 PRINT "THAT IS NOT ONE O
F THE CODES": :
470 INPUT "IS IT A NEW CATEG
ORY?(Y/N) ":Q$
480 IF SEG$(Q$,1,1)<>"Y" THE
N 420
490 X$=SEG$(X$,1,LEN(X$)-1)
500 GOTO 200
510 Y=POS(X$,Q$,1)
520 INPUT "AMOUNT ?":A
530 IF SEG$(V$,1,1)="N" THEN
 580
540 PRINT :C$(Y);A: :
550 INPUT "CORRECT? (Y/N)":L
$
560 IF SEG$(L$,1,1)="Y" THEN
 580
570 IF SEG$(L$,1,1)="N" THEN
 420 ELSE 550
580 T(Y)=T(Y)+A
590 GOTO 420
600 FOR J=1 TO N
610 PRINT :C$(J);T(J)
620 TT=TT+T(J)
630 NEXT J
640 PRINT :"GRAND TOTAL OF A
LL IS";TT
650 END
```

And, did you ever wish that you could make numbers smaller, so that you could squeeze more of them onto a chart or graph? The problem is that resolution is so poor, at least on my TV screen, but maybe you'll find a use for this.

```
100 REM - NUMBER SCRUNCHER -
 programmed by Jim Peterson
110 CALL SCREEN(5)
120 FOR S=2 TO 14
130 CALL COLOR(S,15,1)
140 NEXT S
150 CALL CLEAR
160 RANDOMIZE
170 DATA 75557,22222,25127,6
1216,55571,74616,74757,71222
,75257,75711
180 FOR J=0 TO 9
190 READ C$
200 CH$(J)="00"&C$
210 NEXT J
220 CH=91
230 INPUT "NUMBER? ":RX
240 N$=STR$(RX)
250 IF LEN(N$)/2=INT(LEN(N$)
/2)THEN 270
260 N$="0"&N$
270 FOR J=1 TO LEN(N$)STEP 2
280 P1=VAL(SEG$(N$,J,1))
290 P2=VAL(SEG$(N$,J+1,1))
300 FOR T=1 TO 7
310 Z$=Z$&SEG$(CH$(P1),T,1)&
```

TIPS CONTINUED

```
SEG$(CH$(P2),T,1)
320 NEXT T
330 CALL CHAR(CH,Z$)
340 Z$=""
350 P$=P$&CHR$(CH)
360 CH=CH+1
370 NEXT J
380 PRINT N$;" ";P$
390 P$=""
400 N$=""
410 GOTO 230
```

END OF LINE

GAME PROGRAMMING

By Brian Beery

This month I will provide some techniques to add to the speed and efficiency of game programs. Note that some of the tricks described below are not just limited to use in games, but might also help in drawing programs, Icon-driven software(like the Macintosh's), and many others.

One of the biggest time-wasters in game programs is the user input routine, whether from the keyboard or joysticks. Most of the time, Extended basic programmers end up trading off between less frequent input,allowing less control by the player, but more time to perform other routines, and more frequent input, which gives the player better control of his spaceship,car, or whatever, but limits the computer's response, often making the game easy.

Neither of these methods is particularly satisfying, and both, if not handled well, can produce dull games. In my opinion, the best solution is to maximize the speed of the routines you use, thus giving you more flexibility, and ultimately, a better game.

On to the methods. First of all, the joystick routine will probably be the most executed line in most action games. Therefore, it makes good sense to make that routine as efficient as possible. Take, for instance, this code:

```
500 CALL JOYST(1,X,Y)::Y=-Y::X=X/4::Y=Y/4::CALL MOTION(#1,Y,X)::GOTO 500
```

While only taking up one line, this is wasteful. First of all, unless you need to store the joystick input for later use, you may make all calculations inside the CALL MOTION. So a better answer would be as follows:

```
500 CALL JOYST(1,X,Y)::CALL MOTION(#1,-SGN(Y),SGN(X))::GOTO 500
```

Note that the SGN produces the same effect, in this case, as dividing by 4 would. SGN returns a 1 if positive, 0 if the number is 0, and -1 if the number is negative.

If you need to use a certain formula many times in a program, you can save memory by using a DEF statement. TI BASIC and EXTENDED BASIC have a very powerful version of the DEF statement. They can be used for mathematical functions:

```
10 DEF CUBE(X)=X^3
```

Then when CUBE(3), for example, is referred to, it will return a 27. The X, if it is in parenthesis, will have nothing to do with a variable named X elsewhere in your program.

In that lies the power of the DEF statement. You can use it to update a variable and print it in one command:

