

PORT FE

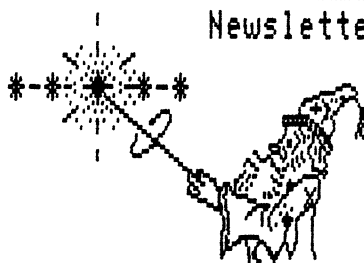
SORCERERS USERS' GROUP

(Toronto)

P.O. Box 1173 Sta. 'B'
Downsview, Ontario,
Canada. M3H 5V6

SORCERER

Newsletter



The Toronto Sorcerer Users' Group was founded in the Spring of 1979, a handful of willing and eager to learn members.

This newsletter shall at all times keep in mind the goal at its conception. To spread the seeds of knowledge.

Articles printed in this newsletter shall be free for all Sorcerer Users' groups to reprint or comment on as they see fit.

Articles submitted for this newsletter must be in no later than the beginning of the 1st of every month.

June 1981 ISSUE

TABLE OF CONTENTS

1. - New loacation (last meeting)
- New GET routine
- WP PAC Blues

CP/M SECTION:

2. - M80 (Z80/8080) assembler described
3. - PLOT.MAC listing
4. - TRS-80 (info)
5. - M80 (continued)
- TIDBYTES

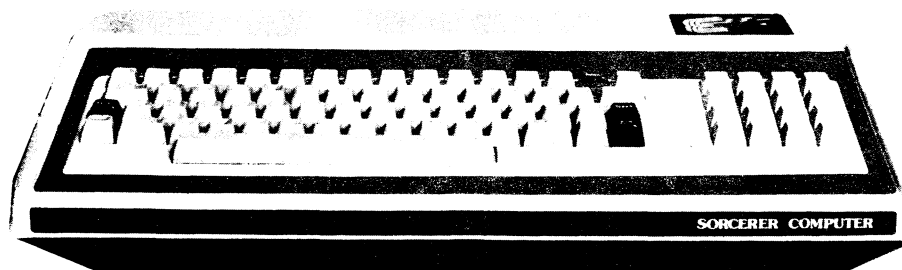
SORCERER TECHNICAL TIPS

6. - I/O Port Problems (S100)
7. - TTT - '3D Tic tac toe' listing
9. - MEMBERSHIP APPLICATION FORM

MEETING PLACE

Location : Bathurst Heights Library - Date: Wed. June 17 - 7:00 PM
3170 Bathurst St.

One block north of Lawrence on the west side of Bathurst.



Observations on our new location

Our last meeting seemed to be well organized for just a general get together. We had three systems set up around the room with plenty of electrical outlets. Jacques Giraud demonstrated the Exidy Disk Drive and I demonstrated the North-American Software Joystick & Audio interface card.

Everyone seemed quite pleased with the new location and I think it will work out very well.

The Editor

..... New Keyboard Scan Routine

This keyboard scan routine is approximately THREE times faster than if the monitor routine KEYIN was to be relocated and modified.

This new subroutine scans the keyboard from right to left, ignoring the Graphic, Control, Shift lock, Shift and Repeat keys. On entry all registers are saved and on exit the Accumulator will hold zero if no key pressed or a hex digit from 0A to 5F. NOTE: Only upper case will be recognized, along with the carriage return, line feed, and clear key. This will allow increased speed and scan time. This is most useful for machine language arcade games that need the extra speed and are probably slow because they are using the relocated monitor keyboard routine. The routine is only half the size of the monitor routine.

The following is the hex dump:

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0000	CD	10	00	C9	00	00	00	00	00	00	00	00	00	00	00	00
0010	E5	D5	C5	06	0F	78	D3	FE	DB	FE	F6	E0	2F	B7	20	14
0020	10	F3	AF	D3	FE	DB	FE	E6	07	FE	07	20	03	AF	18	24
0030	F6	F8	18	E8	CB	27	CB	27	CE	27	C5	06	FF	CB	27	04
0040	30	FB	58	C1	78	06	04	57	82	10	FD	83	4F	06	00	21
0050	59	00	09	7E	B7	C1	D1	E1	C9	00	00	00	00	1B	1B	0B
0060	20	00	0C	31	51	41	5A	58	32	57	53	44	43	33	34	45
0070	52	46	35	54	47	56	42	36	59	48	4E	4D	37	55	4A	49
0080	4B	38	39	4F	4C	2C	30	50	3B	2E	2F	3A	5B	5D	4D	5C
0090	2D	5E	0A	0D	5F	00	2D	2F	2A	2B	37	38	34	31	30	39
00A0	36	35	32	2E	33	3D	00	00	00							

To use the subroutine : From machine language CD 10 00
 From Basic - POKE 260,0:POKE 261,0:X=USR(X)

If one wishes to relocate this subroutine remember the routine up to 0049 is relocatable, but if you wish to relocate the balance then the look-up table pointers must also be changed.

