Southwest Ninety-Niners Newsletter

contributed by
- Tom Wills -
compliments of

JULY 1987

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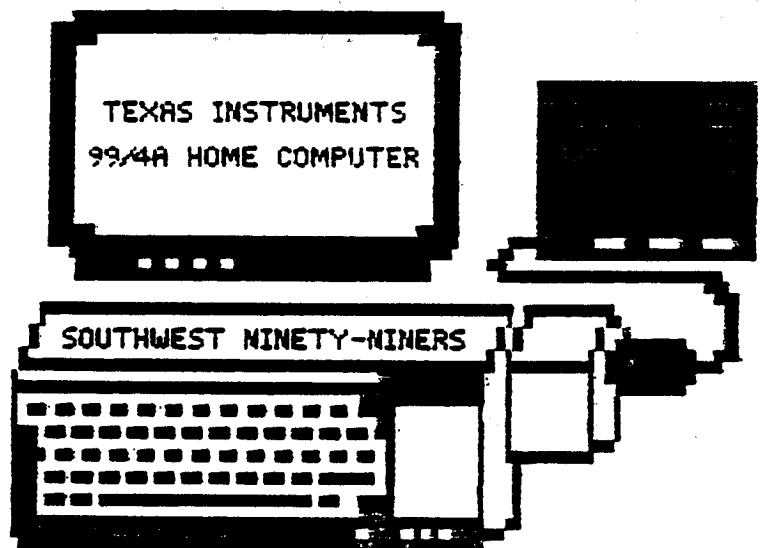
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TEXAS INSTRUMENTS
99/4A HOME COMPUTER

SOUTHWEST NINETY-NINERS

ATTENTION MEMBERS

Next Meeting: July 7, 1987 at 7:30pm. Location-Tucson Fire Department Training Center on Ajo Way just west of Park.

General Users Workshop: Will not be held this month.

Applications Workshop: 3rd Thursday of each month at 7:30pm (July 16th). Includes: Writer, Multiplan, DataBases, etc. Mathis Home - 5941 E. 26th - 747-5046

Advanced Languages Workshop: 4th Tuesday of each month at 7:30pm (May 26th). Includes: FORTH, A/L, etc. Rod Stallard's Home - 7575 E. Logan - 745-6071

PRESIDENT'S CORNER

Newsletter editors lament the lack of contributions from members. I like to get articles from our members, it makes my job easier. When there is a lack of articles from our members it does not stop me from putting out a newsletter nor shorten the newsletter. We get newsletters from 40+ other groups. Some newsletters seldom have anything worth reprinting, however most have one or more articles in every issue I would love to be able to reprint. Lack of space limits the amount of reprinting and articles from our members have priority of course. I see nothing wrong with reprinting articles from other groups, written by people who have tried out things our members haven't. When I use an article from someone else I try to verify as much of the information as possible. Other editors would prefer not reading reprints, however this newsletter is first for the members of the SouthWest Ninety-Niners. They deserve to get the best newsletter we can possibly publish, whether reprints or not.

I encourage all members of the SW 99ers to sign out newsletters from other groups, there is a lot of information that hasn't been in our newsletters. Ida McCargar and Ed McCullough have indexed them which should make it possible for you to find articles that will interest you.

*BJ Mathis * 747-5046*

BASIC BUILDER

The Evolution of a Utility

Review by David Ormand

This is the story of a program known as the Text Converter.

The Text Converter, for those who didn't know it existed, turns a text file into a runnable BASIC program. You can use Writer to do up your program, having the formatting, text manipulating, and screen editing capabilities of the word processor at your disposal; you no longer have to rely on the clunky line-at-a-time editor of BASIC. Once you have finished writing a program, or modifying an old program you had listed to disk, just run the Converter, and you are ready to go.

Let me trace the development by three examples: XLATE, QS-Converter, and Basic Builder.

XLATE was written by John Ford and published for open use in the December 1985 MICROpendium. It is a very tight, very confusing Extended BASIC program, half of which is DATA statements. What it does is take your text file and create a MERGE-format program file, which you subsequently merge yourself and save it as a program file. It runs slowly (as all BASIC programs tend to) and is prone to errors. I could never get it to accept DATA statements. It was a start, but it was only a start.

QS-Converter is immeasurably superior. Produced by Quality 99, it consists of two parts. The first takes the D/V 80 file you made and very quickly turns it into a MERGE-format file where all the lines are preceded by an exclamation mark, thus turning them into comments. When this is finished, you load part two, which is an Assembly Language program, and then load the MERGE program created by part one. When you run part two, it calls up the program lines one at a time, deletes the exclamation mark, and enters it, turning the harmless, no-error remark line into a *real program line*, which is checked for errors by the built-in BASIC system. It's spooky watching it execute, for it is exactly as if someone were entering edit commands, DEL keys, and downspaces from the keyboard.

