



# THE PUG PERIPHERAL



THE MONTHLY NEWSLETTER OF THE  
PITTSBURGH USERS GROUP  
MAY 1993

## TI NEWS By Gary Taylor

In the April issue of *Micropendium* it was announced that Cecure Electronics has taken over the distribution of Mike Maksimik's MIDI-Master. Mike had previously announced that he would limit his distribution of MIDI-Master to TI fairs. "By giving the distribution rights to Cecure, Maksimik insures the product will be available through more accessible mail-order channels", says *Micropendium*.

Also in the same article it was announced that Cecure Electronics will be offering some new products at the Lima Faire which will include a new clock card, an HFDC Clock backup battery board, and a digital to analog poly-port, which has eight outlets. This would allow you to have stereo on your TI!

Cecure Electronics is the company that began a Myarc repair service when Myarc got so far behind with repairs. They are now servicing all of Myarc's products. The TI community is being well served by this company. They can be reached at PO Box 132, Muskego, WI 53150-0132. (414) 679-4343. They also have a BBS at (414) 529-9659.

By the way, while we are talking about the MIDI interface, I noticed an article in the April issue of the Mid-South 99 Users group newsletter about an effort to organize a by-mail user group for persons making music with MIDI-Master. Delores P. Werths, musician for Harrison Software, is waiting to hear from you at 5705 40th Place, Hyattsville, MD 20781. There is no fee at the present time to join. The group plans member exchanges of SNF source file disks, a central clearing house/library and a disk newsletter.

The Lima Multi User Group Conference is just around the corner. It will be held the week after our next meeting on May 15, 1993. Each year they extend an invitation to copy disks at no charge from their library. We received a copy of the additions to their library since the last Conference in 1992. Susan has printed it out and we will be passing it around at the meeting on Sunday, May 9th. You can select any disk from the list and we will see to it that we get a copy for our library. Since our library is also free there is no charge to get these disks.

The meeting in May will be the last one until September. When we signed up for the community center last year we discussed not having a meeting during the summer months and decided there would be no meetings during June, July or August this year. The next meeting will be September 12, 1993. And so the first access you will have to the programs from Lima will be September. You will be able to make special arrangements if you have need for some of these programs by calling myself or Susan during the interim period. Our phone numbers are listed on the back of the newsletter.

As a follow-up to the comments Steve Burns made in his "From The soap-Box" column about the "Memory Card Battle" in the April issue of the Bluegrass 99 Computer Society Newsletter, I agree with Steve. There are two companies developing memory upgrades for the TI-99/4a, Asgard and Western Horizon Technologies. Each uses a different method for making more memory available for the computer. Controversy abounds about which method is better and I am sure that there are good points and bad points about each but as a user I don't care about that, I want to know about the programs I can buy that use the new memory. I told Chris Bobbit at the Chicago faire, where he demonstrated his new memory card along with some development software, that "why would anybody buy a product with the hope of getting some software for it later". I don't want a development kit to write code for it. I know that these programs are the first ones that must be developed so that programs can be written but I want to see a program running that "knocks my socks off", one that I gotta have, and if I need a new memory card to use it, so be it. We all know what kind of programs we are talking about. They are word processing programs with fast spell checkers, graphic programs where you can have more pages in memory, even games. I spent \$100 on a game machine so that I could buy \$40 cartridges and then threw it away to buy one for \$150 with \$60 cartridges just because the graphics and programs were better. Give me the software then I will be interested in buying a new memory card, no matter what the technology behind it.

~~~~~ TI-101 ~~~~~

## OUR 4/A UNIVERSITY

by Jack Sughrue  
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### #4 ROOTS

Last session, Class, we had a couple questions from Mr. Shakespeare over there by the window. He said he had a nephew in junior high and two elementary school grandchildren.

Okay, Okay, Mr. Shakespeare. Just put your grandchildren's pictures away. So long as we know one's 8 and one's 4 and that your nephew in junior high is having trouble reading.

Got that, Class.

He wants to know what the TI can do for him. Or, more specifically, for the significant kiddies in his life.

There are so many directions one can go here that I'm not sure where to begin. Because I'm so text oriented, I think I'll begin with some sources that may not be dried up yet. There are real books like Fred D'Ignazio's TI PLAYGROUND, which I'll discuss during another class. But, first, I want to discuss Newsletter Childrenware.

Zounds, Mr. Shakespeare! Just be patient. I'm sure I'll answer your questions before you even have to ask them.

Now.

Er, oh, yes; the newsletters.

There were so many great newsletters over the years that provided good, solid, educational material in so many enterprising ways - ways that let the adults learn along by typing in the programs. It would be impossible to even list them all on the blackboard here.

Let me just take a super example and hope that her materials are still on disk in the club's library for new massive circulation.

Sue Harper (the present librarian of the Pittsburgh User Group, P.O. Box 8043, Pittsburgh PA 15216) for years wrote a wonderful column called "Kiddie Corner" (note she didn't succumb to the temptation to misspell "Corner" with a "K") and reviewed material for young (and old) learners. Sometimes the older learners could type the programs for the younger learners.

Although I never met Sue, I have been an admirer of her creativity and writing talent for years.

Anyway, Class, while I was preparing some notes I uncovered some of the old "PUG Peripheral" newsletters and want to share a bit of a Fall '89 issue (when her son was 9 and daughter 11):

"This month, since we are all getting back into the swing of things with school, I thought I would give you a little quiz. Yes, indeed, you can tell I used to be a school teacher! Really, it's not a hard quiz: it's a take-home (for sure) and you have a month to do it! Just five questions, and then a little program to amuse you until next month, when I will give you the answers!

1. Write a program that will make the screen blink the colors of fall.

2. Write a program that will play 'Mary Had a Little Lamb.' I'll help you on that one - the notes are A,B,A,G,F,G,A.

3. Write a program that will make your name blink on and off until you use FCTN 4 to stop it.

4. Write a program that will turn your name red and make the screen blue.

5. Take all the programs 1 through 4 and make one long program that blinks fall colors, plays the little song, and blink a red name on a blue screen.

GOOD LUCK!

