the MONITOR

May, 1992 Commodore Users Group of Saskatchewan Vol. 7, No. 5

Obligatory Stuff

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If you have any questions about CUGS please feel free to contact any of the above executive members.

The Monitor is published monthly by the COMMODORE USERS' GROUP OF SASKATCHEWAN (CUGS), Regina, Sask. CUGS meetings are held the FIRST WEDNESDAY of every month (unless otherwise noted) at Miller High School. The next meeting will be held: **June 3, 1992 from 7:30 - 9:30 p.m.**

CUGS is a non-profit organization comprised of PET, VIC-20, C64, 64C, C128, and 128D users interested in sharing ideas, programs, knowledge, problems and solutions with each other. Membership dues are pro-rated, based on a January to December year.

Anyone interested in computing is welcome to attend any meeting. Out of town members are also welcome, but may be charged a small ($5.00) mailing fee for newsletters. Members are encouraged to submit public domain software for inclusion in the CUGS DISK LIBRARY. These programs are made available to members. Any member is entitled to purchase DISKS from our public domain library for a nominal fee. Programs are 'freeware', from computer magazines, or the public domain. Individual members are responsible for deleting any program that he/she is not entitled to by law (you must be the owner of the magazine in which a particular program was printed). To the best of our knowledge, all such programs are identified in their listings. Please let us know if you find otherwise.

This Month's Presentation

LOGO and Turtle Graphics
by Tristan Miller

Door Prize

Qix
Donated by Tristan Miller

Editorial
by Jarrett Currie

In a past Monitor, I described the need to edit articles that were submitted to the newsletter for publication. Because of a discussion held recently on the club's BBS, I thought this information could bear repeating.

I feel confident that everyone in the club enjoys reading the articles that are published in the Monitor. In fact, without the author's of these articles, the Monitor would cease to exist! So a great deal of praise and thanks go to everyone who takes the extra time to make the club's newsletter worth reading.

Unfortunately, although I have been the Editor for several years, the only experience I have had in publishing is the Monitor. Like all the other executives, I have had to live and learn, making mistakes along the way. And I have made mistakes. And I have learned from them. And each month the Monitor is published with the experience I have gained from all of the editing, laying out, rearranging, and rewriting that makes a newsletter.

The most important lesson that I have learned is that the Editor has to make changes to the articles that are received. And that the authors of the articles disapprove of any changes made. It is a bullet I have managed to bite, but to clear up any confusion, let me explain why changes are made:

1. We pay to have the Monitor duplicated. It doesn't make financial sense to duplicate blank pages, so I make a

concerted effort to fill each and every page. Each month there are about 12 different articles and tidbits that have to included, and each of these have to be juggled to fit into the newsletter. More often than not, the 12 articles don't fit an even number of pages exactly. In the past, I have included different articles I downloaded from QLink to fill up the extra space, or (God forbid!) edited the articles.

Of course, when I edit the articles, they are at the mercy of my judgement (which has been known to be periodically faulty). But, I decided a long time ago, that it is better for me to take out pieces of an article (while hopefully retaining the meaning) than to insert text into them, thereby putting words into the author's mouth. Generally this has worked well.

2. Because the Monitor was never intended to be as large as a magazine, which would have an editorial STAFF, the size of the newsletter has to be kept small enough to be manageable by the few people who look after it. This, of course, necessarily means that in order to publish each submitter's work, each article's size must be minimized. As a general rule of thumb, after I review an article, I determine its theme, and if the article needs to be edited for size, I remove text that doesn't pertain directly to it. Previously, this has sometimes meant that a great tangent was lost, but is the price paid for a manageable newsletter.

3. Lastly, I try to give each article a grammatical going-over. In some cases this is like the blind leading the blind. I have no formal training in this area, and rely on English classes taken years before in High School. I regularly check previous month's issues, and am amazed what slipped through. But, I feel confident that the more people who read a piece of text, even people with limited training, the fewer errors there will be. So, given my limited training, it should come as no surprise that some of my "improvements" actually made things worse. I had always assumed I would be forgiven this.

