Spirit of 99

THE OFFICIAL NEWSLETTER OF THE CENTRAL OHIO NINETY-NINERS INC.

PUBLISHED MONTHLY IN COLUMBUS OHIO

VOL 2 NO 4 APRIL 1984 $1.00

HAPPY EASTER!

COME TO THE APRIL MEETING
AND GET A HOME COMPUTER
MAGAZINE FREE!

Spirit of 99

THE OFFICIAL NEWSLETTER OF CENTRAL OHIO NINETY-NINERS

VOLUME 2 NUMBER 4
APRIL 1984 $1.00

Editorial, Advertising and subscription address is 1456 Grandview Avenue, Columbus Ohio, 43212.

Subscription rate (USA) $13.oo/1 year (12 Issues), $24.oo/2 years (24 Issues). Foreign Add $5.oo per year. Third class postage paid at Columbus Ohio.

CHANGE OF ADDRESS: Send both old and NEW Address to: Subscription address above. WE assume no responsibility for manuscripts, programs (tape or disk not accompanied by return postage. Letters to the Editor become the property of Spirit of 99. If published, We reserve the right to edit at our discretion.

Central Ohio Ninety-Niners Inc. is a non-profit organization comprised of MEMBERS who own or use the TI99/4A computer and it's related products and have paid a yearly membership fee of $15.oo and whose main objective is the exchange of Educational and Scientific information for the purpose of computer literacy.

C.O.N.N.I. meetings are held on the Second Saturday of each month at the Martin Janis Senior Center on East Eleventh Avenue at the Ohio State fairgrounds.

Meeting time is at 9:AM, Meetings are open to the public.

Membership dues ($15.oo) are payable yearly to C.O.N.N.I. and cover the imeadiate family of the member. (an application has been placed in this news letter for your convenience). Please address it to Art Morgan, Treasurer 3087 Brandon Rd. Columbus Ohio 43221.

ADVERTISMENT: WE DO ACCEPT COMMERCIAL ADVERTISMENT AT THE FOLLOWING RATES;

BUSINESS CARD (2X3.5) $5.00/ISSUE
1/4 PAGE; $25.00
1/2 PAGE; $45.00
FULL PAGE; $75.00

WRITE THIS NEWSLETTER FOR OTHER SIZE ARANGEMENTS.

ALL ADS SHOULD BE SUBMITTED; CAMERA READY TO; ADVERISING ADDRESS ABOVE, PAYMENT ENCLOSED.

MEMBERS ADS ARE PUBLISHED AT NO COST. (LIMIT 25 WORDS PLEASE, MUST NOT BE COMMERCIAL).

IF YOU HAVE QUESTIONS, PLEASE CALL 486-7262 WEDNESDAYS ONLY 8AM-3PM. I WILL DO MY BEST TO HELP YOU.

PAT SATURN (ED)

MEETING AGENDA

8:30 Doors open for members only to set-up
9:00 Open to public
Library returns
10:00 Business meeting
Program- disks & drive,slide show
Business closes
Open forum
10:30 Question and an answer period
Assembly class
Library re-opens
12:00 Clean up and close shop

From the President...

It is four days since the March meeting and already my thoughts are centered on the April meeting.
We seemed to have accomplished a great deal yet there's much more to be done in the months to come.
First, we must select our Trustees for the new year, and this will be done at our April meeting. So be sure to attend on April 14th.
Second, we hoped to activate committees in March, and "yours truly" skipped this, due to the element of time in March. In the meantime, I would like each of you to consider joining one of the committees which will be in the following areas: Education, Library, Program, Ways and Means, Membership, and, if approved, a Newsletter committee.
Third, to help accomplish one and two above, I will have a table set up at our next meeting with sign-up sheets for all committees and ask each of you to volunteer for at least one of the committees at that time.
Also, there will be a suggestion box for you to submit your ideas about anything the Club does or doesn't do!

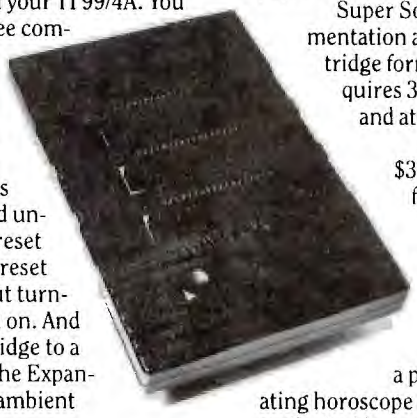
Regarding Trustees, it is important for you to know that our by-laws allow for three trustees who can be officers or non officers of the club, and serve a one year term. the Trustees' responsibilities are a) to keep records of the corporate affairs and b) to supervise the Club's officers and assure that their duties are performed properly.
This will serve notice to all members that we will accept nominations from the floor at our April 14th meeting for persons to be elected as our new Trustees.
The business meeting will start promptly at 10:00 a.m..
A copy of our by-laws will be available at my table at the April meeting, for your inspection.
Information and questions about commitees will be available at my table also.

Where do you go when there's nowhere to go? Navarone.

Things look pretty bad for TI 99/4A owners. So what happens now that your Console can't go home again? Read on. You'll see what we have up our sleeves.

GIVE YOUR CONSOLE ETERNAL LIFE

We have taken our successful *Widgit* and made it better. Introducing our *New Cartridge Expander.* It inserts directly into the game slot on your TI 99/4A. You can plug in up to three command modules at one time. With three sockets and a selector switch, you can choose between your favorite modules without plugging and unplugging. A built-in reset button allows you to reset the computer without turning the power off and on. And by bringing the cartridge to a verticle position on the Expander, we've increased ambient cooling.



Not only have we eliminated overheating and program failure, we have given your Console longer life. By removing the possibility of wearing out the Console's cartridge slot, we've just about made your TI immortal. After all, when something wears out or breaks it won't be easy to find service or parts anymore.

The Cartridge Expander is easy to use and easy on your pocket book—priced at a low $39.95. When ordering, ask for catalog number WD-01.

ELECTRIFY YOUR FILES

Now you can turn those paper files into electronic files. And get any information you want, in any order you want, faster.

We proudly present our *Data Base Management Series,* featuring many programs to increase your personal productivity. Now you can spend less time searching and more time doing.

Super Sort, our assembly language cartridge program provides many DBM functions. It is menu driven to arrange your files in ascending or descending order with up to six nested keys. And is a high speed disk sort utility program written to handle large files. It is limited only by the disk space available, so you can shrink your paper files down to a manageable size.

Super Sort comes with full documentation and is available in cartridge format only. The program requires 32K memory expansion and at least one disk drive.

Find more for less, only $39.95. When ordering, ask for catalog number AS-03.