Finally, the state of the art, which avoids the intermediate MERGE file and takes the "ghost typist" effect to the last degree.

WHAT YOU GET: Basic Builder comes on two SS/SD disks. The program, an X-BASIC loader, the source code, a few BASIC support programs, an example, and six document files are included. The document, which is printable with Formatter, is excellent. It explains everything, although most users will want to skip over the technical parts, and is well-organized (even a table of contents!) and readable. It explains how you can modify the source program, which itself is heavily documented. The support programs are for comparing MERGE files and modifying text files; you may never use them, but you have them, anyway. The example is the text listing of a Frogger video game; a programming jewel in its own right.

HOW IT WORKS: Like the QS-Converter, it is an Assembly Language program which you load into Extended BASIC. You give it the filename of your text, and optionally a print or file devicename. When you run Basic Builder, it gets each line from the text file and enters it into BASIC, just like you were typing it in, but at a fantastic rate of speed. Any errors that occur are logged to your printer or diskfile, if you enabled that option, for your future reference.

Basic Builder is the furthest step in the evolution of the Text Converter program. From Extended BASIC to Assembly Language, and from intermediate MERGE files, to one-step operation, this path from beginning to end is an interesting tale in software development. And, with its fast, no-fault execution, excellent documentation, and thoughtful, plenteous extras, this $5 package by Paolo Bagnaresi is a superb example of the legendary fairware support of the TI 99/4A.

SOME HELPFUL INFORMATION FOR YOUR TI-TOY

Steve Lisonbee - SLAVE UG Salt Lake City, UT and Southwest 99ers Tucson, AZ

The following is a collection of items that have been passed around over the last couple of years that help make life a little better for the TI user. I have collected them all together for easy reference.

Have you been on-line to a BBS when someone picks up the extension phone and leaves you with nothing but garbage? Here's an idea that might help. All you need is a switch, a long piece of 2 conductor wire, two LED's (Radio Shack #270-036(blinking led)), two AA batteries, battery holder and a 100 OHM resister. Run the wire from the extension phone to the computer. Solder the wire at the phone end to one of the LED's (observe polarity flat side is negative) and the wire at the computer end to the other LED with the 100 OHM resister in series to help balance the current load. Hook the wire to the battery through the switch. The LED by the computer should have the 100 ohm resister in series, the remote LED should be hooked directly to the battery through the switch. If the LEDs don't light reverse the battery leads. Now when you call the BBS just turn on the switch and the blinking red light will tell everybody not to pick up the phone, at least not if they know what is good for them. This comes from Steve Lisonbee of the Salt Lake City SLAVES 99er user group.

How about the old computer lock up hassle? Dirty contacts are the culprit on this one. Just about everybody cleans the external contacts, but they may still have problems. The culprit lies inside the console with the cartridge L-connector. What one needs to do is open up the console case, undo the screws (2) for the power supply, undo the screws(3) that hold the motherboard in place, disconnect the power supply and the keyboard connections and remove the motherboard (do not remove the metal shielding), and remove the cartridge connector. Looking at the male part of the connector you will notice some indentations and black corrosion on the soldered area of the contacts. Take a piece of nylon scrub pad and buff those contacts on both sides until the indentations are gone and the contacts are smooth. Also do this to the board edge connectors for the I/O port. It is a good idea to spray the female part of the cartridge connector with contact cleaner while it is out. Now reassemble everything in reverse order(be patient and careful). You will now find that hardware lockups and erratic behavior will be a thing of the past. This comes from Richard K. Stevens and was published in the March 1986 NATIONAL NINETY-NINER.

Do you find that the cursor in DM1000 is too fast for you to control easily? It can be slowed down. Put MGR1 on a newly initialized disk and then use a sector editor to do some changing. Load up sector 36, or do a string search for the string 8000A0FF. The 00A0 is what you want to change. The allowable range is 00A0 to 07D0. Try 010C. Write the changed sector back to the disk and run the program to see how it works for you. This is from Louis Guion of the NET 99ers and was published in the Oct. 1986 MICROpendium.

