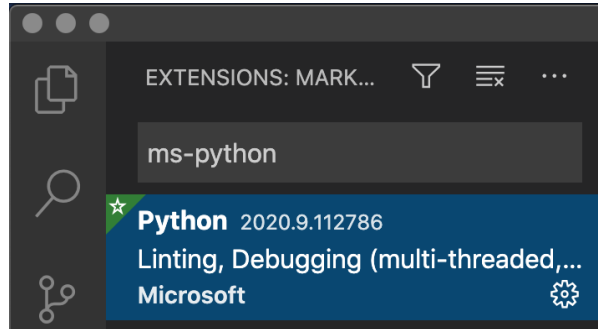


Debugging Python in VSCode

Installing ms-python

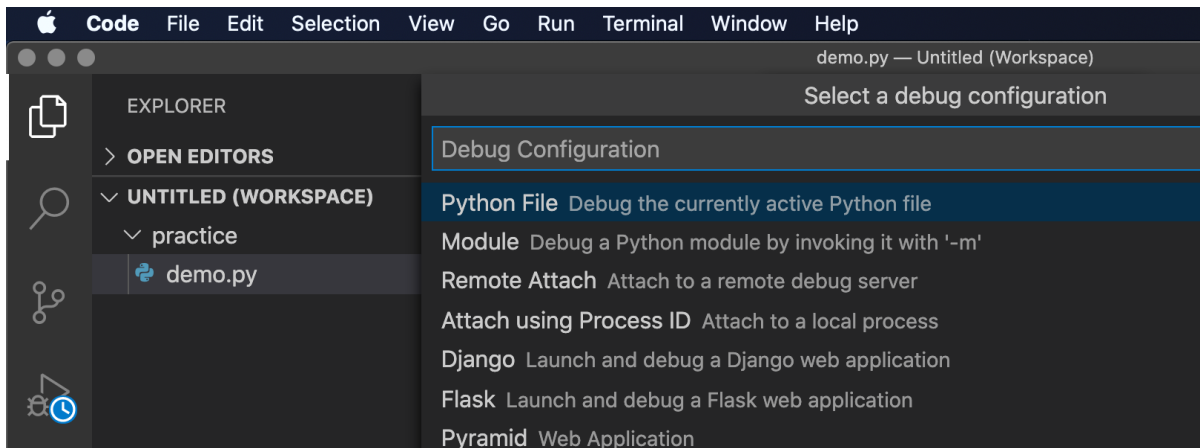
In order to use the Python debugger in VSCode, you will need to install the ms-python.python extension. If you haven't already done this, open the extensions view in VSCode (Ctrl/Cmd+Shift+X) and install the ms-python.python extension.



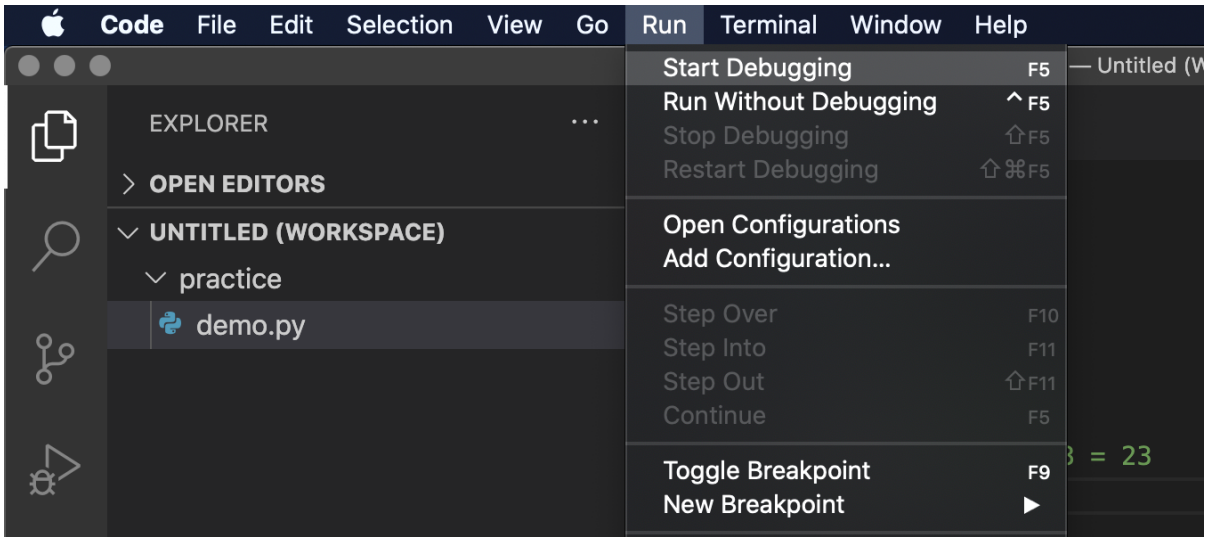
Starting the Debugger

Once you have the extension installed, you can start the debugger on any Python program. First, you'll want to set a breakpoint by clicking the region to the left of the line number you want the debugger to pause at when the program is ran. A red dot should appear to mark a debugging point (you can add multiple debugging points).

