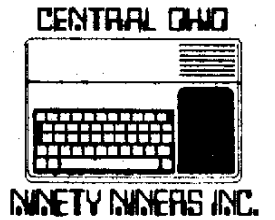


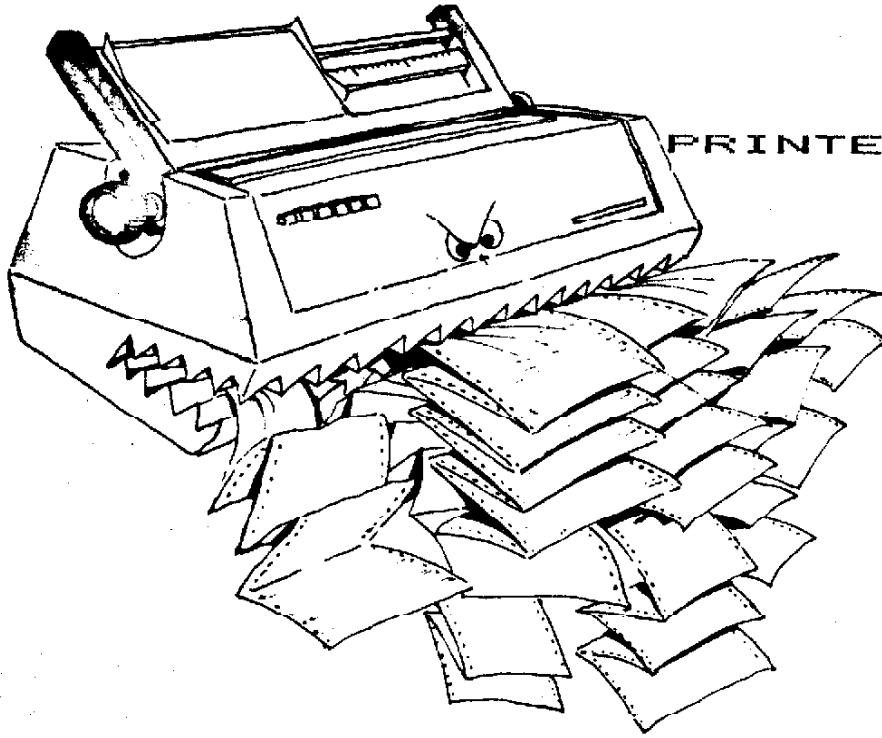
Spirit of 99



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

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VOL 1 NO 7 JUNE \$1.00



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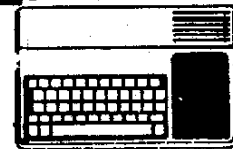
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Spirit of 99

THE OFFICIAL NEWSLETTER OF CENTRAL OHIO NINETY-NINERS

VOL 1 NO. 7 JUNE 1983

CENTRAL OHIO



NINETY NINERS INC.

The SPIRIT of Ninety-Nine is the official newsletter of the Central Ohio Ninety-Niners, Inc. It is published monthly in Columbus, by INFOWARE for C.O.N.N.I. Members and other subscribers.

Subscription price is Ten (\$10.) dollars a year to non-members, or One (\$1.) dollar per single issue. Members whose dues are current will receive the newsletter at no charge.

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Central Ohio Ninety-Niners Inc. is a non-profit organization

composed of members who own or use the TI99/4A and it's related products. It's main objective is the exchange of Educational and Scientific information for the purpose of Computer literacy.

C.O.N.N.I. meetings are held the SECOND SATURDAY of each month at the Martin Janis Senior Center, on the Ohio State Fairgrounds, 632 East Eleventh Avenue in Columbus. Meeting time (to be announced at June meeting). Meetings are open to the public. Membership dues are \$15.00 per year. (this fee covers your Immediate Family). An application has been placed in this newsletter for your convenience. Please address it and all other correspondence to:

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Dear Editor,

Want to get rid of those news letter problems?

As you know there are now over 120 99/4A User groups. One of the primary functions of the group is to type and produce a newsletter every month. This becomes an increasingly difficult task as the months wear on. It also becomes more expensive as we have learned from publishing our own club's newsletter.

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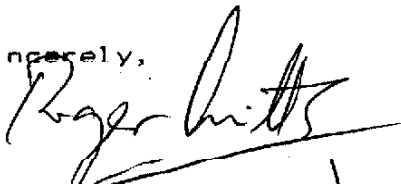
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Sincerely,



P.S. We print the CENTRAL OHIO 99ers newsletter.
Call Pat Saturn: Newsletter Editor 614-486-7262
or myself 614-889-9011 (Evenings)

PRESIDENTS COLUMN

C.O.N.N.I. has grown daily since its inception several months ago. Although I know quite a few of the members, this growth makes it difficult to get to know everybody.

