

Spirit of 99

CENTRAL OHIO

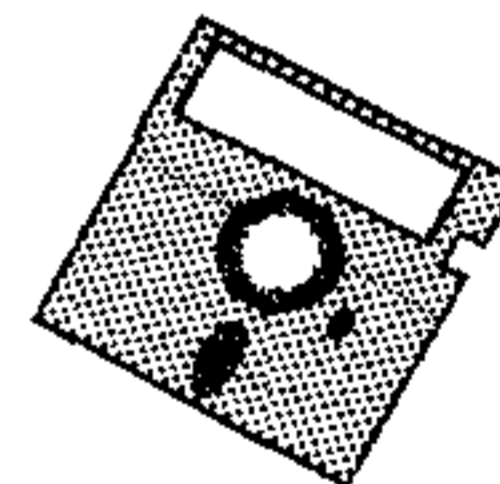


NINETY-NINERS INC.

THE OFFICIAL NEWSLETTER OF THE CENTRAL OHIO NINETY-NINERS INC.

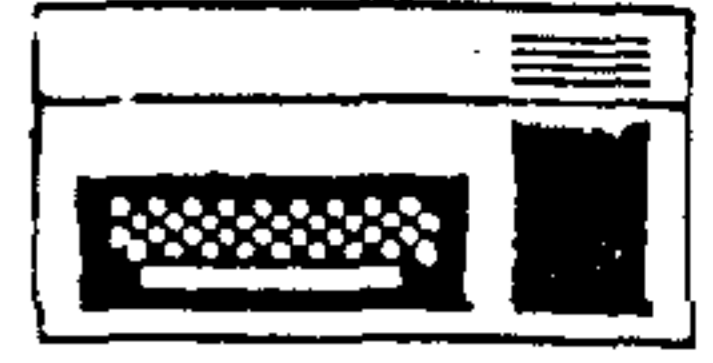
PUBLISHED MONTHLY IN COLUMBUS OHIO

--- REMINDER ---
APRIL MEETING 2ND SATURDAY
IN AUDITORIUM



Spirit of 99

THE OFFICIAL NEWSLETTER OF CENTRAL OHIO NINETY-NINERS



CENTRAL OHIO NINETY-NINERS

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Central Ohio Ninety Niners Inc. is a non profit organization comprised of MEMBERS who own or use the TI99/4A computer and it's related products and have paid a yearly membership fee of \$28.00 and whose main objective is the exchange of Educational and Scientific information for the purpose of computer literacy.

C.O.N.N.I. meetings are held the 3rd Saturday of each month at Chemical Abstracts, 2540 Olentangy River Road Columbus, OH. Meeting time is 8:30 AM til 2:30PM. Meetings are open to the public. Membership dues (\$28.00) are payable yearly to C.O.N.N.I. and cover the immed-

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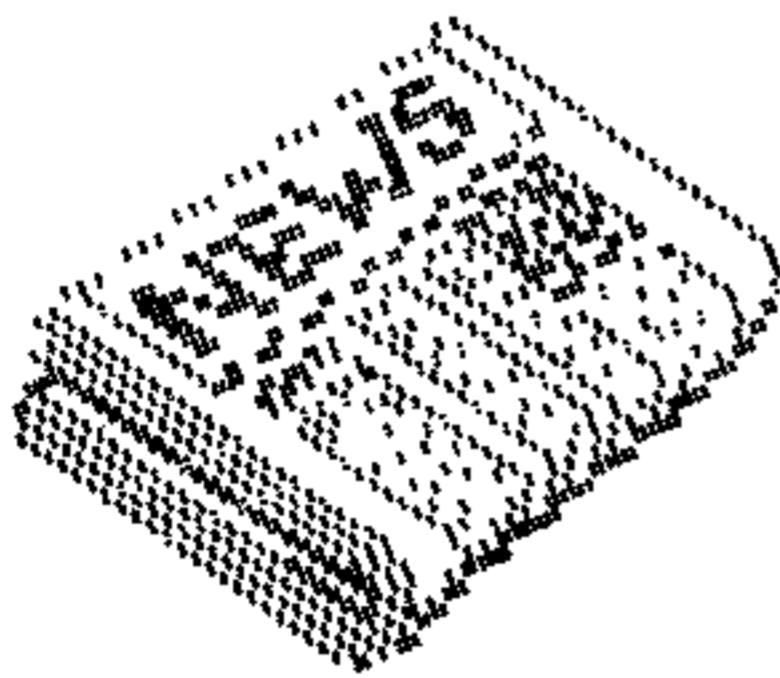


DUES ANNOUNCEMENT

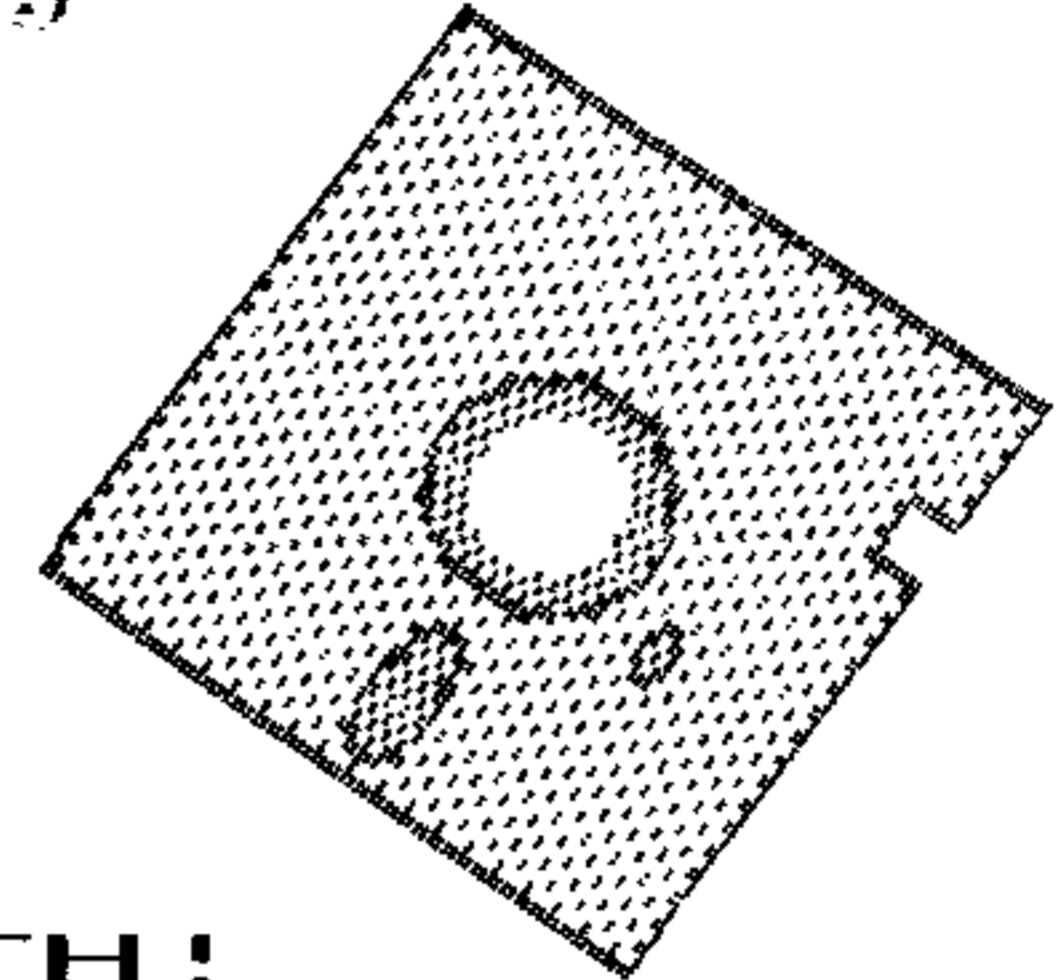
Dues are usually paid at or before the March meeting, and are \$28 per year for full membership, library and voting privileges, plus the newsletter. You may also pay your dues in two installments if desired: \$14 in March and \$14 in September. If only the newsletter is desired, then payment is \$15 per year. Those who join during other months of the year pay a lesser, pro-rated amount:

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up-to-date collection of new public domain
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the Month--both brought to you by the
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Licking, Madison, Pickaway
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CONTACT

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Central Ohio Ninety-Niners, Inc
4178 Chandler Dr, Whitehall, OH 43213
(614) 231-1497

C.O.N.N.I BUSINESS MEETING
CHEMICAL ABSTRACTS
MARCH 16, 1991

The meeting was conducted by our new president, Chuck Grimes. During the Question and Answer period, it was stated that Asgard is still not shipping the MIDI interface, the Chicago User Group is now responsible for the late John Birdwell's DSKU, and nothing more has been heard about the Basic Compiler.

Dick Beery provided information that repair of CorComp equipment is now available from 99 Computer Repair, c/o David Lynch, 2101 West Crescent Ave., Unit A, Anaheim CA 92801. You must call (714) 539-4834 for an RMA# before shipping. There is a flat fee of \$50 for most repairs, and turnaround time is about three weeks.

Under old business, Irwin Hott discussed the status of the Clearinghouse BBS, which is awaiting determination whether the ESD HFDC will be available and whether it will be compatible with Bud Wright's BBS software.

Under new business, Chuck announced that the April meeting has been changed to the second Saturday, the 13th, due to a schedule conflict at Chemical Abstract. The May meeting date is the same as the date of the Lima Conference and, since most of the members present indicated they will attend the conference, the May meeting will be at the Lima conference. The July meeting will again be a picnic.

Dick Beery discussed lodgings available at Lima. Dave Truesdale mentioned calls from people wanting to sell TI equipment. Chuck asked for volunteers to man our table at Lima, and described the disk of the month. We have added four more subscribing members. Dick Beery read the treasurer's report, and Chuck called for a round of applause for last year's officers.

After the business meeting, Irwin Hott accessed his Spirit of 99 BBS and demonstrated its many unique features. Chuck Grimes discussed the various commercial telecommunications services, and then accessed Delphi and demonstrated its features.

Respectfully Submitted,

Jim Peterson
Secretary

MINUTES FOR WEDNESDAY
FEBRUARY 27, 1991

The meeting got off to a late start because the club equipment was with Chuck Grimes, who had to work late. While we waited for another system to arrive, we had our usual question-and-answer period, a series of announcements regarding Midi, the new hard-floppy disk controller, and various other items, and the business meeting. All were encouraged to go to the Lima fair on May 28. A former member, Mike Ballman, who was for several years a member of the Miami (FL) user group, has returned to Ohio and was warmly welcomed. Members were reminded that the fiscal year begins at the March meetings, which means that membership dues are due for everyone. As soon as the backup system was set up (thanks, Jean Hall and Ken Marshall), Dick Beery demonstrated a fairware CAD program, and a multitasking demo and spoke briefly about a program that permits the user to place electronic symbols on the screen to form a schematic. None of these were received with much enthusiasm. The meeting adjourned at approximately 10:45 p.m.