..... Exidy WP PAC BLUES

Well it seems that with all the time that has been devoted to this system there are still people out there in never never land who are experiencing difficulty using this means of MIND to PRINTER intermediate stage contrivance. This must be the headache to end all headaches. I'll bet that since it's conception, at least 10,000 man hours have gone into trying to get it to work with almost every imaginable printer on the market.

If someone out there has ever modified the program (ie.. England) so that it will run the Xerox/Diablo printer properly please send the mods in to PORT FE so that we can get one poor soul out of trouble. Seems he can't get help from anybody. He would like to use the more sophisticated printer functions, precision control of print spacing, boldface & underlining. If anyone can be of some assistance please HELP!!!

Send any material to PORT FE Att: R.Radcliffe . I'm sure that any news would be welcome.

The Editor

CP/M SECTION -- 8080/Z80 Assembler "M80.COM"

Making M80 usable

By: Jacques Giraud

Spectra Electronics, Software Support.

Calgary: 403-264-7270

For those who do not know what M80 stands for it is Microsoft's Macro-80 development package. The software that comes in the package is superb, in the typical Microsoft tradition. The documentation is useless. It is really a shame to see such bad documentation put out with such good software. Fortunately there is a solution to the problem. Digital Research puts out their own macro assembler called MAC. MAC is an excellent package too, but it is only an 8080 assembler while M80 is Z80/8080/8085 compatible. (More about the 8085 stuff later). The best thing about MAC is the excellent documentation that comes with it and the macro libraries that are included. With these you have a very powerful tool for assembly language development under CP/M. One big hassle with MAC is that it cannot produce relocatable object modules and it does not allow external symbols, and does not easily support modular development. It does on the other hand, have a very excellent manual, in particular the section on the Intel Macro Standard and how to use it. Microsoft uses the Zilog Macro Standard which is slightly different but the differences are not drastic. Another feature that MAC has, or should I say was absent from M80, is the MACLIB statement.

Basically put MACLIB reads a macro definition right off disk allowing you the convenience of having a group of standard macros for doing all the drudgery associated with talking to CP/M. I wondered why Microsoft had not put in M80, so I pulled out ZSID (A must for anyone doing any serious assembly work with a Z80) and dove into the problem. After figuring out how Microsoft stored their mnemonics I found a few things that were not documented. Mind you that's not saying much, the M80 manual does not document very much even though it is some 50 pages.

I found four items that were not in the documentation:-

MACLIB	Same as the MAC MACLIB statement.
INCLUDE	Same as the EXASM statement.
SIM	8085 interrupt instruction.
RIM	8085 interrupt instruction.

The SIM and RIM instruction are only valid under the .8080 switch which makes sense. Microsoft can now do stuff for an 8085 using M80. I'm not sure if they produce the right object code, but they do produce something.

The syntax for the MACLIB statement is:- MACLIB <filename[.ext]>

The default extension in MAC. MACLIB statements must be the first lines in a program. If they cannot find the file, they give a V error and assembly continues. Several MACLIBs may be put one after another to specify the MACRO libraries needed.

The syntax for the INCLUDE statment is:- INCLUDE <filename.[ext]>

Default extension in MAC. On EXASM, Exidy's Assembler (Also put out by Microsoft) INCLUDE must have a label. I have not yet tried it seriously so I'm not sure about the whether M80 needs the label or not.

When using the MACLIB and the INCLUDE statement, the files that are read should not have an END statement in them, since this will stop assembly. MACLIB libraries should be ended with an ENDM.

TITLE Quarter Square Plotting Routines - EXBASIC/MBASIC/EXCAS Interface

This program is an interface into EXBASIC that allows it to plot with quarter square graphic characters.

Resolution is:- X-Axis - $0 \leq X \leq 127$, Y-Axis - $0 \leq Y \leq 59$

There are four routines in Ver 1.00. These routines are ginit, plot, reset, set. Ginit initializes the user defined graphics. Plot allows the user to specify an x,y coordinate and the colour of the dot to plot. Set is the same as plot except that the colour is always white 'reset' is the complement of 'set'. It is a call to plot with the mode set to black.

Calling Routine

CALL PLOT(X,Y,COL) ~ CALL SET(X,Y) ~ CALL RESET(X,Y) ~ CALL GINIT

X,Y,COL are all integer variables. X is the x coordinate Y is the y coordinate COL is the colour to make the square, 1 makes square white, 0 makes square black. The standard version of the routine is assembled for 9B00H so use EXBASIC /M:&h9Aff to protect the routines.

The standard Microsoft CALL statement works in this way for passing integers.

HL points to the first integer form, (lo,hi)

DE points to the next integer passed.