TOP OF THE CHARTS

Within *Astrology-Horoscope Maker* we have written a powerful program for creating horoscope charts easily. And look at the kind of chart you are able to print.

This software program determines the precise location of each planet automatically. You won't need tables and lengthy calculations. You are able to print full wheel charts selecting up to nine house systems and have the planets appear in their respective houses. Included are elements, declinations, dignitaries and more.

Astrology-Horoscope Maker is so easy to use, too. Just answer the questions in the menu and you'll have it. But, don't think this uncomplicated program is a mere game. It is written for the professional astrologer and student of astrology. And your charts may be saved on a diskette for future printing.

You will need a drive as this is only available on diskette. The program requires Extended Basic, 32K memory expansion and an 80 col. printer such as Epson 80 or Okidata 82A. Priced at only $49.95 it is real chart topper. When ordering, ask for catalog number EB-03.

ESTABLISH ORDER

Our *Homework Helper* is a powerful organizational tool inside a cartridge. Just plug it in for a completely menu driven program that's easy to use and a big help with homework.

Your child can keep record of assignments. Or use the provided book report formats. Or generate problem worksheets. A practical applications way to teach or learn computer literacy.

Homework Helper is available in cartridge only, requires 32K memory expansion and at least one disk drive. And it is priced at only $39.95. When ordering, ask for AS-04.

VISA and MasterCard welcome. To order by phone, call (408) 866-8579. If ordering by mail, send Cashier's check or Money Order. (Personal checks take 10 days to clear.) C.O.D.'s add $5.00.

Please state items you are ordering, quantity and the price of each item. Allow 4 to 6 weeks delivery. Add 5% of total order for shipping and handling. CA residents add 6.5% sales tax.

For more information on other Navarone products request our catalog.

Dealer inquiries welcome.

NAVARONE

Navarone Industries, 510 Lawrence Expressway, #800, Sunnyvale, CA 94086

MAGAZINES IN REVIEW

By Jake Hinkle

Computue-published by Compute Publications Inc. at $2.95. This magazine (Mar. 84) has a variety of computers, they are Adam, Apple Atari, Color computer (Radio Shack), Commador 64 & Vic 20, IBM PC and Jr, Pet/CBm, Texas Instruments, and Timex/Sinclair. For a magazine that started having the TI in it about a year ago. The ranking of articles are as such, Commandore 64-16 articles or programs, Atari-13, Vic 20-10, and in 4th place with 5 is TI. There are 12 other articles/features that are for all 11 machines above. The TI has a regular column by Regena. To my amazement there are only (2) other machines which have there own column. Compute generally has at least one program in basic and one in X-basic. In the Feb. issue they even had a Terminal Emulator II articles on Spanish. This month programs are Roader (B), Aquarium (X-basic) , File processing (B), and sound shaper (B) are the programs. Hopefully in the Library (CONNI) soon. Some of the articles are meant for people with some experience in programming. But for the beginner that wants to learn about programming or to obtain programs cheap, at $2.95 for 4 programs is a good buy at Krogers or Gold Circle and several of the book stores have it also. If you can not find Compute then you might try having the store order it from Scott Krauss News for you.

The main feature of the magazine that intrigued me was the "Guide to Articles & Programs". This tidbit list to the right of the index page what machine each articles is for. And an Astrisk is for all machines (that is the 11 I mentioned earlier). The magazine is divided up and they are: Features-basicly about all machines but sometimes there are articles about a separate machine but Compute feels that it is relevant to all machines. Education and Recreation- are generally about different games. This month "Roader" has 8 of the 11 machines with side by side programs of Roader. Reviews- are of different functions of different machines or products for specific computers. Columns and Departments include "Editors Notes", "Reader feedback", "Programming the TI", ect, etc... The Journal" includes articles on various computers. The last section of of the magazine tells you "How to ENTER Compute's Programs" a must if you are just learning to type on TI's keyboard. keyboard. "A Beginners Guide to Typing in Programs" which is self explan- atory. "Compute! Modifications or cor- rections to Previous Articles" or as Games magazine puts it "Dirty Laundry". "Product Mart" a small classified. The last section is "Ad--vertisers Index". The mysterious thing about magazines is that for the over priced machines they jump on the bandwagon and pop out a magazine for specific machines. Compute puts out Compute! Gazette for Vic 20 & Com madore 64 and now that IBM introduced the Jr. Compute now has Compute! PC & PC Jr. I cannot tell you how many magazine there are for the PC But I feel that if enough people call or write Compute, that they might consider a magazine dedicated to the 2+ million machines in use. Toll free # is 1-800-334-0868 for subscriptions. Next month I will cover "Home Computer Magazine" formally 99'er Home Computer Magazine Till next month "Happy Computing". JAKE HINKLE 868-0632

LIBRARY NOTES

By Rod Leversee

I'd like to start off this month by saying that I was very pleased by the response we got by asking people to make copies of the tapes they took out last month. When the tapes were turned in we figured it up and found we had 64% of the tapes copied. Thanks to everyone who made their copies. As I said last time, this Library can be as good as you want. The thing to remember is that everyone on the Library committee is a volunteer, and to do the job sometimes we need your help. With the duplicate tapes it should be a lot easier to get the programs you want from the Library.

At this date I haven't heard from anyone having questions, or suggestions for the Library. I guess everyone understands and agrees with what we are doing. At last months meeting we had a number of tapes returned by people saying they could not get them to load. Most of you are probably aware that the volume of your tape recorder is very important, but just for the record I want to go over it with you. If you get an error message that says "No data found" you might have the volume too low. If it says "Error found in data " you may have it too loud. Try it a few times at different settings. This is not to say none of the tapes are bad, because we have had some bad ones. But at least give it your best shot. That way we can devote our time to other things in the Library. In closing, let me ask again for your input. Write and let me know how you feel. My address is Rod Leversee, 1153 Little Plum Ln. Col. Oh 43227. I hope I hear from you. see you next month.

ELECTRONIC MAIL SERVICE

By G. S Ringley

MCI Mail is now available to the general public. The service offers Electronic and postal mail service from your computer. In selected areas, you can even get four hour delivery of your letter . There is no monthly fee for use of the basic service other than paying for the mail that you send.

