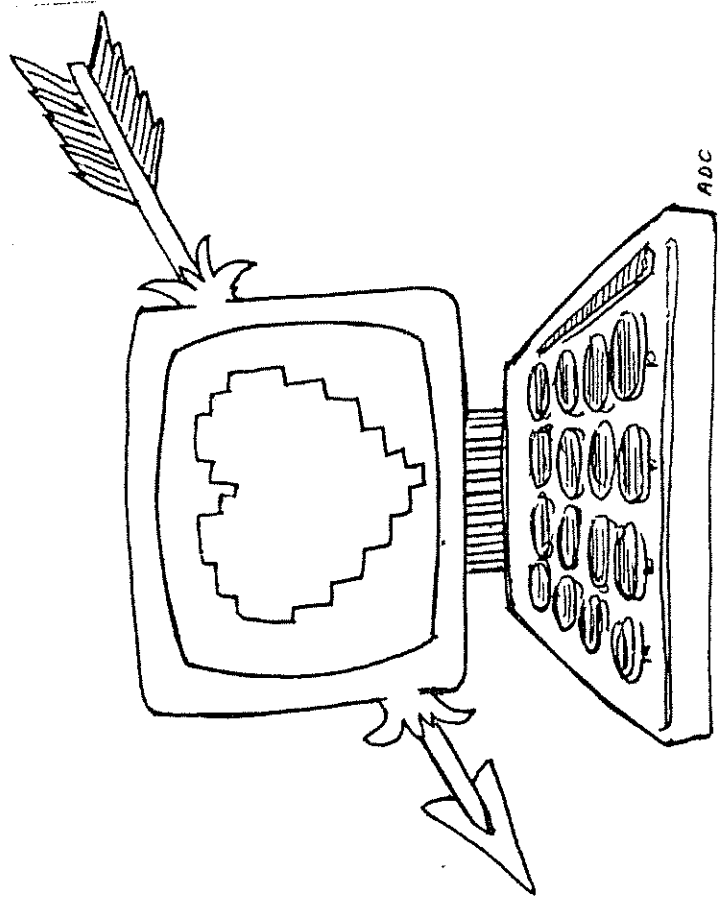


\* \* # # + + % % \$  
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Mass Users of the Ninety-nine and Computer Hobbyists  
 FEBRUARY 1996 Monthly Newsletter Version 15.02

AT OUR NEW HOME IN WORCESTER

RETURN TO  
 RA BISHOP  
 HAPPY VALENTINE'S DAY



M. U. N. C. H.  
 C/O J. W. COX  
 905 EGDEBROOK DRIVE  
 BOYLSTON, MASS. 01505

NEXT MEETING: TUESDAY, FEBRUARY 13th.

POSTMASTER: Forwarding and Address Correction Requested.  
 AT OUR NEW HOME:

FIRST CLASS!!

RETURN TO:  
 RA BISHOP

NEXT MEETING TUESDAY, February 13, 1996 7:00 PM.  
OFFICERS AND NUMBERS (all in 508 area unless noted)

PRESIDENT	Walt Nowak	413-436-7675	
VP./Treas./Editor	Jim Cox	869-2704	MUNCH DUES:
DEMO LEADERS:	Corson Wyman	865-1213	New Membership \$25.00
	Jack Sughrue	476-7630	Renewal \$15.00
CLERK	Ben Parda		Newsletter Sub. \$13.00
Advanced Programmer	Dan Rogers	248-5502	

\*\*\*\*\*

JANUARY MEETING. This meeting was cancelled due to bad weather.

FEBRUARY MEETING. I expect we will all want to share our memories of Tony Falco. He was one of the first members of this group and he did some amazing things with the T.I. M.U.N.C.H. and the entire T.I. community will miss him.

RAFFLE. Occasionally we have a raffle to help defer the rental cost of our meeting hall, it depends on the number present.

REPRINTS. Reprints are permitted as long as credit is given to M.U.N.C.H.

