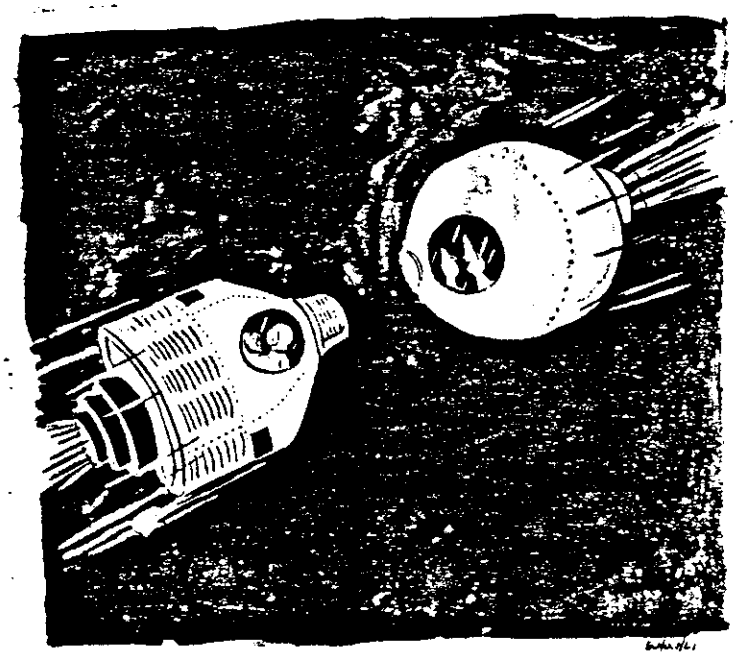
Newsletter Nine-T-Nine

November 1990 Issue
Membership Renewals Due Next Month!

Texas Instruments
USERS GROUP
TORONTO

Meeting Dates:

Nov.29
Dec.13
At CRS



"According to the computer, in just another fraction of a second we will be exactly halfway between Earth and Mars at their closest orbital paths."

From:
9T9 Users Group
15 Kersdale Ave.
Toronto,Ont.,M6M-1C9
CANADA

To:

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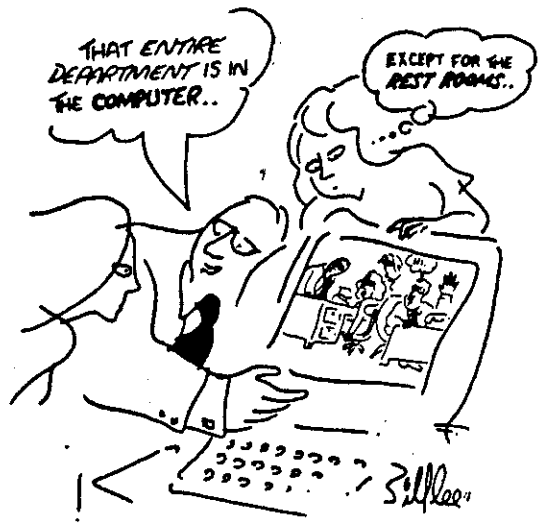

MEMBERSHIP FEE'S
FULL MEMBERSHIP..... $30.00 / year
NEWSLETTER SUBSCRIPTION ..... $20.00 / year
DISK OF THE MONTH subscription,add... $30.00 / year
(Delphi Memberships add $3.00 for credit card fees)

All memberships are household memberships. A newsletter subscription is only for those who do not wish to attend meeting,but wish to receive our newsletter and have access to our library. You are welcome to visit one of our general meetings before joining the group. If you wish more information contact either our president, in writing, at the club address on the front cover or phone him.

The meetings are usually held on the last Thursday of each month,(exceptions are December's meeting date, usually mid-month and the months of July and August, when there are no meetings. Consult this issue of Newsletter 9T9 for the date and time of the next meeting. Meetings are usually held in the lecture room main, at Canada Remote Systems, 1331 Crestlawn Dr., Unit D, Mississauga ,(Eglinton Ave./Dixie Road Area), from 7:30 - 10:30 PM.

BBS
The 9T9 Users Group supports the Toronto BBS, The TI Tower BBS #(416) 921-2731, 300/1200/2400 BPS, 24 hrs. Sysop, Gary Bowser.

MAILING ADDRESS:
9T9 Users Group, 15 Kersdale Ave., Toronto, Ontario, M6M 1C9, Canada

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Any business wishing to reach our membership may advertise in our newsletter.
The rates are as follows. (width by height):
FULL PAGE (7" x 10") $30.00
HALF PAGE (7" x 5") $15.00
QUARTER PAGE (7" x 2 1/2") $ 7.50
Please have your ad's camera ready and paid for in advance. For more information contact the editor. Don't forget, that any member wishing to place ads, may do so free of charge as long as they are not involved in a commercial enterprise.

NEWSLETTER ARTICLES
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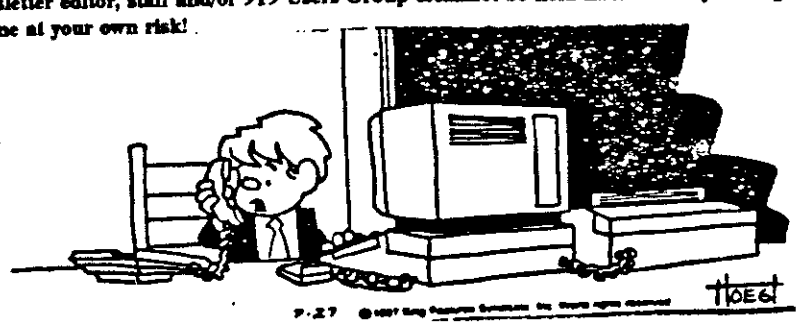
"IF YOU WANT ME TO HELP YOU WITH YOUR SERIAL INTERFACE KIT, KEVIN, YOU'LL HAVE TO BRING IT OVER. I DON'T MAKE HOUSE CALLS."



TIdbits #43

-By Steve Mickelson, President 9T9 Users Group
Compuserve 76545,1255; Delphi SMICKELSON; GEnie S.MICKELSON

October's meeting-TIM Demonstrated
Gary Bowser demonstrated a working model of TIM,(an acronym for TI-Image-Maker),which a plug-in type kit which replaces the TI-99/4A's TMS9918A Video Display Chip with a small 3"x4" printed circuit board, containing the Yamaha V9958 Video Display Chip,(the same used in the Sega Genesis Game System), 192-K of Video Random Access Memory, plus a ASIC chip which makes the TIM hardware compatible without the need of "patching software".

When I examined the TIM, I saw screened "Made in Canada". The board's design reflects a compact, clean design and plugs directly in place of the TMS9918A Video Chip, and requires the connection of only two jumper wires!

The unit Gary demonstrated was installed in a console with a RAVE Keyboard attached,(consultation with RAVE reps. at the November's Chicago Faire determined that the TIM should be hardware compatible with the RAVE/AT Peripheral Expansion Box). The 192-K of Video Expansion RAM allowed the TIM to load and display any GIF's displayed on a Myarc Geneve, without the need to expand the 32-K of Expansion Memory in the Peripheral Expansion Box. Any program run on the now orphaned Digit AVPC 80-column card would run on a TI console with TIM, and the TIM requires not hacking or cutting of the console, as does the AVPC card.

Unlike the Mechatronic 80-column device, no cumbersome external hardware is required, in fact the only cutting would be the small hole needed to run the 25-pin video cable outside the TI console.

The TIM is fully compatible with the 9918 chip, with an analog digital video output of 19,268 colours, simultaneously, 32 sprites,(up to 8 per horizontal line), with 80 columns by either 24 or 26 lines. Graphic modes are medium, 256 by one of 192, 212, 384, or 424,pixels in any of 256 colours; and high, 512 by one of 192, 212, 384 or 424 pixels, in any of 16 colours of the 256 colour-palette.

Demonstrated, on the TI console with TIM installed, at the October meeting was Funnelwriter 80,(version 4.3), Telco in 80 columns, an 80-column version of Mass Transfer, G99 GIF viewer, and X-Hi,(X-Hi being a software patch which resides in low memory and provides Extended BASIC with access to the high resolution, 80 column video of the V9958, plus access to the 192-K of Video RAM).

How did TIM perform? In one word, flawlessly! Because the TIM requires a specific frequency crystal not available in Canada, (Gary could source crystals with values 500 khz above or below the required value), our demo unit produced colours which were not quite true. For final production, Gary assured us that TIM would have the correct crystal, and produce accurate colours. All members who attended the demonstrate were in awe of the great resolution and detail of the GIF's displayed by the TIM. Because of concerns about just which Analog monitor to buy for the TIM and how to make cables, Gary hoped make available a package of the TIM, a colour analog RGB monitor, and cable. This package would be sold at a very attractive price and would make upgrading to 80-columns very simple and straight forward.

We hope to have Gary return in the new year with another demonstration of TIM, as well as other software and hardware from OPA.

November Meeting
Because of the length of time required to show TIM, we were unable to have John Van Weelie give his demonstration of data transfer between the TI-99/4A, using Magic FM and a IBM clone laptop. If all goes well, John will do his thing at our November meeting. Unlike the demonstration I gave a while back using my NEC Z-80A laptop and a TI-99/4A, transferring files using TELCOM and Fast Term at 4800 BPS, Magic FM allows file transfers at much higher speeds.

We will also discuss the Chicago TI Faire,(see Randy Rossetto's synopsis in this issue of the Newsletter).

December Meeting
Nominations and elections of the 9T9 Executive will take place at December's meeting.

No change in membership rates
In spite of the upcoming postal rate hike, the Newsletter and membership rates will be unchanged. For those mailing-in memberships please note the club's new mailing address!

Feature Disk replaces Disk Of the Month
The 9T9 Disk of the Month will continue next year, to be called the 9T9 Feature Disk. I hope to have an up-to-date listing of the club library's contents for December's issue.