I hope all of you are getting more out of your computer by being a member. However, you should remember that the more you share your knowledge and experience with fellow members, the more you will get out of the users group.

To those I have not personally welcomed into the group, let me take this opportunity to do so.

WELCOME TO C.O.N.N.I.

See you at the JUNE meeting at OCLC.

ROGER
WILLS
PRESIDENT

REBATE

Send two KELLOGG'S box tops and 25¢, and get a 99/2 or a signet ring, and \$50.00 rebate. Supplies are limited

PROGRAM COMMITTEE

The program committee is pleased to announce our first field trip. This will be on JUNE the 11th, at D.C.L.C., 6565 Frantz Road, Dublin Ohio at 9AM.

in addition to our regular meeting format, we will have an excellent slide presentation, and I'm sure all will enjoy a tour of their facilities (Computers!) For our JULY meeting we are planning a presentation of Huntington Bank's "BANC SHARE", a bank at home service. Looking forward to seeing you there.

NOTE: I will be looking for ambitious members to help me on the Program Committee. So, if you're interested, and want to contribute to the user's group, this is your opportunity!!!
Sam Morabito,
Program Committee.

DUELING COMPUTERS

"DRAW A CIRCLE"... a circle appears on the screen. "MAKE IT RED",...the shape is instantly filled with color.

LISA will now draw a circle,...Operator's hand moves a MOUSE in a circle on his desk top.

Now I will color it red, Operators movement of the mouse moves the curser on the screen to the color palette and picks the color red.

"MOVE THE CIRCLE TO THE RIGHT", (the operator says) zip it's moved to the right.

The computer being spoken to is THE ANSWER (Pegasus) Texas Instruments new contribution to the Personal Computer world. The other, the much talked about LISA from Apple.

The part that's hard to believe is, no one is using the keyboard. We no longer have to learn special programming codes or commands to make the computer do something. While the two computers are similar in the fact they don't use the keyboard except to type, TI's computer will be able to use voice recognition on all of it's software.

The voice control comes from a circuit board which fools the program into thinking that, the voice command that it just received was punched in at the keyboard.

TI has also manufactured programs and hardware that integrate with other office machines. IT can answer the phone, speak to the caller, and take a message by digitizing the voice and recording it on hard disk for play back later.

Both computers can use CP/M, (the Answer can also use MS/DOS.) Get out your check book and write a check for a new Porsch, or two LISA computers, or get that \$3,000-\$6,000 you've hidden in your sock. TI will cost a little more as soon as they set the price for speech recognition, and if they don't hurry Apple will just throw it in for free...

USER'S GROUP PROGRAMS

The International 99/4 U.G. P.O. Box 67 Bethany Ok. 73008, charges a \$12.00 annual membership fee, for which they issue an occasional newsletter. A catalog of about 700 programs which they sell for about \$3.00 each, or will exchange at a rate of 4 of their programs for one of yours.

The 99/4A Program Exchange P.O. Box 3242, Torrance CA. 90510, charges a ONE-TIME fee of \$10.00 for which they issue an occasional Newsletter and a smaller catalog of programs which they will sell for \$2.00 each, or will exchange at the rate of 5 of their programs for one program plus \$3.00 from you.

The above SERVICES have announced that they will soon issue catalogs with a great many more programs & offer a wide variety of Hardware and Commercial Software at DISCOUNT (User's Group Prices). They may be no less than the DISCOUNT from other dealers.

These User's Groups may be a good deal for you, since you can obtain programs by exchange at little or no cost. It is certainly also a good deal for the User's Groups, since they obtain your program in exchange for programs which cost them NOTHING, and then resell them at a clear profit!!

Both have mostly the same program lists. Both seem to have some trouble with their filing system (maybe they don't have a good filing program ED), and may send you the wrong program, BUT they seem willing to correct their errors promptly. Both have been backlogged and slow to deliver, but seem to have caught up now. Both of them admit that some of their programs contain MINOR BUGS or lack operating instructions.

Actually, some of their programs contain MAJOR BUGS and are worthless. Other would be

"excellent programs", but seem impossible to operate without instructions. Some are excellent, some average or mediocre, SOME should not be offered at any price. Many have been translated from pre-graphics books of computer games, some with added sound and graphics, and some without.