To a small degree, I hope I have cleared up some confusion why the articles submitted don't always appear as the articles published. And I would be remiss at this point not to mention that as summer draws near, all of you have time to think about ways of improving the Monitor. The most important way that comes immediately to my mind is by becoming the Monitor's Editor. Some time after the summer, the executive elections will take place, giving any budding publisher an opportunity to push the Monitor further ahead.

President's Message

by Barry Bircher

Hello all. Welcome to the CUGS newsletter, "The Monitor". In this issue I hope to shed some light on the club's activities of late.

There has been discussions on enlarging the club's BBS in order to help out the Commodore community. This increase has been proposed in the form of a CMD Hard Drive purchase. In light of the fact that the majority of the members have a modem, it makes sense to make access to the library more convenient. The hard drive on the BBS can open up doors to access the club's library. One of the main reasons for going this route will enable the club library to be open to all members with modems, 24 hours a day, 7 days a week, 365 days a year. To do this requires a hard drive. As CMD is the hottest and most talked about NEW peripheral for the 64/128, it makes sense to use it and support CMD in their efforts to provide a long overdue NEW hardware device like the hard drive. Also, it is a known fact that this product is new and revolutionary to the 64/128 8 bitters, and is also expensive.

Disk sales and membership dues are the club's main source of revenue. These revenues are used to pay for the club's expenses in disks, paper and copying services for the "Monitor", hardware maintenance on the club's 64 and 128 computers and disk drives, phone line charges for the BBS, hardware/software purchases for club use like Maverick Ramboard, GEOS, etc, etc.

This will, in part, help pay for the HD. However, through the years, since I can remember, the club has never increased its membership dues despite inflation, GST etc. and we still are only charging 10.00/yr and plan to keep it that way for the near future. In order to make the HD more viable however, one of the things we are looking at is a nominal charge to BBS users who want full access to the library (to be announced). It is not fair that non-users have to pay for a service they don't want or will not want to use. I am toying with the idea of using the BBS capabilities of restricting access via download ratio's. Non-members would have a 10:1 ratio where they can download 10 disk blocks per every 1 block they upload. Club members would have a ratio of 100:1. And Elite BBS club members would either have a 1000:1 ratio or have full download access. These will be the things we will be discussing at the next executive meeting. If you have comments or questions about this proposal or want to voice your support or non-support, just let an executive officer know or leave a message on the BBS.

The executive will be having an important meeting at my place the following Monday after the general membership meeting. We will be discussing the library, the purchase of the hard drive and the future planning of the club such as any new direction the club should go. I ask that all executive officers of the Commodore Users Group be in attendance, if possible, to discuss these things. This meeting will be held on Monday, May 11, 1992 at 7.00 P.M.

I have received a price list, hot off the fax machine, and have included an article later on in this issue describing the latest special club pricing of various devices and software available from:

Holtz Computer supply.
12, 5120 - 11th Street S.E.
Calgary Alberta
T2H 2L7
PH: (403) 262-5896
Fax:(403) 255-3110

For those who don't know about Holtz Computer supply, they are the CMD Canadian representatives. They supply Commodore 64/128 computer hard drives, Ramdrives, Ramlinks, SwiftLink RS232 interfaces, SID Symphony Stereo Cartridges, Dialogue 128, Jiffy DOS, GEOS Gateway, GEOS LQ Perfect Print utilities and modems. Their advertisement can be found in RUN magazine and GeoWorld. One of the first things to catch my eye was that they sell Dialogue 128 for $30.00. I have been looking for Dialogue 128 for over 2 years now and have had no success until now. Those of you who wanted to purchase Dialogue 128 awhile back can now get it through Holtz. Dialogue has long been talked about as one of the best full feature terminal packages for the 128 with many features such as full use of REU's as a buffer (imagine a 512 K buffer!), ASCII, ANSI, VT102, VT52, VT100 mainframe emulation modes and too many other features to mention here. For more detailed information, look at the article on the club's special offering and have a look at the brochures available for these products (available at this meeting only.)

Till Next Month
Have a good one.

Feed the Editor

by Tristan Miller

It has recently come to my attention that the contributors to the Monitor have decreasing somewhat lately. I'm sure we all enjoy reading our club's newsletter, but in order to get the most out of the Monitor we should all put in a little bit of effort. The process of contributing an article is very, very simple.

