WORDPLAY

The PUNN Newsletter - Portland, Oregon
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PUNN

What's Inside

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From the President

As I was sitting down to write a column, it was hard for me to come up with a theme that would be interesting. Then it occurred to me, there are a number of people doing things, each and every month for PUNN that are vital to its very existence.

Of course, I'm referring to the folks who act as Vice President, Secretary, Treasurer, Newsletter Editor, Program Chairman, Membership Chairman, Hardcopy Librarian, Software Librarian(s) and BBS SYSOP.

What it means for me, is that I can count on each of them to do their part each month to make sure we have the various services we need as a Users Group. Generally, things are done without any particular mention, except when something fails to happen.

As an example, we count each month on having an advertisement in the local newspaper, to attract new users. Or, we have come to expect that Micropendiums will be on sale at the General meeting. But who picks up the mail and makes sure it gets to the Treasurers table on meeting night? Or who handles the renewals and other mail? How does the phone bill for the BBS get taken care of? Who licks the stamps and folds the Newsletters? Who comes up with fresh ideas for each months program? Who makes up the Disk of the Month? Who stands up and makes a presentation when the scheduled speaker can't make the meeting? Who records the minutes of the meetings <in GREAT detail>?

All you have to do to answer these questions is take a look around you at the next meeting. The person sitting next to you is likely to be contributing something. They are members, just like yourself, who come to a meeting to enjoy the sharing of information and comraderie of others with similar interests. All too often, we forget they came to the meeting for the same reasons we did.

Take just a moment to say "Thanks!" A little appreciation goes a long ways. And, if the moment runs away

News and Views

THE board meeting for March was held at the home of Al Kinney- a good meeting and good refreshments- - -YOU are invited too board meetings-this is where club business is transacted-come and put in your ideas- - -NEXT meeting will be at Dale Kirkwood's- - -MIKE CAULKINS reminds all those with outstanding books from the library-PLEASE RETURN!-these books are for all and they have little value when not available to members- - -READ Al Kinney's excellent report of the TI Faire held in February in Las Vegas-you'll find a condensed version in this issue and the full report on the BBS- - -THERE will be coffee again at the March meeting-don't forget to put a few coins in the pot so this program can be continued- -THERE were 6 re-newals for membership at the last meeting-watch the date on your mailing label-it tells you when your dues are due- - -YOU won't want to miss the April meeting-all about files-the ability of your computer to handle files is one of the most important features- - -THE DOM will feature music, a board game and solitaire along with some other games (all new)-don't forget to pick up yours- - - REMEMBER-we all have to die sometime, the purpose of modern medicine is to see that we pay for the privelage.

High Res Graphics - Part I

NOTE FROM THE EDITOR: The article that follows comes to us from the Los Angeles Topics. It was written by Ann Dhein of that club as part of a two part series. Because of its length we have divided it into four parts. Part I appears this month and Parts II, III and IV will follow in sucessive months- - -

INTRODUCTION

There was a time when TI-99/4A owners felt abandoned. In place of the promising machine that had been purchased with such high hopes they had been left with an orphan. These users lived with the knowledge that they had a superb graphics system at their fingertips, but unless they were good programmers, they had no way to conviently access the the graphics. Commercial graphics software was just not available. Now a few short years later things have changed drastically. We are left on the other side of the fence wondering in a-mazement how we are ever going to figure out which, of all that great-sounding graphics software, is really worth investing in. What actually can be expected of a drawing program? Is there one perfect program out there waiting for me to discover? Or will I need several programs to meet all my needs? These are the topics that will be explored in this series. This month we'll look at what graphic programs do and what's on the market. Then a definition of a good basic drawing program can be given.

YOUR ELECTRONIC BILLBOARD

For graphics purposes, the 99/4A screen is simply a grid of blocks. Imagine a piece of graph paper and mentally mark off *32 little* squares across the top. Underneath that mark a second row of 32 blocks and then further rows until you have 24 rows. Now you have a nice facimile of your TV or monitor screen. If you were to count all those marked-off squares you would find that you had 768 individual blocks. Each block is just the right size to hold one character that can be typed in from the keyboard. These are the normal, everyday letters, numbers and punctuation that you use all the time. In computer terminology they are all given a special name: "ASCII" characters. A programmer can effectively "erase" these ASCII characters and define a new pattern of his own choosing. This is done in BASIC and EXTENDED BASIC with the Call Character subroutines. The programmer assigns each character block two colors (a foreground and a background) from the 16 colors that the TI computer has available.

In Extended Basic built-in sprites may be used as well. Sprites are character-sized graphics that have the capability of moving around the screen independently of the background. They can be defined to any shape, then colored and magnified. Such things as location, speed and distance can be easily manipulated. (They can also be present in high resolution graphics, but in this case they can no longer move.)

An assembly language programmer also has access to multicolor mode. Here the display is divided into 48 rows, each containing 64 "boxes", or blocks. The blocks are not able to be defined in the manner of the larger pattern mode blocks, but each of the 3072 blocks can be a separate color, chosen from any of the 16 colors available. Sprites can also be used in multicolor mode, but not text. The multicolor mode cannot be used in Basic except with assembly language software that uses a special module such as Editor/Assembler, Mini Memory or Extended Basic.

Text mode is familiar to us through the use of such cartridges as TI Writer and Multiplan. Each of these programs employs a display that is 24 lines long, but the character blocks have been increased to 40 across which gives us 960 screen positions instead of 768. Although sprites cannot be used and only two colors (foreground and background) are allowed at one time, the text mode can be used for graphics. Still, text mode is most suited for just that - text.

In all three of these modes - pattern, text and multicolor - each block is composed of a number of dots. In the multicolor mode each block has 16 dots: 4 dots wide and 4 dots high. In text mode the character blocks are 8 dots high and 6 dots wide - 48 dots for each character. Pattern mode, with only 32 blocks across the screen consists of 64 dots for each block - 8 across and 8 high. This means that there can be 64 times 768 dots on the screen at one time in pattern mode - 49,152 in all. Text mode has 46,080 (48 x 960). In computer jargon these dots are called "pixels" (for PICture ELement) and are the smallest individual units on the screen. It is the 49,152 pixels from pattern code that we are going to focus on, because in the high resolution (or "bit map") mode, each of these 49,152 pixels is able to be turned on and off individually. The whole idea of a drawing program is to let you do this quickly and easily.