They are not catalogued by author's name, and not always by the name the author gave them, so you may get something you already have.

The programs are of all types, mostly games but also music, graphics, educational, business and professional, LOGO, etc. Quite a few were written for the TI99/4 and may require some conversion to run on the 99/4A. At least one of them needs too much memory for the 4/A.

I have obtained nearly 100 of these programs, mostly games. If you are planning to buy or exchange for any of them, give me a call, I may be able to give you my opinion of them, or help you with the bugs. CALL 235-3545 .
Jim Peterson

DISCOUNT

COMMANDER SYSTEMS INC is offering the following discount to members:
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- (1) You must present your C.O.N.N.I. membership card at the time of purchase.
- (2) does NOT apply to items already discounted from our normal price.
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The P-BOX deal is NOT considered a "DISCOUNT". So, this means that you can buy the required items to get the FREE P-BOX, and get a discount to boot!

SOFTWARE

FOR THE 99/4(A)

EXTENDED

Now MASTER DISK FILE Now

A master index of your disks. MASTER DISK FILE uses a large portion of the 90K bytes available on a single sided disk as virtual memory to create and store a perpetual file of disks, programs and applicable data. Data can be added, removed or up dated. The file may then be accessed for viewing on the screen or for printing several types of lists on a printer. Insert disk into drive, it is catalogued then can be filed.

Reads up to 95 programs and files per disk. Maximum of 120 disks or 1100 programs may be filed.

Does not require memory expansion. Supports single or double sided disks (or mixed).

Supports single or multiple drives.

Programs are catalogued from disk in order and merged into the file; no sort is required after filing.

SEARCH for disks or programs by name.

Look-up time from a cold start: under one minute; from a running program: 15 to 25 seconds!

List on screen or a printer in alphabetical order by program name or disk name.

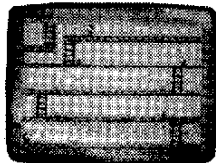
Up-date disks that have been changed by inserting into drive. Automatically replaces and up-dates old information.

May be used without a printer (on screen); file is portable and can be taken to a friend's for printing.

Supports any printer: serial or parallel.

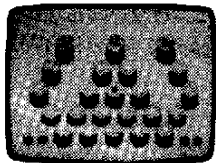
Diskette (only)\$15.00

GAMES PAK/III



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BOUNCER bounds from one trampoline to another, scoring points for clearing off the squares. He must avoid the arrows which will burst him. Six different screens. Uniquely coordinated sprites, graphics and sounds make BOUNCER so like a real arcade game. you will wonder why we didn't provide a slot for the quarters. Joysticks required. Cassette or Diskette\$15.00

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GAMES PAK/II ARTILLERY

The opposing force must be destroyed by determining angle and force of each shot. An ever-changing wind complicates matters. Play is between two players or one player against the computer. Simulates actual ballistic trajectories.

Cassette or Diskette\$9.95

DE-CYPHER

An encrypted message is displayed and guesses change all corresponding letters to the guess. Includes a help feature. Comes with 50 messages which can be changed.

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PUZZLE 15

Move alphabetic squares (A to Q) into the single empty slot in an effort to arrange them into order. The computer keeps track of the number of moves taken to solve the puzzle and scores of previous games are displayed for comparison. Multiple squares may be moved when appropriate.

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FLIP CHECKERS

Outsmart the computer or an opponent by getting all checkers flipped to your color. Computer determines its moves pleasingly fast. A board game with no pieces to lose. Joysticks required.

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Print the screen to a dot-matrix printer. Does not require extra memory! Disk version is simple to use. Cassette version requires mild programming knowledge.

Cassette or Diskette\$12.00

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DATA BASE for: Mail Lists, Labels, Files Records: 250 records per diskette consisting of up to nine 28-character items per record. Prompts: user designated prompts.

Complete File Sort: 250 records in 100 Seconds.

Search; Pre-set; print labels & lists.

Includes a FORM LETTER program that uses NAME-IT data in TYPWRITER generated form letters.

Cassette version differs from disk version. Cassette \$32.00 Diskette \$35.00

NOTE: Should you decide to up-grade to the TI-WRITER module, TYPWRITER and NAME-IT data can be converted for use by that module. NAME-IT alone, will generate 250 TI-WRITER form letter records.

TI-WRITER is copyrighted software of Texas Instr.

GAMES PAK/I FROGGY

Jump FROGGY across 10 lanes of traffic then across 6 logs; keyboard or joysticks. Fabulous sprite action!