First, think of something to write about. Not knowing what to write about has been a commonly-used excuse, so I'm told, but I believe this is an EXCUSE, not a reason! I'm sure almost all of you could write a paragraph or two on a piece of software you use. If you feel you have found a useful programming tip or hint, why not write about that? Or if you feel you know a bit about history or hardware, write a short blurb on that.

Once you have your idea, sit down at a table or computer and begin writing your article with a pen or word processor. You may find a thesaurus and dictionary to be quite useful when writing, and afterwards, if your word processor has that feature, run it through the spell checker so it will look more professional.

There is no limit to the length of your article; it can be a few sentences or several pages (but keep in mind that the editor may want to remove parts or split it up into smaller articles if it is particularly lengthy). Try to aim for between half a page and a page and a half when writing.

Now that you're done your article, you have several options for how to get it into the Monitor. A method that works well with most people is to save it to disk as a SEQuential file and then upload it to the CUGS BBS in section F, the Monitor Uploads Section. Our editor, Jarrett Currie, can then download it and use it in the next month's newsletter.

An alternate (but somewhat longer) method is to print your article and bring it to the next CUGS meeting. Give it to the editor and he will see to it that it appears in the next Monitor. A third way, if you don't own a modem or cannot attend the meetings, is to get in touch with Jarrett by phone and arrange for a transportation method.

Now you may ask, "Why should I do that? What's in this for me?" LOTS. All first time submitters receive one free club disk, plus each time you submit an article your name will be added to a draw to take place at the end of the year. Last year, the draw was for a $50 gift certificate from Software Supermarket. The only articles not eligible for this prize are articles written by non-members, the President's Message, the Executive Meeting Minutes, the BBS listing, Scratch 'n' Save, the Best of Two (or Three) Worlds, the Editorial, and the Forgotten Realms. All other articles are eligible. Here are the current standings:

Tristan Miller	12
Barry Bircher	5
Colin Phillips	3
Ken Danylczuk	3
Ross Parker	2
Jarrett	1

The deadline for

article submissions

for the June issue of the

Monitor

is May 22

Attention Commodore Users
CMD Special Offer

Holz Computer Supply
12, 5120 - 11th Street S.E.
Calgary Alberta
T2H 2L7
Ph:(403)262-6896
FAX:(403)255-3110

Barry Bircher (CUGS President)
182 Coldwell Road.
Regina, Saskatchewan
S4R 4K8
Ph: (306)543-8840
BBS: (306)543-7683

I have talked to Neil Fifer, President of Holz Computer supply store in Calgary Alberta. I requested from him a special club offer for the various CMD products and peripherals. The offer he made to CUGS is as priced below PLUS he will pay the handling and shipping of the order, also there is no PST on the order. 7% GST will have to be added to keep the Government happy. I should point out that these prices are in Canadian dollars (duty, currency conversion, shipping, point of origin certificates, brokerage and import taxes/fees are eliminated.)

Eg: CMD in the states are charging 549.95 US for a 40 Meg drive. Add to that the Shipping of 50.00 US to Canada per drive. Including GST that will be added at the border the price, in Canadian dollars is 768.71. This does not include duty, provincial sales tax, brokerage fees or any other incidentals. Holz Price is 749.00 (including G.S.T., shipping and everything else). So buying from Holz is a better buy with all things considered. Plus the fact we are buying from a Canadian company.

This is a one time offer and probably will not be repeated. There are many things at Holz that would be of interest to you. If so, consider coming to the May 6th meeting and get them now at these prices and help Holz help the Commodore 8 bit community. I will be compiling the orders and will send them off to Holz. It is important to understand that the order has to go in as one order and one money order sent in by the club to be effective. Therefore the following is a schedule of what I am going to do.

✔ May 6th meeting, I should have brochures on the various products the Holz has to offer. Please take these if you are interested in buying something, take it home and look it over.

✔ June 3rd meeting, bring your cash/cheque/money orders made out to CUGS for the amount of your order and 7% GST. A receipt will be written up for your order. (Do not forget about the model and serial numbers if applicable)

✔ June 4th, cash/cheques/money orders will be amalgamated into one money order and a master order form made out and mailed to Holz.

