TI - D - BITS

Issue 3 Volume 13 PHILADELPHIA AREA TI-99/4A USER GROUP March/April 1993

THIS IS THE FIRST OF A NEW FORMAT

This is your Editor With a slightly different format for the newsletter. Lets see how it goes. I am still looking for some articles written by our members. It would be nice if someone would talk Barry Traver into writeing something for us. Our membership has dropped down to only 18 members for 1993 so far. There are much less of us to keep the group going.

TEN YEARS AN ORPHAN

by W. Thomas Boussum
Taken from Reading-Berks Newsletter

1993 will be the tenth year since Texas Instruments backed out of the home computer marketplace. It seems hard to believe that it has been that long, but it really has been.

I remember when I first heard the news. I was driving to Pottsville from work to meet my family at a restaurant when the announcement came across my car radio during a stock market report. When I got there, I informed my wife of what I had heard. Neither of us believed (or probably more correctly WANTED to believe) the news. In spite of our reluctance, it was true.

I can just imagine the force of the collected sighs of relief at Atari and Commodore when the news broke. The closest match that I could imagine would be the free world's reaction to the Berlin Wall being torn down.

At the same time, we in the TI-99/4A community suddenly felt like we were thrown overboard with nothing more than our own ability to swim to keep us from sinking. Fortunately for us, we were clients of a first-class corporation, one that considers its customers as just a bit more valuable than a means of profit.

Many TI users of that time just "bailed out," cutting their losses, and moved on to another computer or else quit computers completely. But enough remained loyal for the TI-99/4A to remain a viable market for both authors and developers to continue marketing hardware and software for TI aficionados so that we were not left "out" in the cold."

"MICROpendium," THE magazine of the TI-99 world, remained loyal to us even through "Compute" and "99er" (after Black Friday "Home Computer Magazine") left us. But recent events with that journal give us reason to doubt the continuing longevity of the TI world.

Because of lack of advertising, the size of "MICROpendium" needed to be cut. The publisher offered the TI community an option of raising the price of subscription or seeing a smaller publication. According to the publisher, the TI community is backing a more expensive magazine which will retain its previous size and coverage.

Whether we will remain viable in the 11th year or not depends to a large degree on **YOU**, the user. If it becomes unprofitable to continue making goodies for the TI market, then that market will become smaller until it disappears completely.

If you want hardware and software to be available in the future, then **BYE** it now. Otherwise there will be no more made available.

The Philadelphia Area TI-99/4A Users' Group meets twice a month. On the second and forth saturday of the month at the Church of the ATONEMENT, 6200 Green St. Germantown (Corner of Greene St. and Walnut Lane) at 10 AM. We invite anyone that is interested in the TI-99/4A or Geneve to visit us. Stop in and see what is available to you for your TI and how membership can benefit you!

Current executive board consists of :

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EDUCATION
Barry Traver
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EQUIPTMENT
Allen Silverstine
PROGRAM
(OPEN)

REMEMBER to be considerate when calling any of the above people. Limit your calls to early evening hours. (6pm to 9pm)

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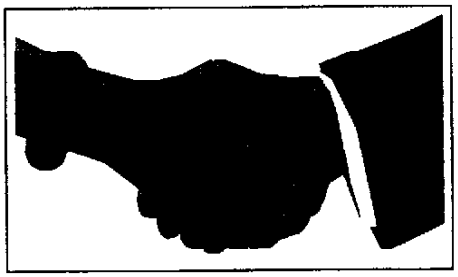
The editor of TI-D-BITS or the executive board of The Philadelphia Area TI-99/4A Users' Group reserve the right to reject any material submitted for publication for any reasons.

