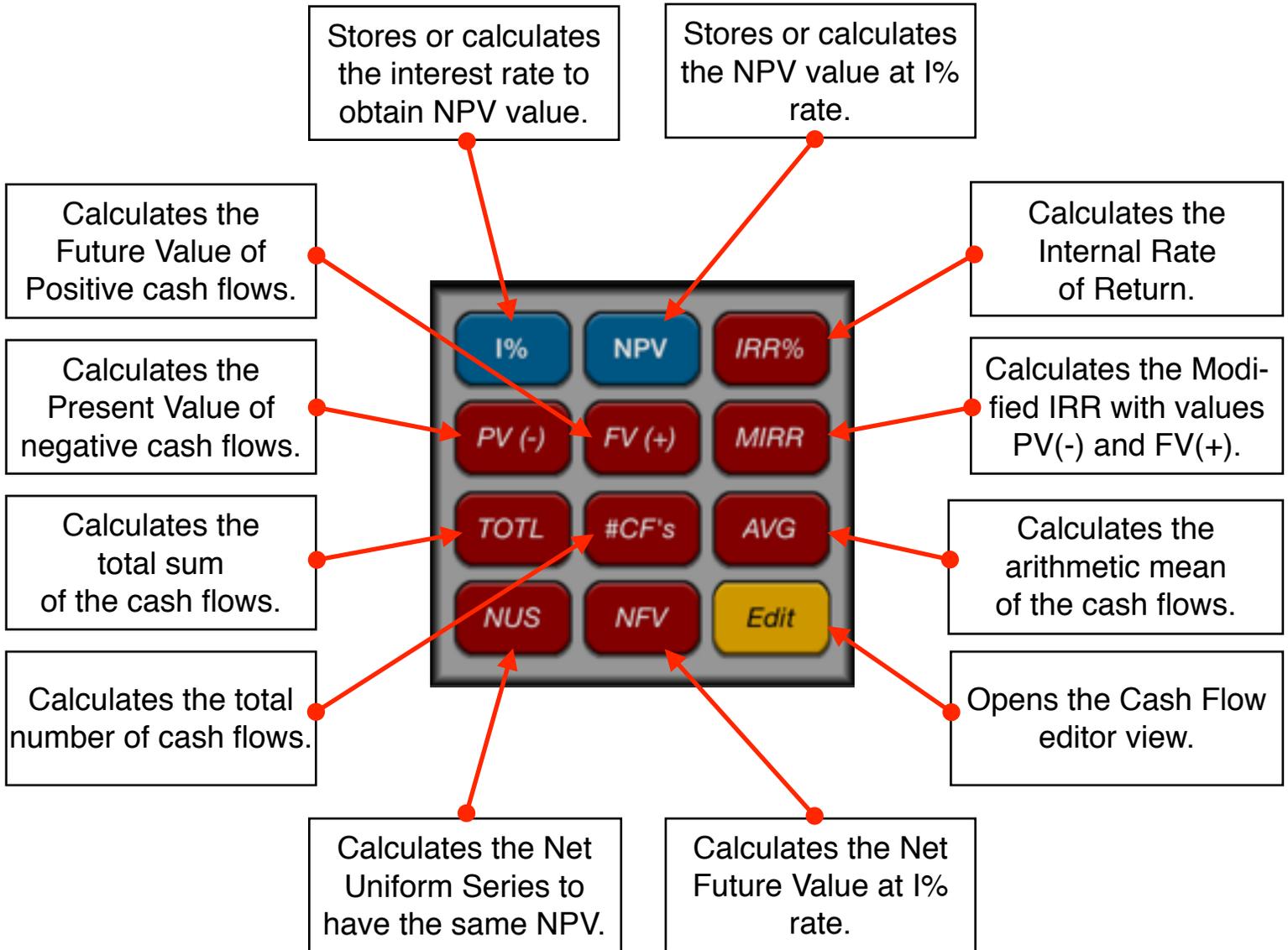


Cash Flow Calculator Tool

This tool is an expansion of the the original HP-11C calculator. To show it, touch the **[OPT]** and select the “CFLO Calculations” option.



The tool manages and does calculations using a series of cash flows (CF) of unequal amounts that occur at regular or variable intervals. To enter the cash flows, the tool provides a special designed editor. Simply touch the **[Edit]** button and the “CFLO Editor” will be shown.

All the calculations are performed over the list entered in the Cash Flow Editor.

Cash Flows Editor View

The screenshot shows a mobile application interface for editing cash flows. It features a table with columns for index (#), value (CFj), and repetitions (Nj). Below the table is a keypad for entering numbers and a set of action buttons (ADD, INS, DEL, CLR, Load, Save, Done). Red arrows point from text boxes to specific elements in the interface.

#	CFj	Nj
#0	-9,000.00	1
#1	500.00	3
#2	1,000.00	4
#3	0.00	1
#4	1,500.00	3

Callouts and their targets:

- Cash Flow Index**: Points to the '#' column header.
- Cash Flow value**: Points to the 'CFj' column header.
- Selected value**: Points to the value '1,500.00' in row #4.
- Consecutive number of repetitions**: Points to the 'Nj' column header.
- Insert a new CF before the selected CF**: Points to the 'INS' button.
- Adds a new CF at the end of the list**: Points to the 'ADD' button.
- Delete the selected Cash Flow entry**: Points to the 'DEL' button.
- Clear the selected cell**: Points to the 'CLR' button.
- Number keypad and editing**: Points to the numeric keypad area.
- Loads a previously saved CF list file**: Points to the 'Load' button.
- Saves the current CF list in a File**: Points to the 'Save' button.
- Close the view and get back to calculator**: Points to the 'Done' button.

