Classic Calculator Emulator +

HP9100B Instructions

Best viewed in 1920 x 1080 screen resolution. (Minimum is 1280 x 720)

Disclaimer

Menu

The menu is activated by right clicking on the calculator

Menu Items

Printer Roll	Print	Print the printed paper listing
	Discard	Discard the printed paper listing
	View	View the printed paper listing
Magnetic Card	New	Places blank card in reader
	Swap	Swap card A and B sides
	Eject	Eject card from reader
	Load	Load a magnetic card file
	Save	Save a magnetic card file
	Card A Write Protect	Toggle write protect card A
	Card B Write Protect	Toggle write protect card B
Peripherals	Plotter	Activate plotter
	Marked Card Reader	Activate marked card reader
	Marked Card Editor	Open marked card editor
View Program Memory		View the calculator program memory
Reset Memory	Reset Now	Resets the calculator memory
	Reset On Start Up	Resets memory on program start
Sounds		Toggle sound effects on/off

Active Mouse Positions
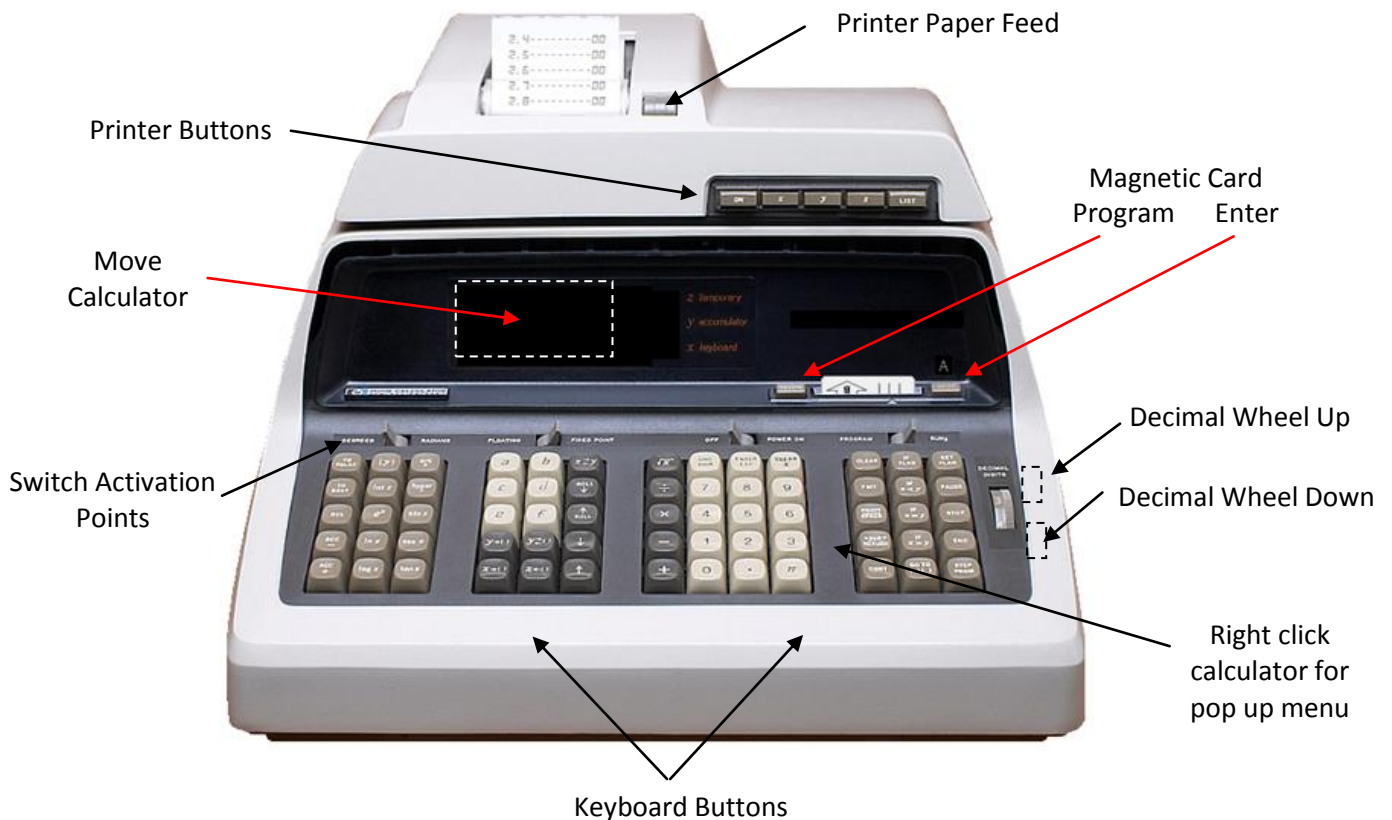
Using The Magnetic Program Card

