PUTTING IT ALL TOGETHER #8

by Jim Peterson

The hard part of learning to program is not in learning what the various commands do - it is in learning how to put them together to do what you want them to do!

Key in this little program and run it to see what it does, then read the explanation of how it does it.

In the early days, when computers had tiny memories, much emphasis was placed on efficient programming - the pioneer David Ahl called it "elegant" programming. The old 99'er magazine published some one-liners. My Tips From The Tigercub contained some one-line programs, even some no-line programs that could be keyed in and run in the immediate mode. In order to cram over a hundred subprograms onto a disk, I made great use of compact programming techniques on my Nuts & Bolts disks. Later, Mike Stanfill originated the name "tinygram" for a program that would fit on one screen, and wrote some great ones. Ed Machonis wrote a diskfull of tiny printer utilities.

Richard Mitchell in his Super 99 Monthly once called me the "king of the one liners", but this title rightly belongs to John Martin. The following one-line disk cataloger is an example.

```
1 IF F THEN INPUT #1:A$,A,J,
K :: IF J THEN PRINT A$;TAB(
12);J;TAB(18);SEG$(B$,ABS(A*
2)+1,2);K;TAB(27);A<0 :: GOT
O 1 ELSE RUN ELSE B$="AVDFDV
IFIVPG" :: INPUT "DSK":F ::
OPEN #1:"DSK"&STR$(F)&".",IN
TERNAL,RELATIVE,INPUT :: GOT
O 1 !BY JOHN M
```

An undefined numeric variable has a value of 0, which is the value of F when the program is first run. IF F THEN is interpreted as "if F is other than 0" so program execution jumps to the first unpaired else. IF J is paired with ELSE RUN so execution jumps to ELSE B$; a string is assigned to B$, the INPUT asks for a disk number, and file #1 is opened, without a filename, as an internal relative file, for input. When it is opened, the first sector of the disk can be read; it contains information regarding the disk and its contents. GOTO 1 goes back to start over. The variable F now as a value other than 0 (from the INPUT disk number) so the values for A$, A, J and K are read from the disk. On the first pass, these are the disk name, a 0, the number of sectors initialized, the number of sectors available, and a 0. IF J THEN is interpreted as "if J is other than 0" and it is because it contains the number of sectors, so the disk name is printed, followed by the number of initialized sectors at tab 12. Since a 0 was read into A, the ABS(A*2)+1 is 0 times 2 plus 1, which is 1, so the segment of "AVDFDVIFIVPG" starting with the first character and consisting of two characters (AV) is printed (meaning "available"), followed by the number of available sectors read into K (preceded by a space because it is numeric). Since a 0 was read into A, the statement A<0 (A is less than 0) is false and has a truth value of 0, so a 0 is printed at tab 27. Execution returns to the beginning, and values are read into the variables again. Now, A$ will be a filename. A will be a number from 1 to 5, indicating the type of file - 1 for display fixed, 2 for display variable, 3 for internal fixed, 4 for internal variable, 5 for a program. If the file is protected, the number will be negative. J will be the number of sectors occupied by the file, and K will be the record length of the file (0 in the case of a program). The filename is printed, and its sector length at tab 12. ABS converts the A from negative to positive, if necessary, and the formula selects the letters DF, DV, IF, IV or PG to print, followed by the record length from K. If the file is protected, A has a negative value and A<0 therefore has a truth value of -1, otherwise a 0, printed at tab 27. Execution goes back to the beginning and this continues until blank records are read. J will then have a value of 0 so execution jumps to ELSE RUN, which re-runs the program, thereby zeroing out the value of F.

John Martin, this is elegant programming to the ultimate!

TIPS FROM THE TIGERCUB

No. 62

Tigercub Software
156 Collingwood Ave.
Columbus, OH 43213

Dec. 1990

My stock of Tigercub Software catalogs is depleted and it would not pay me to reprint it. Therefore I have released all copyrighted Tigercub programs, except the Nuts & Bolts Disks, for free distribution providing that no price or copying fee is charged. All of my Tigercub programs have been added to my TI-PD library and are cataloged, by category, in TI-PD catalog #4.

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

My TI-PD library now consists of 452 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 #4 listing all titles and authors, is available for $1 which is deductible from the first purchase.

According to Charles Good, running a program containing CALL SAY on a beige console without the speech synthesizer attached will cause a lockup.

On a black and silver console, there is no lockup but program execution can be greatly delayed. To avoid that, CALL PEEK(-28672,@) at the beginning of the program and add IF @=96 before each CALL SAY (remember that, IF causes program execution to skip to next program line if not true!), or IF @<>96 THEN to skip over the CALL SAYs.

In Tips #60 I presented a routine to find the lowest power of 7 which contains six 7s in sequence. My version took 24 minutes to find the answer on my TI-99/4A. Several users tried this on a Geneve. The NUTI News of the Nittany UG, Oct 1990 reports that on a 9640 (MDOS 0.97H) with TI XBasic loaded through GPL (speed 5) it ran in 11 min. 33.86 seconds, and with MYARC Advanced Basic V2.99A loaded through GPL it ran in 4 min. 58.62 seconds!

