

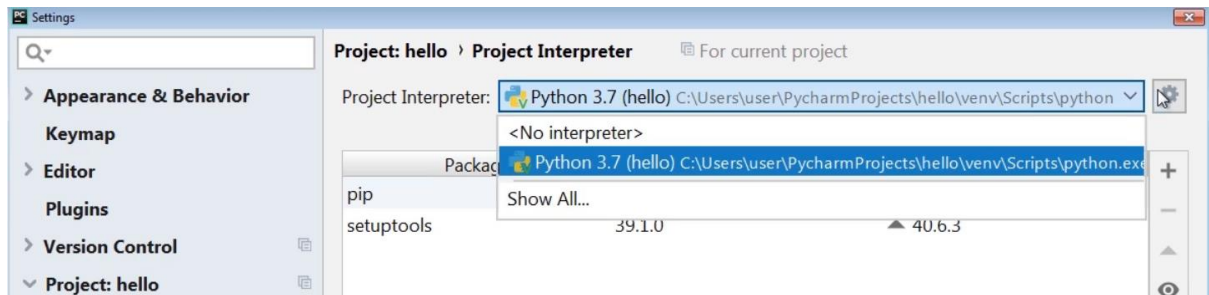
PyCharm

Boost Data Science Productivity with PyCharm

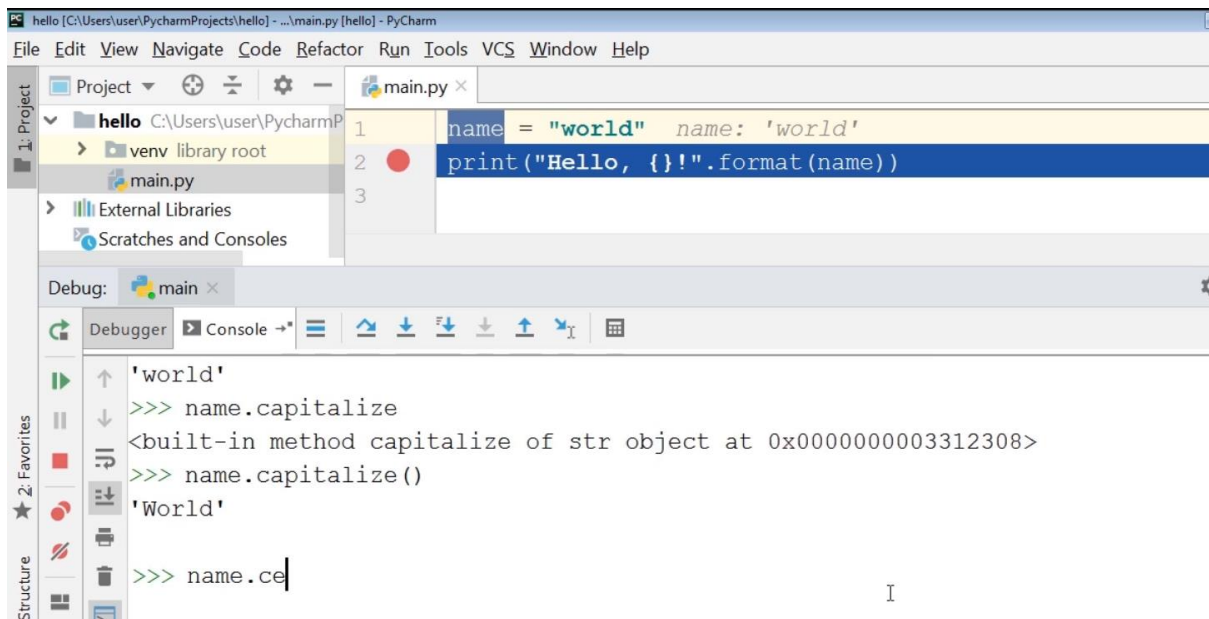
Getting Started

Pressing the escape key will always take to the editor code window.

To execute the python code PyCharm needs an interpreter which is basically the python executable, typically from some virtual environment.

