PITTSBURGH P.U.G. USERS GROUP

PERIPHERAL

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JULY MEETING

The next regular meeting of the Pittsburgh Users Group will begin at 6 p.m. on Sunday, July 17,1983 at the Community College of Allegheny County's South Campus.

The P.U.G. Program Library will be open for copying programs or to accept returns of borrowed items between 5 p.m. and 6 p.m.

Following the general business meeting, the members will split up into thre smaller interest groups: Basic, Extended Basic and Assembly Language.

LAST MEETING

The membership voted to permit advertizing to be placed in the newsletter and a price schedule was accepted by a majority of members.

Vice-president John Dow headed a discussion on purchasing a disk drive for the Group. Librarian, Pat Dean moved that the Group accept the Equipment Committee's recommendations to purchase a disk drive and the members voted to spend up to $350. on a double sided disk drive.

DOOR PRIZE: An Extended Basic Baseball Cassette was won by P.U.G. Member Timothy Stark.

A committee is being formed to review software from various third party manufacturers, and write their report in future issues of the P.U.G. newsletter. Sign up at the next meeting.

A demonstration of TI's new module titled "Beginner's Basic Tutor" was presented by Jonathan Zittrain. The members generally agreed that it was a worthwhile addition to TI's line.

MEMBERSHIP DUES

A large percentage of memberships will be expiring during the summer months. Check your membership card to see when your dues should be paid.

At the June meeting, the majority of the Group present voted to eliminate the Associate Membership and to make dues a straight $12.00 fee for annual membership.

Any P.U.G. Member can pay the Treasurer Mike Fleming at the door during the July meeting or mail a check made payable to the Pittsburgh Users Group to:

Pittsburgh Users Group
P.O. Box 18124
Pittsburgh, PA 15236

Your check will enable the Group to purchase the new equipment that we need. If we receive your check, we can place the orders, which will still take some time to process and ship to the Group. We are looking forward to having a complete system by this Fall, but we need everyone's support to achieve our goal.

We are still asking for the $5.00 voluntary fee from the Group members to support the cost of buying new equipment. We appreciate the help and cooperation of the members who have already paid.

REPAIRMAN WANTED

The Group needs to find a member who would be willing to repair a television set for the Group to use as a monitor at the monthly meeting. Several of the members have TV sets that are not working and they would be willing to donate them to the Group. Volunteers should get in touch with the Secretary, John Asmonga at the next meeting.

HELP WANTED

In the last newsletter the P.U.G. Officers made a request for help in several areas. During the June meeting, Secretary, John Asmonga again requested help from the members who attended the meeting. Some of the members signed up to help in certain areas and they will be contacted in the coming months to do 2-3 hours work per month. We are still looking for help in the following areas:

SET UP CREW To help organize tables and equipment before and after each meeting.

TYPISTS With fairly good typewriter to copy programs and articles for the newsletter and the library.

REPORTER to write articles of general interest directed at computer buffs. (Pick your subject)

PROGRAM CONTEST

The final results of the P.U.G. Program Contest were announced at the last meeting and the winners were as follows:

FIRST PRIZE John Seiler for his game called "Russian Rubbish"

SECOND PRIZE Tom Wible for a kids game called "Saynumber"

THIRD PRIZE George Dué for a game for kids called "Capstates"

The winners are to be congratulated on their achievements in programming these excellent visual displays for the TI 99/4A.

The P.U.G. Officers would like to thank all of the individuals who took the time to create programs for this contest.

Programs submitted for the contest will be available through the P.U.G. Program Library. Members can use the program library prior to the business meeting each third Sunday of the month.

User Groups can order programs on a one for one exchange on DISK ONLY by noting your request on your Group stationary and including a copy of your Library of Programs.

OVERDUE

The Group Librarian. Pat Dean has requested that any book or tape out on loan for two (2) months or longer be returned to the Library so that other members can benefit from its use. The object of the Library has been to circulate any and all books, programs, etc. among ALL the Group members. Please try to return your borrowed items as promptly as possible.

ARITHMETIC OPERATIONS IN THE 99/4

Arithmetic operations on the 99/4 differ from those in other common microcomputers in two ways, one straight-forward, the other, more esoteric. The combined effect is obvious to the casual user, however.

First, the 99/4 does 16-bit arithmetic as its standard mode of operation. This yields 13 or 14 place precision (that is, the result of an arithmetic operation is accurate to 13 significant figures.) This level of precision is only available on other common machines (Apple, Radio Shack, Atari, Commodore) by invoking "double precision", which increases the memory requirements, and slows the operation markedly, and may not be easily invoked.(Possibly only with machine code calls.)