Now, from the TI&MES of England, here is a method using a level of math beyond my comprehension that will solve the problem on an ordinary TI in 6 minutes and 17 seconds!

```
100 ! FASTER WAY John Seager
110 CALL CLEAR :: DIM ELEM(26):: ELEM(0)=7 :: POWER,SS=0 :: DISPLAY AT(1,1):"7 TO THE POWER OF"
120 ELM=SS :: SS,CARRY=0 :: POWER=POWER+1
130 DIS$=STR$(ELEM(ELM)):: FOR I=ELM-1 TO 0 STEP -1 :: DIS$=DIS$&RPT$("0",10-LEN(STR$(ELEM(I))))&STR$(ELEM(I)):: NEXT I
140 DISPLAY AT(1,19):STR$(POWER);"=": : :DIS$
150 FOR I=6 TO LEN(DIS$)STEP 6 :: IF SEG$(DIS$,I,1)<>"7" THEN 190
160 FOR J=I-5 TO I :: IF SEG$(DIS$,J,6)<>"777777" THEN 180 ELSE DISPLAY AT(24,1):"ANY KEY TO CONTINUE"
170 CALL KEY(0,K,S):: IF S=0 THEN 170 :: DISPLAY AT(24,1):: J=I
180 NEXT J
190 NEXT I
200 ELEM(SS)=ELEM(SS)*7+CARRY :: IF ELEM(SS+1)=0 AND ELEM(SS)<1.E+10 THEN 120
210 CARRY=INT(ELEM(SS)/1.E+10):: ELEM(SS)=ELEM(SS)-CARRY*1.E+10
220 SS=SS+1 :: GOTO 200
```

And if you think that is fast, the Autumn '90 edition of TI&MES contains a Mini-memory program to solve the program in 2 SECONDS! And an assembly version that will search to the 10,000 power and find 52 strings of six 7's in an hour and a half!

Here's a puzzler for you. Can you figure out why that 1000-microsecond CALL SOUND is cut short?

```
100 CALL CLEAR
110 DISPLAY AT(12,1):"Filename? DSK" :: ACCEPT AT(12,14)BEEP:F$
120 ON ERROR 130 :: OPEN #1:"DSK"&F$ :: STOP
130 GOSUB 140 :: RETURN 110
140 CALL SOUND(1000,110,0,-4,0):: DISPLAY AT(24,1):"CAN'T OPEN FILE" :: RETURN
```

I recently programmed a diskfull of gospel songs, and in each one I used this formula to set up an array containing the frequencies for 3 octaves:

```
DIM N(36) :: F=110 :: FOR J=1 TO 36 :: N(J)=INT(F*1.059463094^(J-1)+.5):: NEXT J
```

At the end of each selection I put CALL INIT :: CALL LOAD(-31961,149) I don't remember where I learned that one, but it clears the screen, sets all colors and characters to default, deletes sprites, and looks for a LOAD program on DSK1.

The LOAD program has a routine to play each song one after another, but one song crashed with a BAD VALUE error even though it had previously been OK. I found that this was the only song that actually used N(1). The value should have been 110 but it had somehow changed to 24263 which the program line multiplied by 2, therefore out of range.

I found that the routine was correctly giving N(1) a value of 110 the first time but after the CALL LOAD it always had the 24263 value. Substituting other values for 110, I found that any value was being multiplied by 220.5727273, rounded off.

Further experimentation revealed that the problem was being caused by the ^ (exponentiation sign, shift 6 on your keyboard, in case someone prints this through the Formatter!). So I wrote this little routine to experiment with:

```
100 FOR J=1 TO 10 :: PRINT 2^J :: NEXT J :: CALL INIT :: CALL LOAD(-31961,149)
```

I saved that as DSK1.TEST and then wrote another one

```
100 RUN "DSK1.TEST"
```

, saved that as DSK1.LOAD, and then entered RUN "DSK1.TEST".

It printed out the proper values time after time, so I changed the 2^J to read 2^(J-1). The first time around, the first value was 1 as it should be - the computer will consider any number to the power of 0 to have a value of 1. But, the next time around, the first value was F0.57000101 !

That was not even a valid numerical representation, so I changed the formula to 2^(J-1)*2, expecting it to crash. Instead, it gave me a value of 441.140002 !

Further experimentation showed that 2^(J-1)+1 gave a value shown as 1<1.570001.

Changing the +1 to +10 gave 1=0.570001 and to +100 gave 2<0.570001 !

So, poking a value of 149 into -31961 will cause any number taken to the power of zero to have a value of

220.5727273, which will be represented on screen in some apparently undocumented format - it's not even radix 100. I wonder if the fellows who built this computer could explain that!

ATTENTION all newsletter editors! If you print the above through the Formatter PLEASE transliterate the caret sign!

This one requires the TEII module and the Speech Synthsizer. Want to make the computer so mad it will fuss and fume and cuss and mutter? Run this program and answer the prompt with 1.

```
100 CALL CLEAR
110 OPEN #1:"SPEECH",OUTPUT
120 INPUT X
130 PRINT #1:"//"&STR$(X)&"
"&STR$(X*3.17)
140 PRINT #1:"THIS IS THE SE
CRET METHOD OF MAKING THE CO
MPUTER SPEAK IN A WHISPER"
150 GOTO 120
```

Want to make it whisper to you? Answer the prompt with 0 or -10.