Respectfully submitted,
Dick Beery
For the Secretary.

WHAT'S HOTT by IRWIN HOTT

This month, I'll look briefly at the Clearinghouse, some changes to the BBS program, and what's new in files on the Spirit of 99 TIBBS.

We have still not made a decision on what hard/floppy controller to use. I have called ESD, to find out how close they are to shipping units, but got an answering machine, and have not yet received a call back. We soon will have a 32K card to replace the 512K card which is currently in the P-box. The MBP clock quit working recently on the BBS. I found that it was showing the wrong date, and that I could not successfully reset it. I have rewritten the software to work with the TripleTech card and have temporarily put my TripleTech card in the BBS P-box.

I have made a couple changes to the software. The main change is in setting up sort of a "batch" download procedure. When you enter "D" from the file transfer menu, you will see: "Library 1-5 ENTER FILE(S) TO DOWNLOAD! SEPARATE FILES WITH A SPACE FOR MULTIPLE DOWNLOADS."

This means that you may enter up to 23 file names from the selected library. Say you are on library 4 and you want to download several files. Just enter the file names as follows:

LJPART1 LJPART2 LJPART3 LJPART4

The BBS will take that string apart using the space character as the delimiter between file names. Be careful that all file names are correct. If there are any errors,

the list will be aborted at that point. You will be shown the first file name to download. You must still enter the names as usual in your Terminal Program. This is where the procedure differs from a true "batch" download. After the first file is successfully downloaded, you will be shown the second file to download. Just enter the name as you usually would in the Terminal Program, and press enter to tell the BBS to go ahead. This mainly saves time in not having to go back to the file transfer menu after each download. I am working on changes so that the system will work across libraries so you don't have to select the library. I don't know if I will implement that however. The other changes in the BBS were in what went to the speech synthesizer and do not affect what the user sees.

Now let's take a look at what's new on the BBS. These files may be found on library 2.

MSOURC/ARK 95 sectors INT/FIX
128 From JIM PETERSON on 03/29/91
Object code and commented source code, and further comments, for Bruce Harrison's March from the Nutcracker Suite. Bruce has now released his method of creating fantastic assembly music to the public domain.

GETSTR115 4 sectors PROGRAM
From BILL HUDSON on 03/28/91 THIS VERSION OF GETSTR IS PATCHED TO WORK WITH MDOS 115

GETKEY115 2 sectors PROGRAM
From BILL HUDSON on 03/28/91 THIS VERSION OF GETKEY IS PATCHED TO WORK WITH MDOS 115

YMODEM-FIX 18 sectors INT/FIX
128 From Irwin Hott on 03/28/91
NOTE FROM IRWIN: 6Ene file
Number: 4279 Name:
T>YMODEM.FIX.FOR.TELCO Address:
BIG.BROTHER Date: 910326 This archive contains a new T>YMODEM file for Telco... These modifications are NOT associated with Charles Earl, and were all made by Barry Boone (see the included !README file). Several bugs are fixed, including the one that would sometimes trash files.... A few minor features were added... USE THIS ONLY WITH TELCO 2.3 - Compressed Archive, 18 sectors.

CALYPS/ARK 157 sectors INT/FIX
128 From HAROLD TIMMONS on 03/19/91 CALYPS/ARK is a disk containing 6 Calypso songs and 1 "other". The lyrics are provided on screen with a Cursor to guide you on the proper line of the lyrics. Included are BANANA BOAT LOADER'S SONG, MATILDA, BROWN SKIN GIRL JAMAICA FAREWELL, MAN SMART WOMAN SMARTER, and GLORIA (All Calypso). The "other" is MICHAEL ROW THE BOAT ASHORE. HOPE YOU ENJOY!!

ADDRESS_AD 10 sectors DIS/VAR
80 From Irwin Hott on 03/19/91
NOTE FROM IRWIN: 6Ene file
Number: 4246 Name: ADDRESS_LIST.AD
Address: L.TIPPETT Date: 910306
Ever need a place to put your addresses so they could be found easily? Ever need a routine to print out group mailing labels? How about a phone directory that you can search by entering as many or as few letters of the person's name as you want, and then have it

dialled for you? It just so happens I have the answer to your problems. I have recently completed a program on the TI-99/4A that does all of that! You have the capability of storing names, address, and phone numbers in a file, searching the file for the particular name, and printing the address to labels or envelopes. You also have the capability of "SORTING" your list by any of the six fields (name, address, city, state, zipcode, or phone number). Read this file for more information! 10 sectors.

GASKILL 14 sectors DIS/VAR 80
From Irwin Hott on 03/19/91 NOTE
FROM IRWIN: GENIE file Number:
4245 Name: BILL_GASKILL.INFO
Address: GENIAL.AL Date: 910305
Here's information on three
excellent products available
from Bill Gaskill: THE TI-BASE
USER (newsletter for TI-Base
owners, vol. 1 already available,
vol. 2 in process of publication),
TIMELINE 99 (a 120-page book on
the TI-99/4A and the TI community,
a book I consider a "must have"
for any serious TI'er - the
information contained in this

"labor of love" is amazing!), and
MEMBERSHIP MANAGER/NEWSLETTER
EXCHANGE (two separate TI-Base
applications for the price of one,
tremendously useful to officers of
TI User Groups). File includes
prices and address for ordering.
Here are products you should know
about! 14 sectors.

The following files may be
found on library 4.

ULTIMATE 8 sectors PROGRAM From
JIM PETERSON on 03/26/91 THE
ULTIMATE TEST, in XB by Jim
Peterson. Who says programs have
to be big? If anyone EVER gets to
the end of this game, let me know
and I'll make it even harder!
Programmers, take note of the
subprogram CALLKEY in line 30000 -
a CALL KEY with flashing cursor.
From now on I'm going to use this
instead of either ACCEPT AT or
CALL KEY when a single character
is required.

PSYCHO 7 sectors PROGRAM From
JIM PETERSON on 03/26/91 PSYCHO in
XB by Jim Peterson. A very
challenging little mathematical
game, based on one written by Jack
Sughrue.

LJPART1 70 sectors INT/FIX 128

From Irwin Hott on 03/26/91 NOTE
FROM IRWIN: GENIE file Number:
4267 Name: LJPART1 Address:
R.OSTERLOH Date: 910319 Twelve
artist drawings by Leland Piper.
Leland is a member of the Ozark
99er User Group of Springfield,
MO. A Group of very nice drawings
for various uses. Number one in a
set of ten. Archive includes
BIGFOOT_P, CONTINUE_P, DIET_P,
ELEPHANT_P, ESCORT_P, FORD_P,
FUN_P, HAPPY_P, MOORE_P,
SKIPPER_P, and SNOOPY_P. Fairware.
Archived, 70 sectors.

(Note that the other 9 LJPART
files are in this library. I just
haven't listed them here.)

U/CODES 21 sectors DIS/VAR 80
From JIM PETERSON on 03/15/91 In
response to a request, here is an
article I wrote several years ago
on using the CTRL U codes as
printer control codes in
TI-Writer. These were written for
the Gemini 10X printer and a few
are not Epson-compatible - in
particular, the code for elite
print.

Have fun on the BBS.

APRIL MEETING
2ND SATURDAY
MEET IN
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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 disk.

My TI-PD library now consists of 492 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 with Supplement #1, listing all titles and authors, is available for \$1 which is deductible from the first purchase.

Several articles have been published on the subject of using Funlweb as a simple fixed-field database. Sometimes you might want to rearrange the sequence of fields in such a file. This mini-program will quickly change the position of any field in a

D/V80 file.

```

100 DISPLAY AT(3,8)ERASE ALL
:"FIELD SWITCHER": "" by
Jim Peterson": "" To change
sequence of fields in
a DV80 fixed fieldfile creat
ed by Funlweb or other mean
s"
110 DISPLAY AT(23,6):"PRESS
ANY KEY" :: DISPLAY AT(23,6)
:"press any key" :: CALL KEY
(0,K,S):: IF S=0 THEN 110 EL
SE CALL CLEAR
120 DISPLAY AT(8,1):"FILENAM
E? DSK" :: ACCEPT AT(8,14):F
$
130 OPEN #1:"DSK"&F$,INPUT
140 DISPLAY AT(12,1):"MOVE F
IELD STARTING AT WHAT POSITI
ON?" :: ACCEPT AT(13,11)VALI
DATE(DIGIT):N
150 DISPLAY AT(15,1):"LENGTH
OF FIELD?" :: ACCEPT AT(15,
18)VALIDATE(DIGIT)BEEP:L
160 DISPLAY AT(17,1):"TO WHA
T POSITION?" :: ACCEPT AT(17
,19)VALIDATE(DIGIT)BEEP:T
170 IF T>N+L-1 OR T<N THEN 1
90
180 CALL SOUND(400,110,0,-4,
0):: DISPLAY AT(23,1)BEEP:"C
ANNOT MOVE FIELD WITHIN ITSD
WN PARAMETERS!" :: GOTO 140
190 DISPLAY AT(19,1):"OUTPUT
FILENAME? DSK" :: ACCEPT AT
(19,21)BEEP:DF$
200 OPEN #2:"DSK"&DF$,OUTPUT
210 LINPUT #1:M$ :: M$=M$&RP
T$(" ",80-LEN(M$)):: IF T<N
THEN M$=SEG$(M$,1,T-1)&SEG$(
M$,N,L)&SEG$(M$,T+1,N-T)&SEG
$(M$,N+L+1,255)
220 IF T>N THEN M$=SEG$(M$,1
,N-1)&SEG$(M$,N+L,T-N-L)&SEG
$(M$,N,L)&SEG$(M$,T+1,255)
230 PRINT #2:M$ :: IF EOF(1)
<>1 THEN 210 ELSE CLOSE #1 :
: CLOSE #2
240 DISPLAY AT(12,1)ERASE AL
L:"ANOTHER? Y/N" :: ACCEPT A
T(12,14)VALIDATE("YN")SIZE(1
)BEEP:Q$ :: IF Q$="Y" THEN 1
20 ELSE CALL CLEAR :: STOP