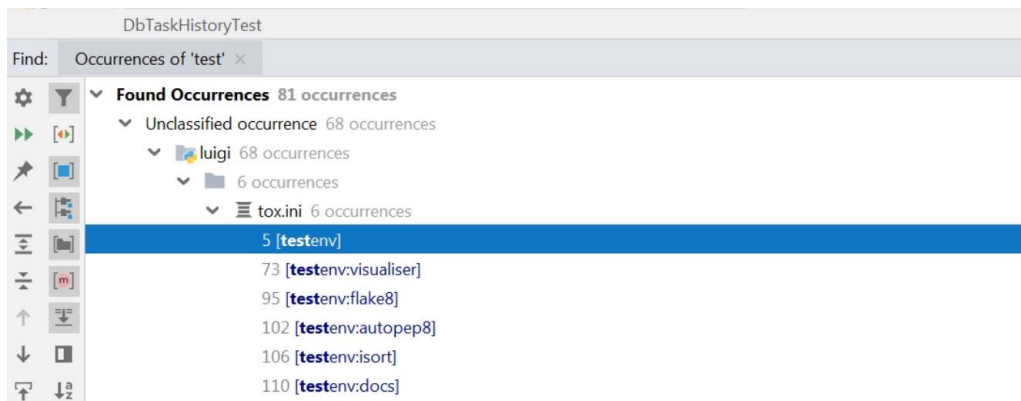
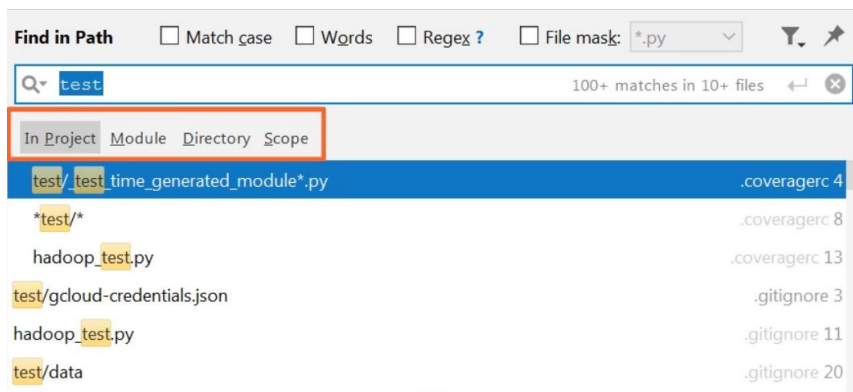


Use alt + shift + e to debug the python code – use IPython console.



Understanding Code

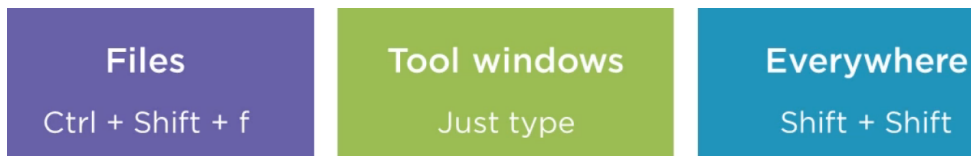
Use shortcuts like alt + 1, alt + ` , alt + 7, f3, shift + f3, ctrl + shift + f, ctrl + enter, shift + shift, ctrl + tab, ctrl + shift + tab



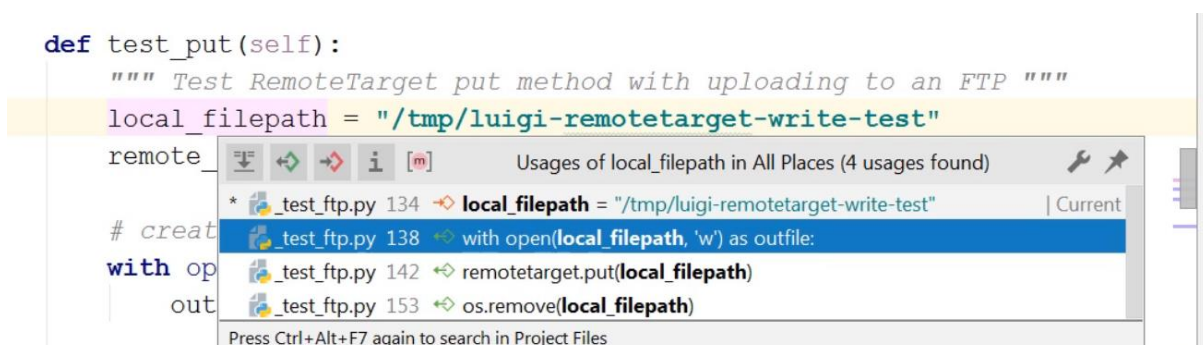
Use settings like auto scroll,

Using Luigi package to build complex pipelines of batch jobs. Use tox.ini to run tests in multiple environments.