ARTICLES. I am always looking for articles for this newsletter, anything which interest you will probably interest other members of the T.I. community, so please share your ideas and opinions with all of us.

DISK LIBRARY. The disk library is at all meetings. We have copies of all disks in the library and they are available to members for just \$1.00 for each disk unless otherwise specified. You can order them through the mail, please add \$1.00 for the first disk and \$.40 for each additional disk ordered to cover postage and handling.

DISK OF THE MONTH. This month's disk #149 is the DSSD of the Tigercub Public Domain library and the MUNCH library, as far as I can get it updated. We will have the entire Tigercub Public Domain library very shortly.

ADVENTURE II. This is our fund-raiser for now. The cost to members is \$4.00, add \$2.00 for first class postage. The regular price is \$6.95 plus postage. This is a two DSSD disk set, archived. There is also a special on The Adventure Compendium and Adventure II for members it is \$8.00 plus \$3.00 for first class postage.

FOR SALE: Al Eisenhower of Hyannis, Mass. has T.I. equipment for sale. He is especially interested in trading T.I. stuff for American Flyer trains or other trains. Call him after 5:30 p.m. EST at 508-775-4289.

Dennis Lavoie, a former member, has a complete system with software for sale. Call Dennis at 508-797-3538. Another former member, Al Kresock has a lot of software and hardware for sale. He wants to sell it as one package. Call him at 607-797-0589(Johnson City, N.Y.).

WELCOME NEW MEMBER Jacques GrosLouis of Bathurst, New Brunswick, Canada. Jacques and his wife came down for the Fall Faire and it was great to meet them. It's great to have him in the Group.

BASIC stores your program in two sections. In the top of memory it stores each line of the program, not necessarily in the correct order. As a matter of fact, each time you edit a line, it becomes the last line in this area, with all other lines packed together above it. Each statement is made up of three parts. The first byte is the length of the rest of the statement in memory. The last byte is zero, and in between are bytes that represent the particular BASIC statement you have written. BASIC keywords are translated into a single byte each (known as a token) while strings and numeric constants are represented as a leading token (199 or 200) followed by a length byte, followed by the ASCII character values of the string. By running this program you can determine how other elements of a BASIC program are stored.

Underneath the statements (that is, lower in memory) is a list of statement numbers and pointers to the first token in each statement. Each statement in your program has a four-byte entry in this list. The bottom two bytes store the statement number. The top two bytes are a pointer to the first token in the statement (the byte following the length byte). This program goes through this list and prints out each token in the statements of your program.

Pointers to the top byte in the statement pointer list and the bottom byte in the list are stored in the scratchpad RAM and read by lines 150 to 180. The loop that starts in line 190 examines each statement in the program. If you have gotten this far in the article, you will understand how the rest of the lines in the program print out each token of each line.

This is one of a series of articles I will be writing for 99/4A newsletters. I hope you found it interesting. Permission to copy this article for publication is given on two conditions: first, that these conditions on publication be published with the article and second, that copies of the next three issues of the publishing newsletter be sent to me at the following address:

Tim MacEachern  
P.O. Box 1105  
Dartmouth, N.S.  
Canada B2Y-4B8

```
100 DEF HEX1(X$)=POS("123456789ABCDEF",X$,1)
110 DEF HEX2(X$)=HEX1(SEG$(X$,1,1))+HEX1(SEG$(X$,2,1))
120 DEF HEX4(X$)=HEX2(SEG$(X$,1,2))+HEX2(SEG$(X$,3,2))
130 DEF HEX(X$)=HEX4(SEG$("0000"X$,LEN(X$)+1,4))
140 DEF MA(X)=X+65536*(X>32767)
150 CALL PEEK(MA(HEX("8332")),A,B)
160 TOSL=MA(A6+B)
170 CALL PEEK(MA(HEX("8330")),A,B)
180 BOSL=MA(A6+B)
190 FOR PTR=TOSL-3 TO BOSL STEP -4
200 CALL PEEK(PTR,A,B,C,D)
210 PRINT "STATEMENT #";A6+B
220 PRINT "TOKENS:"
230 SPTR=MA(C6+D)
240 CALL PEEK(SPTR-1,L)
250 FOR I=0 TO L-1
260 CALL PEEK(SPTR+I,X)
270 PRINT X;
280 NEXT I
290 PRINT :
300 NEXT PTR
```