The Philadelphia Area TI-99/4A Users' Group's program library is available to all active members at NO CHARGE for copying to your disk. A charge of $2.00 per disk is made for club supplied disks for members. Non members may obtain copies of the library for a fee of $5.00 per disk. A catalog of the library's contents is given to all new members upon request and updates will appear in this publication from time to time. To obtain material from the library, contact the librarian for the best procedure to obtain your requests.



~~~~ TI-101 ~~~~

OUR 4/A UNIVERSITY

by Jack Sughrue
Box 459
E.Douglas MA 01516

#1 Corpus
Historical Perspective

First, Class, if you'd look at the screen. This overhead shows the brain. Yes, Ms. Bronte, the human brain.

This is the corpus calosum, that wonderful band of billions of nerve fibers connecting the hemispheres of the brain. Forty years ago that band was surgically severed to contain grand seizures in epileptic patients.

That was the beginning of a profound revolution in education that is quietly (though, at times, quite noisily) continuing through today.

Through the massive research done since that fateful slice, we, as a society, have learned more in the past quarter century about how people learn than we knew about the subject in all the tens of centuries humans have considered the process.

This educational revolution was not without its prophets. John Dewey was one. Today there are many great teachers out there operating under the umbrellas of "Process Learning," "Open Methodologies","Whole-brain Teaching," "Open Classrooms," "Science/Logic Approach," and piles of other names, including "Whole Language." The last is probably having the most profound influence on the real education in the English-speaking World as any philosophical approach since Horace Mann "Manndated" public education in America so long ago. (So long ago that we take free, public education for all as a given, as an inalienable right.)

But there is a problem, Class. (Isn't there always?)

When the Germans first devised an efficient way of organizing a mass education in the 19th Century, they decided to make a step-by-step system of completing a given body of work at a given chronological year of a child's life. Thus, 6-year-olds go through a first grade (and an artificially-created, adult-generated curriculum). After completing this predetermined set of tasks, the child turns seven and, if lucky, moves into the second grade where another set of artificial goals awaits HIM (no girls, of course).

Aren't you glad America has no sexist or racist bias these days?

The fact that 7-year-olds are not developmentally on the exact step at any time (any more than all the 47-year-olds are) made no difference to the people operating this 19th Century system. In order to protect the system, an achievement hierarchy was developed, which has come down to us, unfortunately, even to today in too many schools. It is a system that never worked because it created an invisible - though profound - class system. The system created a society of elitists, of average Dicks and Janes, of losers. The basal reader system (unfortunately still in place in most American schools) requires that the classroom be divided into three groups: the good readers, the average readers, the poor readers (sometimes called Bluebirds, Robins, and Snowy Egrets or Red-crested Flambinglers or whatever). But you know and I know that those groups, begun in kindergarten and carried all through elementary school, created what are perceived as the smart snobs, the struggling middle class, and the dumb (and bad) kids. By the time official tracking takes place in junior high (middle school) the system is firmly in place. You'll never guess which group has the greatest number of dropouts or which group has the greatest number of kids who go on to advanced degrees (followed by the best jobs). These determinations for the most part are made in the primary grades in elementary school.

The same 19th-Century system also created a hierarchy of adults. Prior to the institutionalization of education the teacher was the most important adult in the learning process. After the system overtook the world, administrators became the most important part of the system. This is usually followed by the operational staff. (Go into ANY school and see if that institution operates around the things that secretaries and custodians require before all else or whether the
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teachers get top priority. Surprise!)

Anyway, Class, in this topsy-turvy setup, highly-paid administrators make the decisions. These decisions (from administrators operating in an entirely separate building from a school, believe it or not) are then handed down to other adminstrators who have offices and secretaries. The decisions are then handed down to administrators who are in schools (principals, which means, by the way "first or highest in rank and importance"). In secondary schools these decisions are usually then handed down to department heads. Then - possibly - the teachers are told. These are the same teachers who adminstrators love to hold "accountable," even though they have been excluded from the decision making. Doesn't this "accountability without authority" have a bit of the ring of "taxation without representation" about it?

Generally speaking, administrators - who have the most opportunity and time to learn about all the masses of reseach on how children learn - know the least. They are divorced from the youngsters and from the realities of day-to-day education. They don't realize, for example, that the clientele has changed. That the students today are not made the same way, intellactually and emotionally and socially, that youngsters 25 years ago were. That the horrors of nuclear war, AIDS, street violence, fanatic consumerism, drugs, and so on were not part of our growing up, of our everyday consciousness and reality. That when I was growing up the attention span of youngsters in ELEMENTARY SCHOOL was estimated to be a little over an hour; that seven years ago for students in k-12 it was 22 minutes; that last year for that same group it was 10.8 minutes!

And education is a big - a humongous! - business. Publishers determine the curriculum in America and sell their goods to administrators who foist these materials upon the trained classroom professionals. This is a multi-billion dollar business and one that stomps out any attempt at teacher input for better ways of doing things in the classroom. Such changes may cause these influential profiteers to lose money; influential bureaucrats to lose power.