Budgeting for 1991
At the last 9T9 Executive meeting, your Executive discussed, among other things, the future of our club, newsletter and the need for a budget plan for 1991. For the last few years sales of the 9T9 Disk-Of-the-Month help subsidized the cost of newsletter exchanges with other user groups, as memberships alone could not cover such expenses. It was decided to carefully monitor exchanges, and any clubs not providing regular exchange newsletters may be dropped from our mailing lists.(Exchange editors please note our new mailing address!)

Exchange newsletters are a vital source for articles for this newsletter, as well as fodder for Steve's Hard Copy bi-line and both Randy's and my own articles. The newsletters are a gold mine of technical information, tutorials, reviews and news for our membership. The proposed expenditures will be listed in both Randy's and my own articles this month. A budget for the Disk-Of-the-Month cannot be set forth because the sales of the D.O.M.,(or Featured Disk), varies throughout the year and may be affected by such factors as whether or not we have a table at various TI Fests,(apparently we had none at either Ottawa or Lima Ohio).As far as costs for this newsletter, the expected costs for 1991 are:

-> Printing for ten issues.....$900.00
-> Incidentals,(glue sticks,etc).....$20.00
-> Total Anticipated costs.....$920.00

TI SURPLUS USED EQUIPMENT SALE Call Andy Parkinson 275-4427

BOOKS:

1- 32 Basic Programs for TI99/4A (Book & Tape).....	2.00
1- TI99/4A in Bit & Bytes (Book & Tape).....	2.00
1- Games TI's Play (Book & Tape).....	2.00
2- Teach Yourself XB Tape.....each	1.00
3- Teach Yourself Basic Tape.....each set of 2	1.00
1- TI Personal Financial Aids.....	1.00
2- TI99/4A Favorite Programs Explained.....each	1.00
1- Computes First Book of Games.....	2.00
1- Computes 33 Programs for the TI99/4A.....	2.00
1- The Last Word on the TI99/4A.....	3.00
1- Best of TI Software.....	1.00
1- Best of TI Cartidges.....	1.00
1- Programming Basic with the TI Home Computer.....	2.00
1- Easy TI99/4A Users Guide.....	2.00
1- TI Idea Book.....	2.00
1- The Elementary TI99/4A.....	2.00
1- Free Software for Your 99/4A.....	2.00
1- TI99/4A Users Handbook.....	2.00
1- Zappers Programming & 23 Games for the 99/4A.....	2.00
1- Texas Instruments Home Computer Games & Programs.....	2.00
1- 36 TI99/4A Programs for Home, School & the Office.....	2.00
1- 101 Programming Tips & Tricks.....	2.00
1- TI Home Computer Graphics Programs.....	2.00
1- Terrific Games for the TI99/4A.....	1.00

ACCESSORIES:

2- Double Cassette Cables.....	3.00
2- Single Cassette Cables.....	1.50
1- TI/Wico Joystick Adapter.....	10.00
1- TI Joysticks.....each	5.00
1- Dust Cover for Console & Speech Synthesizer.....	5.00

Chicago 1990
1990 Chicago TI International World Faire
8th Annual - Nov. 2 & 3, 1990.

-Report by Randy Rossetto, 9T9 Users Group

The mixer on Friday night was a good place to meet old friends like Marc Levine from Champaigne, IL. and new friends like big Jim and the other guys from Erie, PA. Everyone had a chance to drink and snack as we talked about things TI, as well as solve All the Worlds major problems. We also had an opportunity to introduce ourselves and our TI affiliation. This gave me time to identify some of the user groups thus allowing me to hand out the copies of our last exchange newsletter, which I brought to personnally deliver in Chicago.

The general attitude of the fair seemed to be a little more laid back and relaxed from other years. The regulars, of course were back, as well as some new faces. As I go through the binder that I historically put together at these events let me list the contents;

- O'HARE INTERNATIONAL AIRPORT VISITOR'S MAP "Aviation Gateway To The 21st Century"
-Chicago TI International World Faire, Invitation/Advertisement incl. map of Rolling Meadows Holiday Inn
-Milwaukee TI Faire, Invitation/Advertisement Nov. 4, 1990, Quality Inn, Milwaukee, WI.
-Fest West 91, Advertisement Feb. 16 & 17, 1991,Anaheim, California Ramada Inn accross the street from Disneyland.
-News Release announcing the 4th Annual User Group Conference and Swap Meet sponsored by the Lima Ohio Texas Instrument Home Computer User Group, May 18, 1991 at the Student Activities Building, Lima campus of Ohio State University.
-Press release; TM Direct Product Marketing announces the purchase of the TI-99/4A business from Triton products Company effective October 29, 1990. New toll free number 1-800-336-9966, address is 379 Beach Road, Burlingame, California, 94010.
-Chicago UG, 8th Chicago TI International World Fair Programme "TI-99/4A THE LEGEND LIVES ON"
-Directory and Map for Woodfield Mall, over 225 stores on 3 levels.
-Comprodine Product Catalog, Fall 1990, is the first catalog/data sheet because my wife and I met Rodger Merritt and Steve Mehr at the airport and rode into Rolling Meadows on the hotel shuttle together.
Data sheet on Pixease, high resolution pictures loaded and printed from any wordprocessor Editor. I bought a set, really neat stuff! A new blockade type game "Backsteine" looked interesting.
-OPA, Oasis Pensive Abacutors, our own Gary Bowser, announcing the TI-IMAGE-MAKER, upgraded console internal expansion of the video display system allowing 80 column support and future analog/digital addons, eg. digitizers, Genlock. I hope Gary got alot of orders! Also Diskodex 2001, disk cataloger and Rambo, Horizon ramdisk upgrade allowing RAM partitioning, hence the name "RAMBO", "Random-Access-Memory-Bank-Operator".
-Asgard Software with Chris Bobbitt, had games like Rock Runner and Waterworks and for all you 80 column users YAPP "Yet Another Paint Program", very nice, I bought one! Also "MIDI Master" was demo'd and will be out for the 99/4A on cartridge and in M-DOS for the Geneve.
HardMaster, a Modern sector editor; The Animator, an easy to use animation program, and Spell It!, a speedy spell checker are some other products that Asgard have available.
-Rave 99 Co.'s John McDevitt, was showing off it's new PE/2 Professional Expansion Chassis for the TI-99/4A and Geneve, with featues like 8 additional data & address lines and a dual processor bus allowing use of the 99/4A and Geneve in the same chassis. Other products available were, Speech Synthesizer Adapter Card, IBM style Keyboard Interface Card 99XT, MX01 Memory Enhancement System(Ramdisk/Memory Expansion).
-Bud Mills Services, with Bud Mills, who I think gives the best demo's, showing off the Horizon Ram Disk, Memex and P-Gram+ as well as ROS_8 and Memex Genmod for Geneve users, always puts on a good show and tell at the TI faires.
-L.L. Conner Enterprise, Larry Conner, was there with his 4 or 5 tables of TI hardware and software and everytime I've seen him he shows up with some new and unusual stuff, like bare printed circuit boards for TI modules, PE Box Interface Cards and RS232 cards and a Test card designed with a 50 pin connector??!!
-Competition Computer Solutions from Milwaukee, WI had their tables full of new and used TI hardware and software.
-Harrison Software, Bruce Harrison, with his Harrison Software Word Processor, Golf Score Analyzer and catalog of a wide variety of Music programs was there.
-9640 NEWS, Beery W. Miller, the editor of the magazine on disk for Geneve users was there with programs like Tetris and Barricade and others for the Geneve.
-ST. Louis 99ers, were there with swap specials and all kinds of printed materials, manuals, templates and programs.
-JP Software, with Disk One a DSKU update supporting the Myarc HFDC, Gen-tri, an integrated software package with Terminal Emulator, Disk Manager and Word Processor, both available late 90 or early 91.
-T and J Sofware, had Hardback, a hard drive backup utility, Diskassembler Ver. 2 and THE Bugger ver 1.1 available.
-Texaments, represented by Barry Boone had loads of software and catalogs available.

-MS Express Software, with Adventure Hints, Sliding Block Solutions, Sliding Block Puzzles and Galactic Emperors Software.
-E.S.D. Corp., Electronic Systems Development Corp., Christopher Pratt were taking orders for the new TI Compatable Hard and Floppy Controller Card ($225.00 US), shipping soon.
-West Penn 99'ers User Group, present
-Fox Valley Users Club, present
-Program Innovators Arcade Action Software, with Power Volleyball, Cut Throat Cribbage and Touchdown 90 and other games.
-Rechargeable Computers had lots of original sofware (read modules).
-Delphi-TInet
-M & M Computer Supplies, paper, labels, disks and accessories.
-Prodigy Interactive Personal service, another information/services network.

OTHER VENDORS AND PARTICIPANTS

-Mickey Schmitt, had her "Getting the Most From Your Cassette System" available and I got a copy for our hardcopy library.
-Hunter Electronics, TI/Geneve harware and software.
-Milwaukee User Group
-Indianapolis User Group
-Micropendium Magazine
-GENIAL TRAVeLER DEISKAZINE, Barry Traver.
-Chicago TI 99/4A Users Group, with lots of TI stuff for sale as well as back issues and printed manuals, etc.

This is basically a quick rundown of the Chicago 8th Annual TI International World Faire and it truely is International because of the 4 or 5 people who came over from Holland and Germany, not just to visit, but to show off a new high density disk drive controller that they plan to market in the USA!! And many thanks to the Chicago User Group, especially to Hal Shandfield, Faire Manager and Ernie Pergrem, UG President and ALL their support staff for putting on another good FAIRE! I've been there 5 times and I'll be there next Year

From Randy Rossetto, Secretary

Just a couple quick notes that we still have a limited number of 9T9 USER GROUP T-SHIRTS available - 5 small and 7 medium, the medium fits a 11-13 year old just right. These are going for only $5.00 each.

