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THE
SPRITE

a monthly newsletter of

THE 9900 USER'S GROUP, INC.

A voluntary organization for the
sharing of knowledge and
resources of people having
interests in, or ownership of
9900 processor based Home
Computers.

INTRODUCTION:

They say that patience is its own reward and seek and ye shall find. We've certainly have had patience and heavens knows we've looked and looked and do you know what? We're still looking? For software that is. We received a listing of a library from an out of state library and in examining it discovered that over 25% of JUST the games listing was without a doubt copyrighted material. We identified just those 25% out of two commercially bought books in about 20 minutes. If we were to purchase a library such as that and only 'rent' the software I don't believe we'd be in the rental business all that long. Also, the problem with BASIC programs on cassette is that they're too easily copiable. To boot right now there are probably ten times as many people who have PUBLIC II and PUBLIC III than we've sold it too. So to say that we have such and such in our library just for 'rental' is a joke. If a program is rented or if a commercial program is bought at a meeting and then passed to Tom, Dick, and Harry we are ALL the biggest losers in the world just looking for a hole to climb into so the Commodore's, IBM's, and others can finish us off easily. If I sell one commercial program or let's say a \$2.50 diskette of PUBLIC II for example and then ten people suddenly wind up with it then the group has lost \$25 or about \$9 profit that could be used for the group for other things. Some people seem to think that public domain means FREE and that the prime function of a User's Group is to give public domain software away and to copy copyrighted software at meetings and splinter groups for its members. That is NOT what public domain means and that is NOT the purpose of a User Group and its activities. As far as public domain it only means that the copying and distribution can occur without the authors consent!

Another interesting phenomena is that if the group can get an item for about \$90 and someone jumps up and says K-mart has it for \$88 and the room clears out I begin to get the message. Keep in mind that a 'group' can get good discounts. I mean a large order. If someone comes up to me and says I need a box of disks the odds are he's out of luck. Get me ten or more people together who each needs two or more BOXES and then watch the price drop. Just recently when I had diskettes for \$18 thats only because I got together with a few other User's Groups and purchased over \$500 worth of diskettes. I can certainly tell you that those who put the money up got them for a lot less than that. Naturally for the group to survive we do have to make something. Running a User's Group is not a FREE operation. Regardless of whether a group is non-profit or profit they both MUST MAKE MONEY to survive. Just because a "group" is a non-profit organization (which we are NOT, although I wonder) does NOT mean they are obligated to anyone to give things away at cost! The only difference between the two is the decision of where the profit can go. In a non-profit group it MUST go back into the organization so that the total talley sheet shows no

excess or 'profit.' In a profit group the decision is that of the Board of Directors and any stockholders. Also taxes come into play but for a small business this is inconsequential. Generally speaking I spend more than I get back. 'Oh Heck!' you say. How much can a User Group spend? Dec/Jan were our only decent months. Only because of the holidays. We took in \$502.74 in Jan. but we put out \$464.70. So we realized only \$38.04 profit. December was a little better, we did exactly double of January. Which is backwards! Sales from the preceding month dropped 50%. Now the bad news. The running total so far for our fiscal year (1 June to 31 May) as of 1 FEB 1984 is as follows: RECEIPTS \$2466.82 and DEBITS \$2622.67. Notice anything? It does indeed cost REAL money to run a User's Group. So keep that in mind when you run to the local department store to buy something \$2 cheaper or cassettes for .32 via the mails. After awhile you won't be able to run back to that department store to get anything or ask for help and then I know exactly where everyone will run or who they'll call. However, by that time you may have put this User's Group to rest and you have no one else to blame but yourself.

If I sell only one of something which I do a lot and we shouldn't have to I HAVE TO CHARGE MORE!!!! The cost of going back and forth to the distributor for this and that creeps right up on you. There is a list of products that we can get through the group listed elsewhere in this newsletter. The prices listed are the high end. In quantities I can lower the price. What you need to do is contact some of the user group members and set up a purchase for cassettes or diskettes or cartridges, etc. Remember, if we stick together we have purchasing power and can gain by it. If everyone marches off in all directions to hunt for that proverbial 'pie-in-the-sky' savings your missing the point. Along with all this comes involvement. If someone is assigned a project that takes a week and he only accomplishes part of it in a month they should give up, or seriously re-evaluate what they are doing. It only hurts the group. Each meeting that goes by without a particular project completed hurts the group severely.

Getting back to our library, I have in excess of 50 programs scattered throughout out of state newsletters and need to get them put on cassette and disk. I have received 3 so far. I am NOT going to key in all those programs by myself. Mike Harte has agreed to handle the task of being disk librarian. I don't expect him to key in all those programs either. I will give him copies of newsletters with programs in them and if we get volunteers please see Mike Harte. He will gladly give you a handfull of newsletters. Take ONLY what you will key in BEFORE the next meeting! Also Ray Osowski will have copies for cassette aficionados. If you elect to handle this task keep in mind we will probably call on you again. We desire to keep the same people for keying in programs. That way we will know where we have to

go for keyed in programs. It is too bad but we must maintain control. REMEMBER! If you take a handfull of programs for key in they are NOT FOR PASSING AROUND! I have to get serious about that. If the programs are gone before they even get into the library we are wasting our time.

If each member could take a program and totally rewrite it in his own way we would immediately have 90 programs in the library. If just the splinter groups did that as a sort of programming assignment we could very well be on the way. The learning process is very well served also. I think splinter group 'activity' would be a bee hive of activity under those conditions. It would be a driving force. If everyone just frantically swaps, after awhile its all used up and you sit around staring at each other. With those words it should be noted as brought out by another User's Group that any activity sponsored by the User's Group and the activities it is involved in are the responsibility of that User's Group. I'm not that naive nor do I have the ability to curtail all types of infringement problems but I do ask that they not be done at group functions.

TI FORTH BUGS:

SCREEN 72, LINE 5, CHANGE "PAB_ADDR" to "PAB-ADDR".
Change the underline to a dash.