Millions of Americans sense (even if they don't have statistics at hand) that something is drastically wrong with schools that still use 19th-Century methods and materials to teach 21st-Century life skills and that still put profits and political power (inside and outside the schools) ahead of the education of our children. These parents and other friends of pulic education are afraid for America, for the Earth. For all our children.

Some parents (former Bluebirds) have the lucky financial fortune to put their children into expensive private schools. Others have sought to find some solace and protection from the outside world by placing their youngsters in religious schools where they hope their own values will be inculcated. Others, who have the trained academic and intellectual background (like Barry Traver) teach their children at home. The vast majority of us parents are, however, just working class stiffs who want and expect public education to do its job by our kids.

But, wait a minute, my young scholars!

Aren't we the same society that put a man on the Moon just because Jack Kennedy set us that national goal? Didn't we (not England, not Chile, not Russia, not China, not Iraq) send those Voyager spacecraft out into the wilderness of our Solar System? Aren't we the country with the most Nobel winners?

But those achievements all stemmed from a society that prized education. Weren't these and most of the other masterful achievements of our nation developed during a high level of carring for our youngsters (our future), and of developing a liberal climate of risk-taking and experimentation?

What has happened since Nixon's Presidency to change all this? In spite of the lip service given to education by our recent Presidents, the State of the Union, educationally, has regressed catastrophically following the Kennedy/Johnson Era. And, because federal and state programs to assist and enhance the education of our nation's greatest resource - it's

children - has virtually dried up and property taxes are the primary source of funding education, teacher bashing has become a national pastime. Blaming the teachers (the lower paid members of the staff who are not allowed to make important educational decisions nor even to give input in most cases) is like blaming the production line worker for the stupid concepts American car manufacturers have been promulgating. As a matter of fact, it is an interesting solution on the part of these rich conservatives to save American business (and, thus, America) by laying off the workers, as if they in some way were to blame for the decision-makers' gross and blatant stupidities.

That, of course, is another story, Class.

There is a revolution happening in American education, and it will prove to be the saving of our nation. This revolution has many names and takes many forms, but it has a commonality: holism. It's an idea whose time is long overdue, and your TI has its place in this scheme of things. We'll begin to look at those next time in TI-101.

Meanwhile, Class, for your homework I'd like you to type in any program from any source on your TI. No, it doesn't have to be an educational program, but it must be a minimum of 20 lines and work when you bring it to class next time.

Ciao!

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MIDI MASTER 99 and CASIO MT-240

by Jim Peterson

In my opinion, Midi Master 99 is one of the most interesting accessories ever developed for the TI-99/4A. It is very reasonably priced and, unlike many hardware developments, it offers no compatibility difficulties.

There are only two problems -obtaining it, and finding a low-priced MIDI-compatible keyboard to use it with.

Of all the TI suppliers with a poor reputation for filling orders, Crystal Software seems to have been the worst. Perhaps that has now changed, but the surest way to obtain the product would be to catch Mike Maksimik at a computer fair and walk away from his table with it firmly clutched in your hand.

Midi Master 99 was developed using the Casio MT-240 keyboard, which sold for about $80, and I was lucky enough to be able to find one for that price. Unfortunately, it is no longer on the market. The only MIDI-compatible keyboards in the 1992 Casio catalog are the CT-700 at $399, the CT-670 at $499 and the CT-770 at $599.

A local music store told me that Yamaha keyboards with the MIDI interface started at about $200, but I do not know the model numbers. A few people have been able to find them in discount stores for about $190, but those stores usually only stock them for the Christ- mas sales. The music stores only carry the professional keyboards in the $400 - $600 dollar range; they would probably order a cheaper model for you, but would certainly charge you full manufacturer's suggested retail price or more.

Many people are waiting to buy Midi Master 99, or to write any music for it, until Version 3 is released. I learned long ago not to hold my breath while waiting for a new version of any TI product.

Version 3 is supposed to allow you to play music on the keyboard, which will be converted into a MIDI file that the computer can play back, through MIDI, on the keyboard. Since I can only play a keyboard with even fewer fingers than the three I use for typing, that doesn't interest me.

Come to think of it, if you can play the keyboard, why would you want to convert your music to a MIDI file? Why not just tape it to a cassette, if you want to save it?

To me, the great thing about Midi Master 99 is that it allows me to create music even though I cannot play an instrument just as I used to do in Extended Basic, using the three tone generators of the TI-99/4A. Also, it allows me to do things that no musician could do from the keyboard, such as playing two or more instruments simultaneously, or playing chords that no human hand could reach, or creating musical effects that would

require two very nimble-fingered musicians.

Midi Master 99 consists of a cable, to connect your RS232 card to the keyboard, and a disk containing the necessary software, the documentation, and some sample music files. The documentation is adequate. It contains a good deal of technical material that is way over my head, but which is not necessary in order to use the program.

Music files are created by keying in an SNF file, from sheet music, using TI-Writer or Funnelweb or Editor/Assembler. If you use TI-Writer or Funnelweb, select the open cursor mode or else save the file by PF with the C option, because carriage returns will result in an error message.

If you have an elementary knowledge of reading music, keying in a selection is quite simple, although it does take time. The only thing I had to learn is that octaves start from C, not from A. The lowest note available, in octave 0, is the C which is 3 notes above Hertz 110 A, the lowest note available from the TI tone generators (other than the noise generator). This means that you may have to fudge on some notes in the bass clef.