BC points to the last integer passed if there are 3 passed or to the data block if more are passed.

hl -> pointer x coordinate de -> pointer y coordinate bc -> pointer to colour

Program starts here. A few simple macros

.Z80

```
fdefb macro data ;repeats data four times for defb
      rept 4
      defb data
      endm
      endm

getxy macro ;gets X and Y coordinate off reg1 and reg2 and
           ;puts them in their correct place
      local pastm ;redefine macro as subroutine
      jr pastm ;jump past main macro body on first call. Then
               ;redefine macro as a subroutine
@getxy: ld a,(hl) ;get x value
        ld (cords+1),a ;put x in place
        ld a,(de)
        ld (cords),a ;put y in place
        ret

pastm:
getxy macro x1,y1 ;redefine macro as subroutine
      call @getxy
      endm ;end of new macro definition
getxy ;now invoke macro with call
      endm ;end of old macro definition

ginit:: ld hl,gtab ;move graphic tables in
        ld de,0fe00h ;start of user defined graphics
        ld bc,40 ;32 bytes of data to move
        ldir
        ret ;back to user

set:: getxy ;get x,y
      ld a,1 ;put colour to black
      ld (mode),a ;put mode in
      jr plot1 ;do the plot

reset:: getxy ;get x,y
        ld a,0 ;put colour to white
        ld (mode),a ;put mode in
        jr plot1 ;do the plot

plot:: getxy ;basic interface
        ld a,(bc)
        ld (mode),a ;put mode in place
```

```

; The actual plotting routine first appeared in the
; January 1981 issue of Creative Computing, Page 94.
; The program was entered as in the program, then
; DISZILOG was used to generate the source below.
; I made a few minor additions to the source to make
; it more readable.
plot1: XOR      A          ;start of plotting routines
LD      BC, (CORDS)
SRL     C
ADC     A,A
SRL     B
ADC     A,A      A0049: LD      A,D
LD      D,001H   CPL
OR      A        AND      B
JR      Z,A001B  A004C: LD      B,A
A0016:  SLA      D      LD      IX,MODE
DEC     A        INC      B
JR      NZ,A0016 A0052: INC      IX
A001B:  LD      H,A    DEC     B
LD      L,C        JR      NZ,A0052
LD      A,006H     LD      A,(IX+000H)
A001F:  ADD     HL,HL   LD      (HL),A
DEC     A        RET
JR      NZ,A001F   ; cord+1 => X
LD      C,B      ; cord  => Y
LD      B,A      CORDS: DEFW   000H
ADD     HL,BC     MODE:   001      ;SET DEFAULT MODE TO WHITE
LD      BC,0F080H ; table of ascii values corresponding to
ADD     HL,BC     ; quarter square characters.
LD      B,A      ;
LD      C,(HL)    GRTAB: DEFB   020H,0A1H,0A0H,0A9H,096H,0A7H,0A6H
LD      IX,GRTAB  DEFB   0C0H,095H,0A5H,0A8H,0C1H,0AAH,0C2H
A0030:  LD      A,(IX+000H) DEFB   0C3H,0C4H,000H
OR      A        ;
JR      Z,A003E   ; user defined graphics tables
CP      C        .radiax   16
JR      Z,A003F   gtab:  fdefb   Off ;make user defined charac.
INC     B        fdefb   0f0
INC     IX       fdefb   Off
JR      A0030    fdefb   0f
A003E:  LD      B,A    fdefb   0f0
A003F:  LD      A,(MODE) fdefb   Off
OR      A        fdefb   0f
JR      Z,A0049   rept    3
LD      A,B      fdefb   Off
OR      D        endm
JR      A004C     END

```

This completes the plotting routines submitted by Jacques Giraud using EXBASIC and showing how to interface with a machine language program.

I have tried this routine out and it works very well. The basic is not too slow but it could be compiled into a very fast version.

Re: TRS-80 Level II review

Let me apologize for not continuing this article in this issue. The modifications to the TRS-80 Basic have become just a little too long for publication. Every week almost, Robert has been giving me more and more information. For those of you who are interested in receiving the balance of this material please send \$2.00 to PORT FE to cover the cost of photo copying and mailing.

The Editor

Nifty Things You Can Do with M80.

Once you get the feel of the thing, M80 is excellent. You can write large programs in a modular fashion and they are totally relocatable at load time.

.c M80 tty:,tty:=tty:

This invocation of M80 allows you to pound away at the keyboard putting in assembly code. On the first pass nothing great happens, but after the first END, it is in the listing mode and you can see what effect many of the psuedo-ops have on M80.

M80 is not very picky about switching instruction sets mid-stream. Very often when I have to work with some 8080 code, I use M80 to assemble it under the .8080 switch, then the parts that I add are assembled under the .Z80 switch.

