



## Debugging

VisUAL provides step-by-step debugging functionality as well as the ability to execute code to the end of the program.

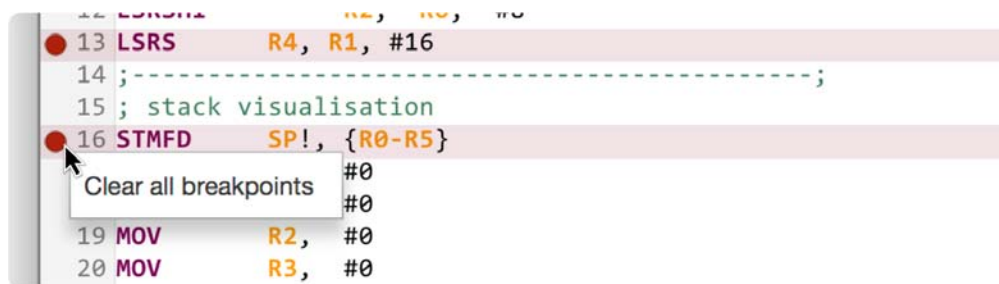
### Line highlighting modes

Depending on the execution status of a line, it will be highlighted differently.

Execution Status	Highlight colour
Normal	Yellow
Predicated true	Green
Predicated false	Red
Link register instruction	Purple
Branch destination	Grey

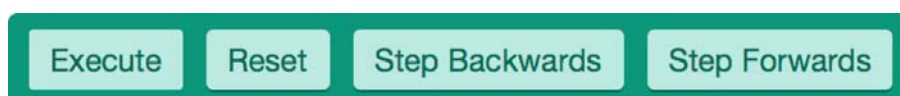
### Breakpoints

Breakpoints can be toggled on/off on any line by clicking the corresponding line number. To clear all breakpoints, right click in the line number area and select **Clear All Breakpoints**.



### Stepping through code

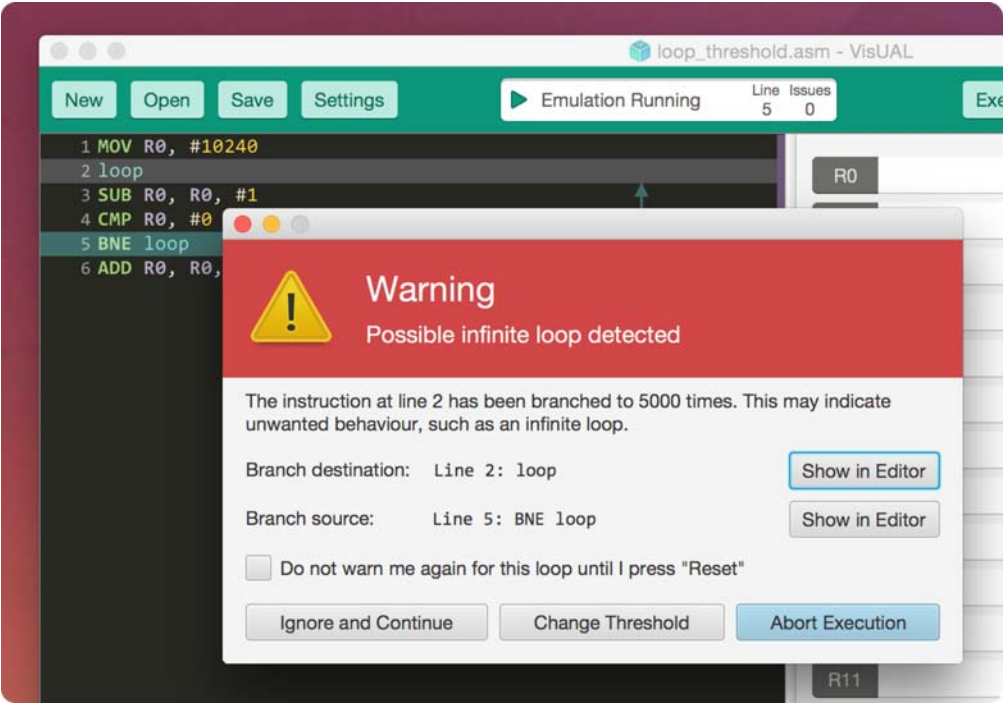
Debugging can be performed on a line-by-line basis using the debugging buttons in the [main window](#) toolbar and shown below.



Click on **Step Forwards** to execute the next line of code. The emulator will pause after that line of code has been executed. Click on **Step Backwards** to restore the program state to the previous line of code. **Execute** will automatically step through all code until a breakpoint or the end of the file is reached.

To exit debug mode, press the **Reset** button. This resets the emulator and clears the [register history values](#).

Infinite loop detection



If you accidentally write an infinite loop, or the number of loop iterations exceed [a specified threshold](#), a warning message will be displayed. You have a number of options for how to proceed when you see this warning.

Option	Description
Do not warn...	Warnings for this loop will be ignored until you press <b>Reset</b>
Ignore and Continue	Ignores this warning. The next warning will be shown when the threshold is hit again
Change Threshold	Shows a dialog to specify a new threshold to use. The warning window remains open
Abort Execution	Stops execution and resets the emulator
Show in Editor	Scrolls to the branch destination / source in the code editor. The warning window remains open