Why did I get an INPUT ERROR when the strings in this routine got too long?

```
100 CALL CLEAR :: X=1
110 X=X*2 :: A$=RPT$("A",X):
: B$=RPT$("B",X):: C$=RPT$("
C",X):: D$=RPT$("D",X):: PRI
NT A$:B$:C$:D$
120 OPEN #1:"DSK1.TEST",VARI
ABLE 254,OUTPUT :: PRINT #1:
A$:B$:C$:D$ :: CLOSE #1
130 OPEN #1:"DSK1.TEST",INPU
T :: INPUT #1:A$,B$,C$,D$ ::
 PRINT A$:B$:C$:D$ :: CLOSE
#1 :: GOTO 110
```

Thanks to Irwin Hott for the answer to that one. I don't think it's in the books anywhere, but the TI won't input multiple records in a single INPUT if the total number of bytes is too high - less than 154 for two records to less than 144 for six records.

I still think computers should be fun, so here is a quickie for the kids, or for the kid in you -

```
100 PRINT TAB(9);"QUICK DRAW
":: :: :" How good a gunslin
ger are":"you?":: :" Can you
outdraw":"Deadeye Joe?":: :
110 PRINT " Watch the countd
own from 1":"to 10.":: :" Wai
t for the gun....":: :" Then
hit any key FAST!! - ":: :" -
 and HOLD IT DOWN":: :
120 PRINT " I got down to 20
 once - can":"you beat that?
":: :" Press any key to start
"
130 CALL KEY(0,K,ST):: IF ST
=0 THEN 130
140 CALL CLEAR :: S@=300 ::
CALL CHAR(58,"009F9191919191
9F"):: CALL CHAR(42,"0000FCF
E171F0707")
150 CALL KEY(0,K,ST):: IF ST
=-1 THEN 150
160 CALL CLEAR :: FOR M=1 TO
 10 :: CALL HCHAR(12,16,M+48
):: FOR N=1 TO 100
170 NEXT N :: CALL KEY(0,F,X
):: IF F=70 THEN 330
180 NEXT M :: CALL CLEAR ::
FOR J=1 TO 500
190 NEXT J :: IF F=70 THEN 3
30
200 CALL KEY(0,K,ST):: IF ST
<>0 THEN 330
210 CALL HCHAR(12,16,42):: F
OR D=1 TO S@
220 NEXT D :: CALL KEY(0,Z,X
):: IF X=0 THEN 240
230 GOTO 270
240 CALL CLEAR :: PRINT :: P
RINT "YOU'RE DEAD!"
250 FOR D=1 TO 200
260 NEXT D :: GOTO 160
270 PRINT "OUCH!" :: IF S@<5
1 THEN 290
280 S@=S@-50 :: GOTO 320
290 IF S@<31 THEN 310
300 S@=S@-5 :: GOTO 320
310 S@=S@-1
320 PRINT S@ :: GOTO 250
330 PRINT "YOU CHEATED!" ::
GOTO 150
```

I always wondered about those recipe programs. Does the cook lug the computer out to the kitchen to read the screen, or use a printer to make a hardcopy of a file that was keyed in from a hardcopy in the first place?

Anyway, some of those programs do convert quantities for different servings, so here is a little program to do that. It provides input and output in fractions instead of decimals, because that is the way recipes are written.

```
100 DISPLAY AT(3,6)ERASE ALL
:"RECIPE CONVERTER"
110 DISPLAY AT(6,1):"Enter f
ractional quantities separat
ed by a space from  whole q
uantities."
120 DISPLAY AT(9,1):"For ins
tance, to enter threeand one
-half, type 3 1/2"
130 DISPLAY AT(12,1):"Result
s will be rounded to  the ne
arest 8th."
140 DISPLAY AT(24,7):"press
any key" :: DISPLAY AT(24,7)
:"PRESS ANY KEY" :: CALL KEY
(0,K,S):: IF S=0 THEN 140
150 DISPLAY AT(12,1)ERASE AL
L:"TURN PRINTER ON!"
160 OPEN #1:"PIO" :: PRINT #
1:CHR$(27);"8" :: CALL CLEAR
170 DISPLAY AT(5,1):"Name of
 recipe?" :: ACCEPT AT(7,1):
M$ :: PRINT #1:M$:"":""
180 DISPLAY AT(3,1)ERASE ALL
:"Recipe is for how many
  servings?" :: ACCEPT AT(4,
11)VALIDATE(DIGIT)BEEP:R
190 DISPLAY AT(6,1):"You wan
t to cook how many  serving
s?" :: ACCEPT AT(7,11)VALIDA
TE(NUMERIC):S :: X=S/R
200 DISPLAY AT(10,1):"Name o
f ingredient? (just  enter
if finished)" :: ACCEPT AT(1
3,1)BEEP:A$ :: IF A$="" THEN
 STOP
210 DISPLAY AT(15,1):"Unit o
f measure?" :: ACCEPT AT(17,
1)BEEP:M$
220 ON ERROR 310 :: DISPLAY
AT(19,1):"Quantity in recipe
?" :: ACCEPT AT(21,1)BEEP:AX
$ :: A=VAL(AX$)
230 Q=X*A :: J=INT(Q):: P=Q-
J :: IF P=0 THEN X$=STR$(J):
: Y$="" :: GOTO 290
240 IF J=0 AND P<=.0625 THEN
 X$="" :: Y$="less than 1/16
" :: GOTO 290 ELSE IF P<=.06
25 THEN X$=STR$(J):: Y$="" :
: GOTO 290
250 IF P>.9375 THEN X$=STR$(
J+1):: Y$="" :: GOTO 290
260 DATA .8125,7/8,.6875,3/4
,.5625,5/8,.4375,1/2,.3125,3
/8,.1875,1/4,.0625,1/8
270 RESTORE 260
280 READ M,N$ :: IF P>M THEN
 Y$=N$ :: X$=STR$(J)ELSE 280
290 IF J<1 THEN X$=""
300 PRINT #1:A$&" "&X$&" "&Y
$&" "&M$ :: GOTO 200
310 P=POS(AX$," ",1):: Q=POS
(AX$,"/",1):: IF Q=0 THEN 34
0
320 ON ERROR 340 :: IF P=0 T
HEN A=0 ELSE A=VAL(SEG$(AX$,
1,P-1))
330 B=VAL(SEG$(AX$,P+1,Q-1-P
)):: C=VAL(SEG$(AX$,Q+1,255)
):: A=A+B/C :: RETURN 230
340 DISPLAY AT(24,1):"OOPS!
TRY AGAIN" :: CALL SOUND(1,1
10,0,-4,0):: RETURN 220
```