```

And this one will make it easy to completely rearrange the sequence of any number of fields.

```

100 DISPLAY AT(3,9)ERASE ALL
:"REARRANGER": "" by Ji
m Peterson"
110 DISPLAY AT(7,1):" To re
arrange the sequence of fiel
ds in a DV80 file of fixed f
ields created by Funlweb
or otherwise."
120 DISPLAY AT(24,7):"PRESS
ANY KEY" :: DISPLAY AT(24,7)
:"press any key" :: CALL KEY
(0,K,@):: IF @=0 THEN 120
130 DIM L(20),S(20),F$(20)::
CALL CLEAR
140 DISPLAY AT(8,1):"INPUT F
ILENAME?": "":"DSK" :: ACCEPT
AT(10,4)BEEP:I$ :: OPEN #1:
"DSK"&I$,INPUT
150 DISPLAY AT(12,1):"OUTPUT
FILENAME?": "":"DSK" :: ACCE
PT AT(14,4)BEEP:O$:OPEN #1:"
DSK"&O$,OUTPUT
160 DISPLAY AT(16,1):"HOW MA
NY FIELDS?" :: ACCEPT AT(16,
18)VALIDATE(DIGIT)SIZE(2):F
:: CALL CLEAR
170 FOR J=1 TO F :: DISPLAY
AT(12,1):"FIELD #";J;"LENGTH
?" :: ACCEPT AT(12,20)VALIDA
TE(DIGIT)BEEP:L(J):: NEXT J
:: FOR J=1 TO F
180 DISPLAY AT(12,1):"IN FIE
LD #";J:"": "PLACE FIELD #":
: ACCEPT AT(14,15)VALIDATE(D
IGIT)BEEP:S(J)
190 IF S(J)<1 OR S(J)>F THEN
CALL SOUND(300,110,0,-4,0):
: GOTO 180
200 IF POS(E$,CHR$(S(J)),1)=
0 THEN E$=E$&CHR$(S(J)):: GO
TO 220
210 CALL SOUND(300,110,0,-4,
0):: DISPLAY AT(16,1):"FIELD
#";S(J);"HAS ALREADY BEEN
PLACED!" :: GOTO 180
220 NEXT J
230 LINPUT #1:M$ :: M$=M$&RP
T$(" ",80-LEN(M$)):: P=1 ::
FOR J=1 TO F
240 F$(J)=SEG$(M$,P,L(J))::
P=P+L(J):: NEXT J
250 FOR J=1 TO F :: N$=N$&F$(
S(J)):: NEXT J :: PRINT #2:
N$ :: N$=""
260 IF EOF(1)<>1 THEN 230 EL
SE CLOSE #1 :: CLOSE #2 :: S
TOP

```

If you need to use either of those programs on files

with a record length other than 80, just add VARIABLE (or FIXED) and the record length to all the file opening statements, and change that 80 in line 210 or 230.

This subprogram, in which X=28 for a 28-column screen or whatever width you want, will reformat a string of almost any length to print on screen without breaking words, and will return in L the number of lines required to print it, which can be used to space DISPLAY AT statements.

```

31993 SUB FORMAT(X,M$,L):: Y
=X
31994 IF LEN(M$)<Y+1 THEN 31
996 ELSE IF LEN(M$)<Y+X+1 AN
D SEG$(M$,Y,1)=" " THEN 3199
6 ELSE IF LEN(M$)<Y+X+1 AND
SEG$(M$,Y+1,1)=" " THEN 3199
6 ELSE P=Y-1
31995 IF P<1 THEN 31996 ELSE
IF SEG$(M$,P,1)=" " THEN M$
=SEG$(M$,1,P)&RPT$(" ",Y-P)&
SEG$(M$,P+1,255):: Y=Y+X ::
GOTO 31994 ELSE P=P-1 :: GOT
O 31995
31996 L=INT(LEN(M$)/X)-(LEN(
M$)/X<>INT(LEN(M$)/X)):: SUB
END

```

The following little program, plus the magic of Funlweb, should be all the mailing list program that most people would need for home use. Just use Funlweb to create a file with name on the first line, address on the second line, city and state on the third - or use 4 or even 5 lines for the address if you need to, but the 6th line must either be blank or contain selection codes. These codes can be anything you want, such as C for everyone you want to send a Christmas card to, or B11 to send a birthday card in November, or whatever.

You can put as many codes as you want to on that line, separated or strung together

but be sure not to use a code that is part of another code - for instance, if you use B11 for those November birthdays, don't use B or 1 or B1 or 11 for something else.

Then continue with the next address in another block of six lines. Just be sure that the line number of the line just above the first address line is always a multiple of six.

```
100 DISPLAY AT(12,1)ERASE ALL
L:"Filename? DSK" :: ACCEPT
AT(12,14)BEEP:F$ :: OPEN #1:
"DSK"&F$,INPUT :: OPEN #2:"P
ID"
110 DISPLAY AT(14,1):"Print
addresses with code -":"(
to print all addresses,
ust press Enter)"
120 ACCEPT AT(15,1)BEEP:X$
130 LINPUT #1:A$ :: LINPUT #
1:B$ :: LINPUT #1:C$ :: LIMP
UT #1:D$ :: LINPUT #1:E$ ::
LINPUT #1:F$
140 IF POS(F$,X$,1)<>0 OR X$
=" THEN PRINT #2:A$:B$:C$:D
$:":":
150 IF EOF(1)<>1 THEN 130 EL
SE CLOSE #1
```

In Tips #62 I reported on the weird behavior of the CALL LOAD(-31961,149), when used to clear all defaults and search for a LOAD file on DSK1. I have since found that if you put this CALL at the beginning of a program, it will not execute until an END or STOP is reached - but if you break the program with FCTN 4, it will not be in memory!

I stated that after this CALL LOAD was executed, any number taken to the power of 0 (which should be a value of 1) acquired a value of 220.5727273. I was led astray by the INT in the the formula in which I first found this puzzle. Actually it is 220.57000101, which prints to the screen in the peculiar format F0.57000101.

If a number between 1 and 9 is added to that, it is printed as 1< followed by the number being added, followed by the decimal part. For a number between 10 and 19, the < is changed to = and between 20 and 29 it becomes > (note the ASCII sequence); from 30 to 35 it becomes ? but from 36 to 99 the decimal portion is preceded by 0 to 63 respectively. 100 is 2<0.570001 and the pattern continues.

Although these are not valid representations of numbers, they are treated as such. Run a program to give N the power of 2^0, then break the program and experiment in immediate mode.

PRINT N gives that strange F0.57000101. PRINT N+1, or whatever, gives values represented in the format described above. PRINT N#1 will give the true numeric value 220.57000101 but multiplying by some other values gave me results in the odd format, as did dividing.

Peter Walker pointed out to me that trying to subtract from N within a program resulted in printing a value followed by a crash reporting a SYNTAX ERROR (in the line which had just been executed!) followed by a jump to a non-existent line zero!

N-1 should be 219.57.. of course, but in immediate mode PRINT N-1 results in 63.57000101. In the format in which added values are printed, this would be 319.57000101 but the 63.. is actually a decimal value, as can be proved by PRINT CHR\$(INT(N-1))! When I tried to get a zero value by PRINT N-64.57000101, the computer blew its mind.

Does anyone know what is going on here?

An IBM program called DOC-SMASH, which sells for about

\$35, will read a D/V80 file and output it to a printer in full carriage-width lines of elite condensed subscript thereby getting up to 216 lines per page. Bud Wright wrote a TI version, with assembly links, to let us do the same thing for free. His version wouldn't work on my trusty old Gemini 10X, which does not support condensed elite, so I wrote this mini-program which is not as fast as Bud's, but does the job.

```
100 DISPLAY AT(3,9)ERASE ALL
:"TEXTSMASHER":":":
"emini 10X printer, to print
D/V80 text in lines of 136 ch
aracters closely spaced, i
n subscript."
110 DISPLAY AT(20,1):"Press
Enter to end input" :: DIM F
$(20)
120 F=F+1 :: DISPLAY AT(12,1
):"FILE #":F:"DSK" :: ACCEPT
AT(13,4)BEEP:F$(F):: IF F$(
F)<>" THEN 120
130 OPEN #2:"PIO",VARIABLE 2
55 :: PRINT #2:CHR$(27)&CHR$
(83)&CHR$(1);
140 PRINT #2:CHR$(15)&CHR$(2
7)&CHR$(51)&CHR$(12);: LN=1
36
150 FOR J=1 TO F-1 :: OPEN #
1:"DSK"&F$(J),INPUT
160 LINPUT #1:M$
170 IF LEN(T$)>0 THEN M$=T$&
" "&M$ :: T$=""
180 IF LEN(M$)<LN+1 AND POS(
M$,CHR$(13),1)<>0 THEN PRINT
#2:M$ :: GOSUB 260 :: M$=""
:: GOTO 230
190 IF LEN(M$)=LN THEN PRINT
#2:M$ :: GOSUB 260 :: M$=""
:: GOTO 230
200 IF LEN(M$)<LN AND EOF(1)
<>1 THEN LINPUT #1:X$ :: M$=
M$&" "&X$ :: GOTO 170 ELSE I
F LEN(M$)<136 THEN PRINT #2:
M$ :: GOSUB 260 :: GOTO 240
210 P=LN
220 IF SEG$(M$,P,1)=" " THEN
T$=SEG$(M$,P+1,255):: M$=SE
G$(M$,1,P):: PRINT #2:M$ ::
GOSUB 260 :: M$="" :: GOTO 2
30 ELSE P=P-1 :: GOTO 220
230 IF LEN(T$)<LN+1 AND POS(
T$,CHR$(13),1)<>0 THEN PRINT
```

```
#2:T$ :: GOSUB 260 :: T$=""
240 IF EOF(1)<>1 THEN 160
250 CLOSE #1 :: NEXT J :: ST
OP
260 X=X+1 :: IF X<121 THEN R
ETURN
270 X=0 :: FOR K=1 TO 8 :: P
RINT #2 :: NEXT K :: RETURN
```

For that to work properly, your paragraphs must end in carriage returns, and so must the title line, etc. If such is not the case, try Bill Wood's method - load the file into Funlweb, enter RS for Replace String, then /. /.X/ but instead of X type CTRL U SHIFT M. At the first prompt, enter A for All. If your text has any paragraphs ending in ? or !, get your cursor back to the beginning, change that first period to ? or !, and do it again. You might also need to manually add carriage returns to titles, etc. Just type CTRL U, then SHIFT M wherever a CR is needed.