To start debugging, select the Run tab and select the Start Debugging option:

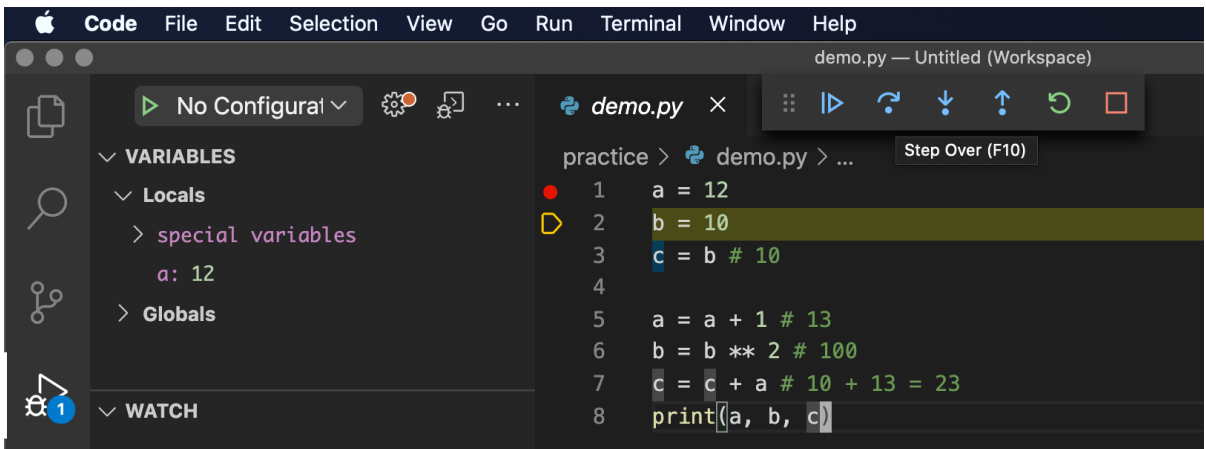


A list of options will appear (depending on what other extensions you have installed) - select the "Python File" option.

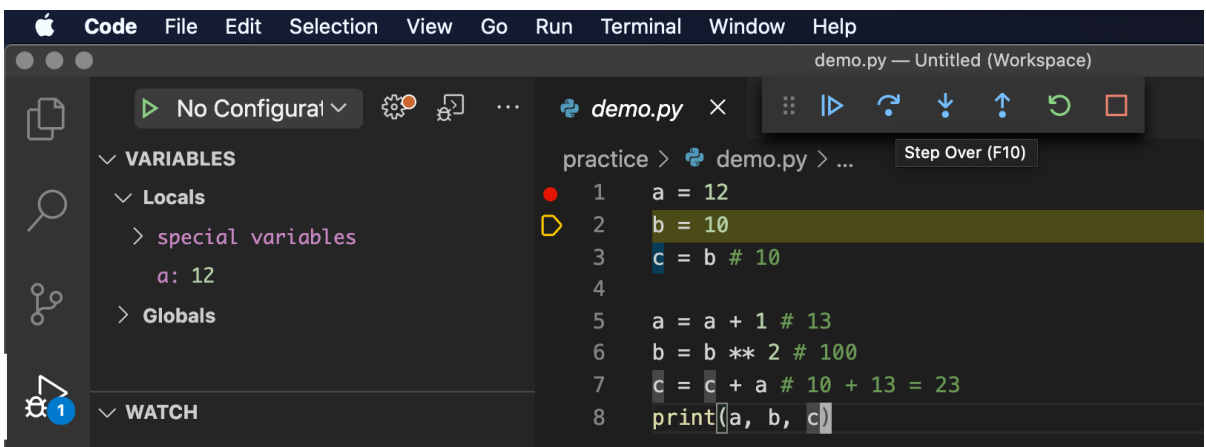


When the debugger starts, it will immediately run the program until the first breakpoint is reached. You will see a view on the left of the local variables in scope at the point of the highlighted line. If you do not see this view, click on the play icon with a bug on the far left pane.

To step through the program line-by-line, select the "step-over" action in the debugger action bar. In the screenshot below, the "step-over" action was performed exactly once after the first breakpoint, assigning the new variable `a` to the value 12 as a local variable. Note that you will only see variables added to this view once the next line is reached (which is why we don't see `b` assigned as a local variable yet, until line 3 is reached).



You can continue to step through the program and watch the variables update after each statement.



This is a very useful method for getting familiar with variables and scoping as well as debugging your programs in CS1!

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