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EXTENDED BASEBALL

Joystick control of the pitcher and the batter, and individual batting averages that specifically effect the batting algorithm. Multi-base and multi-runner plays. Joysticks required.

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Joystick control of a laser sight or inertia influenced space mines to shoot down the invading Gorfians. Joysticks required.

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Quick graphics, music, color, speech (optional) and sound are added to keep the players entertained. Includes 580 words of 4 to 9 letters in length in easy, medium, and difficult groups.

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Cut Here (may be copied or substituted)

BIGGIES BITS

```
1000 REM PUT MESSAGES ON THE
SCREEN W/OUT SCROLLING & USE
AUTOMATIC CENTERING.
1010 REM BY NIRAJ SHAH
1020 LENGTH=LEN(M$)
1030 IF LENGTH>32 THEN 1110
1040 COL=16-INT(LENGTH/2)
1050 IF COL=0 THEN 1060 ELSE 1070
1060 COL=1
1070 CALL HCHAR(ROW,1,32,32)
1080 FOR X=1 TO LENGTH
1090 CALL HCHAR(ROW,COL+X-1,ASC
      (SEG$(M$,X,1)))
1100 NEXT X
1110 RETURN
```

The ONLY things you have to send to the subroutine are the ROW (1-24) and the actual MESSAGE. NOTICE that in line 1070 the SUBROUTINE ERASES ANY old message that was on the same row prior to putting the NEW message on THAT row

Here is an example of HOW to use the above SUBROUTINE.

```
100 REM EXAMPLE OF HOW TO USE NO
SCROLL/AUTO CENTERING SUBROUTINE
110 CALL CLEAR
120 M$="THIS IS ON ROW 12"
130 ROW=12
140 GOSUB 1000
150 FOR DELAY=1 TO 1000
160 NEXT DELAY
170 M$="NOW THIS CHANGESTHE LAST
ONE"
180 ROW=12
190 GOSUB 1000
200 M$="NOTICE THE AUTO
CENTERING"
210 ROW=16
220 GOSUB 1000
230 FOR DELAY=1 TO 1000
240 NEXT DELAY
250 END
```

Also, NOTICE that the SUBROUTINE will NOT "PRINT" ANY MESSAGE THAT IS OVER 32 CHARACTERS LONG. This was taken care of by LINE 1030.

AUTOMATIC REPEAT?

Are you aware that even the <FCTN> KEY is designed for automatic REPEAT? say that you want to DELETE 5 characters. To activate the function, you

have to simultaneously press <FCTN> and <1> KEYS; Then you can let go of the <FCTN> KEY and still be deleting characters! So, this AUTOMATIC REPEAT feature leaves one hand free to flip pages, drink coffee, etc.

KIDS COMPUTER CORNER

By Ernie & Will

The Author's of K.C.C. have been asked to write a column from the **Kids** point of view on computers.

This column will have many helpful hints on programming, and the many aspects of computer use.

We, from time to time, will write reviews on the extent of TI BASIC language. As a last resort, we will help debug BASIC programs, and can review some Hardware.

If you have questions, an interesting program, or game, please contact one of us to have it printed in this column. this way we may share it with other members.

We are here to help other members in the group, and get others to join the group. After all, when it comes to computers, we are all **KIDS**. TO CONTACT K.C.C. CALL

Greg Thomas >(614) 444 1439
Will McClung >(614) 855 9271
Editor: Greg Thomas
1706 Oakwood
Columbus Ohio 43207

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A good response & I will get it
together.....

BIGGIES BITS KEYBOARD ORGAN

```

100 CALL CLEAR
110 REM KEYBOARD ORGAN          by Jim Peterson
Tigercub Software
120 CALL CHAR(123,"50F850F850")
130 CALL CHAR(124,"80E0A0A0C0B0")
140 CALL CHAR(125,"00")
150 PRINT TAB(10);"TIGERCUB":TAB(7);"KEYBOARD ORGAN":
160 PRINT " This program will permit":"music to be played on the":"TI 99/4A keyb
oard."
170 PRINT " The bottom row of keys":"plays the lower octave from":"A to B, the 3
rd row plays"
180 PRINT "the upper octave from A to D":"and the 2nd and 4th rows":"play the fl
ats and sharps"
190 PRINT "for the keys below them.":" Key response is a bit slow":"but is fast
er in Extended":"Basic."
200 PRINT ::: " Touch any key, and play"
210 CALL KEY(0,K,ST)
220 IF ST<1 THEN 210
230 CALL CLEAR
240 FOR SET=9 TO 12
250 CALL COLOR(SET,2,16)
260 NEXT SET
270 FOR SET=2 TO 8
280 CALL COLOR(SET,5,11)
290 NEXT SET
300 CALL SCREEN(5)
310 PRINT " 1 2 3 4 5 6 7 8 9 0 =:" a\b)c\d(e)f}g)a\b)c("::
320 PRINT " Q W E R T Y U I O P /:" a\b)c)d(e)f}g)a\b)c)d":
330 PRINT " A S D F G H J K L ;:" a\b)c)c(e)f}f(a\b)c":
340 PRINT " Z X C V B N M , ." a\b)c)d(e)f}g)a\b)":::::
350 DATA 220,40000,247,587,523,208,233,262,272,311,349,370,415,466,40000,262,400
00,554,40000,40000,40000
360 DATA 110,165,131,131,262,139,156,175,440,185,208,233,196,175,494,523,220,294
,117,330,392,147,247,123,349,110
370 DIM M(50)
380 FOR J=1 TO 47