✔ When the order is received, I will be phoning to let you know that your order is ready for pickup. The first price is the regular price and the second is the club price.

* Jiffy DOS *

64 (system)	$85.00	$70.00
64C (system)	$85.00	$70.00
64SX (system)	$85.00	$70.00
128 (system)	$95.00	$80.00
128D (system)	$95.00	$80.00

note: JiffyDos is probably the single most popular disk speedup/utlity upgrade for the 64/128 . JiffyDos "SYSTEM" includes one Kernal chip for the computer and one for the drive. (specify drive model and serial number). These chips are socketed in the computer and are easy to install.

Additional drive ROMS for the 1541, 1541II, 1541C, 1571, 1581 (Specify drive model and serial number)	$45.00	$40.00

* Stereo SID *

SID Symphony Stereo Cartridge (Includes 2 sided disk)	$65.00	$60.00
SID Program book & SID Editor (2 disks, write your own SIDS)	$50.00	$45.00

* GEOS *

Perfect print complete system (All drivers, utilities and fonts)	$70.00	$60.00
GateWay 64 (Incredible GEOS enhancement)	$40.00	$35.00
GateWay 128	$40.00	$35.00

* Miscellaneous *

JiffyMon Machine Language Monitor	$35.00	$30.00
Dialogue 128 (The Ultimate 128 Terminal program.)	$35.00	$30.00

* RAM *

RAMDrive 1Mb	$315.00	$300.00
2Mb	$375.00	$360.00
RAMLink, no RAMCard	$250.00	$230.00
RAMCard, 0 Mb	$95.00	$80.00
RAMLink/RAMCard combo 0 Mb	$300.00	$280.00
RAMLink Battery backup	$45.00	$45.00
RAMLink to Hard Drive Parallel cable	$25.00	$25.00
RAMLink RAM memory module 1 Mb	$75.00	$65.00
4 Mb	$250.00	$230.00

* Hard Drives *

All CMD HD series Hard drives (64/128) include a built-in 2Mhz., 64K controller and are about the size of a 1581 drive. A SCSI port on the back of the drive allows the addition of more SCSI drives (eg the SD series SCSI add-ons). Due to the market trends and manufacturers, the 20Mb SCSI drives are harder to come by and may be phased out completely.

HD Series 20 Mb (not recommended, 20Mb SCSI phasing out)	$550.00
HD Series 40 Mb	$700.00
HD Series 100Mb	$1100.00
HD Series 200Mb	$1350.00

*** C-Scan Unit *** $285.00

Up to 8 computers can be connected to 1 drive or printer. Send $10.00 if you would like to look over the users manual before deciding to order this product. The 10.00 will be credited towards your C-Scan purchase.

*** Power Supplies. ***

1541II/1581/HD Power Supplies Heavy duty replacement	$65.00	$60.00
Replacement serial Cable 36" 6 pin DIN male to male		$8.00

*** SwiftLink ***

SwiftLink RS-232 Cartridge (For Hayes Comp. modems. Includes cable and 3 disks of terminal prgs.)	$80.00	$70.00

*** Modems ***

Smart One 2400 ext.	$90.00
Smart One 9600 ext. V.32/V.42 data and error compression	$475.00
Cardinal 9600 ext.	$525.00
Zyxel 14,400 ext.	$750.00

note:- The Swiftlink cartridge should be used with these faster modems.

Is Your Name a One Dollar Word?

A (practical?) use for the ASC, MID$ and LEN functions

by Tristan Miller

ASC, MID$, and LEN are three of those little-used BASIC commands. But just because they are little-used doesn't mean they aren't useful. This article will discuss what the functions are, how to use them, and where to use them in your programs. I have also prepared a short, 5 line program that demonstrates the capabilities of these three functions.

ASC(A$) returns the PETASCII code of the first character in A$. This may seem a little confusing at first, but really it's quite simple. Most of us know that ?CHR$(65) will print out an A on the screen. Likewise, ?ASC("A") will output to the screen the number 65. In a nutshell, you could say that the ASC command is the exact opposite of the CHR$ function.

