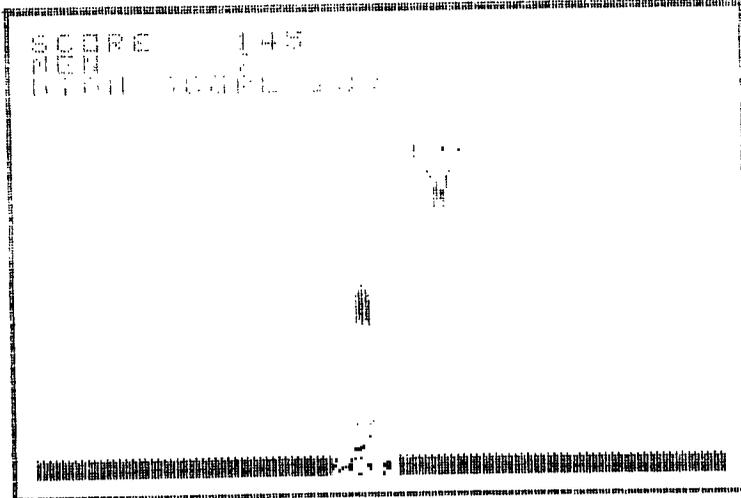




HOCUS

Home Computer
Users Spotlight
a monthly publication of the
Milwaukee Area 99/4 Users Group



FORTH Editing Tricks

Did you know about the QOPS key in the Forth Editors ? In case you ever tried to insert, using the FCTN 2 key and mistakenly hit FCTN 3 and erased the entire line, don't despair, FCTN 8 (insert line) brings it right back since it's still sitting there in memory. This usefull key can be utilized for moving lines, duplicating lines and even portions of lines, even to other screens. Using FCTN 3 to erase a line or FCTN 7 to erase a portion of a line, saves it in a memory buffer from which FCTN 8 will return it. I've included a little Forth game I wrote to utilize some speech and arcade sound routines from our Forth data disks. It'll run even if you don't have the Speech Synthesizer but the computer just won't talk to you. You can test the editing key on this program and eliminate a whole screen. Do it in this order:

```
75 78 EOCOPY <cr>
76 75 SCOPY <cr>
78 76 SCOPY <cr> this switches lines 75 & 76
```

Now use FCTN 3 (erase) on line 1 Scr 77
FCTN 6 to return to Scr 76 cursor to line 12
FCTN 8 (insert) and the line appears here
use the same method to move lines 2, 4 & 5 from Scr 77 to lines 13 to 15 Scr 76 and you've eliminated Scr 77
Always be careful however inserting lines, so you don't wipe out something important on line 15 that disappears in this case the --> is no longer needed. When using the FCTN 8 to insert a line from the memory buffer, it doesn't forget the line. You can continue to insert the line to your heart's content. Thus if you need a number of similar lines, just erase the one and then insert as many as you need before going back and making the minor editing changes in each. To copy a line, merely erase it and re-insert it. Since it's still in memory you can then copy it any place as often as you wish.

In BODY-SNATCHERS your gun emplacement should move horizontally back and forth, if it begins to descend off the screen, by moving to the left, you evidently have one of the "buggy screens" versions of Forth. I've seen 4 different versions already. Correct lines are:
Screen 08 lines 9 & 10
9- VDCM @ 4 < IF SMTN 80 0 VFill 300 ' SATR ! ENDIF
10- GATR 20 0 DO DUP >R D000 SPC R> 2 VMBW DROP 4 + LOOP DROP
Screen 09 line 9
9- 4 * SMTN >R 8 SLA SWAP 00FE AND OR SPC R> 2 VMBW DROP :

<< JUNE 1985 >>

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WAUWATOSA WI 53222

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Organization Information

Membership to the Milwaukee Area 99/4A Users Group is open to anyone interested in using, playing with, learning about or programming in the still-kicking *** Texas Instruments 99/4A Home Computer ***

Annual dues for individuals - \$10.00
for families - \$15.00

Meeting dates are the SECOND SATURDAY each month in the lower level of WAUWATOSA SAVINGS and LOAN
7500 W. State Street
1:00 til 4:00 P.M.

Assembly-Forth SIG on the FIRST MONDAY each month in the lower level of the NATIONAL SAVINGS and LOAN
3670 So. Moorland Rd
7:00 til 10:00 P.M.