And here is an oldie - a utility to get the bugs out of your programs.

```
100 ! MOSQUITO #2 by Jim Pet
erson from a PEEK by Crag Mi
ller
110 CALL CLEAR :: CALL SPRIT
E(#1,42,2,100,100)
115 DISPLAY AT(22,1):"Don't
let the mosquito get":"out o
f the TV!":"Press any key -Q
UICK!"
120 RANDOMIZE :: CALL PEEK(-
31808,A,B):: CALL MOTION(#1,
A-128,B-128):: CALL KEY(0,K,
S):: IF S=0 THEN 120
130 CALL CLEAR :: CALL COLOR
(1,2,8):: CALL SCREEN(2):: C
ALL CHAR(32,"FF888888FF88888
8"):: GOTO 120
```

Long live the TI-99/4A!

Jim Peterson

The Tigercub

TI-994A Refresher Chart

LOADING A PROGRAM

LOAD PROGRAM INTO MEMORY	OPTIONS — IF ERROR OCCURS	
	REPEAT THE LOADING	EXIT THE LOADING
OLD CS1	R	E

SAVING/VERIFYING PROGRAMS

SAVE PROGRAM ON CASSETTE #1	SAVE PROGRAM ON CASSETTE #2	VERIFY SAVED PROGRAM (Y(ES)
SAVE CS1	SAVE CS2	Y

CHANGING COLORS

CHANGE FOREGROUND AND BACKGROUND COLORS	CHANGE SCREEN COLOR
CALL COLOR (+ CHAR/COLOR CODES)	CALL COLOR COLOR CODE

COLOR CODES

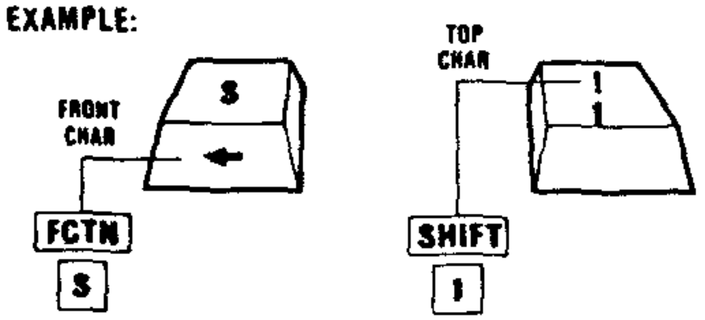
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
TRANSPARENT	BLACK	MEDIUM GREEN	LIGHT GREEN	DARK BLUE	LIGHT BLUE	DARK RED	CYAN	MEDIUM RED	LIGHT RED	DARK YELLOW	LIGHT YELLOW	DARK GREEN	MAGENTA	GRAY	WHITE

EDITING COMMANDS

BEFORE YOU PRESS ENTER			AFTER YOU PRESS ENTER. HOLD DOWN FCTN KEY AND THEN PRESS DESIRED KEY									
DELETE A CHAR	INSERT A CHAR	ERASE THE LINE YOU ARE TYPING	ENTER EDIT MODE	CURSOR LEFT ←	CURSOR RIGHT →	DELETE A CHAR	INSERT A CHAR	ERASE THE LINE BEING DISPLAYED (EXCEPT LINE NO.)	ACCEPT CHANGES AND DISPLAY: NEXT LOWER-NUMBERED LINE FOR EDITING	ACCEPT CHANGES AND DISPLAY: NEXT HIGHER-NUMBERED LINE FOR EDITING	EXIT EDIT MODE AND: IGNORE CHANGES MADE	EXIT EDIT MODE AND: ACCEPT CHANGES MADE
FCTN 1	FCTN 2	FCTN 3	EDIT ENTER DESIRED LINE NO.	FCTN S	FCTN D	FCTN 1	FCTN 2	FCTN 3	FCTN E	FCTN X	FCTN 4	ENTER

USING KEYS WITH TWO CHARACTERS ON THEM

EXAMPLE:



RUNNING A PROGRAM

RUN A PROGRAM	STOP PROGRAM (BREAK)	CONTINUE PROGRAM (AFTER BREAK)	LIST PROGRAM
RUN ENTER	FCTN 4	CON ENTER	LIST ENTER

MISC. COMMANDS

LOCK KEYS INTO UPPER CASE	QUIT/RETURN TO MASTER SCREEN (LOSE ALL DATA)	CLEAR THE SCREEN
ALPHA LOCK	FCTN =	CALL CLEAR ENTER

.LM2,RM75,AD

Mass Users Of the Ninety-nine and
Computer Hobbyists

MUNCH Disk Library

4-1-91

<<<Code Legend>>>

B	T.I. Basic
XB	Extended Basic
J	Joysticks
MM	Mini-Memory
C	Cassette Data Storage
D	Disk Data Storage
SS	Speech Synthesizer
TE	Terminal Emulator II
P	Printer
E/A	Editior/Assembler
W	T.I. Writer
M	Modem

The Following is a list of the disks currently in the MUNCH group library. Programs have been writen by members of MUNCH, other groups, and other sources.