Plans are also in the works for allowing you to compose letters using your word processor and then uploading the file to MCI to mail, rather than writing the letter on line as you do now . If you think that is a great deal, you also get a FREE basic subscription to the Dow Jones News/Retrival service (this cost 49.95 at Micro Center), and you can access Dow Jones (at their normal hourly fees) from the MCI Mail number. How do you get all this? Just call 221-3451 with the modem and TE II ready. When you hear carrier, connect the modem, and press the enter key twice. The system will prompt you for a user ID: enter "REGISTER".The system will then prompt you for a password: enter "REGISTER". You will then be run through an on-line registration questionnaire, and within seven days you will get this big orange envelope with your user ID and password, Dow Jones information, and a MCI Mail user's guide/rate schedule. Now wasn't that easy!!! If you dally to long on a question or do not use the inputs shown then the system may log you off. Then just call back and try it again!

TI WRITER WITH TE II

By Paul Powers

Having finally accumulated all the hardware and SOFTware to access online sources such as CompuServe, Franklin County Line, etc. and after switching telephones several times, rewiring my phone jack in the den, and talking with Fred at the Franklin County Line I finally got on line with several sources.

The information from these on-line sources can be read directly from the screen. However, if you want some record for future reference you must either take notes or use the OUTPUT (CTRL 2) option of the TE II. This allows all information currently displayed to be transfered to files on a mass storage medium.

After signing off, the problem is reading these files. Page 22 of the TE II manual lists a short program for retrieving these files. This program looks as if it will work but requires Extended Basic and won't allow editing. A better solution is to use TI Writer. It reads "DISPLAY, VARIABLE 80" files the same as the ones created by TE II, it allows editing and allows a great degree of control over the format in which the file document is printed.
line and allows you to enter the special characters listed on

Editing is accomplished by loading the file into the Text Editor as you would a TI Writer file. This is handy for deleting prompts or unwanted information and inserting additional information or comments. Since TE II allows only line widths of 34 to 40 characters, and most printers will allow up to 80-character lines with standard print, you may also wish to set the tabs for longer lines. TE II puts no carriage returns or formating codes in the text so you may want to add them while in the text editor. To enter special characters such as carriage returns press Ctrl U (this changes the curser to an under-

CONTINUED

page 146 of the TI Writer manual). The special characters of interest are line feed, form feed, and carriage return. When finished entering these codes be sure to press CTRL U a second time to return to normal characters.

Format commands also can be added with the text editor. Some of the more common ones set the the right and left margins, fill text between newly established margins, add line spacing, and center text. A full description of the format commands begins on page 99 of the TI Writer manual. Remember that if format commands are present in the document the document must be printed through the text formatter rather than the the text editor.

If you use another word processor which uses files of "DISPLAY, VARIABLE 80" format it should also work with files from TE II. If you use a word processor which doesn't use this format but allows user modification (such as Typ Writer), find the line which opens the file to be read in to the program and change into "DISPLAY, VARIABLE 80". The instructions which came with the word processor may help you.

LET'S GO MODEMING

By G. S. Ringley

The purpose of this article is to introduce you to a service which is readily availible for the modem user but which many people are unaware of. This is the local bulletin board service, which we will call a "BBS". What is a BBS? It is a place where you can call in with a modem read a "bulletin board" post messages to it, and on some of the better systems, send private Email addressed by name to other individuals who use the system and up or download programs. Sounds nice doesn't it?

Who runs these BBS things? For the most part people like you and me who treat the board as an extension of their computing hobby, although there are some boards that are run as a business. What is on the board? Based on who runs it, there could be anything! For the most part, the messages are about neat things that people have discovered, or have for sale, or problems that people need help with.

There are presently eight local bulletin boards that are up and running.These are "Franklin County Line", "Modem Mania" "UBIX", "RBBS Pickerington", "CBBS Columbus", "Teleport-64 #5", "The Micro Cottage ABBS", and "Andes Message Service"

What follows are quickies about how to logon to each of the systems, and what they are about.

Franklin County Line is a "T-Net" BBS that runs off a 20 megabyte harddrive, and offers 21 or so different boards for for its subscribers (including a TI board), Email, "TP" text files on such things as the local users' groups meetings, and hopefully an online version of the "Spriit of 99". There are also "BO" modules that allow the user to do such things as play on line games or up and download programs (Thanks to the Terminal Emulator the file transfers are not usable by a TI at this time) and there may be an on line store soon. To logon to FCL set your modem up normally, and dial 875-7399. When you get a tone, connect the modem and the system will take you from there. As I said, some BBS are run as businesses, and this is one of them, so there will be a yearly subscription fee for the use of the board. For most people this will be $15 per year, but it depends on what boards that you want access to. This system is definately worth your time and money.

Modem Mania, as

CONTINUED

some of you will remember was what Alan discovered and spoke about at the February meeting. Modem Mania is a smaller BBS (Normal 5.25) which offers many of the same features as Franklin County Line, but due to the the smaller storage space it only has 2 boards. The log on method is the same as for Franklin County Line, call and go. This board is a hobby for the for the SYStem OPerator (SYSOP). Although there are no actual fees, Modem Mania appreciates a one time $15 donation which is being put towards a hard drive system so that it can grow (it is a very crowded board right now). Once again best bet for the local modem user

UBIX deserves special treatment. This is not a normal computer BBS.Instead Instead it serves as a repository of valuable information for Ham Radio Operators. This board has been featured in international broadcasts, and is a for the amature radio buff. UBIX runs from 8:30p 9:00a EST every day and all day Sunday (beware these people keep Greenwich Mean Time). The number is 866-4392 and you will have to also go through a probationary period. There is no cost to you, and you will be sent a book explaining how UBIX works. UBIX is run by the Universal Amateur Radio Store in Reynoldsbug.

RBBS Pickerington and CBBS Columbus are two birds of a feather. Both of these BBS are "Remote C/PM Operating Systems". What that means is that while both offer a BBS,the prime purpose is to allow a remote user to run the system so that they can up and download and trade C/PM software. RBBS can be reached at 837-3269, but after you connect the modem you will have to press the enter key once or twice to start the system up (the same applies for CBBS).If nothing happens after six presses, hang up and try again. If it still will not start then something is wrong with the system and you will have to try again later (the same applies for CBBS). RBBS will put you on strict probation, while CBBS is open to anyone who calls. CBBS can be reached at 272-2227.

Overall RBBS and CBBS are most useful to those of us rich enough to afford the Morning Star C/PM card, but if you are tired of the busy signal do not count these two out. For the trivia buffs, CBBS is the oldest BBS in Columbus.

"The Micro Lottage ABBS" is run by small store that is set up like a"co-op" The co-op is $5 a month (I think) but if you go through large amounts of stuff every month the prices on things like disks are very good. If you could care less about that part, the board is free and open to all They have been allowed to borrow a Rana Elite 3 drive and this has resulted in the offering of between 12-18 boards at any given time. They have for at least this week set aside a TI board. This is a call and go system that can be called at 846-0200.

