



REQUIRED EQUIPMENT: TI Extended BASIC

The TI-99/4A is the machine on which *Snap-Calc*TM was originally designed. The TI version differs from the other versions because of the 99/4A's keyboard layout and screen size incompatibilities.

The Keyboard

The TI keyboard does not have separate function keys. On the 99/4A, you select functions by pressing the [FCTN] key in the lower right corner of the keyboard, in conjunction with the numeric keys. The functions perform as follows:

Press [FCTN]	for FUNCTION
1	Load data from disk or cassette.
2	Save data to disk or cassette.
3	Cancel entry/erase.
5	Calculate the logic model.
6	Print report.
7	Logic entry mode.
9	Exit <i>Snap-Calc</i> TM .

In addition, several other keys work with the [FCTN] key to move the cursor:

KEYS	FUNCTIONS
[FCTN] E	Move the cursor up 1 cell.
[FCTN] S	Move the cursor left 1 cell.
[FCTN] D	Move the cursor right 1 cell.
[FCTN] X or [ENTER]	Move the cursor down 1 cell.

The [CTRL] key is useful for moving the entire window of the spreadsheet.

Press [CTRL]	for FUNCTION
E	Move up 5 cells.
S	Move left 3 cells.
D	Move right 3 cells.
X	Move down 5 cells.

Screen Size

The 99/4A is capable of printing only 28 columns, using the PRINT and DISPLAY AT commands. This limits screen displays of row labels to nine characters wide, and numeric entries to seven characters wide—including a decimal point.

Data Storage

The 99/4A is capable of saving and recalling information from both a cassette recorder and a disk drive. Either device will work with this program. When you select either SAVE or LOAD, you must decide whether you want to work with the spreadsheet data or the logic model, which are kept in two different files.

After making your selection, you are prompted to input the device name. If you are using a cassette, simply type CS1 and press [ENTER]. For a disk drive, enter DSK1 or DSK2. It is not necessary to enter the period separator or the file name at this time, because the computer will just ignore them.

If you selected a device other than a cassette, you will also be prompted for the file name. The only exception to this is when you are saving the logic model. In this case, if you have already assigned a logic name, the logic model will automatically use that name for the file. If no name has been assigned, or you are loading the logic model, you will be prompted for the file name. The file name will then be used as the logic model name. When saving or loading data you are always asked for the file name.

Reports

The 99/4A can work with a maximum of only 13 columns because of its memory limitations, so this program is designed to print all 13 columns on one page. To do this, it is necessary to set the printer to condensed mode, which allows an 80-column printer to print 132 columns. This is done in line 1440. CHR\$(15) sets condensed mode on most printers. If your printer requires a different code to enter condensed mode, however, you may need to change line 1440 to your printer's

specifications. If you are using a letter-quality printer, or one of the less expensive dot matrix printers, you may not be able to print in condensed mode.

Logic Mode

The maximum string length on the 99/4A is 127 characters. You are limited to this size when you enter commands. If the calculation you enter gets too big, it should be broken down into smaller parts.

It's in this mode that you set up your logic model. It can include row labels, a totals column, a last column, a name for your model, and row equations. If you assign a row name longer than nine characters, it will be truncated. All spaces are removed. If you want spaces in your row name, you can enter them directly in Data Entry mode.

The maximum number of rows you can use for data or equations is 20, and the maximum number of columns is 13. But, if you run the program with the 32K memory expansion connected, you could easily modify the program to accept more columns and rows. The modifications are simple using the following procedure:

In line 190 change the value assigned to A to the number of rows you want. Then change the value assigned to B to reflect the number of columns you want. You also need to change the values used to dimension the arrays in this same line. D\$() and E\$() need to be expanded to the number of rows you wish to use. The J() array should have its first value set to the number of rows you wish to use, and the second value set to the proper number of columns.

**SNAP-CALC (TI-99/4A)
Explanation of the Program**

Line Nos.	Explanation
100-160	Program header.
170-200	Initialize program variables and functions.
210-280	Main control loop for data entry mode.
290-300	Exit program routine.
310-320	Subroutine to clear an entry and display the new value.
330-470	Subroutine to calculate the logic model.
480-490	Subroutine to return the value to be used in the equation.
500-690	Control loop for logic entry mode.
700	Subroutine to return a numeric value from the entry string.
710	Subroutine to delete the cursor.
720-750	Subroutine to take entry string apart by placing each word into a cell of the FS() array.
760-910	Subroutine to rebuild the entry string for listing to the screen or printer.
920-1090	Subroutine for file handling.
1100-1120	Builds the row names from the entry string.
1130-1140	Creates a cell value for the spreadsheet during data entry mode.
1150-1160	Control loop repaints the data entry screen.
1170	Routine to display the current mode.
1180-1190	Input the logic entry string.
1200	Direct output to either the screen or the printer.
1210	Key scan routine.
1220	Relocate the cursor.
1230-1250	Key scan routine waits for a different key to be pressed before continuing.
1260-1300	Display the data entry screen.
1310-1390	Move the cursor up, down, left, and right one position.
1400-1490	Print the report.
1500-1520	Image formats for printing single items.
1530-1540	Clears the logic model from memory.
1550-1570	Error routine.
1580-1590	Image formats for a full screen.
1600-1620	Open and close the printer port.

HCM

For the Key-In listing refer to the Contents of HCM PROGRAM LISTINGS on page 67.

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