All disks are SS/SD. They are $1.50 each. Some of the programs are fairware, and as such the author would like a donation for the work done.

Any disk in the MUNCH library may be purchased at any MUNCH meeting or by mail (please add .50 for the 1st disk and .25 for each additional disk) orders should be sent to MUNCH 560 Lincoln St. P.O. Box 7193 Worc., Ma. 01605.

Note: Whenever Editor/Assembler is required to run a program. The program will usually run by using Funnelweb with Extended Basic. Funnelweb may be purchased from the MUNCH Library.

#1 Air Traffic Controller, Black Box, Chicken Helper, County Fair Derby, Star Dodger, A Day at the Races, AACFS Mailing List, Miner, Stock Market, Warfish, Zap A Ball, Critical Path Method .....B,XB,C,J

#2 Score Four, Equations Convertions & Tables, Dog-Bone Boggie-Woogie, Kismet, Amortization Schedule, Loans, Star Wars Theme, Match-A-Pair, Mouse Maze, Evaluation and Review Technique, Sav & Spell, Word World, Word-Builder #3 Addresses, Air Defense, Christmas, Depreciation Program, Depreciation of Small Bussiness, Flight Planning Program, Watch Your Money Grow, Investments, Spell, N-Vader, Home Secretary, Interest Recieved Projections, Welcome to Motocross, Zanquest, Mastermind, Math Munch, Rockpile .....B,D,J,XB,C

#4 Records, Star Wars, K&K Office Data Statement, Basic Typing, Animal Multitudes, Beach World, Murder, Bee Line, Mathamatics Quiz, Space Junket, States & Capitals, Ameteurs' Special Purpose Instructional Code .D,B,C,XB,J

#5 Object, Chemin De Fer, Hostage Holdup, U.S. Presidents, Shapes, Teach the Computer, Ten Page Journal, Egg Wars, Game of Duck, Madlib, Helicopter Attack, Jungle Jim, Matching Test, Flag-O-Rama, Music Box, Old MacDonald, Meet Me in St. Louis ...B,XB,C,TE,SS

#6 Raindrops, Runway-14, Space Zapper, Learning How to Tell Time, Trapshoot, Variations on a Theme, Ships Attack, Annual Budget, Program to Display Calendar, Diet-Menu, Gas Milage, Home Librarian, Home Value Estimator ....B,XB,C,J

#7 Savings, Treasure Island, Trigonmetry, Bill Tracking Program, Home Check Prosessor, Kitchen Aids, America the Beautiful, List Maintenance, Air Rescue, 1982 American League Players, Little Town of Bethlehem, Challenge of Camelot, Castle Hallways, Crazy Climber .....B,XB,C,SS

#8 Translate Spanish to English, Baba, Survival, French Teacher, Charachter Codes, Christmas Songs, Keyboard Memory, Parrot, Taco-Man, Square Dance, Constellations, Talk Tarrot, Lost Ruins, Autobahn, Battleship, Twinkle .....B,XB,J,TE,SS

#9 Success Formula, Termite, Aardvark, Creative Learning, Number Nimbler, Giants & Dwarfs, Gold Rush, Micro Jaws, Pocket Sunrise, The Fly, Alpha Blast ...B,XB,J,SS

#10 Knights Tour, Adventure, Counting Fun, Harried Housewife, Caves of Carnage, Make Your Mark, Boa Alley, Steps and Chords Get gold, Diamond Drop, Counting Fun, ...B,XB,J,TE,SS

Jaws, Pocket Sunrise, The Fly, Alpha Blast ...B,XB,J,SS

#10 Knights Tour, Adventure, Counting Fun, Harried Housewife, Caves of Carnage, Make Your Mark, Boa Alley, Steps and Chords Get gold, Diamond Drop, Counting Fun, ...B,XB,J,TE,SS

#11 Robo-Chase, Switch-A-Row, Be a Clown, TI Tower, Dogfight, Cookie File

#12 Wizards Keep, Nerm, Interplanetary Rescue, Force One

#13 Window Washer, Melt-Down, Circus, Robotron, Homebound

#14 Allowance Planner, Bartender, The Cheerleader, Chore Assigner, Cpu Maze, Crossing Paths, Dicision Maker, Dollar Bill Serial Number, Dracula's Family Tree, Egg Hunt, Future Age, Heat Loss Calculator, Jack O' Lantern, Learn Names Quicker, LOAD, Mystery Manor, Misical Chairs, Pig Latin Translator, Pulse Rate, Rad Rhymer, Shopper Search, Trick or Treet, True Love, *Turkey, Turkey Panic, Valentine,* Family Voting Booth, Wrapping Papper, Christmas Tree .....B,XB