A library of disk & cassette programs and computer-related magazines & books is available for members use.

BASIC COMPILER AVAILABLE

We will be taking orders at the meeting for a BASIC to MACHINE LANGUAGE compiler. It's a new compiler that we will be licenced to sell to all group members only.

Priced at only \$10.00
a real bargain !!

T-Shirts still available at \$ 5.00
Stand Alone RS-232 Interface \$50.00
Paraprint Parallel Interface \$50.00
Gorilla Dot Matrix Printer \$50.00
TI 99/4 Computer Console \$40.00
Cassette Recorder with Cable \$20.00

```

SCR # 70
0 ( BODY-SNATCHERS Scr 1 by Gene Hitz )
1 BASE->R HEX
2 : SPEAK 40 9400 C! 50 9400 C! ;
3 : s 4 0 DD 4 SRC DUP 4 SRC 0F00 AND 4000 OR SWPB 9400 C!
4 : LOOP SFEAT DROP ;
5 : "OVER" 2225 s 4E0A s 7170 s 556E s 71BE s 478b s 145C s
6 : 4FE5 s 177E s ;
7 : "NICE" 49A5 s 71BE s 236b s 2B1E s ;
8 : "HIGH" 7225 s 71BE s 2FFC s 35AE s 18AC s 35AE s ;
9 : "33" 487C s 30D6 s 3793 s 31A0 s 71BE s ;
10 : "GOOD" 30FA s 30 0 SPRPAT 71EE s 34 0 SFRPAT
11 : 31A0 s 38 0 SFRPAT 477E s 3C 0 SFRPAT ;
12 : "PLEA" 5093 s 5231 s 227E s 145C s 637C s ;
13 : "10TR" 71F4 s 61C6 s 678b s 3A32 s 664E s 4ADA s ;
14 : wait 400 0 DD NOP LOOP ;
15 -->

```

```

SCR # 71
0 ( BODY-SNATCHERS Scr 2 )
1 8400 CONSTANT SOUND 0 VARIABLE CMD DECIMAL
2 : FC0E >R 111620B R> M/ SWAP DROP 10 / ; HEX
3 : TONE FC0E 22 0F AND CMD C! 4 22 03F AND CMD 1+ C!
4 : CASE 1 OF 223 ENDOP 2 OF 0A0 E123F 3 OF 0C0 SOUNDF ENDCASE
5 : CMD 00 OR 22C C! CMD 1+ 00 SOUND CMD 00 SOUNDF C! C! ;
6 : VOL 0F AND 22C C! CASE 1 OF 090 E123F 2 OF 0B0 ENDOP
7 : 3 OF 0D0 E123F ENDCASE CMD 00 OR DUP CMD C! SOUND C! ;
8 DECIMAL
9 : UP 330 220 DD 1 1 TONE 4 +LOOP ;
10 : DD 330 220 DD 1 550 I - TONE 4 +LOOP ;
11 : SLI 1 1 VOL 5 0 DD UP DD LOOP 1 15 VOL ;
12 : ALA 1 1 VOL 5 0 DD UP COOP 1 15 VOL ;
13 : SPA 2 274 TONE 3 276 TONE 2 2 VOL 3 2 VOL SLI
14 : 2 15 VOL 3 15 VOL ; ; AT GOTOXY ;
15 -->