The following is where to look if you want to change default colors in some of the more commonly used programs. All sectors given are if the program file to be changed

is the first file on a disk. A sector editor is needed and it is assumed that the person using it knows how to use it. The first one is for the original TI-WRITER. Sector 022 of EDITA1 is where the change needs to be made. At address F4 there are a series of words starting with 87xx. The xx is what needs to be changed. The third and fourth digits are the foreground (characters) and the background (screen) colors respectivly.   The hexdecimal codes are: transparent, 0; black, 1; medium green, 2; light green, 3; dark blue, 4; light blue, 5; dark red, 6; cyan, 7; medium red, 8; light red, 9; dark yellow, A; light yellow, B; dark green, C; magenta, D; gray, E; white, F. This comes from Tim MacEachern, author of Wycove Forth and was published in the June 1985 MICROpendium. BA-WRITER has the color bytes in EDITA2. FUNLWRITER has all of the defaults (screen color and printer name) in the beginning of the loader.   The others that I have located are as follows: DISK+AID; if your disk has AID1 then look for the word 0717 (white on blue) in sector 2B address 69.   For DISK+AID-0 look in sector 33 address 2C. For DISK UTILITIES ver3.2 look in DSKU1 sector 22 address 35 for the word 0CF5 (white on light blue). In all cases the last 2 digits are the ones that need to be changed. For ARCHIVERver2.11 list the program and look in lines 80, 170, 390 (CALL J(n)).

About those noisy P-BOX fans. Radio Shack has one (#273-242) for $15 that is supposed to be a quite fan but I have been told that it isn't all that quite. You could also go to just about any electronics store and buy, or order, a 3 inch quite, or whisper, fan. Make sure you know what the noise level is, it should be less than 30 DB. Some compananies have fans as quite as 24 DB. I repeat; BE SURE THAT YOU ARE GETTING A FAN WITH A VERY LOW NOISE LEVEL. Some people have told me that they bought a fan and found out AFTER it was installed that it was just as noisy as the original.

On the earlier TRIPLE-TECH cards from CorComp there was a design error that allowed voltage to be applied to the battery which could possibly cause it to explode. I read about this and wrote to CorComp to verify it. They confirmed the problem and supplied the correction needed which corresponded with the correction given in the article I read. The correction is as follows: resister R7 which is by the lower right hand corner of the speech synthisizer card needs to be taken out and replaced with a IN914 diode. The diode should be put in with the black band (the cathode) pointing away from the battery. After you have done this check the voltage at the battery terminals (take the battery out) with the card in the P-BOX and turned on, you should get a reading of 0 volts. The latter versions of the TRIPLE-TECH card have had this problem corrected. This information is from an article by Mark Keeler from Dayton, Ohio and was printed in the June 1986 issue of THE NATIONAL NINETY-NINER.

IF THEN ELSE

by Jim Swedlow - User Group of Orange County, CA

Something I found in the 'Teach Yourself XB' tutorial is how XB matches ELSEs with IFs. Each ELSE is paired with the last unmatched IF. For example:

    IF A THEN B :: IF C THEN D ELSE E ELSE F

In words: If A is true, do B and then test C. If C is true, do D. If C is false, do E. If A is false, do F.

TEN STEPS FOR TYPING IN AND RUNNING ASSEMBLY LANGUAGE PROGRAMS
=== ===== === ====== == === ======= ======== ======== ========

by L.R. Livergood - Decatur 99er User Group, IL - Sep '87

Many consider assembly language programming to be more difficult to learn than BASIC; however you don't have to become an expert assembly language programmer in order to take advantage of it. If one just learns how to enter and assemble the code then he or she can begin to utilize the expanded capabilities that this language has to offer.

If you are familiar with only the BASIC language, then the concept of "compiling", or in the case of assembly language, "assembling" a program may not be clear to you. With either a high-level language like BASIC or an intermediate-level language like assembly, a program must be translated into machine language before it can be executed by the computer. TI's BASIC uses an interpreter rather than a separate compiler which allows the "writing" and "running" of BASIC code to be done at the same time without the need to first "edit" and then "compile" the program - a two step process in other languages.

In the case of TI-99/4A Assembly Language, you must first enter the program with the EDITOR (provided with the E/A module) and then assemble it with the ASSEMBLER. The key to doing this is to familiarize yourself with the following words:

SOURCE CODE   OBJECT CODE   LISTING

The SOURCE CODE is the collection of assembly language statements typed in by you that are translated by the assembler into OBJECT CODE. Also produced is a LISTING that includes the assembly language statements, the resulting machine code produced by these statements, the machine code memory locations, as well as other information.