#15 Schmoo, Koala, Dice, Golf, Star Trek, Simple Math, Dissembler, Relocator for Miny Memory

#16 Guessing Money,

#17 Crayon program, 3D Tic Tac Toe, Areas, Biorhythm,Charachter Definition , Color-Vision, Craps, Darts, Devil's Dungeon, Forest Fire, Graphics Match, Welcome to Computer Quiz, Wagon Wheel

#18 Frogger, Indy 500, Hot Dog, Corner Wars, Space Dual, Story Writer

#19 Salvo-Battleship, Connect-Five, Freeway, Let's Build America, Program Compactor

#20 Artist Board, Block 'Em, Brain Teaser, Craps, Itchie, Magic Squares, Minature Golf

#21 Call Key, Color Fractions, Directory, Drawing, Large Charactors, Printing Letters, Master Index, Playing Cards Demo, Making Signs,

#22 Bach, Oregon Flag, Othello, Print Right, Safty Awareness Program, Scorcher, Utah Flag, Color Math, Finger Spelling, Mace Race, Terminal Emulator Logon

#23 Cryptography, Doctors Billing System, Formatted Printing, Homework Helper, Grade Average Program Demo,

#24 1040 Estimated Tax, Expense Account, Invasion from Space, Last Rpbot, Nautical Navigations, Music Maker, Slot Machine Vegas Style, Mother Goose Nursery Rhymes, Checkboc Manager, Chi square

#25 Estimate Tax Valuation, Factorial Logarithm, House Inventory, Income Averaging, Music Box Dancer, Watch th Planets Move, Set up for Modem, Shipping Labels, South Pacific

#26 Household Budgeting, Make Music, Make Pictures, Pony Race, Bible Quiz, *Running Digital Time Piece, Hangman,* Kaleidoscope, Obstacle, Guess the Presidents, Stock Market Record Program, Simon One, Tarot Cards, Worc search, Mastermind

#27 TI-Dogfight, Air-Missle, Zippy One, Mozart, Ludwig, Bach Minuet, Boogie

#28 Name that Bone, Match-up, Rescue, Mug-Wumps, Forest Rose, Singing TI, Sprite Aid

#29 Finance, Heat Eff, Hex-Convert, Geometry, Psyco, Print-Maze, Frog, Ga Electric

#30 Black Tunnel, Camels, Closeouts, Grabs, Goblin, Gunner

#31 Orbit Planet Chart, Pay, Word, Spanish, Statement, PERT, Flight Planning, Slot Machine, America, Aquarius

#32 Checking, Cost, Convert, Deduct, Diet, Energy, Gas, Nutrition, Inventory, Job Cost, Estate

#33 Acme Hotel, Crazy Fraze, Add Magic, Film Exposure, Surveyor II, Nerm Beamer, Gemini

#34 Music Demo, Word Search, XB Demos

#35 Crossword, Hunt, Invasion, Maze, Mine, State Capitol, Reggression, Calender, Chart, Sprite Demo

#36 Screen Dump Utilities

#37 Kismet, Algebra, Fractions, Italian, Crayons, Tic-Tac-Toe, Learn to Count, Numbers, Letters

#38 Bingo, Acey-Ducey, Supercity, Number-Nimbler

#39 28 Column Converter, Tax Help, R'Bert, Flight Similator

#40 1040/84, Checkbook, Database, Fernando, Finance, Phrase Demo, Speak

#41 40 Column Program, Sign Language, Mousekins, Sprite Game

#42 Color, Diskinfo 1A, Egg Hunt, Intruder, Silent Night, Sp/Builder.

#43 DM 1000, Disk Manager program.

#44 German, Nations, Presidents, Spelldown, Trees, Trig, Who, Elevate, Marksman, Night.

#45 Data Base with catalog auto loads and Help instructions.

#46 Genealogy Disk.

#47 Collections of utilities to use with Disassembler and Word Proscessor.

#48 Trivia Game, Great game with full instructions and capability to add questions.

#49A 49B FUNNELWEB VER. 4.30 Two flipies or archived disks containing th latest Funnelweb version also, Archiver, Disk utilities and Plus enhancements.

#50 Mass-Copy V. 3.25 Ultimate back-up utility. Handles all formats, copies two disks at once supperts 128k card.

#51 A menu driven disk of utilities such as; Bar Charts, Appointment Calendar, Disk Card File, Word Processor and more.

#52 Games. Bowling, freeway, Hobo, Mind Buster, Shark, Trap, Vanilla more.

#53 Educational and Games. Flashcards, Spelling, Math, Wordsearch, Flags, etc.

#54 Utilities Games. Plots, Kewboard, Inventory, Blacl-jack, Grizzy, Doxology and more.

#55 Collection of 50+ utilities and sub-routines.

#56 Games. Demolition, Balckhole, Las-Vegas, Math Challence, Maze Madness, Sky Dive and more.

#57 Utilities Games. Cataloger, Labels, Record File, Hangman and more.

#58 More utilities games. Condition print, Sorts, Disk Loader, Bandit more.

#59 Great utility disk includes Fast Term and DM 1000 with full documentation.

#60 Neat-List Utility. Creates list of programs with each statement on a peparate line and variable cross referencing table. In assembly, fast.

#61 Loaders. Clock, Catalog, Debuger, TI-Disassembler and Fixer with docs.