"Andes Message Service" is a different breed of BBS given what Columbus is used to. The board is tied around being efficiently used (composing messages offline, capturing incoming bulletins in your buffer etc.). The BBS also charges 1 penney per minute access time. Of course one should not be on the board for more than 50 minutes a week anyway. The conception and execution of the board is great, if you have a Apple. Terminal Emulator lets you save to the printer or or disk. What this guy is talking about is a real buffer. On most Apple II term programs, you can fill up a 20k to 30k area and then dump it in one big shot. Over all, if you are going to speed money you would find your-

CONTINUED

self better served spending it elsewhere. Give it at least one call though, since the boards provided are of a different flavor from the rest of the city. For you it might be worth it. The number is 253-1028.

The latest addition the Columbus area is "Teleport-64 #5" a board that is run on a Commodore 64 by the Central Ohio Vic Users Group (COVUG).It is a nice place to call, but effective 1 April there will be a yearly fee of $15 for normal people and $10 COVUG and CLUE (Commodore Local Users Exchange) member.

As a footnote, TI BBS #1 in Atlanta has implemented file transfers under the Terminal Emulator II protocols, but for right now it is just the system operator and his buddies that have access to it.

Some good advice to get you going: read EVERYTHING that comes up on the screen. Remember that help is just a ? or an H or an HELP command away. Do not play with the contrl keys that are not mentioned by the system (especially on RBBS and CBBS). Remember that these people keep hard copy logs of all that enters and leaves the board. Since these systems do not have a multiline setup like Compuserve or the Source, you may get lots of busy signals before you actually get through. Anymore I have been tempted to get an autodialer for the early evening hours. On these words, I cast thee off into a fun new world, and remember that if you have a question, I can be found on any of the eight BBS metioned in this article as "GALE RINGLEY".

P.S.: If the local ones get you excited I recommend "The Computer Phone Book", by Mike Cane, a factual and sometimes witty compendium of some 400 BBS systems across the country.

GAMES

By Stuart Williams

Phone 291-7893

Due to the fates, few if any of you heard my spiel about the games section at the last meeting. Too Bad, I was Wonderful.

What I said at the meeting was that I am forming a games section of this club.

The section will be targeted at those of you reasonably literate in TI Basic and X-Basic who would like to expand their abilities as programmers.

Each meeting of the section will feature (hopefully) a Short lecture by a guest speaker on a subject of interest in game related programming. Topics will include Computor music, Sprites, Parsing, Etc. I will be taking requests from people on what topics interest them. Anyone who has a trick or skill that they would like to contribute to the group is encouraged to contact me.

In addition we will critique and review each others programs and help each other with problems.

The Universal Game Rating System wil be the next subject of Discussion. (UGRS). It is my hope that all people writting games in the future will use this system so that potential game buyers will know sort of what they are getting themselves into. Of course before this happen$ we must make a system up. Think about it and bring ideas to the meeting.

Do you ever get the feeling that with out all those expensive peripherals that you are sort of left out in the cold? Not so in the games section we will try to avoid peripherals with the exception of the cassette recorder and the speech synthesizer. So not to fear. People forget once they get all nifty toys that a lot of nice fun and powerful things can be done with just basic.

Keep 'Em Flying.

Spook.