Forth manual, Appendix D, page 30, 4th definition should be, "ENDOF".

Forth manual, Chapter 6, page 3, "SCREEN" must follow 2 color values, foreground and background colors, or screen writing becomes transparent.

EDITOR ASSEMBLER TUTORIAL: Part II by M. Baker

Welcome back to another blinding session of assembly language. Before we really get into this new language it is imperative that we get some basics out of the way. The predominant mode in assembly language is its use of numbers, naturally. Although decimal can be used for the most part an understanding of HEX is extremely desirable. Addresses for example are HEX numbers. To differentiate between decimal and HEXadecimal numbers we place the "greater than" symbol > before the number such as >768.

What is hexadecimal? First, what is decimal? Deci means ten and HEX means sixteen. The term refers to and dictates the "BASE" of the number system in use. The number of DIGITS in any number system always counts up to ONE LESS than the BASE. So, in our everyday number system of decimal the digits are 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9. There are 10 digits and we can count up to 9. The number TEN is not a digit but composed of two digits, '1' and '0'. Only single

digit or character representations may be used. When we are converting from one base to another it may "appear" this is not true but that is not the case. Also, remember, counting starts from ZERO and not ONE!

Well we already said that hex means sixteen. ~~Minimummmmm.~~ That's two digits. One less than the base is fifteen and that too is two digits. The problem is in our thinking, not the numbers. We are thinking in base 10 of a number system higher than base 10. We don't have too much of a problem when we use base 2 (BINARY) or base 8 (OCTAL) since those are 'within' our present number usage. Since numbers are merely representations of quantities dictated by us we could actually use anything to represent a number system. How about hieroglyphics! Maybe Roman Numerals? As you probably already know these are representations that man has used. We don't want to overcomplicate things do we. We already have ten digits and all we need are six more. Why not letters? Ok. Which ones? In the world of mathematics someone a long time ago very arbitrarily set up that letters of the alphabet could indeed represent numbers. Not only that but letters in the beginning of the alphabet should generally represent unvarying quantities while those at the end represent changing values. That is variables or unknowns. The proverbial x. (Boy, I tell ya, someone always comes up with some kind of rule.) Let's do that then. The letters of course are A, B, C, D, E, AND F. Now we have sixteen 'digits' or characters to represent our hexadecimal base. In order now they are: 0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F.

Just as 10 in decimal represents a 'jump' to the next 'unit' so does >10 in HEX. However their Values or weightings are very different. >10 is equivalent to 16 in decimal and >10 is equivalent to >A in HEX. Let's show a number line to get the 'feel' of all this:

```
d 0 1...9 10 11 12 13 14 15 16...25 26 27 28 29 30 31 32...
h 0 1...9 A B C D E F 10...19 1A 1B 1C 1D 1E 1F 20...
```

Let's do some simple hex arithmetic. If we add >5 and >4 we come up with >9. Looks easy. That's the same answer as in decimal. But, if we add >5 and >5 we now get >A. How about >33 and >66. A nice >99. Everything works smoothly until the proverbial CARRY. It's not so bad but you do need 15 fingers. How about >43 and >66. What did you get? I hope it was >A9. I'm not going to get into conversion now since that will take an awful lot of space. The simplist way to attack this hex stuff is to use tables. You remember those. Just like the multiplication tables you were forced to learn as a child. After you get the 'feel' of hex with that you can do some reading (unfortunately on your own). You will then be better equipped to tackle conversions, etc.

To get you on the move I've included the tables for addition and multiplication in hex. Good Luck, good reading (which you MUST do) and see you next newsletter.

HEX MULTIPLICATION TABLE

1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2	04	06	08	0A	0C	0E	10	12	14	16	18	1A	1C	1E
3	06	09	0C	0F	12	15	18	1B	1E	21	24	27	2A	2D
4	08	0C	10	14	18	1C	20	24	28	2C	30	34	38	3C
5	0A	0F	14	19	1E	23	28	2D	32	37	3C	41	46	4B
6	0C	12	18	1E	24	2A	30	36	3C	42	48	4E	54	5A
7	0E	15	1C	23	2A	31	38	3F	46	4D	54	5B	62	69
8	10	18	20	28	30	38	40	48	50	58	60	68	70	78
9	12	1B	24	2D	36	3F	48	51	5A	63	6C	75	7E	87
A	14	1E	28	32	3C	46	50	5A	64	6E	78	82	8C	96
B	16	21	2C	37	42	4D	58	63	6E	79	84	8F	9A	A5
C	18	24	30	3C	48	54	60	6C	78	84	90	9C	A8	B4
D	1A	27	34	41	4E	5B	68	75	82	8F	9C	A9	B6	C3
E	1C	2A	38	46	54	62	70	7E	8C	9A	AB	B6	C4	D2
F	1E	2D	3C	4B	5A	69	78	87	96	A5	B4	C3	D2	E1

HEX ADDITION TABLE

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	10
2	3	4	5	6	7	8	9	A	B	C	D	E	F	10	11
3	4	5	6	7	8	9	A	B	C	D	E	F	10	11	12
4	5	6	7	8	9	A	B	C	D	E	F	10	11	12	13
5	6	7	8	9	A	B	C	D	E	F	10	11	12	13	14
6	7	8	9	A	B	C	D	E	F	10	11	12	13	14	15
7	8	9	A	B	C	D	E	F	10	11	12	13	14	15	16
8	9	A	B	C	D	E	F	10	11	12	13	14	15	16	17
9	A	B	C	D	E	F	10	11	12	13	14	15	16	17	18
A	B	C	D	E	F	10	11	12	13	14	15	16	17	18	19
B	C	D	E	F	10	11	12	13	14	15	16	17	18	19	1A
C	D	E	F	10	11	12	13	14	15	16	17	18	19	1A	1B
D	E	F	10	11	12	13	14	15	16	17	18	19	1A	1B	1C
E	F	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D
F	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E

SPLINTER GROUPS:

We have two groups. A BASIC group and an ASSEMBLY group. An Extended BASIC group will begin in July with Ray Osowski. The BASIC group will continue with John Bagocius as the Splinter Leader. I (Mike Baker) will be running the Assembly group until we find the guru for that one. If you want to learn how to use any of these languages please join a splinter group. With this newsletter was mailed a 'member list'. Just call that groups particular leader to get the time and place with directions for the next meeting. We will try to put in the newsletter the topic for a particular splinter group if we can and at least the dates of the upcoming meetings.