Second, all "floating-point" operations (wherein a decimal point can pop-up anywhere) are the output of an approximation routine. This is what results in the nonsense answers often returned in common 8-bit computers. TI uses a different, more rigorous, approach, "radix-100" based. The result is that the effect of what round-off error as is present is noticable only in rare instances, dealing with extremely large or extremely small numbers. This is why the answers returned on the 99/4 look like you expect them to, and why identities are correctly evaluated. (Only Atari, among the other common micros, will correctly identify the square root of all the perfect squares between one and one-hundred as the correct integer.)

AN ASSEMBLY LANGUAGE SUBROUTINE (CONTINUED FROM LAST MONTH)

By John Dow

The last newsletter included a listing of a subroutine which is called from Basic (using the Mini Memory Module) to sort a numeric array. Below is a modified version of that subroutine. It has been revised to be assembled with TI's Editor/Assembler. It is now designed to be called from Extended Basic. It therefore has been renamed XBSORT.

I made a few additional changes. For instance, I eliminated the variables M8, J8, I8, and L8 in favor of registers R6 through R9. Also, at our meeting last month (Sunday before the PUG meeting), we decided that there were two bugs in Jerry's version: change 712A to 712C at locations 08A and 0C6. (In the version listed here, I eliminated those statements altogether by having multiple move statements.)

Last month's version was produced with the Dow Editor/Assembler. You can compar that listing with the one below to see how easy it is to convert from using the Mini Memory Module to a full system (with disk and expansion memory).

```
* CALL LINK("XBSORT",N,A())
*
* DERIVED BY JOHN DOW FROM JERRY ROWELL'S SHELL SORT
* SUBROUTINE WRITTEN FOR THE MINI MEMORY MODULE.
*
* THIS VERSION IS TO BE USED WITH EXTENDED BASIC.
*
* REGISTER USAGE:
* R0 TEMP FOR SUBSCRIPTS ETC
* R1 =2   FOR NUMREF
* R2 N/2 ETC
* R3 N-M8
* R4 FAC POINTER
* R5 XI8 POINTER
* R6 L8
* R7 I8
* R0 J8
* R9 M8
*
       DEF  XBSORT
FAC    EQU  >834A
NUMREF EQU  >200C
NUMASG EQU  >2008
XBSORT CLR  R0          GET 1ST ARGUMENT: SIZE OF ARRAY
       LI   R1,1
       BLWP @NUMREF
       MOV  @FAC,R1     CONVERT TO INTEGER
       CLR  R2
       MOVB R1,R2
       SWPB R2
       CI   R2,>41
       JNE  L0
       SWPB R1
       CLR  R2
       MOVB R1,R2
       SWPB R2
       LI   R4,100
       MPY  R4,R2
       MOV  R3,R2
       MOVB @FAC+4,R0
       SWPB R0
       A    R0,R2
```

```
        JMP   L1
LO      SWPB  R1
        CLR   R2
        MOVB  R1,R2
        SWPB  R2
L1      MOV   R2,@N
TOP     SRL   R2,1
        JEQ   DONE
        MOV   R2,R9          M8=INT(N/2)
        MOV   @N,R3          R3=N-M8
        S     R2,R3
        LI    R8,1           J8=1
L2      MOV   R8,R7          I8=J8
L3      MOV   R9,R6
        A     R7,R6          L8=I8+M8
        MOV   R7,R0
        LI    R1,2
        BLWP  @NUMREF        FAC=A(I8)
        LI    R4,FAC
        LI    R5,XI8
        MOV   *R4+,*R5+      XI8=FAC
        MOV   *R4+,*R5+
        MOV   *R4+,*R5+
        MOV   *R4,*R5
        MOV   R6,R0
        BLWP  @NUMREF        FAC=A(L8)
        LI    R0,4
        LI    R4,FAC
        LI    R5,XI8
COMPAR  C     *R4+,*R5+      COMPARE FAC WORD TO XI8 WORD.
        JGT   L4
        JNE   LPO
        DECT  R0             4TH WORD YET?
        JOC   COMPAR         NO.
        JMP   L4             YES, ALL EQUAL.
LPO     MOV   R7,R0          FAC IS > XI8. SET A(I8)=FAC
        BLWP  @NUMASG
        LI    R4,FAC
        LI    R5,XI8
        MOV   *R5+,*R4+      FAC=XI8
        MOV   *R5+,*R4+
        MOV   *R5+,*R4+
        MOV   *R5,*R4
        MOV   R6,R0
        BLWP  @NUMASG        A(L8)=FAC
        S     R9,R7          I8=I8-M8
        JGT   L3             IF I8>0 GO TO L3
L4      INC   R8             FAC<XI8. SET J8=J8+1.
        C     R8,R3
        JLE   L2             IF J8<=R3 GO TO L2
        JMP   TOP            GO TO TOP
DONE    B     *R11
N       BSS   2
XI8     BSS   8
        END
```

E-PROM CARTRIDGES FOR THE TI-99/4A ?