BIGGIES BITS

```
50 !ORIGINALY WRITTEN FOR
    MAINFRAME AT CBS FOR
   "WIZKIDS"
60 ! TRANSLATED TO TI FOR
    YOUR ENTERTAINMENT
70 ! PROGRAM DEMONSTRATES
   HOW THE COMPUTER IS
   PROGRAMMED TO LOOK AS IF
   SOMEONE IS ENTERING DATA
   AND IT IS ANSWERING
80 ROTTEN=100
90 OK=20
100 GOOD=7
110 FAST=1
120 SLOW=4
130 CALL CLEAR
140 GOSUB 540
150 LINES=3
160 SPEED=SLOW
170 TYPIST=0
180 PROFICIENCY=OK
190 DATA "SYS-134 LOGON 06:3
8:10       HRD DSK B43-0010"
200 DATA ""
210 DATA "PLEASE ENTER ACCOU
NT NAME:  "
220 GOSUB 400 :: GOSUB 540
230 TYPIST=1
240 LINES=1
250 DATA "KILROY"
260 GOSUB 400
270 PRINT
280 GOSUB 540 :: GOSUB 540 :
: GOSUB 540
290 PRINT
300 TYPIST=0
310 LINES=4
320 SPEED=SLOW
330 DATA ""
340 DATA "Hello Richie."
350 DATA "This is ralf."
360 DATA "Why didn't you cal
l earlier?"
370 GOSUB 400 :: GOSUB 540 :
: GOSUB 540
380 PRINT : :
390 END
400 FOR MAIN=1 TO LINES
410 READ PHRASE$
420 PL=LEN(PHRASE$)
430 FOR CHARACTER=1 TO PL
440 IF TYPIST=1 THEN SPEED=R
ND*CHARACTER*PROFICIENCY
450 FOR DELAY=1 TO SPEED
460 NEXT DELAY
470 PRINT SEG$(PHRASE$,CHARA
CTER,1);
480 NEXT CHARACTER
490 IF MAIN<LINES THEN PRINT
500 FOR DELAY=1 TO 200
510 NEXT DELAY
520 NEXT MAIN
530 RETURN
540 FOR DELAY=1 TO 1000
550 NEXT DELAY
560 RETURN
```

```
50 !THIS IS A REPRINT OF THE
 FAMOUS "LOVE PRINT" ART WOR
K BY ROBERT L. INDIANNA PASS
ED ON BY MICHAEL NOBEL OF SU
MMIT 99ERS.
60 !THE PRINTER CALL IS FOR
A TI99 PRINTER IN LINE 100 S
IMPLY CHANGE THIS TO YOUR PR
INTER.
100 INPUT A$ :: OPEN #3:"RS2
32.BA=9600.DA=8",OUTPUT,VARI
ABLE 255 :: PRINT #3:CHR$(15
)
110 INPUT "YOUR MESSAGE (60
CHARACTERS MAXIMUM? ":A$ ::
L=LEN(A$)
120 DIM T$(120):: FOR X=1 TO
 10 :: PRINT #3: :: NEXT X
130 FOR J=0 TO INT(60/L)
140 FOR I=1 TO L
150 T$(J*L+I)=SEG$(A$,I,1)
160 NEXT I :: NEXT J
170 C=0
180 A1,P=1 :: C=C+1 :: IF C=
37 THEN 370
190 PRINT #3:
200 READ A :: A1=A1+A :: IF
P=1 THEN 220
210 FOR I=1 TO A :: PRINT #3
:" ";:: NEXT I :: P=1 :: GOT
O 230
220 FOR I=A1-A TO A1-1 :: PR
INT #3:T$(I);:: NEXT I :: P=
0
230 IF A1>60 THEN 180
240 GOTO 200
250 DATA 60,1,12,26,9,12,3,8
,24,17,8,4,6,23,21,6,4,6,22,
12,5,6,5
260 DATA 4,6,21,11,8,6,4,4,6
,21,10,10,5,4,4,6,21,9,11,5,
4
270 DATA 4,6,21,8,11,6,4,4,6
,21,7,11,7,4,4,6,21,6,11,8,4
280 DATA 4,6,19,1,1,5,11,9,4
```

```
,4,6,19,1,1,5,10,10,4,4,6,18
,2,1,6,8,11,4
290 DATA 4,6,17,3,1,7,5,13,4
,4,6,15,5,2,23,5,1,29,5,17,8
300 DATA 1,29,9,9,12,1,13,5,
40,1,1,13,5,40,1,4,6,13,3,10
,6,12,5,1
310 DATA 5,6,11,3,11,6,14,3,
1,5,6,11,3,11,6,15,2,1
320 DATA 6,6,9,3,12,6,16,1,1
,6,6,9,3,12,6,7,1,10
330 DATA 7,6,7,3,13,6,6,2,10
,7,6,7,3,13,14,10,8,6,5,3,14
,6,6,2,10
340 DATA 8,6,5,3,14,6,7,1,10
,9,6,3,3,15,6,16,1,1
350 DATA 9,6,3,3,15,6,15,2,1
,10,6,1,3,16,6,14,3,1,10,10,
16,6,12,5,1
360 DATA 11,8,13,27,1,11,8,1
3,27,1,60
370 PRINT #3:CHR$(12):: REST
ORE :: GOTO 110
```

```
50 ! UNCLE BIGGIES ROOM
     PAINTING CALCULATOR
60 CALL CLEAR :: FOR SET=1 T
O 12 :: CALL COLOR(SET,16,1)
:: NEXT SET :: CALL SCREEN(5
):: DISPLAY AT(12,6):"PAINT
CALCULATER": :TAB(6);" PRESS
 ANY KEY"
70 CALL KEY(0,K,S):: IF S=0
THEN 60 ELSE CALL CLEAR
80 DIM WALLS(6)
90 HEIGHT,GALLONS,SQFT,S1,S2
,S3,S4,S5,S6,TCST,CST=0
100 ! MAIN WALL LENGTH LOOP
110 FOR C=1 TO 6 :: WALL(C)=
0 :: CALL CLEAR :: PRINT "LE
NGTH OF WALL";C;"(feet)";
120 INPUT WALL(C)
130 INPUT "IS LENGTH CORRECT
? (Y/N) ":A$
140 IF A$<>"Y" THEN 100
150 NEXT C
160 ! WALL HEIGHT CALCULATIO
N INPUT
170 CALL CLEAR :: PRINT "HEI
GHT OF WALLS (feet)";
180 INPUT HEIGHT
190 INPUT "IS HEIGHT CORRECT
? (Y/N) ":A$
200 IF A$<>"Y" THEN 160
210 CALL CLEAR :: INPUT "NO.
 OF SQ.FT./GALLON
      (from label) ":SQFT
220 INPUT "IS SQ.FT. FIGURE
CORRECT ?                 (
Y/N) ":A$
230 IF A$<>"Y" THEN 210
240 ! CALCULATE AND PRINT VA
LUES
250 CALL CLEAR :: INPUT "COS
T PER GALLON ?            (
from store) $":CST
260 INPUT "IS COST CORRECT ?
(Y/N)":A$
270 IF A$<>"Y" THEN 250
280 CALL CLEAR :: S1=HEIGHT*
WALL(1):: S2=HEIGHT*WALL(2):
: S3=HEIGHT*WALL(3):: S4=HEI
GHT*WALL(4):: S5=HEIGHT*WALL
(5):: S6=HEIGHT*WALL(6)
290 S7=S1+S2+S3+S4+S5+S6 ::
GALLONS=S7/SQFT+.5 :: TCST=I
NT(GALLONS)*CST
300 DISPLAY AT(4,1)ERASE ALL
:"LOOKS LIKE A JOB FOR SOME
   FRIENDS AND A COUPLE OF
        SIX PACS!"
310 DISPLAY AT(8,1):"GALLONS
 REQUIRED";INT(GALLONS): :"C
OST $";TCST: :"TOTAL SQUARE
FOOTAGE": :"=";S7;"SQ.FT. ":
 :TAB(5);"PRESS ANY KEY TO E
ND"
320 CALL KEY(0,K,S):: IF S=0
 THEN 310
```

```
10 ! OUTPUT SUBROUTINE/
     K-POWER MARCH 84 WITH
MINOR IMPROVEMENTS BY
BIGGIE. XBASIC REQUIRED
20 CALL CLEAR :: VT=1 :: A$=
"THIS IS A  DEMONSTRATION OF
 HOW EASY IT IS TO USE THIS
"
30 A$=A$&"SIMPLE SUBROUTINE
IN YOUR OWN PROGRAMS. LIST T
HE PROGRAM AND LOOK AT ..."
40 GOSUB 1030
50 VT=10 :: B$=" LINES 10-15
0 TO SEE " :: GOSUB 2010
80 B$=" HOW TO PRINT LINES,
OR " :: GOSUB 2010
110 B$=" LINES 1000 TO 2080
TO " :: GOSUB 2010
140 B$=" SEE THE ROUTINES."
:: GOSUB 2010
150 B$=" PRESS ANY KEY TO CO
NTINUE" :: GOSUB 2010 :: CAL
L KEY(0,K,S):: IF S=0 THEN 1
50 ELSE 20 :: END
1000 ! OPTIONAL LINE BREAK
ROUTINE, USE THIS IF YOU
WANT THE OUTPUT SUBROUTINE
TO BE ABLE TO HANDLE LINES
THAT ARE LONGER THAN YOUR
1001 ! COMPUTER SCREEN IS
WIDE.
1030 IF LEN(A$)>27 THEN 1080
1040 B$=A$ :: A$="" :: GOSUB
 2010 :: RETURN
```

```
1080 Y=28
1090 FOR X=2 TO 29 :: IF SEG
$(A$,X,1)<>" " THEN 1120 ::
Y=X-1
1120 NEXT X
1130 B$=SEG$(A$,1,Y):: A$=SE
G$(A$,Y+2,LEN(A$)):: GOSUB 2
010 :: GOTO 1030
2000 ! HERE IS THE OUTPUT
        SUBROUTINE
2010 M=LEN(B$)
2020 IF M/2=INT(M/2)THEN 205
0
2030 B$=B$&" "
2040 M=M+1
2050 DISPLAY AT(12,1):" " ::
 FOR N=1 TO M/2
2070 DISPLAY AT(12,14-N):SEG
$(B$,1,N);SEG$(B$,M-N+1,M)::
 NEXT N :: CALL WAIT :: RET
URN
2080 SUB WAIT :: FOR X=1 TO
200 :: NEXT X :: SUBEND
```

```
50 CALL CLEAR :: ! HERE IS T
HE SAME THING WITHOUT ALL
   THOSE LINES
60 DISPLAY AT(12,8)ERASE ALL
:"SHOW A MESSAGE" :: DISPLAY
 AT(14,7):"BY NIRAJ N. SHAH"
70 INPUT M$
71 CALL CLEAR
80 L=LEN(M$):: H=INT(L/2)::
H=H+((L/2)-H>0)*(-1):: IF L=
0 OR L>28 THEN RETURN
90 FOR I=1 TO H :: DISPLAY A
T(12,14-I+1)SIZE(1):SEG$(M$,
H-I+1,1):: DISPLAY AT(12,14+
I)SIZE(1):SEG$(M$,1+H,1):: N
EXT I
100 GOTO 70
```