Without having printers to test it on, I think the program can be modified for the SG-10 by changing line 140 to

```
140 PRINT #2:CHR$(27)&"B"&CH
R$(4)&CHR$(27)&CHR$(51)&CHR$
(12);: LN=160
```

And for old Epson-type printers which don't support elite condensed by

```
140 PRINT #2:CHR$(27)&CHR$(7
7)&CHR$(27)&CHR$(51)&CHR$(18
);: LN=132
```

And new Epson compatibles by

```
140 PRINT #2:CHR$(27)&CHR$(7
7)&CHR$(15)&CHR$(27)&CHR$(51
)&CHR$(18);: LN=160
```

You might also have to change that 8 to 12 in line 270 - my old Gemini seems to think that 11#12=128.

COMPLETELY out of memory,
Jim Peterson

PROGRAMMING MUSIC THE EASY WAY

PART 1

by Jim Peterson

A while ago, I wrote an article about music programming in which I said that it was easy but that you almost had to know how to read music. Well, it is still easy to program, but no longer necessary to know how to read it.

Personally, I am about like the country fiddler who admitted that he could read music a little, but not enough to hurt his playing. I know just a little about reading music but that has been all I needed to know to program more than 50 songs. And, if you have ever heard my Tigercub Country or Tigercub Gospel disks, you will know that I have programmed those songs in a wide variety of styles.

Now, I have put together a few little routines to enable anyone to program music on the TI-99/4A very easily, and in many ways. You DON'T need to know how to program and you DON'T need to know how to read music!

First, key in this one-liner and save it as DSK1.SCALE,MERGE

```
100 DIM N(36):: F=110 :: FOR
  J=1 TO 36 :: N(J)=INT(F*1.0
59463094^(J-1)+.5):: NEXT J
:: N(0)=40000
```

Next, NEW to clear memory and then key in this music program, which we will use as an example to experiment with.

```
110 T=2 :: A=13 :: GOSUB 100
0 :: T=1 :: A=18 :: GOSUB 100
00 :: GOSUB 1000 :: T=3 :: G
OSUB 1000
120 T=1 :: A=20 :: GOSUB 100
0 :: A=22 :: GOSUB 1000 :: A
=23 :: GOSUB 1000 :: T=2 ::
A=27 :: GOSUB 1000 :: T=4 ::
A=25 :: GOSUB 1000
130 T=1 :: A=30 :: GOSUB 100
0 :: A=29 :: GOSUB 1000 :: T
=5 :: A=27 :: GOSUB 1000
140 T=1 :: A=25 :: GOSUB 100
0 :: A=27 :: GOSUB 1000 :: A
=25 :: GOSUB 1000 :: A=22 ::
GOSUB 1000 :: T=5 :: A=25 ::
: GOSUB 1000 :: T=2 :: GOSUB
```

```
1000
150 T=1 :: A=27 :: GOSUB 100
0 :: GOSUB 1000 :: T=3 :: G
OSUB 1000 :: T=1 :: A=22 :: G
OSUB 1000
160 A=25 :: GOSUB 1000 :: A=
22 :: GOSUB 1000 :: T=2 :: A
=20 :: GOSUB 1000 :: T=4 ::
A=18 :: GOSUB 1000
170 T=1 :: GOSUB 1000 :: A=2
0 :: GOSUB 1000 :: T=5 :: A=
22 :: GOSUB 1000 :: T=1 :: A
=18 :: GOSUB 1000
180 A=22 :: GOSUB 1000 :: A=
27 :: GOSUB 1000 :: T=6 :: A
=25 :: GOSUB 1000 :: T=1 ::
A=18 :: GOSUB 1000 :: A=20 ::
: GOSUB 1000
190 T=6 :: A=22 :: GOSUB 100
0 :: T=2 :: A=18 :: GOSUB 10
00 :: A=20 :: GOSUB 1000 ::
T=4 :: A=18 :: GOSUB 1000 ::
STOP
```

Save that by SAVE DSK1.SHEN just so you don't lose it, but keep it in memory, and enter MERGE DSK1.SCALE to get that one-liner back in.

The music you just keyed in is in one voice without harmony. Let's see what you can do with just one voice. Put in a line 105 D=200 and another line -

```
1000 CALL SOUND(T*D,N(A),0)
:: RETURN
```

Enter RUN, wait a second, and listen. If you didn't make any mistakes in keying in the music, you should hear a fairly pleasant single-note rendition of a beautiful old folk song.

Maybe you would prefer a higher key? Here's the neat part about starting with that formula in line 100 - besides the fact that it lets you key in frequencies in shorthand. To change key, just change that 110 in line 100 to a higher frequency number. They are listed in the "blue book" that came with your computer, but if you lost it they go upward 110, 117, 123, 131, 139, 147, 156, 165, 175, 185, 196, 208, 220.

You can also lower the key, providing you do not cause the lowest note in your music to go below frequency 110. In the piece you keyed in, the lowest note number used was 13 so you could go down 12 steps. The frequencies are not in the book, but they go 110, 104, 98, 92, 87, 82, 78, 73, 69, 65.

Want the music faster or slower? Just change the 200 in line 105.

Now let's see what else we can do with single-note music. Try this -
1000 CALL SOUND(T*D,N(A),0,N(A)*1.01,0):: RETURN

Has a richer sound, doesn't it? How about this?

1000 CALL SOUND(T*D,N(A),0,N(A)/2,0):: RETURN

Or combine the two -

1000 CALL SOUND(T*D,N(A),0,N(A)*1.01,0,N(A)/2,0):: RETURN
N

Multiplying a note by 1.01 in another voice will always give a more resonant sound, and dividing a note by two (providing its note number is not less than 13) will always be in harmony - so will multiplying by two, or by four.

How about some real deep down bass music? The TI's tone generators can only go down to frequency 110, but the noise generator can be tuned far below that. The timber of the sound is different and doesn't blend too well with the tones, so use it with caution - but it's great for a tuba solo. Try this -

1000 CALL SOUND(T*D,N(O),30,N(O),30,N(A)*3.75,30,-4,0):: RETURN

Want to go deeper? Try changing the 3.75 to 1.875 - too deep to even be musical, isn't it? Maybe you could improve it by raising the frequency in line 100.

Try changing the 3.75 to 7.5 - not bad, is it? So try doubling it again to 15 - oops! When you go that high you get some very sour notes!

So, go back to 7.5 and change one of those N(O) to N(A) and change the 30 following it to 0. Pretty good, so try also changing the other N(O) to N(A)*1.01 and the 30 after it to 0.

If any of those effects sound like something you might want to try in a piece of music someday, clear the memory with NEW, key it in and save it with SAVE DSK....,MERGE using a different filename for each one. Then, after you have keyed in some music, you can very quickly merge in different routines and try them. You will find that different ones go better with different songs.

The routines we have been trying all

play music with a very strong beat. For a smoother effect, try this -
1000 FOR J=1 TO T :: CALL SO
SOUND(-2999,N(A),0):: GOSUB
1100 :: NEXT J :: RETURN
1100 FOR D=1 TO 99 :: NEXT D
:: RETURN

You will notice one thing right away; with this method, a series of the same note gets run together into one long note. Later we will look at ways to get around that.

To change the tempo of the music, just change the value of 99 in line 1100.

Try this method in combination with the effects we tried previously.

Here's another one that gives a very nice effect -

1000 FOR J=1 TO T :: CALL SO
UND(-999,N(A),0):: GOSUB 110
0 :: CALL SOUND(-999,N(A)*1.
01,0):: GOSUB 1100 :: NEXT J
:: RETURN
1100 FOR D=1 TO 8 :: NEXT D
:: RETURN

Or for a more mournful sound -

1000 FOR J=1 TO T*4 :: CALL
SOUND(-999,N(A),0):: CALL SO
UND(-999,N(A)*1.01,0):: NEXT
J :: RETURN

You can control the tempo by changing the value of 4, but not as precisely as with the previous method, and it does not work well with bass notes. Try changing the 1.01 to 1.02 - also try erasing the *1.01 and change the following 0 to 8, for a mandolin effect.

Those are just a few of the effects you can create with just a single-note melody - experiment and see what else you can discover.

So, just imagine what you will be able to do using all three voices - coming up in part 2 of this article!

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PUZZLE-12

by WESLEY R. RICHARDSON
NORTHCOAST 99ER'S, CLEVELAND, OH

PUZZLE-12 is an Extended BASIC puzzle which uses joystick number 1 and works best with a color monitor or TV. The objective is to fit twelve pieces of various shapes into a rectangle at the center of the screen. The pieces are not allowed to overlap each other, however pegs on one piece may fit into holes on another. There are only two unique solutions, and 16 symmetry related solutions.

To use a piece, place the cursor on the piece using joystick #1, and press the fire button. The piece will be colored black for rotation. Each of the pieces can be rotated or flipped into eight orientations with the joystick.

Pressing the fire button again will color the piece white, and it can be moved with the joystick. When it is at the desired location, pressing the fire button will place the piece, if it is at an allowable position. The thick portion of the piece must be at the position indicated by the arrows, and the piece must not overlap another piece for the position to be acceptable.

There are no time constraints for working the puzzle, so speed is not required. Pieces on the arrow line may also be removed from the rectangle and another piece tried in its place.

Pressing fire while the cursor is in the RESTART OR QUIT box, will allow you to restart the game or quit. The restart places all of the pieces in their starting boxes. The color of the pieces can be changed by pressing fire when the cursor is in the CHANGE COLOR box. There is no difference in piece shape as a result of changing colors, but some colors will be easier to see than others on the screen.

The program takes almost three minutes to initialize values and progress of the loading is shown on the two instruction screens. Restart during the game does not require the initialization sequence delay.

To receive the program on disk, send a SSSD or DSSD disk with some programs on it to 18140 Rolling Brook, Bainbridge, OH 44022-4860.