```

CALL KEY

Here is an enhancement for those who use CALL KEY statements extensively. This hint is only for a KEY-UNIT of ZERO(0). Consider the following example:

```

100 REM USING CALL KEY
110 REM BY NIRAJ SHAH
120 CALL CLEAR
130 PRINT "WANT TO CONTINUE
(V/N)?"
140 CALL KEY(0,K,ST)
150 IF ST=0 THEN 140
160 IF K=ASC("Y") THEN 200
170 IF K=ASC("N") THEN 500 ELSE
140
200 REM START A NEW GAME
500 END

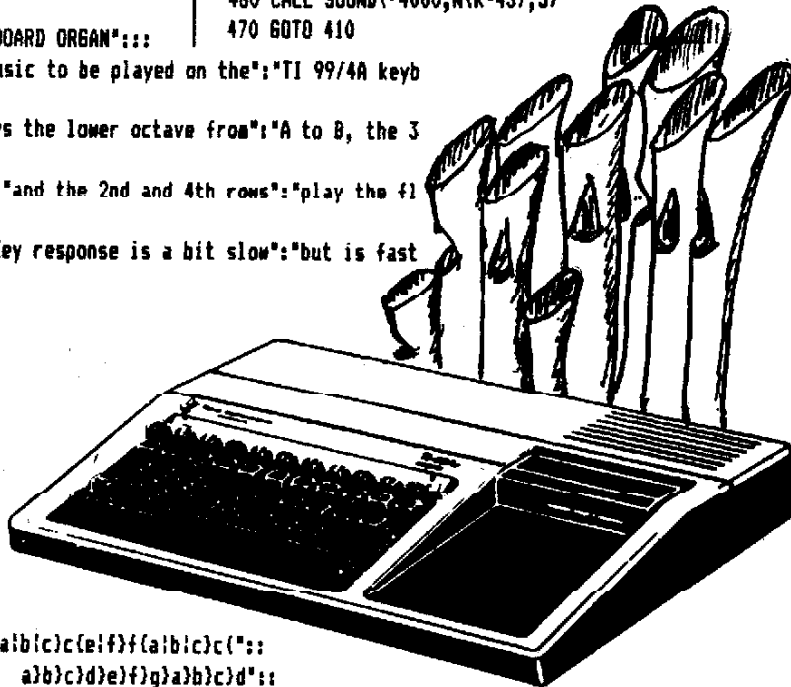
```

In the example above notice how I let the COMPUTER find the ASCII code for the keys <Y> and <N>.

```

390 READ M(J)
400 NEXT J
410 CALL KEY(0,K,ST)
420 IF ST<>0 THEN 450
430 CALL SOUND(-4000,40000,30)
440 GOTO 410
450 IF (K<44)+(K>90) THEN 410
460 CALL SOUND(-4000,M(K-43),5)
470 GOTO 410

```



remember that the ASC function converts the FIRST character of the string into ASCII code. So, if you do not have your ASCII table handy you can use the above method instead. Another advantage of this method is, it makes DEBUGGING a lot easier.

PROGRAMMING COURSE

INTRODUCTION TO PROGRAMMING
IN TI BASIC

Contact: Roger Willis 889-9011

INFOWARE INC

345 GLEN MEADOW ROAD
DUBLIN, OHIO 43017

ANIMATION AND GRAPHICS V

By Roger Wills

Since my last four articles have been on animation, I decided I would change to Graphics this month. Little did I realize, how much time I would spend on what initially I considered to be an Elementary topic. This is because of the limitations of TI BASIC.