Exploring BASIC Programs  
by Tim MacEachern

-----

The program listed below demonstrates how BASIC programs are stored in the 99/4A. The program as listed will work in Extended BASIC with the Memory Expansion card or peripheral attached. A similar program can be run in normal BASIC with the Editor/Assembler or Mini Memory module inserted. To convert this program to normal BASIC simply change the calls to subroutine 'PEEK' in lines 200, 240 and 260 into calls to subroutine 'PEEKV'. That is, add a 'V' between the 'PEEK' and the '(' in each line. This program will not work properly in Extended BASIC unless you have the memory expansion.

The techniques used in this program are intended to make it as easy to understand as possible, while still showing how the DEF statement in BASIC can be used to do all the hard work for you. For instance, lines 100 to 130 of the program create a function HEX which will convert a string of hexadecimal (base 16) digits into a decimal number. As can be seen in lines 150 and 170, this allows us to write the actual hexadecimal addresses as used by assembler language programmers.

Line 130 takes the string of hexadecimal digits given to it and pads it with leading zeroes to make sure that there are four hex digits. Then function HEX4 is called to evaluate this four-digit hex number. In line 120, HEX4 splits the number into two two-digit hex numbers and combines them to get the proper decimal result. Similarly, line 110 splits a two-digit hex number into two one-digit numbers. Line 100 then is used to figure out the value of each separate hexadecimal digit.

Using nested DEF statements as in this program can simplify development of a working program, but be warned that DEF statements take considerably longer to run than the exact same code put directly into your lines wherever needed. Still, you may find it convenient to write some programs that consist solely of DEF statements! After such a program is RUN in normal BASIC (or in Extended BASIC without the memory expansion), the defined functions will be available to use in BASIC's calculator mode. For instance, if your program consisted of lines 100 to 130 only, it would provide a conversion function from hex to decimal that you could use while in calculator or direct command mode.

Let's get back to the program. Line 140 defines a function that is used to convert a 16-bit unsigned number (from 0 to 65535) into a 16-bit signed number (from -32768 to 32767). For some strange reason BASIC insists on signed numbers for addresses passed to PEEK, PEEKV, LOAD and POKEV. So whenever an unsigned address is calculated function MA is used to convert it to a signed number. This function works by comparing its argument to the largest positive value allowed. If the number is too big the comparison yields a value of -1. The rest of the expression then causes 65536 to be subtracted from the argument value, giving the correct result. If the original number is okay (from 0 to 32767) the comparison yields a result of 0 and the value of the function is the same as the value of its parameter. It seems complicated to write functions like this, but try to figure them out - you may find them fascinating.

LAST WEEK WE WROTE A SIMPLE PROGRAM USING LINE NUMBERS, PRINT WITH QUOTATION MARKS (FCTN AND P), AND GOTO TO KEEP THE PROGRAM RUNNING. TO STOP OR BREAK THE PROGRAM, WE PRESSED FCTN AND 4. NOW WE WILL USE WHAT WE LEARNED. TYPE:

NUM AND PRESS ENTER.

```

100 CALL CLEAR
110 RANDOMIZE
120 IF INT(3*RND)<1 THEN 170
130 PRINT "TAILS"
140 PRINT
150 INPUT "AGAIN? PRESS ENTER":KY$
160 GOTO 100
170 PRINT "HEADS"
180 GOTO 140

```

HEADS  
OR  
TAILS

RUN YOUR PROGRAM.

To SAVE IT ON YOUR DISK, TYPE:

SAVE DSK1.HEADSTAILS AND PRESS ENTER.