Also if you would like to put thr club design on your own T-Shirt I had the original silk screen frame that you could borrow to make your own shirts. Call me if you are interested.

9T9 USER GROUP - MAILOUT BUDGET FOR "1991"

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ESTIMATE - 25 MEM (MEMBERS)
           25 SUB (SUBSCRIBERS)
          ----
           50 TOTAL
           15 AVERAGE # OF NEWSLETTERS PICKED UP AT MEETING
          ----
           35 NET TO MAIL OUT PER MONTH
                                  ---------
TYPICAL SPLIT IS - 20 CDN @ 0.61 = $ 12.20
                   15 USA @ 0.65 = $  9.75
MAILING LABELS MEM/SUB 50 @ 0.01 = $  0.50
   "      "    SEALING 35 @ 0.01 = $  0.35
                                  ------
TYPICAL MONTHLY MAILOUT COST ----- $ 22.80

         YEARLY NEWSLETTER MAILOUTS - TOTAL = $ 228.00
                10 % CONTINGENCY ---------- $  22.80
                                            --------
----- REQUIRED BUDGET FOR MEMBERSHIP MAILOUTS $ 250.80 --> $ 250.80


ESTIMATE - 45 UG (USER GROUP EXCHANGES)

ALL MAILED OUT BI-MONTHLY (5 MAILINGS)

TYPICAL SPLIT IS - 10 CDN @ 0.78 = $  7.80
                   35 USA @ 0.80 = $ 28.00
        MAILING LABELS 45 @ 0.01 = $  0.45
          9T9UG LABELS 45 @ 0.01 = $  0.45
 PRINTED MATTER LABELS 18 @ 0.01 = $  0.18
       KRAFT ENVELOPES 45 @ 0.14 = $  6.30
                                  ------
TYPICAL BI-MONTHLY MAILOUT COST -- $ 43.18

    YEARLY NEWSLETTER MAILOUTS (X5) - TOTAL = $ 215.90
            5 % CONTINGENCY ---------------- $  10.80
                                              -------
------- REQUIRED BUDGET FOR EXCHANGE MAILOUTS $ 226.70 --> $ 226.70
                                                          --------

TOTAL BUDGET REQUIREMENTS FOR NEWSLETTER MAILOUTS FOR 1991 $ 477.50
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Personal Banking

by Jiri Svoboda, 9T9 UG, Toronto, Canada
A Review by Harry W. Guenther
from LITI (Long Island 99er Users Group)

When one writes a review, the reviewer may be concerned that others may not view the offering in the same light as does he. In the case of Jiri Svoboda's program - "PERSONAL BANKING" - THE 9T9 User's Group of Toronto, Canada, has already given a strong vote of approval, because this program was selected as the Grand Prize Winner of the May 1989 - 9T9 software contest. While I am not a dedicated user of financial programs, I am impressed with the artful design of this Fairware program.

Mr. Svoboda characterizes this as a financial record-keeping package which handles itemized financial transactions on up to 20 bank accounts and 20 credit card accounts. I think the reference to credit cards is restrictive; any billing account obviously could be included as well.

PERSONAL BANKING works out of Extended Basic, and needs at least one disk drive and the 32K Memory Expansion Card, as well as an 80-column printer. TI-Writer Word Processor is an optional peripheral.

The Master Title Screen shows some nice three color combinations, introductory musical notes, and a nice program logo in the shape of a sphere with capital letters "PB" within the enclosure. This logo and sound effect accompanies several of the screen presentations. Also, a light yellow color characterizes the principal "MENU" screen, the color changing to cyan with item selection.

The Program "MENU" screen is the central operating source, and allows selection of:

1) Accounts	2) Credit Cards
3) Banking Manager	0) Program Exit

Each of the above is interrelated. The program itself does a considerable amount of housekeeping chores and follow-through of input data.

Accounts or Credit Cards

The user enters the names of desired bank accounts and credit cards (or billing agencies). Names selected use 10 or less characters, and the underline key must be used in place of the space bar in the case of a divided name. Each entry is selected in sequence to an alphabetical prompt. Twenty each of accounts and credit cards may be chosen. Since each selected name is associated with a letter, an interesting effect in the program is that subsequent name deletion may move some names up the alphabetical ladder.

For either ACCOUNTS or CARDS there are four available choices:

1) UPDATE Account (or Card)
2) Display File
3) Print File
4) Statement Recheck

The UPDATE feature permits the entry or revision of new transactions. You may enter up to 300 transactions per data file. These can be entered in random order, but the tidy little PB program will compile them in chronological order without effort on your part! If you enter a $0 as the amount in any transaction, that transaction will be ignored. As no information is added to the data file, this provides a means of backing out of an unintentional entry.

UPDATE will permit you to enter -

For ACCOUNTS	For CARDS
A) Deposits or Credit	A) Payment
B) Transfer to ACCOUNT	B) Transfer to ACCOUNT
C) Interest Credit	C) Credit
D) Withdrawal/Debit	D) Service Charge
E) Transfer from ACCOUNT	E) Transfer from ACCOUNT
F) Cheque	F) Purchase Charge

Two nice features follow the actions "TRANSFER TO/FROM ACCOUNT" (permitting exchanges of funds between bank sources) and "CHEQUES" which permits issuing of a check - or cheque, as the Canadian author prefers. In each case, the current operation is terminated and a return is made to the Program Screen, and the operation involving the second account is processed automatically. It is impressive to find such a feature in Fairware programs.

The Display or Print File choices permit the listing of transactions to either screen or printer. Interrupted or continued viewing is possible by toggling any key.

STATEMENT RECHECK permits the elimination of any item in a current data file after a bank statement has been received and checked. No longer needed items can thus be removed and the file kept uncluttered.

BANKING MANAGER

This portion is the disk manager for all the files.

1) CATALOG lists every file by Account or Card. AS one builds up the database this becomes indispensable. An Account which is inactive - does not have any transactions - lacks an asterisk which marks activity.
2) RENAME and 3) DELETE FILE are self explanatory.
3) CONSOLIDATED ACCOUNT will give you the total calculated balance of all the various accounts/cards as of any stipulated date. Any post-dated transactions or checks will not be included. An option of a printout for all Account/Card statements may be made. (Note- a simulated four data file statement is shown on the next page.

PROGRAM CHECKS

It is important that you always exit the date program through the "Program Exit" choice. This will properly close all the open files, and if you have so chosen will automatically call the "CHEQUES" program for the transactions you had previously indicated. If called, this option then will analyze the data files and send to the printer the information to print those checks indicated! This is an impressive feature I have previously seen only in expensive lap-top computer. (You thought the TI was an obsolete computer?)
The best way to use this feature is, of course, to have pre-printed computer check paper, but the author has provided a Template program that will permit you to print out the check information as your check forms require. Be forewarned, however, that such an approach may require considerable care and preparation on your part. I haven't tried that, but I did try out this feature on normal paper, and the result is impressive.

In summary, this is a program that you may find useful to maintain order within your various financial accounts. At the very least, you will see still another demonstration of the capabilities of your TI computer in the hands of a creative programmer.

EXAMPLE OF "PERSONAL BANKING" PRINTOUT

ACCOUNT: CHECKING NO. 2 3071 160A DATE: 89/03/24

(Item)	(Type of transaction)	(Date)	(Amount)	(Balance)
001	DEPOSIT/CREDIT	89/01/02	3750.00	3750.00
002	TRANSFER FROM ACCOUNT	89/01/05	-1000.00	2750.00
003	CHEQUE NO.47	89/01/15	-146.90	2603.10
004	CHEQUE NO.101	89/01/16	-96.21	2506.89
005	TRANSFER FROM ACCOUNT	89/02/12	-120.50	2386.39
006	CHEQUE NO.137	89/02/13	-174.83	2211.56
007	CHEQUE NO.173	89/03/24	-54.85	2156.71

ACCOUNT: CHECKING NO. 444 000 71C DATE: 89/03/24

(Item)	(Type of transaction)	(Date)	(Amount)	(Balance)
001	TRANSFER TO ACCOUNT	89/01/05	1000.00	1000.00
002	TRANSFER TO ACCOUNT	89/02/12	120.50	1120.50

CREDIT CARD: OIL CO. NO. 7650 DATE: 89/02/13

(Item)	(Type of transaction)	(Date)	(Amount)	(Balance)
001	PURCHASE CHARGE	89/01/05	-146.90	-146.90
002	PAYMENT	89/01/15	146.90	0.00
003	PURCHASE CHARGE	89/02/07	-174.83	-174.83
004	PAYMENT	89/02/13	174.83	0.00

CREDIT CARD: VISA NO. 0205 591 6689 DATE: 89/03/24

(Item)	(Type of transaction)	(Date)	(Amount)	(Balance)
001	PURCHASE CHARGE	89/01/10	-96.21	-96.21
002	PAYMENT	89/01/16	96.21	0.00
003	CREDIT	89/02/27	14.23	14.23
004	PURCHASE CHARGE	89/03/11	-69.08	-54.85
005	PAYMENT	89/03/24	54.85	0.00

CONSOLIDATED ACCOUNT 89/04/01 3277.21

Transcribed by Blair MacLeod

- OSHTI OCT-90-8- -

PUG PERIFERAL a newsletter put out by the Pittsburgh User group has a review of SUPER MARIO BROS. It seems that it isn't such so super.

Gary Taylor ordered Super Mario Bros. from an ad in MICROpendium (which I mentioned in a previous newsletter). It seems that it takes a long time to get it via the mails (Gary says 5 weeks and 1 phone call).

Super Mario is also copy protected and won't work at all on a MYARC HFDC (disk controller). TURBO COPY will copy the disk on a NON-MYARC controller, bad sector 1 and all.