The macro libraries that come with MAC are compatible with M80 as long as you insert a .8080 at the beginning of each macro definition to make sure that they produce the right code.

All in all, I would highly recommend M80 to anyone who does serious development work on Z80/8080 based systems. Once you have the documentation figured out, it is a pleasure to use.

TIDBYTES

The following routines seem to have been overlooked by a great many people. These routines deserve a second look for most of you. I will bring them to your attention again. (reprint of Tidbytes Feb/81 PORTFE)

ATTENTION ATTENTION ATTENTION

- 5 Did anyone ever want reverse some or all of the graphic characters say at FC00 to FFFF. Here is a very small machine language program that can be located anywhere in memory and a USR(X) call to it will do the trick.

```
FD E5 F5 C5 D5 E5 11 00 FC 21 00 FC 1A 2F 12 13
23 3E FE BC 20 F6 E1 D1 C1 F1 FD E1 C9
```

This is called Bit Manipulation. See how **f a s t** this is!

- 6 The next is being able to CLEAR your VIDEO screen or just a part of it **without damaging** your graphic character set @ FC00.

```
FROM TO
E5 F5 21(80 F0)36 20 23 3E(F5 BC)20 F8 3E(80 BD)
20 F3 F1 E1 C9
```

- 7 'LOG A BASIC PROGRAM' Should anyone desire to have a BASIC program written in Standard ROM PAC Basic come up running, then follow this procedure:

ENTER Line # 0 REM this must exist

Find the end address of your basic program (i.e.: at least past it). Now enter the Monitor and SE F=40 <CR>, SE X=C858 <CR>, Then SA name 1D5 xxxx where (xxxx) is the end of your basic program. In saving the program this way all you have to do is LOG when loading.

```
.....
CLEAR A,B (A) Represents the amount of string space
          (B) Represents TOP OF MEMORY POINTER
```

i.e.: CLEAR 100,6000 Sets string space to 100 and sets top of memory to 6000.

ALL machine language subroutines can be safely placed above the basic program area and in protected free memory space.

Trusting these will be of great use to some of you. These will surely eliminate many problems that you encounter.

By: H.A. Lautenbach

SORCERER TECHNICAL TIPS

I/O PORT PROBLEM ON EXPANSION INTERFACE

This problem causes incorrect data output or input from any I/O port in the expansion unit. This is for any person wishing to use an external type parallel or serial type card in the expansion unit.

This occurs specifically, when outputting to a port in the expansion interface with a value greater than or equal to 'E0' hex. Incorrect data is latched into the port. The value is loaded into the accumulator if the accumulator, prior to performing the input instruction has a value of 'E0' hex or greater in it.

THE CAUSE:

When the Sorcerer is addressing its internal memory E000 hex or greater, the data bus to the expansion interface is tri-stated (electrically disconnected). When an input or output instruction is performed, the accumulator contents appear on the high order address lines of the Z80 chip. If this value is equal or greater than 'E0' hex, the Sorcerer decodes this as a memory address E000 or greater and tri-states the data bus to the expansion interface.

AND THE FIX

A modification in the Sorcerer unit, not the expansion unit consisting of one etch cut on the printed circuit board and four jumper wires are required to cure this fault. They are as follows:

1. Cut etch between I.C.'s B8 and B9. This is the etch trace that goes under B9 between pins 5 & 6. (on component side of board)
2. Add jumper from 9B pin 8 to 10H pin 13.
3. Add jumper from 10B pin 10 to 10H pin 12.
4. Add jumper from 10H pin 11 to 8E pin 13.
5. Add jumper from 8E pin 12 to 8B pin 5.

A FEW MORE WORDS...

This problem became apparent when trying to get a prom programmer to work in the expansion box. I checked other Sorcerers to see if they had the same problem. The third one that was checked worked.... This unit was one of the first units sold in the Toronto area. The above modifications are from this unit. In all, five Sorcerers were checked and only one of them had this modification. It seems that some of the first Sorcerers that were made, were modified and then later ones weren't. I wonder how many more.....??

By: Ted Seki

Anybody that is using the expansion box for External Peripheral work should check to see if this modification has been made to their Sorcerer. The Sorcerer II should also be checked to see if it has been corrected. We would be glad to hear from anyone with a Sorcerer II that is doing data transfer via a port to the S100 Expansion box, to see if the problem still exists on the new boards.

NOTE

If anyone wishes to make this modification take note that it was tried on my Sorcerer and was taken out again when an error was detected on the parallel port (back of the Sorcerer) connector. The status indication on pin three seemed then to be wrong.

From: THE EDITOR WHO WAITS

PIRANHA

The results will be published in the next issue of PORT FE, but as of this time only one written submission has been received. (May 24/81). Hopefully there will be more competition for something FREE. We shall run another contest starting in JULY/81. This will be announced at our next meeting.