```

```

SCR # 72
0 ( BODY-SNATCHERS Scr 3 )
1 -EX 0 VARIABLE SCO 0 VARIABLE HYS 0 VARIABLE FLG
2 0 VARIABLE MEN A 0F00E0E 0 VARIABLE EHL RANDOMIZE
3 : S50 2000 S50T 2 0A0E1F A SCREEN C 1 10 COLOR 1 1 4 COLOR
4 AAF FFFF FFFF FFFF 80 C-AF 0 16 20 80 MCHAR 3 #MOTION
5 0101 0303 0703 0707 20 SPCCHAR 0707 0707 0707 0505 21 SPCCHAR
6 0000 0000 0000 0000 22 SPCCHAR 0000 0000 0000 4040 23 SPCCHAR
7 1F12 3F7F FFFF 77F7 24 SPCCHAR F737 0000 0000 0000 25 SPCCHAR
8 FB48 FCFE FFFF EEEF 26 SPCCHAR EFEC 1000 1000 1000 27 SPCCHAR
9 0000 0320 0404 070F 28 SPCCHAR 3F7F D5FF FFBF 9FC0 29 SPCCHAR
10 0000 0320 4040 C0E0 2A SPCCHAR FBFC 56FE FEFA F206 2B SPCCHAR
11 0404 0505 0703 0303 2C SPCCHAR 0302 0206 0000 0000 2D SPCCHAR
12 2020 A0A0 5020 C0C0 2E SPCCHAR C040 4060 0000 0000 2F SPCCHAR
13 1F12 0040 2220 51C6 30 SPCCHAR 645D 1903 0818 0F10 31 SPCCHAR
14 FB48 0002 7E0B 0A63 32 SPCCHAR 26BA 98C0 1018 F00B 33 SPCCHAR
15 -->

```

```

SCR # 73
0 ( BODY-SNATCHERS Scr 4 )
1 1F12 0040 2220 50C2 34 SPCCHAR C01D 1802 0018 0710 35 SPCCHAR
2 FB48 0002 330B 0A43 36 SPCCHAR 03B8 1840 0018 E00B 37 SPCCHAR
3 1B10 0000 4094 00C0 38 SPCCHAR 8010 1800 0010 010C 39 SPCCHAR
4 DB0B 0000 0229 0003 3A SPCCHAR 0109 1800 000B 8030 3B SPCCHAR
5 1110 0000 00C0 0080 3C SPCCHAR 8000 2030 0000 0026 3D SPCCHAR
6 8B0B 0000 0003 0001 3E SPCCHAR 0100 040C 0000 0064 3F SPCCHAR
7 A0 A0 F 2B 1 SPRITE 0 0 1 MOTION 4 2 AT ." SCORE " SCO ?
8 4 3 AT ." MEN " MEN ? ;
9 : CLR 0 0 AT CLS ;
10 : MT> 70 RND 30 - FAL 0 RND 2+ 0 MOTION ;
11 : S51 A0 2 D 24 0 SFRITE 70 RND 30 - 1 0 MOTION SPA MT> ;
12 : ?HI SCO @ HYS @ OVER < IF HYS ! "HIGH" wait ELSE
13 "NICE" wait THEN 4 4 AT ." HIGH-SCORE "
14 HYS ? ;
15 -->

```

```

SCR # 74
0 ( BODY-SNATCHERS Scr 5 )
1
2 : G4 ?HI A C AT ." FINI" "OVER" wait wait TEXT ABORT ;
3 : G5 FFFF MEN +! A 3 AT MEN ?
4 : MEN @ = IF G4 THEN ;
5
6 : G2 0 SPRGET SWAP DROP ;
7
8 : G1 0 0 0 MOTION 0 SPRGET F + 6 2C 2 SPRITE
9 : 0 F0 0 MOTION 0 F0 2 MOTION BEGIN G2 10 < END 2 DELSFR G5 ;
10
11 : HYT 0 SPRGET SWAP DROP A0 > IF "GOT" G1 S51 THEN ;
12 -->
13
14
15

```

```

SCR # 75
0 ( BODY-SNATCHERS Scr 6 )
1 : Gd 1 SHL +! SHL @ A = IF 0 SHL ! "10TR" G5 THEN ;
2 : Gc 2 SFFF SWAP DROP 0 SPRGET SWAP DROP > ;
3 : Gb 0 SFFF 80 SWAP - SCO +! DROP 0 2 SPRCOL 6 0 SPRCOL
4 : 0 0 2 MOTION 1 1 2 SPRPUT 0 0 0 MOTION wait ALA 0 FLG !
5 : "GOOD" A 2 AT SCO ? wait ;
6 : Ga 2 0 8 COINC IF Gb S51 THEN ;
7 : G9 HONK 0 0 1 MOTION 1 SPRGET A 20 2 SPRITE 1 FLG !
8 : 0 90 2 MOTION S51 Gc WHILE Ga REPEAT 2 DELSPR FLG @ 1 =
9 : IF Gd 0 FLG ! T-EX ;
10 : G8 0 0 AT 1 JOYST DROP 8 * 0 1 MOTION 12 = IF G9 THEN ;
11 : GAM S51 BEGIN 5 FAL +! 200 0 DD MT> G8 HYT LOOP AGAIN ;
12
13
14 -->
15