To get it to work on a MYARC controller, Gary copied the sectors over to a newly initialized disk and RECOVERED the files with DSKU. A long, slow process. But it worked.

Gary compared Super Mario Bros. to the Nintendo game, "It's graphics are poor and the speed o the game is slow." Gary adds, "All in all , it was a bad purchase." He goes on to say that the documentation was unreadable and it looked like the tenth generation of a xerox copy.

When Gary ordered Super Mario Bros. he also ordered Super Games Pack. He said that his was the only saving grace for this company. The only problem with the other games is that they are a "bit buggy and tend to crash occassionally but not in the same spot."

B U Y E R B E W A R E !

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* 9T9 TORONTO USER GROUP LIBRARY LISTING FALL '89 *
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MAILING ADDRESS:

9T9 Users Group
15 Kersdale Ave.
Toronto, Ont. ,M6M-1C9
Canada

LIBRARY DIRECTORS:

Gary Bowser	960-0925	Disk Librarian	: Handles the mail order,etc.
Andy Parkinson	275-4427	Library Updater	: Adds/Demos the new software.
Steve Findlay	727-6807	Cassette Librarian	: Handles the Cassette Library

LIBRARY INFO:

Library disks are $2 each.
DOM's (Disk of the Month) are $3 each.
Prices are a buck less per disk, if you supply the diskettes.

All disks & DOM's are available the following ways;

1: At all club meetings.
2: By mail, send a list of diskettes wanted, and a cheque or money order to the club's address. Disks will be mailed within a week after getting your letter.
3: By calling, GARY BOWSER at 960-0925 & arranging to pick them up at his place.

DISK CODE:	A)rtist	S)peech util's	U)tilities	C)atalogs soft/hard
G)ames	O)ther misc.	I)nstructions	H)ome & finance	P)rogram langs/help
M)usic	E)ducation	D)isk manips	W)ord manips	T)erm ems/help/BBS's

TYPE CODE :	TEXT-Dis/Var 80	EA -Editor/Assembler and 32K
MP -Multiplan	FRTH-Forth lang.	EAXB- (E/A or Extended Basic) and 32K
MM -Mini Memory	TE2 -Term Em. II	XB -Extended Basic
ART -pictures	9640-MYARC 9640	XB32-Extended Basic with 32K
LOGO-Logo II module		

is the number of single sided/single density disks needed.
VER. is version of the program. Disks listed as OLD will be updated as soon as the club gets the latest version. Disks listed as NEW were recently added or updated since the last print of the CATALOG.

DSK	DISK NAME	#	TYPE	VER	Comments about the programs,etc.
A01	ARTISTPIC	>	ART	>>>	B/W TI-ARTIST pictures (32 disks)
A02	COLORPICS	>	ART	>>>	Color ARTIST pictures (02 disks)
A03	ARTISTFS1	>	ART	>>>	Fonts/Slides/Instances (13 disks)
A09	AUTO CAD	1	EA		Computer assisted drawing
A10	GRPHJACKT	1	XB		Prints a disk jacket using a GRAPHX
A11	JETSPRITE	2	XB		Sprite builder program
A15	TASS 2001	1	XB32	3.0	Tri Artist Slide Show 2001
A20	PICASSO	1	EAXB		Desktop Publisher
A23	INFOSYSTM	1	EAXB		Slide Show and Editor from Holland
A24	ART/CON	1	XB32		Utilities to use with TI-ARTIST
A25	PIX-SHOW	1	XB32		Color Artist Picture show from XB
A26	ANIMATION	2	EAXB		Make your own Cartoons with Docs
D03	MX-DOS	1	XB32		A DOS for Extended BASIC
D04	QUADLISTR	1	XB32		A great 4 column disk cataloger
D05	DISKUALL	1	EAXB	4.1	DSKU for TI/CORCOMP/GENEVE systems
D "	DSKUMYARC	-	EXXB	4.1	DSKU for MYARC Controller in a TI99
D "	ARCHIVER	-	EAXB	3.0	Archiver 3 with one step ARC & CMP
D06	LISCUTILA	1	EAXB	---	BTLOAD,DISK@,CATLIB,DCOPY with docs
D07	MISCUTILB	1	EAXB	---	DCLP,LABELER,GR EDITOR,GR VIEWER
D08	DSKLABLER	1	XB32	2.0	Disk Labeler 99 with full docs
G01	CHINACHSS	1	XB		A new game using icon control!
G02	CRAPS	1	XB32		Crap Game (very good game)
G03	FRENZY	1	EAXB		Space game very well done
G04	MONOPOLY	1	XB		Plays like the board game
G05	MS ADVEN	1	XB32		Text adventure game
G06	OIL INVAS	1	FRTH		Oil Invasion (a game in forth)
G07	TI99OPOLY	1	XB32		A well done version of Monnpoly
G08	TRIVIA99	1	XB32		Trivia Game
G09	WIT GAMES	3	XB		Scrabble type games
G10	WORD WIZ	1	XB32		A word game with text to speech
G11	ICSAMPLER	2	EAXB		Samples of INFOCOM adventure games
G12	TOD*BASES	2	EAXB		Tunnels of Doom with over 10 games
G13	FROG	1	XB32		Frog jump game from MicroPendium
G14	CHAINLINK	1	XB32	5.0	Solataire type game by Walt Howe
G15	GERMANXB1	1	XB		Some XB games from Germany
G16	HOCKEYC99	1	EAXB		Hockey game in C with good graphics
G17	BRIDGEBID	1	XB32		Bridge bidding with docs on BRIDGE
G18	MAZE-GROG	1	XB32		A Maze game for woodstock with docs
G19	STAPHGAME	1	XB32		Blackjack, Poker & Wheel of fortune
G20	ZODIAC	1	XB32		A Zodiac wheel of fortune with docs
G21	NUCLEAR99	1	XB32	NEW	Simulation of a Nuclear Plant
G22	TIRUNNER	1	XB32	NEW	TI Runner Screens & Editors + docs
H01	CHECKBOOK	1	XB32		Cheque Book and Budget Management
H02	FASTTRANS	2			Checkbook Recapper/planner
H03	MP-BUDGET	1	MP		Budget template for Multiplan
H04	PR BASE	3		2.1	A good personal data base program
H05	VCR-DB	1			A Database for your VCR Tapes
H06	RECORDS/+	1	XB32		Data Base type prog. (Records Plus)
H07	AMORTIZAT	1	XB		AMORTIZAT by Jiri Svoboda (9T9 UG)
H08	CFS	3	XB32	5.0	Creative Filing System by Mark Beck
H09	TI-LEDGER	1	XB32	1.2	Like AUTOMATIC ACCOUNT on the IBMPC
H10	99-MAIL	1	EAXB		A mail list (710 records per SSSD)
H11	MULTITAXS	1	MP	NEW	Canadian & Ontario TAX years 85-88
H12	PERECORDS	2	XB32		Personal Records Filing System
H13	CHQUEWRTE	1	XB32		Cheque Writer with docs
H14	BUDGTPRNT	1	EAXB		Utilitly for the Home Budget Module
H15	GENEALGY1	1	XB32		A program to record family roots
H16	GENEALGY2	1	EA		GENEALOGY in Assembly from HV99 UG
H17	HOMEINVEN	1	XB	NEW	A Home Inventory program
H18	PERBNKING	1	XB32	NEW	Personal Financial Record-Keeping
I01	FORTHDOCS	5	TEXT		Forth Manual on disk (incomplete)
I02	TIREWRITE	1	TEXT		Helper file for TI-WRITER commands.
I03	TYPETTE	1			A Basic course in Beginners Typing
I04	TUTORIALS	1	XB		Tutorials for XB
I05	SPEEDREAD	1	XB32		Tutorial for SPEED READING + tests
I06	GPLMANUAL	2	TEXT		ARChived unpacks to four diskettes
M01	4thMUSIC	1	FRTH		Music or Graphics Demo in Forth
M03	MUSIC#01	1	EA		Selection of EA Music
M "	AXLE F	-	EA		Music (Beverly Hills Cop)
M05	XBMUSIC#-	>	XB	>>>	XB music disks (06 disks so far)
M10	MUSIC-MAN	1	XB32		The MUSIC MAN album
M11	S-PACIFIC	1	XB32		The SOUTH PACIFIC album (volume I)
M12	WIZARD/OZ	1	XB32		The WIZARD OF OZ album
M13	PATSYCLNE	1	XB32		The best of PATSY CLINE album
M14	STARTREK	1	XB32		The STAR TREK album
M15	BEATLES	1	XB32		The BEATLES album
O01	C99PROGS	1	EA		C99 Programs Disk A)
O02	HV-1988	1	XB32	NEW	1988 MISC. FROM HUNTER VALLEY UG
O03	TI-PSYCHO	1	XB32	NEW	Simulation of a PSYCHIATRIST!
O04	GIRL/CALS	4	XB	NEW	Prints a Girlie Calendar for 89
P01	BEAXS	2	XB32		Editor Assembler on Disk Version
P02	STAR	1	XB32		Super TI Assembly Routines for XB
P03	TI FORTH	1	EA		TI FORTH programming language