#62 #63 Pilot 99. An excellent implementation of Pilot Program Language. Includes full support for TI sound and graphics. Two disks.

#64 Data-Base 99. Create a data base with full documentation.

#65 Games. Blitz, boxing, defend, fireball, missle T-dive.

#66 Utilities. Catalog library, compac, direct, disassembler, sector and others with docs.

#67A 67B PR Base data base with full documentation. Two disks.

#68 Adventure Hints. A disk full on hints for the Acott Adams adventures.

#69 C99 complete program and instructions.

#70 Home helpers. Budget, calendar, diet-menu, Home checker, home library, home value est., kitchen aid, more.

#71 Educational programs. Health exam, number nibbler, statistics, tell-time, trig, word-wizzard, more.

#72A 72B 72C Creative Filing System. A data base program with full instructins and help. Three disks.

#73 TI Advanced Assembly Debuger.

#74 TI 99/4A System Test, Extended Basic.

#75 TI System Test, Mini Memory.

#76 TI Writer and Multiplan enhancements.

#77 DOM #1 Word processing utilities and MUG loader. Writer Aid.

#78 DOM #2 Utilities. Amortization, alphabatize, Calendar and other word processing utilities.

#79 DOM #3 Games. Chisolm Trail, Pinbal, Football Soccer and more.

#80 DOM #4 Space. Solar system, star gazer, ursa and more.

#81 DOM #5 Hockey and Labels, archived.

#82 DOM #6 Zodiac. What happened on the day you were born?

#83A 83B DOM #7 Adventure and Tunnels of Doom, also carwars, blackjack, wumpus, more. Two disks.

of games, Tennis Beyond Parsec, Lass
Sargon Sub Hunt Draw Poker, more.
$4.95.

Set #2. Adventure Compendium. A set
more than 70 adventures. 10 SSSD dis
$19.95, 5 DSSD disks $15.95 or 3 DSD
disks $11.95.

Set #3. T.I.P.S. The TI Print Shop.
set of 11 archived SSSD disks. Great
graphics. $9.95 mail orders add $2.5
postage and handling.

#84 TI PD II Basketball Stats, Universal Graphics & MSG, Firing Squad, TI Rescue, Trucker.

#85 TI PD III Stock Records, Piano, Old MacDonald's Farm, Readfast, Snak & Ladders.

#86 DOM 6/90 Aggressor, Barrage Buzzard, Cave, Facechase, Fish, Hopper.

#87 ASSEMBLEY LANGUAGE GAMES. DOM 7/
Beyond Parsec, Blitza, Lasso, Sub.

#88A&88B DOM 8/90 John Johnson's Labe Maker utility and a complete list of modules available on disk. TI Ytility Disk #1: Adventure, disk manager 2, Disk Mapper, Editor/Assembler, Easybu and TI Demo.

#89 DOM 9/90 Mickey Schmidt's manuel "Getting the Most from Your Cassette Recorder" and a disk of all of its programs done by Jack Sughrue. The charge for both is $5.00 plus @.00 postage.

#90 DOM 10/90 The German fareware gam The Mine. A most challenging game.

#91A&91B DOM 11/90 A companion set of disks to jack Sughrue's Cassettes #89

#92A,B,C,D DOM 1/91 Funnelweb Ver. 4.31(the last one). A total of Four SSSD Dsiks. Special price $3.00.

#93A&93B DOM 2/91 TIPS Ver. 1.6 with new pictures and utilities, such as TIPS Label, TIPS VU and TIPS Show.

#94A&B DOM 3/91 TIPS Ver. 1.7 a further enhancement to the TIPS package with more pictures.

#95 DOM 4/91 GPL-#12 Centipede, Dig/Dug, Pacman, le Position and Moon Pat ol.

NEXT MEETING TUESDAY APRIL 9. 1991.

MUNCH OFFICERS AND NUMBERS (all in 508 area unless noted)

President	W.C. Wyman		865-9683
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Secretary	Jim Cox		
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NEW-AGE/99	Jack Sughrue		476/7630

MUNCH DUES

NEW MEMBERSHIP	$25.00
RENEWAL MEMBERSHIP	$15.00
NEWSLETTER ONLY SUBSCRIPTION	$12.00

MARCH MEETING. Corson did a well received demo of his newest toy (a Mac) and showed how it could interface with a TI system. Jack came "sans beard" and almost went unrecognized. Work continues on getting as much of the Tigercub catalog into our library as possible. Twelve members attended the meeting.

APRIL MEETING. This month's meeting will have a report on the Fair to be held on the Saturday before the meeting.

RAFFLE. Every month we have a raffle to help defer the cost of the monthly ha rental. The number of prizes awarded depends on the number of tickets sold. This month we have some TI T-Shirts, disk holders and some games for prizes. If you have some old things you no longer use how about some donations for the raffle, our prize chest is getting low!!!

LIBRARY NOTICE. Please return any items borrowed from our library. If you can not come to a meeting or give these items to someone who will be at the meeting.