```
10 CALL CLEAR
20 FOR H=1 TO 10
30 RANDOMIZE
40 LET R=INT(RND)+32
50 LET S=INT(RND)+3
60 CALL SCREEN(S)
70 CALL HCHAR(12,12,R)
80 CALL KEY(0,K,S)
90 IF S=0 THEN 100 ELSE 80
100 NEXT H
110 PRINT "PEACHY-KEEN!!!!" : : : : :
120 STOP
```

"This little program ... well, what will it do? Try it and see!

"See you next month!"

Now this short "Kiddie Corner" article is filled with the stuff of learning. First, Class, it made me go back and dig out a couple manuals to solve those five small problems of hers. Very enticing, very educational little problems. Suffice it to say that previous columns of hers led up to skills levels that could achieve these

creative extensions. These are real, relevant logic problems for any age. They also include things that younger children must know for a solution even if parents, grandparents, or older siblings are typing some things in (i.e., What ARE the colors of fall? How does the song go?).

And then that tiny program you have to type in to see what it is supposed to do. I modified it slightly upon the suggestion of Harold Hoyt of the St. Louis TI user group. But is that program a motivator or what?

And the safety net of all the answers next month. But could anyone wait a full month. Nope! This is a true learning situation for everyone, including those who DO wait the month and type in all the answer programs. However, if you don't wait the month your correct answers are guaranteed to be different from hers. Thus, Lesson Uno: there are many ways to skin a cat.

Although why one would actually WANT to skin a cat has always been beyond me. What does one DO with a skinned cat? Do you use the skinless cat part or the skin itself? Or both?

Anyway, Class, the point does not have anything to do with cats: the point has to do with the great learning tool called the 99/4A.

Sue Harper is only one of many people throughout the whole TI World who wrote excellent early-learner articles.

If every newsletter editor and every librarian in the country looked back in the old issues and disks and tapes and dug out the old programs and articles written by club members about education or for young people and transferred them all to disk for an educational clearinghouse, there would be piles of materials which would constitute a marvelous resource for all clubs, particularly as the new generation of grandchildren, nephews and nieces are arriving at the right ages for using these services. Remember, Mr. Shakespeare, and all the rest of you who have questions similar to his, that what may be old stuff for oldtimers is new stuff for newtimers.

You may quote me.

But let's get back to Sue Harper. I hope she has all her stuff on disk.

Anyway, she always began her column with a nice graphic (teddy bear in the case mentioned). This was at a time when not too many newsletters used graphics for their local columns.

Sue also did program reviews, as I said, that dealt with learning. These were all excellent, too. For example, in this same '89 issue, she reviewed Jim Peterson's "KINDERTIMES," which I have had the good fortune to use with some younger children with much success.

Here's Sue:

"This program, listed as TCX-1062 on the disk ... is a very nice little program which uses only 12 sectors, and yet has quite a bit to offer.

"The main audience for this program would be third graders learning their multiplication tables, or for a review for the next few grades. The program will accept parameters higher than one digit numbers, but working these problems in your head becomes difficult.

"At the beginning, the program asks the user for the highest number desired and the lowest number desired. These two answers set the parameters for the multiplicands. The format of the program is:

7 X 6 =

and waits for the answer. The answer must be typed in with the highest digit first, which is why I say this program is not suited for 'hard' questions like 127 X 639. In the 7 X 6 example, the user types in 42 and presses ENTER. The user is rewarded with a graphics display for correct answers."

And so on.

Actually, Jim (TIGERCUB) has upgraded this program. He even has a nice new program that prints out simple worksheets (with answers on a separate sheet). Ideal for any adult who spends time helping children with math. Refer to your notes from previous classes to learn more about this extraordinary (and extraordinarily inexpensive) resource called TIGERCUB

These rich resources of newsletter and disk and tape libraries of clubs throughout the country are some of the very best sources all of you can use for learners even in today's "high-tech wizardry" marketplace. The TI STILL does what it was made to do better than anybody else.