LINES 100-200 define the X and Y AXIS, with the CHAR codes in LINES 150 and 160 defining points along these axis i.e. the scales. In order to put these markers on the axis I have used a LOOP (LINES 210-255) I originally wanted to use the PROMPT INPUT to receive the X and Y values, but this affects the graph since it scrolls up the screen. To avoid this problem I used our old friend the String Variable M\$ for the words, and companion small subroutine in LINES 530-580 to print on the screen, remove words and enter the instruction "PRESS ENTER TO CONTINUE". You don't get the beep sound and it's slower than "INPUT". Incidentally, this is all avoided in X-BASIC. You simply use "DISPLAY AT" and you don't have to worry about the screen scrolling.

Now, once you get a value of X or Y you have to accept or reject it, and then plot the DATA. Here I ran into another difficulty. I couldn't accept any NUMERIC value because, I wasn't using "INPUT". The routines in LINES 600-650, and 700-750, accept only the values of 0-9 from the keyboard. I've then converted X,Y values to R,C values, (remember how CALL HCHAR works?) using the conversions $C=X+2$ and $R=21-Y$. LINE 340 says that if you press enter, (ASCII code 13), the program keeps asking for values of X and Y. Any other value will stop the program.

If you are going to learn programming, it is really important that you understand what every line is doing. So don't just type this program in without asking yourself how it works. It's really the ONLY way to learn.

100 REM DATA PLOTTING

BY ROGER WILLS

```

110 CALL CLEAR
120 CALL SCREEN(12)
130 CALL CHAR(136,"FFFFFFFF")
140 CALL CHAR(137,"070707070707
0707")
150 CALL CHAR(138,"000000000001
0101")
160 CALL CHAR(139,"EOE")
165 CALL COLOR(14,2,12)
190 CALL VCHAR(2,2,137,20)
200 CALL HCHAR(21,3,136,28)
210 FOR I=1 TO 19
220 CALL HCHAR(21-I,3,139)
230 NEXT I
240 FOR I=1 TO 28
250 CALL HCHAR(20,2+I,138)
255 NEXT I
256 Y=0
257 X=0
258 R=0
259 C=0
270 M$="VALUE OF X?"
275 GOSUB 540
277 GOSUB 600
278 GOSUB 530
280 M$="VALUE OF Y?"
281 GOSUB 540
282 GOSUB 700
283 GOSUB 530
284 C=(X+2)
285 R=(21-Y)
290 CALL HCHAR(R,C,42)
300 M$="PRESS ENTER TO CONTINUE"
310 GOSUB 540
320 CALL KEY(O,K,S)
330 IF S=0 THEN 320
340 IF K<>13 THEN 350
345 GOSUB 530
346 GO TO 256
350 STOP
530 M$=""
540 FOR I=1 TO LEN(M$)
550 CODE=ASC(SEG$(M$,I,1))
560 CALL HCHAR(23,2+I,CODE)
570 NEXT I
580 RETURN
600 CALL KEY(O,K,S)
610 IF S=0 THEN 600
620 IF (K<48)*(K>57) THEN 600
640 X=K-48
650 RETURN
700 CALL KEY(O,K,S)
710 IF S=0 THEN 700
720 IF (K<48)*(K>57) THEN 700
730 Y=K-48
740 RETURN

```

Have fun. See you at OCLC.

BASIC TENDERFOOT

BY NIRAJ SHAH © 1983

The only statement in TI BASIC that will STOP the execution of the program to let the user assimilate the information on the screen at his own rate is the INPUT statement. This method is usually implemented in the following way:

```
100 PRINT "HELLO MY NAME IS THE
TI-99/4A"
110 PRINT "I USE A 16-BIT
PROCESSOR"::::
120 INPUT "PRESS <ENTER> TO
CONTINUE":GARBAGE$
130 PRINT "I HOPE YOU AND I WILL
BE GOOD FRIENDS"
140 END
```

The only thing wrong with this approach is that the user ends up losing the information at the top of the screen because of scrolling.