Write Protected — Card Side Indicator
Record — Enter

Right click the calculator to open the popup menu. Select [Program Card] [New]
A new card will be inserted into the card reader slot.

To record the card, set the starting address Eg GO TO 0 0, then click the card [Record] Button
To record on side B, open the popup menu and select [Program Card] [Swap].
Side B should be active.
To record the card, set the starting address Eg GO TO - 0 0, then click the card [Record] Button

To read from a card, select the required side, set the starting address and click the card [Enter] button.
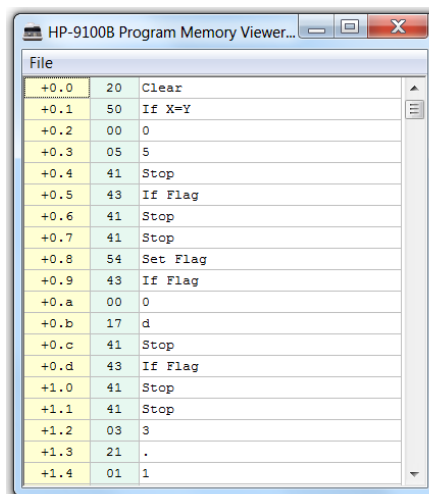
Cards can be saved to a file or loaded from a file if required.

Both sides of the card will be saved or loaded, but will not appear in memory unless the card is read using the [Enter] button.

Use the popup menu to select [Program Card] [Open] [Save].

To move the calculator, click in the centre of the display area and drag the calculator.

Viewing Program Memory

With the calculator turned on, this window will display the contents of the memory.

File Menu
         New   Clear all memory to zero
         Copy To Clipboard   Copy the memory to PC clipboard as text
         Load As Text   Load a program saved as a text file*
         Save File As   Text   Save the program as a text file
                              Optical Card   Save the program in Optical Card Format
         Send To Memory   Sends the data to the 9100B memory
         Print Until End   Print program memory until END found
         Print All   Print all program memory

*NOTE: Loading a file does not automatically send the data to the 9100B memory.
                Use the [Send To Memory] menu item to do that task.

Text File Format

The editor can load a text file in the following format:

         AddressOctal Code   Text
         +0.0   50   If X=Y

The minimum data required is the octal code or the code text.

Octal only example   Text Only Example

         50   If X=Y
         00   0
         05   5

Both examples input the following to memory...

Address   Octal Code   Text
+0.0   50   If X=Y
+0.1   00   0
+0.2   05   5

If the address is given then that data will set the Program Counter.

+0.0   50   If X=Y   +0.2   50   If X=Y
+0.1   00   0   +0.1   00   0
+0.2   05   5   +0.0   05   5

Address   Octal Code   Text   Address   Octal Code   Text
+0.0   50   If X=Y   +0.0   05   5
+0.1   00   0   +0.1   00   0
+0.2   05   5   +0.2   50   If X=Y

You can modify any memory location by overwriting the text column. The text will be checked and an error
flagged if it is not valid.

After modifying any of the code, it can be transferred back to the calculator memory if required.