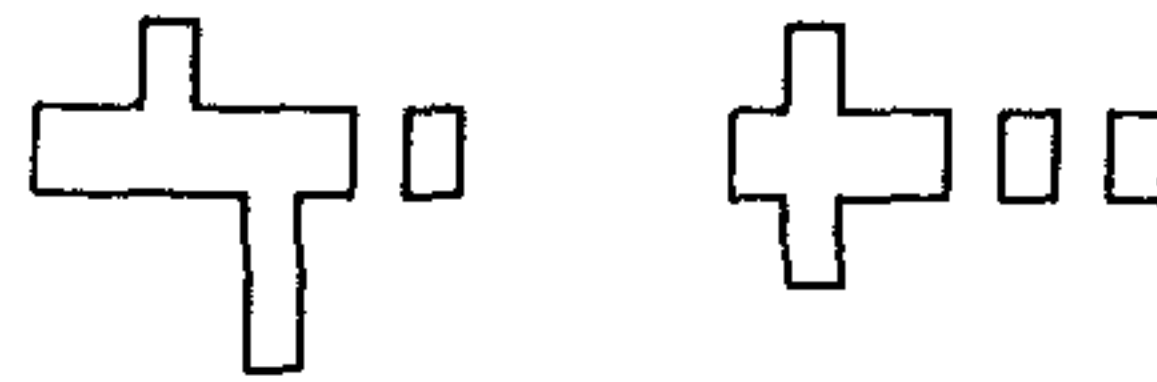
```
100 REM PUZZLE-12
110 REM BY WESLEY R. RICHARDSON, FEB 1
    991
120 REM NORTHCOAST 99ERS, CLEVELAND, O
    H
130 REM TI-99/4A EXTENDED BASIC
140 REM VARIABLES A(24),B$(12,8),C(36)
    ,C$(12,8),D(12),D$,E$,I,J,K,T,V,W,
    X,Y
150 DATA 2,3,4,5,6,7,8,9,10,11,13,14,1
    5
160 DATA "PLACE ALL 12 PIECES IN THE",
    "MIDDLE BOX. PRESS FIRE ON","JOYS
    TICK #1 TO CHANGE COLOR"
170 DATA "TO BLACK TO ROTATE THE PIECE
    ","TO ANY OF 8 ORIENTATIONS","OR W
    HITE TO MOVE THE PIECE."
180 DATA "PRESSING FIRE AGAIN WILL","P
    LACE THE PIECE, IF IT IS","AT AN A
    LLLOWABLE POSITION."
190 DATA ""," ALPHA LOCK MUST BE UP!"
200 DATA C0C0F3C000003F00,C0C0F3C00000
    3F00,C0C0FF0C0000F300,C0C0F3000000
    FF00
210 DATA C0C0FF000000F300,00C0F3C00000
    3F00,00C0F3C00000F300,00C0F3000000
    F3C0
220 DATA 00C0FF0000003300,00C0F3000000
    3F00,00C0FF0000003300,0000F3000000
    3300
230 DATA "THERE ARE ONLY TWO UNIQUE",
    "SOLUTIONS, AND 16 SYMMETRY",
    "RELAT
    ED SOLUTIONS. PRESSING"
240 DATA "THE FIRE BUTTON WHEN THE",
    "CURSOR IS IN THE QUIT BOX",
    "WILL AL
    LOW YOU TO RESTART"
250 DATA "OR END THE GAME. HAVE FUN",
    "IT CAN BE DONE.",
    "",
    "",
    " ALPHA L
    OCK MUST BE UP!"
260 DIM A(24),B$(12,8),C(36),C$(12,8),
    D(12)
270 CALL DELSPRITE(ALL):: CALL MAGNIFY
    (4):: CALL SCREEN(12):: GOTO 300 :
    : D$,E$,I,J,K,T,V,W,X,Y
280 CALL CHAR :: CALL CLEAR :: CALL CO
    INC :: CALL COLOR :: CALL HCHAR ::
    CALL JOYST :: CALL KEY :: CALL LO
    CATE
290 CALL PATTERN :: CALL SPRITE :: CAL
    L VCHAR :: !@P-
300 W=0 :: GOSUB 1650 :: READ C(0):: F
    OR I=1 TO 12 :: READ C(I):: C(I+12
    )=5 :: C(I+24)=7 :: NEXT I
310 CALL CHAR(36,"103070FFFF703010",37
    ,"080C0EFFFF0E0C08")
320 CALL CHAR(40,"01070911113F11110907
    01000000000000C0201010F8101020C000
```


...PUZZLE-12

```

000000000000")
330 CALL CHAR(60,RPT$("0",14)&"FF",61,
RPT$("FF00",4),62,"FF")
340 GOSUB 1660 :: FOR I=1 TO 12 :: REA
D B$(I,1):: NEXT I
350 FOR I=1 TO 12
360 FOR J=0 TO 4 STEP 4
370 FOR K=2 TO 4
380 D$=B$(I,J+K-1)
390 B$(I,J+K)=SEG$(D$,10,1)&SEG$(D$,1,
1)&SEG$(D$,12,1)&SEG$(D$,3,1)&SEG$(
D$,14,1)&SEG$(D$,5,1)&SEG$(D$,16,
1)&SEG$(D$,7,1)
400 B$(I,J+K)=B$(I,J+K)&SEG$(D$,2,1)&S
EG$(D$,9,1)&SEG$(D$,4,1)&SEG$(D$,1
1,1)&SEG$(D$,6,1)&SEG$(D$,13,1)&S
EG$(D$,8,1)&SEG$(D$,15,1)
410 NEXT K
420 D$=B$(I,1)
430 B$(I,5)=SEG$(D$,7,1)&SEG$(D$,16,1)
&SEG$(D$,5,1)&SEG$(D$,14,1)&SEG$(D
$,3,1)&SEG$(D$,12,1)&SEG$(D$,1,1)&
SEG$(D$,10,1)
440 B$(I,5)=B$(I,5)&SEG$(D$,15,1)&SEG$(
D$,8,1)&SEG$(D$,13,1)&SEG$(D$,6,1
)&SEG$(D$,11,1)&SEG$(D$,4,1)&SEG$(
D$,9,1)&SEG$(D$,2,1)
450 NEXT J :: CALL HCHAR(22,14+I,58)::
NEXT I
460 GOSUB 1650 :: GOSUB 1660
470 FOR I=1 TO 12
480 FOR J=1 TO 8
490 C$(I,J)="" :: D$=B$(I,J)
500 FOR K=1 TO 16 STEP 2
510 C$(I,J)=C$(I,J)&RPT$(SEG$(D$,K,2),
4)
520 NEXT K
530 NEXT J :: CALL HCHAR(22,14+I,58)
540 NEXT I :: CALL COLOR(1,9,1)
550 REM RESTART POINT
560 T=13 :: W=18 :: GOSUB 1650
570 CALL VCHAR(1,14,61,14):: CALL VCHA
R(1,19,61,14):: CALL HCHAR(1,15,61
,4)
580 CALL HCHAR(14,10,61,14):: CALL HCH
AR(18,10,61,14):: CALL HCHAR(24,10
,61,14)
590 CALL VCHAR(1,4,61,24):: CALL VCHAR
(1,9,61,24):: CALL VCHAR(1,24,61,2
4):: CALL VCHAR(1,29,61,24)
600 FOR I=0 TO 5 :: CALL HCHAR(1+4*I,5
,62,4):: CALL HCHAR(1+4*I,25,62,4)
:: NEXT I
610 CALL HCHAR(24,5,60,4):: CALL HCHAR
(24,25,60,4)
620 Y=97 :: X=113 :: CALL SPRITE(#1,40
,C(0),Y,X)

```



```

630 RANDOMIZE :: FOR I=1 TO 12 :: D(I)
=1+INT(8*RND)
640 A(I)=I :: A(I+12)=0 :: CALL CHAR(9
2+4*I,C$(I,D(I)))
650 CALL SPRITE(#I+1,92+4*I,C(I+V),1+3
2*(I-1)+192*(I>6),33-160*(I>6))
660 NEXT I
670 REM MAIN LOOP, CURSOR
680 GOSUB 1680
690 DISPLAY AT(15,14)SIZE(1):"=" :: DI
SPLAY AT(16,8)SIZE(14):"CHANGE=RES
TART" :: DISPLAY AT(17,8)SIZE(14):
"COLORS=OR QUIT"
700 CALL VCHAR(T-12,13,37):: CALL VCHA
R(T-12,20,36):: IF T=25 THEN 720
710 CALL VCHAR(T-11,13,32):: CALL VCHA
R(T-11,20,32)
720 CALL LOCATE(#1,Y,X)
730 CALL KEY(1,K,J):: IF J THEN 760
740 CALL JOYST(1,K,J):: IF (K=0)*(J=0)
THEN 730
750 K=2*K :: J=-2*J :: X=MIN(MAX(25,X+
K),201):: Y=MIN(MAX(1,Y+J),169)::
GOTO 720
760 IF K<>18 THEN 730
770 IF (Y<105)+(Y>121)+(X<65)+(X>161)T
HEN 890
780 IF (X>64)*(X<105)THEN 860
790 IF (X<121)+(X>161)THEN 890
800 GOSUB 1680 :: CALL LOCATE(#1,200,2
00):: DISPLAY AT(15,8)SIZE(13):"C
TO CONTINUE"
810 DISPLAY AT(16,8)SIZE(12):"R TO RES
TART" :: DISPLAY AT(17,8)SIZE(9):"
Q TO QUIT"
820 GOSUB 1630 :: IF (I=82)+(I=114)THE
N 550
830 IF (I=67)+(I=99)THEN 680
840 IF (I=81)+(I=113)THEN CALL CLEAR :
: STOP
850 GOTO 820
860 REM CHANGE COLOR
870 V=V+12 :: IF V>24 THEN V=0
880 FOR I=1 TO 12 :: CALL COLOR(#I+1,C
(I+V)):: NEXT I :: GOTO 730
890 REM CHECK FOR ON PIECE
900 J=1 :: IF X>184 THEN X=193 :: J=7
:: GOTO 920
910 IF X>41 THEN 930 ELSE X=33
920 Y=1+32*INT((Y+8)/32):: J=J+INT((Y+
7)/32):: GOTO 1000
930 IF (Y>89)+(X<105)+(X>121)THEN 730
940 X=113 :: J=12+(Y+7)/8


