

BEDIT

**A Neat BASIC Editor For The
Sorcerer Computer**

By E.E. Bergmann

A
product
of



QUALITY SOFTWARE

-8: 1
-7: 2
-6: 4
-5: 8
-4: 16
-3: 32+128
-2: 64+128
-1: 128+64+32



SENTIN - Recreate sentinel character

10 POKE -8,2

20 " -7,4

30 " -6,8

40 " -5,16

50 " -4,32+128

60 " -3,64+128

70 " -2,128+64+32

80 END

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INTRODUCTION

BEDIT adds important editing features not available in the Sorcerer's BASIC ROMPAC. This software has been developed by E. E. Bergmann, Physics, Bldg. #16, Lehigh University, Bethlehem, Pennsylvania 18015. Written in machine language and residing in the first 256 bytes of memory, BEDIT allows you to edit your BASIC programs by modifying text on the video screen.

LOADING INSTRUCTIONS

BEDIT will run on any size Sorcerer Computer. You must have the BASIC ROMPAC inserted before you turn on your computer. To run BEDIT, follow these directions.

When you are in BASIC as indicated by a READY prompt, type

BYE<CR>

to exit BASIC and enter the Sorcerer Monitor. Rewind the tape and fast forward about one second. Type LOG, press play on the recorder, and press the RETURN <CR> key on the Sorcerer. The program should load in about 5 seconds after the FOUND message is displayed.

When loading is complete, a flashing cursor will appear on the screen, and you will be back in BASIC. The flashing cursor indicates that all normal BASIC commands plus the BEDIT features are available. At this point you may load a BASIC program with a CLOAD command. It is important that such a BASIC program not have a machine language subroutine that resides in memory in the range 0000-00FF because that is where BEDIT is located. It is acceptable to load BEDIT either before or after you load your BASIC program.

Should BEDIT fail to load correctly, an adjustment in volume setting may be necessary. Note the volume setting that loads the program correctly, and retain it for future reference. There is a second copy of BEDIT on the tape following the first.

If the tape is defective, we will replace it at no charge if returned to Quality Software along with proof of purchase within ninety days of the date of purchase.

USING BEDIT

You may enter BASIC code from the keyboard and CLOAD and CSAVE BASIC programs just as you have done without BEDIT. However, now you have the additional capability of modifying BASIC statements without retyping the entire line or lines.

If you keep in mind the following general rules, you will understand how BEDIT works.

1. All keypresses work as usual except that the SKIP key and the SHIFT arrow keys have special meaning to BEDIT and are not passed to BASIC.
2. To edit BASIC lines with BEDIT, first list the subject line or lines on the video with a LIST command. Use CTRL C to stop the listing before the subject lines scroll off the screen.
3. Typing SKIP followed by a character advances the cursor to the next occurrence of that character or to the end of the line, whichever comes first. All characters that are skipped over, exclusive of the character over which the cursor stops, are passed to BASIC. This has precisely the same effect as retyping the characters that are "SKIPed".
4. Pressing the SHIFT and RUB keys causes BASIC to "undo" the character to the left of the cursor.
5. Cursor movement keypresses are not input to BASIC, and none of the characters over which the cursor moves when using the SHIFT arrow keys is input to BASIC.

DISABLING BEDIT

You may disable BEDIT at any time by using the following sequence of commands:

```
BYE<CR>      :Enter the Sorcerer Monitor
SET I=K<CR>  :Set input to standard keyboard
SET O=V<CR>  :Set output to standard video
PP<CR>       :Return to BASIC
```

ENABLING BEDIT

It is possible to enable BEDIT once it has been loaded and you have disabled it. However, this should be done cautiously. If you have failed to load BEDIT in the first place, or if your BASIC program has somehow corrupted the BEDIT program, then you could crash your BASIC program by following the reentry steps below. Normally the following commands should cause BEDIT to resume control:

BYE<CR>	:Enter the Sorcerer Monitor
GO 0<CR>	:Execute BEDIT
PP<CR>	:Go back to BASIC

LINES WITH 64 OR MORE CHARACTERS

BEDIT places an invisible "sentinel" at the end of each line. The sentinel serves to stop the transfer of video data to BASIC when using the SKIP and character keys. If a character resides in column 64, a sentinel is placed in this column causing the character to be blanked out. Your BASIC program will not be changed by the presence of the sentinel in column 64 unless you edit such a line.