The Editor

3D Tic Tac Toe

The following is a Hex dump for the 3D Tic Tac Toe which uses the top portion of the screen as the playing fields. Commands are 'X' to place your piece, and the numeric pad cursor arrows to move the cursor around or to each level. This program comes from the CP/M user's library disk #29. If anyone can improve on the Graphic display and wishes an ASM listing please write in and we shall send you a copy.

-D100 97F

```

0100 11 E2 09 2A 01 00 06 09 7E 12 13 23 05 C2 08 01 ...*...~...#...
0110 31 E2 09 06 41 21 48 07 AF 77 23 05 C2 19 01 21 1...A!H...w#...!
0120 6D 05 CD B9 02 CD 20 03 21 E2 06 CD A3 02 CD 33 m...!...3
0130 03 CD 4E 05 47 11 4F 01 13 13 1A B7 21 F2 06 CA ...N.G.O...!...
0140 2B 01 13 B8 C2 38 01 1A 6F 13 1A 67 11 2E 01 D5 +...8...o...g...
0150 E9 38 6A 01 32 7A 01 34 A3 01 36 86 01 58 BC 01 .8j.2x.4..6..X..
0160 0D 10 01 03 00 00 4F B8 01 00 21 46 07 7E 3C 77 .....O...!F...~<w
0170 FE 05 DA C4 02 36 01 C3 93 01 21 46 07 35 C2 C4 .....6...!F.5..
0180 02 36 04 C3 AC 01 21 47 07 7E 3C 77 FE 05 DA C4 .6...!G...~<w...
0190 02 36 01 21 45 07 7E 3C 77 FE 05 DA C4 02 36 01 .6...!E...~<w...6.
01A0 C3 C4 02 21 47 07 35 C2 C4 02 36 04 21 45 07 35 ...!G.5...6...!E.5
01B0 C2 C4 02 36 04 C3 C4 02 D1 C3 E5 01 D1 21 42 07 ...6...!...!B..
01C0 7E 3D 87 87 87 87 47 23 7E 3D 87 87 23 86 80 21 ~...G#~...#...!
01D0 48 07 85 6F 7E B7 C2 3C 01 36 01 0E 58 CD 54 05 H...o~...<6..X.T.
01E0 0E 01 CD 54 05 21 02 07 CD A3 02 CD 44 03 3A DB ...T...!...D...
01F0 07 FE 03 F2 57 02 FE 01 3E 4F 21 22 07 C2 05 02 ...W...>O!"...
0200 3E 58 21 32 07 32 EB 07 CD A3 02 3A D9 07 3D 6F >X!2.2......=o
0210 26 00 29 29 23 11 31 08 19 16 04 7E CD EA 04 E5 &...)*...1...~...
0220 D5 CD C4 02 D1 E1 3A EB 07 4F CD 54 05 0E 01 CD .....O.T...
0230 54 05 15 23 C2 1B 02 3A EB 07 FE 20 CA 47 02 32 T...#...G.2
0240 E9 07 3E 20 C3 4A 02 3A E9 07 32 EB 07 CD 61 05 ...>...J...2...a.
0250 B7 CA 0B 02 C3 10 01 3A D9 07 B7 C2 87 02 3A 42 ...>...J...2...a.
0260 07 5F 16 00 21 EC 07 19 4E 06 00 21 48 07 09 7E ...!...N...!H...~
0270 B7 CA 8D 02 13 3E 15 BB C2 64 02 21 12 07 CD A3 .....>...d...!...
0280 02 CD 4E 05 C3 10 01 4F 21 48 07 85 6F 36 05 79 ...N...O!H...o6.y
0290 CD EA 04 CD C4 02 0E 4F CD 54 05 0E 01 CD 54 05 .....O.T...
02A0 C3 28 01 E5 CD 33 03 CD 20 03 06 18 CD 3A 05 E1 .(...3...~...O.T
02B0 CD B9 02 CD 20 03 C3 C4 02 7E 23 B7 C8 4F CD 54 .....~...O.T
02C0 05 C3 B9 02 21 42 07 11 45 07 1A BE CA EE 02 FA .....!B...E.....
02D0 E0 02 34 06 0E CD 3A 05 06 02 CD 12 05 C3 CA 02 ...4...!...#...
02E0 35 06 0E CD 30 05 06 02 CD 21 05 C3 CA 02 23 13 5...0...!...#...
02F0 06 01 1A BE CA 08 03 FA 01 03 34 CD 12 05 C3 F0 .....4...
0300 02 35 CD 21 05 C3 F0 02 23 13 06 03 1A BE C8 FA .5...!...#...
0310 19 03 34 CD 3A 05 C3 0A 03 35 CD 30 05 C3 0A 03 ...4...!...5.0...
0320 CD 44 05 06 09 CD 21 05 21 42 07 3E 01 77 23 77 .D...!...!B...>w#w
0330 23 77 C9 11 42 07 21 45 07 06 03 1A 77 13 23 05 #w...B...!E...w...#
0340 C2 3B 03 C9 06 01 78 21 89 07 85 6F 36 00 E5 68 ;...x...!...o6..h
0350 26 00 29 29 2B 2B 2B EB 0E 04 21 31 08 19 7E 21 &...))++...!...Z...!
0360 48 07 85 6F 7E E1 E5 86 77 13 0D C2 5A 03 E1 04 H...o~...w...!1...
0370 3E 4D B8 C2 46 03 06 01 78 32 DB 07 21 01 08 85 >M...F...x2...!...
0380 6F 7E 32 D6 07 B7 FA D3 04 78 21 11 08 85 6F 7E o~2...x...!...o~
0390 32 D7 07 78 21 21 08 85 6F 7E 32 D8 07 0E 01 79 2...x...!...o~2...y
03A0 21 89 07 85 6F 3A D6 07 BE C2 CC 04 78 D6 03 DA ...i&...))++...!...>2
03B0 E1 04 69 26 00 29 29 2B 2B 2B 22 DC 07 3E 04 32 ...!&...))++...!...>2
03C0 DE 07 2A DC 07 11 31 08 19 7E 32 D9 07 21 48 07 ...*...1...~2...!H.
03D0 85 6F 7E B7 C2 BE 04 3A D7 07 B7 FA E5 04 3E 01 .o~...!...>...
03E0 32 DF 07 3A DF 07 21 89 07 85 6F 3A D7 07 BE C2 2...!...>...
03F0 B4 04 3A DF 07 B9 CA B4 04 6F 26 00 29 29 2B 2B ...&...))++...
0400 2B 22 E0 07 22 E3 07 3E 04 32 E2 07 2A E0 07 11 +"...!...>2...*...
0410 31 08 19 3A D9 07 BE C2 A6 04 3A D8 07 B7 FA E5 1...!...>2...*...
0420 04 2A E3 07 22 E5 07 3E 04 32 E7 07 2A E5 07 11 ...!...>2...*...
0430 31 08 19 7E 32 DA 07 21 48 07 85 6F 7E B7 C2 98 1...~2...!H...o~...
0440 04 3E 01 32 E8 07 3A E8 07 57 21 89 07 85 6F 3A .>2...!W!...o:
0450 D8 07 BE C2 8E 04 7A B9 CA 8E 04 3A DF 07 BA CA ...!...x...!...
0460 8E 04 6A 26 00 29 29 2B 2B 2B 22 E9 07 3E 04 32 .j&...))++...!...>2
0470 EB 07 2A E9 07 11 31 08 19 3A DA 07 BE CA E9 04 ...*...1...~2...*...
0480 2A E9 07 23 22 E9 07 21 EE 07 35 C2 72 04 21 E8 ...*...#...!...5.r...!
0490 07 34 3E 4D BE C2 46 04 2A E5 07 23 22 E5 07 21 .4>M...F...*...#...!
04A0 E7 07 35 C2 2C 04 2A E0 07 23 22 E0 07 21 E2 07 ...5...!...*...#...!
04B0 35 C2 0C 04 21 DF 07 34 3E 4D BE C2 E3 03 2A DC 5...!...4>M...*...
04C0 07 23 22 DC 07 21 DE 07 35 C2 C2 03 0C 3E 4D B9 .#"...!...5...>M.