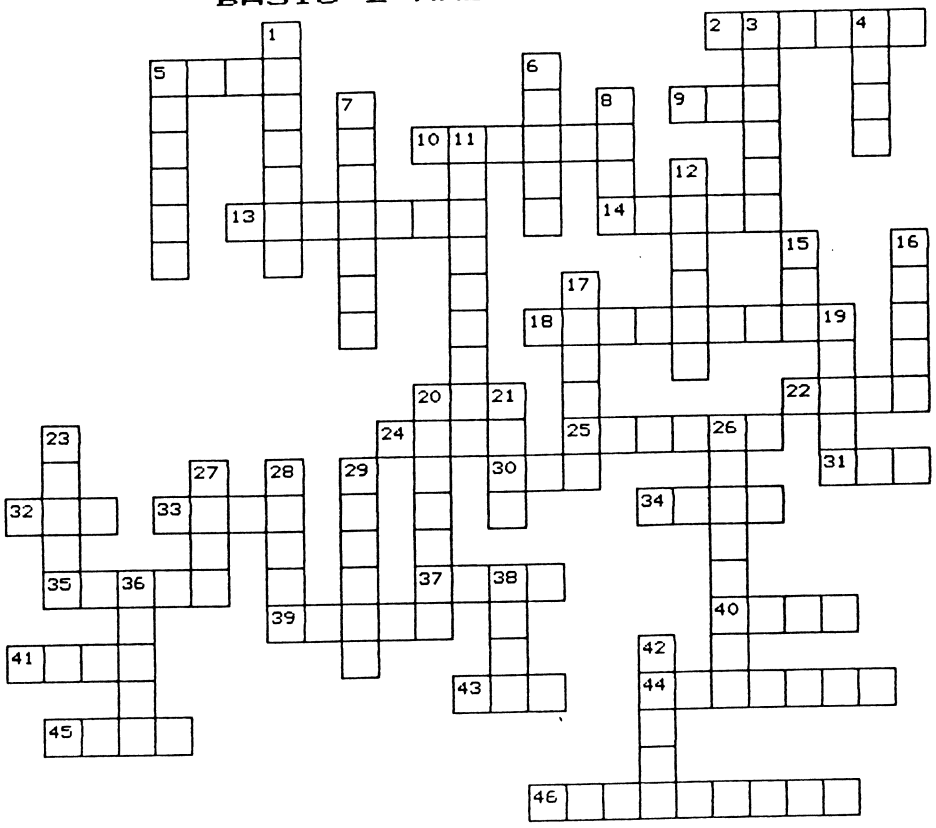
Here are some sample outputs of the ASC function so that you may better understand how to use it.

?ASC("!")	33
?ASC("CUGS")	67
T$="+YT":?ASC(T$)	43

Crossword Craze

by Barry Bircher

BASIC 2 AND 7 KEYWORDS



ACROSS

2. I DON'T DO THEM
5. TO INSERT INFO ON A LINE
9. GET A BYTE FROM A CHANNEL
10. CLOSES ALL FILES OPEN
13. DO IT UNTIL THIS HAPPENS
14. DISK OPEN
18. CONDITIONAL STATEMENT LIKE IF/THEN
22. GET A PROGRAM FROM A DISK
24. TO JAB
25. USED TO END A GOSUB
30. FINI
31. TO SIZE UP AN ARRAY
32. TO ADD YOUR OWN NOTES TO A PROGRAM
33. DIRECTLY TO A LINE
34. TO CONTINUE A PROGRAM
35. OUTPUT TO SCREEN
37. TO SEE A PROGRAM ON SCREEN
39. BINARY SAVE
40. TO USE THE 128'S OTHER 64 MEMORY
41. END THE PROGRAM NOW
43. START FROM SCRATCH
44. TO DELETE
45. USING THIS SAVES TYPING LINE NO.
46. LIKE CATALOG