MISCELLANEOUS SCOOP:

Remember TI-MINI-WRITER? Advertised but it never showed up. Well it supposedly is being sold by Tex Comp Users Supply. They still have quite a big selection of items to be had. You may contact them at PO Box 33084 Granada Hills, CA 91344

Rumor has it that Cor-Comp may not bring out the long awaited Pheonix after all. There is no positive confirmation of this though. If you were really looking forward to this computer then don't wait for me. Write Cor-Comp a letter and give them your support. Let them know your willing to expand if products such as theirs become available. You are the consumer and the driving force!

COMP-U-SERVE is now averaging one sign on per minute.

HINTS FROM OTHER CLUBS:

"Arizona 99 UG" - If you have a black and white TV, try this trick for a sharper picture. Add the the following statement to the beging of your program:

10 CALL SCREEN(15) This will disable the color-generating circuit in the 99/4A and remove the pattern of vertical linesoften seen on black and white TV's. It also increases the sharpness of characters.

"Huggers Hoosier Users Group" - Does your TV set/monitor have a terminal case of wavy lines moving across the screen? They accidently found a cure! They set up four TV's to one computer using a Radio Shack 4-way Distribution Amplifier. It eliminated the wavy lines on all the monitors. For those of you who want to get rid of your wavy lines for about \$25, you can get all the equipment you will need at your local Radio Shack; ask for:

Distribution Amplifier (up to 4 TV's) \$12.95 Cat# 15-1119 or
 Booster Amplifier (for one TV) \$9.95 Cat# 15-1118
 VCR/TV Matching Transformer \$2.99 Cat# 15-1253
 75 ohm Coaxial Cable, with male "F" end connectors \$2.49 to \$5.99 or if you have no 75 ohm connector
 Color Matching Transformer Cat# 15-1140A

"Pittsburgh Users Group" - Let's say you're editing a program instead of pushing Function 2 (Insert), you inadvertently push Function 3 (Clear)! DO NOT ENTER! Push Function 4 (Clear). Function 4 takes you out of the Edit mode without updating the last lines you were editing. List your program, and you'll find the line is still there.

"Arizona 99 UG" - Advanced Program Tip - You need Mini Memory, or Editor/Assembler for this tip. This program uses some memory addresses that most programers have not yet discovered.

Using Mini-mem or Ed/Ass, type in the following program from TI BASIC. You will find that pressing the following keys

will unveil some secrets: N:normal mode, C:clear screen, T:text 40 column mode, M:multicolor mode(each character is a 4X4 block), B:bit map mode(99/4A only). as you can see, contrary to most literature, it can be done from TI BASIC:
90 PRINT "PRESS:" : "N-FOR NORMAL MODE" : "C-FOR CLEAR SCREEN" : "T-FOR TEXT MODE" : "M-FOR MULTICOLOR MODE"

```
100 PRINT "B-FOR BIT MAP MODE"  
110 CALL KEY(3,K,S)  
115 IF S=0 THEN 110  
120 IF K()=78 THEN 140  
130 CALL POKEV(-32768,0)  
140 IF K()=67 THEN 160  
150 CALL POKEV(-32352,0)  
160 IF K()=84 THEN 180  
170 CALL POKEV(-32272," ",-30945,0)  
180 IF K()=77 THEN 200  
190 CALL POKEV(-32288,0)  
200 IF K()=66 THEN 220  
210 CALL POKEV(-32766,0)  
220 GOTO 90
```

"Iowa 4A Forum" - Rumor has it that TI accidentally shipped out 15 special 248K memory cards instead of the 32K cards. To see if you have one of these special cards, insert the Editor/Assembler cartridge, go to Edit mode type in a full line of 40 "AZ"'s, use the copy function to get 2 lines of "AZ"'s (FCTN 9 C 1,1,1), then copy 2lines giving 4 lines, 4 to 8, 8 to 16, etc. If you get 306 lines, you have the normal 32K card (80 * 306 = 24K + 8K for Ed/Ass). If you get 3065 lines, then you have the 248K card. Good Luck!

"OSCAR", A REVIEW: by Phil, ALOHA 99/4A USRES GROUP Honolulu, Hawaii

You pays your money and takes your chances! Well I paid my \$80 and sent off for OSCAR. It finally arrived and with great anticipation I opened the box, wanting to devote as much time as possible to OSCAR I decided to wait until the weekend to try it out. So I spent the next three days reading the the users manual and the premier issue of the DATABAR magazine. I also reviewed the video tape twice. Saturday arrived! I put the four batteries into OSCAR, made several practice runs with the reader and felt I was ready. Connecting OSCAR to the console was a snap. A single cable from OSCAR to the cassette input jack is all that was required. I selected a short program from the magazine because I was anxious to see how OSCAR performed. A quick review of the users manual and I was ready. The first couple of passes with the wand ended with an error tone. Ok, so I neede to practice and develop the proper technique. About a half hour later I could read several lines of code without an error. The following discoveries were made during my trial and error period with OSCAR. 1. As the manual stated, I found that a steady movement of the wand across the bar code

was necessary for proper reading. 2. I had a little problem with the cord to the wand which kept pulling the wand off the template tracks. Proper placement of the main unit corrected this problem. 3. By flipping the template over and using the back I found that I was able to read many more lines error free. For some unknown reason I had problems aligning the wand with the front of the template. After all the trails and practicing, I am still not able to report on the quality of the software programs. The reason is simple, I have not been able to enter a single program into the TI-99/4A. "NO DATA FOUND" is the only response that I have been able to get from the console. The manual indicates that this is a time-out problem and that "You have 25 seconds to read 2 lines of bar code for transmission into the TI...". Three frustrating hours later I was able to read 8 lines of code into the 4A before the NO DATA FOUND message appeared. I decided to call it quits for the day.