```

```

SCR # 76
0 ( BODY-SNATCHERS Scr 7 )
1 : DOCU 8 2 AT ." BODY-SNATCHERS CR CR
2 : ARCADE ACTION SOFTWARE " CR CR
3 : ." Move your gunner with the arrow keys "
4 : ." or joysticks (1) and fire with '0' "
5 : ." or the fire button." CR CR
6 : ." You have 5 gunners to stop the alien "
7 : ." Body-Snatchers from body-snatching." CR CR
8 : ." Everyone getting thru snatches a body "
9 : ." and costs you a gunner." CR CR
10 : ." Every 10 misses also costs you a one, "
11 : ." so don't waste your shots." CR CR
12 : ." The higher the alien when you hit him "
13 : ." the higher the points scored." CR CR
14 : ." Press Enter To Start" "PLEA" wait CR KEY D = IF
15 : CLR ELSE ABORT THEN ; -->

```

```

SCR # 77
0 ( BODY-SNATCHERS Scr 8 )
1 : ?J: CLR LOC 0 SCO ! 5 MEN ! 0 SHL ! A FAL !
2 : GRAPHICS S50 DECIMAL GAM ;
3
4 RUN
5 R->BASE
6
7
8
9
10
11
12
13
14
15

```

DON'T HESITATE TO TRANSLITERATE!

Many members of our User's Group and other TI-99/4A owners with TI-WRITER avoid using the Transliterate Command like it was a disease or a foreign language. As thick as the TI-WRITER Manual is, which intimidates some, this command is certainly one subject that deserves further explanation. These tips and applications are probably not the only points to be made about transliteration, and I hope others will come about as a result of this article. To keep it short, no examples are included, but contact me at the meeting if you have any questions.

1) Contrary to several published reports, the Transliterate Command does indeed work, and works well if each instance of its use is on a separate line (with a carriage return afterward). The most common reason seen for failure of this command is the lack of the leading period, which is required for all format commands. Also, you must use commas, not spaces, when a multiple-character "conversion" is needed. One user even gets it to change printer configuration (instead of the SPECIAL CHARACTER MODE, which does not seem to work), but he uses the ampersand "&" between the multiple characters needed.

2) Use the Transliterate Command to transliterate a character to itself if you want to cancel that conversion later in your text.

3) Be aware that any time you use the Transliterate Command to cause one character to produce a set of symbols all at one time, if you are using the Fill and Indent Mode, the Text Formatter will treat those symbols as one character! As examples, consider the sequence given on page 107 of the TI-WRITER Manual to print a tilde over an "n" or the case of using one character to produce a set of ellipses marks (for a partial quotation).

4) The instance described in item #3 can be used to your advantage when you have run out of positions when composing a Header or Footer --- just use one "complex" Transliterate Command to specify the additional spaces or other characters needed.

5) The Transliterate Command can also be used to increase the spacing between a Header or Footer and the text and/or the end/start of the page, by using a line feed appropriately in the Header or Footer, preceded by a proper Transliterate Command. However, in this instance, do not use underline or overstrike symbols in your text.

6) Another caution to keep in mind is not to convert any of the "reserved" characters used by TI-WRITER for its own special functions (the caret "^", the ampersand "&" or the at-sign "@"), as well as the underline. You will not get any error message, but your results will be strange!

7) The suggestion by the TI-WRITER Manual at pages 106 and 127 to use two at-signs or ampersands together when you want to print one of these symbols did not seem to work. Only transliterating did the trick.

8) I haven't tested this for the entire set of available characters, but it appears that the Transliterate Command will work with any valid ASCII code as its first parameter (even ASCII 0 to 31), although the second parameter should be a character your printer is capable of printing/processing.

9) It's a good idea to use the Find String Command to check your document for instances where you may have used a character in the text before you use that same character in a transliteration.

