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MICRO/99 Newsletter
Volume 5, Number 3
May - June 1987

MICRO/99 is a not-for-profit group dedicated to the sharing of information and public domain software for the Texas Instruments 99/4A home computer. Members have free access to our library of several hundred programs on cassette and diskette. Meetings are held at 7:00 p.m. on the third Thursday of each month at the Illinois Agriculture Association building, 1701 Towanda Avenue, Bloomington. Attendees sign in with the guard at employee entrance number 4 at the rear of the building. Turn left at the sign for the main reception area and go down the stairs on the far side of it. Visitors are especially welcome, and may attend one meeting free of charge. Annual dues are $15 per family.

*** MEETINGS: MAY 21 & JUNE 18, 1987 ***

This is a call for volunteers for the upcoming meetings. Right now we have only a couple of vague promises to try to find "something to demo next time." But some of our best meetings have resulted from just that situation in the past. I'm confident that we will have several interesting things by meeting time. We really have had good participation at our meetings, with everyone having been "up front" at one time or another.

At all meetings members are encouraged to share any information gleaned from magazines, catalogs, bulletin boards, newsletters from other clubs, personal experience with products, etc. If you have a computer related question or problem, someone at the meeting may have an answer or suggestion for you. And, you are encouraged to bring and show any interesting program you found or wrote recently.

**** SMART REMARKS ****

This month the I'm turning the spotlight on one of our youngest members, high school junior, Jim Lohmeyer. I've enjoyed watching Jim develop since I first got him interested in the club. At that time I was able to teach him some things about the TI 99. Now it seems that the relationship has reversed. I find myself trying to hold him down to a level that the rest of us can understand when he gets going on assembly language, GPL, advanced hardware concepts, etc., etc. He's now at the level of communicating and collaborating with some of the real movers and shakers in the 99/4A community.

The next thing you ought to do, Jim, is to learn the "c" language. That's partly because it's one of the most portable languages (I suspect that you'll be working on other machines someday), and partly because I'd like you to teach me something about it. (After seeing your article for this month, I'd suggest you learn a bit more respect for your elders too!) This young man has come a long way since his main claim to fame was being my paper boy!

Sid Smart, President

# Assembler Executing

by

Jim Lohmeyer

Hello once again. Sorry I missed you last time, but I seemed to have contracted SMARTitis. SMARTitis is that crippling disease that causes one to put off writing a newsletter article, or doing taxes, until the very last second. In this case, it caused me to put off writing my article until the very last moment, at which time I was called in to work. I am now writing this a full THREE DAYS before it is due. I HAVE BEEN HEALED! LET THE ORPHANAGE SAY HALLELUJAH!

This month, let's discuss the SAVE utility found on the E/A disk. But first, I thought I would share with you a few little goodies I have discovered. Whilst I was pouring over one of TI's software development handbooks, I ran across some intresting little tricks.

Sometimes a register needs to be incremented by four. There are various methods of doing this:

```
INCT Rx              or   LI Rx,4
INCT Rx                   AI Rx,Ry
```

But both of these seem quite cumbersome compared to:

```
C *Rx+,*Rx+
```

Yes, that does work, and it takes only two bytes of memory!

Have you ever wanted to move a byte from the left half to the right half of a register and leave the left half empty? The easiest way to do so is:

```
SRL Rx,8
```

If you would like to carry the sign with it, use SRA instead.

If you are writing a program that is register intensive and need to swap values between two registers try this:

```
XOR Rx,Ry   Ry contains bit-wise difference
XOR Ry,Rx   set Rx to original contents of Ry
XOR Rx,Ry   set Ry to original contents of Rx
```

At first, this might look like a waste of memory, but if you take a look, saving and restoring with memory locations would take AT LEAST as much memory.

I must make a confession. I haven't been programming in assembly lately. Instead I have been programming in GPL. What is GPL you might ask. Well read on:

GPL is a language developed by Texas Instruments for use with their medium-speed memory devices called GROM (Graphics Read Only Memory). It is a language quite like assembly but then again not like assembly. Its syntax is virtually the same as assembly, but it has many features that assembly doesn't. For one thing, it can move anywhere from 1 byte to an unlimited number of bytes from any type of memory (GROM, CPU RAM or VDP RAM) to any other type of memory with just ONE line! One of its nicest features is that it is very compact object code (about a 41% savings over assembly code). Now for its downfall. To use a program written in GPL you have to use a GRAM simulating device (GRAMKRACKER, GRAMKARTE,

MAXIMEM, GRAMCARD etc.). Mack McCormick says he will be writing a GPL compiler that will work much like Clint Pulley's c-compiler. I started to write a GPL simulator that would run from memory expansion but I think I will hold off work on that until I see the result of Mack's efforts. If need be, I'll finish it. (It is about half done.) GPL also has many nice features that, if there is sufficient intrest, I can explain at a later date. Now, down to the business at hand.

