

UPSTATE UPSTATE UPSTATE UPSTATE UPSTATE UPSTATE UPSTATE UPSTATE UPSTATE UPSTATE

OUR NEXT MEETING will be on Friday,

SEPTEMBER 16, 1983 at 7:30 pm

PLACE: KEY BANK BLDG.

SW corner of Rt. 20 and Rt. 155

THE OCTOBER MEETING will be on Friday,

OCTOBER 21, 1983 at 7:30 pm

PLACE: KEY BANK BLDG.

SW corner of Rt. 20 and Rt. 155

September's meeting will include an introduction to Pascal, Another seat prize, A report on possible charter changes, The choosing of a nominating committee and if time permits, de-bugging your BASIC program.

UPSTATE 99/4A USERS GROUP
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M I N I M E M O R Y

Well, as the man said, I've got some good news and some bad news. The good news is that we are going to continue the MINI MEMORY column in the newsletter. The bad news is that the column will no longer be written by Jon Daggett, who's returning to school in Virginia for the fall semester. So let's struggle along together. Jon has discussed general features of the MINI MEMORY and compared it to the EDITOR/ASSEMBLER. Most importantly he showed you how to name an assembly language program. While the MINI MEMORY has only limited capability compared to its big brother the EDITOR/ASSEMBLER, it does represent an opportunity to get at assembly language with a minimum investment compared to the full blown system. To operate the MINI MEMORY you only need that module (discounted to about \$70-\$75) with your console and a cassette recorder; compared to the EDITOR/ASSEMBLER, DISK DRIVE, DISK CONTROLLER, and MEMORY EXPANSION to have the more powerful system. Also ... some of us already own the MINI MEMORY.

After struggling with my MINI MEMORY for several months, I am now using two pieces of TI-BASIC software which make use of the module much easier. This column will discuss those programs.

DISASSEMBLER:

Martin Kroll has written a disassembler for the MINI MEMORY (see the March 1983 99'er and SC-083). When you finish entering a program into MINI MEMORY and then enter END, you can then execute the program from MINI MEMORY or EASY BUG. Unfortunately, doing this causes your source code to be erased and only your object code is retained. If your program does not run correctly and you have to debug it (or if it runs, but you want to modify it), you really have to be pretty proficient to work only with object code and to disassemble things by hand. Kroll's program runs out of TI-BASIC and will disassemble the object code for you with the capability to dump to a printer. Voila! You now have a chance. You must run the program three times to separately disassemble object code, text, and data, but it sure beats doing it by hand.

LOADER:

The Line-by-Line Assembler in the MINI MEMORY occupies some of the 4K bytes in the module and only lets you assemble a program of about 750 bytes. But if you have the object code for a program you can use the whole 4K (you should only use about 3800 bytes for an assembly language program. EASY BUG will let you load object code directly into memory. EASY BUG however has you type one byte (two hexadecimal digits) at a time. As you work with assembly language on a TI 99 you'll learn to think in words (two bytes or four hexadecimal digits on a 16 bit computer). I've written a TI-BASIC program (see SC-084) which lets you load hexadecimal object code directly into the MINI MEMORY one "word" at a time. You'll find this much more convenient, because assembly language programs for the TI 99 list one "word" (two bytes) per line. also you may find it easier to load corrections to your programs this way after you've debugged them using Kroll's disassembler.

Two short, simple assembly language programs have also helped me in my use of the MINI MEMORY. One, CLEARS, puts all zeros at the front of the assembler (starting at >7D00). It's much less confusing when typing in a new program to have all zeros there, than with the object code left from the LINES program that comes with the Line-By-Line Assembler. I wrote a program, NAMES, which catalogs the program names in the Ref/Def table in MINI MEMORY. While both these programs take up space in the assembler (you'll have about 640 bytes left with both loaded), you will find them convenient in the beginning as you write short programs. Next month, we'll show you one or both of these programs depending on how much newsletter space it takes to detail them.

Mike Henry

H I N T S F R O M H E N R Y

Welcome to the second installment of our advice column for TI 99 users. So far we have not received any input from readers, but it's early and we hope you will eventually share your best tricks with your fellow 99 owners. If you have something that you think is worth sharing then send it to the Users Group at P.O. Box 13522 in Albany, send it to my home at 734 Wright Avenue, Schenectady, N.Y. 12309, or talk to me at our monthly meetings. Until then here are two more tricks that we have picked from a variety of sources.