You can key in all voices simultaneously or separately. That is, you can key in a melody note and its harmony notes, and then go on to the next, or you can key in the entire melody, and then the entire first note of the harmony, etc. Dolores Werths of Harrison Software, who knows more about this than I ever will, recommends the second method, but I am stubbornly sticking to the first way.

One serious flaw is the lack of looping - a directive to repeat the melody over again as many times as you wish, which is so easily done in XBasic programming. You can only use the Copy function of Funnelweb to copy the file after itself, which doubles the time required to load and compile it before playing. However, I understand that looping in this case is far more difficult than it would seem, and has only recently been implemented for MIDI on the PC.

According to the documentation, existing TI Basic music can be easily converted to the MIDI SNF format. In actual practice, it depends on how the music was originally programmed. That had best be the subject of another article.

The completed file can be saved in DV80 format, in which case it is loaded and compiled each time it is played, or in compiled image format which will load and play directly. The trouble is that the image file is stored in a very wasteful PC-style format of three 33-sector files. I have not done any comparative timing, but it seems that the additional loading time wipes out the time saved by not compiling - unless, of course, you have the file on a ramdisk or hard drive. Also, image files cannot be modified.

As a bonus for waiting so long for my Midi Master 99, Maksimik sent me a free copy of his Midi Album program. This requires the Mini Memory module or other device to provide extra memory, as Midi Master 99 itself uses all that is available. It will catalog a disk, allow you to select the files you want to play randomly or in sequence, and load and play them. It works very well. I did find that you must be sure to specify duration and instrumentation in the SNF file, if it is to be played through Midi Album; otherwise, it will carry through the values from the previous selection rather than using the program defaults.

For some reason, the documentation on my Midi Album disk was a DV254 file rather than a DV80 file, so it could not be printed with Funnelweb!

Different models of keyboards have different instruments available, and different numbers assigned to these instruments. Maksimik has provided a patch program, so that you can use your keyboard to play music written for a different keyboard. On the copy of Midi Master 99 he sent me, he had patched the percussion instrumentation into a couple of the other voices, which caused me great puzzlement for awhile.

If the music is in SNF format, it is probably more practical to just edit the file. I do hope that those who write MIDI music will include remarks in the SNF file, or separately with image files, to indicate what keyboard they programmed for and what

instruments they assigned.

Regarding the Casio MT-240, it is a budget model which lacks some desirable features. For one thing, it does not allow MIDI to control the volume. It perhaps uses the same tone generators as a larger model because I found several instruments, numbered 21 through 29, beyond the 20 on the panel. There are also some additional percussion effects in the octave above the keyboard range.

I have found several problems which may be the fault of the keyboard, of Midi Master 99, or of Midi in general. Without having other keyboards to try out, I cannot tell.

Some instruments such as bells, are not practical to use because they continue to reverberate and create a dissonance. Others, such as chorus, drag out until they seem to affect the rhythm. Some, such as organ, are almost silent in the lowest octave, probably because they also sound in an octave lower. Some instruments sound harsh when programmed in all three voices although not when played from the keyboard. I have found it difficult to find pleasing combinations of two or more instruments. The best effects are generally obtained by giving all voices the default instrumentation of piano, and most existing TI MIDI music has been written for that instrument.

Dolores Werths, the renowned music programmer of Harrison Software, is trying to organize a by-mail users group for those making music with Midi Master. If you are interested, write to her at 5705 40th Place, Hyattsville MD 20781.

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HARRISON SOFTWARE FONT DUMPER

by Jim Peterson

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

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

Using this, and my routines to manipulate hex codes, I created assembly routines of all kinds of screen fonts. They looked fine on my old TV set, but when I saw them on a monitor I realized that they had lost too many pixels in the conversion process. So I added a screen character editor to the source code writer, and cleaned up the fonts before saving them. I added several existing CHARA1 fonts, some other fancy fonts that others had designed, and some special ones from my Nuts Bolts disks, and ended up with a diskfull called 127 Screen Fonts.

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

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

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

had to turn the printer off and on again.

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

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

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

The disk also contains a FIXCHAR program, based on my screen editor and saver, which you can use to modify the existing character sets or to create new ones. For instance, you could design little graphics characters to replace those never-used keyboard symbols, and use them to dress up your correspondence with hearts and flowers, smiley faces, fickle fingers, or whatever. Just in case you don't have the Editor/Assembler module to assemble the source code, Bruce has provided Art Green's Assembler with Barry Boone's loader, and Todd Kaplan's ALSAVE.

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

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

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

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

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TI-BASE - From INSCEBOT

TUTORIAL 6.1 By Martin Smoley
NorthCoast 99'ers - Jan. 10, 1989

*** I'm Sorry! ***

Last month I left out the program segment listed below. I was looking over the tutorial, well after the newsletter had gone to the printer, and near the top of FNDPRNTI I saw it. It sticks out like a sore thumb, DO DSK2.INFSCR2. I instantly knew that it was not in the tutorial. "What a dumb thing to do." So here it is and I hope this didn't wreck your holiday computing.