With the high resolution in the bit map mode, the screen is considered to be a grid 192 pixels high and 256 pixels wide. That's still only 32 character blocks across and 24 blocks high, but now each pixel can turned on or off (drawn or erased) independently of any other pixel. For color the computer divides each pixel-row into 32 groups of 8 pixels. The computer can assign a background color and a foreground color to each 8-pixel group. This is what our electronic drawing board consists of in all the popular art packages we have today. It is on these drawing programs that our interest will now focus.

IN THE BEGINNING . . .

When Texas Instruments first unveiled the TI-99/4A computer in June of 1979, there were only a handful of applications of any kind available and all those were in module format. One of these was Video Graphs which was billed as "an easy-to-use Graphics System which lets you draw in 14 colors on the screen with a whole new electronic paintbrush concept". This drawing can be done in high resolution with a single pixel line width, or in the multicolor mode by placing 16-pixel colored dots anywhere on the screen. The user could also command the computer to create graphic images by using the Building Blocks section. Here, many graphic characters of various geometric shapes are located a-long the bottom of the screen. Select one, pick all or part of it up with the keyboard or joystick and place it where you want it in your picture.

Video Graph's demonstrations were impressive when the module was new, and although the bright, mosaic-like patterns may seem archaic by today's standards, the module actually contains the rudiments of the more sophisticated graphics systems we know have. High resolution drawing was there, as was the computer's less familiar multicolor mode. Even the concept of icons which is so popular in today's graphics software made its appearance here, in the building block section. This module was intended purely for personal enrichment, not as a tool. There is no way to use the graphics you create in your own programs and no way to print them out. In fact, the only way drawings can be saved at all is on tape.

If you have Video Graphs you have probably seen for yourself the fascination it holds for children. Children love to draw and this module provides a medium for creative expression unhampered by long lists of functions that must be remembered. Indeed, anyone with an unexpanded system will find that it can still provide hours of enjoyment and satisfaction.

No other drawing programs were ever released by Texas Instruments, but users themselves soon began circulating a number of very good programs made available through local user's groups and through the International Users Group in Bethany, Oklahoma or Amnion Helpline in Bakersfield, California. These first user-written programs were in Basic, mainly graphics screens. Also a couple of entertaining drawing programs came a-long such as Color Crayon where you could draw colorful character-size blocks using the keyboard or joysticks. There were also utilities for designing graphics characters to be used in Basic (and later Extended Basic) programs. There was even a program or two for printing out banners if you were lucky enough to have a printer. When the Editor/Assembler package was finally released, program quality rose. Like 3rd. party software, these user written programs have tended to become more and more sophisticated with time and today some very good graphics programs are available for only a fraction of their worth. (Next month: First Commercial Programs.)

Don Steffan on HEX

Last month we ran what I thought should be a good program for all TI-er's. It was a program that would convert the math forms (hexidecimal, binary and decimal) one to the other.

Well it did just that, but the program I selected was rather long and slow.

During the break at the last meeting, our good member Don Steffen showed me a program that he wrote that is much quicker and shorter. He wrote the program after reading the one in Word Play.

Don agrees that having a good knowledge of Hex, Decimal and Binary is important to be "computer wise" and congratulations to him for a splendid program and sharing it with us. It is this type of input that makes the editors job worthwhile. It means that people are reading the Word Play and if something doesn't look right or something could be improved they are speaking out.

His program is listed below and it takes just a few minutes to type in.

```
100 ! ###############
110 ! # NUMBER CONVERTER #
120 ! ###############
130 ! BY DON STEFFEN XEANIC
140 12/21/83 VERSION 1.0
150 !
160 !INITIALIZE VALUES
170 CALL SCREEN(1)
180 DIM C$(14),V$(5),M$(6)
190 CALL CLEAR :: FOR I=1 TO
3 :: READ C$(I),V$(I),M$(I)
:: NEXT I :: FOR I=1 TO 6 ::
READ F(I),T(I),L(I)
200 DISPLAY AT(I#2,I):I;".."
;C$(I));" TO ";C$(T(I))::
NEXT I
210 DATA DECIMAL,0123456789,
6,HEXIDECIMAL,0123456789ABCDEF
FFF,BINARY,01,11111111111111
11
220 DATA 1,2,5,1,3,5,2,3,4,2
,1,4,3,1,16,3,2,16
230 DISPLAY AT(15,1):"CHOICE
? " :: ACCEPT AT(15,2)VALID
ATE("123456")SIZE(1):C :: I
F C=0 THEN 410
240 CALL HCHAR(16,1,32,256):
: DISPLAY AT(18,1):"TYPE IN
$ ":C:I);" NUMBER UP TO ";M$(
F(C))
250 ACCEPT AT(I),()VALIDATE(
V$(F(C))):N$:NS :: ON
C GOSUB 270,270,320,350,370
,390,410
260 DISPLAY AT(22,1):C$(T(C)
);" NUMBER IS ";D$ :: H$,B$,
I$,C$="" :: H,K,V,D,Y=0 :: G
OTO 230
270 BP-
```

```
280 !****DECIMAL TO HEXIDECI
MAL
290 D=VAL(N$):: FOR I=3 TO 0
STEP -1 :: H=INT(D/15^I)::
H$=H&CHR$(H+48-(H>9)#7)):: D
=D-16^I#H :: NEXT I
300 IF C=2 THEN N$=H$ :: GOT
O 320 ELSE D$=H$ :: RETURN
310 !****HEXIDECIMAL TO BINA
RY
320 FOR I=1 TO 4 :: S$=SEG$(
N$,I,1):: K=ASC(S$)-48 :: K=
K+(K>9)7 :: FOR Y=0 TO 3 ::
IF K>2^(3-Y)THEN B$=B$&"1"
ELSE B$=B$&"0"
330 K=K+2^(3-Y)#(K>2^(3-Y))
:: NEXT Y :: NEXT I :: D$=B$
:: RETURN
340 !****HEXIDECIMAL TO DECI
MAL
350 FOR I=3 TO 0 STEP -1 ::
K=ASC(SEG$(N$,4-I,1))-48 ::
K=(K>9)#7+K :: D=D+K#16^I ::
NEXT I :: D$=STR$(D):: RETU
RN
360 !****BINARY TO DECIMAL
370 FOR I=1 TO 16 :: D=D+VAL
(SEG$(N$,I,1))#2^(16-I):: NE
XT I :: D$=STR$(D):: RETURN
380 !****BINARY TO HEXIDECIM
AL
390 FOR I=1 TO 13 STEP 4 ::
S$=SEG$(N$,I,4):: FOR Y=0 TO
3 :: K=K+VAL(SEG$(S$,Y+1,1)
)#2^(3-Y):: NEXT Y :: H$=H$&
CHR$(K+48-(K>9)#7):: K=0
400 NEXT I :: D$=H$ :: RETUR
N
410 STOP
```