It is recommended that you not attempt to edit lines with BEDIT that are 64 or more characters in length. Such lines can be created in BASIC by use of the BASIC key words. However, it is possible to write too many characters into the BASIC input buffer and to "crash" your program. This problem occurs with or without BEDIT, but it is more likely to occur with BEDIT.

Here is an example of how to crash BASIC by inputting too many characters into the input buffer. Just after BASIC is powered up and before you have loaded a program, try entering a line in the following fashion. Type '10 ' followed by an 'A'. Hold down the REPEAT key until the line is almost filled with consecutive A's. Then press the SHIFT and left arrow keys. Hold down the REPEAT key again until the cursor is almost back to the first A. Press the 'B' key, and hold down the REPEAT key until the line is filled. Then press RETURN. This procedure will usually cause BASIC to crash.

USE OF CHARACTER CODE 255

BEDIT constructs a blank character to use as the "sentinel". The character used has character code 255. This is the character that is displayed when the SHIFT and GRAPHICS keys are held down and the "=" key on the numeric keypad is pressed. The eight bytes that define this user defined character are located at FFF8-FFFF in the Sorcerer's memory and are referenced from BASIC with PEEK'S and POKE'S to locations - 8 to -1. If you use this character in your BASIC program, you may see the sentinel character displayed on the screen when you list the program.

As an experiment, it is recommended that you change some of the values at locations -1 to -8 with POKE statements. For instance, the direct command POKE -1,255 <CR> will cause the sentinel to appear on the video as an underscore character. Your BASIC program will not be affected, and you will be able to see the sentinel wherever it appears.

USING BEDIT — CURSOR MOVEMENT

You may move the cursor anywhere on the screen by holding down the SHIFT key and pressing the arrow keys that reside on the numeric keypad. You will find that the use of the REPEAT key will greatly speed the movement of the cursor. It is important to remember that the cursor movement keypresses are not passed by BEDIT to BASIC. That is, as far as BASIC is concerned, the cursor movement keypresses are not input, nor are any of the characters passed over input.

USING BEDIT — MODIFYING CHARACTERS

To change a character in a BASIC program, first list the line you wish to change. Use CTRL C to stop the listing before the subject line is scrolled off the screen. Move the cursor to the first digit of the subject line. Press the SKIP key followed by the character you wish to modify. The cursor will move to the first occurrence of that character on the subject line. If this is not the desired character, repeat the SKIP and character keypress sequence until the cursor reaches the desired character. Then type the desired replacement character. Press the SKIP key once more and follow by pressing the RETURN key. This will move the cursor to the end of the line. Press the RETURN key a second time and the desired change will be effected.

USING BEDIT — DELETING CHARACTERS

To delete a character from a line, place the cursor at the first digit of the subject line. Use the SKIP and character keys to move the cursor to the character you wish to delete. With the aid of the SHIFT and right arrow keys, move the cursor past the character you wish to delete. Then use the SKIP and RETURN keys to move the cursor to the end of the line. Finally press RETURN a second time to finish the editing of that line.

Note carefully that if you use the SHIFT-RUB keys to delete a character, the cursor moves back one space. This means that if you follow the SHIFT-RUB by a SKIP and RETURN sequence, the space will be inserted in place of the character deleted. To avoid placing a space in the text at that position, use the SHIFT and right arrow keys to move the cursor one space to the right.