TYPE IN THE FOLLOWING PROGRAM TO SEE 2 DICE.

```

100 CALL CLEAR
110 PRINT "TO ROLL 2 DICE, P
PRESS ENTER."
120 INPUT KY$
130 RANDOMIZE
140 D1=INT(CRND*6+1)
150 D2=INT(CRND*6+1)
160 CALL CLEAR
170 PRINT "*****", "*****"
180 PRINT " *"; D1; " *", " *"; D2;
 * "
190 PRINT "*****", "*****"
200 GOTO 110

```

IF YOU WOULD LIKE A BLACK BOX AROUND THE NUMBERS, TYPE:

```
165 CALL COLOR(2,2,2)
```

IF YOU WANT TO COLOR THE SCREEN, TYPE:

```
166 CALL SCREEN(7)
```



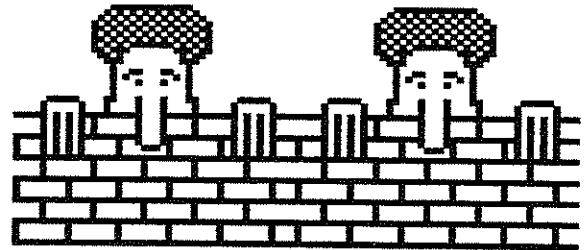
## GET THE HYDRA!

```

100 CALL CLEAR
110 PRINT "THE HYDRA IS A CLASSIC MONSTER."
120 PRINT "SHE HAS SNAKES INSTEAD OF HAIR"
130 PRINT "AND SHE HAS MANY HEADS."
140 PRINT "YOU MUST STAB THE RIGHT ONE"
150 PRINT "TO KILL HER AND ESCAPE HER LAIR."
160 PRINT
170 PRINT "BUT WATCH OUT!"
180 PRINT "IF YOU ATTACK AND MISS,"
190 PRINT "EVERY HEAD SPROUTS A NEW ONE"
200 PRINT
210 HEADS=3
220 PRINT
230 PRINT "WHICH HEAD WILL YOU ATTACK?"
240 PRINT "CHOOSE A NUMBER 1 TO";HEADS;
250 INPUT N
260 RANDOMIZE
270 R=1+INT(RND*HEADS)
280 PRINT R
290 IF N=R THEN 410
300 IF N<(HEADS+1)*N>0 THEN 320
310 RANDOMIZE
320 HEADS=(HEADS-1)*2
330 IF HEADS>40 THEN 440
340 PRINT
350 PRINT "WRONG ONE"
360 PRINT "TRY AGAIN."
370 PRINT "THE HYDRA NOW HAS";HEADS;"HEADS."
380 PRINT
390 GOTO 230
400 PRINT
410 PRINT "GOOD WORK!"
420 PRINT "YOU HAVE SLAIN THE HYDRA."
430 END
440 PRINT "TOO BAD."
450 PRINT "YOU ARE DOOMED"
460 PRINT "IT WAS";R
    
```

FOR OUR BEGINNERS' GROUP

## THE WALL!



```

100 CALL CLEAR
110 PRINT "BUILD A WALL TO KILL AWAY A MONSTER."
120 PRINT "PRESS ENTER TO BEGIN."
130 INPUT X$
140 CALL CLEAR
150 B$="*****"
160 L$="****"
170 M$="***"
180 FOR X=1 TO 3
190 PRINT B$;B$;B$;B$
200 NEXT X
210 FOR Y=1 TO 3
220 PRINT L$;B$;B$;B$;M$
230 NEXT Y
240 PRINT
250 GOTO 180
    
```

1. TYPE IN THE ABOVE PROGRAM TO MAKE A BRICK WALL. RUN IT.
2. TO COLOR THE \*\*\*\* THAT MAKE THE BRICKS, TYPE:  
145 CALL COLOR(2,7,7)  
AND RUN IT.
3. TO COLOR THE SCREEN, TYPE:  
146 CALL SCREEN(15)  
AND RUN IT.
4. CHANGE THE TWO SEVENS TO CHANGE THE COLOR OF THE BRICKS.
5. CHANGE THE NUMBER 15 IN LINE 146 TO CHANGE THE BACKGROUND.