My attempts on Sunday were no different than on Saturday. Although on Sunday, I began to notice that the 4A was responding like it does with a recorder before you turn up the volume control. Unfortunately, the OSCAR does not have a volume control. Monday morning at 5 A.M. I called the Customer Service Department of Databar Corp., in MN. Of course the toll free number does not work from Hawaii. The person I spoke to read me the manual over the phone and said that I was having a time-out problem. She insisted that I practice several more days. Well practice I did, but still no luck. In desperation I tried a little trick I thought might work. I cabled OSCAR directly to a cassette recorder. Without much difficulty I read the whole program onto a cassette tape. When loading the tape it would run for one minute and eight seconds then I would get the familiar NO DATA FOUND message. At this point I am recommending a "NO BUY" for the OSCAR. (See Ed Note below!) A copy of this review will be sent to the DATABAR Corp. and hopefully by next meeting I should have a reply. Stay tuned for chapter two I hope the problem with OSCAR can be resolved as I am impressed with the concept.

Ed Note: There is an updated review by Phil available and shows great improvement in OSCAR. The updated review will appear in the next newsletter and a copy of that review is available on request. This review is printed for those who may have recently acquired an OSCAR from DATABAR Corp and are having problems. If you are having problems please contact them for help.

RADIOTELETYPE: by Al Curran CIN-DAY USERS GROUP

The wonderful world of telecommunications, which is known the world over as "Radioteletype", is rapidly appearing as a means of not only people to people contact but also as computer to computer. Those of you who are licensed Radio Amateurs are already quite aware of the media and so are not

newcomers to the field. However, those of you who are not licensed should not feel left out in the cold.

Okay, so you own a Texas Instruments 99/4A Computer, a few peripherals, a pile of cassettes, loads of magazines and a handful of command modules. Is there nothing more? Have you ever heard some funny sounding noises on your all-band radio receiver (standard AM broadcast up through 30 megahertz)? Well, some of them are teletype being broadcast by a number of services such as Military, weather, Ham Radio and maritime. Most of those broadcast are in english but on occasion you will hear a foreign language, all being done the same way. I assume most of you are familiar with Western Union type communications where an operator types a message by perforating a tape, putting that tape into what is called a distributor and then transmits that same message over telephone lines to another city where the message is decoded, retyped by another operator and delivered to the addressee, all in a very short time.

Well, those funny noises and toggling tones are teletype but being transmitted via radio frequency. Those tones are placed on the air by the sending station in much the same way as talking into a microphone or using a morse key and the transmitted to the receiving station which then becomes "any station" and not limited to one destination. These signals are decoded by a special device, known as an "Interface", which converts the analog signal to digital thus asking your computer a receive terminal. However, there is one other device that is needed and that is the Radioteletype (RTTY) program which produces the display protocol, various parameters for speed variations, date, real time clock, sending and receiving banners, split screens, message ports and other aspects of the total function. These are all programmed in the command module with a menu that steps you right through each function to simplify the operation. There are a number of exciting things about this media. First of all, it is super inexpensive since you already have the computer and a display monitor.

The only other equipment that you need is the interface and the Radioteletype Command Module. I have found the Kantronics Interface and Hamsoft Radioteletype Command Module to be the best. Secondly, the equipment is simple to hookup because everything you need is right in the package including excellent documentation. Now a whole new world of excitement and education in the field of communications has been opened. Some of you may even wish to study for your "ham" ticket and join the hundreds of thousands of radio amateurs around the world in this exciting and rewarding experience. But for the time being, you can listen to and display all those radioteletype messages from ships at sea, satellite broadcasting telemetry or weather reports being sent from city to city, military amateur radio stations (MARS) and a host of other intriguing broadcast. Now you have the opportunity to utilize your computer in never ending area of

education. I hope everyone gets a chance to "read" the world of funny noises!

HEAPSORT:

Have you heard of the Bubble sort? If you have ever used a sorting program you should be familiar with the bubble sort. This sort is the simplest method to sort numbers or strings. Simple but SLOW! From the BELGIAN 99er club comes a sorting program called HEAPSORT. This sort will do 100 items in 47 seconds while a Bubble Sort would take 6 minutes 33 seconds.

```
10 REM HEAPSORT
20 DIM A(100)
30 RANDOMIZE (2)
40 REM SETUP RANDOM ARRAY
50 FOR I=1 TO 100
60 A(I)=INT(RND*999)
70 NEXT I
80 PRINT "START"
90 REM START OF SORT
100 N=100
110 L=INT(N/2)+1
120 M=N
130 IF L=1 THEN 170
140 L=L-1
150 X=A(L)
160 GOTO 210
170 X=A(M)
180 A(M)=A(L)
190 M=M-1
200 IF M=1 THEN 330
210 J=L
220 I=J
230 J=J*2
240 IF J=M THEN 280
250 IF J(M THEN 310
260 IF A(J))A(J+1) THEN 280
270 J=J+1
280 IF X)A(J) THEN 310
290 A(I)=A(J)
300 GOTO 220
310 A(I)=X
340 PRINT "END"
350 FOR I=1 TO N
360 PRINT A(I)
370 NEXT I
380 END
```

LATEST FLASHES:

Navarone Industries is at it again with a **GROM BUSTER** that will allow using ANY 3rd party cartridges with any 99/4A that presently does not allow such usage!

Axiom Corporation, 1014 Griswold Ave, San Francisco, CA 94134 has a stand alone parallel interface (ParallAxTI) for just \$99. Naturally it connects into the side port of your computer and allows you to daisy-chain other expansion devices.