P04	TI PILOT	2	EA	TI PILOT programming language
P05	TOOL KIT	1	XB32	A set of programming utilities
P06	cBASIC	2	EA	cBasic Language Compiler
P07	P-SAMPLER	1		Sample of different languages
P08	XB*TOOLS	1	XB32	Tools to assist the Extended Basic
P09	EDP 2.1	1	XB32 2.1	Enhanced Display Package
P10	UTILDISKB	1	XB32	ACE,COLIST,DISK HACKER,TEXT-BASIC
P11	PULSAR	1	XB32	Assembly Routines for X/B use
P12	LISP99	1	EA	LISP for the T199
P13	FRACTUAL2	1	EA32 2.0	FRACTUAL EXPLORER with docs & demos
P14	XBTXTLOAD	1	XB32	Converts DIS/VAR80 to XB program
P15	GEE!	1	EAXB	Graphics GEE! Language with docs
P16	NASTYXBOS	1	XB32	OS with a mind of it's own
P17	DASSM	1	EA/3	Universal Disassembler in FORTH
S01	SPEECH/01	1	TE2	Samples of singing speech programs
S02	TXTSPEECH	1	XB32	Text-To-Speech
S03	SPCHSPRWD	1	XB32	SUPERWORD for XB with docs & demo
T01	FT/OM/MT	2	EAXB ---	Fast-Term,Omega,Mass-Transfer
T02	TELCO	2	EAXB ---	DOES ANYONE HAVE THE LATEST VERSION
T04	DELPHIAID	1	XB32	Explains the DELPHI system
U01	CALENDARS	1	XB	A set of different calenders progs.
U03	LABELER	1	XB	Prints labels with over 110 logos
U05	SCRENDUMP	1		Screen dump to printer
U06	SYSTEMTST	1	XBMM	TI system test for XB or MM by TI!
U07	UTILDISKA	1	EAXB ---	Seletion of Util's in XB and EA
U08	LOGODUMP	1	LOGO ---	Logo dump program (EA5 type loader)
U09	LOGOSTART	1	LOGO ---	Logo auto start program EA5 loader
U10	GRPHLISTR	1	EA	Graphic Lister in c99 with docs
U11	NAMELOCK1	1	XB32	Label Maker, Mailing List, Calendar
W01	BA WRITER	2	EAXB 1.3	TI Writer on Disk Version and more!
W02	CRUNCH	1		Crunches Dis/Var 80 files
W03	FUNNELWEB	2	EAXB 4.1	TI Writer,E/A,Disk manager in one.
W04	FUNNELWB+	2	XB32	Companion disk for FUNNELWEB
W05	1000WORDS	1	EAXB	Print ARTIST pictures from TIWRITER
W06	TIWRITER2	1	TWTR 2.0	European Release of TI-WRITER
W07	RAGWRITER	1	EAXB 4.0	RAG software TI-WRITER with docs

HARDWARE CORNER
9900 ARCHITECTURE
by Richard Roseen

I will discuss the basic architecture of the TMS9900 microprocessor used in the 99/4A. As mentioned last month the 9900 is the main or excutive processor that controls the input, output, and memory of the 99/4A. It has a memory to memory architecture that makes it unique among other microprocessors that use register file general registers integrated within the architecture of the microprocessor. As a microprocessor molded from a minicomputer processor the 9900 has a minicomputer type instruction set. Also unlike other microprocessors the 9900 uses serial I/O for I/O communication; therefore, the only true parallel I/O is the well known memory mapped I/O which is used quite a bit by the 9900 in the 99/4A. The serial I/O in the 9900 is capable of single bit serial I/O and multiple bit serial I/O which is similiar to parallel I/O, in that multiple bits of I/O are transfered serially with the execution of one instruction.

Fig. 1 shows the internal architecture of the TMS9900. Notice the control logic and control ROM, when an instruction is read in from memory it is stored in the instruction register, then the control ROM can decode the instruction word into information that will tell the control logic what operations or activities that the remaining registers, multiplexers, and ALU are to do. There are only three user accessible registers a program counter, a workspace pointer and a status registers. These are the mininum number of registers needed for a Von Newman architecture where instruction and data memory are located in the same sequential address space and a program is executed in essentially sequential order, that is, the program counter is incremented sequentially. The status register provides storage for status information on the executing program and other hardware of the CPU. Other registers are the temporary registers T1 and T2, interrupt register, memory address register, source data register and are not accessible in machine language to the programmer. The above registers provide temporary storage for intermediate operations with the ALU. The interrupt register provides storage for the interrupt currently active so that a new interrupt can be checked for priority over the current active interrupt and depending on the result, the new interrupt will be activated during or after the current active interrupt. ALU is the Arithematic Logic Unit which does all the arithematic and logic operations on 16 bit data inputs (operands) and 16 bit results or output (destination). Multiplexer C allows either the X bus or the Y bus to be input to the block of 16 bit registers shown (10). Multiplexer A allows the input of any one of the 4 - 16 bit registers (10) to the input A of the ALU. B inputs of ALU are connected to the Y bus.

The workspace pointer register stores the address of the current set of workspace registers. Workspace registers are a set of 16 general purpose registers located in memory. All 16 registers can be used as accumulators and are all referenced by the workspace pointer register. Since all general purpose registers are in memory, and all general purpose registers can be located anywhere in memory by changing the workspace pointer, and there can be any number of sets of general purpose registers limited to the amount of memory availible and data in memory can be moved from one location to any other directly, the 9900 is described as having a memory to memory architecture.

The minicomputer instuction set of the 9900 refers to the fact that 69 instructions become 64,000 distinct operations because of the combination of operands possible with the 9900 instructions. For example, Fig. 2 below shows the arrangement of 16 bit instruction words for one type or set of instructions shown in Fig. 3.

Fig. 2

0 1 2 3	4 5	6 7 8 9	10 11	12 13 14 15
op code	Td	D	Ts	S

Bits 0, 1, 2, and 3 provide the indication of which general operation instruction is referenced. The Td bit indicates the type of address mode for a destination operand where data is retrieved and/or results are placed. The D bit represents which workspace register will be the destination operand or address. The Ts bit indicates the type of address mode for a source operand where the data is retrieved. The S bit represents which workspace register will be the source operand or address. More details of the 9900 architecture will have to be discussed in later articles.

Next month will be a discussion of assembly language, logic, and number systems. For instance, what is the difference between assembly language and machine language? Machine language is the binary word insructions retrieved that the microprocessor can execute. Assembly language is the set of machine instructions in mnenomic form, in other words, assembly language provides the instructions in abreviated words representative of the kind of task carried out by the microprocessor. Therefore, there is a one to one correspondence between assembly language and machine language.

MACHINE LANGUAGE	ASSEMBLY LANGUAGE	MEANING
1011 1010 1000 1100	ADD R1,R2	Add the contents of R1 to the contents of R2 and put the the results in R2.

Machine language is the binary bits understandable by the microprocessor. Naturally the discussion of assembly language and hardware next month will show how stupid a computer really is. It needs to restart its childhood learning every time it is turned on.

UPDATED:03/04/89 1:37:20 e.s.t. by Mike McGaughey, Why Knott PBBS 803 359-6792

ALL NUMBERS ARE FOR TI-99/4A BULLETIN BOARDS TOTAL:148

? = Item in Question
* = Accessible via PC-Pursuit
T = Temperary Down
. = Carrier Detected

300 = 300 Baud
12 = 300/1200 Baud
24 = 300/1200/2400 Baud
48 = 300/1200/2400/4800 Baud