-----Abdallah Clark

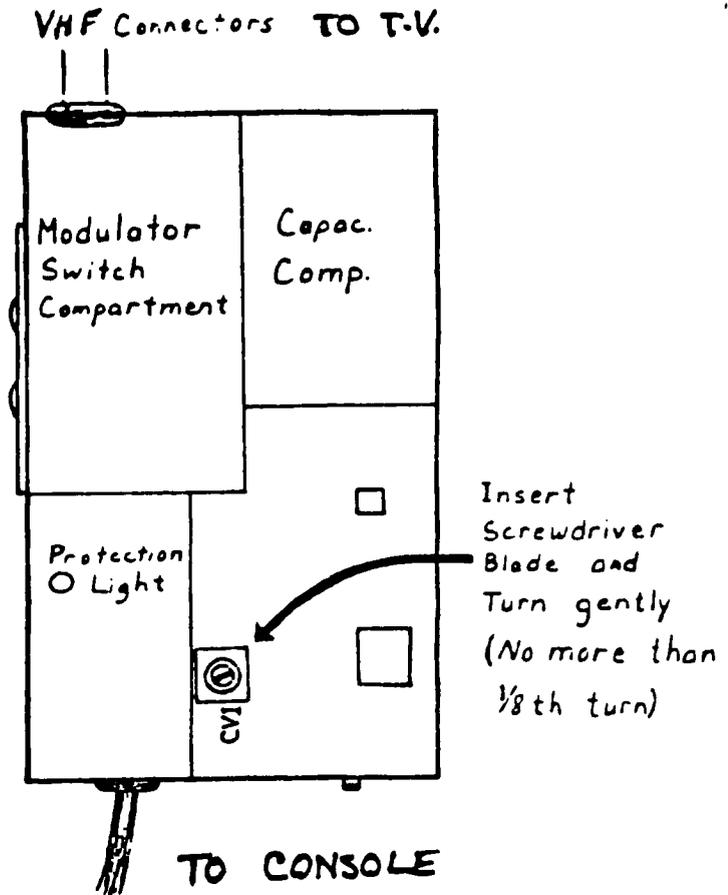
BACKGROUND NOISE

WE RECEIVED FROM THE WALTHAM TI EXCHANGE CENTER THE FOLLOWING INFORMATION. WHEN EXPERIENCING BACKGROUND NOISE, SUCH AS HUMMING OR BUZZING, WITH THE R.F. MODULATOR, INTERNAL ADJUSTMENT IN THE MODULATOR WILL USUALLY ALLEVIATE THE PROBLEM. THIS CAN BE ACCOMPLISHED BY THE USER BY FOLLOWING THE STEPS BELOW. AND REFER TO THE DRAWING. THIS PROCEDURE IS TO BE DONE WHILE ALL EQUIPMENT IS ON AND OPERATING. IF YOU HAVE THE OLD VERSION OF THE TI900 VIDIO MODULATOR, THIS PROCEDURE DOES NOT APPLY.

MATERIALS REQUIRED: ONE SMALL, FLAT, THIN-BLADED SCREWDRIVER TO CORRECT THE NOISE DIFFICULTY.

- 1 TURN THE VOLUME OF THE TV ALL THE WAY DOWN, BUT DO NOT TURN IT OFF.
- 2 SELECT THE MASTER TITLE SCREEN ON THE COMPUTER FCTN = IF NECESSARY.
- 3 USING THE TITLE SCREEN COLOR GRID, FINE TUNE THE TV TO THE BEST COLOR PICTURE.

- 4 WITH THE SCREWDRIVER, PRY OFF THE LID OF THE MODULATOR BOX BY LIFTING UNDER ONE EDGE OF THE LID NEAR THE INDENTATIONS HOLDING IT ON.
- 5 LIFT OFF THE LID AND TURN THE TV VOLUME UP TO HALF.
- 6 INSERT THE BLADE OF THE SCREWDRIVER INTO THE SLOT OF THE SMALL BOX LABELLED CV1-SEE FIGURE- AND TURN IT SLIGHTLY UNTIL THE BACKGROUND NOISE IS AT A MINIMUM-THIS SHOULD TAKE LESS THAN 1/8 OF A TURN.
- 7 AFTER BENDING THE MODULATOR LID EDGE BACK INTO PLACE, PUT IT BACK OVER THE MODULATOR BOX AND PRESS IT FIRMLY INTO PLACE UNTIL IT SNAPS. THE SYSTEM IS NOW READY FOR OPTIMUM USAGE.