Item 1:

The old version of EXTENDED BASIC (Version 100) runs slower than TI-BASIC on most programs. This is because Version 100 enables all 28 Sprites whether you are using them or not. The new version (Version 110) disables all sprites until you want to use them, and then only enables a number equal to the highest number Sprite that you have specified. You can determine which version you have. At the command level type: CALL VERSION(A). When the 99 returns with its prompt, then type: PRINT A. The computer prints out the version number as 100 or 110. If you have the MEMORY EXPANSION unit and Version 100, you can speed up execution when not using Sprites. At the beginning of your program insert the following line: CALL INIT :: CALL LOAD (-31878,0). This disables all sprites. If you are using sprites, then substitute the number of the highest specified Sprite that you are using for the "0" in that line.

Item 2:

TI-BASIC left justifies numbers when it prints, i.e.} it lines up its numeric output such that the first character in each number appears in the same column. The International Users-Group newsletter had a simple solution to cause numeric printouts to line up numbers on the decimal point. This certainly makes reading the output easier, especially financial data. The following subroutine should be put in your program:

```
1000 REM DECIMAL POINT ALIGNMENT SUBROUTINE
1010 IF POS(STR*(RJN),".",1) THEN 1040
1020 PRINT TAB(T-LEN(STR*(RJN)));STR*(RJN)
1030 RETURN
1040 PRINT TAB(T+1-POS(STR*(RJN),".",1));STR*(RJN)
1050 RETURN
```

Whenever you want to print numbers with decimal points aligned, just set RJN equal to the number want to print, set T equal to the column number that you want the decimal point in, and then do a GO SUB 1000. The routine also correctly handles whole numbers.

Mike Henry

S W A P C L U B N E W S

We should have a new Swap Club catalog this month, unless there are no additions beyond the two reported last month. As an experiment we will be open for business for at least 15 minutes before the scheduled start (7:30 P.M.) of the regular meeting. We will close at 7:30 so that everybody (myself included) can pay attention to the meeting, and then re-open after the meeting.

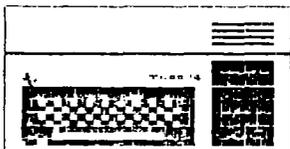
Swap club transactions (your input to me and my output to you) may now be done on 5-1/4" floppy diskette. We'll have to work out the details of costs for blank disks, if you want me to supply them, after I have located a reasonable source of diskettes.

Mike Henry

The UPSTATE is published monthly by the Upstate New York 99/4 Users Group. It's purpose is to keep group members informed of the meeting dates, tentative topics and other items of interest to the users of the 99/4(A). We welcome articles from the membership for publication. All articles in The Upstate (unless specifically noted as copyrighted) may be reproduced as long as the authors and The Upstate are credited properly. For any additional information regarding any article in The Upstate kindly contact the author.

NEWSFLASH

The "free" P BOX deal has been replaced by a better offer. Now for a list price of \$550 you get a disk drive, controller, memory expansion, peripheral box and your choice of t.i, writer or multi-plan. Many other peripheral prices slashed also. I should have known this would happen, I just finished paying off my loaded expansion box. For more details see your local dealer!



FROM THE CONSOLE
OF THE PRESIDENT

H E L P

HELP! We sure do need it. As we look toward another year of the club we realize our tremendous growth will necessitate some changes in the club. We are looking for people in every phase of our organization. We need people to write and edit this newsletter. In the October election we need to replace all of our officers. We need to choose a nominating committee this month to choose candidates for next month's elections. We need people to speak on subjects for our monthly meetings. In short many of you will be needed if this group is going to continue to be active. I hope you will volunteer. You are needed.

Rich Lane

Book publishers have suddenly discovered the 99/4A. Recently I visited the computer section of the bookstore in Northway Mall. I counted six different titles on the TI! Three I had already, but I decided to buy Programmer's Reference Guide to the TI-99/4A by C. Regena, published by Compute! Publishers. It is by far the best beginning manual I have seen. Even the early chapters contained programming ideas I had passed over when I first started to program in TI Basic, and that now seemed to be really useful.

For example, in using the Insert Key (FCTN 2) I had somehow always assumed it gave you the ability to insert one character, and if you wanted to insert more than one, you needed to press the Insert Key before each one. Not so - one use of the Insert function allows you to insert any number of characters.

The book is full of interesting programs, and covers in an easily understandable way music, sound, color, speech, and the coordination of all these in BASIC programs. This is a book that shows off well the power and complexity of the 99/4A.

Robert S. Burgess

Wanted To Buy: Used broken Computers call Rich at 843-0637.