

Vol. 1 No. 11
July 1983

Next Club Meeting
Tuesday, July 12, 1983 (7-9p.m.)
Jefferson County Fairgrounds
Auditorium

THANK YOU

John Groetz gave an excellent presentation at the June club meeting vividly showing the speed differences between Basic, PGL, and Assembly Language. Best of luck with your Word Processing and Programming School John; and thanks again..... for a super presentation!

Tenative Subjects

- (July, 12) What are SIGS?
"Library" Survey of programs & Large Screen Demos.
"Pascal" / Kent Gestring. Workshops on Personal Record Keeping and Household Budget Management
- (August, 2) "Announcement of Canidates" for Club Election, which will be held at September Club Meeting.
"High-Lighting" with Extended Basic / John Goetz.
Mini Memory Demo.
- (Sept, 13) "Annual Meeting"
CLUB OFFICERS ELECTION
- (Note): Members who have an idea for a future program or workshop please contact Ron Kuseski, 444-1797.

ON SKINNING CATS

by Roland L. Wilder

At our May meeting Mr. Behlen gave us a demo of a procedure for columnizing (right justifying) numerical output. This is one solution to a perplexing problem for those programing in TI console basic. Fortran has its "write-format" and Extended basics have their "print-usings"; but in lower grade basics columnizing is strictly a do it yourself operation. Mr. Behlen used string manipulation to tackle the problem. This is probably the most common and most direct approach. There are; however, other ways to skin this particular cat.

continued-

An old acquaintance of mine columnized his output with a very lengthy series of "if-then" statements. The method operated, but was aggravatingly slow. The following is a numerical type solution.

The general concept is to use the base 10 logarithm of a variable to adjust its tab statement in the print command. The integer part of a \log_{10} characteristic is always one less than the number of digits appearing before the decimal point, i.e.

$\log_{10} 432.1 = 2.____$,
 $\log_{10} 43.21 = 1.____$, and
 $\log_{10} 4.321 = 0.____$, etc.

Subtracting the characteristic from the tab value will align the decimal points. This will be true for all numbers equal to or greater than 1. For numbers less than 1, subtract (-1). (Note) $-\log_{10}(x) = \ln(x)/\ln(10)$. Also, (x) must be taken positive. Therefore; the tab adjustment is as follows:

$BK(X) = INT(\log_{10}(ABS(X)) / \log_{10}(10))$

Changing \log_{10} to its constant value may speed machine time. O.K. Lets try it. First let's whip up a batch of variables to columnize. (lines 100-210)

Then hold the variables for examination with a call key. (lines 220-230)

Then we truncate and roundup the variables. (lines 240-250)

Then columnize. (lines 260-290)

Then print results. (lines 300-310)

Note the minus sign in line 270.

That ought to do it. Changing the 100's in line 250 (by factors of 10) will change the number of decimals displayed. Changing the 16 in line 300 will relocate the column. Variations on this theme might include the use of define statements to avoid undue repetition when considerable data is to be handled.

```
10 REM FROM ROLAND WILDER
20 REM 07/83, ROCKY MT. 99ERS
100 CALL CLEAR
110 DIM A(24),BK(24)
120 RANDOMIZE
130 FOR I=1 TO 23 STEP 2
140 A(I)=RND*1000
150 NEXT I
160 FOR I=2 TO 24 STEP 2
170 A(I)=RND*10
180 NEXT I
190 FOR I=1 TO 24
200 PRINT A(I)
210 NEXT I
220 CALL KEY(0,B,STATUS)
230 IF STATUS=0 THEN 220
240 FOR I=1 TO 24
250 A(I)=INT(A(I)*100+.5)/100
260 IF A(I)>=1 THEN 290
270 BK(I)=-1
280 GOTO 300
290 BK(I)=INT(LOG(ABS(A(I)))
/2.302585)
300 PRINT TAB(16-BK(I));A(I)
310 NEXT I
```

Music Ideas

From Cincinnati, Ohio Users' Group:

The Low Down on Music: by Rob Williams of T.I.U.P.

I was very interested to see the single line program by Stephen Shaw of TI-HOME in the last issue of TITBITS. Here is a program to use the effect:

```

100 FOR I=1000 TO 109 STEP -20
110 CALL SOUND (500,22000,30,
22000,30,I,30,-4,0)
120 PRINT I
130 NEXT I

```

Now to actually make use of this idea. Here is a program to play the lowest chromatic octave of music as given in the "User's Reference Guide". It also plays another chromatic octave below that, previously unknown and unobtainable.

```

100 REM VIA CINCINNATI, OHIO
USERS' GROUP

110 REM ROB WILLIAMS T.I.U.P.

120 REM PROGRAM TO PLAY LOWEST
CHROMATIC OCTAVE AND NEW (!!) SUB
OCTAVE

130 CALL CLEAR

140 X=110

150 K=2^(1/12)

160 FOR N=12 TO 1 STEP -1

170 Y=X*K^N

180 CALL SOUND (500,Y,0)

190 NEXT N

200 CALL SOUND (500,110,0)

210 X=825

220 FOR N=12 TO 1 STEP -1

230 Y=X*K^N

240 CALL SOUND (500,22000,30,
22000,30,Y,30,-4,0)

250 NEXT N

260 CALL SOUND (500,22000,30,
22000,30,825.30,-4.0)

```

Finally, here is a short harmonics progression that uses the low notes.

```

100 REM

110 REM ROB WILLIAMS T.I.U.P.

120 V=8

130 T=600

140 T1=T/4

150 FOR I=1 TO 5

160 CALL SOUND (T,659,V,784,V,
981,30,-4,0)

170 CALL SOUND (T,440,V,523,V,
1310,30,-4,0)

180 CALL SOUND (T,494,V,587,V,
1470,30,-4,0)

190 CALL SOUND (T,523,V,659,V,
825,30,-4,0)

200 IF I=5 THEN 280

210 FOR J=1 TO 4

220 READ N

230 CALL SOUND (T1,110,30,110,30,
N,-4,0)

240 NEXT J

250 RESTORE

260 NEXT I

270 DATA 1470,1310,1236,1101

280 STOP

```

HINTS & TIPS

How Much Memory is Left?

1 A=A+8

2 GO SUB 1

>RUN (PRESS ENTER)

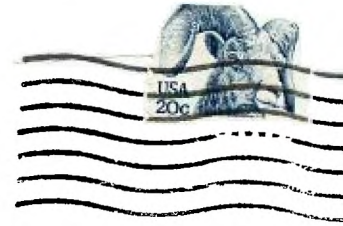
*MEMORY FULL IN 1

>PRINT A (PRESS ENTER)
is the number of unused bytes in random access memory (RAM).

* * ROCKY MOUNTAIN 99ers * *

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TIC/TALK is published monthly by the Rocky Mountain 99ers. The newsletter is intended to keep the membership informed regarding the TI 99/4(A). We welcome all members to contribute an article for publication. All articles submitted must be typed and double spaced.

All members are encouraged to serve on one or more of the committees. To volunteer..... contact one of the officers or committee chairpersons.

Members who have an idea for a future program are asked to submit the idea to the Program Committee, Ron Kuseski, 444-1797, or see him at the next club meeting.

WANT ADDS

Rates: \$.20 per word for members and \$.30 per word for nonmembers.

REMINDER

Deadline for submitting articles and adds to this newsletter is the 10th of the month.

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