 I guess the above shouldn't surprise me too much. Last Friday I received from TI a brochure on the 99/4A computer! They have been out of the business for 18 months and are still sending out promotional literature on the 4A!

Well, if you want to brave it, here are the active numbers that I know of from TI. Ask them for a brochure while you are at it.

1-800-842-2737	CARES	General questions
1-800-232-3200	RESPONSE	When CARES can't help you
1-800-847-2787	PROFESSIONAL	For their business computers
1-800-858-4075	SOFTWARE	To order a cartridge before RIF
1-806-741-2663	TECHNICAL	For a more intelligent answer than CARES
1-806-741-3064	MANUALS/PARTS	To order manuals and parts (what else)

 Speaking of parts, if you need a GROM port connector (the thing that cartridges plug into) you can get one from the above number for \$5.95. Mine busted and I ordered from a local electronics shop and had to wait 2 months to get it (also had to pay \$10). This might be what you need to clear up some "bad" modules.

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The entire contents of Tips from the Tigercub Nos. 1 through 14, with more added, are now available as a full disk of 50 programs, routines and files for just \$15.00 postpaid!

Nuts & Bolts is a diskfull of 100 (that's right, 100!) Basic utility subprograms in MERGE format, ready for you to merge into your own programs. Contents include 13 type fonts, 14 text display routines, 12 sorts and shuffles, 9 data saving and reading routines, 9 wipes, 8 pauses, 6 music, 2 protection, etc., and now also a tutorial on using subprograms, all for just \$19.95 postpaid!

And I have about 140 other absolutely original programs in Basic and Basic at only \$3.00 each! (plus \$1.50 per order for cassette, packing and postage, or \$3.00 for diskette, PPM) Some users groups charge their members that much for public domain programs! I will send you my descriptive catalog for a dollar, which you can then deduct from your first order.

I thought that my 28-Column Converter, as published in Tips #18, was

finally foolproof, but someone found a way to print a program incorrectly with it!

I'm sure you know that characters 127-143, and on up to 159 in Basic, can be redefined and used in graphics. You probably also know that these redefined characters can be put into PRINT or DISPLAY AT statements, by holding down the CTRL key as you type them. If you load a program containing such redefined characters and LIST it, they will appear as blanks. If you RUN the program, so that they are redefined by the CALL CHAR statements, and then LIST it again, they will show up in their redefined form - but if you print out the program on your printer, they will still appear as blanks. So, before you publish a program, it's a good idea to RUN it and LIST it, and look for any of those gremlins.

If you do want to publish such a program, this fix will take care of it by underlining all characters that must be typed with CTRL down (except that lower case v is typed with FCTN down). It's slow, so only use it when you need to.

```

190 IF US="E" THEN 195 ;; PR
INT @2;"TL 126194;" ;; PRIN
T @2;"TL 123164;" ;; PRINT
@2;"TL 125138;" ;; PRINT @2
;"TL 124142;" ;; PRINT @2;"
.TL 92146;" ;; PRINT @2;"NF
"
195 PRINT "Does the program
contain redefined characte
rs above ASCII 126? (Y/N)"
196 ACCEPT AT(24,1)VALIDATE(
"YN");@BS
282 IF @US="N" THEN 290
283 FOR J=1 TO LEN(LS)
284 A=ASC(0E6@LS,J,1) ;; IF
A<127 THEN L2@=L2@&CHR@A)
;; GOTO 288
285 IF A=127 THEN A=118 ELSE
IF A=128 THEN A=44 ELSE IF

```

```

A=155 THEN A=46 ELSE IF A=15
& THEN A=59 ELSE IF A=157 TH
EN A=61 ELSE IF A=158 THEN A
=56 ELSE IF A=159 THEN A=57
ELSE A=A-64
286 L2@=L2@&CHR@(27)&CHR@(45
)&CHR@(1)&CHR@A)&CHR@(27)&C
HR@(45)&CHR@0)
288 NEXT J ;; L@=L2@ ;; L2@=
""

```

That should do it, unless the number of added control characters stretches the line beyond 80 characters. Such is the case with the following, which I had to type in manually (It also contains low ASCII characters which the printer misinterprets as controls).