No, Mr. Shakespeare, I am not going to give you or Ms. Bronte or anyone else in the class the answers to Sue's five problems. That is homework for next class.

Please, please, Class! Give me your attention! Stop that moaning and groaning back there! These five questions will be on the mid-term, so I would definitely have them ready for the next class.

Yes, yes. There were many other people who did such articles for newsletters and magazines. I remember Chick De Marti of the Los Angeles Group often had similar fascinating items in his "Did You Know That...?" column. I wonder if he has all those great columns on disk?

And Fred D'Ignazio ran a regular children's column in COMPUTE, I think. Anyway, TI PLAYGROUND is one of his tested for-and-by-kids program books.

Maybe next class I'll do nothing but educational books, like my favorite, THE ACADEMIC TI.

Meanwhile, do your homework and maybe you can reach Sue or Chick for extra-credit material.

The software, Mr. Bell? We'll get to the tapes and cartridges during another session, right after we finish discussing the rest of the textware. What? The SYLLABUS, Mr. Bell. Must follow the syllabus.

No, Mr. Shakespeare, a syllabus is not like a hexbus. Perhaps if you'd care to walk out with me to my car, I'll explain the differences on my way.

#### MAX-RLE

by Sue Harper

Pittsburgh Users Group

MAX-RLE is a great program for displaying graphics either on the screen or for printing out a copy. The files used are DF format, and are loaded after a prompt on the screen from the main program. A quick example is GRAFPX3003, which includes an early version of MAX-RLE, and some pictures that will display with the program. For example, ENTERPRISE shows a picture of the space shuttle, WEATHER displays a weather map, and so forth. Docs are included even on this early version, and that is a rarity, as well as a credit to the author!

How to find files for MA-RLE? Look for disks that have MAX-RLE on them, files that end with RLE, or files that are saved in the DF format. The docs tell you how to create new files, print files, convert TI Artist files to DF format and more. By the way, the DF files are compatible with GRAPHX.

Here are some disks to look for:

3003 3022 3033 3034 3035

#### FROM THE LIBRARIAN

by Sue Harper



May promises to be a big month at the user's group, and we extend a special invitation to all members to come on down, and help decide the fate of the library! What I am referring to is what we will try to get from the Lima Faire. I have printed out the list of what they have that is new, and my goodness, there seems to be quite a bit. Once again, the orphan lives!

We will be passing the list around, and any disk that YOU would like to see in the library, just circle the disk number, and we will have our team of crack expert disk copiers bring 'em all home to us! Truthfully, there are a few things that we do have already, but there are lots and lots of disks to choose from, and a wide variety of programs to pick from. Unfortunately, we cannot just say, bring back everything, so we will have to be somewhat selective! After all, we already have over 1300 disks, and more coming in May! Gary sure knows how to keep a librarian busy!

Also we will have in May some new disks, many of the modules on disk. If you have a module that we don't have, bring it along, and perhaps we can transfer it. I don't have a list of what we have so far, but there are quite a few still missing. It would be great to have all the ones that can be transferred - some cannot.

As an added bonus on the Lima listing disks, there was a set of files that contain the articles from Bits, Bytes and Pixels. This disk will be in the library under Miscellaneous. Also included is a 40 column utility by Brad Snyder, release date February 1993.

I've lots to do, so I'd best get to it! See you at the meeting. . .



## COMMANDLAND

by Sue Harper

Pittsburgh Users Group

Here we are in another month, hopefully full of sunshine, flowers and song. Have you ever had a time when you wanted to just skip over the bad parts and get to the good stuff? Maybe a favorite movie that you want to see the end, but don't want to sit through the whole thing. Well, this month's statement will help with just that!

At times in a program you want to skip around a bit. For example, you might want to change the screen color, the character codes, whatever, and you want to have something on the screen while that is going on. You might try this:

```
10 CALL CLEAR
20 PRINT "HANG ON! WITH YOU IN A SEC -"
30 PRINT "JUST HAVE TO FIND A TOWEL!"
40 GOTO 1000
```

Line 10 clears the screen.  
Line 20 prints the statement in quotes.  
Line 30 prints the statement in quotes.  
Line 40 tells the computer to skip over every line until it gets to line 1000.

Now, to make this work, you have to have a line 1000! Perhaps line 1000 would change the code of every letter on the screen, or include DATA statements, or define and place graphics on the screen. At the end of your set up which begins at line 1000, you would have a line with the statement GOTO 50. This would tell the computer to go to line 50 and proceed from there.

Now, you may ask, why is this useful? Once again, in a short program it probably is a waste of time more than anything else, but in a long program this can mean the difference between the professional look and a blank screen with the word RUN on it for the time the computer traces the program looking for any errors.

Here is another use of GOTO - which, by the way can be used as one word or two - GOTO or GO TO.

```
10 CALL CLEAR
20 LET X=4
30 LET Y=5
40 GOTO 100
50 PRINT "DID YOU KNOW THAT X+Y=9?"
60 PRINT "HERE, I'LL PROVE IT!"
70 PRINT X:"+":Y:"=":X+Y
80 PRINT "TOLD YA SO!!!!"
90 STOP
100 FOR COLOR=1 TO 16
110 CALL COLOR(COLOR)
120 FOR WAIT=1 TO 100
130 NEXT WAIT
140 NEXT COLOR
150 GO TO 50
```

Line 10 clears the screen.  
Line 20 tells the computer to make X equal 4.  
Line 30 tells the computer to make Y equal 5.  
Line 40 tells the computer to go to line 100.  
Line 100 (now, remember, we have skipped down to here!) tells the computer to count from 1 to 16, and make the word COLOR equal to the number.  
Line 110 tells the computer to change the color of the screen to the color that each number represents.  
Line 120 tells the computer to wait for a bit while the viewer sees the color.  
Line 130 tells the computer to stop waiting.  
Line 140 tells the computer to go to the next color.  
Line 150 tells the computer to go back to line 50.  
Lines 50, 60, 70 and 80 tell the computer to print words and numbers on the screen.  
Line 90 tells the computer to end the program.

That's enough for now, see ya later!!!



## TIPS FROM THE TIGERCUB

No. 68

Tigercub Software  
156 Collingwood Ave.  
Columbus, OH 43213  
#####

My three Nuts & Bolts disks, each containing 100 or more subprograms, have been reduced to \$5.00 each. I am out of printed documentation so it will be supplied on disk.

My TI-PD library now has almost 600 disks of fairware (by author's permission only) and public domain, all arranged by category and as full as possible, provided with loaders by full program name rather than filename. Basic programs converted to XBasic, etc. The price is just \$1.50 per disk(!), post paid if at least eight are ordered. TI-PD catalog \$5 and the latest supplement is available for \$1 which is deductible from the first order.

When I have finished reading Barry Traver's column in Computer Monthly, I like to take a look at whatever Dr. Michael Ecker is up to in his "Recreational Computing" column, although much of his math is beyond me and I can't always translate his GW Basic into TI Basic.

In the February issue, he had a routine to play Fibonacci modular music. This is the TI version; it is not very musical, but the notes are in the chromatic scale.

```
100 A=0 : B=1 : M=51
110 C=A+B : C=C-M*INT(C/M)
: CALL SOUND(-100,110e2*(E/12),5) : A=B : B=C : GOTO 110
```

Dr. Ecker also had a challenge to swap two numbers without using a third vari-

able or the SWAP command - which TI Basic doesn't have anyway. The practical way, of course, is to use the 3rd variable, T=A : A=B : B=T, but just for the fun of it, if we are dealing with one-digit numbers -

```
100 A=1 : B=2 : A=A+B/10 :
: B=INT(A) : A=(A-INT(A))*10
: PRINT A;B
```

But suppose we are dealing with numbers of any length - we can still do it with a one-liner, or a two-liner if we want to input the numbers from the keyboard -

```
100 INPUT A : INPUT B
110 B=B/10^(LEN(STR$(B))) :
A=A+B : B=INT(A) : A=A-INT(A) :
A=A*10^(LEN(STR$(A))-1) :
: PRINT A;B : GOTO 110
```

So you got smart and tried a negative number or a decimal? OK, how about this -

```
100 INPUT A0 : INPUT B0
110 A=A0&" " & B0 : B=SEG$(A0,1,POS(A0," ",1)-1) : A0=B
EG$(A0,POS(A0," ",1)+1,255) :
: PRINT A0 ; " " ; B0 : GOTO 110
```

And another challenge was to alternately assign X the value of A and B, without using IF...THEN or any outside help. That seems to require a two-liner -

```
100 A,X=77 : B=132
110 X=ABS(X-A)*B+ABS(X-B)*A
: PRINT X : GOTO 110
```

The only honest way to compute interest on a loan is on the unpaid balance, although the banks and finance companies have devised more complicated and profitable ways. If you want to make an honest loan, here is how to do it -

```
100 DISPLAY AT(3,1)ERASE ALL
:"SIMPLE INTEREST CALCULATOR
:";"For interest to be cal-
```

culated monthly on unpaid balance."