## THE SAVE UTILITY

This utility is actually a gem of a little program. It is included on E/A disk B, where it sits just waiting to be used. I am ALWAYS suprised to see an assembly file that has been downloaded from a BBS that is in DF/80 form. It is a waste of disk space!! Let me explain.

The SAVE utility creates a MEMORY IMAGE (PROGRAM) file from an assembled DF/80 file. The advantages of this are that it saves disk space and it loads QUICKER.
It also allows you to save assembly code to CASSETTE. Yes, CASSETTE!

Now, read the section on the SAVE utility in your E/A manual. (pp. 420-421)

Isn't it incredible? To prepare your assembler source code for this utility, here's all you need to do:

1. Define the labels SFIRST, SLOAD and SLAST with the DEF directive in your assembly source.
2. Make SFIRST the label on the very first line of the program.
3. Make SLOAD the label on the first statement to be executed.
4. Make SLAST the label on the END directive.
5. Make sure your program isn't auto start (no entry point defined with the END statement).

After preparing your assembly source as above, assemble it using the R option. DO NOT USE THE C OPTION!. Load the object file using the name that you chose, then load the save utility from E/A utility disk B using the file name DSKx.SAVE and program name SAVE. The program will display some reminders, then it will prompt you for a file name. This file name is the name of the file it will create in program image format. Wasn't that simple?

One drawback to this method is the fact that a program saved in this format can not be directly CALL LOADed from EXTENDED BASIC. However, there are MANY fine loaders out there that can be used to load these type formats from XB. One is included with DM1000 V3.5. It is simple to use and will give you the option of loading multiple files from a menu selection.

Well, that about wraps it up for now. If you have any questions, comments or suggestions, just talk to me at the next meeting.

Until next time-

Happy Assembling,
Jim

# THE VIEW FROM MILAN, ITALY

By Paolo Bagnaresi (Author of BA Writer)
Via Ottawa TI UG, Aug 1986 and Call Sounds Oct 1986

TI-994/A seems to be the fourth largest used computer, Commodore, VIC 20 and C-64 being first. They are followed by ZX Spectrum and QL (Sinclair) and Apple II. However, PC IBM and compatibles are catching up really fast. Other computers, Atari 510-1040ST, Apple McIntosh; are slowly increasing their market share. Commodore Amiga hasn't shown up yet: it will be available in the next few months.

TI-99/4A typical configuration is console and tape recorder. A 5-10 percent of owners have also the disk drive system, expansion memory, a RS232 and a printer. Few users also have a second drive and maybe some fancy disk controller (CorComp or Atronic, this one from Germany).

Users of TI-994/A have not gathered into any user group. This may be due to the Mediterrian way of life: everybody does not trust too much anybody else. Moreover, in a user group you would have to work for free. Are we crazy? We do not like to work even if we get paid for, let alone for free. Now way we will do it. Some others argued that a TI club could be seen as a blatant American supporting team: we could be bombed by our mighty neighbor on the other side of the Mediterranean Sea (Khaddafi) as a dangerous US base (since we would have US computers we might as well have some US missle, couldn't we?). I think that it is mainly for this second reason why we do not have a user group.

There is a wild Frontier life here. You exchange a program for another program, sometimes for two programs, if you are lucky. If you do not have anything to exchange with, chances are you are gonna pay for that program you want. Mind, we are talking about programs that have been imported, that are copyrighted, that are sold by dealers in North America at regular prices. Anyway, no one here seems to give a damn about copyright, about rewarding a programmer. The only concern seems to be "is it copyable?"; that's enough , what the hell!

Here the real smart guy will join a user group in the US, get some really good stuff and then he will sell it all over Italy: prices for any program from US span $15 to $35. To the smart guy that programs costs $2.00 each, the copy fee he payed to the US user group! Good business, isn't it? Here there is a real spaghetti market. Only spaghetti, the meat balls are gone forever.