SST Software, Inc. has announced their release of the SST Expanded Basic Compiler for 5 June. It will contain many features of Extended BASIC as well as some commands that are not available in either environment. SST states that compiled commands are up to 130 times faster than corresponding commands in TI BASIC or Extended BASIC. Anyone who has or purchases the SST BASIC COMPILER before 5 June, 1984 will be offered the SST EXPANDED BASIC COMPILER for \$50. They may be contacted at: SST SOFTWARE PO Box 26 Cedarburg, WI 53012, Tel (414) 771-8415.

Morning Star Software is still offering their CP/M processor for the 99/4A. Price is \$595. They are at 4325 S.W. 109th Ave. Beaverton, Oregon 97005.

I NEED IT BAD!:

Don't have enough storage?? How about a 10 Megabyte Hard Disk! A little too much? Ok. How about a 5 Megabyte Hard Disk. MYARK, INC PO Box 140 Basking Ridge, NJ 07920 can set you up and really make your 99/4A streak right along. Prices start at \$1899.

AMNION SOFTWARE:

These folks have such a deal for you!! If there's ever a time that I get confused, or we both need some questions answered call HELPLINE. The resident expert there is Guy-Stefan Romano Ph.D plus some. You may call them from 9AM-3PM, Mon-Sat at 415-753-5581. Besides, it's your nickel! You can also send a SASE to AMNION HELPLINE 116 Carl St San Francisco, CA 94117. Dr. Romano is doing this strictly on a volunteer basis and receives NO fees or reimbursement so that he can give unbiased information without being obligated to anyone, even Amnion! They also offer WORDTEX a word processor that can create a document up to 360,000 characters long and can be bought with a Speech Synthesizer capable version.

TOTAL TI PULLOUT:

Effective April 2, 1984 Texas Instruments no longer sells products for the TI-99/4A Home Computer. All available software has been acquired by:

TRITON

P.O. Box 8123
San Francisco, CA 94128

You may call them toll free at 800-227-6900

BASIC TIPS by AMLIST - The purpose of the Basic TIPS Instructional Manual is "to help the user get the maximum from his computer, in terms of both a general understanding of its capabilities, and in the application of specific techniques which enable it to operate at peak efficiency".

This is a rather large book and is good. We can get it through the group at a discount for the following schedule:

1-4: \$22 5-9: \$20.00 Over 9: \$18.00

It normally retails for \$24.95. They are located at 4542 Memorial Dr #202 Decatur, GA 30032

COMPUTER SHOWS and Flea Markets:

The biggie is just around the corner!! Kengore is having their annual Computer Show/Flea Market at the Meadowlands Hilton up in Secaucus New Jersey right off the New Jersey Turnpike. Dates are Saturday 2 June and Sunday 3 June 1984. Don't miss it. All the major 99/4A User's Groups in New Jersey will be there. BRING MONEY!!!

The Philadelphia Area Computer Society is holding its 2nd Annual HAM & CHIPS FLEA MARKET Saturday, August 18, 1984 from 9AM-1PM at the LaSalle College parking lot, 20th & Olney Philadelphia, PA.

RANDOM ACCESS: by Larry Hughes, QUALITY 99 SOFTWARE

"Hey! Where's the K? What happened to my 48K!" That's what a friend said to me the other day when he first plugged in his new expansion system with a disk drive and the 32K RAM. Using Extended BASIC, he had typed in the SIZE command and gotten the message:

11840 BYTES OF STACK FREE
24488 BYTES OF PROGRAM SPACE FREE

"That only adds up to 36328!", he said. "Where's the other 12K?" "Well,", I told him, "I have good news for you and bad news for you. The good news is that you really have 48K RAM in there. The bad news is that you can't use all of it!" First I explained to him that an 8K portion of the 32K RAM is reserved exclusively for Assembly Language programs. Thus, only 24K of the 32K RAM can be used by an Extended Basic program. He said, "OK, but that should leave 40K and I only have 36328. Where's the other 4K?"

used by the system. Then I told him that the disk controller automatically reserves 2K for three disk file buffers, but that he could free up 1K of that space by telling the system that he only wanted one disk file buffer. So, he entered the commands:

```
CALL FILES(1)
NEW (-----Note: You MUST use this!!!
```

When he typed SIZE again, he got:

```
12876 BYTES OF STACK FREE
24488 BYTES OF PROGRAM SPACE FREE
```

"Hooray!", he said, "Now I have a total of 32364 bytes to play with. Can I increase it still more by specifying zero disk buffers?", he asked.

(Continued next month)

MORE PROGRAMS:

This double program comes from VAUGHN SOFTWARE 5460 Marian St. #84, Arvada, CO 80002. Phone 303-425-5143 and they thought they might be of interest to us.