TIGERCUB CHALLENGE

```

100!The Unprintable Unkeyabl
e Program!
110!To shuffle the numbers 1
to 255 into a random sequen
ce without duplication
120!The strings contain the
ASCII characters 1 to 127 an
d 128 to 255
130!Most of the ASCII charac
ters below 32 or above 159 c
annot be input from the keyb
oard
140!So how was this program
programmed?
150 M@="
!"@%$%&'()*+,-./0
123456789:;<=>?@ABCDEFGHIJKL
MNOPQRSTUVWXYZ[\]^_`abcdefg
hijklmnopqrstuvwxyz{"
160 M2@="

```

```

170 M@=M@&M2@
180 L=LEN(M@) ;; RANDOMIZE ;;
X=INT(L@RND+1) ;; M=ASC(0E6@
(M@,X,1) ;; M@=0E6@M@,X-1
)&0E6@M@,X+1,LEN(M@))
190 PRINT M@ ;; IF LEN(M@)=0
THEN STOP ELSE 130

```

GROCERY SHOPPING LIST

Are you desperate for some way to convince your wife that your computer and PEB and printer and all are not just a too-expensive plaything? Maybe this will do the job.

The first thing to do is to prepare a file of the grocery items she might want to buy. It will be especially useful if you can list the items in the sequence in which she will come to them in the aisles of her favorite store. This little program will set up the file. Type END when you are finished.

```

100 OPEN @1:"DSK1.BUYLIST",O
UTPUT
110 INPUT AS
120 IF AS="END" THEN 150
130 PRINT @1:AS
140 GOTO 110
150 CLOSE @1

```

If you have TI-Writer, you can also use that to create the file, edit it and add to it - but BE SURE to delete all the carriage return symbols and any blank lines at the end. Save it under the filename BUYLIST.

Next, this program will hopefully get your wife to actually sit down at the keyboard and try out your computer. It will go through the list and ask if she wants to buy. If she types in any quantity other than 0, it will output the item name and quantity to the printer. At the end, she will be given the opportunity to add any other items.

```

100 CALL CLEAR
110 OPEN @1:"DSK1.BUYLIST",I
NPUT
120 OPEN @2:"P10"
130 LINPUT @1:AS
140 IF EOF(1) THEN 210

```

```

150 DISPLAY AT(12,1):A0
160 DISPLAY AT(12,LEN(A0)+2)
:0"
170 ACCEPT AT(12,LEN(A0)+2)B
IZE(-4):0
180 IF @=0 THEN 130
190 PRINT @2:AS@ "ASTR@(@)&
" *CHK@(175)
200 GOTO 130
210 DISPLAY AT(12,1):"ADDITI
ONAL? Y"
220 ACCEPT AT(12,13)VALIDATE
("YM")SIZE(-1):0
230 IF @="N" THEN 300
240 DISPLAY AT(12,1):"ITEM?"
250 ACCEPT AT(12,7):A@
260 DISPLAY AT(14,1):"QUANTI
TY?"
270 ACCEPT AT(14,1):0
280 PRINT @2:AS@ "ASIK@(@)&
" *CHR@(175)
290 GOTO 210
300 CLOSE #1
310 CLOSE #2
320 END

```

The list will be in enlarged print, so that no one in the store will see her putting on her reading spectacles. And after each item and quantity is a blank square to be checked off when she picks up the item.

You might also point out that she could use the checkoff blocks to mark the items she has coupons for, and she could jot down prices on it to be sure she isn't cheated at the checkout counter, or to shop for better bargains elsewhere.

The program is set up for the Gemini printer. You may need to change the "PIO" to the name of your printer, and other printers may not have the open block character CHR@(175) available.

Of course, you can also use this program for more important things, such as shopping for computer software....!

If you type the period key while holding down the

CTRL key, the printer interprets the resulting blank space as CHR@(27), even though the computer knows it is really CHR@(155). Since CHR@(27) is the ESC or "escape code" which tells the printer to interpret the following characters as function command codes, you can for instance set up the printer for emphasized double-struck double-width underlined italics by OPEN @1:"PIO" :: PRINT @1:" E 6 W"&CHR@(1)& "-"&CHR@(1)& " 4", using CTRL . in the blanks. I have been overlooking another very useful feature, the skip-over perforation. PRINT @1:" N"&CHR@(6), again with CTRL . in the blank, causes the paper to advance to the top of the next page when there are only 6 lines left at the bottom of the page (providing that you started at the top, of course). This makes it possible to LIST "PIO" a program, or PF PIO from Ti-Writer Editor, without printing right across the perforations.