```



```
04D0 C2 9F 03 04 3E 10 B8 C2 78 03 AF 32 D9 07 C3 E5 .....>...x..2....
04E0 04 79 32 D9 07 AF 32 DA 07 C9 47 3D 0F 0F 0F 0F ..y2...2...G=...
04F0 E6 0F 3C 32 45 07 3D 87 87 87 87 4F 78 91 47 3D ...<2E=...Ox.G=
0500 0F 0F E6 3F 3C 32 46 07 3D 87 87 4F 78 91 32 47 ...?<2F=...Ox.2G
0510 07 C9 0E 1B CD 54 05 0E 17 CD 54 05 05 C2 12 05 ...T...T...
0520 C9 0E 1B CD 54 05 0E 1A CD 54 05 05 C2 21 05 C9 ...T...T...!
0530 0E 01 CD 54 05 05 C2 30 05 C9 0E 13 CD 54 05 05 ...T...0...T...
0540 C2 3A 05 C9 0E 1B CD 54 05 0E 11 C3 54 05 CD E8 ...T...T...T...
0550 09 E6 7F C9 C5 D5 E5 59 0E 02 CD 05 00 E1 D1 C1 .....Y.....
0560 C9 C5 D5 E5 0E 0B CD 05 00 E1 D1 C1 C9 1B 0C 54 .....T
0570 48 52 45 45 20 44 49 4D 45 4E 53 49 4F 4E 41 4C HREE DIMENSIONAL
0580 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 + + +
0590 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 + + +
05A0 20 20 2E 0D 0A 20 54 49 43 20 2D 20 54 41 43 20 + + + TIC - TAC
05B0 2D 20 54 4F 45 20 20 20 20 20 20 20 20 20 20 - TOE
05C0 20 20 20 20 20 20 20 20 20 20 20 20 20 20 2B +
05D0 20 20 2B 20 20 2B 20 20 2B 0D 0A 20 20 20 20 20 + + +
05E0 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 + + +
05F0 20 20 20 20 20 20 20 20 2B 20 20 2B 20 20 2B 20 + + +
0600 2B 20 20 20 20 2B 20 20 2B 20 20 2B 20 20 2B 0D + + +
0610 0A 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 + + +
0620 20 20 20 20 20 20 20 20 20 20 20 20 20 2B 20 20 +
0630 2B 20 20 2B 20 20 2B 20 20 2B 20 20 2B 20 2B 20 + + +
0640 20 2B 20 20 2B 0D 0A 20 20 20 20 20 20 20 20 20 + + +
0650 20 20 20 20 20 2B 20 20 2B 20 20 2B 20 20 2B 20 + + +
0660 20 20 20 2B 20 20 2B 20 20 2B 20 20 2B 0D 0A 20 + + +
0670 20 20 20 20 20 20 20 20 20 20 20 20 2B 20 20 20 +
0680 2B 20 20 2B 20 20 2B 20 20 2B 20 20 2B 20 2B 20 + + +
0690 20 2B 20 20 2B 0D 0A 2B 20 20 2B 20 20 2B 20 20 + + +
06A0 2B 20 20 20 20 2B 20 20 2B 20 20 2B 20 20 2B 0D + + +
06B0 0A 2B 20 20 2B 20 20 2B 20 20 2B 20 20 20 2B + + +
06C0 20 20 2B 20 20 2B 20 20 2B 0D 0A 2B 20 20 2B 20 + + +
06D0 20 2B 20 20 2B 0D 0A 2B 20 20 2B 20 20 2B 20 20 + + +
06E0 2B 00 45 4E 54 45 52 20 59 4F 55 52 20 4D 4F 56 +.ENTER YOUR MOV
06F0 45 00 54 52 59 20 41 47 41 49 4E 20 20 20 20 20 E.TRY AGAIN
0700 20 00 49 20 41 4D 20 54 48 49 4E 4B 49 4E 47 20 .I AM THINKING
0710 21 00 54 49 45 20 47 41 4D 45 20 21 21 21 21 21 !.TIE GAME !!!!!
0720 21 00 59 4F 55 20 48 41 56 45 20 4C 4F 53 54 20 !.YOU HAVE LOST