The first program is helpful in demonstrating what the second program (DATA LINKER) does. After you take out all the remarks the linker makes a good routine for programs run under program control.

```
100 REM Type only line 240 through 270
110 REM This program is just for demonstration purposes.
    It shows how the old program could leave a data trail
120 REM for the data linker. Notice that all string
    values are preceeded by a space. When you print a
    numeric value it is printed in column
130 REM number four. This is where the linker will look
    for it.
140 REM
150 REM By modifying the linker program you can pass
    more values.
160 REM *****
170 REM * i *
180 REM * | *
190 REM * Main body of the old program.
200 REM * | *
210 REM * i *
220 REM *****
230 REM
240 SCORE=0 :: TIME+524 :: PLAYER$=" JOHN BROWN
    (---NAME" :: CODE$=" PASSWORD (---OLD PASSWORD"
250 REM Watch what happens after the space in "BROWN"
    and "PASSWORD".
260 CALL CLEAR :: PRINT SCORE:TIME:PLAYER$:CODE$ : :
270 RUN "DSK1.LINKER" ! This line should run the
    linker. It can say RUN "CS1" if the linker is on tape.
```

```
100 REM *****
110 REM *          DATA LINKER          *
120 REM *          BY                    *
130 REM *          VAUGHN SOFTWARE      *
140 REM *          *                     *
150 REM *          EXTENDED BASIC      *
160 REM *          *                     *
170 REM *          With this subroutine in your *
180 REM *          *                     *
190 REM *          program you can pick out values *
200 REM *          *                     *
210 REM *          from a previous program that is *
220 REM *          *                     *
230 REM *          no longer in the in the computer *
240 REM *          *                     *
250 REM *          will allow you to link your *
260 REM *          *                     *
270 REM *          programs in endless chains! *
280 REM *          *                     *
290 REM *          There is no limit on program *
300 REM *          *                     *
310 REM *          length!               *
320 REM *****
330 REM DO NOT CLEAR THE SCREEN BEFORE RUNNING THIS SUB-
    ROUTINE!
340 FOR A=1 TO 24 :: CALL GCHAR(A,4,SK) :: IF SK()32
    THEN R=A ::A=25 ! This line finds where your data
    starts on the screen
350 REM The line above assumes your data always is left
    justified in column #4
360 NEXT A
370 FOR P=R TO R+4 :: CALL GCHAR(P,4,SK) :: IF SK()45 AND
    SK()58 THEN BOSUB 420 ELSE BOSUB 450 ! Sorts string
    values from numeric values
380 REM Don't mix numbers and letters in your data
390 NEXT P
400 CALL SOUND(1,900,0) :: PRINT VALUE(1):VALUE(2):
    STRING$(1):STRING$(2) ! Prints the values from an old
    program
410 GOTO 410 ! This line should goto the MAIN program
420 FOR C=4 TO 32 :: CALL GCHAR(P,C,SK) :: CALL
    HCHAR(P,C,30):: IF SK=32 THEN C=33 ELSE V$=V$&CHR$(SK)!
    Picks out digits in numeric data
430 NEXT C
440 COUNT=COUNT+1 :: VALUE(COUNT)=VAL(V$) :: V$="" ::
    RETURN ! Assigns the data found to VALUE(COUNT)
450 FOR C=4 TO 32 :: CALL GCHAR(P,C,SK) :: CALL
    HCHAR(P,C,30):: IF SK=32 THEN C=33 ELSE V$=V$&CHR$(SK)!
    Picks out digits in string characters
460 NEXT C
470 COUNT2=COUNT2+1 :: STRING$(COUNT2)=V$ :: V$="" ::
    RETURN ! Assigns the string found to STRING$(COUNT2)
```

CORCOMP INC. PRODUCT REVIEW OFFER:

The CorComp product Review special pricing is still available to those interested in upgrading. The RS232 Stand Alone unit can be made available with 32K RAM and/or the upgraded Disk Controller. All of this is in an enclosure no larger than two Speech Synthesizers put together. All that for about \$299. They also have the 99000 Expansion System which is about half the size of the current TI Peripheral Expansion box. It will retail for \$549.95 and during this review offer can be had for about \$400.

DOOR PRIZES AND STUFF:

Show up at a meeting and you too could get the "door prize." How about what's behind curtain number 1 or number 2 or number 3? Would you settle for what's under box #1 or box #2 or box #3??? Whatever the surprises may be don't miss the "summer spectaculars! How about an auction? Mmmmm could get interesting. Now.....let's see.....where did I put that rabbits foot???

MEETING LOCATION:

We're not 110% sure but about 98% sure that we will be having our summer meetings in Cinnaminson unless something unexpected comes up. The location will be announced in the next newsletter and at the next meeting since by that time it should be firm. The times requested would be the last week of each month and it looks like a Tuesday nite. Sorry we couldn't get a firm place and date for this newsletter but acquiring a meeting location to hold 50+ people is harder than gopher holes to find. We will keep everyone posted and it WILL be in the next newsletter which you will of course receive prior to the meeting so don't panic.

A MEMBER SPEAKS UP:

An Open Letter To The Users Group-

Now that I've been in the user's group for a while, I'm writing to comment on a few subjects. First the good words. THANK YOU! During the last eight months when the world was crashing down around us (or so we thought) the Users Group was most helpfull and supportive to me. Whenever I had a problem, help was only a phone call away. The support available at the group gave me the confidence to expand my system when by usual circumstances this should have been the time to sell out (at a loss) and move on to another system still being marketed and supported by the manufacturer. I think our 99/4's are the best, which brings me to the next subject: The support we give each other. Remember that Texas Instruments no longer makes a Home Computer! Where does that

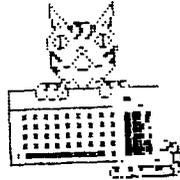
fact leave us? Stuck(?) with each other thats where! We had better all bail together or we'll surely sink alone. We are it, if we don't do for ourselves it won't get done. What can we do? STICK TOGETHER. Support the group! Buy your supplies from The Group. Join a Splinter Group! Write a program and offer it to the group library. Buy a program from the group library! Don't copy or swad copyrighted software. Every time you do, the company that sells it loses a sale. When the sales dry up so does new software titles. Maybe the very next program they were going to odevelop was the very one YOU have been wanting! Remember that the Users Group needs money to operate, expand and to survive. That money comes from the profit on things we buy from the group. If we don't buy the item from the group, the group does not get the profit. Third party vendors and the user's groups are our future. Please do not take the short view. Plan on the long term and we will be computing together for a long time!

Sincerely Yours,
Mike Harte

MEETING AGENDA:

- 7:00PM - 7:15PM - Introduction
- 7:15PM - 8:00PM - Analyzing BASIC commands: Checking Out "BREAKPOINT" and TRACE/UNTRACE
- 8:00PM - 8:15PM - "Give-Aways", Doorprizes, Booby Prize?
- 8:15PM - 9:00PM - Open Session. Look around, ask questions, Join The Group and then a splinter group.
- 9:00PMQuitting Time

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TIGERCUB SOFTWARE IS A KITCHEN-TABLE ENTERPRISE SPECIALIZING IN ORIGINAL LOW-COST QUALITY SOFTWARE FOR THE T1-99/4A COMPUTER. I HAVE OVER 130 PROGRAMS AVAILABLE ON CASSETTE OR DISK AT ONLY \$3.00 EACH. MY DESCRIPTIVE CATALOG WILL BE SENT TO YOU FOR \$1.00 WHICH IS DEDUCTABLE FROM YOUR FIRST ORDER.