USING BEDIT — INSERTING CHARACTERS

To insert a character into a line, place the cursor at the first digit of the subject line. Use the SKIP and character keys to move the cursor to the character just following the desired insertion. Use the SHIFT and left arrow keys to move the cursor back one character (more than one character if more than one is to be inserted). Type the desired character (or characters) to be inserted (So what if you are typing over characters that you have already passed to BASIC). Then finish the line using the SKIP and RETURN keys. Note that in this case the line as it appears on the screen is not what is entered into your BASIC program. To convince yourself that the insert operation has been properly executed, LIST the line after completing your insert.

USING BEDIT — RENUMBERING LINES

To renumber a line, list the line on the video and position the cursor at the leftmost digit of the line number. If the new line number has the same number of digits as the old, you may type in the new line number over the old, press the SKIP key, the RETURN key, and the RETURN key again.

This will cause the line to have a new line number, but the same line will still exist at the old line number. To complete the renumbering of the line, you must delete the old line. This may be done by typing the old line number followed by a RETURN. If a large number of lines is to be deleted, you may speed the process by following the directions in the next section of this booklet.

If the new line has fewer digits than the old, type the new line number over the old, use the SHIFT and right arrow keys to move the cursor to the first blank character following the line number, and finish the line with the SKIP and RETURN keys. Finally, delete the old line.

If the new line number is to have more digits than the old, you may type the new line number on the line above the subject line. Then with the SHIFT and arrow keys move the cursor to the first blank character following the line number of the subject line. Finish the line with the SKIP and RETURN keys. Then delete the old line.

Of course, in renumbering lines, you must change all references such as GOTO and GOSUB statements that refer to the old line numbers.

USING BEDIT — DELETE A SERIES OF LINES

A BASIC line may be deleted by typing the line number followed by a RETURN. With BEDIT, it is quite easy to delete a large number of lines. To do this, LIST on the video a group of lines that you wish deleted. Position the cursor to the beginning of the first line that you wish to delete. Press SKIP followed by the SPACE BAR and RETURN. The line will be deleted. If you wish to delete the next line, the cursor is already positioned at the beginning of that line. So pressing the SKIP, SPACE BAR, and RETURN keys successively will delete the second line. This process may be repeated, and the cursor may be moved down over lines that you wish to retain. If you should make an error and delete a line that you had intended to retain, you may easily recover if the line has not yet been scrolled off the screen. Just move the cursor to the beginning of the line. Press the SKIP key and the RETURN key twice, and the line will be read back into BASIC.

EXAMPLES

Suppose you have entered the following line into your BASIC program.

```
200 IF X>Y THEN 410: GORO 90
```

You would like to change 'GORO' to 'GOTO' and 90 to 100. To do this, position the cursor to the first digit of the line number. Press SKIP and the 'R' key. This will enter all of the characters up to the letter R into BASIC just as if you had retyped them. Then type 'T', press the SKIP key, and press the '9' key. The cursor will move to the 9. Type in '100' and press RETURN. The new line will be in your BASIC program. You may verify this by LISTing the line again on the video.

Suppose you wish to insert the statement $X=X+1$: after the first colon in line 200. To do this, position the cursor to the first digit in the line, press the SKIP key and then the ':' key. The cursor will move to the first colon. Press the SKIP and SPACE BAR keys to move the cursor one more position to the right and at the same time enter the colon into BASIC. Now use the SHIFT and left arrow keys to move the cursor six characters to the left. This will move the cursor but won't add any characters to the BASIC line or subtract any characters from it. Type in $X=X+1$: (six characters long), press the SKIP and RETURN keys, and press RETURN again. This will finish the editing of the line. If you have followed these steps, the line will appear on the video as:

```
200 IF X>Y THENX=X+1: GOTO 100
```

To verify that you have correctly edited the line, LIST the line on the video again. The edited line should appear this way.

```
200 IF X>Y THEN 410:X=X+1: GOTO 100
```

It is useful to be aware that the insertion of several characters may be accomplished by typing them in above or below the line being edited. This technique requires a little more cursor movement, but it has the advantage of being easier to read while the line is being edited.



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