With this in mind, it is fairly easy to get assembly programs typed in and running by doing the following:

CREATE A SOURCE CODE WITH THE EDITOR
ASSEMBLE THE SOURCE CODE INTO OBJECT CODE WITH ASSEMBLER
RUN OBJECT CODE (PROGRAM) AFTER CORRECTING ERRORS APPEARING IN LISTING

Both the EDITOR and ASSEMBLER programs can be found on the disk supplied with the E/A module called PART A. Place this diskette in drive #1 before beginning the 10 steps below:

CREATING THE SOURCE FILE

1) Bring up the EDITOR Selection List menu on the E/A module. This is done by pressing 1 to EDIT from the Editor/Assembler Selection List.

2) Make sure you have the Editor/Assembler diskette in drive #1, press 2 to EDIT. The computer should automatically load the EDITOR from the system diskette. If it is already present in memory, then the screen is cleared sio that you can begin typing in a new program.

3) Enter the program using the editor functions. It operates similar to the Writer editor which you are probably familiar with. If you are having trouble, then read the part of the E/A manual which explains the editing features. It should be easy to see that the listing you are about to type in is divided roughly into four fields or

columns. It is important to make sure the information is being entered into the appropriate columns. For reference they are described as the LABEL FIELD, INSTRUCTION OPERATION CODE or ASSEMBLER DIRECTIVE FIELD, OPERAND FIELD, and COMMENT FIELD. Note that by placing an asterisk in the first column, the whole line becomes a comment.

The tab positions of the EDITOR default to the beginning of each of these fields. It is important to keep columns separated. However, it is not necessary for all columns to contain information on each line.

4) After you have entered the program, you must save it. Press FCTN 9 (or escape key) twice to return to the Editor Selection Screen. Then press SAVE and answer (Y)es to the VARIABLE 80 FORMAT (Y/N) question. Next place a formatted diskette in another drive or replace the system diskette if you have only one drive and type in a file name for the program. This is the SOURCE CODE file (not runnable as is) and should be coded as such when you type in the file name.

ASSEMBLING THE SOURCE FILE

5) Next, bring up the Editor/Assembler Selection List (press escape key if you are in the Editor) and press 2 to ASSEMBLE. You should have the system diskette in the appropriate drive again before answering the LOAD ASSEMBLER ? (Y/N) question. After pressing (Y)es you will be asked for the source file name which should be the name given above. Next, you will be prompted for the object file name. This will be the name of the OBJECT CODE file created by the assembler and should be coded as such.

6) Give a file name for the LIST File which will contain a listing of the errors encountered along with other information such as line numbers, memory locations, machine code and source program statements. You can use a printer name or disk name, but a name is required even if you don't want a listing.

7) The next prompt is for the OPTIONS. They are R for prefixes to be included, L to produce a listing (if you really do want it), S for a symbol table, and C to save the object file in compressed format. If you aren't sure what to use then type RLSC and see what happens.

8) Next, you should get the message ASSEMBLER EXECUTING at the bottom of the screen, wait for the PRESS ENTER TO CONTINUE message to appear. If you selected a printer for the listing then you should have that in front of you by now. If you chose to send the listing to a disk instead, you can examine it by calling up the EDITOR (see above) and loading the listing into it.

9) If you have any errors in your source program, they will appear in the listing. you must go back and correct these by loading the source prgram into the EDITOR and resaving with the corrections. In turn, you must now reassemble the source program. Continue this procedure until you get an error-free listing.

10) Finally go back to the Editor/Assembler Selection List and select 3 for the LOAD AND RUN option. Give the object program file name at the prompt. If everything is as it should be, the program should be up and running.

Some additional points to remember. Unless your program includes a way to terminate, you will have to shut off the computer to stop the program. Additionally just because the listing is free of errors, does not mean the program will run error free. There may be logical errors, in addition to syntax errors, which the assembler might not pick up.

ANTFARM
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The AntFarm is now on-line 24 hours/7 days a week 300/1200 BAUD. The phone number is 889-6930. Through the use of a modem, an RS232, software and a computer, you can leave messages, get answers, obtain programs, pass programs to others, help solve problems, get your problems solved, find out about new developments, ...

MORE FAIRWARE
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If you picked up a copy of the 'complete' Fairware list at the last meeting ($1.50), mark the following items available from the SW 99ers library. If you didn't get a list come to the next meeting.

44. * CALENDAR PROGRAM - Richard Bailey, 68A Church St, Gonic NH 03867. Makes a 'useable' size calendar for any year you'd be interested in. It's a simple program of 168 sectors - full of 9 programs and files, 7 different calendars!

130. * WORD-COUNT - Jim Jasielski, Rt 1 Box 826, Sanbornville NH 03872. A program that accurately counts your words in your word processor. For writers with 2500 word assignments this is wonderful. Counts a 2,000 words article in -30 seconds!