# COME TO THE FAIR!

in Cleveland, Ohio

Attention \*\*\* ALL \*\*\* TI-99/4A and Geneve User Groups, programmers / developers / users, vendors and closet cleaner-outers!

The Cleveland area TI-99/4A User Groups (The TI-CHIPS and the NORTHCOAST 99ers) are giving the Lima User Group a much needed and well deserved break in 1996!!! We are pleased to announce that the popular TI-99/4A and Geneve M.U.G. Conference will be held on Friday, May 24th (Set-up night) and May 25th (Conference day) 1996 at the Ohio National Guard Armory in Brookpark, Ohio (a southwest suburb of Cleveland), (3 minutes from I-71, 5 minutes from I-480, 5-10 minutes from CLEVELAND HOPKINS INTERNATIONAL AIRPORT and 10 minutes from exit 10 of the Ohio Turnpike (I-80))

The 1996 Conference in Brookpark, Ohio will be \*\*\* FREE \*\*\* ! There will be \*\*\* NO \*\*\* admission charge or set-up fee!

ON FRIDAY, MAY 24 (Set-up Night - From 3:30 pm to 8:00 pm) there will be security on the premises. The National Guard always does this. Starting at 8 P.M. there will be a social get together at the Middleburgh Hts. Recreation Center. Nothing fancy, just munchies and something to drink (non-alcohol).

On Saturday, May 25 (Conference Day) there will be food available at the Armory, made up by some of our women members. Coffee + ? for breakfast, sandwiches and maybe homemade Sloppy Joes during the day, with coffee, pop, & snacks all day. More on this at a later date when we send you a follow-up letter.

Please let us know what we can provide, in the way of tables, outlets, etc. Also, let us know if you want seminar time for any of your new / old hardware and/or software. Our co-ordinator is Glenn Bernasek.

If you have something for the TI-99/4A and/or Geneve you would like to show, share, sell or just talk about, come to the 1996 TI-99/4A and Geneve M.U.G Conference in Brookpark, Ohio next May 24 and 25.

To get answers and/or make conference reservations (please make your reservations as-early-as-possible).

Contact: Glenn Bernasek  
13246 Harper Road  
Strongsville, Ohio 44136  
PHONE: (216) 846-0865 (After 9:00 pm EST)  
(ALL MESSAGES WILL BE RETURNED!)

E-MAIL: dd314@cleveland.freenet.edu

*Thanks you Ifer  
Harry Hoffman*

# TI EMULATION NEWS

FROM: CUE

by Don Grim

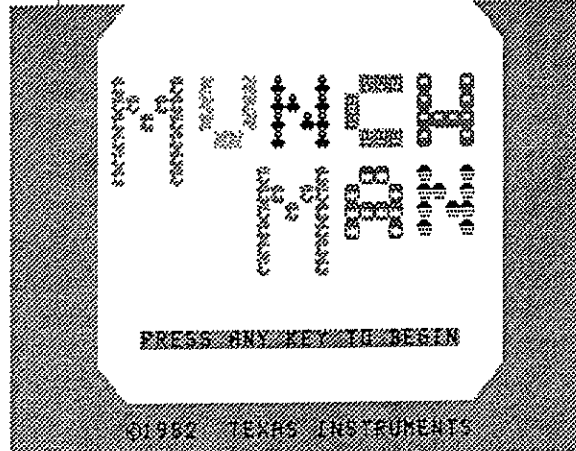
The TI 99 home computer continues to be used despite the eventual extinction of its hardware. There are many reasons people continue to use the TI computer with some reasons being special capabilities (music, speech, sprites), comfort of use, and nostalgia.