If you do not want the scrolling to occur but still want the same effect the INPUT statement provides then there are two other alternatives:

(1) USING A DELAY LOOP

(2) USING A CALL KEY STATEMENT

If you use a delay LOOP you have to guess at how proficient the user is at assimilating the information on the screen. If the user is slow then you, the programmer, will have to make the delay longer. The purpose of the delay LOOP is to give the user enough time to absorb the DATA but not get bored waiting for the LOOP to expire. Here is how to implement a delay LOOP:

```
100 REM USING A DELAY LOOP
110 CALL CLEAR
120 PRINT "HELLO, MY NAME IS
TI-99/4A"::
130 PRINT "I AM USING A DELAY
LOOP"::
140 PRINT "IS THIS LOOP LONG
ENOUGH?"::
150 FOR DELAY=1 TO 1000
160 NEXT DELAY
170 END
```



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The only things that were changed from the previous example were LINES 150-160. These LINES are the actual DELAY LOOP. LINE 150 Tells the computer to count from 1 to 1000. LINE 160 tells it when to increment (how fast to count). Think of it like playing hide and seek. The person doing the seeking has to count to 1000 to give others time to hide (in our case, time to look). So, if you want to make the delay LOOP count faster, change 1000 to something smaller, which will give the user less time to read the information.

The second way lets the user tell the COMPUTER when he is finished with the current DATA. The only DISADVANTAGE to this method is that it requires the user to make an INPUT to the COMPUTER even though his hands might be busy doing other THINGS.

NEXT MONTH: HOW TO IMPLEMENT THE SECOND METHOD...

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Spirit of 99

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() BUSINESS () PROFESSIONAL USE () OTHER _____

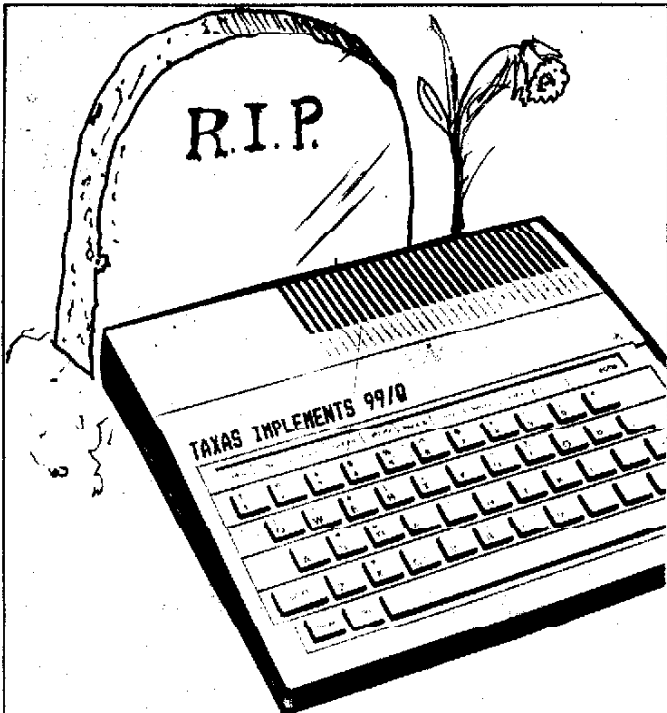
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MEGAMEMORY

What would you say if I told you that in the near future, you could buy disks that could store five times more data than they can now? Well it's true. A new generation of VERTICALLY recorded disks are in laboratories around the world.

This spinoff of the horizontal recording technology could give your home computer the storage of an IBM Mainframe. The disk available to us now, 5.25 inch, hold roughly 850 kilobytes (850,000 characters) of information. Not Unlike ordinary

audio tape, disks are coated with a film of magnetic material, (usually Iron Oxide) which is read or recorded by an Electromagnetic head. This magnetizes the particles so that different places on the disk have different polarities. Each particle acts as a miniature permanent magnet representing a Binary one or zero. Think of them as tiny toy soldiers lying head to toe. The obvious solution to getting more data would be to pack these little soldiers closer together. However when you attempt to put a North and South poles of a magnet close together, what happens? Right, they neutralize (repell) each other causing each other to Demagnitize. And so goes the material on a disk.

What if we stand these little soldiers up? Then no matter how close we squeeze them together, their north & south poles are the same distance apart.

One of the pioneers of this technology is Vertimag Systems, who currently have a working prototype of a 5.25-inch floppy disk that holds 3 megabytes. Toshiba (you all remember them) has demonstrated a 3.5-inch floppy disk and drive system which holds 3 megabytes.

There are other computer giants also working on similar systems, too many to mention here.

Think about a disk that could contain 10 to 40 times the information as today's disk, and cost about \$15.-\$20. How about recording entire libraries on a single disk?....Now back to the present, let's put that new 12k program in your computer from your tape recorder...

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FOR AD RATES

PRINTER PROBLEMS

BY PAT SKEELE

Last month when the MICRO-COMPUTER CENTER had a sale on the EPSON Printers for under \$400.00, I decided that I could not pass up the price. After being assured by a TI rep in Dayton, Ohio that EPSON made the TI IMPACT PRINTER, I purchased one.