Listing for "Color"

```
100 CALL CLEAR :: CALL SCREE
N(2):: K=2 :: W=32 :: FOR S=
88 TO 136 STEP 8 :: CALL CHA
R(S,"FFFFFFFFFFFFFFFF00")::
NEXT S
110 CALL CHAR(42,"0000303030
30"):: CALL COLOR(1,14,2,8,1
3,3,9,4,5,10,6,8,11,7,9,12,1
0,11,13,12,14,14,15,16)
120 FOR S=88 TO 136 STEP 8 :
: DISPLAY AT(1,K):CHR$(S)&""
&CHR$(S+1):: K=K+4 :: NEXT S
130 CALL HCHAR(2,1,32,736)::
CALL SPRITE(#1,42,16,17,121
):: Y=3 :: X=16 :: CALL SOUN
D(-100,660,9)
```

```
140 CALL JOYST(1,K,S):: X=X+
SGN(K):: Y=Y-SGN(S):: IF Y>2
4 THEN Y=1 ELSE IF Y<1 THEN
Y=24
150 IF X>32 THEN X=1 ELSE IF
X<1 THEN X=32
160 CALL LOCATE(#1,Y#8-7,X#8
-7):: CALL KEY(1,K,S):: IF S
=0 THEN 140 ELSE IF Y>1 THEN
CALL SOUND(-90,-2,15):: CAL
L HCHAR(Y,X,W):: GOTO 140
170 IF K=19 THEN 130 ELSE CA
LL GCHAR(Y,X,W):: CALL SOUND
(-90,880,7):: CALL HCHAR(1,2
,W):: GOTO 140
```

New Members

Welcome these 3 new members:
    Eric Hutsoft
    Neccol Johnson
    Robert Edward
We are now 91 members strong. Let's continue our growth by inviting prospective members to our meeting.

Program for April

The program for April will be a on "FILES". Ted Peterson will discuss simple files that you can set up when you have a program. Al Kinney will explain more complex files that can be used on your TI.

There are a lot of new files now being produced for use on the TI-994A and this program should help all of us take advantage of them.

In May we will set up two consoles and run both of them. One of the computers will be an original unaltered version just as it came from Texas Instruments and the other one will will have modifications made. Some of our members have added the 32k chip to the mother board (inside the computer) so that you do not need the the 32k expansion card in the Peripheral Expansion Box. You will see how this change causes the machine to run a lot faster. Come and see this in April.

Also in attendance at the April meeting will be Jim Luque. He has the distribution rights to programs written by Roger Merritt.

He plans to demonstrate 2 new programs written by Roger. The programs are entitled "PICTURE IT" and "PRINT IT". What the programs do are to enable you to use TI-Artist Instances and combine them with TI-Writer files. You will be able to see exactly how the programs work. It promises to be a nice demonstration, one that you word processors should not miss.

We need to know what you would like in programs. Please call Ted Peterson and let him know. The phone number is 244-1587.

Little Known Fact

Here's a little known fact on Funnelweb. Have you ever had a program where you were not sure whether it ran in XB or E/A? Here is how to tell. Load Funnelweb Editor and then enter the SD function (show directory). After the directory is displayed, press FCTN = and the program will then read the directory and tell you if a program is XB or E/A. You will find the information in the REC Column.

From the President

with your imagination, let us know. There are lots of other things we could do, with with some help.

It is increasingly important that we hear from you, the membership, about what you want to do and see at the general meetings. I was recently amazed to see someone, whom I thought was a PUNN member, requesting assistance on COMPUSERVE. Now COMPUSERVE is a nice place, inhabited by lots of dedicated TI users, but so is PUNN! Let us know what you need.

—Al Kinney

```
****************************************
*                                      *
*   Murphy's Rule:                     *
*        If everything seems to        *
*    be going well, you obviously      *
*       don't know what the hell       *
*          is going on.                *
*                                      *
****************************************
```

TI Writer Tips

SOME of you may use TI-Writer enough to be extremely proficient at it, while others may know just enough to get by. By necessity, I've had to be counted among the former. With my trusty Gemini 10X, I've written dozens of papers as well as a Master's Thesis with my TI-Writer. Along the way, I've picked up a few nifty tricks that make TI-Writer perform like the software written for the Big Blue. I thought that I might share a few of these tricks with you. All of you will know some of what follows, and some of you may even know everything, and still others may prefer to do things differently. But some of these tips may benefit enough readers to make this article worthwhile. Many of the hints which follow will work only with Gemini or compatible printers, so be forewarned.

When writing a paper, I never worry about formatting commands—at first. I set the tabs at 2 and 38, so that all the text can be viewed within the monitor screen. I then proceed to type to my heart's content, knowing that the formatting commands will be added later. When text is typed this way, you will run out of memory in about 630 lines or so. Don't type that much. Stop at around 400 lines, save it, and start a new file. This is convenient for two reasons. First, it takes forever to save and load a 600 line file (about 30 seconds per 100 lines). Second, if something has to be added to the file, you still have room to do so without needing to break it up. While it really doesn't matter (technically) if a file is broken up, this may prevent comprehension difficulties when you are composing text.