DOWN

1. LIKE DIRECTORY
3. CONDITIONAL WHEN TRUE, DO THIS
4. TO CREATE A CHANNEL
5. CONDITIONAL LIKE IF/THEN
6. TO END A FILE AND CHANNEL
7. A CONTROLLED LOOP
8. TO GET FROM DATA STATEMENT
11. VALIDATE
12. TO ADD ONTO A FILE
15. TO START THE PROGRAM
16. BINARY LOAD COMMAND
17. RELATIVE FILE POINTER COMMAND
19. DISK LOAD
20. CONDITIONAL WITH AN END LIMIT
21. TO SNEAK A LOOK
23. TO SNORE
26. TO NUMBER IT AGAIN
27. TO GET THE THING STARTED
28. GO DO A SUBORDINATE ROUTINE
29. CLEAR CHANNELS TO DRIVE
36. GET A STRING FROM CHANNEL
38. TO PUT A PROGRAM ON DISK
42. DISK SAVE

Now that that's clear, let's move on to the LEN function.

LEN(A$) returns the number of characters (including spaces) in A$. For example, ?LEN("HOUSE") would output 5. Similarly if B$="BARN CHICKEN DOG", ?LEN(B$) would return the value of 16.

The MID$ function, used in the syntax MID$(A$,X,Y), gives us the characters of A$ beginning at character X and continuing for Y characters. For example, if A$ were to equal "COMMODORE" and we were to print MID$(A$,4,3) we would get "MOD". MID$(A$,2,5) would return "OMMOD".

OK, OK, now I bet you're asking how you can make use of them in your programs. Well here is a (practical?) use of the three functions in a simple, 5-line program which calculates one-dollar words. A one dollar word, for those of you who don't know, is a word whose letters add up to exactly one dollar; A being worth one cent, B being worth two cents, C three cents, etc., to Z being worth 26 cents.

```
10 PRINT"ENTER YOUR WORD WITH NO"
20 PRINT"SPACES OR PUNCTUATON:"
30 INPUT A$
40 FORI=1TOLEN(A$):D=D+ASC(MID$(A$,I,1))-64:NEXT
50 PRINTA$;" IS A $"D/100"WORD."
```

Lines 10 and 20 print the input request, and line 30 gets a string from the user. Line 40 isn't that simple, though. First of all it counts a loop to repeat for as many times as there are characters in A$. Then the value in cents of each letter is stored in D via taking the ASCII value of each letter and subtracting 64 (because we want A to equal 1, not 65, etc.). Line 50 then gives us the final printout. Try typing in your name and see what you get.

The April Presentation of

Keyboard, Kids and Krud

is now available on videocassette

(VHS, BETA)

for only $5.00

Contact Tristan Miller (586-2036)

for details

Reuse Your Ribbons!

**Be enviornmentally conscious,
and save money, too!
Don't throw away
those used ribbons.
Have them re-inked.**

**Call Barry Bircher at 543-8840
for details.**

BBS Etiquette

Is It to BBS or Not to BBS
That's a Good Question
by Barry Bircher

I have been BBSing for over 6 years now and have noticed and made conclusions about a trend that happens frequently on BBSs. It can best be called Murphy's Law of BBSing.

Murphy's Laws

1) When you have limited time and are in a rush and all you want to do is call a BBS to see the latest gossip on the message areas, the board you call will NOT be busy and there will be a thousand messages to wad through and the latest "gotta have it" file has just been uploaded.

2) When you have plenty of time to waste, the Board will always be busy. If by the slim chance you do get on, there will be no new messages or files.

3) The file you want is never available and neither is the Sysop.

4) The files that you feel only so-so or luke warm about, are always available and so is the Sysop. :-).

5) When there is a hot topic in the message area, you either run out of time or out of posts and you just want to post one more.

6) If a message can be interpreted two ways, it always is, and always in the negative sense.

7) Idle chatter, although saying nothing, does nothing and the reply thread dies out quickly.

8) Opinions chatted/expressed by one person is always counteracted by someone's opposite opinion and arguments usually flare up and sometimes, so do the tempers. (This is usually the case with "My computer is better than your computer" arguments). The message reply threads tend to get

long (these tend to be interesting at the start but soon the discussion gets drawn out).

9) Short messages are worse than long ones. See #6.

10) Sometimes the best reply is no reply.