"FORTH provides a natural means of communication between man and the smart machines he is surrounding himself with....I cannot imagine a better language for writing programs, expressing algorithms, or understanding computers".

- Charles H. Moore, inventor of FORTH
Forward, "Starting FORTH"

GO FORTH

By Roger Wills

After you have become a proficient progammer in extended basic you can consider learning a more advanced language. There are three main choices: Assembly, Pascal and Forth. Since P Code cards are out of production your choice is really restricted to Assembly and Forth. I have some experience with both languages and beleive that learning Forth is easier.

As many of you will know the club has received documentation and a disk from TEXAS INSTRUMENTS. This material is available to all club members (its in the library). TI does state that their version of Forth may not be "bug free" since it has not received the normal amout of screening that a new product would receive prior to its release on the market. Anyway we should all be grateful to TI for sending to the User groups. Thanks Ed Weist.

Forth was invented by Charles More in 1969. Its a very interactive language allowing an immediate response from the computer and freedom to define and compile your own words (in BASIC you are confined to a set of rules and routines). This may be difficult to understand, but once you have read the following book you will know what I'm talking about. You should read "STARTING FORTH" by Leo Brodie, published by PRENTICE HALL. There are several other books you could read but its worthwhile noting that TI's documentation contains an appendix outlining the differences between TI Forth and the version used in "STARTING FORTH".

The final remark that I would like to make this month is on equipment. This version of FORTH requires memory expansion, disk drive and the EDITER/ASSEMBLER MODULE (call me if you can't find one or if you are interested in forming a Forth discussion group-889 9011).

If you are interested the Forth Institute mailer has been included for your convenience. please place a stamp on it and mail it today.

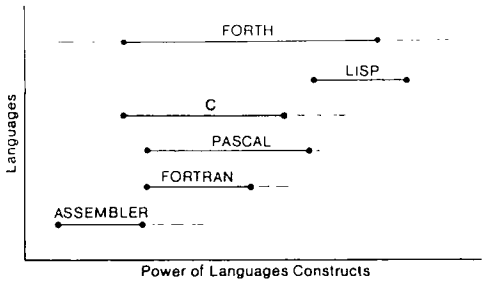
The Forth Institute in Rochester New York; would also like a copy and documentation of TI Forth.
Sam Moribito has the address for anyone who would like to be of service to the group as our representitive.

Looking for a computer language that is:

Extensible - The FORTH computer language builds upon itself. A FORTH program is a set of increasingly powerful commands. Each command is built on those that have been previously added to the language. The low run-time overhead for each command encourages modularity. Extensibility is part of FORTH's innate structure.

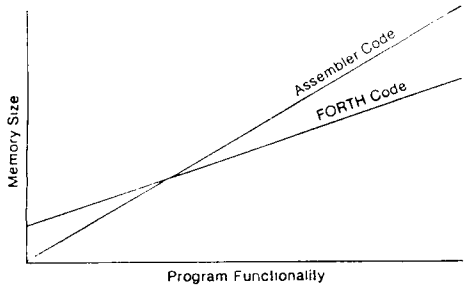
Easily Debugged - FORTH is an interactive language where changes can be entered and immediately tested, minimizing programming development time.

Powerful - FORTH spans the power of most other computer languages.



Transportable - Applications written in FORTH can be run easily on many different computers. In addition, the ready availability of cross-compilers means that anyone can maintain their own FORTH implementations.

Compact - FORTH code becomes more compact than even assembly code



FORTH is the Answer!

FORTH is extensible, easily debugged, powerful, transportable and compact. It can include an interpreter, compiler, assembler, operating system and editor.

Who needs FORTH?

Everyone! FORTH is used in video games, operating systems, real-time control, word processing, spread sheet programs, business packages, database management systems, robotics and engineering and scientific calculations.

Where can I get more information on FORTH?

Everywhere! The FORTH community is broad, varied and worldwide!

- **The FORTH Interest Group (FIG)** is a non-profit worldwide organization of over 3,800 members and more than 30 chapters devoted to the dissemination of FORTH related information. Most FIG chapters meet monthly. Contact the FORTH Interest Group for the chapter nearest you.
- **FORTH Dimensions** – is published six times a year by the FORTH Interest Group. A one year subscription is included with FIG membership. FORTH Dimensions keeps members informed of the latest FORTH news, applications and recent developments of the language.
- **FORTH Vendors** - Over 100 vendors support implementations of FORTH on almost every computer, large and small. Professionally written books range from tutorial to more advanced topics.
- **FORTH Development** - The FORTH Modification Laboratory, FORTH National Convention, and the FORTH Standards Team meet periodically to monitor and guide the evolution of FORTH

Join the FORTH Interest Group!

To join the growing family of FIG members and receive your 1 year subscription to FORTH Dimensions merely complete the attached application and return it to the FORTH Interest Group, P.O. Box 1105, San Carlos, CA 94070 with your payment of the annual dues of $15.00 US, $27.00 Foreign. Or, call (415) 962-8653. You will also receive information on other publications available from the FORTH Interest Group.