After typing the text, and saving it (calling it, say, DSK1.XXX), I call up my "MASS" file (I literally call it "DSK1.MASS" for lack of a better name.), which I always keep nearby. As many of you know, one file (when printed) can call up another using the "Include File" (.IF DSK1.FILENAME) formatting command. To ease things a bit, I put nearly all my formatting commands in one file, with the last line being ".IF DSK1.XXX". The formatting commands I use (but you may prefer others) are:

```
.LM 9
.RM 69
.PL 58
.LS 2
.FI
.HE
(or .FO)
.IN+5
.IF DSK1.XXX
.IF DSK1.YYY
```

This will give double-spaced text, about 25 lines long, nifty margins, with page numbers, no less. Don't forget to load the file "DSK1.MASS, not "DSK1.XXX" when formatting.

You are easily able to embed two printer commands, besides the familiar (underscoring) and (overstriking commands (others can be embedded, but with more difficulty; these will be discussed later in this article). The two commands are emphasized and double-strike. The "Emphasized" command is "ESC E". To embed "ESC E", type the following: "CTRL U", "FCTN R", "CTRL U" (these three keystroke combinations will henceforth be called "ESC" "E". You will see on the screen a funny character and an "E". Don't put a space be-

tween these characters. These will not be printed, and unlike "&" and "@", they will work even if you print the file (PF) while you are in the Edit mode. Everything following these symbols will be emphasized. To cancel the command, type "ESC" "F".

IMPORTANT NOTE!

If you do not intend to "fill" your your text (i.e. include the formatting command .FI), or if you are printing in the Edit mode, then watch out! Embedded commands exist in the eyes of the monitor, but they do not exist in the eyes of the printer. Consequently, all printed text will be moved two places to the left (at least for the line of text in which the embedded command appears). Embedded double-strike is "ESC" "G", and is cancelled by "ESC" "H". This command is different from "@" in that "ESC" "G" continues to double-strike until commanded to stop. The same warning concerning moving text applies here too.

TRANSLITERATE STATEMENTS

For some documents, I add a few "Transliterate" commands (.TL x:y,z). A transliteration statement enables the printer to print out y,z whenever it encounters x, without actually printing x. As an important example, think about "underlining". NO, not underscoring, but underlining. For those of us with dot-matrix printers, this is a big difference. Underscoring merely puts a line under each letter, while underlining puts a continuous line under whole words. To do this, include two formatting lines:

```
.TL 60:27,45,1
.TL 62:27,45,0
```

With this, whenever (<) is encountered, the printer begins to underline and will continue to do so until it encounters (>). Therefore, if these commands are used, <these words> will be underlined, while these words will be underscored.

ANOTHER IMPORTANT NOTE:

If your left margin is other than "0", and you are underling a lot of continuous text, you will have annoying underlines in the left margin. To avoid this, there are two remedies. One is to print out your document first, and then add the ">" at the appropriate places to cancel the underline and "<" at the beginning of the next word to begin it again, and so on. The second remedy is to place your tabs at 9 and 69 when you are typing your document (using those annoying windows) and placing the "<" and ">" at the appropriate places in the text (and make sure that you do not "fill" your document). I find this to be the easiest method. Because of the hassles, underlining is most ideal for using with words or short phrases only.

Maybe you want to italicize certain words in your text. Put these .TL commands in:

```
.TL 123:27,52
.TL 125:27,53
```

With these commands, everything following a *** will be italicized and everything following a *** won't be. This is great if you want to italicize just one word in the text for stress.

Perhaps you need a subscript for footnotes:

```
.TL 94:27.83,0
.TL 92:27,84
```

Tell it with Style

NOTE FROM THE EDITOR: The Word Processor that functions with our computers has made most of us into letter and report writers. We are writing more that ever before-I know I am-. But alas, how many of us remember all the rules of grammar and good word usage that we learned in school? Not too many of us I suspect, so this month we begin a series of brief articles on grammar. It will be an interesting series, I assure you and not intended to be a boring lecture. I dug most of the material up from books I have had for years. They have been condensed and brightened up and are intended to make your TI-Writer turn out better appearing letters and articles.

A BASIC RULE. . .

Probably the best rule to follow if you want to improve your writing is to go easy on following a lot of rules. Most people can write a letter, tell a story or produce an article best by just telling it like it is. However, when the experts come in, simplicity and common sense give way to an incredible array of rules and nonsense.

Try to keep in mind when writing anything that you are telling a story, describing how-to-do or giving an opinion. Most sucessful writers "get on with it". They get right down to what they have to say and this is what holds a readers attention.

I think that many of us are still hindered in good writing by some school experiences where we had to perform to set standards. Proper English is encouraged but don't let that requirement stop you from expressing yourself in a natural manner.

So when you sit down to your computer keyboard, forget the cliches, compelling phrases and cold impersonal sentences and let your style come out as if you were actually telling the story instead of writing it.

(More next month)

Fun with Color!

The following program is just FUN! It requires a joy stick.

I doubt that it can be used in any worthwhile program, but it is easy to type in so why not try it.

When you run the program the screen will go black and fourteen different colored boxes will be displayed across the top of the screen. In between each pair of colors is a black box and this can be used as a color too.

To pick up a color and use in your drawing, use a joy stick to place the white dot on top of a color and press the fire button. The selected color is displayed in the upper left hand corner of the screen. Now move the white dot around the screen with the joy stick and when you want to place the color push down on the fire button. If you hold down the fire button you will be drawing continuously as you move the white dot.

When you are ready for a new color, go to that color with the white dot and again press the fire button and continue the drawing.

The program was printed in the February issue of the KC 99er, with original credit given to "Miller Graphics", Feb. 1984.

TI Writer Tips
(continued from page 4)

When "^" is encountered, everything following it is in superscript. The command is stopped when "\" is encountered. If your text is not being double-struck, then after "^", you should add "ESC" "H", since the superscript automatically cancels it.