The editor has three areas: the data listing, the keypad to enter numbers and the actions buttons.

Data Listing:

- Shows the current content of the cash flow list.
- Touch a row of the list to select it. The row must exist to allow the selection (see **[ADD]** below).
- Touch it again to enter in editing state.

Keypad:

- The keyboard contains the common 15 keys for number entry including the change sign, exponent and backspace.
- A number in edition is actually entered in the list when the **[Input]** key is pressed

Action Buttons:

[ADD]	Creates a new cash flow row at the end of the list.
[INS]	Inserts a new cash flow entry above the current line.
[DEL]	Deletes the current cash flow and shift up the list.
[CLR]	Clears the current cash flow value data samples to 0.
[Load]	Opens a file picker to load a previously saved data file.
[Save]	save the current data list to a file.
[Done]	Closes the editor and get back to the calculator with the Cash Flow Calculation Tool.

Example: An Investment with Grouped Cash Flows.

You are considering an investment that requires a cash outlay of \$9,000, with the promise of monthly cash flows as shown. Calculate **IRR%**. Also find the cash flows sum total and, **NPV**, **NUS** and **NFV** at an annual interest rate of 9%.

Period	Amount	Period	Amount
0	(\$9,000)	6	\$1,000
1	\$500	7	\$1,000
2	\$500	8	\$0
3	\$500	9	\$1,500
4	\$1,000	10	\$1,500
5	\$1,000	11	\$1,500

Solution: First, enter the cash flow data:

Keystrokes	Description
[Edit]	Shows the Cash Flow Editor view.
[Add]	Adds a new cash flow entry.
“9000” [+/-] [INPUT]	Enters the initial investment (Cash-Out).
[Add] “500” [INPUT] “3” [INPUT]	Adds a new entry and enters the cash flow value. Enters the cash flow consecutively repeats.
[Add] “500” [INPUT] “4” [INPUT]	Adds a new entry and enters the cash flow value. Enters the cash flow consecutively repeats.
[Add] “0” [INPUT]	Adds a new entry and enters the cash flow value.
[Add] “1500” [INPUT] “3” [INPUT]	Adds a new entry and enters the cash flow value. Enters the cash flow consecutively repeats.
[Done]	saves the current cash flow list and, get back to the calculator with the Cash Flow Calculation Tool.

Now, proceed to perform the requested calculations following the next sequence (RPN mode):

Keystrokes	Description
[IRR] “12” [x]	Calculate the annual internal rate of return . IRR = 18.39 (% per year)
[TOTL]	Calculate the cash flows sum. TOTL = 1,000.00

Keystrokes	Description
Type "9" [ENTER] "12" [÷] [I%]	Type 9÷12 as interest rate and touch "I%" to enter it. I% = 0.75 (% per month)
[NPV]	Calculate the net present value . NPV = 492.95
[NFV]	Calculate the net future value . NFV = 535.18
[NUS]	Calculate the net uniform series . NUS = 46.86

What is the interest rate required to obtain a net present value of \$500.00?

Keystrokes	Description
Type "500" [NPV]	Enters the required net present value . NPV = 500.00
[I%] "12" [x]	Calculate the rate of return . I% = 8.87 (% per year).

Example: Modified Internal Rate of Return.

An investor has an investment opportunity with the following cash flows:

Period	Amount	Repetitions
0	(\$180,000)	1
1	\$100,000	5
2	(\$100,000)	5
3	\$0	9
4	\$200,000	1

Calculate the **MIRR** using a safe rate of 8% per period and a reinvestment (risk) rate of 13% per period.

Solution: (touch the **OPT** key until any tool view is hidden and the calculator interface is fully visible).

First, enter the cash flow data:

Keystrokes	Description
[Edit]	Shows the Cash Flow Editor view.
[DEL].....	Press the [DEL] key until the list is empty.
[Add]	Adds a new cash flow entry.
“180000” [+/-]	Enters the initial investment (Cash-Out).
[Add] “100000” [INPUT] “5”	Adds a new entry and enters the cash flow value. Enters the cash flow consecutively repeats.
[Add] “100000” [+/-] [INPUT] “5”	Adds a new entry and enters the cash flow value. Enters the cash flow consecutively repeats.
[Add] “0” [INPUT] “9”	Adds a new entry and enters the cash flow value. Enters the cash flow consecutively repeats.
[Add] “200000” [INPUT]	Adds a new entry and enters the cash flow value.
[Done]	saves the current cash flow list and, get back to the calculator with the Cash Flow Calculation Tool.

Now, proceed to perform the requested calculations:

Keystrokes	Description
Type “8” [I%]	Enters the safe rate value in “I%”.
[PV(-)]	Calculate the present value of negative cash flows only. PV(-) = -451,737.14
Type “13” [I%]	Enters the risk rate value in “I%”.
[FV(+)]	Calculate the future value of positive cash flows only. FV(+) = 4,252,936.45
[MIRR]	Calculates the MIRR . MIRR = 11.86%