The cartridges we are using now on our computer are all based on the so-called ROM technology. ROMs are Read Only Memories. As the name implies, programs on them can only be READ into the computer. The computer cannot read back into them. ROM-based programs are irrevocably cast in silicon.

E-PROMs, on the other hand, are Erasable Programmable Read Only Memories. This means then that they can be erased and re-programmed. The usual method of erasing them is to subject them to ultra-violet light. Re-programming them requires a more elaborate device than just a simple home computer.

But an enterprising fellow, called Paul Terrell, who is president of Romox Inc. of Campbell, CA, announced at the recent Consumer Electronics Show in Chicago that he is going to install 2500 programming terminals at major retail outlets across the country. They will be in place in time for the Christmas season of this year. The terminals are linked by 1200 Baud modems and telephone lines to a main-frame computer in Santa Clara, CA. Each terminal will store the top 10 games of the week for the VIC-20, the VIC-64, the Atari 400 and 800 and for the TI-99/4A. They will also store 100 more titles on floppy disks. A customer will be able to buy a new game cartridge on the spot for $ 15 to $ 25. Romox will bill the store monthly for all game cartridges sold and pay any royalties due the computer companies.

If at a later date the customer decides to exchange that cartridge for another one, he simply goes to the store and, for $ 10 will receive a new cartridge with a more recent version of his game or with an entirely new game, if he prefers.

Initially this distribution system will be used for the most popular programs: games. But in time, Terrell envisons distribution of non-game software programs as well.

Blank cartridges come in sizes from 4 to 16 K and will cost from $ 15 to $ 25. But once the customer has several of them and is willing to exchange them, the new software will cost only $ 10 a game. The distributor will then batch-erase all cartridges given in exchange and reprogram them with games obtained from the main-frame computer. The Romox cartridges have a snap-open case, so that the dealer can easily expose them to ultra-violet light for erasing.

Terrell also talked about the possibility of using EE-PROMs in the future. These are Electrically-Erasable ROMs, doing away with the ultra-violet light erasing. For the time being, prices on EE-PROMs are still markedly higher than on E-PROMs.

Maurice E.T. Swinnen. Reprinted from WASHINGTON DC USER GROUP

FOR SALE

Modules for sale: A-Maze-ing $15., Tombstone City$22., TI-Invaders $22., Munch Man $22., Alpiner $22., Solid State Speech Synthesizer $80., call Jeff at 884-1281.

TEACH YOURSELF BASIC $10.TE II $30.
SPEECH SYNTHESIZER $75.
SPELL WRITER $10. Chris 885-5692

TAPE RECORDER for sale RED 462-3734

The following items will be available for sale to P.U.G. members at the meeting.

5-"Editor Assembler Manuals"
Reg. $14.95 P.U.G. Price $10.00
(A must for Mini-Memory Owners)

2-"Introduction to TI Basic"by Don Inman
Reg. $12.95 P.U.G. Price $10.00

10-"Boxes of Verbatim Diskettes"
10 in a box. Price $22.90 per box

CES 83 "NEWS BRIEFS"

TI-99/4A HOME COMPUTER

Color change (beige) and switch relocation.
- o Effective June 83.

Milton Bradley MBX Voice Recognition System.
- o Plugs into the joystick port.
- o Developed by Milton Bradley; marketed by TI.
- o Available 4Q83.
- o Suggested Retail Price (SRP) is $129.95.
- o SRP of associated joystick is $29.95.

SOFTWARE

Ten new Milton Bradley Software Packages.
- o 3 require MBX; SRP is $59.95.
- o 7 don't require MBX; SRP is $49.95.
- o 6 are arcade games.
- o 4 are educational packages.
- o All are cartridges available 4Q83.

3 new educational packages (cartridges).
- o Early LOGO Learning Fun; Jul 83; SRP is $39.95.
- o Word Radar; 4Q83; SRP is $39.95.
- o Word Invasion; 4Q83; SRP is $39.95.

4 new games.
- o M*A*S*H (cartridge); 3Q83; SRP is $39.95.
- o Sneggit (cartridge); 3Q83; SRP is $39.95.
- o Moonmine (cartridge); 4Q83; SRP is $39.95.
- o Entrapment (cassette); 3Q83; SRP is $19.95.
  -Requires Mini-Memory Cartridge to run.

Imagic software.
- o 7 Imagic titles on the TI-99/4A in the first including Demon Attack and Microsurgeon.
- o 4 will be ready for Christmas.

TI-Mini-Writer.
- o Cassette based.
- o Requires Mini-Memory Cartridge.
- o Available 3Q83; SRP is $19.95.

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