FORTH Interest Group

Name _____

Organization (if applicable) _____

Address _____

City _____ State _____ Zip _____ Country _____

Where, or from whom did you get this application? _____

VISA# _____ Mastercard # _____

VISA/Mastercard Expiration Date _____

Please make check or money order ($15.00 U.S., $27.00 Foreign) in US Funds on US bank payable to: FORTH Interest Group and mail to P.O. Box 1105, San Carlos, CA 94070; (415) 962-8653 for credit card orders

TENDERFOOT BASIC

BY NIRAJ N. SHAH

I would like to give credit to Curtis Garcia of the South Bay TI Users Group for giving me the incentive to write this month's article on Relational Operators. I apologize to those of you who were expecting a TENDERFOOT BASIC column in last month's newsletter. I was too busy with my homework for OSU to find the time to write my column. For those of you who do not know me, I am an Electrical Engineering student at the Ohio State University. I expect to graduate in June of 1984 and become another member of the unemployed club.

This month I am going to discuss Relational Operators. What are Relational Operators? They are the greater than(>), less than(<) and the equal(=) operators. The term relational implies that the operators show the relation between two operands.

To illustrate what I am saying lets look at an example. Suppose Tom and Dick are bidding at an auction. We want to find out whose bid was the highest. Here is one possible solution to the problem.

```
100 INPUT "TOM'S BID = ":TOM
110 INPUT "DICK'S BID = ":DI
CK
120 IF TOM>DICK THEN 130 ELS
E 140
130 PRINT "TOM'S BID WAS GRE
ATER THAN DICK'S BID"
140 IF DICK>TOM THEN 150 ELS
E 160
150 PRINT "DICK'S BID WAS GR
EATER THAN TOM'S BID"
160 IF DICK=TOM THEN 170 ELS
E 180
170 PRINT "BOTH BIDS ARE EQU
AL"
180 END
```

Lines 100 and 110 ask the user what are the respective bids for Tom and Dick. Line 120 compares Tom's bid with Dick's bid, in particular, it checks to see if Tom's bid is larger than Dick's bid. If so, then the corresponding message is printed by Line 130 otherwise execution skips to Line 140.

Line 140 checks to see if Dick's bid is greater than Tom's bid. If so, then the appropriate message is printed by Line 150. Otherwise, the computer skips to line 160, which compares the two bids to see if they are equal. Again, if they are equal then a message is printed by Line 170. Then the program stops execution by Line 180.

I know that some of you more advanced programmers are wondering why I put Line 160 in there. The main reason for the inclusion of that line is clarity. It is easier for the novice to understand the flow of execution if Line 160 is used. However, if you want to change that then both Lines 140 and 160 have to be changed:

```
140 IF DICK>TOM THEN 150 ELS
E 170

160 GOTO 180
```

Try it out and you will see that both versions accomplish the same thing. But, the first version is easier to understand than the second version.

Now that you have seen a concrete example on how relational operators are used in a program lets examine how the computer evaluates expressions that contain those

CONTINUED

relational operators. When the computer encounters an expression such as, A<B, it evaluates it to see if A is indeed less than B. If that is the case then the computer will replace that expression by a -1. Otherwise if it turns out that A is not less than B then the computer replaces that expression by a zero(0). Here is an example.

```
100 A=5
110 B=10
120 PRINT "A<B IS";A<B
130 PRINT "A>B IS";A>B
140 PRINT "A=B IS";A=B
150 PRINT "A<=B IS";A<=B
160 PRINT "A>=B IS";A>=B
170 END
```

Type in this program and observe the results. In Lines 100 and 110 the variables, A and B, are assigned their respective values of five and ten. Then in Lines 120-160 the computer is asked to compare the two variables and print the results of the comparisons. Since A is indeed less than B but not equal to B only Lines 120 and 150 should result in printing a -1. The other Lines should print a zero(0).

Why is this? As I stated above, if the relational expression is evaluated to be true then the computer replaces that expression with a value of -1 otherwise it is zero(0). Since only the expressions in Lines 120 and 150 are true then only those lines will print a true indicator value of -1. The rest of the lines will indicate a false evaluation of their expressions by printing a value of zero(0).

Now, how can one use this facility in his programs? Well, lets try to minimize the following program. This program scans the keyboard for a key to be pressed. When a key has been pressed then it checks to see if the key that was pressed was a numeric key, the numbers zero through nine. If so, then the program prints a one(1) to indicate a valid key was pressed. But if a valid key was not pressed then a value of zero(0) should be printed.

```
100 CALL KEY(0,K,STATUS)
110 IF STATUS=0 THEN 100
120 IF K<ASC("0") THEN 140
130 IF K>ASC("9") THEN 140 EL
SE 160
140 PRINT 0
150 GOTO 170
160 PRINT 1
170 END
```

Here is a shorter program that makes full use of the facilities of relational operators. But it is also a lot less readable.

```
100 CALL KEY(0,K,STATUS)
110 IF STATUS=0 THEN 100
120 IF (K<ASC("0"))+(K>ASC("
9")) THEN 130 ELSE 150
130 PRINT 0
140 GOTO 160
150 PRINT 1
160 END
```

The key point to be made by the second version is in Line 120, which replaced lines 120 and 130 in the first version of the solution. Lets say that the key pressed was less than ASC("0"), maybe the <!> key was pressed. That means that the expression K<ASC("0") is going to be evaluated to be true and replaced by a -1. So now Line 120 looks like this: (-1)+(K>ASC("9")). Since the <!> key was pressed, the expression, K>ASC("9") is false and thus will be replaced with a zero(0). Which makes Line 120 look

CONTINUED

looks like this: (-1)+(K>ASC("9")). Since the <!> key was pressed, the expression, K>ASC("9") is false and thus will be replaced with a zero(0). Which makes Line 120 look like this: (-1)+(0). But since there is an addition symbol still left in the expression the computer has to add the two numbers. So, now Line 120 looks like this: -1. Since the expression in the IF-THEN-ELSE statement has been reduced down to a -1 value(true) the computer recognizes the IF-THEN-ELSE statement to be a TRUE one. Which causes execution to continue on to Line 130 and print a value of zero(0). Which indicates that an invalid key was pressed.