0730 21 00 43 4F 4E 47 52 41 54 55 4C 41 54 49 4F 4E !.CONGRATULATION
0740 53 00 20 20 2B 0D 0A 20 20 20 20 20 20 20 20 20 S. + + +
0750 20 20 20 20 20 2B 20 20 2B 20 20 2B 20 20 2B 20 + + +
0760 20 20 20 2B 20 20 2B 20 20 2B 20 20 2B 0D 0A 20 + + +
0770 20 20 20 20 20 20 20 20 20 20 20 20 20 2B 20 20 +
0780 2B 20 20 2B 20 20 2B 20 20 2B 20 20 2B 20 2B 20 + + +
0790 20 2B 20 20 2B 0D 0A 2B 20 20 2B 20 20 2B 20 20 + + +
07A0 2B 20 20 20 20 2B 20 20 2B 20 20 2B 20 20 2B 0D + + +
07B0 0A 2B 20 20 2B 20 20 2B 20 20 2B 20 20 20 2B + + +
07C0 20 20 2B 20 20 2B 20 20 2B 0D 0A 2B 20 20 2B 20 + + +
07D0 20 2B 20 20 2B 0D 0A 2B 20 20 2B 20 20 2B 20 20 + + +
07E0 2B 00 45 4E 54 45 52 20 59 4F 55 52 00 16 2B 17 +.ENTER YOUR...
07F0 2A 1A 27 1B 26 01 40 0D 34 04 3D 10 31 16 2B 17 *.'.&.@.4.=.1.+
0800 2A 00 04 0F 03 0A 0A 02 02 02 02 01 05 05 05 05 *.....
0810 FF 00 FF FF FF FF 0A 05 02 01 01 00 01 05 05 00 00 .....
0820 FF 00 FF FF FF FF 0A FF 02 01 02 01 0A 05 0A 05 .....
0830 FF 00 16 2B 40 01 17 2A 3D 04 1A 27 34 0D 1B 26 ...+@.*.=...'4..&
0840 31 10 16 2A 3E 02 17 2B 3F 03 17 26 35 08 1B 2A 1..*>...+?...&5..*
0850 39 0C 1A 26 32 0E 1B 27 33 0F 16 27 38 05 1A 2B 9..&2...'3...'8..+
0860 3C 09 16 26 36 06 17 27 37 07 1A 2A 3A 0A 1B 2E (<..'&6...'7...'..+
0870 3B 0B 16 17 18 15 1A 1B 1C 19 16 1A 1E 12 17 1B ;.....
0880 1F 13 16 1B 20 11 17 1A 1D 14 26 27 28 25 2A 2B ..&'(%*+
0890 2C 29 26 2A 2E 22 27 2B 2F 23 26 2B 30 21 27 2A ,)&*...'+'#&+0!'*
08A0 2D 24 3D 01 15 29 40 04 18 2C 31 04 13 22 3D 10 -$=...)@...;1..="
08B0 1F 2E 31 0D 19 25 34 10 1C 28 34 01 12 23 40 0D ..1..%4..(4..#@
08C0 1E 2F 31 01 11 21 34 04 14 24 3D 0D 1D 2D 40 10 ./1..!4..$=-@
08D0 20 30 04 01 02 03 10 0D 0E 0F 0D 01 05 09 10 04 0.....4123E=
08E0 08 0C 10 01 06 0B 0D 04 07 0A 34 31 32 33 40 3D .....>?=159<48<@16;=4
08F0 3E 3F 3D 31 35 39 40 34 38 3C 40 31 36 3B 3D 34 ?>="2..#3..%5..(
0900 37 3A 12 22 32 02 13 23 33 03 15 25 35 05 18 28 7:.."2..#3..%5..(
0910 38 08 19 29 39 09 1C 2C 3C 0C 1E 2E 3E 0E 1F 2F 8..>9..(<...)/
0920 3F 0F 06 07 08 05 0A 0B 0C 09 06 0A 0E 02 07 0E ?.....
0930 0F 03 12 13 14 11 1E 1F 20 1D 15 19 1D 11 18 1C .....
0940 20 14 22 23 24 21 2E 2F 30 2D 25 29 2D 21 28 2C .."#$!./0-%)-!(<
0950 30 24 36 37 38 35 3A 3B 3C 39 36 3A 3E 32 37 3B 0$6785;:<96:>27;
0960 3F 33 00 00 00 00 00 00 00 00 00 00 00 00 00 ?3.....
0970 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
```