Ghosts! Did you ever read data from a file, and find that you were getting data from a file that was no longer on the disk? It can happen, at least if you are reading from a RELATIVE file in the UPDATE mode. When you delete a file, only its address is actually deleted - the data remains on the disk until it is overwritten by a new file. If the new file is shorter than the old one, and you try to read beyond the end of the file, you may awaken the ghost!

Are you making use of those special characters that are available on your Gemini printer? You didn't know about them? Try this.

```

100 OPEN @1:"PIO" :: 110
PRINT @1:" (hold down the
CTRL key and type 1234567/
and then hold down the FCTN
key and type </>@;@HJKL@NGY
)". RUN . Surprised? Some
of those can be very
useful, such as the true
division sign that you get
with FCTN H. There are many
more of these that you can
access by CHR@. For a
complete list of them and
their CHR@ codes, run this -
100 OPEN @1:"PIO" :: FOR
CH=160 TO 254 :: PRINT
@1:CH:CHR@(CH):: NEXT CH ::
CLOSE @1. Unfortunately,
these can't be used out of
Ti-Writer.

```

Here's a handy little routine to practice up on your typing.

```

100 CALL CLEAR
110 CALL CHAR(94,"3C4299A1A1
99423C")
120 CALL SCREEN(5)
130 CALL VCHAR(1,31,1,96)
140 CALL COLOR(1,8,16)
150 FOR SET=2 TO 12
160 CALL COLOR(SET,2,16)
170 NEXT SET
180 PRINT TAB(10);"TIGERCUB"
: TAB(0);"TOUCH-TYPING": :
AB(11);"TUTOR": :TAB(9);" T
iger cub Software": :
190 REM by Jim Peterson
200 PRINT " Watch the screen.
not the": " keyboard!": : "
Letters and numbers will"
210 PRINT " appear on the sc
reen grid": : " in position cor
responding": : " to their keybo
ard position.": : " Type the
a and they will"
220 PRINT " disappear.": : :
" Press any key"
230 CALL KEY(0,K,BT)
240 IF BT=0 THEN 230
250 CALL CLEAR
260 CALL CHAR(32,"FFB0B0B0B0
B0B0B")
270 CALL VCHAR(1,30,1,192)
280 CALL MCHAR(14,1,1,384)
290 CALL VCHAR(1,4,1,14):: C
ALL VCHAR(5,6,1,11):: CALL V
CHAR(8,7,1,6):: CALL VCHAR(1
1,8,1,3):: CALL VCHAR(8,29,1

```

```

,6)
300 CALL VCHAR(11,28,1,3)
310 CALL CHAR(48,"003A444C54
6444B8")
320 KEY@="1234567890-QWERTYU
IOP/ABDFGHJKL;*&CHR@(13)&"ZX
CVBN,."
330 RANDOMIZE
340 K=ABC(SEE@ (KEY@,INT(42@R
ND+1),1))
350 GOSUB 370
360 GOTO 420
370 I=POS(KEY@,CHR@(K),1)
380 Y=ABS(I)11+ABS(I)22+AB
S(I)33+1
390 R=Y#3
400 C=((1-ABS(Y)1)@ (Y-1)@11)
@2)+4+Y
410 RETURN
420 CALL MCHAR(R,C,K)
430 CALL KEY(3,K,BT)
440 IF BT=0 THEN 430
450 GOSUB 370
460 CALL GCHAR(R,C,6)
470 IF 6(>)32 THEN 500
480 CALL SOUND(-100,110,0,-4
,0)
490 GOTO 340
500 CALL MCHAR(R,C,32)
510 CALL SOUND(-100,1000,0,1
005,0)
520 GOTO 340

```

Here's one for the kids to have fun with. I'm sorry I lost track of who published it.

```

100 CALL INIT :: FOR J=1 TO
100 :: PRINT J :: FOR P=1000
TO 1 STEP -J :: CALL LOAD(-
31456,P):: NEXT P :: NEXT J

```

MEMORY FULL,

Jim Peterson