STUPID PET TRICKS

I have found a few unusual tricks that are useful on occasion.

a. CTRL Y. This will enable you to backspace beyond the left margin as you are typing. Mention of this ability is buried in the TI-Writer manual.

b. CTRL K. This deletes, in one stroke, everything to the right of the cursor.

c. CTRL V. This moves the cursor, in one stroke, to the beginning of the line.

d. BEL. When I have a long document (30+pages), I sometimes transliterate some symbol I don't use (e.g. "!") into ASCII "7" (BELL or BEL). I then put ! at various places in the text. Then, when the text is printing, and I'm in the kitchen cooking hotdogs, I know exactly where in the text the printer is printing. "!!!!" will make the printer ring four times.

e. After you have proofread a hardcopy of your text, and want to make a change in your file, it is often difficult to find the exact place in your file where to make the change. Use the Find String Command. "Search" for an unusual or capitalized word in the vicinity of your error (or search for your error, if it is a misspelling). This is easier than reading everything on the screen.

f. Using the transliterating style demonstrated earlier, one can change the printing pitch at will anywhere in the text.

(from the Bytemonger, by Edward Stamm.)

D O M
(Disk of the Month)

The DOM (Disk of the Month) for April includes 8 new games prepared by Jim Thomas. Some music is part of this disk and you will enjoy it.

Also available will be the latest versions of Funnel Writer and DM-1000. Both of these programs have had some minor bugs fixed and will run smoother.

TELCO has been available on the BBS but if you have not had the opportunity to download it you can get it from the library also. This new program is now being used by some people instead of Fast Term. TELCO has some features not available in Fast Term. Try it out and make your own choice which one you prefer.

Librarian Jim Thomas reports that he now has over 260 keyboard BASIC, cassette files. He will have a list of many of these proat the meeting. For those members with minimum systems, these programs could add a lot of additional capability to your computer.

We encourage you to support your LOCAL LIBRARY! This function of your club is an is an important money raiser and the funds generated go right back to you in Club Activities.

Conversion

This public domain program will help you with any problem you may have converting various sizes, lengths or quantities from one standard to another. It is very easy to use. Just run the program and follow the prompts and the results will show up on the screen.

As written the program does not print out to a printer, but I am sure someone out there could accomplish that with a little work.