```
10 DEF XYZ=C*4^B
20 FOR C=1 TO 10::FOR A=1 TO 5 STEP .1
20 B=RND:: PRINT XYZ::NEXT A::NEXT C
```

So after being set up, XYZ can take care of itself through the rest of the program. Another use could be quick solving of mathematic-

CONTINUED

al problems:

```
10 DEF ANSWER=A/(C+B)^A
20 INPUT A,B,C ::PRINT ANSWE
R::GOTO 20
```

But enough of these DEF statements. Keyboard input, while allowing more variety and number of controls, can be very cumbersome and difficult to handle. For instance:

```
200 CALL KEY(0,K,S)::IF S=0
THEN 1000
210 IF K=69 THEN CALL MOTION
(#1,-10,0):: GOTO 1000
220 IF K=83 THEN CALL MOTION
(#1,0,-10):: GOTO 1000
230 IF K=68 THEN CALL MOTION
(#1,10,0):: GOTO 1000
240 IF K=88 THEN CALL MOTION
(#1,0,10):: GOTO 1000
250 GOTO 1000
```

This method, while providing four directions, uses up a lot of memory and time, and does not provide for diagonals. A better way:

```
200 CALL KEY(0,K,S)::IF S=0
THEN 1000
210 X=(10*(K=87 OR K=69 OR K
=82))+((-10)*(K=90 OR K=88 O
R K=67))
220 Y=(10*(K=87 OR K=83 OR K
=90))+((-10)*(K=82 OR K=68 O
R K=67))::CALL MOTION(#1,X,Y
)::GOTO 1000
```

This method allows for diagonals, and is more effecient than the first version.

If you need more accuracy than automatic sprite motion can give, and are willing to trade off execution speed for more accuracy, you should try updating the sprites yourself using CALL LOCATE. For instance:

```
100 CALL CLEAR::CALL MAGNIFY
(4)::CALL SPRITE(#1,42,2,96,
96)::V,H=96
200 CALL JOYST(1,X,Y)::V=V+(
SGN(-Y)*(V>1 AND V<180))::H=
H+(SGN(-Y)*(H>17 AND H<224))
210 CALL LOCATE(#1,V,H)::GOT
O 200
```

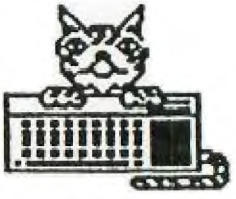
(SGN(-Y)*(V>1 AND V<180)) checks to see what direction is desired, and then double checks to make sure that the move won't exceed the screen boundaries. However, once those limits are reached, no further motion in that direction or the opposite is possible. Puzzle of the month: Rewrite the formula so that you may move back after you have hit one of the limits, without using an IF - THEN construct.

The system described allows you to maintain complete accuracy as to the sprite's location.

Well, that's it for this month. Response regarding what you want to see in the column has been poor. Remember, this is your column, I just write it! Let's get any suggestions or comments in to me, so I will know what you want to hear about. Once again, my home phone # is 262-7769. Modem users can leave me email or a message on F/C/L,M.M., or the new TIBBS columbus. Anyone can just hunt me down at the meeting.

Happy Programming!

END OF LINE



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HOW TO FIX DISKS

By Niraj N. Shah
Counseled by Mike Ballman

Did you ever try to catalog a disk and find out the Disk Controller thinks the disk is NOT Initialized? But you know better! What do you usually do with the blown disk? Most people Delete the file giving them the problem. Usually that does correct the problem, but it also gets rid of that file forever. The ultimate solution is to use DISK FIXER by Navarone Industries

The DISK FIXER enables one to examine and change the contents of any disk on a sector-by- sector basis. I think it is worth its forty-dollar list price. It is available from some TI retailers INFOWARE, MICROSTUPH & ZETTLERS OR directly from Navarone Industries.

Here is the process to fix up a blown disk...
First acquire a DISK FIXER from a friend or buy one, they're worth it. Get a hard-copy catalog of the blown disk, or even better, get a complete(old) catalog of what should be on the disk. If a complete catalog is not available, try to remember what should be on the disk and write those names down on paper. Once you have a catalog of the disk, you are ready to start using DISK FIXER

Insert the DISK FIXER cartridge and select option 2 from the TITle Screen. Upon doing so you should see the DISK FIXER menu. Do the following if the most recent catalog of the disk tells you there are more sectors used/free than is logically possible: 358 for single-sided & 718 for double-sided disks
For example, IF the catalog lists 500 sectors used/free on a single-sided disk THEN do the following ELSE GOTO the paragraph on "SECTOR ONE".

This part tells you how to fix up Sector 0; which is the sector containing the information concerning the name of the disk and the number of sectors used/free on the disk. If the disk catalog tells you the used/free sector information is erroneous then Sector 0 needs to be fixed. The easiest way to this is to copy a good Sector 0 from another disk to the blown disk. Here is how to do that:

1) Insert a good disk in drive
2) Read Sector 0 of that disk:
   R 0,1 <enter>
3) Put the blown disk in drive
4) Write good Sector 0 to disk:
   W 0,1 <enter>

If you catalog the bad disk, you will see that the diskname and the used/free information is the same as the good disk. But do not let that alarm you. We did that to fool the Disk Controller into thinking the bad disk is at least partially restored to normalcy. Now we need to fix up the blown disk as much as we can This is done by changing Sector 1.

Here is how to fix Sector one. First, get the most complete catalog and the most recent catalog of the bad disk in front of you. Then compare the two catalogs to see which filenames are missing. Next, compile an alphabetical list of all the filenames which are and should be in the catalog.

Then you need to find the corresponding sector for each filename. This is done by using the Find String function of the DISK FIXER

1) Put the bad disk in drive
2) Find a filename by:

   F 0,2D0,1 <enter>
   type in the filename
   <enter>
3) Ignore the "ERROR N SECTOR" message
4) Write down the sector number for that filename
5) If that filename could not be found make sure you typed it ni correctly and and try again; otherwise that file does not exist on the disk.
6) Repeat the process from step two for all the filenames

CONTINUED

You should now have an alphabetical list consisting of two columns: filenames and sectors. With that information in hand you are ready to begin fixing up the bad disk. This is done by modifying Sector one of the blown disk. First you have to read Sector 1 from the bad disk by doing this:

1) Put the bad disk in drive
2) Read Sector 1 of disk by:
   R 1,1 <enter>

Then you want to Alter the contents of sector one. This is done by using the Alter function of the DISK FIXER. This process is best learned by observing a concrete example
  Thus, lets say the blown disk has 14 files (filenames) on it. Thus there should be 14 entries on sector 1; one entry for each file. The rest of the sector should be all zeroes. Lets Alter Sector 1:

1) Keep the bad disk in drive
2) Enter the Alter function:
   A Ø <enter>
3) Type in the following just as shown, including the spaces:
   1 2 3 4 5 6 7 8 9
   A B C D E

4) Do not press enter) yet!
5) If you saw a non-zero entry after the "E" entry in the first column then type in a (Ø) zero <space> and repeat until the first column shows a zero.
6) Press <enter>
7) Write the revised Sector 1 to the disk:
   W 1,1 <enter>

You have just entered a table of pointers to the files on the disk. The table points to the corresponding sector for each file name. This is the table that is updated and sorted if you add/delete files to the disk.

Leave the DISK FIXER by typing <@> for QUIT and press (enter>. Then catalog the disk. Lets call this new catalog the "mixed" catalog. You will see the reason once the disk has been cataloged. Notice how the catalog is NOT in alphabetical order! It does however contain all the filenames that you expected to be on the disk! The next step is to alphabetize the catalog. This is done by first alphabetizing the catalog on paper and carrying along the appropriate sector number of each filename. Here is an example of a "Mixed" Catalog.

MIXED CATALOG

FILENAME	SECTOR
CAT	1
SCREEN	5
VOTE	2
FIRE	6
APPLE	E
HELLO	9
SCROLL	C
LOAD	3
TIME	8
DEMO	7
QUICK	4
JUSTIFY	D
PLOT	B
LOGO	A

SORTED CATALOG

FILENAME	SECTOR
APPLE	E
CAT	1
DEMO	7
FIRE	6
HELLO	9
JUSTIFY	D
LOAD	3
LOGO	A
PLOT	B
QUICK	4
SCREEN	5
SCROLL	C
TIME	8
VOTE	2

The above example shows how you should alphabetize the filenames and the corresponding sector numbers on paper. Once you have done this, you are ready to enter this information into Sector 1. You do not have to enter the filenames, just the sector numbers. Here is how to do that:

1) Put the blown disk in drive
2) Read Sector 1 by:
   R 1,1 <enter>
3) Enter the Alter function:
   A Ø <enter>
4) Type in the sector numbers in the order as shown for the above sorted example catalog. Seperate each number by a space:

E 1 7 6 9 D 3 A B
4 5 C 8 2

5) Then press <enter>
6) Write revised sector to disk:
W 1,1 <enter>
7) Put a Write-Protect tab on the disk!

You have now fixed up the disk. For verification, Quit the DISK FIXER program and catalog the disk. You should encounter no problems during the cataloging process. But you are not completely done yet! DO NOT add/delete any files or programs to the disk!
Get a fresh disk and inititalize it to the same configuration as the blown disk. Then backup the blown disk to the fresh disk. Then catalog the fresh disk and you will see that the used/free sector information is now correct. Thus, the fresh disk is now your working disk and the blown disk is now a disk for your archives.

Keep the blown disk in a safe place just in case you remember a file that was not previously recovered from the blown disk. Go through the above procedures to recover that new-but-old file.

If you have any questions on how to fix up blown disks please write to this newsletter in care of the Blown Disks department
Happy fixing!

END OF LINE

RANDOM SYMMETRICAL CHARACTER GENERATOR

by Jim Peterson -
Tigercub Software

This month the old Tigercub would like to share with you his methods of creating random symmetrical redefined characters. I doubt that I'm the first one who ever thought of this, but I've never seen it in anyone else's programs and I don't think it can be done in BASIC on any computer other than the TI.
In its basic form it goes like this:

```
100 DIM A$(16)
110 DATA 00,18,24,3C,42,5A,6
6,7E,81,99,A5,BD,C3,DB,E7,FF
120 FOR J=1 TO 16
130 READ A$(J)
140 NEXT J
150 FOR L=1 TO 4
160 RANDOMIZE
170 X=INT(16*RND+1)
180 B$=B$&A$(X)
190 C$=A$(X)&C$
200 NEXT L
210 CALL CHAR(65,B$&C$)
```

Now, no one should ever use a routine without understanding it, because you won't be able to debug it and you won't be able to modify it. So, let's go through this. If you take a good look at the chart on page 109 of your "BEGINNER'S BASIC", or page II-77 of the "USERS REFERENCE GUIDE", you will see that those pairs of hexadecimal numbers in line 110 represent rows of bits which are mirror images of each other. Therefore, if we assemble a character from these pairs, it will have left-right symmetry. So, lines 100-140 read these pairs into an array. Then, lines 120-140 go

CONTINUED

through a loop four (4) times, each time picking one of these pairs at random, by randomly picking a subscript number between 1 and 16. The top half of the hex code of our redefined character is built up by adding these pairs to the end of string B$, which starts out as a blank. For instance, if on the four (4) loops the random values generated for X are 1, 2, 3 and 4, the pairs selected are ØØ, 18, 24 and 3C, and B$ is successively built up as ØØ, ØØ18, ØØ1824, and finally ØØ18243C. At the same time, C$ is built up with the same pairs in reverse order, as ØØ, 18ØØ, 241800, 3C241800. Finally line 21Ø redefines ASCII character 65 as being string B$&C$, which is "ØØ18243C3C241800", and which is symmetrical top-to-bottom as well as left-to-right.

Now that you understand how it works, let's program it a bit more efficiently.

```
1ØØ FOR L=1 TO 4
11Ø RANDOMIZE
12Ø X$=SEG$("ØØ18243C425A66
7E8199A5BDC3DBE7FF",INT(16*
RND+1)*2-1,2)
13Ø B$=B$&X$
14Ø C$=X$&C$
15Ø NEXT L
16Ø CALL CHAR(65,B$&C$)
```

You can cram that into one line of Extended Basic! So, what's it good for? Well, let's add:

```
9Ø FOR CH=4Ø TO 152 STEP 8
change 16Ø to CALL CHAR(CH,
B$&C$)
17Ø B$=""
18Ø C$=""
19Ø NEXT CH
```

Now we've redefined the first character of sets 2 through 16. Don't forget lines 17Ø and 18Ø. Since B$ and C$ are formed by adding onto themselves, they must be cancelled out before we start over or they will just keep on adding onto themselves. Next, let's give each character set a foreground color and a different background color.

```
2ØØ FOR SET=2 TO 16
21Ø X=INT(15*RND+2)
22Ø Y=INT(15*RND+2)
23Ø IF Y=X THEN 22Ø
24Ø CALL COLOR(SET,X,Y)
25Ø NEXT SET
```

Now for the fun...