11) If a file transfer is going to fail, it will, and only after 96% of the file has successfully been transferred. This is very true of BBBBIIIIGGGG files.

12) If you have the Sask-Tel call waiting feature, you don't know what it's like to use because no one has called you (voice) to find out. But as soon as you are downloading that file... (see #11) you get disconnected!

13) BBSers who have only one line to the household, will find out no one will pick up the other end while you're away from the computer. But as soon as you sit down, CLICK, someone gets on the other phone and does not get off it for hours.

14) You're downloading that "You gotta have it" file from a board, everything is going great until that disk you were sure had enough room, runs out of it. See #11.

One SysOps observations. 'Till next month, have a good one eh!

The Forgotten Realms

VIC/PET/+4/16 Library

by Tristan Miller

Hello everyone. I just got my SuperPET SP9000 computer the other day, and I have spent many, many hours rediscovering this old computer. It's really fascinating; the computer is about as big as a 64 and comes with a built-in monochrome 80-column monitor. The computer has 31743 bytes (almost 31K) of memory for programming, and has both a 6502 and a 6809 microprocessor. But the thing I liked best about it was the BASIC 4.0 that comes with it; I could hardly wait to try all the new disk commands... when I got a disk drive. Alas, there are only 2 ports on the PET: 1 for a datassette and one for an 8050-type drive, making it incompatible with any 1541-type drive without an interface. However, I do have an MSD-2 dual disk drive that can plug right into the PET... if I had a cable... I guess for now I'll have to be content with storing my programs on the unbearably slow Commodore datassette that I happened to have lying around...

But the PET really is an amazing machine. And I have quite a bit of software (on disk) for it, which I have now donated to the PET library. If anyone wishes to buy a CBM 8032 or a SuperPET SP9000, phone Glenn Brekkerat 565-2105. The CBMs are $20 and the SuperPETs are $30; the only difference is that the SuperPET has the 6809 CPU which the CBMs don't; but both computers are fully compatible with all the software in the library.

The VIC library now nears completion. I apologize for not having it done this month but it has been very busy for me, setting up a BBS and all...nevertheless, I will have some disks prepared for this meeting and the rest I will have for next month.

A New Kid on the Block!

If you are looking for a

new BBS, why not try out the

Lycanthrope's Den

(586-6608)

operated by

Tristan Miller

LOGO

by Tristan Miller

Logo is a high-level computer-programming language of procedural nature. Each procedure is a group of instructions which the computer stores and executes. The instructions can be basic commands, called primitives, or a pre-defined procedure containing groups of primitives.

This article will discuss the part of Logo that has to deal with graphics. Turtle graphics, as they are commonly referred to as, are high-resolution graphics drawn by means of a turtle-shaped object on a screen or plotter. Turtle graphics allows you to draw lines and turn in any direction. This may seem like a simple concept but you can utilize simple turtle graphics commands to create complex figures and drawings. The Logo on your 64 (or 128) also incorporates the use of sprites and colors, making it one of the best Logo packages available even today.

The graphics demos presented in this article are for use with the Logo package for the Commodore 64. However, almost any turtle graphics package you might own is likely to be compatible with Logo commands. Boot up your graphics program and let's get started.

If you are using Logo, you will be greeted by the opening screen containing a title, the copyright notices, and a flashing cursor under the words "WELCOME TO LOGO!". To enter the turtle graphics mode, type DRAW and hit return. You should now see a split screen. The large top part will be gray and will have a white triangle situated in the center. The bottom part will be blue and will contain the ? prompt. The triangle in the middle of your screen is the turtle. It is used to draw all of the shapes you enter at the cursor. To watch the turtle in action, type FD 50 and hit return. You'll notice that the turtle has moved up exactly 50 screen pixels, leaving a line behind as it goes. Now type RT 90. The turtle should make a ninety degree turn to the right. Two other commands you will want to use are BK and LT, which are essentially the exact opposites of FD and RT (respectively). BK causes the turtle to move back, and LT tells the turtle to turn to the left.