This programs like all others published in Word Play will be available in the Library and you are urged to check use this service.

```
10 @=1 :: =2 :: CALL CLEAR
:: PRINT TAB(7);"!!!!!!!!!!
!!!!";TAB(7);"! CONVERSIONS
!";TAB(7);"!!!!!!!!!!!!!!!!"
: : : : : : :: CALL C
HAR(96,"") :: FOR A=@ TO 8 ::
CALL COLOR(A, 15)
20 NEXT A :: CALL SCREEN(13)
:: GOSUB 710 :: PRINT " PRES
S ANY KEY TO BEGIN..." :: CA
LL SOUND(150,1400,5)
30 CALL KEY(@,B,C):: IF C=0
THEN 30
40 CALL VCHAR(@,3,72,672)::
GOSUB 710 :: PRINT "CHOOSE F
ROM ONE OF THE FOLLOWING C
ONVERSION TYPES:": :
50 DATA TEMPERATURE,MEASUREM
ENT,LENGTH,CAPACITY,ANGULAR,
ENERGY,PRESSURE,(END PROGRAM
)
60 RESTORE 50 :: D=8 :: GOSU
B 750 :: GOSUB 760 :: ON B-4
8 GOTO 80,200,270,370,440,49
0,590,70
70 CALL CLEAR :: END
80 GOSUB 710 :: CALL CHAR(92
,"") :: PRINT TAB(9);"
!..TEMPERATURE.."
90 DATA \FAHRENHEIT-\CELCIUS
\CELCIUS-\FAHRENHEIT,\CELCI
US-KELVINS,KELVINS-\CELCIUS,
\FAHRENHEIT-KELVINS
100 DATA KELVINS-\FAHRENHEIT
,LEAVE TEMPERATURE
110 RESTORE 90 :: D=7 :: GOS
UB 740 :: PRINT TAB(9);"
120 GOSUB 760
130 ON B-48 GOTO 140,150,160
170,180,190,40
140 PRINT "\FAHRENHEIT-\CELC
IUS":"
: : : :: INPUT "ENTER \FA
HRENHEIT: ":E :: PRINT :
" ";STR$(E);"\F=";STR$((E-32
)*(5/9));"\C" :: GOSUB 720 :
: GOTO 80
150 PRINT "\CELCIUS-\FAHRENH
EIT":"
: : : :: INPUT "ENTER \CE
LCIUS: ":F :: PRINT : : "
";STR$(F);"\C=";STR$(F*(9/5)+
32);"\F" :: GOSUB 720 :: GOT
O 80
160 PRINT "\CELCIUS-KELVINS"
:"
:: INPUT "ENTER \CELCIUS: "
:F :: PRINT : : " ";STR$(F)
;"\C=";STR$(F+273);" KELVINS
" :: GOSUB 720 :: GOTO 80
170 PRINT "KELVINS-\CELCIUS"
:"
:: INPUT "ENTER KELVINS: ":
B :: PRINT : : " ";STR$(B);
" K=";STR$(B-273);"\C" :: GO
SUB 720 :: GOTO 80
180 PRINT "\FAHRENHEIT-KELVI
NS":"
: : : :: INPUT "ENTER \FAHR
ENHEIT: ":E :: PRINT : : "
";STR$(E);"\F=";STR$(((E-32)
*(5/9))+273);" KELVINS" :: GO
SUB 720 :: GOTO 80
190 PRINT "KELVINS-\FAHRENHE
IT":"
: : : :: INPUT "INPUT KELVI
NS: ":B :: PRINT : : " ";ST
R$(B);" K=";STR$((B-273)*9/5
+32);"\F" :: GOSUB 720 :: GO
TO 80
200 GOSUB 710 :: PRINT TAB(8
);"..MASS/WEIGHT.."
210 DATA POUNDS-KILOGRAMS,KI
LOGRAMS-POUNDS,POUNDS-NEWTON
S,NEWTONS-POUNDS,LEAVE MASS/
WEIGHT
220 RESTORE 210 :: D=5 :: GO
SUB 740 :: PRINT TAB(8);"
230 GOSUB 760 :: ON B-48 G
OTO 240,250,260,260,40
230 PRINT "POUNDS-KILOGRAMS"
:"
:: INPUT "ENTER POUNDS: ":G
:: PRINT : : " ";STR$(G);"
LBS=";STR$(G*.45359237);" K
G" :: GOSUB 720 :: GOTO 80
240 PRINT "KILOGRAMS-POUNDS"
:"
:: INPUT "ENTER KILOGRAMS:
":B :: PRINT : : " ";STR$(B
);" KG=";STR$(B*1@/.45359237
));" LBS" :: GOSUB 720 :: GO
TO 200
250 PRINT "POUNDS-NEWTONS":"
INPUT "ENTER POUNDS: ":H ::
PRINT : : " ";STR$(H);" LBS
=";STR$(H*.45359237);"NEWTON
T" :: GOSUB 720 :: GOTO 200
260 PRINT "NEWTONS-POUNDS":"
INPUT "ENTER NEWTONS: ":I ::
PRINT : : " ";STR$(I);" NT
=";STR$(I/9.8*(1@/.45359237))
;" LBS" :: GOSUB 720 :: GOTO
200
270 GOSUB 710 :: PRINT TAB(1
0);"..LENGTH.."
280 DATA INCHES-CENTIMETERS,
CENTIMETERS-INCHES,FEET-METE
RS,METERS-FEET,MILES-KILOMET
ERS,KILOMETERS-MILES
290 DATA LEAVE LENGTH MODE
300 RESTORE 280 :: D=7 :: GO
SUB 740 :: GOSUB 760 :: ON B
-48 GOTO 310,320,330,340,350
360,40
310 PRINT "INCHES-CENTIMETER
S":"
: : :: INPUT "ENTER INCHES:
":J :: PRINT : : " ";STR$(
J);" IN=";STR$(J*2.54);" CM"
:: GOSUB 720 :: GOTO 270
320 PRINT "CENTIMETERS-INCHE
S":"

: : :: INPUT "ENTER CENTIME
TERS: ":K :: PRINT : : " ";
STR$(K);" CM=";STR$(K/2.54);
" IN" :: GOSUB 720 :: GOTO 2
70
330 PRINT "FEET-METERS":"
: : : :: INPUT
"ENTER FEET: ":L :: PRINT :
: " ";STR$(L);" FT=";STR$(L
*.3048);" M" :: GOSUB 720 ::
GOTO 270
340 PRINT "METERS-FEET":"
: : :: INPUT
"ENTER METERS: ":M :: PRINT
: : " ";STR$(M);" M=";STR$(
M/.3048);" FT" :: GOSUB 720
:: GOTO 270
350 PRINT "MILES-KILOMETERS"
:"
:: INPUT "ENTER MILES: ":N
:: PRINT : : " ";STR$(N);"
MI=";STR$(N*1.609344);" KM"
:: GOSUB 720 :: GOTO 270
360 PRINT "KILOMETERS-MILES"
:"
:: INPUT "ENTER KILOMETERS:
":O :: PRINT : : " ";STR$(
O);" KM=";STR$(O/1.609344);"
MI" :: GOSUB 720 :: GOTO 27
0
370 GOSUB 710 :: PRINT TAB(9
);"..CAPACITY.."