I know one of those smart guy, he lives in Bologna. He used to write US user group pretending he was an user group! He was also able to get his name publised on Home Computer Magazine, Oregon, USA. In this way he was able to receive a vast number of programs. Now he can see you ANY program you can think of, no matter what. Obviously, having been in this business for over three years, he did not have time to learn to program yet. But after all, who cares? Good money will come to him as a steady flow anyway: net income, no income tax to pay, no anything. Good life, isn't it?.

Ah, I forgot to tell you: documentation will not be provided by the pirate. It is like a "mafia": a dumb user *is not supposed to have the right* to know how to use a program. The less he knows, the better for the pirate distributor. Obviously, the dumb user gets hungry for some understandable program. Eventually, he will buy some other program from the pirate distributor, a program that will be more or less the same as the one he bought previously. That program was rather useless, wasn't it? The next one will be the same. By now, the trend has already been started. The dumb user gets addicted to the pirate distributor. He will consider him like a good willing person who does his best to help the fellow man. The pirate distributor is his friend, not doubt about it. If only those damned programs were easier to use....

On the other hand, photocopies are too costly and too time consuing. As a result, intelligent users will have to figure out by themselves how to use that pirate program: well, well, well, that is the fun of it, isn't it?

So much for the bad news. As for the good news: we have none. Here everybody seems to be waiting to see when the new Myarc computer will be working and ready to be shipped to Europe.

As for the rest of Europe. Germany (and Austria) are the strongest market for the TI-994/A. There are several companies that are developing good hardware and software. Most of what is available in Germany is already imported in North America by RYTE DATA of Canada.

France used to be a good country as for TI-99/4A. After all, the fabulous "TENNIS" game, by Micesoft, come from Nice, France. There was a French magazain "99 MAGAZINE", from Paris, that used to be pretty good. Unfortunately, it ceased publishing last year. Now we do not hear too much anymore from our cousins on the other side of the Alps.

We do not know what is going on in England. We know the Queen is still kicking and alive (God save Her), but we are afraid that TI-994/A is dead there. I'll be happy to be wrong on that assumption.

Greece does have some small market, but they seem to have only the console, no disk drive and only a few few memory expansions.

We do not know anything about Spain, aside from the fact that Bill Gronos lives there.

Back to Italy. There is a slow, but steady, shifting of users toward the PC IBM (and compatibles). Each month some friend calls me up and says: "Paolo, I am sorry, but I wanna sell out my system. Can you Help? You see, I have been offered a true PC IBM compatible. It's such a deal... I know, I know, we said we will never give away our beloved TI-994/A. But you see I simply need it for work. They recently asked us employeees to become PC IBM expert. Our office will be fully equipped with lots of PCs. and I don't want to be the least informed person in my office. C'mon, don't take it so hard, after all, we did not marry TI did we?"

This rap kinda goes on now and then. Boys, does it give me a chilly on my back! Will I be the last survival of an dwindling race?

If you ever publish this article, I would be glad to receive a copy of that newsletter

Yours truly,
Paolo Bagnarese
Via J.F. Kennedy 17
20097 San Donator Milanese, Italy
Phone 415.202 (Milan Area Code: 2. Calling from U.S. dial 01-39-2 first)

# DESIGN YOUR OWN CURSOR.....

I can't give proper credit to whoever originated this program to create a TEXAS cursor, but my goal is not for you to be the proud user of a TEXAS type cursor, but rather you know how to create your own CUSTOM CURSOR!

Whatever program that you use, assembly, or extended basic, you will have to encode the design for your CUSTOM CURSOR. The program will be the vehicle for your own cursor.

```
1 !TEXAS CURSOR  from GOTO Newsletter of Columbus, GA. Users Group;
  unattributed, but JIM PETERSONS and DR. RON ALBRIGHT'S names came
  up.
2 CALL CLEAR :: CALL INIT
3 CALL LOAD(8196,63,248)     ! REF table pointer at >2004 (3F,F8)
4 CALL LOAD(16376,67,85,82,83,79,82,48,8)  ! Indicates that a pro-
  gram named "CURSOR" begins at >3008
5 CALL LOAD(12288,48,48,63,255,254,124,24,12) ! THIS IS WHERE WE
  START THE CUSTOM CURSOR DESIGN .
6 CALL LOAD(12296,2,0,3,240,2,1,48,0,2,2,0,8,4,32,32,36,4,91)
7 CALL LINK("CURSOR") ! Links to the cursor program.
```