```
8Ø CALL CLEAR
26Ø CALL SCREEN(5)
27Ø CALL HCHAR(INT(24*RND+1
),INT(32*RND+1),INT(15*RND+
1)*8+32,INT(1Ø*RND+1))
28Ø CALL VCHAR(INT(24*RND+1
),INT(32*RND+1),INT(15*RND+
1)*8+32,INT(1Ø*RND+1))
29Ø IF INT(1Ø*RND)<>Ø THEN
   27Ø
3ØØ CALL CLEAR
31Ø GOTO 27Ø
```

Or if you're in Extended Basic, let's change:

```
9Ø FOR CH=4Ø TO 136 STEP 4
155 SP=SP+1
16Ø CALL CHAR(CH,RPT$(B$&C$
,4))
165 CALL
SPRITE(#SP,CH,INT(15*RND+2)
,1,1,INT(1Ø*RND+2)-INT(1Ø*R
ND+2),INT(1Ø*RND+2)-INT(1Ø
*RND+2))
85 CALL SCREEN(5)
2ØØ FOR D=1 TO 1ØØ
21Ø NEXT D
22Ø CALL MAGNIFY(INT(4*RND+
1))
23Ø GOTO 2ØØ
```

and delete 24Ø-31Ø.

You would prefer something a bit more useful? OK, let's try a different variation of the same principle.

CONTINUED

```
100 CALL CLEAR
110 RANDOMIZE
120 DATA TIGERCUB PRESENTS,T
HE,CHAMELEON,SCREEN BORDER,A
ND,WIPE,by Jim Peterson,
" "," TOUCH ANY KEY"
130 M$="1800665AC342DB667E18
8100995AC3A5E78142DB24BD6600
8142992400E7E5AC3A5C32418
00FFDB5AFF7EFF009918810066 00
18"
140 RESTORE 120
150 FOR P=1 TO 9
160 READ A$
170 PRINT TAB(15-LEN(A$)/2);A
$;" "
180 NEXT P
185 PRINT :::::
190 GOSUB 240
200 CALL KEY(0,K,ST)
210 IF ST=0 THEN 200
220 GOSUB 320
230 GOTO 140
240 CALL CHAR(128,SEG$(M$,INT(
43*RND+1)*2-1,16))
250 X=INT(15*RND+2)
260 Y=INT(15*RND+2)
270 IF Y=X THEN 260
280 CALL COLOR(13,X,Y)
290 CALL HCHAR(24,1,128,64)
300 CALL VCHAR(1,31,128,96)
310 RETURN
320 T=T+1-ABS(T=2)*2
330 ON T GOTO 340,360
340 CALL VCHAR(1,3,128,768)
350 GOTO 370
360 CALL HCHAR(1,1,128,768)
370 CALL CLEAR
380 RETURN
```

In this one, M$ consists of any of those symmetrical pairs typed in at random, and we define a character which has only left/right symmetry by randomly pulling out any sequence of 16 of these. Another way to do this is:

```
100 CALL CLEAR :: RANDOMIZE ::
FOR L=1 TO 8 :: B$=B$&SEG$("00
18243C425A667E8199A
5BDC3DBE7FF",INT(16*RND+1)*2-1
,2):: NEXT L
110 CALL CHAR(128,B$):: B$=""
:: CALL MAGNIFY(2):: CALL SPRI
TE(#1,128,2,8,120)
120 CALL KEY(0,K,ST):: IF ST=0
THEN 120 ELSE 100
```

Now start tapping any key until you find an appropriately evil-looking alien space ship or man-eating bug for your game program.

If you consult that chart in "BEGINNER'S BASIC" again, you will find that the first eight (8) of those pairs do not turn on the first or last bit, therefore do not fill a print space. So, let us enter another program:

```
100 CALL CLEAR
110 FOR CH=129 TO 154
120 RANDOMIZE
130 FOR L=1 TO 3
140 X$=SEG$("0018243C425A667E"
,INT(8*RND+1)*2-1,2)
150 B$=B$&X$
160 C$=X$&C$
170 NEXT L
180 CALL CHAR(CH,"00"&B$&C$)
190 B$=""
200 C$=""
210 NEXT CH
220 INPUT M$
230 GOTO 220
```

Now type any of the letters with the CTRL key held down your computer has a built-in Venusian alphabet!

Many other effects and variations are possible. I use this routine frequently in my Tigercub programs. It provides the infinite variety of kaleidoscopic displays in Kaleidovision, Multivision and Ten Thousand Sights

It enables me to provide a completely different assortment of colorful cards to turn over in each new game of Match a Patch, and a new screenfull of walls in each game of Getaway. It provides the colorful characters of the Mongolian Typewriter for the little tots, and the rainbow displays that reward correct answers in Kinderminus, and many more.

END OF LINE

LETTER TO THE MEMBERS

Dear Members,

In reading the newsletters from other User Groups, we all have a common problem -- the same people are writing articles for their newsletters each month and the editor keeps asking for new people to participate. I admit I was just as bad, if not worse, as the rest of you. I always thought that no one would be interested in what I had to say and my knowledge on the computer is so close to zero that I could not write an original program that would win any award. Well I'm writing this on behalf of all the officers to encourage every member to write something. It can be about a problem you are having or some story about your family and the TI -- I'm sure everyone has those.

If you're like me I never got anything written up and given to any of the officers by press time. W ell here's a suggestion--write something up or put it on tape using REM statements (the tape will be returned to you) and bring it with you to the next meeting. That way it can go in the following newsletter. Most things aren't outdated from one month to another and if everyone , myself included, helps a little it will add up to a lot.

See you at the next meeting.

Mary Drummett

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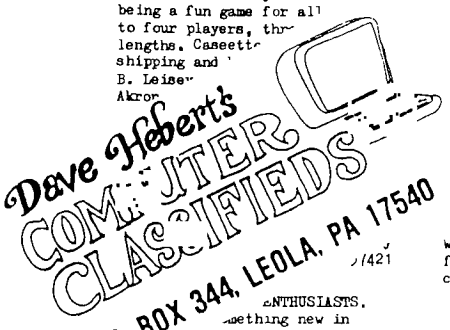

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Your group has purchased a license agreement from Cyndex Software and will be distributing the program and its files to its members this month. Want to know more about this great game? Come to the September meeting, where we will be demonstrating it. It will be available after the meeting on cassette for $3.00 or we will put it on your disk for $2.00 so be sure to bring a blank unformatted disk with you.

One last note: it will not run on a bare system, you will need any of the below configurations.

1) cassette recorder, Mini Memory, joysticks
2) disk drive, Mini Memory, joysticks
3) disk drive, 32K memory, Editor Assembler, joysticks
4) disk drive, 32K memory, Extended Basic, joysticks

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FOR SOMETHING COMPLETELY

DIFFERENT ! ! !

I shan't explain which device this is, and further recommend not running the program until you've got all in. If all goes well you're in for a real surprise. Didn't know the ol' box had it in it, did you?

BLACK BOX DIRECT MEMORY LOADER

```
4 CALL INIT
8 FOR A=1 TO 255 :: CALL LOAD(-31
744,-A):: NEXT A
12 FOR A=1 TO 255 :: CALL LOAD(-3
1744,A):: NEXT A
16 FOR A=1 TO 255 :: CALL LOAD(-3
1744,A):: NEXT A
20 FOR A=1 TO 255 :: CALL LOAD(-3
1744,-A):: NEXT A
24 FOR B=1 TO 5
28 FOR A=1 TO 255 STEP 4 :: CALL
LOAD(-31744,-A):: NEXT A
32 NEXT B
36 PRINT "2ND HALF" :: CALL SOUND
(100,110,0)
40 FOR B=1 TO 5
42 FOR A=1 TO 975 STEP 4 :: CALL
LOAD(-31744,A):: NEXT A
44 FOR A=1 TO 255 STEP -5 :: CALL
LOAD(-31744,A):: NEXT A
48 NEXT B
```

For background material and help in understanding this gimmick, read section 20 of the Editor/Assembler manual. That's the chapter, 20.2 is likely the verse.

>Frederick Hawkins

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This article comes to us from HUG, The Houston Users Group, September 1984.

FORTH SINGLE-DRIVE DISK COPIER

EQUIPMENT NEEDED: CONSOLE, 1 DISK DRIVE, EDITOR-ASSEMBLER, BACK-UP COPY OF TI-FORTH

This program will allow you to make back-up copies of most disks in 6 passes. This is a lot faster than the 18 passes using the earlier copying information where you had to type in 0 1 2 3 4 CR CR CR CR CR etc. Everything is screen prompted for ease in using. The original program is from St. Louis #6 with revisions by Bill Knecht. The auto-load is by Larry Pipkin & Bill Knecht.

This program will have to be typed in on an extra copy of your original FORTH Systems Disk and used by itself, i.e., don't put any other screens on this disk. After you have made your back-up copy, follow these directions.

LOAD FORTH PROGRAM - Ed/Asm option 3 Load & Run DSK1.FORTH
Load -EDITOR. Type 41 EDIT (Enter) 41 should be blank. Type in SCR #41 then hit FCTN 9 (Back) to get the cursor below the screen. Type FLUSH and hit ENTER. The information is now saved on screen 41).