LAST MONTH'S CHALLENGE WAS TO UNFURL THE U.S. FLAG (WITH 49 STARS), FROM THE MAST OUT, IN 2 LINES OF EXTENDED BASIC.

```
100 CALL CLEAR :: CALL COLOR
(2,16,5,3,16,16,4,7,7):: A$(
1)="*****080808" :: A$(2)=
RPT$("80",7):: CALL CHAR(33,
RPT$("01",8):: CALL VCHAR(4
,4,33,20)
110 FOR C=5 TO 22 :: X=1+ABS
(C>11):: FOR T=1 TO 13 :: CA
LL VCHAR(5+T,C,ASC(SEG$(A$(X
),T,1))):: NEXT T :: NEXT C
:: GOTO 110
```

ONE OF THE PREVIOUS CHALLENGES WAS TO WRITE THE EXTENDED BASIC STATEMENT IF X=1 THEN Y=7 ELSE IF X=2 THEN Y=33 ELSE IF X=3 THEN Y=19 ELSE IF X=4 THEN Y=21. MY SOLUTION WAS Y=VAL(SEG\$("07331921",X#2-1,2)). JIM JOHNSTON IN THE K*3 USER'S GROUP NEWSLETTER CAME UP WITH A METHOD WHICH IS BETTER BECAUSE IT DOES NOT REQUIRE THAT THE VALUES OF X BE IN A SEQUENCE:

```
Y=ABS((7*(X=1))+(33*(X=2))+(19*(X=3))
+(21*(X=4)))
```

PROVING ONCE AGAIN THAT THERE IS MORE THAN ONE WAY TO SKIN THE CAT, AND OFTEN A BETTER WAY - ALTHOUGH THE CAT MIGHT NOT AGREE.

ADVICE TO DISK-DRIVERS - KEEP AN EYE ON THOSE LITTLE TABS OF SILVER TAPE THAT YOU USE TO COVER THE WRITE-PROTECT NOTCH ON YOUR DISKS. THEY TEND TO BECOME DOG-EARED FROM BUMPING AGAINST THE

SLOT OF THE DRIVE. I RECENTLY HEARD A HORROR STORY ABOUT ONE OF THOSE TABS THAT CAME LOOSE AND GOT INTO THE DRIVE!

THE FOLLOWING MENU-LOADER OR AUTO-BOOTER WAS ORIGINALLY PUBLISHED BY A. KLUDGE IN THE 99'ER VOL. 1 #4. MARSHAL GORDON AND THOMAS BOISSEAU GREATLY IMPROVED IT AND PUBLISHED IT IN THE ATLANTA 99/4 UG NEWSLETTER VOL. 2 #1. I HAVE NO IDEA HOW IT WORKS, BUT HAVE MANAGED TO MODIFY IT SO THAT IT WILL CATALOG UP TO 99 PROGRAMS ON A DISK, STOPPING FOR INPUT AFTER EACH 19 ARE LISTED, OR STOPPING WHENEVER ANY KEY IS PRESSED; I ALSO ADDED A DELETE OPTION, REQUIRING A REPEATED INPUT TO PREVENT ERROR. IT TAKES UP ONLY 8 SECTORS. IF YOU HAVE EXTENDED BASIC AND DISK DRIVE, LOAD THIS PROGRAM UNDER THE FILE NAME LOAD. IT WILL THEN AUTOMATICALLY RUN WHENEVER YOU SELECT EXTENDED BASIC, WILL LIST ALL THE PROGRAMS ON THE DISK, AND WILL RUN WHICHEVER PROGRAM YOU SELECT.

```
100 OPTION BASE 1 :: DIM PG$(
(99),T$(5):: CALL CLEAR
110 T$(1)="DIS/FIX" :: T$(2)
="DIS/VAR" :: T$(3)="INT/FIX
" :: T$(4)="INT/VAR" :: T$(5)
)="PROGRAM"
120 IMAGE ##
130 DISPLAY AT(1,9)ERASE ALL
:"DISKETTE MENU"
140 I IF YOU HAVE MORE THAN
ONE DISK DRIVE, DELETE THE I
IN LINE 150
150 I DISPLAY AT(12,6):"DISK
? (1-3):" :: ACCEPT AT(12,19
)SIZE(-1)VALIDATE("123"):D$
:: D$="DSK"&D$&". "
160 D$="DSK1." :: OPEN #1:D$
,INPUT,RELATIVE,INTERNAL ::
INPUT #1:N$,A,J,K :: DISPLA
Y AT(1,1)ERASE ALL:SEG$(D$,1
,4)&" - DISKNAME="&N$;
170 DISPLAY AT(2,1):"AVAILAB
LE=";K;"USED=";J-K:"PROG FI
LENAME SIZE TYPE": "-----
-----" ::
I=0
180 FOR X=1 TO 80 :: IF X/20
<>INT(X/20)THEN 210
190 DISPLAY AT(24,1):"TYPE C
HOICE OR 99 FOR MORE" :: ACC
EPT AT(24,27)VALIDATE(DIGIT)
:K :: IF K=99 THEN 200 :: IF
K>0 AND K<X+1 THEN 360.ELSE
190
200 X=X+1 :: CALL VCHAR(1,2,
32,48)
```