OK, after you've had your fun with the basic commands, type HOME CS and return to reset the turtle position and clear the screen. OK, now I'll introduce 3 new commands: PU, PD, and PC. PU, or PENUP, invisibly lifts the turtle so your FD and BK drawing commands will not write to the screen. This is useful if you need to move your turtle to another location on the screen but do not want it to draw. PD, or PENDOWN, puts the turtle back down. PC (PENCOLOR) and a number from 0 to 15 instructs the turtle to change its line color to the color specified (0 is black, 1 is white, 2 is red, etc.).

Now let's draw a square. Type HOME CS and return. Now type FD 50 RT 90 FD 50 RT 90 FD 50 RT 90 FD 50 and hit return. The turtle should draw you a square. But isn't all that typing tedious? Try the REPEAT command: REPEAT 4 [FD 50 RT 90]. This accomplishes the same thing only it takes less time.

Utilizing the power of the REPEAT command, we can now use Logo to draw complex graphic figures in just a few keystrokes. Try entering the following one-line program:

```
REPEAT 12 [REPEAT 2 [FD 60 RT 30 FD 60 RT 150] RT 30]
```

Like what you see? Well now I'll introduce you to procedures, which are very similar to macros or subroutines. You define a procedure using the TO command. For example, to define the procedure SQUARE you would enter TO SQUARE. You are then taken to a full-screen editor to enter your procedure. The thing about procedures that is different from macros and subroutines is that you can ask for input from the user before it is executed. Say you wanted to draw a square, but wanted the sides' length determined each time you ran the SQUARE procedure. To do this, you would enter TO SQUARE :LENGTH, :LENGTH being the variable to be inputed. In the procedure editor, :LENGTH is treated just like a variable used in BASIC. Here's the sample SQUARE :LENGTH procedure:

```
TO SQUARE :LENGTH
REPEAT 4 [FD :LENGTH RT 90]
END
```

Then, whenever you want to draw a square, all you have to do is type SQUARE and a number. It's that simple. But Logo isn't just for drawing sharp, angular lines. Logo can also do circles. Try REPEAT 360 [FD 1 RT 1]. This makes the turtle go forward one pixel, then make a one degree turn, then repeat that for 360 times (or degrees). With this in mind, here is a sample program which will allow you to create any-sized any-sided figure on your screen:

```
TO POLY :LENGTH :TURNS
REPEAT :TURNS [FD :LENGTH RT 360/:TURNS]
END
```

Well, that's all I have time for next month. If any of you show enough interest in this subject, I may consider making this a regular column.

New Club Disks

by Earl Brown

The club is introducing three new GEOS disks to the library this month. All the programs found on the CUGS GEOS 18 disk were supplied to us from the Saskatoon Commodore Users Group. We gratefully thank them for these programs. It has been in the club's interest to exchange programs with other user groups throughout North America and elsewhere. It is gratifying in the least to acknowledge this exchange with a neighbourhood club just north of us. Thank you SCUG from all of us here at CUGS. We look forward to future exchanges.

This number 18 disk contains plans to make up to a 2-meg REU for your computer. I've heard about a 2-meg REU for quite some time now, but this is the first look I've had at plan designs to build your own.

Also on this disk of interest to Epson 8-pin compatible printer owners, is a three pass program that gives you super print results in GEOS. There is also a file full of photos for GEOPUBLISH, and another for GEOWRITE.

Next month, I hope to review some of the programs available on the other two disks.

GEOS 18 $ER
ep8pin3pass
toolkit
july 2-meg des
beyond512kplans
two meg reu
2-meg thoughts
geopublishphotos
geowrite photos
.info-gw

GEOS 19 $ES
geolist2.0
icondir2
getdirectory
directory label
dirmanager
dirmag docs
geologger
geojacket 2
headereditor
headeditdocs
lockunlock
untrash
geodisked128
qwikbam
qwikpik
qwikstash
pik/stashdocs
r s v p
der vaterland
park avenue
wilson.919
iconfont.926
reverse.927
geogif
geogif.doc
geopcx
geopcx.docs

GEOS 20 $ET
qtauto
qwik top
qwik-top
wormdesk
dual top
dualtop64.docs
128 dualtop
dual top128.docs
scrapgrab
photograb
albumcopy
geostampdemo
geostamp.docs