```
CLEAR
  WRITE 3,9,"This section Locates a    "
  WRITE 5,9,"record using the NM field."
  WRITE 7,9,"It then displays the "
  WRITE 9,9,"name and address and asks"
  WRITE 11,9,"how many labels you want."
  WRITE 13,9,"It will find as many"
  WRITE 15,9,"records as you wish."
  WRITE 17,9,"** NEWNAMES has 5 RECORDS."
RETURN
*
*  INFSCR2      Save as INFSCR2/C
*  *******  Info Screen 2  12/1/88
*
*****************************************
```

TI-Base Version 2.0

As I stated in December I am switching to TI-Base Version 2.0. Ver. 2.0 still has a couple of small bugs in it, but it is almost bug free and I expect the CHANGE commands to arrive at any minute. Also, I would add that it already works better, runs and loads faster, does more than Ver. 1.02 and the Manual has twice as much information (plus it's easier to read). The upgrade from Ver. 1.02 is only $7.95 plus your original system disks, so you should get yours as soon as possible. I do suggest that you keep a copy of the old version. It will probably come in handy at some time.

Let's get started. Two items that caught my eye immediately were READSTRING and the use-ability of .DATE. The READ command is still in use. It will accept the input of numbers with no quams. READ will also accept the input of characters if you place your data in quotes. So to answer the question, CONTINUE? Y/N, you would have to answer "Y" or "N", including the quotes. If you use the new READSTRING, your answer would be Y or N without the quotes. This makes things a lot easier.