```
 SCR #41
   0 ( half-fast one-drive disk copier -- C. Schram 4/28/84 )
   1 ( COLD load this screen and DUPLICATE )
   2 BASE->R DECIMAL -SYNONYMS 0 VARIABLE BIG 15358 ALLOT
   3 : ?# EMPTY-BUFFERS 0 BLOCK 10 + @ 256 1024 */MOD SWAP 0= 0= + ;
   4 : PAK CR ." PRESS ANY KEY " 52 GPLLNK KEY DROP CR CR ;
   5 : LMD ." LOAD MASTER DISK" PAK ; : LCD ." LOAD COPY DISK" PAK ;
   6 : DUPLICATE CLS 0 0 GOTOXY LMD 0 DISK_LO ' ?# DUP DUP
   7 DISK_SIZE ' DISK_HI ' LCD
   8 ." ... FORMATTING COPY DISK ..." 0 FORMAT-DISK
   9 0 DO CLS 0 0 GOTOXY LMD
  10 I 15 0 DO DUP I + DUP .  CR BLOCK BIG I 1024 * + 1024 CMOVE LOOP
  11  CLS 0 0 GOTOXY LCD
  12 15 0 DO DUP I + DUP .  CR BLOCK BIG I 1024 * + SWAP 1024 CMOVE
  13 UPDATE FLUSH LOOP
  14 DROP 15 +LOOP 1 DISK_LO ' ; R->BASE
  15
```

After you have entered and flushed screen 41, type in 3 EDIT (Enter) and make the following changes:

```
SCR #3
  0 ( WELCOME SCREEN )  BASE->R HEX 10 SYSTEM    ( Clear Screen )
  1 0 0 GOTOXY  ." Loading Forth Cooler " CR 10 83C2 C! ( Quit off)

 12 41 LOAD
 13 CR CR CR ." READY...TYPE 'DUPLICATE' " CR CR CR CR
```

FLUSH this screen as you did with screen 41. Next type in 2D EDIT and Erase lines 9-15. Then add the following

```
  9
 10
 11
 12    (12 spaces)     FORTH SINGLE-DRIVE
 13                       DISK COPIER
 14
 15                    one moment please
```

FLUSH this screen and your program is now complete. Take the disk out and attach a "Write-protect tab". Put the disk back in the drive and enter COLD. Follow the prompts and enter NOW when finished or COLD to copy another disk. This program runs automatically by loading DSK1.FORTH.

This article comes to us from HUG, The Houston Users Group, Sept.

CURSOR DEFINITION
by Tony Johnson

It seems that every computer that you look at has a different type of cursor. Some have a blinking square, such as the 4A, some have a "?" sign, still others have, and my personal favorite, an "_". So, why can't the 4A have one?

After a few tries, I came upon it. First you need the following equipment: 1) Disk drive, 2) Extended Basic, 3) Expansion memory, 4) Editor/Assembler. You can get by without the E/A if you have a friend with one or can get the object code from someone who has the program. Then you need to do the following steps.

Step 1. Get into your E/A and enter the following program:

```
        DEF CURSOR,VMBW

VMBW    EQU >2024

NEWDEF DATA >0000,>0000,>0000,>7E00

CURSOR LI R0,1008
       LI R1,NEWDEF
       LI R5,8
       BLWP @VMBW
       RT
       END
```

The data statement holds the hexadecimal code for the cursor. After entering it into the E/A, save the file in "DSK1.CURSOR1". Next, assemble it using the "R" option storing the object file in "DSK1.CURSOR". Below is source listing of the above program:

```
0001A        A0000B0000B0000B0000B7E00B0200BB03F0B0201C0000B02027F375F      0001
A0012B000BB0420B2024B045B7FA5CF                                             0002
S0008CURSOR62024VMBW  7FA74F                                                0003
:       99/4 AS                                                             0004
```

Step 2. Leave E/A and get into X-basic. Then type in the following program:

```
100 CALL CLEAR
110 CALL INIT
120 CALL LOAD("DSK1.CURSOR")
130 CALL LINK("CURSOR")
140 END
```

For those who aren't too familiar with these commands, the "CALL INIT" will prepare the expansion memory to load and run assembly program, the "CALL LOAD" statement will load the file after DSK1 into the expansion memory and "CALL LINK" will transfer control to the assembly language program. When the program finishes with the loading and linking of the program, control will be passed back to you, and you should have a blinking "_". Save the X-basic program under "DSK1.LOAD" so that every time you enter X-basic the cursor will come up as an "_". Also, the assembly program will stay in the expansion memory until you turn the power off or if you use a program such as TI-WRITER or E/A that will write over that memory location. When you come back to extended basic, just type in 'CALL LINK("CURSOR")' and the cursor will come back up.

CAN OF WORMS

By T. D. Bell

CAN OF WORMS; PART 2 APPLESOFT TO TI BASIC WAS MOVED TO NOVEMBERS ISSUE TO MAKE ROOM FOR THEMANY ARTICLES I FOUND INTERESTING IN OUR FELLOW 99'ers NEWSLETTERS FROM OUR MAILBAG.

TD BELL'S ARTICLE WILL APPEAR IN FULL NEXT ISSUE ALONG WITH YOUR ARTICLE

THE ONE YOU FORGOT TO MAIL...ED

PLEASE REMEMBER TO BE KIND TO THE LITTLE BEGGERS ON THEIR NIGHT
YOU WERE A KID ONCE TOO!
. HAPPY HALLOWEEN

Are you tired of squabbling with your spouse or lover over what six numbers to choose for the Ohio Lottery every week? Why not let your T.I. 99/4A eliminate the headaches. The short program that follows will randomly choose six numbers between 1 and 40 for you. If you want more than one set of numbers (of course you will!), simply press the space bar when prompted. Pressing any other key when prompted will terminate the program. Note that lines 280-300 assure that the random number seed generated by the computer will be different each time the program is used. This technique is good to use in any program where random numbers are desired. Since the amount of response time to the prompt will differ between each use, the random number seed will always be different. After all, you wouldn't want to have to share your $24+ million (or whatever the jackpot may be) with other club members would you?

```
100 REM LOTTERY NUMBERS
110 CALL CLEAR
120 CALL SCREEN(15)
130 PRINT "  **************************"
140 PRINT "  *                        *"
150 PRINT "  *   OHIO LOTTERY         *"
160 PRINT "  *                        *"
170 PRINT "  * NUMBER GENERATOR       *"
180 PRINT "  *                        *"
190 PRINT "  **************************":::::
200 RANDOMIZE
210 OPTION BASE 1
220 DIM A(40),N(6)
230 FOR I=1 TO 40
240 A(I)=0
250 NEXT I
260 PRINT " PRESS ANY KEY WHEN READY"
270 CALL SOUND(150,1500,0)
280 CALL KEY(0,K,S)
290 Z=RND
300 IF S=0 THEN 280
310 CALL HCHAR(23,1,32,32)
320 FOR I=1 TO 6
330 N(I)=INT(RND*40)+1
340 IF A(N(I))=1 THEN 330
350 A(N(I))=1
360 NEXT I
370 PRINT TAB(3);N(1);N(2);N(3);N(4);N(5);N(6);:::::::
380 PRINT " PRESS SPACE BAR FOR MORE"
390 CALL SOUND(150,1500,0)
400 CALL KEY(0,K,S)
410 IF S=0 THEN 400
420 IF K=32 THEN 110
430 CALL CLEAR
440 PRINT TAB(10);"GOOD LUCK!":::::::::
450 END
```

BY:
John D.Tuesday
Summit 99'ers USERS GROUP

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

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Spirit of 99

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writers []
technical []
games []
reviews []
news []

Advertising Editor/coordinator []
Assistant A e/c []

labeling []
coalating []
folding []

Publicity editor []
program editor []
genneral typists []
Correspondance editor []

****

Demo committee []
Taking notes at meetings []
Other (Please specify)

_____
_____
_____
_____

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Price []
Enertainment []
It seemed like a good idea []
Newsletter Articles []
Business []
Word Processing []
Education []
To meet women []
None of Your Business []
All of the above []
One of the above []

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*** MEMBERSHIP APPLICATION ***

NAME _____ AGE ___
ADDRESS _____
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 _____