```

...PUZZLE-12

```

950 IF J<>(T-1)THEN 730
960 IF A(J)=0 THEN 730
970 Y=Y+8*(D(A(J))<5):: IF T=25 THEN 9
90
980 CALL VCHAR(T-11,13,32):: CALL VCHA
R(T-11,20,32)
990 T=MAX(13,T-1)
1000 IF A(J)=0 THEN 730 ELSE I=A(J):: A
(J)=0
1010 REM PIECE COLOR BLACK FOR ROTATE
1020 CALL LOCATE(#1,200,200):: CALL COL
OR(#I+1,2)
1030 GOSUB 1680 :: DISPLAY AT(16,12)SIZ
E(8):"PIECE ";CHR$(64+I):: DISPLAY
AT(17,11)SIZE(8):"ROTATE";D(I)
1040 CALL KEY(1,K,J):: IF J THEN 1150
1050 CALL JOYST(1,K,J):: IF (K=0)*(J=0)
THEN 1040
1060 K=0.25*K :: D(I)=D(I)+J
1070 IF D(I)<1 THEN D(I)=D(I)+8
1080 IF D(I)>8 THEN D(I)=D(I)-8
1090 J=0 :: IF D(I)>4 THEN J=4
1100 D(I)=D(I)+K
1110 IF D(I)<(1+J)THEN D(I)=4+J
1120 IF D(I)>(4+J)THEN D(I)=1+J
1130 CALL CHAR(92+4*I,C$(I,D(I))): CAL
L PATTERN(#I+1,92+4*I)
1140 GOTO 1020
1150 IF K<>18 THEN 1040
1160 REM PIECE COLOR WHITE TO MOVE
1170 GOSUB 1680 :: DISPLAY AT(16,12)SIZ
E(8):"PIECE ";CHR$(64+I):: DISPLAY
AT(17,13)SIZE(4):"MOVE"
1180 CALL VCHAR(T-12,13,32):: CALL VCHA
R(T-12,20,32)
1190 CALL VCHAR(T-11,13,37):: CALL VCHA
R(T-11,20,36):: CALL COLOR(#I+1,16
)
1200 CALL KEY(1,K,J):: IF J THEN 1240
1210 CALL JOYST(1,K,J):: IF (K=0)*(J=0)
THEN 1200
1220 K=2*K :: J=-2*J :: X=MIN(MAX(33,X+
K),193):: Y=MIN(MAX(1,Y+J),161)
1230 CALL LOCATE(#I+1,Y,X):: GOTO 1200
1240 IF K<>18 THEN 1200
1250 REM POSITION OK?
1260 IF (Y>89)+(X>113)THEN 1360
1270 CALL COINC(ALL,J):: IF J THEN 1200
1280 E$=B$(I,D(I))
1290 IF (Y=1)*((SEG$(E$,1,2)<>"00")+(SE
G$(E$,9,2)<>"00"))THEN 1200
1300 IF (Y=81)*((SEG$(E$,7,2)<>"00")+(S
EG$(E$,15,2)<>"00"))THEN 1200
1310 IF (Y=89)*((SEG$(E$,5,2)<>"00")+(S
EG$(E$,13,2)<>"00"))THEN 1200
1320 J=12+(Y+7)/8 :: J=J-(D(I)<5)
1330 IF J<>T THEN 1200

```



```

1340 IF A(J)>0 THEN 1200
1350 CALL VCHAR(T-11,13,32):: CALL VCHA
R(T-11,20,32):: T=MIN(25,T+1):: GO
TO 1420
1360 IF X<185 THEN 1380
1370 X=193 :: J=7 :: GOTO 1400
1380 IF X>41 THEN 1200
1390 X=33 :: J=1
1400 J=J+INT((Y+8)/32)
1410 Y=1+32*INT((Y+8)/32)
1420 IF A(J)>0 THEN 1200 ELSE A(J)=I
1430 CALL LOCATE(#I+1,Y,X)
1440 CALL COLOR(#I+1,C(I+V))
1450 FOR J=1 TO 3
1460 IF A(J)>0 THEN I=J :: GOTO 1490
1470 IF A(J+6)>0 THEN I=J+6 :: GOTO 149
0
1480 NEXT J :: GOTO 1550
1490 FOR K=6 TO J+1 STEP -1
1500 IF A(K)=0 THEN 1530
1510 IF A(K+6)=0 THEN K=K+6 :: GOTO 153
0
1520 NEXT K :: GOTO 1550
1530 A(K)=A(I):: A(I)=0 :: I=A(K)
1540 CALL LOCATE(#I+1,1+32*(K-1)+192*(K
>6),33-160*(K>6))
1550 REM CHECK FOR WIN
1560 FOR J=24 TO 13 STEP -1
1570 IF A(J)=0 THEN 680
1580 NEXT J :: CALL SCREEN(16)
1590 DISPLAY AT(16,9)SIZE(11):"YOU DID
IT!" :: DISPLAY AT(17,8)SIZE(13):"
PRESS ANY KEY"
1600 GOSUB 1630 :: CALL SCREEN(12):: GO
TO 680
1610 STOP
1620 REM SUBROUTINES
1630 CALL KEY(0,I,K):: IF K THEN RETURN
1640 CALL KEY(1,I,K):: IF K THEN RETURN
ELSE 1630
1650 CALL CLEAR :: DISPLAY AT(W+2,10):"
PUZZLE-12" :: DISPLAY AT(W+4,10):"
WESLEY R." :: DISPLAY AT(W+5,10):"
RICHARDSON" :: RETURN
1660 FOR I=7 TO 17 :: READ E$ :: DISPLA
Y AT(1+I,1):E$ :: NEXT I :: DISPLA
Y AT(22,5):"LOADING"
1670 CALL HCHAR(21,15,60,12):: CALL HCH
AR(23,15,62,12):: RETURN
1680 FOR J=15 TO 17 :: DISPLAY AT(J,8)S
IZE(14):"" :: NEXT J :: RETURN
1690 !@P+
1700 END

```

**MOTEL AND TOURIST INFORMATION:
LIMA TI MULTI USER GROUP CONFERENCE
Friday May 17 4PM, through Saturday May 18 6PM
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THIS ALL TI/GENEVE EVENT IS TOTALLY FREE. It is the Lima Ohio TI User Group's gift to the TI community. There is no admission charge and tables in the exhibit room can be reserved at no charge on a space available basis.

HOW TO GET TO THE O.S.U. LIMA CAMPUS:

Lima is located in Northwest Ohio along Interstate 75 between Toledo and Dayton. The usual way to approach Lima by automobile from the north or south is on I75 and from the east or west on US30 or Ohio 309. Lima is served by Grayhound bus from several directions. There is no longer any passenger train service. The nearest airport is Dayton Ohio, from which it is necessary to rent a car or take a Grayhound bus. By advance request, the Lima Ohio User Group will attempt to provide pickup and delivery to and from the Lima bus station.

The O.S.U. Lima Campus is 3 miles east of the intersection of Ohio 309 and I75. A new and very well marked campus entrance is now located on Ohio 309 just east of Mumaugh Road. Turn north from 309 into the campus at the green highway sign. The first turn to the right (east) off this new entrance road takes you to the Reed Hall parking lot.

MOTEL INFORMATION:

The following motels have quoted us room prices. These prices are "plus tax", which is 12%, and in most cases represent discounts over their usual prices. Rooms are available on a "space available" basis. To obtain reservations at the prices quoted here, call the desired motel directly (do not use a motel chain's 800 national reservation number), state specifically that you are attending the TI Computer Conference at the O.S.U. campus, and request the special price. We have grouped these motels in two groups, those at the most convenient location (near I75 and Ohio 309) and those at other nearby locations.

MOTELS NEAR INTERSECTION OF I75 AND 309. A variety of restaurants and stores are within walking distance of these three motels.

- **MOTEL 6** (419-228-0456) All rooms have 2 double beds. Regular prices are Single \$24.95, Double \$30.95
- **HOWARD JOHNSON LODGE** (419-227-2221) One bed (1-2 persons)-\$29 Two beds (2-4 persons)-\$31
- **HOLIDAY INN** (419-222-0004) Has "Holidome" indoor pool. The facilities are comparable to those of the Holiday Inn used for the Chicago TI faire. Flat room rate of \$68 for up to 4 people. To get this rate reservations must be received at least two weeks in advance of the MUG Conference.

MOTELS AT OTHER NEARBY LOCATIONS:

- **LIMA DAYS INN** (419-227-6515) I75 and Ohio 81 One person \$26.95 Two persons \$32.95
- **ECONO LODGE** (419-228-4251) I75 and Ohio 81. Restaurant, outdoor pool, exercise and game room. Flat rate \$30/room up to 4 persons.
Reservations must be received at least two weeks prior to the conference to get this price.
- **QUALITY INN** (419-222-0596) I75 and Ohio 81. Restaurant, outdoor pool, and exercise room. Flat room rate of \$34.50 per room.
- **BEST WESTERN** (419-221-0114) I75 and Bluelick Rd. Has restaurant and olympic size indoor pool. Regular rates vary from \$39-\$55 for one person to \$48-\$65 for 3-4 persons depending on room.

TOURIST INFORMATION:

The O.S.U. Lima Campus has an extensive wooded area with nature trails that includes a beach-maple climax forest. As mentioned by Harry Brashear in his Micropendium article describing the May 1990 Lima TI MUG Conference, the city of Lima has a number of interesting exhibits relating to its past history as a railroad center. A few miles south of Lima at Wapakoneta is the Neil Armstrong Air and Space Museum honoring the first man to walk on the moon. Wapakoneta is the only place in the United States where it is still possible to make a local telephone call from a pay phone for five cents!

For a complete package of tourist information about Lima and the surrounding area send a post card to the Lima Convention and Visitors Bureau 147 N. Main St., Lima OH 45801, or phone them during business hours at 419-222-6045. Specifically state that you are attending the TI Computer Conference the weekend of May 18. They will promptly mail you a whole bunch of stuff.

FOR MORE INFORMATION ABOUT THE TI MUG CONFERENCE:

To reserve tables, schedule a formal presentation, or for further information phone Dave Szippel evenings at 419-228-7109 or write the Lima Ohio TI User Group at P.O. Box 647, Venedocia OH 45894.

LIMA CONFERENCE - 1991

A MESSAGE FROM JACK SUGHRUE

In a recent letter Jack has asked us to pass along the following message to the entire TI community: "Jack Sughrue, author of the NEW-AGE/99 articles in many newsletters, is temporarily unable to continue with the series, which he expects will be resumed in a few months. He wishes to apologize to his readers for this unexpected delay."

1991 LIMA TI MULTI USER GROUP CONFERENCE UPDATE

Saturday May 18, Reed Hall

The Ohio State University Lima Campus

FORMAL PRESENTATIONS

As of March 9 we have the following list of individuals who plan to give formal presentations and their topics. These presentations will be video taped and made available to user groups and to individuals who are members of the Lima User Group for the cost of media and postage. We will publish a tentative hour by hour schedule prior to the conference in the May issue of BB&P.

--Eunice Spooner, "THE OAKLAND COMPUTER CLUB." This elementary school user group is probably the most active user group in the country. Eunice may have a 12 year old club member assist with her presentation.

--Mike Wright, "THE TI99/8." Mike, a member of the Boston Computer Society, is a collector of all things relating to the history of the 99/4A. He will put the 99/8 through its paces for us.

--Paul Scheidewantle, Topic to be announced (Paul says, "Maybe something about programming.")

--Irwin Hott, "STATUS OF THE NEWSLETTER ARTICLE CLEARING HOUSE." This project, initially discussed at the 1990 MUG Conference, has received enough funding to proceed as planned. It may be in operation by the time Irwin gives his report.