CITY/STATE	AC	PHONE	BBS NAME/INFO	BAUD	SYSOP
Queensland, Austral.	61	07-284-8493	Techie	12	B. Barnardt
Gothenburg, Sweden	46	031-917004	West 99 BBs	12	Sten Gunnarssen
Sayreville, N.J.	*. 201	238-8170	Beaver Board	24	Dan Gazsy
Roselle Park N.J.	*. 201	241-8902	TICOFF BBS	12	Bob Guellnitz
Lakewood, N.J.	*. 201	370-0835	Jersey Shore TI	12	John Herbert
Howell, N.J.	*. 201	370-4756	TI-NET	12	Rick Dickens
Passaic, N.J.	*. 201	472-1799	NNJTIBBs	12	Ed Platlow
Passaic, N.J.	*. 201	472-2632	StashBox	12	John Bauiera
Succasunna, N.J.	*. 201	584-5373	Ramer 99	12	Jeff Eggenburger
Old Bridge, N.J.	*. 201	679-0549	O.B.T. Techie	24	Jackie Reiss
Elmwood Park, N.J.	*. 201	794-3175	GS99er's BBs	12	Scott Mueller
Clinton, Md.	*. 202	292-1482	BBBBs	12	Bob Fowler
Dulles, Va.	*. 202	631-8772	The Bull Board	24	Phil Simerly
Birmingham, Al.	. 205	836-7608	TI-Bugs	12	Gene Burchfield
Vancover, Wa.	. 206	254-3376	N.O.V.A. PBBs	24	Ivar Godlibsen
Seattle, Wa.	*. 206	361-0895	Queen Anne Computer	12	Barbara Wiederhold
Lynnwood, Wa.	*. 206	784-4142	Puget Sound 99er's	12	Keith Johnson
Des Moines, Wa.	*. 206	824-6757	Trothgard	12	John Brittingham
Waterville, Ma.	. 207	465-9065	The Northeaster BBs	12	Eunice Spooner
Sanford, Ma.	. 207	490-2870	Tree Top BBs	24	Michael Lescord
Portland, Ma.	. 207	797-5690	Down East Connection	12	Mark Rideout
New York, N.Y.	*. 212	547-4210	After Hours	12	Ed Scham
Carson,Ca.	*. 213	324-3185	Texlink BBs	12	John Bohlier
Los Angeles, Ca.	*. 213	755-7239	L.A. 99er's	12	Danny Nelson
Los Angeles, Ca.	*. 213	864-2488	TI-Club BBs	12	Steve Chalcraft
Whittier, Ca.	*. 213	947-7777	99 BBs	24	Roger Davis
Dallas, Tx.	*. 214	233-1750	99er Connection	12	John Guion
Dallas, Tx.	*. 214	263-7648	F.L.U.G. Texlink	12	Marty McCain
Easton, Pa.	. 215	252-8867	WWIV BBS	24	Mike Mattes
Hatboro, Pa.	*. 215	672-4051	TId Bits	24	Bob Rowe
Philadelphia, Pa.	*. 215	729-0401	Bullwinkle's Corner	24	Steve Clarke
Philadelphia, Pa.	*. 215	745-9774	Philly Tibbs 2	12	Dan McCloskey
Leesport, Pa.	*. 215	926-1661	TI-Line	12	
Philadelphia, Pa.	*. 215	927-6432	Philly TIBBs	12	Tom Burke
Struthers, Oh.	*. 216	755-8220	Penn-Ohio U.G.	12	Ed Luptak
Champaign, Il.	. 217	359-3431	Champagne FIDO	24	Jim Lewis
Clinton, Md.	*. 301	292-1482	BBBBs	12	Bob Fowler
Laural, Md.	*. 301	596-1044	The Harvester	12	Bob Hoffman
Newark, Del.	. 302	322-3999	Delaware Valley U.G.	12	James Gentry
Dover, Del.	. 302	674-1449	Delaware Valley U.G.	300	
Dover, Del.	. 302	678-0612	The Partical Board	12	Jim Davis
Golden, Co.	*. 303	277-1447	Nite Line PBBs	12	Keith Amann
Miami, Fl.	*. 305	386-8295	Miami U.G.	12	Wolfgang R
Pekin, Il.	. 309	353-9161	Perkin Techie	12	Mike Christianson
Melrose Park, Il.	*. 312	345-4127	TI-WEST #-1	24	Nick Iacovelli Jr
Chicago, Il.	*. 312	395-4618	TI-North	24	Gary Owens
Chicago, Il.	*. 312	453-7831	Chicago Connection	12	Hank Ellerman
Franklin Park, Il.	*. 312	455-3256	Westdale	12	Alan Izzo
Chicago, Il.	*. 312	725-0652	Captain Video	12	Ed Lee
Sauk Village, Il.	*. 312	757-3135	The Board	12	Bob Lee
Chicago, Il.	*. 312	966-2342	City Limits	12	Butch Goldstein
Taylor, Mich.	*. 313	291-4415	Taylor Town TI	12	Kenny English
Center Line, Mich.	*. 313	757-6157	Genesis PBBs	12	Joseph Lehn
Flint, Mich.	. 313	787-8284	TI Port-All	12	Jim Herron
St Louis, Missouri	* 314	878-4289	TIBBs	12	Ron Courtois
Witchita, Kan.	. 316	681-3167	MMPB TIBBs	12	Jerry McClusky
Bastrop, La.	. 318	281-7735	The I/O Bus BBs	24	Pat McMullan
Calgary Alberta,	. 403	285-1024	TI-Guru	12	Dave Lovering
Atlanta, Ga.	*. 404	363-1640	Ham Radio TIBBs	12	Larry Lord
Atlanta, Ga.	*. 404	250-9031	TIBBs	12	George Gorman
Forest Park, Ga.	*. 404	366-1914	Atlanta TI U.G.	12	Charles Dupree
PeachTree City, Ga.	*. 404	487-2849	Peach Nut #1	12	Ted DeLamare
Atlanta, Ga.	*. 404	768-0990	Micro 99	12	
College Park, Ga.	*. 404	991-6250	Atlanta UG #2	12	Jimmy Fairchild
Oklahoma City, Ok.	. 405	672-8270	OK Sooner Techie	12	Jerry Robertson
Orlando, Fl.	. 407	894-9641	Lone Wolf	12	William Byrd
Greenacres, Fl.	. 407	969-3134	Mid-Evil BBs	24	Stanley Krajewski
Lake Worth, Fl.	. 407	533-5167	The Big Experiment	12	Lee Stillwell
San Jose, Cal.	*. 408	258-3679	South Bay PBBs	12	Keith Felix
Pittsburg, Pa.	. 412	344-1315	The Harvester	12	Bob Hoffman
Pittsburg, Pa	. 412	344-1931	The Harvester	24	Bob Hoffman
New Castle, Pa.	. 412	654-8268	Mailbox BBs	24	Jeff Bishop
Pittsburg, Pa.	. 412	824-6779	Pittsburg UG PBBs	24	Gene Kelly
Springfield, Mass.	*. 413	736-0667	Mass. Gold Mine	12	Edward Goldberg
Green Bay, Wi.	*. 414	437-6930	Green Bay TIBBs	12	Denis Pfotenhauer
Sturgeon Bay, Wi.	*. 414	743-8654	Techie	12	Wayne Fisher
Toronto, Canada	. 416	288-9412	9T9 BBs	12	$Gil Tennant
Toronto, Canada	. 416	921-2731	TI Tower	24	Gary Bowser
Springfield, Mo.	. 417	865-0810	TI Depot PBBs	24	Curtis Finney
Waldbridge, Oh.	. 419	385-7484	Techie	12	John Clulow
W.Memphis, Ar.	. 501	735-9980	The Midnight Hour	12	Mike Dorman
Louisville,Ky.	. 502	893-0622	KyInda U.G.	12	Bill Fielden
Portland, Or.	*. 503	233-6804	P.U.N.N. BBs	12	Ron Mayer
Gresham, Or.	*. 503	667-4992	Net-Work 99 BBs	12	Chris George
Marrero, La.	. 504	340-5603	TI Net #4	24	Paul Arnold
Malden, Mass.	*. 508	321-8214	National 99er's	12	Russ Medeiros
Weymouth, Mass.	*. 508	331-4181	B.C.S. #-1	12	Tom Ward
Weymouth, Mass.	*. 508	335-8475	B.C.S. #-2	12	Wendell Davis
Worchester, Mass.	* 508	329-4237		12	Helen Holmes
Worchester, Mass.	* 508	754-0271	Jeff's TIny BBs	12	Jeff Artz
N. Attleboro, Mass.	*. 508	699-2099	Techie	12	Bob Brower
Worcester, Mass.	. 508	754-0217	Jeff's TIny PBBs	12	Jeff Artz
Carver, Mass.	*. 508	866-7878	99 Is Alive	12	Michael
Spokane, Wa.	. 509	484-6163	?	12	
Lubbock,Tx.	. 512	250-6112	TI-Care Forum	24	
Montreal, Que.	. 514	254-8685	CIM-99	12	Rejean Felton
Laval, Que. Canada	. 514	669-4385	TI-Echange	24	Aime Franche
Patchogue, N.Y.	. 516	475-6463	TI-Source Texawnt	24	Steve Lamberti
Saratoga Spring,NY	. 518	426-8349	Sam's Place	24	Phyllis Maiorella
Saratoga Spring,NY	. 518	583-2193	Saratoga 99er's	24	Phyllis Maiorella
Jackson, Miss.	. 601	373-2269	Jackson TIBBs	12	David Dent
Biloxi, Miss.	. 601	392-8717	The Keep TIKsoft	12	Larry Levy
Glendale, Az.	*. 602	437-4335	Vast 99er's	24	Jim Ely
Tucson, Az.	. 602	795-1953	Cactus Patch PBBs	12	Dave Ormand
Vancouver, B.C.	. 604	526-3389	Public Users BBs	12	Gavin Hutchinson
Vancouver, B.C.	. 604	689-3227	West End PBBs	24	John McKechnie
Delta, B.C.	. 604	943-2077	TIme Warp	24	Dave MacDonald
Sioux Falls, S.D.	. 605	336-3578	Dakota Infonet	12	Rory Binkerd
St.Bonifacius, Mn.	*. 612	446-1419	OOPS BBs	12	Ralph Johnson
Ottawa, Canada	. 613	738-0617	TI Ottowa 99er's	12	Peter Arpin
Columbus, Oh.	. 614	442-1852	T.I.A.B.S.	12	Bud Wright
Nashville, Tenn.	. 615	331-7344	Music City 99er's	12	Terry Johnston
San Diego, Ca.	*. 619	278-8155	99er BBs	24	Lutz Winkler
Grand Forks, Nb.	. 701	594-9797	The Rendezvous	12	Bill Overton
Las Vegas, Nv.	. 702	648-1247	S.N.U.G. BBs	24	John Martin
Chantilly, Va.	*. 703	631-8772	The Bull Board	12	Phil Simerly
Houston, Tx.	*. 713	479-0466	USS Starship Exodus	12	Chris Schneider
Houston, Tx.	*. 713	537-0741	Phoenix TIBBs	12	Bill Rister
Houston, Tx.	*. 713	781-4844	H.U.G. BBs	12	Henri Schlereth
Houston, Tx.	*. 713	955-6049	U.S.S. Net	12	Doug Hood

Fullerton, Cal.	*.	714	680-6406	O.C. BBs	12
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Thanks to Bill Wright for the original file of 75 numbers, also Bill Rister, Charles Petersen, Jeff Asenas, Cy Leonard, Jim Thomas and all others for their help! If you find any info missing here or updates (up or down #'s), changes, etc., please leave me [F]eedback with the changes or additions.

Those of you with P.C. Pursuit should know the details of logging on to P.C.P. by now, so the list below is a quick ref. replacing the old longer listing.