Since the future is leaning strongly towards the use of the IBM compatible computer, the hope of using TI software in the future is stronger if it can be emulated on an IBM compatible computer. The good news, for current and future TI fans, is there is an emulator available today that accomplishes the goal called the TI Emulator (or V9T9) by Ed Swartz. With this emulator, you can transfer TI programs from a TI computer to an IBM compatible computer by using a null modem cable connected to each serial port. Since programming languages, like TI Extended BASIC, can be transferred, new TI programs can be written and run on an IBM compatible computer by way of the TI Emulator.

I found out about the TI Emulator a few months ago in the FIDO message system. I might have found out about it sooner but it is "hidden" on the Night Owl 13 shareware CD which labels it as a "TI calculator emulator" instead of a "TI computer emulator". That is a natural labeling mistake since more people are familiar with TI

calculators than TI computers.

The version from the Night Owl CD is version 4 and it is very nice. What I like about it is you



can adjust the speed so you can run programs slower or faster than the original TI computer. I guess the best compliment is that I'll forget I'm not using a TI computer since the emulation is so good.

When I registered the TI Emulator, I found out that it is at version 6 and it is now called V9T9. Version 6 has added many enhancements including the start of speech emulation. Ed Swartz plans to release future versions to make more enhancements including improved speech and possibly the option to read TI disks directly from the disk drive on the IBM compatible computer. The next version may arrive as early as December 1995.

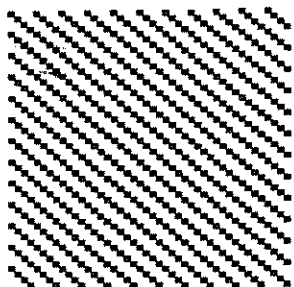
When you look at version 6 of V9T9, it doesn't include the ROM and GROM which has the startup screen and TI BASIC which was

burnt into the hardware of the original TI computer. However, there are various demos that you can run that show how nicely the emulator runs programs. To get the ROM and GROM, plus any TI programs, moved to the V9T9, you can transfer it from your TI computer. An easier option, which I chose, is you can order the ROM and GROM plus 3 programs of your choice for \$15 from Ed Swartz. Ed relays the \$15 to TI since he has a special licensing agreement with Texas Instruments.

When you register V9T9 for the \$25 asking price, you can also order more programs for the nominal price of \$1 each. The \$25 goes to Ed for his fine programming efforts and he relays the dollars for purchased programs to Texas Instruments. So, V9T9 is made available in such a way that even if you don't own an original TI 99 computer, you can still run TI software on an IBM compatible computer by using V9T9 emulation.

At this point in time, I haven't run into any problems with V9T9. Since I can slowdown the Munch Man game (Pacman clone) in the TI Emulator, I was finally able to get through all the levels which was impossible for me on the original TI computer. V9T9 is an amazing program. Let me know if you should have any comments or questions regarding V9T9.





D I A G O N A L S  
D I A G O N A L S  
D I A G O N A L S  
D I A G O N A L S  
D I A G O N A L S  
D I A G O N A L S

This program will make a simple design on the screen. After you run it, you will add a few lines to make it surprisingly different.  
TYPE:

```
100 CALL CLEAR
110 CALL CHAR(128,"FFFFFFFFF
FFFFFFFF")
120 CALL SCREEN(9)
130 FOR L=1 TO 24
140 PRINT TAB(L);CHR$(128)
150 NEXT L
160 GOTO 130
```

RUN

Now type the following lines to add colorful changes.

```
111 RANDOMIZE
112 SC=INT(13*RND)+3
113 CALL SCREEN(SC)
114 CL=INT(14*RND)+3
115 CALL COLOR(13,CL,SC)
```