(CONT.)

```

210 I=I+1 :: IF I>127 THEN K
=>X :: GOTO 300
220 INPUT #1:PS,A,J,B
230 IF LEN(PS)=0 THEN 270
240 DISPLAY AT(X+4,2):USING
120:X :: DISPLAY AT(X+4,6):P
$ I: PG$(X)=PS :: DISPLAY AT
(X+4,18):USING 120:J :: DIS
PLAY AT(X+4,22):T$(ABS(A))
250 CALL KEY(0, KK, ST):: IF S
T=0 THEN 260 :: FLAG=1 :: GO
TO 280
260 NEXT X
270 DISPLAY AT(X+4,1):" " ::
DISPLAY AT(X+4,2):USING 120
:X :: DISPLAY AT(X+4,6):"TER
MINATE" :: DISPLAY AT(X+5,2)
:STR$(X+1)&" DELETE?"
280 DISPLAY AT(X+6,1):" C
HOICE"
290 ACCEPT AT(X+6,16)SIZE(2)
VALIDATE(DIGIT):K :: IF K<>X
AND K<>X+1 OR FLAG=1 THEN 3
50
300 IF K=X THEN CALL CLEAR :
: CLOSE #1 :: END
310 DISPLAY AT(X+5,11)SIZE(1
8):" #?" :: ACCEPT AT(X+5,15
)SIZE(2)VALIDATE(DIGIT):KD :
: IF KD<1 OR KD>X-1 THEN 310
320 DISPLAY AT(X+6,1)SIZE(28
)BEEP:"VERIFY - REPEAT DEL
ET E #?" :: ACCEPT AT(X+6,27)SIZ
E(2)VALIDATE(DIGIT):KD2 :: I
F KD2<>KD THEN 340
330 DELETE "DSK1."&PG$(KD)
340 CLOSE #1 :: GOTO 130
350 IF K<1 OR K>99 OR LEN(PG
$(K))=0 THEN 270
360 CLOSE #1
370 CALL INIT :: CALL PEEK(-
31952,A,B):: CALL PEEK(A*256
+B-65534,A,B):: C=A*256+B-65
534 :: A$=D$&PG$(K):: CALL L
OAD(C,LEN(A$))
380 FOR I=1 TO LEN(A$):: CAL
L LOAD(C+ASC(SEG$(A$,I,1))
):: NEXT I :: CALL LOAD(C+
0)
390 RUN "DSKX.1234567890"

```

COME TO THINK OF IT, IF YOU HAVE MORE THAN ONE DISK DRIVE YOU WILL ALSO HAVE TO DELETE THE FIRST STATEMENT IN LINE 160, AND MODIFY LINE 330.

HERE'S A MEMORY-SAVER FOR YOU - PUT YOUR DATA IN STRINGS INSTEAD OF DATA STATEMENTS. MY "HANGMAN PLUS" PROGRAM WAS ONLY 7764 BYTES LONG BUT IT CONTAINED A VOCABULARY OF 315 WORDS IN DATA STATEMENTS. AFTER

READING THESE INTO AN ARRAY, IT HAD TOO LITTLE WORKING MEMORY LEFT, AND PAUSED TOO OFTEN FOR GARBAGE COLLECTION. AFTER CHANGING ALL THE DATA STATEMENTS TO STRINGS, IT RUNS WITHOUT STALLING EVEN THOUGH THE NUMBER OF WORDS WAS INCREASED AND AN ARRAY OF 50 IS STILL DIMENSIONED FOR USER INPUT OF WORDS. WHEN I LOADED THE ORIGINAL VERSION IN EXTENDED BASIC WITH THE MEMORY EXPANSION AND ASKED FOR SIZE AFTER THE DATA HAD BEEN READ IN, I FOUND THAT I HAD 14756 BYTES OF PROGRAM AND 7669 BYTES OF STACK FREE. IN THE VERSION WITH DATA IN STRINGS, AT THE SAME STAGE IN THE PROGRAM I HAD 14874 BYTES OF PROGRAM AND 11310 BYTES OF STACK FREE - A SAVING OF 3730 BYTES! AND ANOTHER ADVANTAGE IS THAT THERE IS NO DELAY WAITING FOR ALL THOSE WORDS TO BE READ INTO THE ARRAY. HOWEVER, PULLING DATA OUT OF A STRING IS UNDOUBTEDLY A BIT SLOWER, SO THIS METHOD SHOULD NOT BE USED WHEN SPEED IS OF PRIMARY IMPORTANCE.

IN THE "HANGMAN PLUS" PROGRAM, I USED LOWER CASE LETTERS AS DIVIDERS BETWEEN THE UPPER CASE WORDS. TO PULL WORDS AT RANDOM, I RANDOMLY SELECTED A STRING AND A POSITION WITHIN THE STRING, USING THE POS OF THE LOWER CASE LETTER TO FIND THE WORD. THE FOLLOWING IS A MUCH ABBREVIATED EXAMPLE:

```

100 M$(1)="AJOHNBJOECCHARLIE
DMIKEELARRYF"
110 M$(2)="AGEORGEBPETECCHRI
SDONERALPHF"
120 X=INT(2*RND+1)
130 Y=INT(5*RND+97)
140 X$=SEG$(M$(X),POS(M$(X),
CHR$(Y),1)+1,POS(M$(X),CHR$(
Y+1),1)-POS(M$(X),CHR$(Y),1)
-1)

```

IT IS OF COURSE ESSENTIAL THAT ALL THE STRINGS CONTAIN THE SAME NUMBER OF ELEMENTS OF DATA. IF LOWER CASE LETTERS ARE NEEDED, THE SEPARATORS CAN BE ASCII CODES 129 THRU 154, OBTAINED BY HOLDING DOWN THE CTRL KEY WHILE TYPING THE ALPHABET - IT'S A BIT HARD TO KEEP TRACK OF THOSE, BECAUSE THEY'RE INVISIBLE! NUMERIC DATA CAN ALSO BE STORED, USING THE VAL FUNCTION TO CONVERT IT TO NUMERIC AFTER IT IS PULLED FROM THE STRING.

YOU PROBABLY ALREADY KNOW THIS, BUT YOU DON'T HAVE TO TYPE IN THE BLANK SPACES BEFORE AND AFTER THE :: IN MULTIPLE STATEMENTS IN EXTENDED BASIC. JUST RUN EVERYTHING TOGETHER 100 CALL CLEAR::RANDOMIZE::FOR D=1 TO 100::NEXT D AND THE COMPUTER WILL SEPARATE IT FOR YOU, SHOWING STATEMENTS INTO ADDITIONAL LINES IF NECESSARY.

OUT OF MEMORY

HAPPY HACKIN'

JIM PETERSON



TI-99/4A users



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