If you are interested in creating your own cursor, please read the rest of this page, and I'll show you how to chart out this TEXAS CURSOR, and how to create your very own, let's say one with your initials, or a square box. The creation is very much the same as charting a sprite in extended basic, but instead of using HEX, you will be using straight BINARY.

| BINARY WEIGHT→ | 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 | |
|---|---|---|---|---|---|---|---|---|---|
| ROW # 1 | | | X | X | | | | | = 48 |
| ROW # 2 | | | X | X | | | | | = 48 |
| ROW # 3 | | | X | X | X | X | X | X | = 63 |
| ROW # 4 | X | X | X | X | X | X | X | X | = 255 |
| ROW # 5 | X | X | X | X | X | X | X | | = 254 |
| ROW # 6 | | X | X | X | X | X | | | = 124 |
| ROW # 7 | | | | X | X | | | | = 24 |
| ROW # 8 | | | | | X | X | | | = 12 |

LOOK AT LINE "5" IN THE ABOVE PROGRAM.

If you look at the above chart, you will see the TEXAS CURSOR defined. Now all you will have to do is make a blank chart similar to the one above, and instead of putting the "X"'s in for TEXAS, put in the "X"'s to match the shape of your custom letters, or logo. Add up the numbers (binary weights)across the top of the chart above the place you inserted an "X". Do this for each row, and put the total at the end of each row.

Enter these totals in line 5, AFTER the address in the CALL LOAD(12288,xxx ,xxx,xxx,xxx,xxx,xxx,xxx,xxx). Now save this program to disk! RUN the program, and you are all set.

The program should stay in the machine until you either:

* Write over it with another program, not likely with xbasic.
* Shut the system down.

HAVE FUN!

From J. F. Willforth of the WEST PENN 99'ERS  March, 1987

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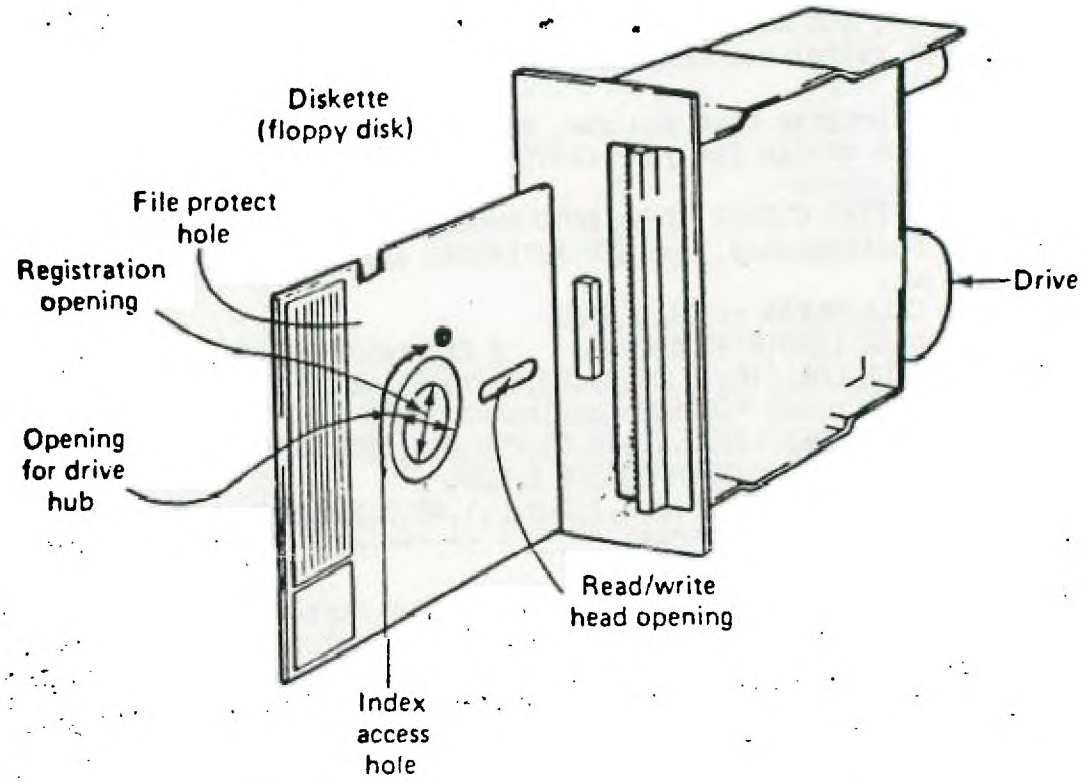