```
110 DISPLAY AT(9,1) : "Printer
? P10" : ACCEPT AT(9,10)SIZ
E(-20) : P0
120 DISPLAY AT(11,1) : "Amount
loaned? $" : ACCEPT AT(11,
17)VALIDATE(NUMERIC) : A
130 DISPLAY AT(13,1) : "Interes
t rate? %" : ACCEPT AT
(13,16)SIZE(4)VALIDATE(NUMER
IC) : X
140 IF X<1 THEN DISPLAY AT(1
2,1) : "Enter as a percentage"
: GOTO 130
150 DISPLAY AT(15,1) : "Monthl
y payments of $" : ACCEPT A
T(15,22)VALIDATE(NUMERIC) : P
160 DISPLAY AT(17,1) : "Beginn
ing in month 11-12) of yea
r"
```

```
170 ACCEPT AT(17,27)VALIDATE
(DIGIT) : M : ACCEPT AT(18,9)
VALIDATE(DIGIT) : Y
180 DATA JAN,FEB,MAR,APR,MAY
,JUN,JUL,AUG,SEP,OCT,NOV,DEC
190 I=X/100 : DIM M$(12) :
FOR J=1 TO 12 : READ M$(J) :
: NEXT J
200 OPEN #1:P0,VARIABLE 254
: PRINT #1:CHR$(27)&"E"&CHR
$(27)&"G"&CHR$(27)&"M"&CHR$(
6)&CHR$(27)&"N" :
210 PRINT #1:"A";STR$(A);" F
INANCED AT ";STR$(X/100);"%
WITH MONTHLY PAYMENTS OF $";
STR$(P);" BEGINNING ";M$(M);
Y;"
220 I=A*I/12 : TI=TI+1 : A
=A+I-P
230 PRINT #1:M$(M);Y;" PAYME
NT $";STR$(P);" OF "
240 PRINT #1,USING "####.##"
: PRINT #1:" INTEREST AM
D "
250 PRINT #1,USING "####.##"
:P-1; : PRINT #1;" PRINCIPA
L - BALANCE OF "
260 PRINT #1,USING "####.##"
:"A
270 M=M+1 : IF M=13 THEN M=
1 : Y=Y+1
280 IF A>P THEN 220
290 PRINT #1,USING "FIMAL PA
YMENT ####.##" : A : PRINT #1
,USING "TOTAL INTEREST PAYED
####.##":TI
```

Thanks to Bruce Harrison, here is a neat subprogram to

sort strings into sequence as they are entered -

```
100 CALL CLEAR : DIM W$(100)
)
110 FOR J=1 TO N : W$(J)=" "
: NEXT J : INPUT "N=? " : N
120 INPUT I0 : IF I0="" THEN
N 130 ELSE CALL INSBORT(W$(I),
I0,N) : GOTO 120
130 FOR J=1 TO N : PRINT W$(
J) : NEXT J : GOTO 110
30020 SUB INSBORT(W$(I),I0,N) :
FOR T=1 TO N : IF I0>W$(T)
THEN 30030 ELSE 30040
30030 NEXT T : GOTO 30050
30040 FOR J=N TO T STEP -1 :
W$(J+1)=W$(J) : NEXT J
30050 W$(T)=I0 : N=N+1 : S
UBEND
```

In the test routine in lines 100-130, give N the value of 0, input some words and then just press enter.

To start a new array, use FOR J=1 TO N : W\$(J)=" : NEXT J, then reset N to 0. If you want to sort in reverse sequence, change the > to <. If you need to sort numbers, delete all the \$, change the " in line 120 to 0, and input a 0 when you are when finished inputting.

Someone sent me a program to figure days between dates but it would not count leap dates, so I decided to write one that would.

```
100 DISPLAY AT(2,5)ERASE ALL
:"DAYS BETWEEN DATES";" ;"
including leap year days" :
M0(1)="From" : M0(2)="To"
: R=13
110 DATA 31,28,31,30,31,30,3
1,31,30,31,30,31
120 DIM L(12) : FOR J=1 TO 1
2 : READ L(J) : NEXT J
130 FOR J=1 TO 2 : DISPLAY
AT(R-1,1) : M0(J) : "year
on
nth day" : ACCEPT AT(
R,6)VALIDATE(DIGIT)SIZE(4) : Y
(J)
140 ACCEPT AT(R,17)VALIDATE(
DIGIT)SIZE(2) : M(J) : IF M(J)
<1 OR M(J)>12 THEN 140
150 ACCEPT AT(R,24)VALIDATE(
```