```
* Copyright 1989 By Martin A. Smoley
*
  LOCAL LYDT C 2
  LOCAL TYDT C 2
 REPLACE LYDT WITH "88"
 REPLACE TYDT WITH "89"
DOCASE
  CASE MM="01"
    REPLACE CUTOFF WITH LYDT ! "/09"
    REPLACE PRDT WITH TYDT ! "/01"
   BREAK
  CASE MM="02"
    REPLACE CUTOFF WITH LYDT ! "/10"
    REPLACE PRDT WITH TYDT ! "/02"
   BREAK
  CASE MM="03"
    REPLACE CUTOFF WITH LYDT ! "/11"
    REPLACE PRDT WITH TYDT ! "/03"
   BREAK
  CASE MM="04"
    REPLACE CUTOFF WITH LYDT ! "/12"
    REPLACE PRDT WITH TYDT ! "/04"
   BREAK
  CASE MM="05"
    REPLACE CUTOFF WITH LYDT ! "/01"
    REPLACE PRDT WITH TYDT ! "/05"
   BREAK
  CASE MM="06"
    REPLACE CUTOFF WITH LYDT ! "/02"
    REPLACE PRDT WITH TYDT ! "/06"
   BREAK
  CASE MM="07"
    REPLACE CUTOFF WITH LYDT ! "/03"
    REPLACE PRDT WITH TYDT ! "/07"
   BREAK
  CASE MM="08"
    REPLACE CUTOFF WITH LYDT ! "/04"
    REPLACE PRDT WITH TYDT ! "/08"
   BREAK
  CASE MM="09"
    REPLACE CUTOFF WITH LYDT ! "/05"
    REPLACE PRDT WITH TYDT ! "/09"
   BREAK
  CASE MM="10"
    REPLACE CUTOFF WITH LYDT ! "/06"
    REPLACE PRDT WITH TYDT ! "/10"
   BREAK
  CASE MM="11"
    REPLACE CUTOFF WITH LYDT ! "/07"
    REPLACE PRDT WITH TYDT ! "/11"
   BREAK
  CASE MM="12"
    REPLACE CUTOFF WITH LYDT ! "/08"
    REPLACE PRDT WITH TYDT ! "/12"
   BREAK
ENDCASE
RETURN
*
* RSTRCS1  Save as RSTRCS1/C
* *******  DOCASE for PRSTR1 01/02/89
```

TIPS FROM THE TIGERCUB

No. 68

Tigercub Software
156 Collingwood Ave.
Columbus, OH 43213

****

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

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

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

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