--A user group officers' meeting will be held immediately following Irwin Hott's report.

--Jim Horn, "THE SEX LIFE OF THE 99/4A." Honest folks, that was the tentative title Jim gave us. We didn't realize there was enough material on this topic to give a whole one hour presentation. Jim's attendance at our conference is only tentative, since he is on active duty with the army and thus may not be able to attend.

--Gary Bowser, "HARDWARE AND SOFTWARE PRODUCTS FROM D.P.A." In the last few years Gary has been on the cutting edge of new products for the 99/4A.

--Barry Traver, "THE CURRENT STATUS OF THE TI COMMUNITY."

--Bruce Harrison, "GOLF SCORE ANALYZER, AND OTHER 'HARRISON SOFTWARE'"

--Bud Mills, "THE LATEST FROM BUD MILLS SERVICES"

--Chris Bobbitt, "SOFTWARE AND HARDWARE FROM ASGARD."

GROUPS WHO HAVE REQUESTED EXHIBIT ROOM TABLES

To date the following dealers and user groups have requested free tables in the exhibit area. We know that representatives of other user groups who are planning to attend but have not requested table space.

--CIN DAY USER GROUP; Cincinnati and Dayton Ohio.

--GREAT LAKES USER GROUP; Detroit Michigan.

--BUD MILLS SERVICES; Horizon ramdisks, PGRAM cards, and MEMEX expansion memory for the Geneve.

--ST LOURS USER GROUP; St. Louis Missouri.

--CONNI; the Columbus Ohio user group.

--TIGERCUB SOFTWARE; Jim Peterson will be selling (almost giving away) disks from his vast public domain library.

--GENIAL TRAVELER; Barry Traver will be accepting subscriptions to his disk magazine.

--CLEVELAND AREA USER GROUPS; Cleveland Ohio.

--OH MI TI USER GROUP; Toledo Ohio

--L.L. CONNER ENTERPRISE; Larry Conner is a general dealer with lots of stuff for the 99/4A, Geneve, and CC40.

--OASIS PENSIVE ABACUTORS; Gary Bowser will have the DPA 80 column peripheral, RAMBO, and other neat hardware and software.

--RAMCHARGED COMPUTER; Ron Markus is a general dealer with lots of stuff for the 99/4A. Ron may have some 80 column cards available for sale.

--THE FORT'S USER GROUP; Fort Wayne Indiana.

--NEW HORIZONS USER GROUP; Toledo Ohio.

--979 USER GROUP; Toronto, Ontario, Canada.

--HARRISON SOFTWARE; Bruce Harrison will feature his Golf Score Analyzer, the Harrison Word Processor, and classical music.

--COMPETITION COMPUTER; a generic TI dealer from Milwaukee. They told us, "We have lots and lots of stuff we can bring to sell."

--HOOSIER USER GROUP; Indianapolis Indiana.

--MS EXPRESS; Mickey Schmitt and Mike Sealy will have adventure games and hints available.

--CHICAGO USER GROUP; Chicago Illinois. They will have their own special software and hardware manuals for sale.

--ASGARD; the largest publisher of TI and Geneve software. Chris Bobbitt may have some of his much talked about hardware available as well.

--THE LIMA OHIO USER GROUP; from guess where?

HOPE TO ATTEND, BUT NOT YET CONFIRMED

--Jack Sughrue; His column is reprinted in many newsletters. If his health and finances permit he wants to attend.

--Beery Miller; Mr. Miller edits the disk based 9640 NEWS and hopes soon to have a disk magazine for the 99/4A.

--Chris Pratt; representing ESD CORPORATION and their hard and floppy disk controller for the 99/4A.

~~~~~  
W-AGE/99 \* NEW-AGE/  
99 \* NEW-AGE/99 \* N  
EW-AGE/99 \* NEW-AGE  
/99 \* NEW-AGE/99 \*  
~~~~~

* by JACK SUGHRUE, Box 459, East Douglas, MA 01516 *
#13

the VCR CONNECTION

I think one of the most exciting things to happen in our 99 world is the advent of tutorial and conference videos.

Almost everyone has a VCR, the ownership of which can now open new worlds to 99 and Geneve users. Now that VCRs are coming down in price, more and more groups and individuals are using this tool to enhance their computer activities and share their computer knowledge.

The unquestioned master of this new genre is Dr. Charles Good of the Lima, Ohio, group. Videos have been around for some time and made their first TI existence about five or six years ago at the Chicago Fair. Some of the big-wiggies were interviewed and some screens were shown of different pieces of software. This amateur tape circulated for a year or so around lots of user groups. We (then still in the millions, it seemed) watched transfixed as new and exciting things were explained and shown to us.

Then drought.

Well, even though there were some other videos around here and there, the drought really ended when Charlie took up the cause with a vengeance. Not only does the Lima group make a monthly tape of the demos of their meetings, but they have amassed a vast TI tape library. I have on my desk (all from Lima) the following: NEVER RELEASED OFFICIAL TI MODULES, TI MULTI-USER GROUP CONFERENCE 1988, CONFERENCE 1989 (2 tapes), CONFERENCE 1990 (3 tapes), MBX REQUIRED GAMES, FUNNELWEB v4.2 DEMO, and DON ALEXANDER'S GENEVE SOFTWARE DEMO. These 10 tapes run about 50 hours! They are filled with all sorts of people demonstrating (or discussing or teaching) all sorts of TI things. I'll list a few.

Karl Romstedt - friendly general loader and label printing software in XB with assembly routines; Harold Hoyt - useful applications of Steve Karesek's SUPER BASIC; Irwin Hott - using ALSAVE to imbed assembly code with an XB program; Bill Hudson - an assembly language prescan for XB; Multiplan Tutorial - presented by Great Lakes Computer Group; PLUS! - demonstrated by Jack Sughrue; Geneve - demonstrated by Edu Comp; Horizon Ramdisk - discussed by Bud Mills; Home Control 99 - demonstrated by Paul Wheeler; The Future of User Groups - discussion led by Charles Good and Dave Szippel of the Lima Group; A Blind Person Using the TI - demonstrated by Irwin Hott; NUTS & BOLTS - demonstrated by Jim Peterson; GENE III - demonstrated by Dick Berry; Output to a VCR - shown by John Perkins; 1000 WORDS - author Norman Rokke demonstrates this Artist/text conversion file; Barry Traver - contents of Genial Traveler and linking XB to assembly via CALL LINK; Chris Bobbitt - recent and future releases from Asgard; Andy Frueh - music programming on the 4a; Ron Markus - the DIJIT AVPC 80-column card; Jim Horn - services on COMPUERVE; Martin Smoley - TI BASE tutorial; Paul Scheidemantle - converting from one Artist format to another and tips and tricks; Steve Karasek - SUPERBASIC 2.0; Karl Romstedt - Panorama, a new artist program; Milo Tsukroff - MX-DOS v3.0 an icon/joystick based program loader with disk management features; Beery Miller - future software for the Geneve; Jim Peterson - using Don Shorock's Kana Filer that speaks and writes (with TEII)

Japanese and drills vocabulary; Bruce Harrison - secrets of assembly language programming to make TI music; Gary Bowser - Rambo review module library box; Gary Taylor - demonstration of TI's Compact Computer 40, TI's Hex Bux peripherals, and Mechatronics Hex Bus Drive; and lots more.

This should give you a good idea of the kinds of things available each May just from the annual Lima Fair (called "T.I. Multi User Group Conference," for some unknown reason). Each of these six-hour tapes use cameras on the tutor while cutting into the screen electronically when something is being shown. These tapes get better and better each year, and the editing techniques are superb. Although I haven't been able to attend the last two years, I felt I got a big part of the fair sent to me. I know a lot of other homebound TI acquaintances feel the same. It's no real substitute for being at the fair, of course, but it's a great second best. The TI experts are at your beck and call in your home any time you want them.

In addition to all these fair tapes, there are numerous "single theme" jobs also available. Don Alexander of Macon, Georgia, for example, does a fine job with the Geneve. I think this one is better for someone who has used the Geneve for awhile, though. I hope someone eventually does a truly step-by-step basic tutorial of the Geneve, maybe even a full six hours. It is sorely needed.

Charlie has also done theme tapes, such as MBX (where he steps through all the MBX modules) and UNRELEASED (where he plays and discusses all the delightful unreleased TI modules). I found both these tapes fascinating, particularly the UNRELEASED, as I could load them onto my SUPERCART or my GENEVE. Charlie's FUNNELWEB 4.2 DEMO is a classic. The viewer is taken through every step of the FWB configuration process that (for some strange reason) frightened so many people. Though the tape is similar to Charlie's tutorials in the BITS, BYTES & PIXELS newsletter he edits for Lima, it is far more extensive and much clearer, as you can see and hear everything being done live. I can't imagine anyone not being able to perform FWB magic after viewing this tape.

To get more information about these tapes (and/or join the Lima Group by mail which I would HIGHLY recommend), contact Charles Good, PO Box 647, Venedocia, OH 45894.

ANOTHER GOLDEN GOODIE

There is another great video now available to TI owners: the full-length LOGO video done by Eunice Spooner (RFD 1, Box 3720, Webb Road, Waterville, ME 04901). It is wonderful! It also comes with a disk full of lots of the items she demos and a hardcopy listing of the items and footage for easy tape locations.

Eunice is a certified elementary teacher and it is obvious on this tape. She's terrific: kind, patient, step-by-step logical, no panic; and she makes everything seem easy and fun. Which it is, if you do the things she suggests.

I always liked LOGO. Then I put it away for a long time. After viewing this tape and trying her programs, I discovered I ~~was~~ LOGO.

If you own LOGO, get this package instantly. At \$10 it is a total steal. And it is used as a fundraiser to support the only ALL KIDS TI USER GROUP IN THE WORLD! If you don't own LOGO, buy it instantly. (It's on sale everywhere CHEAP! I paid \$119 for my first and recently bought an unboxed one for \$15.) But, new or used, pick one up for this video/disk set alone. You'll rediscover the joys of computing and the real fun (and learning, which is why it is fun) of your remarkable 4a. Don't delay.

(If you use NEW-AGE/99 please put me on your exchange list.)

TUTORIAL 21.1.1 By Martin Smoley
 North Coast 99'ers - July 21, 1990
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I am reserving the copyright on this material, but I will allow the copying of this material by anyone under the following conditions. (1) It must be copied in its entirety with no changes. (2) If it is retyped, credit must be given to myself and the NorthCoast 99ers, as above. (3) The last major condition is that there may not be any profit directly involved in the copying or transfer of this material. In other words, Clubs can use it in their newsletters and you can give a copy to your friend as long as its free.