```

DIGIT)SIZE(2);D(J); IF D(J)
<1 OR D(J)>31 THEN 150
160 CALL LEAP(Y(J),X); L(2)
=L(2)-X ; IF D(J)>L(N(J))TH
EN 150
170 L(2)=28 ; R=R+3 ; NEXT
J ; R=13 ; IF Y(1)>Y(2)TH
EN T=Y(1); Y(1)=Y(2); Y(2)
=T ; T=M(1); M(1)=M(2); M
(2)=T ; T=D(1); D(1)=D(2);
; D(2)=T
180 IF Y(1)=Y(2)AND M(1)>M(2)
THEN T=M(1); M(1)=M(2); M
(2)=T ; T=B(1); D(1)=D(2);
; D(2)=T
190 L(2)=28 ; IF Y(2)>Y(1)T
HEN 220
200 IF M(1)=M(2)THEN B=ABS(D
(2)-D(1)); GOTO 260
210 CALL LEAP(Y(1),X); FOR
J=M(1)+1 TO M(2)-1 ; B=B+(L
(J)+X*(M(1)=2)); NEXT J ; B=
B+(M(1)+X*(M(1)=2)-D(1))+D(
2); GOTO 260
220 CALL LEAP(Y(1),X); B=L(
M(1))-D(1)+X*(M(1)=2)
230 FOR J=M(1)+1 TO 12 ; B=
B+(L(J)+X*(J=2)); NEXT J
240 FOR J=Y(1)+1 TO Y(2)-1 ;
; CALL LEAP(J,X); B=B+365-X
; NEXT J
250 FOR J=1 TO M(2)-1 ; CAL
L LEAP(Y(2),X); B=B+(L(J)+X
(J=2)); NEXT J ; B=B+D(2)
260 DISPLAY AT(20,1);B;"days
between" ; B=0 ; GOTO 130
270 SUB LEAP(Y,X); X=(Y/400
=INT(Y/400)); IF X=-1 THEN
SUBEXIT ELSE X=(Y/4=INT(Y/4)
); IF X=0 THEN SUBEXIT ELSE
X=(Y/100<>INT(Y/100))
280 SUBEND

```

A leap year is a year that is evenly divisible by 4 unless it is evenly divisible by 100 but not evenly divisible by 400. The subprogram in lines 270-280 will give X a value of -1 if Y is a leap year.

Gene Hitz of Arcade Action Software reports another undocumented feature of TI Extended Basic. The manual says that you can only enter a subprogram by a CALL and only leave it by a SUBEXIT or SUBEND, but the manual is

wrong. You can GOSUB to a subroutine within a subprogram, providing it does not contain a SUBEXIT, and return; and you can GOSUB from within a subprogram to a subroutine in the main program, and return. In this way, you can transfer variables in and out of a subprogram without putting them in a parameter list. See for yourself -

```

100 CALL CLEAR
110 INPUT M# ; CALL SUB(M#)
; PRINT M# ; GOSUB 140 ;
PRINT "M# IS";X;"CHARACTERS
LONG" ; GOTO 110
120 M#="SEE WHAT I TOLD YOU?"
; RETURN
130 SUB SUB(M#); GOSUB 120
; GOSUB 140 ; SUBEXIT
140 X=LEN(M#); RETURN
150 SUBEND

```

If you are among the lonely few who have purchased by TI-PD disks, you will know that most of these load from a menu by full program name, not those abbreviated filenames. Those menus are prepared quickly and easily by my Cateriter program which was published in Tips 847 and in MICROpendium and is available on TI-PD 1105.2.

I was asked if there was a way to dump those full program names to the printer. There is, but it requires a big program - like this -

```

1 OPEN #1:"DSK2.TI-PD/CAT",A
PPEND
2 DISPLAY AT(12,1)ERASE ALL:
"TI-PD# ?" ; ACCEPT AT(12,1)
Q);N
14 FOR J=1 TO X-1 ; READ X#
; PRINT #1;X#;TAB(30);N ;
NEXT J ; CLOSE #1 ; STOP
17 REM

```

Save that on an empty disk by SAVE DSK2.C.MERGE. Put your TI-PD disk in drive 1, boot its LOAD program, break it with FCTM 4 and enter MERGE DSK2.C., then RUN. Put

in the next TI-PD disk and do the same. You will have a D/V80 file of all the programs, followed by their TI-PD disk number. Run the file through Sort Experiment or TI-Sort or whatever, and you can print them out in alphabetical sequence.

If you have only one drive just change that DSK2. to DSK1. and swap disks after breaking the LOAD program.

Of course, this won't work with fairware disks which have the author's own loader or some other disks which do not have my Cateriter load for one reason or another. You'll have to type those into the file.

Another user asked me if there was anyway to key in the ASCII above 127 into TI-Writer's Editor. Many of those ASCII can be entered from the keyboard by using the CTRL and FCTM keys - try this -

```

100 INPUT M# ; PRINT ASC(M#)
; GOTO 100
- but the Editor has been programmed to refuse them because so many of those FCTM and CTRL combinations are used as edit commands.
I had a bright idea - I thought. I wrote a little program to create 127 files, named 128 through 255, each containing just the ASCII of the same number. Now, I thought, when I want to put in such an ASCII I will just LF that file into the next line and CTR 2 to pop it into place. But the Editor refused to even load a file that began with an ASCII above 127!

```

I'll fool you, I thought. I created those files again, but with an asterisk before the high ASCII. Now they loaded alright - but each ASCII above 127 became an ASCII 128 numbers lower! It is too bad that the Editor does not have a command to

add 127 to an ASCII, just as CTRL U subtracts 64, but if you want those graphics characters in your text you will just have to transliterate them and print through the Formatter.

Folks take it for granted that my Nuts & Bolts disks are only useful for programmers, but they contain many routines so simple to use that anyone can use them to dress up their favorite program. For instance -