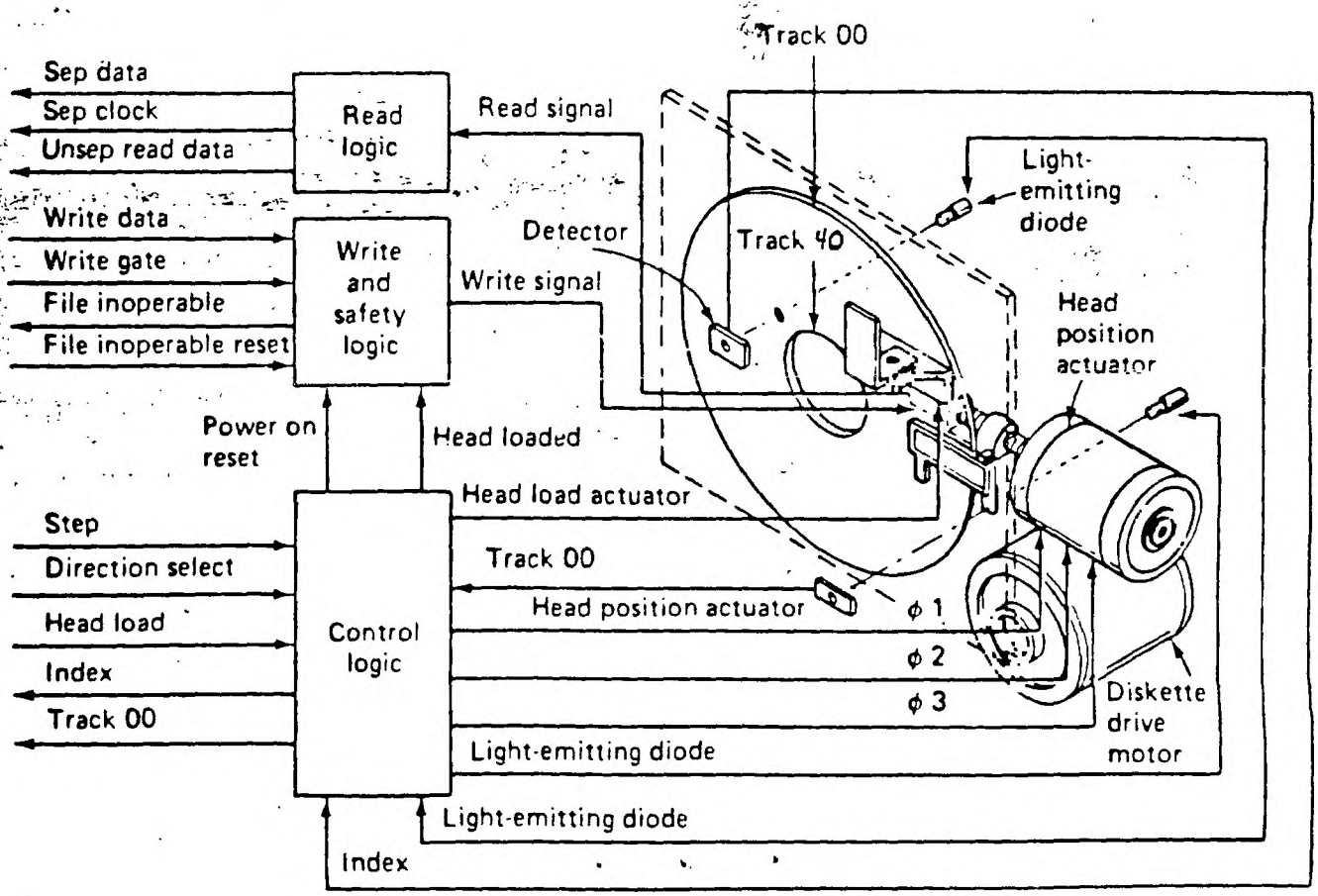

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*         MM     MM    IIIIII     CCCCCCC    RR        RR  00000000      *
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