SORCERER USERS' GROUP (TORONTO)

Membership Application Form

Covering Jan. to Dec. 1981

Membership to the group is not restricted to the TORONTO area. All persons willing to participate are invited to join.

As a member of the Sorcerer Users' Group (Toronto), I enclose the annual membership fee and agree to the following Terms.

1. That I will not, without the authorization of the board of directors, represent myself or take any action as agent, or representative or become spokesperson of the group.

2. That I will not use any software obtained from the SUGT library for any commercial purpose or financial gain. The library shall be available to me should I wish to obtain programs donated by other members. These programs shall not be distributed without the owners consent and/or the consent of the board of directors.

3. That I have the right to vote for the officers and directors of the organization at the annual general meeting.

4. That any breach of the above conditions and any other restrictions that the board of directors may invoke in the future on my part may result in suspension or termination of my membership without refund.

Annual Membership Rates : (Jan - Dec)

Canadian - \$15.00 Cdn - U.S. & Foreign \$15.00 (U.S Funds) PLUS \$8.00 Postage

Payable to - SORCERER USERS' GROUP (TORONTO) - by Cheque or Money Orders.

The SUGT program library is available to all members in the following manner.

You may send \$6.00 for each volume as they become available and we shall supply the cassette/s. Program cassettes shall be sent via Air Mail.

All issues of PORT FE shall be mailed first class, in the case of non local issues, they are mailed via Air Mail. Past issues of PORT FE are only available for the current calendar year. Contact the editor, he will advise the amount of payment for previous issues.

NAME(print):.....
ADDRESS:.....
CITY:.....
POSTAL CODE:.....
TELEPHONE: Res..... Bus.....

Payments enclosed (membership):..... Library tape/s.....

Signature:.....

Please list the type of equipment you are using etc...

Sorcerer size: 8... 16... 32... 48... other..... S100... Graph board....
Disk system - Micropolis.... Discus.... Exidy.... other... Size.....
Other Equipment

If you belong to any other Sorcerer Users' Group please list it below.