```

20083 SUB TITLE(S,T#); CALL
SCREEN(S); L=LEN(T#); CAL
L MAGNIFY(2)
20084 FOR J=1 TO L ; CALL S
PRITE#J,ASC(SEG#(T#,J,1)),J
+1-(J+1=8)+(J+1=8+13)+(J>14)
#13,J#(170/L),10+J#(200/L);
; NEXT J
20085 SUBEND

```

Key that in and save it by SAVE DSK1.TITLE.MERGE. Load your favorite program. Enter MERGE DSK1.TITLE. Make sure your program does not have a line 1 or 2 - if so, RES it. Type in -

```

1 CALL CLEAR ; CALL TITLE(S
,"MY PROGRAM")
2 FOR D=1 TO 1000 ; NEXT D
; CALL DELSPRITE(ALL)

```

And try it. Instead of "MY PROGRAM", put the name of your program. Instead of 5, put the number of whatever screen color you would like, from 2 to 16 - check your Basic manual. Change 1000 to whatever delay you want - if you have selected a screen color that will leave text legible, use -

```

2 DISPLAY AT(24,1);"PRESS AN
Y KEY" ; DISPLAY AT(24,1);"
press any key" ; CALL KEY(0
,K,B); IF S=0 THEN 2 ELSE C
ALL DELSPRITE(ALL)

```

You might also need a CALL SCREEN(B) to restore normal screen color.

Oops! Memory full! - Jia P

## HARRISON SOFTWARE'S FONT DUMPER

by Jim Peterson

A few years ago, I wrote a few little routines to modify the hex codes of the screen character sets. Then I found the source code of a simple assembly program by Barry Traver, to instantly restore the lower case characters which are not restored by CALL CHARSET. I don't know anything about assembly, but I figured out how to substitute my altered hex codes for the DATA in his source code, to produce instant screen font changes.

Then I wrote an Extended Basic program to write that assembly source code, using the existing screen character hex codes. I may be the first one to have come up with the idea of using Basic to write assembly (Bud Wright has also used it effectively) and certainly the first one to do it without knowing anything about assembly!

Using this, and my routines to manipulate hex codes, I created assembly routines of all kinds of screen fonts. They looked fine on my old TV set, but when I saw them on a monitor I realized that they had lost too many pixels in the conversion process. So I added a screen character editor to the source code writer, and cleaned up the fonts before saving them. I added several existing CHARAI fonts, some other fancy fonts that others had designed, and some special ones from my Nuts & Bolts disks, and ended up with a diskfull called 127 Screen Fonts.

I used some of those in my music programs on the Tigercub Country and Tigercub Gospel disks, but otherwise they haven't seen much use, because there are not many XBasic programmers left. Some folks have converted them to TI-Artist fonts, and I think they have also been converted to IML fonts.

I tried using some of them as download fonts for my printer, but was not satisfied with the results. I thought they might look better as NLQ download fonts, but the instructions for coding NLQ fonts in my NX-1020R were complex and confusing, and I never got around to trying it.

However, I did mention the idea during one of my many phone conversations with Bruce Harrison - and he is not one to ignore a challenge. He had soon produced a fast assembly NLQ downloader for his NX-1000. He sent it to me to try out on my NX-1020. It put my printer off-line so thoroughly that the on-line command wouldn't even work - had to turn the printer off and on again.

I sent Bruce my printer manual. It turned out that the NLQ download codes are somewhat different for the NX-1020 in IBM mode, and entirely different in standard mode. He soon produced a version that would work for me in IBM mode, and then a version that would work in standard mode.

Bruce is now offering this program, called Font Dumper, in versions for the NX-1000 and the NX-1020, and will try to make the program compatible with any other printer which supports NLQ downloads - and will refund your money if he can't do so. Anyone who has dealt with Harrison Software will tell you that no one tries harder to make their software compatible with any user's equipment.

As usual, Bruce has done a thorough job. He sends a set of two disks. The one disk contains 32 of the best of my screen fonts - all he could get on a SS/SD disk. The other disk contains the object code and source code for the dump program, and a fontfiler with this assembly built in, to load a font into the printer in perhaps 30 seconds. If that is too slow for you, he provides a means of creating fast loaders for your favorite fonts, which load in a second or two. As another alternative, the download codes can be sent to disk, and then downloaded with another fast routine. There are six pages of clear instructions, a program to print them, and a couple of demo programs.

The disk also contains a FIXCHAR program, based on my screen editor and saver, which you can use to modify the existing character sets or to create new ones. For instance, you could design little graphics characters to replace