Here is a summary of the sequence of evaluations that the computer made:

```
(1)  (K<ASC("0")+(K>ASC("9")
(2)  (    -1    )+(K>ASC("9")
(3)  (    -1    )+(    0    )
(4)               -1
(5)  Aha! It is a True Statement!
(6)  So, print a value of zero(0)!
```

Now, suppose that the key pressed was indeed a numeric key, such as <4>. Here is the sequence that computer would go through in evaluating the expression in Line 120.

```
(1)  (K<ASC("0")+(K>ASC("9")
(2)  (    0     )+(K>ASC("9")
(3)  (    0     )+(    0     )
(4)               0
(5)  Aha!  It is a False Statement!
(6)  So, print a value of one(1)!
```

Well, you say that is all fair and good but it only saved one line! True, but lets say that the problem statement was changed to print a 1 when the key being pressed was in the range:

```
0 <= KEY <= 9  OR  A <= KEY <= Z
```

In other words, if the key pressed was between 0-9 or between A-Z then a print a one(1). In the first example we would have to add two more lines. Here is the solution:

```
100 CALL KEY(0,K,STATUS)
110 IF STATUS=0 THEN 100
120 IF K>=ASC("0") THEN 130 E
LSE 140
130 IF K<=ASC("9") THEN 160
132 IF K>=ASC("A") THEN 134 E
LSE 140
134 IF K<=ASC("Z") THEN 160 E
LSE 140
140 PRINT 0
150 GOTO 170
160 PRINT 1
170 END
```

Notice that Lines 132 and 134 were added to the above program. Also, take a close look at the logic involved in the IF-THEN-ELSE statements. The relational expressions are quite different from the previous examples. Here is the second solution which uses the relational operators more efficiently.

```
100 CALL KEY(0,K,STATUS)
110 IF STATUS=0 THEN 100
120 IF (K<ASC("0"))+(K>ASC("
9"))*(K<ASC("A "))*(-1)+(K>A
SC("Z")) THEN 130 ELSE 150
130 PRINT 0
140 GOTO 160
150 PRINT 1
160 END
```

Notice that in this version only Line 120 had to be changed. Line 120 has three major checkpoints:

CONTINUED

```
a)  (K<ASC("0"))
b)  (K>ASC("9"))*(K<ASC("A"))*(-1)
c)  (K>ASC("Z"))
```

Part (a) checks to see if the key pressed was less than zero, which is invalid. Part (c) checks to see if the key pressed was greater than <Z>, which is also invalid. The other invalid range is for any key that lies between nine(9) and <A>, not inclusive. This range is checked by part (b). Lets assume that a key was pressed in the range being checked by (b). Assume the key pressed was <:>. Here is how the computer would evaluate parts (a),(b) and (c).

```
For Part (a):
1)  (K<ASC("0"))
2)      0
3)  Aha!  It is a false value!

For Part (b):
1)  (K>ASC("9"))*(K<ASC("A"))*(-1)
2)  (    -1    )*(K<ASC("A"))*(-1)
3)  (    -1    )*(    -1    )*(-1)
4)  (           1           )*(-1)
5)  (           -1                )
6)  Aha!  It is a true value!
7)  Thus it is an invalid key!

For Part (c):
1)  (K>ASC("Z"))
2)      0
3)  Aha!  It is a false value!

For Line 120
1)  (a)+(b)+(c)
2)  (0)+(-1)+(0)
3)  ( -1 )+(0)
4)      -1
5)  Aha!  It is a true value!
6)  Thus it is an invalid  key!
```

The main point of this way of doing the invalid key checking is to illustrate how one can implement OR and AND functions. Part (a) and (c) were strictly relational expressions. Part (b) was a mixture; both relational and an AND function. It was checking for an invalid key by making sure that the key was greater than <9> AND less than <A>. Then finally Line 120 in itself was an OR function. It was checking to see if the key pressed was less than <0> OR greater than <Z> OR between <9> AND <A>. Thus, OR functions can be implemented with the plus(+) operator and AND functions with the multiply(*) operator.

Go through the same procedure as I showed above in evaluating the expression in Line 120 for a valid key. This time the second version of the program saved me four lines of programming! Thus, if there are a lot of IF-THEN-ELSE statements in one part of your program try to get rid of them by using your relational operators more efficiently as demonstrated above.

Finally, this last program is a subroutine that enables one to move in the arrow directions and also in diagonal directions. The diagonal moves are done by using the <W,R,Z,C> Keys. Otherwise, use the arrow keys without the <FCTN> key! Notice how many IF-THEN-ELSE statements I eliminated by using the versatility of Relational Operators! The routine basically takes place of a Joystick routine if you do not have Joysticks. Just insert this in a suitable place in a Joystick based game and Voila! You have a keyboard based game!

```
100 REM KEYBOARD ROUTINE
110 REM BY NIRAJ N. SHAH
120 CALL CLEAR
130 R=12
140 C=12
150 CALL HCHAR(R,C,30)
160 CALL KEY(0,K,STATUS)
170 IF STATUS=0 THEN 160
180 R=R+((K=87)+(K=69)+(K=82
))+(((K=90)+(K=88)+(K=67))*-
1)
190 C=C+((K=87)+(K=90)+(K=83
))+(((K=68)+(K=82)+(K=67))*-
1)
200 CALL HCHAR(R,C,30)
210 GOTO 160
```

Spirit of 99
THE OFFICIAL NEWSLETTER OF CENTRAL OHIO NINETY-NINERS
PUBLISHED MONTHLY IN COLUMBUS OHIO

C.O.N.N.I. Membership Questionnair...

Name:_____
Phone:_____
Address:_____

I own the following hardware:

_____
_____
_____
_____

I own the following software:

_____
_____
_____
_____

I intend to purchase the folowing hardware within the next year

_____
_____
_____
_____

I intend to purchase the following software within the next year

_____
_____
_____
_____
_____

I will help the User's Group the following ways.

_____
_____
_____
_____

****
Newsletter (see Editor) check one
Assistant Editor []
second printer []
writers []
technical []
games []
reviews []
news []

Advertising Editor/coordinator []
Assistant A e/c []
labeling []
coalating []
folding []

Publicity editor []
program editor []
genneral typists []
Correspondance editor []

****
Demo committee []
Taking notes at meetings []
Other (Please specify)

_____
_____
_____
_____

I bought my computor because:
Price []
Enertainment []
It seemed like a good idea []
Newsletter Articles []
Business []
Word Processing []
Education []
To meet women []
None of Your Business []
All of the above []
One of the above []

I grant permission for this information to be made available to other user group members.

Signature:_____
Date:_____

Return this form or a copy of it to:
Art Morgan 3087 Brandon rd.
columbus Ohio 43221

Bulk Rate
U.S. Postage
PAID
COLUMBUS 43212
Permit No. 1945

EDMONTON USERS GROUP
P O BOX 11983
EDMONTON ALBERTA T5JSLI

*** MEMBERSHIP APPLICATION ***

NAME _____
ADDRESS _____ AGE _____
CITY _____
AREA CODE _____ HOME PHONE _____ STATE _____ ZIP _____
WHAT IS YOUR PROFESSION/VOCATION _____ BUSINESS PHONE _____ EXT# _____
HOW LONG HAVE YOU OWNED YOUR COMPUTER _____
DATE OF APPLICATION _____ ACCEPTED BY _____