Inventory Control

Inventory Control is a fancy name for reordering parts when your stock gets low. In the June issue we created five databases and filled them with part numbers, prices, etc. In those DBs we entered Current Stock (CRS), Minimum Stock (MNS) and Maximum Stock (MXS) to use for stock control. This month I have written two small CFs to check those fields and copy certain items to an ORDER Db if they meet my requirements. To put it very simply, if the Current stock falls below the Minimum stock, reorder. My first step is to CLOSE ALL of the currently open Dbs. My second step is to utilize that wonderful INSTALL area again. For those of you who do not have ramdisks, the INSTALL area is a great new feature. It's fast, quiet and doesn't wear out your disk drive. INSTALL ADD DSK2.\ORD places or loads the entire CF named \ORD into the TI's VDP memory. Aside from the previously mentioned advantages I also wanted to demonstrate INSTALLs ability to perform intricate steps, such as Math or WHILE loops. When you get the hang of it I'm sure you will use INSTALL quite frequently. SELECT 2 and USE DSK2.ORDER merely opens the ORDER Db in slot 2. You should recognise the lines from here to ENDCASE, they are straight out of LSPRNT/C from last month. I merely edited LSPRNT by deleting and adding lines and saved it to the new name ORDPRNT/C. As in LSPRNT the DOCASE is used to open each of the DBs. The WHILE .NOT. (EOF) will leaf through each DB, one record at a time. IF the Current Stock (CRS) is less then the Minimum Stock (MNS), \ORD will be executed. IF not then the CF will MOVE to the next record and try again. If you look at \ORD, you can see that most of its line merely moves data from the 74LS Db to the ORDER Db, after a new record has been APPENDED. When using (or SELECTing) slots in this manner always tell TIB where the data is located by slot number (2.COPNM, 1.COPNM etc.). There are two field changes from the 74LS to ORDER, one is ORDQT (for ORDer QUantity) and CHK. ORDQT should be self explanatory. CHK will be a number half way between MNS and MXS. If there are no other determining factors, I would like to raise my stock level to the first whole number above CHK. I saved CHK in the new Db (which is not necessary) to allow myself to visually check the process. The sum of CRS and ORDQT should be slightly larger then CHK.

```
*                07/08/90                ORDPRNT/C
CLOSE ALL
INSTALL ADD DSK2.\ORD
SELECT 2
USE DSK2.ORDER
SELECT 1
LOCAL LOOP N 3
REPLACE LOOP WITH 1
WHILE LOOP<6
  DOCASE
    CASE LOOP = 1
      USE DSK2.74LS'S1
      BREAK
    CASE LOOP = 2
      USE DSK2.74LS'S2
      BREAK
    CASE LOOP = 3
      USE DSK2.74LS'S3
      BREAK
    CASE LOOP = 4
      USE DSK2.74LS'S4
      BREAK
    CASE LOOP = 5
      USE DSK2.74LS'S5
      BREAK
  ENDCASE
  WHILE .NOT. (EOF)
    IF (1.CRS)<(1.MNS)
      DO \ORD
    ENDIF
    SELECT 1
    MOVE
  ENDWHILE
CLOSE
REPLACE LOOP WITH LOOP + 1
ENDWHILE
CLOSE ALL
INSTALL REMOVE \ORD
RETURN © Martin A. Smoley 1990
```

```
*                07/08/90                \ORD/C
SELECT 2
APPEND BLANK
REPLACE 2.COPNM WITH 1.COPNM
REPLACE 2.MFGPARTNUM WITH 1.MFGPARTNUM
REPLACE 2.CPRICE WITH 1.CPRICE
REPLACE 2.CRS WITH 1.CRS
REPLACE 2.ORDQT WITH (1.MXS-1.MNS)
REPLACE 2.CHK WITH ((1.MXS - 1.MNS) /2);
+ 1.MNS
WHILE (2.ORDQT+2.CRS)<2.CHK
  REPLACE 2.ORDQT WITH 2.ORDQT+1
ENDWHILE
REPLACE 2.LCTN WITH 1.LCTN
REPLACE 2.LASTSALE WITH 1.LASTSALE
REPLACE 2.LRESTOCK WITH 1.LRESTOCK
REPLACE 2.NSN WITH 1.NSN
REPLACE 2.DESC WITH 1.DESC
RETURN © Martin A. Smoley 1990
```

Continued Next Page.

TI-BASE -FROM INSCEBOT

TUTORIAL 21.1.1 By Martin Smoley
 North Coast 99'ers - July 21, 1990
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This process starts with REPLACE 2.CHK WITH (1.MXS - 1.MNS). If the maximum is 10 and the minimum is 5 and we know that the current stock is below 5 then we can safely order 5 items without going over the maximum. For my own preference, I'd like to see the stock level greater than the half way point between MNS and MXS. By mental deductions I can see that half way between 5 and 10 would be 7.5. REPLACE 2.CHK WITH ((1.MXS - 1.MNS) / 2) + 1.MNS does my mental calculation and places the answer in CHK. As you can see, this process will not produce a whole number, so I have set CHK to one decimal place. If you set a field to zero decimal places the field will be truncated to a whole number value. The WHILE loop checks to see if the amount we have in stock plus the amount we should order are less than the number we are CHECKing. If so, it adds 1 to the ORDQT until (ORDQT + CRS) is no longer less than CHK. This way of establishing our new stock level is slow, cumbersome and poor programming technique, but I do not consider those thoughts. This sequence will work, it will produce the end result we want and (most important) it will give the non programmer an opportunity to understand the thought process that he or she must use and the calculating process that TIB must use to find the desired answer. You may also want the ordering CF to scrutinize the prospective fields in greater detail. For example, you may want TIB to look at the last sale date and compare it to the last restocking date. If a large amount of time has elapsed you may not want to restock as many items. If you sell out in a short period of time, you may want to double or at least increase your order. I also decided to direct my order list to another Database,

rather than the printer, as the CFs name might indicate. This is because the price and availability may have changed after your last restock. If you use a Database, as I have, you can look at the data and decide if you want to order more or less of a particular item, based on its popularity. You can also check the current prices against a catalog or by other means. After editing the ORDER Db to your satisfaction, another CF can be used to write out an order form for the materials you require. If you have a normal supplier list, which you would keep in a normal supplier Database, sorted by their Normal Supplier Number (NSN), TI-Base can break down the ORDER Db and send orders to each supplier for those parts marked with that specific number. This seems like a lot of work if you consider my example (IC chips costing from 14 to 50 cents each), but the same ideas can be applied to larger items costing much more. And, if any of you are regular shoppers at Radio Shack you know that even for a 69 cent purchase, they run the barcode reader over the package, they ask for the last four digits of your phone number and your last name and their computer does the rest. As a matter of fact, the smaller your profit margin is the more advantageous the computer inventory control becomes.

Ordering Updates

I have decided to not be involved in the distribution of the new TI-Base updates. If you received any updates from me in the past, I suggest you contact Dennis Faherty by mail for your future updates. Dennis is cheerful, courteous and helpful, and except for the fact that you will probably have to send back your current diskettes to get the new update price, you should have no trouble dealing directly with Inscebot. I will start any future tutorials with Inscebot's address for your convenience. I think that the new updates will cost \$14.95, but I'm not sure.

My Last Tutorial!

This tutorial and any future tutorials should each be considered my last tutorial. Because of many other demands on my time, I find it almost impossible to allocate the time needed to write the TI-Base Tutorials. I have not lost the interest, but I have lost the energy needed to get the job done. Therefore, this tutorial should be considered my last. If by some chance I find the time and mental ability to write another tutorial, then that should be considered my last. "You will no longer see (Continued Next Month.) at the end of the tutorials." No matter what happens I plan on throwing in the towel by the end of this year. It's been a lot of fun, but there are many things I would like to try when and if I find a little spare time.

CREATED 07/08/90 CHANGED 06/17/90

FIELD	DESCRIPTOR	TYPE	WIDTH	DEC
1	COPNM	N	005	00
2	MFGPARTNUM	C	010	
3	CPRICE	N	006	02
4	CRS	N	003	00
5	ORDQT	N	003	00
6	CHK	N	004	01
7	LCTN	C	004	
8	LASTSALE	D	008	
9	LRESTOCK	D	008	
10	NSN	C	003	
11	DESC	C	040	

ORDER Database Listing with STRUCTURE above.

Good luck. Marty.

REC	COPNM	MFGPARTNUM	CPRICE	CRS	ORDQT	CHK	LCTN	LASTSALE	LRESTOCK	NSN	DESC
0000	1005	74LS05	0.14	3	5	7.5	D2B1	04/15/90	08/21/89	24	Hex Inverter (Open Collector)
0001	1008	74LS08	0.14	2	6	7.5	D2B4	06/19/90	05/15/90	9	Quad 2-in AND Gate
0002	1038	74LS38	0.24	4	5	7.5	D5B3	02/25/90	01/20/90	24	Quad 2-in NAND Buffer (Open Collector)
0003	1373	74LS373	0.50	3	5	7.5	D7B2	05/02/90	01/09/90	24	Tri-State Octal Dual Latch

**MEETING DATES
FOR
1991-1992**

C.O.N.N.I. BOARD MEMBERS

3RD SATURDAY
13 APR 1991
18 MAY 1991
15 JUN 1991
20 JUL 1991
17 AUG 1991
21 SEP 1991
19 OCT 1991
16 NOV 1991
21 DEC 1991
18 JAN 1992
15 FEB 1992
21 MAR 1992

4TH WEDNESDAY
24 APR 1991
22 MAY 1991
26 JUN 1991
24 JUL 1991
28 AUG 1991

Pres. - Chuck Grimes	614/268-8821
Treas - Everett Wade	614/262/6346
Sec/Sat - Jim Peterson	614/235-3545
Sec/Wed - Dick Beery	614/459-3597
Membership - Harley Ryan	614/231-1497
Librarian - Chuck Grimes	614/268-8821
Disk - David Truesdale	614/238-0719
Cassette - Sonny Grubb	614/1-873-8708
Cartridge - Jim Seitz	614/875-5519
NL Exchange - Jean Hall	614/885-4223
Chuck's BBS	614/268-1994
TIABS BBS	614/852-4579
Vice Pres. - Bill Sheppard	614/881-5742
Spirit of 99 BBS	614/263-3412
Irwin Hott	614/263-5319
Dick Beery	614/459/3597
Co-Editors/Spirit of 99 Newsletter	
Jean Hall	614/885-4223
Bob DeVilbiss	614/891-0566

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Spirit of 99

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