those never-used keyboard symbols, and use them to dress up your correspondence with hearts and flowers, smiley faces, fickle fingers, or whatever. Just in case you don't have the Editor/Assembler module to assemble the source code, Bruce has provided Art Green's Assembler with Barry Boone's loader, and Todd Kaplan's ALSAVE.

I really think that this is one of the greatest printing utilities available for the TI. The fonts are neat and crisp in NLQ mode, and extremely easy to use. They can be printed in pica, elite or condensed, expanded or double height or both, even quadrupled, underlined, in italics, just about anything your printer is capable of. They print at normal NLQ printer speed, except that the printer buffer must be turned off, so the computer cannot get ahead of the printer.

If you want variety in your printing, these are a great alternative to the oversized and crowded, slow-printing bit-image fonts of Page Pro. I hope to see these showing up on the pages of a lot of newsletters.

Font Dumper is available for \$10, postpaid, from Harrison Software, 5705 40th Place, Hyattsville MD 20781.

As I mentioned above, Bruce provides 32 different fonts along with his program. If you want even more, I have gone through my 127 Screen Fonts and selected 101 which are suitable for printer output, and made some modifications for that purpose - the transliterated characters which were useful for screen display are not desirable for printer use. Only so much can be done within an 8x8 dot matrix, so some of these were quite similar as screen fonts, and even more so in the much reduced size of a printed character, but there is a wide variety here - extra tall, extra short, long-legged, squat, fuzzy, extra-heavy, leaning, spooky, hollow, boxed, upside down, sideways, etc., etc., as well as Greek, Russian and Hebrew. These are available as a DS/DD disk, or a SS/SD archived disk, from Tigercub Software, 156 Collingwood Ave., Columbus OH 43213, for \$1.50 plus \$1.50 S&H.

## TIP OF THE MONTH

### HOW TO RECOVER MEMORY IN TI BASIC/EXTENDED BASIC WITH DISK DRIVE ATTACHED

The TI operating system automatically sets aside memory to serve three concurrent open files. A minimum of 534 bytes of memory are taken up by general expansion overhead plus 518 more bytes for each of the three files opened by default, or a total of just about 2K. If you know that you will have only one file open, key in the following DIRECT COMMAND: CALL FILES(1) (Press ENTER) NEW (Press ENTER). This sequence will recover 1K of precious memory. Please note that this sequence can be keyed in as a command only and cannot be used as a program statement.

Don't forget the NEW or results will be unpredictable. This procedure can be used with both TI Basic or Extended Basic. With TI Basic and attached disk this is more essential than ever since TI Basic will only address 16K and you can ill afford to lose much of that.

## EDITORS NOTE

Remember there will be no meetings in June, July and August.

I will be publishing a newsletter for JUNE/JULY, AUGUST/SEPTEMBER and OCTOBER/NOVEMBER after which we will resume a monthly newsletter.

Have a great summer and in some of your free time maybe you would consider writing an article for the newsletter or perhaps submitting a program you may have written and would like to share with the TI community. I'm sure there are a lot of programs floating around out there that we could publish. It may be just what someone else is looking for. As you can see from Jack Sughrue's article, Sue Harper's programs have really been appreciated by many others. (And her editor loves them...Thanks Sue!)

THE PUG MEETS  
ON THE 2ND SUNDAY OF THE MONTH  
AT WHITEHALL BOROUGH COMMUNITY ROOM  
100 BOROUGH PARK DRIVE  
WHITEHALL, PA.

| MAY 1993 |             |
|----------|-------------|
| S        | M T W T F S |
| 2        |             |
| 9        | MEETING     |
| 16       |             |
| 23       |             |
| 30       |             |

CLASSES BEGIN AT 3PM  
GENERAL MEETING BEGINS PROMPTLY AT 6PM

| PUG OFFICERS |               |              |
|--------------|---------------|--------------|
| Pres:        | Gary Taylor   | 412-341-6874 |
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| Treas:       | Art Gardner   | 412-835-4304 |
| Rec Sec:     | George Dick   | 412-793-5834 |
| Librarian:   | Susan Harper  | 412-464-0525 |
| Paper Lib:   | Tom Puhatch   | 412-885-3183 |
| Cor. Sec.:   | Gary Taylor   | 412-341-6874 |
| NL Editor:   | Audrey Bucher | 412-881-5244 |

| JUNE 1993 |             |
|-----------|-------------|
| S         | M T W T F S |
| 6         | NO          |
| 13        | MEETING     |
| 20        | THIS        |
| 27        | MONTH       |

| SCHEDULE      |
|---------------|
| 3PM....SET UP |
| 4:00PM.....   |
| 6-8PM MEETING |

DUES \$15/YR



PITTSBURGH TI USER'S GROUP  
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