SAVE DSK1.DIAGONALS

```
*****
* OUR NAME *
*****
```

We will put our name in a box  
TYPE:

```
10 CALL CLEAR
20 INPUT "YOUR NAME IS ":N$
30 LN=LEN(N$)
40 LT=LN+4
50 CALL CLEAR
60 FOR L=1 TO LT
70 PRINT "*";
80 NEXT L
90 PRINT
100 PRINT "* ";N$;" *"
110 FOR L=1 TO LT
120 PRINT "*";
130 NEXT L
140 PRINT
150 GOTO 150
```

To color the \*\*\*\*, TYPE

```
55 CALL COLOR(2,7,7)
```

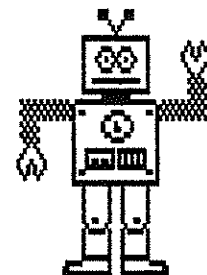
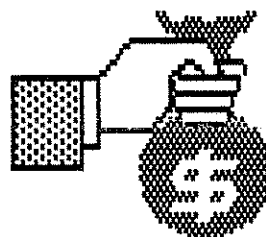
SAVE DSK1.BOXNAME

Type in the following program to hear a robot sound.

```
100 CALL CLEAR
110 PRINT "*****"
120 PRINT "* ROBOT SOUND *"
130 PRINT "*****"
140 PRINT
150 RANDOMIZE
160 D=INT(10*RND)+1
170 F=INT(5000*RND)+110
180 U=INT(20*RND)
190 CALL SOUND(D,F,U)
200 GOTO 140
```

Now add these lines which will read and print data.

```
145 FOR X=1 TO 5
191 READ A$
192 PRINT A$
193 DATA THIS,IS,MY,ROBOT,SO
UND
194 NEXT X
195 RESTORE
SAVE DSK1.ROBOT
```



The EASY WHEEL was originally written by James Johnson of San Antonio Texas of MID-SOUTH 99 UG MEMPHIS, TN. I have changed the categories, words, and colors.

1. BOOK TITLE
2. DISNEY CHARACTER(S)
3. CARTOONS
4. PERSON or PEOPLE
5. STORYBOOK STARS
6. HOLIDAYS

This easy Wheel of Fortune is for 1 to 3 players. Either the computer can choose the puzzle to be guessed, or someone who is not playing can choose.

If you want your friend to enter a word, he or she can type in the puzzle invisibly using no punctuation marks or numerals. If you think you made a mistake, you can use 'erase' to start over before final 'enter'. He or she chooses the category number.

IN MEMORIAM

**Anthony N. Falco, 56, high school math teacher**

**NORTHBORO** — Anthony N. Falco, 56, of 141 Hudson St., a high school teacher of mathematics and computer science, died Sunday in Marlboro Hospital after he was stricken ill while attending Mass in St. Bernadette's Church. He had been battling brain cancer since May.

He leaves his wife of 29 years, Jean M. (Pariseau) Falco; a son, Anthony M. Falco of Northboro; two daughters, Laurie A. Falco of Worcester and Lisa M. Falco of Brighton; a sister, Terry Grigsby of Lebanon, N.H.; nephews and nieces. He was born in Ware, son of Maurice and Eleanor (Mirabile) Falco, and lived many years in Barre before



moving here in 1967. He graduated from Barre High School in 1956 and Worcester State College in 1960. Winning a scholarship from the National Science Foundation, he earned a master's degree in mathematics from Wesleyan University in Middletown, Conn.

Mr. Falco taught math and computer science at Framingham High School for 28 years. He previously taught at North Brookfield High School. He was a member and lector of St. Bernadette's Church, and sang for many years in its choir. He was a member of the local Knights of Columbus. He was a member of MUNCH, a computer group.

The funeral will be tomorrow, with a Mass at 11 a.m. in St. Bernadette's Church, 266 Main St. Burial will be in Howard Street Cemetery. Calling hours are 7 to 9 tonight at Leland-Hays Funeral Home, 56 Main St. Memorial contributions may be made to St. Bernadette's Church, Building Fund, PO Box 743, Northboro 01532, or the Anthony N. Falco Scholarship Fund, care of Joseph Hannigan, Framingham High School, 115 A St., Framingham 01701.