Marked Card Editor

Right click the calculator to open the popup menu. Select [Peripherals] [Marked Card Editor]
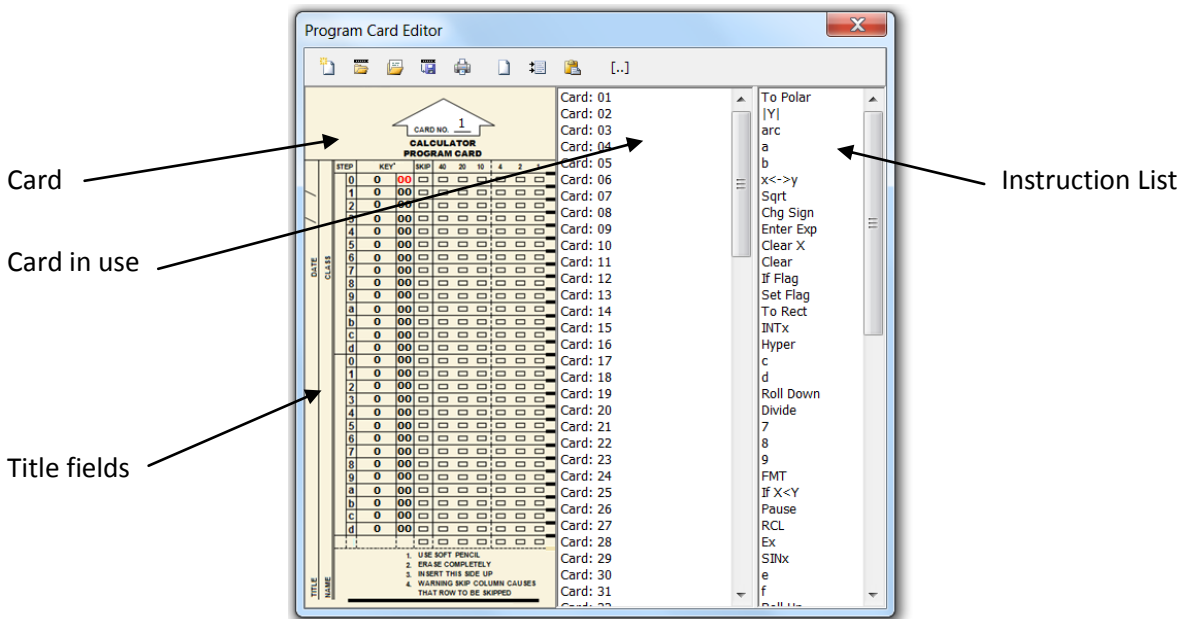
Menu Buttons

New	Create a new card stack file
Open	Open a saved card stack file
Open Text	Open a program file saved in text format
Save	Save a card stack file
Print	Print the card stack – 6 cards per page
Clear	Clear the current card
Titles	Set the card Name, Title and Date for the card stack
Clipboard	Copy the instruction set to the PC clipboard in text format

Enter Program Information
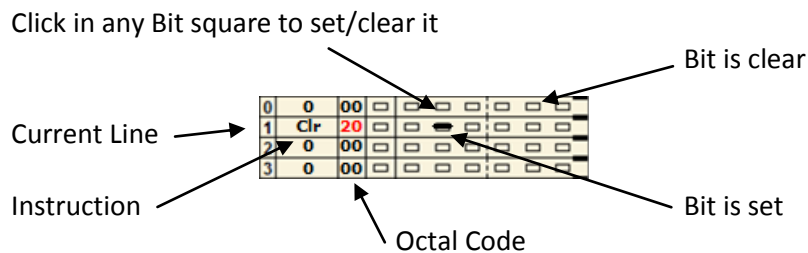
To set/clear an entire row, right click the required row.

To select a row, double click the required row. The code column is highlighted in red.

To the right of the screen is a list of valid instructions.
To enter an instruction to the selected row, double click the instruction.

If a name, title and date are entered they will appear printed on the left side of the cards.

Notes

The actual mathematical algorithms used in the original calculator are only simulated in this application and are performed using the internal PC algorithms. As such, some mathematical results will be slightly different to the original calculator results, but the differences should be limited to the guard digits of the mantissa.

Because of these differences, some original programs may not function as expected.

For example, the HP9100B Diagnostic Program* will fail when executing sections of the program that do SIN -> ARC SIN, COS -> ARC COS, HYP SIN -> ARC HYP SIN etc.

It only fails because the results of these calculations are slightly different to the original. You can use the CONT key to bypass the errors and the diagnostics will continue.

Non BCD Numbers.

It is possible with the 9100B calculator to use programming data as numerical data, however this information is not normal BCD format and results will not be valid. A 9100B example: 9 + b = 5.

When this simulator has to use numerical data greater than 9, it will treat that digit as zero.

Files

Some example files are supplied with this project

Printer Test	Magnetic card file	Printer Diagnostic
9100Diagnostic	Magnetic card file	HP9100B Diagnostic*
Plot Diagnostic	Marked card file and as a text file	Plotter Diagnostic