It was at that point that both my problems & frustrations began. The EPSON has a parallel CENTRONICS standard input rather than the RS232 serial input on the TI. IMPACT PRINTER. I was then faced with having to purchase an additional Serial Interface Card for 180.00 plus tax and cable. Some bargain indeed!

However the Scottish in me was not going to let me pass up this bargain!

After checking with the TI Rep in Dayton and calling the Technical Assistance number in Texas and picking up a SPEC SHEET, I was set to have a cable made - one quote was for 50.00 in Dayton, another from MICRO-COMPUTER CENTER in Columbus was for 25.00, IF it worked - and NOTHING if it did not!

By now 1 week had passed and STILL no cable!. I was beginning to doubt the wisdom of purchasing the BARGAIN PRINTER. The Sales Rep at THE MICRO-COMPUTER CENTER wanted absolutely nothing to do with me, since I had a TI which they do not handle!

After 2 weeks I called the EPSON Company in Colorado and received the name of an electronics firm in Michigan who could make the cable for me . . . however being a BUCKEYE I was glad when the TI Rep in Dayton gave me info on TENEX in South Bend

Indiana who specialize in TI hardware & software. At 8:00 A.M., I was explaining my problem to the switchboard operator, since Indiana is one hour behind us in time & the Technicians were not due in the shop for another hour. I carefully & slowly listed all of the specifications for both the printer & P-BOX RS232

Interface card. 5 days and 24.00 later, I had my cable custom made and all ready to go!

The only difference in operating the system was a slight modification of commands. I MUST open and list with a PIO command rather than RS232. This DOES REQUIRE slight modification to most software I purchase or borrow <which is very little, since I prefer to write my own>. However the time required for this modification is worth it MOST of the time compared to paying almost twice as much for a printer.

There are still some minor modifications to be made, but I will keep the CONNI MEMBERS informed. And just to show off my PRINTER, along with this article, I am including a short program that almost everyone can use this summer. It is a mileage/gas calculator. After all some people may have to JUSTIFY their 99/4A to their spouse.

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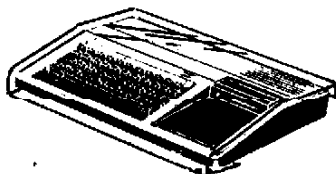
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MILEAGE/GAS CHECK

```
10 OPEN #1:"PID"
20 CALL CLEAR
30 OPEN #1:"CS1",INTERNAL,INPUT
  ,FIXED
40 INPUT #1:X,Y,LF$,DT$
50 CLOSE #1
100 OPEN #1:"PID"
110 CALL CLEAR
120 REM MILEAGE/GAS CHECK
130 REM BY PAT SKEELE
140 PRINT "MILEAGE/GAS CALCULATOR"
150 PRINT
160 INPUT "LAST FILL-":LF$
170 PRINT
180 PRINT ""
190 INPUT "TODAY'S DATE-":DT$
200 PRINT
210 PRINT ""
220 INPUT "ODOMETER-LAST FILL-":X
225 PRINT
230 PRINT ""
240 INPUT "ODOMETER READING NOW-":B
250 PRINT ""
260 C=B-X
270 PRINT "MILES TRAVELED-";C
```

```
280 PRINT ""
290 INPUT "COST OF GAS-":D
300 PRINT ""
310 INPUT "PRICE PER GALLON-":E
320 PRINT ""
330 F=D/E
340 PRINT "GALLONS USED-";F
350 PRINT ""
360 G=C/F
370 PRINT "CURRENT MILEAGE-";G
380 PRINT ""
390 INPUT "LAST MPG-":Y
395 PRINT
400 PRINT ""
410 J=G-Y
420 PRINT "MPG DIFFERENCE-";J
430 PRINT ""
440 INPUT "PRINT DATA TO TAPE
(Y/N) ":Z$
450 IF Z#="Y" THEN 460 ELSE 510
460 OPEN #2:"CS1",OUTPUT,INTERNAL
  ,FIXED
470 X=B
480 Y=G
490 PRINT #2:X,Y,LF$,DT$
500 CLOSE #2
510 END
```



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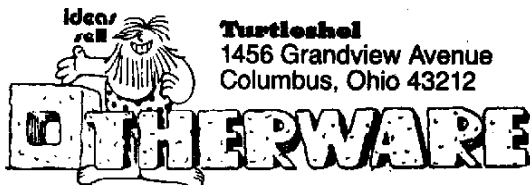
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