380 DATA GALLONS-LITERS,LITE
RS-GALLONS,QUARTS-LITERS,LIT
ERS-QUARTS,LEAVE CAPACITY MO
DE
390 RESTORE 380 :: D=5 :: GO
SUB 740 :: GOSUB 760 :: ON B
-48 GOTO 400,410,420,430,40
400 PRINT "GALLONS-LITERS":"
INPUT "ENTER GALLONS: ":P ::
PRINT : : " ";STR$(P);" GA
L=";STR$(P*3.785411784);" L"
:: GOSUB 720 :: GOTO 370
410 PRINT "LITERS-GALLONS":"
INPUT "ENTER LITERS: ":Q ::
PRINT : : " ";STR$(Q);" L=
";STR$(Q/3.785411784);" GAL"
:: GOSUB 720 :: GOTO 370
420 PRINT "QUARTS-LITERS":"
: : IN
PUT "ENTER QUARTS: ":R :: PR
INT : : " ";STR$(R);" QT=";
STR$(R*.9463529461);" L" :: G
OSUB 720 :: GOTO 370
430 PRINT "LITERS-QUARTS":"
: : IN
PUT "ENTER LITERS: ":Q :: PR
INT : : " ";STR$(Q);" L=";S
TR$(Q/.9463529461);" QT" :: G
OSUB 720 :: GOTO 370
440 GOSUB 710 :: PRINT TAB(9
);"..ANGULAR.."
450 DATA DEGREES-RADIANS,RAD
IANS-DEGREES,LEAVE ANGULAR M
ODE
460 RESTORE 450 :: D=3 :: GO
SUB 740 :: GOSUB 760 :: ON B
-48 GOTO 470,480,40
470 PRINT "DEGREES-RADIANS"
:"
: INPUT "ENTER DEGREES: ":T
:: PRINT : : " ";STR$(T);"
DEG=";STR$(T*(PI/180));" RAD
" :: GOSUB 720 :: GOTO 440
480 PRINT "RADIANS-DEGREES"
:"
: INPUT "ENTER RADIANS: ":U
:: PRINT : : " ";STR$(U);"
RAD=";STR$(U*(180/PI));" DEG
" :: GOSUB 720 :: GOTO 440
490 GOSUB 710
500 PRINT TAB(10);"..ENERGY.."
510 DATA CALORIES-JOULES,JOU
LES-CALORIES,EV-JOULES,JOULE
S-EV,EV-ERGS,ERGS-EV,LEAVE E
NERGY MODE
520 RESTORE 510 :: D=7 :: GO
SUB 740 :: GOSUB 760 :: ON B
-48 GOTO 530,540,550,560,570
580,40
530 PRINT "CALORIES-JOULES":
: INPUT "ENTER CALORIES: ":V
:: PRINT : : " ";STR$(V);"
CAL=";STR$(V*4.1788);" J" :
: GOSUB 720 :: GOTO 490
540 PRINT "JOULES-CALORIES":
: INPUT "ENTER JOULES: ":W :
: PRINT : : " ";STR$(W);" J
=";STR$(W/4.1788);" CAL" ::
GOSUB 720 :: GOTO 490
550 PRINT "EV-JOULES":"
: :: INPUT "ENT
ER ELECTRON VOLTS (EV): ":I
:: PRINT : : " ";STR$(I);"
EV=";STR$(I*1.602E-12);" J"
:: GOSUB 720 :: GOTO 490
560 PRINT "JOULES-EV":"
:: INPUT "ENT
ER JOULES: ":W :: PRINT : :
: " ";STR$(W);" J=";STR$(W*6.
242E12);" EV" :: GOSUB 720 ::
GOTO 490
570 PRINT "EV-ERGS":"
: : :: INPUT "ENTER E
LECTRON VOLTS (EV): ":I ::
PRINT : : " ";STR$(I);" EV=
";STR$(I*1.602E-12);" ERGS"
:: GOSUB 720 :: GOTO 490
580 PRINT "ERGS-EV":"
: : : :: INPUT "ENTER E
RGS: ":Y :: PRINT : : " ";S
TR$(Y);" ERGS=";STR$(Y/1.602
E-12);" EV" :: GOSUB 720 ::
GOTO 490
590 GOSUB 710 :: PRINT TAB(9
);"..PRESSURE.."
600 DATA ATMOSPHERES-TORR,TO
RR-ATMOSPHERES,ATMOSPHERES-I
N HG,IN HG-ATMOSPHERES,LB/IN
^2-ATMOSPHERES
610 DATA ATMOSPHERES-LB/IN^2
,LEAVE PRESSURE MODE
620 RESTORE 600 :: D=7 :: GO
SUB 740 :: GOSUB 760
630 ON B-48 GOTO 640,650,660
,670,680,700,40
640 PRINT "ATMOSPHERES-TORR"
:"
:: INPUT "ENTER ATMOSPHERES
: ":Z :: PRINT : : " ";STR$
(Z);" ATM=";STR$(Z*760);" TO
RR" :: GOSUB 720 :: GOTO 590
650 PRINT "TORR-ATMOSPHERES"
:"
:: INPUT "ENTER TORR: ":AA
:: PRINT : : " ";STR$(AA);"
TORR=";STR$(AA/760);" ATM"
:: GOSUB 720 :: GOTO 590
660 PRINT "ATMOSPHERES-IN HG
":"
: ::INPUT "ENTER ATMOSPHER
ES: ":Z :: PRINT : : " ";ST
R$(Z);" ATM=";STR$(Z*29.92);
" IN HG" :: GOSUB 720 :: GOT
O 590
670 PRINT "IN HG-ATMOSPHERES
":"
: :: INPUT "ENTER INCHES OF
MERCURY (IN HG): ":J :: PRI
NT : : " ";STR$(J);" IN HG=
";STR$(J/29.92);" ATM" :: GO
SUB 720 :: GOTO 590
680 PRINT "LB/IN^2-ATMOSPHER
ES":"
: :
690 INPUT "ENTER POUNDS/SQUA
RE INCH     (LB/IN^2): ":6 ::
PRINT : : " ";STR$(6);" LB
/IN^2=";STR$(6/14.7);" ATM"
:: GOSUB 720 :: GOTO 590
700 PRINT "ATMOSPHERES-LB/IN
^2":"
: : :: INPUT "ENTER ATMOS
PHERES: ":Z :: PRINT : : "
";STR$(Z);" ATM=";STR$(Z*14.
7);" LB/IN^2" :: GOSUB 720 :
: GOTO 590
710 CALL VCHAR(@,31,96,96)::
RETURN
720 PRINT : : : :"PRESS (E
NTER) TO CONTINUE..." :: CAL
L SOUND(150,1400,5)
730 CALL KEY((0,B,C):: IF B<>
13 THEN 730 ELSE CALL VCHAR(
@,3,32,672):: RETURN
740 PRINT : :"CHOOSE ONE OF
THE FOLLOWING:"
750 FOR A=@ TO D :: READ A$
:: PRINT : ("  ";STR$(A);")")
";A$ :: NEXT A :: RETURN
760 PRINT : :"ENTER YOUR
CHOICE:";:: CALL SOUND(150,
1400,5)
770 CALL KEY(1,B,C):: IF (B<
49)+(B>148+D)THEN 770 ELSE
PRINT CHR$(B):: CALL VCHAR(@
,3,32,672):: RETURN
```