```
100 A=0 :: B=1 :: N=51
110 C=A+B :: C=C-N*INT(C/N)
: CALL SOUND(-100,110*2^(C/1
2),5):: A=B :: B=C :: GOTO 1
10
```

Dr. Ecker also had a challenge to swap two numbers without using a third variable or the SWAP command - which TI Basic doesn't have anyway. The practical way, of course, is to use the 3rd variable, T=A :: A=B :: B=T, but just for the fun of it, if we are dealing with one-digit numbers -

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

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

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

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

```
100 INPUT A$ :: INPUT B$
110 A$=A$&" "&B$ :: B$=SEG$(
A$,1,POS(A$," ",1)-1):: A$=S
EG$(A$,POS(A$," ",1)+1,255):
: PRINT A$;" ";B$ :: GOTO 11
0
```

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

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

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

```
100 DISPLAY AT(3,1)ERASE ALL
:"SIMPLE INTEREST CALCULATOR
":"":"For interest to be cal
cu-  lated monthly on unpai
d    balance."
110 DISPLAY AT(9,1):"Printer
? PIO" :: ACCEPT AT(9,10)SIZ
E(-20):P$
120 DISPLAY AT(11,1):"Amount
 loaned? $" :: ACCEPT AT(11,
17)VALIDATE(NUMERIC):A
130 DISPLAY AT(13,1):"Intere
st rate?     %" :: ACCEPT AT
(13,16)SIZE(4)VALIDATE(NUMER
IC):X
140 IF X<1 THEN DISPLAY AT(1
2,1):"Enter as a percentage"
 :: GOTO 130
150 DISPLAY AT(15,1):"Monthl
y payments of $" :: ACCEPT A
T(15,22)VALIDATE(NUMERIC):P
160 DISPLAY AT(17,1):"Beginn
ing in month (1-12)  of yea
r"
170 ACCEPT AT(17,27)VALIDATE
(DIGIT):M :: ACCEPT AT(18,9)
VALIDATE(DIGIT):Y
180 DATA JAN,FEB,MAR,APR,MAY
,JUN,JUL,AUG,SEP,OCT,NOV,DEC
190 X=X/100 :: DIM M$(12)::
FOR J=1 TO 12 :: READ M$(J):
: NEXT J
200 OPEN #1:P$,VARIABLE 254
:: PRINT #1:CHR$(27)&"E"&CHR
$(27)&"G"&CHR$(27)&"M"&CHR$(
6)&CHR$(27)&"M";
210 PRINT #1:"$";STR$(A);" F
INANCED AT ";STR$(X*100);"%
WITH MONTHLY PAYMENTS OF $";
STR$(P);" BEGINNING ";M$(M);
Y:""
220 I=A*X/12 :: TI=TI+I :: A
=A+I-P
230 PRINT #1:M$(M);Y;" PAYME
NT $";STR$(P);" OF ";
240 PRINT #1,USING "$$$$.##"
:I;:: PRINT #1:" INTEREST AN
D ";
250 PRINT #1,USING "$$$$$.##
":P-I;:: PRINT #1:" PRINCIPA
L - BALANCE OF ";
260 PRINT #1,USING "$$$$$.##
":A
270 M=M+1 :: IF M=13 THEN M=
1 :: Y=Y+1
280 IF A>=P THEN 220
290 PRINT #1,USING "FINAL PA
YMENT $$$$.##":A :: PRINT #1
,USING "TOTAL INTEREST PAYED
 $$$$$.##":TI
```

Thanks to Bruce Harrison, here is a neat subprogram to sort strings into sequence as they are entered -

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

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

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

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

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

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

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

Gene Hitz of Arcade Action Software reports another undocumented feature of TI Extended Basic. The manual says that you can only enter a subprogram by a CALL and only leave it by a SUBEXIT or SUBEND, but the manual is wrong. You can GOSUB to a subroutine within a subprogram, providing it does not contain a SUBEXIT, and return; and you can GOSUB from within a subprogram to a subroutine in the main program, and return. In this way, you can transfer variables in and out of a subprogram without putting them in a parameter list. See for yourself -

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

If you are among the lonely few who have purchased my TI-PD disks, you will know that most of them load from a menu by full program name, not those abbreviated filenames. Those menus are prepared quickly and easily by my Catwriter program which was published in Tips #47 and in MICROpendium and is available on TI-PD 1105.2.

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

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

Save that on an empty disk by SAVE DSK2.C,MERGE. Put your TI-PD disk in drive 1, boot its LOAD program, break it with FCTN 4 and enter MERGE DSK2.C, then RUN. Put in the next TI-PD disk and do the same. You will have a D/V80 file of all the programs, followed by their TI-PD disk number. Run the file through Sort Experiment or TI-Sort or whatever, and you can print them out in alphabetical sequence.

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

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

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

```
100 INPUT N$ :: PRINT ASC(N$
):: GOTO 100
```

- but the Editor has been programmed to refuse them because so many of those FCTN and CTRL combinations are used as edit commands.

I had a bright idea - I thought. I wrote a little program to create 127 files, named 128 through 255, each containing just the ASCII of the same number. Now, I thought, when I want to put in such an ASCII I will just LF that file into the next line and CTR 2 to pop it into place. But the Editor refused to even load a file that began with an ASCII above 127!

I'll fool you, I thought. I created those files again, but with an asterisk before the high ASCII. Now they loaded alright - but each ASCII above 127 became an ASCII 128 numbers lower! It is too bad that the Editor does not have a command to add 127 to an ASCII, just as CTRL U subtracts 64, but if you want those graphics characters in your text you will just have to transliterate them and print through the Formatter.

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

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

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

```
1 CALL CLEAR :: CALL TITLE(5
,"MY PROGRAM")
2 FOR D=1 TO 1000 :: NEXT D
:: CALL DELSPRITE(ALL)
```

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

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

You might also need a CALL SCREEN(8) to restore normal screen color.

Oops! Memory full! - Jim P

* * 1993 MEETING SCHEDULE * *

1st Meeting On:	2nd Meeting On:
Saturday April 10th at 10:00 AM	Saturday April 24th at 10:00 AM
Saturday May 8TH at 10:00 AM	**NO MEETING TODAY**
Saturday June 12th at 10:00 AM	Saturday June 26th at 10:00 AM

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