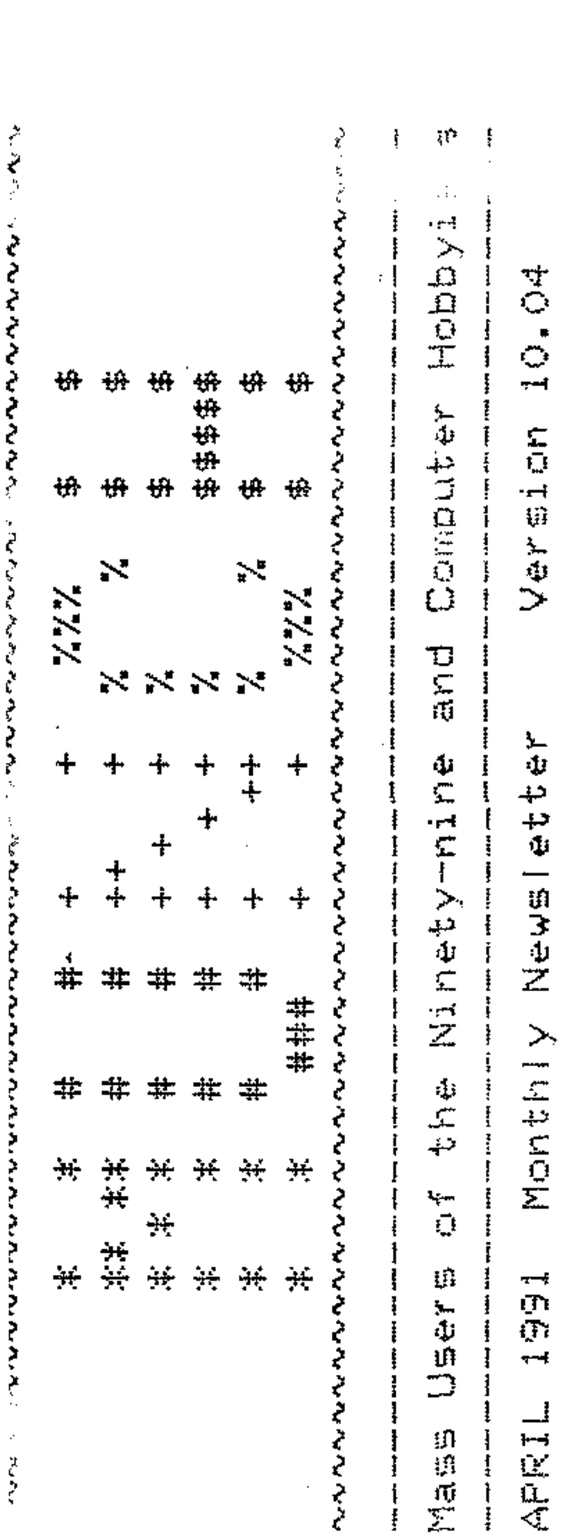
REPRINTS. Reprints are permitted as long as credit is given to M.U.N.C.H.

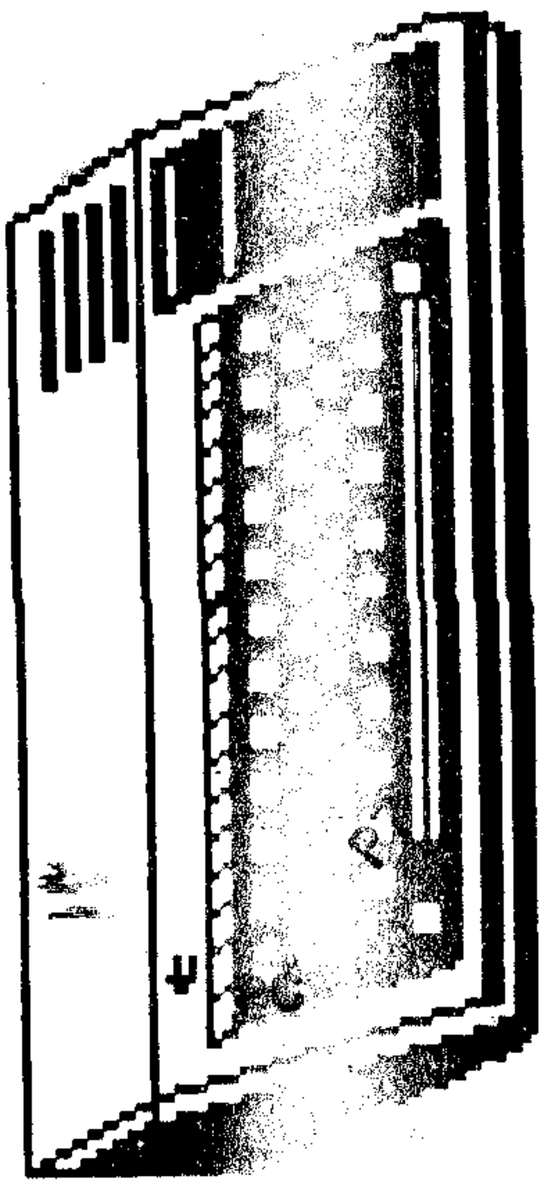
ARTICLES. I am always looking for articles for this newsletter, anything which interests you will probably interest other members of the TI community, so please share your ideas and opinions with all of us.

DISK LIBRARY. The disk library will be at the meetings from now on. We have copies of all disks in the library and they are available to members for just $1.50 each.

FOR SALE. The group has a TI Count Business Software package available for sale. If interested contact Jim Cox at the above numer or the club address.

DISK OF THE MONTH. The DOM for this month will be a game disk. It is GPL-#12 and has Centipede, Dig Dug, Pacman, Pole Position and Moon patrol.





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APRIL 1991

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17 APR
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Next Meeting APRIL 9TH.

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