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PAT GRAHAM.
(474 9290)

9-T-9 TORONTO USERS' GROUP

THE DISK OF THE MONTH, 90/8 HAS SOME INTERESTING STUFF ON IT. THERE'S A PROGRAM FOR PRINTING YOUR OWN ENVELOPE, COMPLETE WITH OUTLINE SO YOU CAN ACTUALLY MAKE YOUR OWN. A PROGRAM FOR TAKING TI-ARTIST PICTURES AND FILLING A STANDARD PAGE WITH 20, 8, 4 OR EVEN JUST ONE. THE LATTER BEING SIDEWAYS. I FOUND IT SLOW, BUT VERSATILE. ANOTHER PROGRAM WILL PRINT UP TO TWENTY TI-A PICTURES ON A "PICTURE REFENCE SHEET" SHOWING, IF YOU WISH, THE DISKNAME OR A TITLE OF YOUR CHOOSING, AND THE FILENAMES FOR EACH OF THE PICTURES DISPLAYED.
CAME IN HANDY FOR THE DISKS I GOT FROM THE TORONTO LIBRARY A FEW DAYS BEFORE.
AGAIN TRANSCRIPTS WERE PRINTED FOR A COUPLE OF BBS CONFERENCES, ONE ON "DELPHI" WITH TONY LEWIS, THE OTHER FROM COMPUSERVE WITH ELI WILLNER, OWNER OF PECAN SOFTWARE AS A GUEST ON SYSOP JIM HORN'S SIG. STEVE FINDLAY'S "HARDCOPY" ARTICLE IS BACK WITH A LISTING OF MANY INTERESTING SOUNDING BINDERS. AND THERE IS AN ANNOUNCEMENT OF A NEW TI99/4A SOFTWARE SUPPLIER:-"KB COMPUTER CONCEPTS" HEADED BY KEITH BERGMAN AT 653 1/2 FAIR AVENUE NW., NEW PHILADELPHIA, OHIO, 44663 OFFERING A FREE CATALOG WHICH INCLUDES A GAME NAMED SPINNER, LIKE WHEEL OF FORTUNE FOR 1 TO 3 PLAYERS WITH "PHRASE" DISKS.

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BENCHMARKS & DIFFERENT LANGUAGES

In the October 1986 issue of Personal Computer World a new set of benchmarks was listed, suitable to test all languages - although some may not be applicable to some languages!

Looking over these benchmarks for the various languages available for the TI99/4A may help you to appreciate some of the good points of some of the languaes - and some of the weak points too.

By giving listings in the various languages, you may also be helped to understand how to use them - and if you dont have them already, maybe thing about obtaining them (or not!!).

I shall look at each benchmark in turn, and start with the first, called INTMATH - here is the description:

```
DECLARE THREE INTEGER VARIABLES X,Y AND I
 ASSIGN X EQUAL TO 0 AND Y EQUAL TO 9
  WRITE "START" TO SCREEN
   REPEAT 1000 TIMES USING I AS THE LOOP VARIABLE
    ASSIGN X=X+Y-Y*Y/Y
   WRITE "FINISH" AND X TO SCREEN
      [ X SHOULD BE ZERO ]
```

In the various Basics available on the TI, Integer Math is available ONLY with version 2.1 of Myarc's Extended Basic:

```
 100 DEFINT X,Y,I
 110 X=0 :: Y=9
 120 PRINT "START"
 130 FOR I=1 TO 1000
 140 X=X+Y-Y*Y/Y
 150 NEXT I
 160 PRINT "FINISH";X
```

This took 18 seconds.

In the following timings "MYARC EXBAS" refers to Version 2.0, using all real math, unless otherwise specified.

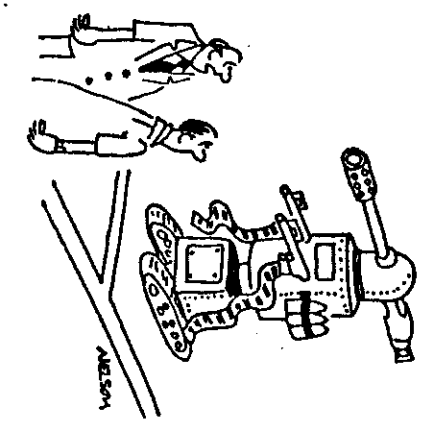
Integer math is also available in Machine Code, C-99, and Forth.
I will leave the machine code to someone else..

```
TI FORTH:
 0 VARIABLE X   0 VARIABLE Y
 0 X !          9 Y !
 : TS  ."   START"
   7 10001 1 DO DROP
     X @
     Y @ +
     Y @ -
     Y @ *
     Y @ /
       LOOP
  ."   FINISH"   .   ;
       TS
```

You may note that I have used a 10000 loop instead of just one thousand - mainly to give me a long enough period to time! This runs in 28.6 seconds, equivalent to 2.86 seconds for one thousand.

```
c-99
/* CONIO FIRST */
#define stdin    -1
#define stdout   -2
#define stderr   -3
#define EOF      -1
#define YES       1
#define NO        0
#define NULL      0
#define EOL      10
#define FF       12
#define BS        8

int x,y,i,loop;
main()
{ putchar(FF);
 x=0;
 y=9;
 while(++loop<11)
  { puts("start");
    i=0;
    while(++i<10001)
      { x=y+y-y*y/y;
      }
  }
puts("  finish");
}
```



Notice that ten thousand was not enough for accurate timing! This ran at a rate equivalent to 0.4755 seconds for one thousand.

Before we pass to Benchmark two, a note on these timings- we know of at least 6 different console operating systems - and three different TI extended basics - so timings on other systems may differ somewhat! TI did not bother with version numbers, but the set up used was:
TI99/4A console, TI peripheral expansion box, TI disk controller, Myarc ram card, TI SSSD disk drive (made by MPI). The extended basic module used was the second version of what TI called Version 110.

So, onto BENCHMARK TWO, called REALMATH:

```
DECLARE TWO REAL VARIABLES X AND Y
 DECLARE AN INTEGER VARIABLE I
  ASSIGN X EQUAL TO 0 AND Y EQUAL TO 9.9
   WRITE "START" TO SCREEN
    REPEAT 1000 TIMES USING I AS THE LOOP VARIABLE
     ASSIGN X=X+Y-Y*Y/Y
      WRITE "FINISH" AND X TO SCREEN
       [ X SHOULD EQUAL 0 ]
```

Again, we have problems with using integers... and you do not need to declare variables (why when there is only one class!) in Basic and in some languages there is no loop counter to be called I... however, this is one benchmark we can test in MANY languagse!!!

BASIC first:

```
100 X=0
110 Y=9.9
120 PRINT "START"
130 FOR I=1 TO 1000
140 X=X+Y-Y*Y/Y
150 NEXT I
160 PRINT "FINISH";X
```

Timings are:
TI BASIC: 17.7 seconds
TI EXTENDED BASIC: 22.0 seconds
MYARC EXTENDED BASIC: 31.8 seconds
(in these tests we have used Vn 2.0 of Myarcs Extended Basic - contrary to the ads, it does NOT support integer math)

[Using Myarc Vn 2.1 and defining i as an integer the timing is reduced to 23 seconds - a useful speed up]
Extended Basic allows multi-statement lines, and if the benchtest is compressed to a single program line in this manner, for both tested versions of Extended Basic, the running time is reduced by six per cent.

PILOT-99: In this language, use is made of 32 byte floating point math:

```
C: #X<-0
C: #Y<-9.9
T: START
LP: 100
C: #X<-#X+#Y-#Y*#Y/#Y
EL:
T: FINISH #X
E:
```

This has been looped only 100 times to save insomnia, as the test runs equivalent to 1000 loops in 576 seconds!

We now turn to BENCHMARK 3: TRIGLOG

```
 DECLARE TWO REAL VARIABLES X AND Y
  DECLARE AN INTEGER VARIABLE I
   WRITE "START" TO SCREEN
    ASSIGN X EQUAL TO 0
    ASSIGN Y EQUAL TO 9.9
     REPEAT 1000 TIMES USING I AS THE LOOP VARIABLE
      ASSIGN X=COS(SIN(ATN(LOG(Y))))
   WRITE "FINISH" AND X TO SCREEN
    [ X SHOULD BE 1000 ]
```

Now as COS cannot produce a value of 1000, we shall read this as 1.000, which still leaves a problem: the benchmark does NOT specify that LOG must be to Base 10 nor that trig uses degrees - but if you want an answer of 1.000 that is what you must use. Our TI99/4A uses BASE e for logs and radians for trig - so for many of the tests below I have used these. There is a comparison test using the "assumed" bases.

Basic first:

```
100 PRINT "START"
110 X=0
120 Y=9.9
130 FOR I=1 TO 100
140 X=COS(SIN(ATN(LOG(Y))))
150 NEXT I
160 PRINT "FINISH";X
```

The remarkable accuracy of the TI99/4A, coupled with trig routines written in long GPL sequences means TI trig is slow, hence only looped 100 times. However the results below are for 1000 loops (100 x 10 !):

TI Basic: 624 secs
TI Extended Basic: 362 secs
Myarc Extended Basic: 365 secs (Vn 2.0 AND Vn 2.1)

Using Log Base 10 and trig in degrees:

```
100 M=0.01745329251994
110 L=2.302585093
120 PRINT " START "
130 X=0
140 Y=9.9
150 FOR I=1 TO 100
160 X=COS(M*SIN(M*ATN(M*LOG(Y)/L)))
170 NEXT I
180 PRINT " FINISH ";X
```

The equivalent timings for one thousand loops are:
TI Basic: 640 secs
TI Extended Basic: 386 secs
Myarc Extended Basic: 392 secs

I will leave others the pleasure of testing this benchmark in TI Forth, C-99 and machine code, but here is what PILOT-99 can do:

```
T: START
C: #X<-0
C: #Y<-9.9
LP: 100
C: #X<-COS(SIN(ATN(LOG(#Y))))
EL:
T: FINISH #X
E:
```

The equivalent time for 1000 loops is here 1710 secs!

BENCHMARK 4 is TEXTSCRN:

```
 DECLARE AN INTEGER VARIABLE I
  WRITE "START" TO SCREEN
   REPEAT 1000 TIMES USING I AS THE LOOP VARIABLE
    WRITE "1234567890QWERTYUIOP" AND I TO THE SCREEN
  WRITE "FINISH " TO SCREEN
```

Another problem looms... the benchmark makes no mention of scrolling, a time consuming process. Not a lot of choice in TI Basic, but we do have the option in the other languages - so this benchmark has been run twice, with and without scroll. The results of this benchmark appear to be quite miraculous and will be commented on in the summary at the end:

```
100 PRINT "start"
110 FOR I=1 to 100
120 PRINT "1234567890QWERTYUIOP";I
130 NEXT I
140 PRINT "FINISH"
```

Times for 1000 loops:
TI BASIC: 260 secs
TI Extended Basic: 117 secs
Myarc Extended Basic: 73 seconds

Now, without the scroll:

```
100 PRINT "START"
110 FOR I=1 TO 100
120 DISPLAY AT(3,1):"1234567890QWERTYUIOP";I
130 NEXT I
140 PRINT "FINISH"
```

Times for 1000 loops:
TI Extended Basic: 76 seconds
Myarc Extended Basic: 34 seconds
(repeat: thirty four seconds)
but... incredible this - Version 2.1 of Myarc ExBas still manages an improvement and take it down to just 30 seconds!