Understand the Problem

```
*************************************************************
*                                                           *
*      A woman went to the dentist for the fifth time to ask him to  *
*  grind down her false teeth again because "they don't fit."        *
*      "Well," said the dentist, "I'll do it again this time, but    *
*  no more.  By every test, these should fit your mouth easily."     *
*      "Who said anything about my mouth?" the woman answered test-  *
*  ily.  "They don't fit in my denture glass!"                       *
*                                                           *
*************************************************************
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TI-EXPO 88
Al Kinney

(EDITORS NOTE: Al Kinney's view of the show are condensed.   We urge you to read the the entire report. It is available on the IEE for downloading.)

I just returned from the Las Vegas TI-EXPO 88, and what a job by the hosts of the show, SNUG (Southern Nevada Users Group).

SNUG had made arrangements through PSA to provide the lowest airfare possible, and arranged for reasonable priced rooms. I would assess this EXPO as "technically satisfying", because it seemed like there was SO much in the way of hardware.

I saw Ken Hamai's all-in-one system, that I would call the TI-99/4Z. It had EVERYTHING but the kitchen sink...Disk Controller, RS-232, 32K memory expansion and Speech Synthesizer. What's so unusual about that? It was ALL in the CONSOLE!!! No Peripheral Box! No Fan! The only thing not there was Extended Basic, only because he didn't want to tear up the cartridge. He has also combined Multiplan, Editor Assembler and "super cart" functions into one cartridge. Ken was there representing the GRAND RAM board from DATABIOTICS, manufacturer of the GRAND RAM.

The Grand Ram card is YARD (Yet Another Ram Disk). Ken was quick to point out, there are significant differences to this card over "the others". It has a built-in clock-calendar and the board is battery-backed. You will enjoy powering up the system and have the date and Time information available immediately. There are a few programs available to make use of such little niceties, such as REMIND ME. The board is COMPLETELY constructed, and the only thing you need to do is plug it in. You could add more memory chips as you expand it. Considering the density of wires and the heavy soldering job this is no small consideration. Included is an impressive "CONFIGURATOR" program that allows you to allocate memory to various RAM DISKS. All-in-all, a very impressive board.

Another familiar face, was TAPE, LTD's Franz Wagenbach. Franz was demonstrating the GRAM-KARTE from the German company Mechatronics, a GRAM KRACKER type board, with up to 512KB of GRAM space. He also brought along the Mechatronics mouse. Somehow, the Gram Kracker, et al, never caught my fancy, so I just wandered along.

As I was checking into the hotel, I met Bob Boone of Ottawa. Bob is the author of the excellent BBS system that Cy Leonard runs for the Upper Pinellas Users Group in Florida. There are several other copies running in different parts of the US and Canada. Bob was sharing a booth with a fellow named Bud Mills, who has taken over the Horizon Ram Disk. He is now selling it in kit form or completely built. Think about it...a double sided, double density floppy disk holds 360Kb and takes just short of forever to engorge or disgorge its contents. Here is something that can hold almost three times that much and is faster than a speeding bullet. Now that should get the juices flowing if you are considering "upgrading" your system. Bud had several boards built and was demonstrating their capabilities. I suggest you buy it ASSEMBLED unless you are an EXPERT Electronics Technician! This is NOT a beginner's kit. The prices Bud asks for an assembled board are a bargain!   Unless you are very good AND a masochist, pay the price.

Another interesting YARD product was the RAVE 99 Memory Enhancement System. This board will allow up to 544 Kb on each board, and up to 4 boards for a total of over 2 Mb of "backed-up" memory. Using a very large (1 FARAD) capacitor, the board will retain its information for up to five days, without the need for a battery. Batteries are optional however, and will allow the board to remember much longer. This board has many possibilities beyond a simple ram disk. A scheme of bank switching allows the Memory Management software to swap 32K memory segments in and out. I never saw this in operation, but J. Peter Hoddie is working on the software for it, so I feel like it is a well-thought out operation. What I did see in operation was Ram Disk software and it worked as expected. Very interesting product. As with the other products I've mentioned so far, they tend to get rather pricey when you start adding large quantities of Static RAM memory. The basic board is "only" $200, with 64Kb of memory. The price doubles to $400 when you get it up to 544Kb which is very consistent with the other boards I've talked about.

So far I've only discussed three products. To be sure, there was a MYARC booth, with Jack Riley carrying the the banner for the GENEVE 9640. From what I heard from Jack, the long-awaited Hard Disk controller still has bugs, and will be coming along "real soon, now." Too bad, I'd hoped to get some good news on that subject.

DIJIT Systems was there, demonstrating their fast, whizzy 80 column card, complete with 192K of fast video RAM. A rock-solid, crystal-clear display of Multiplan in 80 columns was definitely impressive. At $220, plus a $25 cable and a $250 monitor, though, it seems destined to be a very specialized product.

One of the happier surprises for me was L.L. CONNER ENTERPRISES, out of Lafayette, Indiana. Larry Conner carries an OUTSTANDING array of TI parts, so if you have a console, RS-232 card or just about anything else that fails, he will likely have the necessary repair parts. Ron Mayer, our BBS Sysop and Librarian has been waiting forever to get his RS-232 card repaired by Richard Fleetwood, who used to work TI. The problem, Ron was told is the inability to find parts. Larry also offers an extensive catalog of cables, modules, power supplies and cartridges to support the 99/4A.

Barb Weiderhold, of QUEEN ANNE COMPUTER SHOPPE, in Seattle, was there with an impressive looking IBM-AT system. It was a GENEVE 9640 in new clothing. Talk about Gilding the Lily! About the only resemblance to a TI-99/4A is it would run some of the same software! With a spiffy SONY Multiscan Monitor, IBM AT style keyboard, and an impressive box and power supply combination, I think her system represents the ULTIMATE UPGRADE for someone interested in staying with the 9900 family of processors.

On the software side of things, I had the opportunity to speak to J. Peter Hoddie (XB-BUG and others) who was there representing his company, Genial Computerware, and the Boston Computer Society's TI User Group. Also there was the President, Chief Programmer and Spokesperson for Great Lakes Software (JOYPAINT, CERTIFICATE '99). Both are bright young men, who are different as night and day. Peter Hoddie in blue jeans, somewhat longish hair and very friendly, while the Great Lakes young man was every bit the young professional who knows and likes his business.

Other booths of interest were from the LA 99ers and the Rocky Mountain 99ers Users Groups. The LA group had LOTS of stuff for sale, and looked more like a commercial booth than some of the commercial booths. Staffed by Teri Masters (Past President) and Tom Freeman (President) and their Librarian, they took up one entire corner. Next to them was Cheryl Whitelaw (Regena) and the SNUG booth. I'm sure I'll think of others I should have mentioned. If you have never gone to a TI-Faire and you are interested in what is going on in our little corner of the world, do yourself a favor...DO IT!

Three new addresses to add to your Vendor List published in the February 1988 Word Play:

Bud Mills Services
166 Dartmouth Drive
Toledo, OH 43614
419/385-5946

Boston Computer Society
TI User Group
One Center Plaza
Boston, MA 02108

L.L. Conner Enterprise
1521 Ferry Street
Lafayette, IN 47904
317/742-8146

PUNN

ALL GENERAL MEETINGS ARE HELD
ON THE FIRST TUESDAY OF EACH
MONTH, AT THE PGE BUILDING
3700 SE 17TH AVENUE
PORTLAND, OREGON

‼ NEXT MEETING DATE ‼
APRIL 5TH. 1988

The PUNN Newsletter

WORDPLAY

P.O. Box 15037 Portland, OR 97215
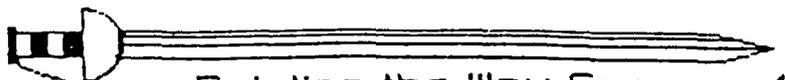
Pointing the Way For
Users of TI's 994/A Computer

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