146. * GENE III - Walter Davies, 17718 Orchard Lane, Salinas CA 93907. GENE III is a geneological program used to list, search and print a family tree. ExBasic, disk system and printer required.

175. * SUPER BETTER BANNERS - Bernard Falkin & Jeff Asenas, 326 Glen Way, Fillmore CA 93015. Allows creation of horizontal or vertical banners. Banner text can be printed in 81 different sizes, (9 character sizes high X 9 charcters sizes wide). Choice of foreground and background characters for printing banners. Ability to load custom fonts, (font disk#1 included), or create your own. Much more! Donorware, not Fairware. Send $15 for complete user support.

WHAT???
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From Club 99 - Attleboro, MA - Apr '87

Do you often show off your 99/4A to your friends? Do they often touch things they shouldn't? I had one person who asked, "What does this lighted, red switch do?" and he promptly shut off my main power switch. (I'm not kidding.) To prevent this from happening to you I suggest you force all visitors to read the following notice:

ACHTUNG

ALLES TOURISTEN UND NOT-TECHNISCHEN LOOKEN PEEPERS! DAS MACHINE CONTROL IS NICHT FUR GERFINGERPOKEN UND MITTENGRABBEN. ODERWISE IS EASY SCHNAPPEN DER SPRINGENWRK, BLOWENFUSE UND POPENCORKEN MIT SPITZENSPAKEN. DER MACHINE IS DIGGIN BY EXPERTEN ONLY. IS NICHT FOR GERVERKEN BY DAS DUNKOPFEN. DAS RUBBERNECKEN SIGHTSEENEN KEEPEN DAS COTTEN PICKIN HANDS IN DAS POCKETS. SO RELAXEN UND WATCHEN DAS BLINKENLIGHTS.

I found this on a poster on the computer room wall at school. Who wrote it? I'll never know.

-Edgar Lecuyer, Club 99 Editor-

BUYER'S GUIDE

The following information is provided as a service to our members. The items listed are for sale by the individuals indicated and are subject to prior sale. The group assumes no responsibility for items listed and makes no claims as to their condition or interface capability with the TI-994A computer. Only computer related items will be accepted for publication in this newsletter.

TI-99/4A Console $50; TI LOGO $15; (plus the following cartridges) Car Wars; Tax/Investment Record Keeping; Attack; Number Magic; Tombstone City; and TI Invaders. Documentation and cables included. Call and make an offer John 296-8198.

TI-99/4A Console, Cassette cable and two games $60. Call Ejaz 623-8257.

2-TI-99/4A consoles $50 ea, *2 CDC Floppy Drives DSDD half height $110 ea, Multiplan $30, *Speech Synthesizer $33, P-Code Card w/documentation & disks $90, *3 console power supplies(the good ones) $5 ea. All items are new/unused. *These items are not negotiable. Call Dick 790-4779.

TI Program Cassette Recorder w/cable $25. Call Mike 722-8620 evenings and weekends.

Star Micronics Thermal Printer w/4+, 100' rolls of Thermal paper & instruction book. Requires parallel RS232 hook up - $50 o.b.o. Call J.F. Hale 296-5602 evenings.

TI 32K Memory Card for P-box $75, Full height SS Disk Drive PHP 1240 $40. Modules: Tax Investment Record Keeping $4, Household Budget Management $4, Personal Real Estate $4, Home Financial Decisions $3, Personal Report Generator $8, Personal Record Keeping $8. Book - Compute!'s Beginner's Guide to Assembly Language $8. Call Jack or BJ 747-5046.

Sakata SG1000 high resolution green monitor composite video w/video cable $60. Call George 742-3091.

TI-99/4A Console, TI Joysticks, Thermal printer, Cassette Recorder, 12" TV(BW), Selling all for $125 or best offer. Call Paul Garrison 747-3884 (Days) or 573-0572(Evenings).

FOR MEMBERS ONLY: These items the group has for sale. They are used.

$30 TI-99/4A Console	
$50 P-code Card(no docs or disks)	$8 Personal Report Generator
$3 The Attack	$8 Personal Record Keeping
$4 Jawbreaker 2	$4 Tax Investment Record Keeping
$3 Tombstone City	$8 Return to Pirate's Isle
$8 Terminal Emulator 2	$8 PIO/RS232 cable (Epson type)
$3 Home Financial Decisions	$3 Household Budget Management
$4 A-MAZE-ING	$3 Munch Man
$3 Cassette and monitor cables	$7 Music Maker