Now...TI FORTH...first,scrolling:

```
 : TEST
  ."   START"
   101 1 DO
     ." 1234567890QWERTYUIOP" I .
         LOOP
  ."   FINISH" ;
```

The equivalent time for 1000 loops is 68 secs.

Next, non-scrolling:

```
 : TEST
  ."   START"
   1001 1 DO
    4 5 GOTOXY
    ." 1234567890QWERTYUIOP"  I  .
         LOOP
  ."  FINISH"  ;
```

This routine takes 33.6 secs for 1000 loops.

Before we move on to the fastest, let's try the slowest, PILOT-99:
(non-scrolling):

```
C: #I<-0
T: START
LP: 100
C: #I<-#I+1
TC: 4,5
T: 1234567890QWERTYUIOP #I
EL:
T: FINISH
E:
```

For 1000 loops, this takes...980 secs

Moving quickly on to the fastest, first WITH scrolling, here is what C-99 can do:

```
/* console i/o first */
#define stdin    -1
#define stdout   -2
#define stderr   -3
#define EOF      -1
#define YES       1
#define NO        0
#define NULL      0
#define EOL      10
#define FF       12
#define BS        8
int I;
main()
{ putchar(FF);
  puts("start ");
   while(++i<5001)
   { puts("1234567890qwertyuiop");
   }
puts("finish");
}
```

Unfortunately my C skills have not yet become sufficiently refined to print the loop variable, but it should not make too much difference...
The time for 1000 loops here is 38.72 secs.

Now, take the scroll out - the upper part of the program up to main() is identical so I won't repeat it here:

```
main()
{ putchar(FF):
  puts("start ");
    while(++i<5001)
    { locate(3,4);
      puts("1234567890qwertyuiop");
    }
  puts("finish");
}
```

and this version runs 1000 loops in 6.82 seconds.

Now on to Benchmark Five, GRAFSCRN:

```
 DECLARE INTEGER VARIABLES I AND J
  WRITE "START" TO SCREEN
   REPEAT 100 TIMES USING X AS THE LOOP VARIABLE
    REPEAT 100 TIMES USING Y AS THE LOOP VARIABLE
     PLOT PIXEL AT SCREEN LOCATION (X,Y)
  PRINT "FINISH" TO SCREEN.
```

OK- spot the deliberate error - the top line should ask you to declare variables called X and Y and I and J! Minor point... and speaking of points, all this benchmark is for is to find out how long it takes to plot 10,000 pixels on screen...

Not available in TI Basic or TI Extended Basic, but it can be done with Myarc Extended Basic:

```
100 CALL GRAPHICS(3)
110 CALL WRITE(1,22,2,"START")
120 FOR X=1 TO 100
130 FOR Y=1 TO 100
140 CALL POINT(1,X,Y)
150 NEXT Y
160 NEXT X
170 CALL WRITE(1,23,2,"FINISH")
180 GOTO 180
```

This took 268 seconds.
Running the program in Version 2.1 and using intergers, the time is reduced to 150 seconds.

FORTH also allows bit map graphics, so here is TI FORTH:

```
: TEST   PAGE  GRAPHICS2
    101 1 DO
     101 1 DO
       I J DOT
     LOOP
    LOOP
      TEXT ;
```

Notice that TI FORTH forces us to use those errant variables I and J!
This routine takes just 20.1 seconds.

Now, PILOT-99 also allows us to use bit map graphics, but those 32 byte floating point numbers seem to get in the way:

```
IG:
GC: 2,16
C: #X<-30
C: #Y<-0
TG: 12,9,START
LP: 50
LP: 25
PP: #Y,#X
C: #X<-#X+1
EL:
C: #X<-30
C: #Y<-#Y+1
EL:
TG: 13,9,FINISH
E:
```

Right- I have not used two loops of 100 each, instead, just 50 and 25, to give a total pixel count of one eighth of what it should be...and here is why- to

plot 10,000 pixels would take one hour five minutes and 36 seconds.

Let's finish this benchmark off with something a might faster:
9900 Source Code.
VSBW, VSBR, and VWTR are externally referenced to routines in the Editor Assembler module, and also available in the disk file EAU with FUNLWRITER.
The routines SETUP, CLEAR and PLOT are not shown here - they were written by Graham Marshall and appeared in the diskazine 4FRONT published by New Day Computing:

```
***************
* bit map
* benchmark 5
***************
         DEF   BITMAP
         REF   VSBW,VSBR,VWTR
***************
ROW      DATA  >0000
COLN     DATA  >0000
BITMAP   BL    @SETUP
         LI    R2,>F100
         MOV   @ROW,R8
         MOV   @COLN,R9
POINT    MOV   R8,R0
         MOV   R9,R1
         BL    @PLOT
         INC   R8
         CI    R8,100
         JGT   ROWINC
         JMP   POINT
ROWINC   MOV   @ROW,R8
         INC   R9
         CI    R9,101
         JLT   POINT
END      LI    R0,>F100
         BL    @CLEAR
         JMP   BITMAP
* graham marshalls routines here
*****************
```

This routine took 8.66 seconds.

FINALLY:
BENCHMARK 6: STORE:

```
 DECLARE AN INTEGER VARIABLE I
 WRITE "START" TO SCREEN
  CREATE A DISK FILE "TEST"
   OPEN "TEST" [READY FOR] INPUT
    REPEAT 1000 TIMES USING I AS THE LOOP VARIABLE
     WRITE THE RECORD "1234567890QWERTYUIOP" TO "TEST"
   CLOSE "TEST"
  DELETE "TEST"
 WRITE "FINISH" TO SCREEN
```

This also gives us a problem or two, mainly because the TI Disk Operating system automatically does some of the work for us - we don't have to "create a disk file", the system does that for us when we open the file!
And if you are used to opening a file "OUTPUT" when you write to it, the reference to "open "test" for input" just might throw you there...
I've only run this benchmark in the Basics, for to TI Disk Drive and to Myarc Ram Card, I'll leave the other languages to better programmers...
In the listings below, the file is opened as the default of DISPLAY, UPDATE, VARIABLE 80, and a well used disk was used - the same one for every test, in exactly the same condition for each.
Now, DV80 may not be the fastest way of running this benchmark! but the conditions WERE identical for every run:

```
100 PRINT "START"
110 OPEN #1:"DSK1.TEST"
120 FOR I=1 TO 1000
130 PRINT #1:"1234567890QWERTYUIOP"
140 NEXT I
150 CLOSE #1
160 DELETE "DSK1.TEST"
170 PRINT "FINISH"
```

Using the MPI/TI SS.SD. disk drive:
TI BASIC: 166.5 secs
TI Extended Basic: 131.5 secs
Myarc Extended Basic: 82.8 secs

Using the Myarc Ram Disk:
TI Basic: 112.6 secs
TI Extended Basic: 68.6 secs
Myarc Extended Basic: 34.6 seconds.

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NOW... a brief summary of all those timings.

BENCHMARK: INTMATH	REALMATH	TRIGLOG	TEXTSCRN	GRAFSCRN	STORE
---all times for 1000 loops as definition---					
LANGUAGE:					
TI BASIC NP	17.7 SEC	TI Norm 624 SEC Base 10 640 SEC	SCROLL 260 SEC NOSCROLL NP	NP	DISK 166 SEC RAMDISK 113 SEC
TI EX BAS Vn 110 NP	22.0 SEC	362 SEC 386 SEC	117 SEC 76 SEC	NP	131 SEC 69 SEC
MYARC EXT BASIC Vn 2.0 NP	31.8 SEC	365 SEC 392 SEC	73 SEC 34 SEC	268 SEC	83 SEC 35 SEC
Vn 2.1 18 SEC	23 sec	as 2.0	untried 30 sec	150 sec	untried
PILOT-99 NP	576 SEC	1710 SEC untried	untried 980 SEC	65.5 MINUTES	untried untried
TI FORTH 2.86 SEC	untried	untried untried	68 SEC 34 SEC	20.1 SEC	untried untried
C-99 0.48 SEC	untried	untried untried	38.7 SEC 6.8 SEC	untried	untried untried
9900 MACHINE CODE not tried	untried	untried untried	untried untried	8.66 SEC	untried untried

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We long ago became accustomed to the TI99/4A being placed very very close to the bottom of the PCW benchmark listings.... but take another look at the times for TEXTSCRN above.
In the October 1986 issue, PCW gave the following timings, for these very new and very fast machines:
COMMODORE AMIGA BASIC.....150.3 seconds!
IBM PC + BasicA.....100.0 seconds
IBM PC + Turbo Pascal.....76.4 seconds
IBM PC + PC Forth.....67.0 seconds
ATARI ST + Atari Basic.....44.8 seconds
Atari ST + Megamax C.....39.6 seconds

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Well well well....

What can we deduce?
Extended Basic tends to be faster than TI Basic, and while Myarc Extended Basic can be much faster than TI Extended Basic, it is NOT the rule for that to be so!
PILOT-99 is really held back by those 32 byte numbers and is not a language of choice for speed!
TI FORTH can be fast, and C-99 is well worth looking at if you can't make it all the way to 9900 machine code.

STEPHEN SHAW

Stand Up Comic: NOW's Weekly Guest Comic **by Randy Melson**