Searching



Find usages – selection, ctrl + b, ctrl + shift + f7



Finding usages vs. searching

Finding Usages

Code-oriented

Imperfect

Powerful

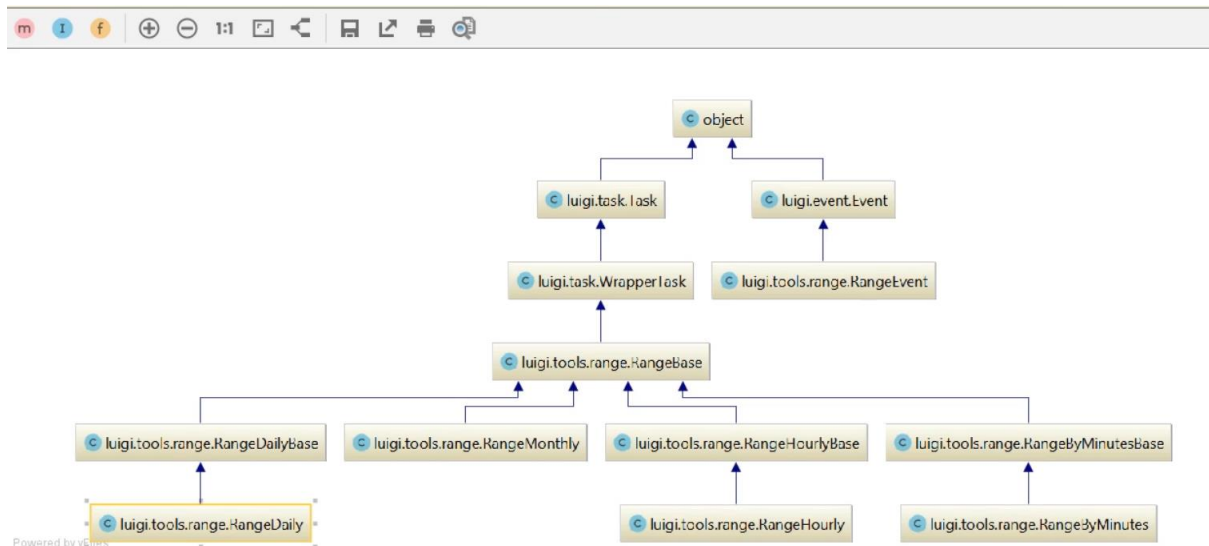
Searching

Text-oriented

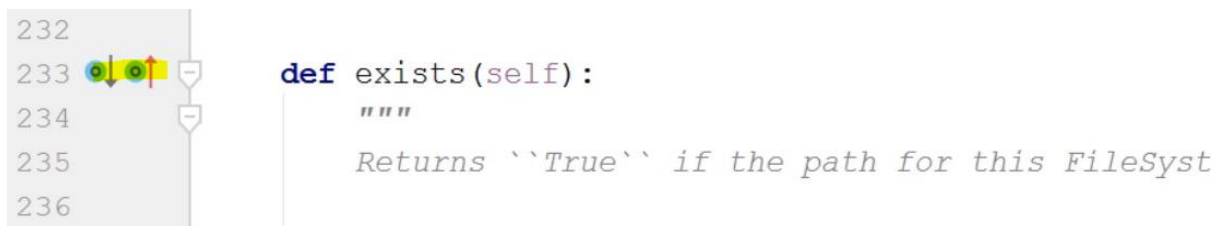
Perfect

Powerful

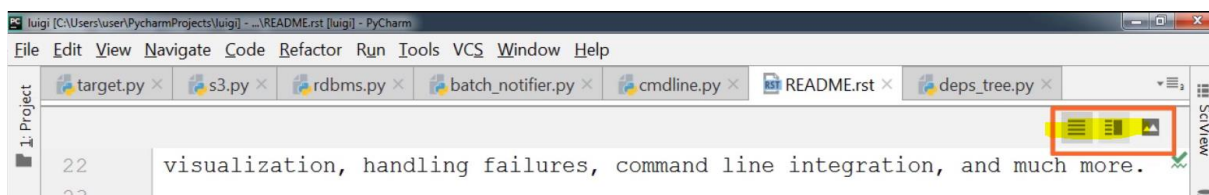
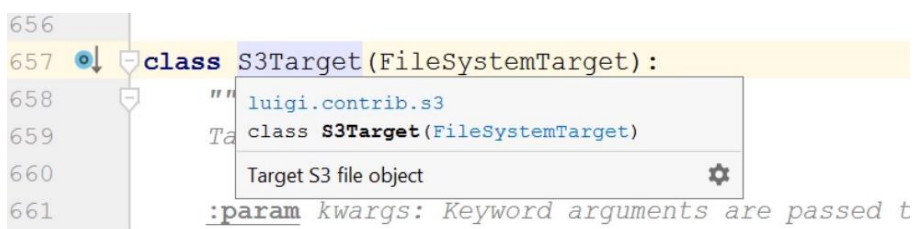
Diagrams – high level overview of code



Gutter icons



Documentation – ctrl + q for a quick overview, we can also show the documentation externally on browser window



The tox.ini file will have list of dependencies for that project. Ctrl + shift + 10 to run tox file by pycharm.

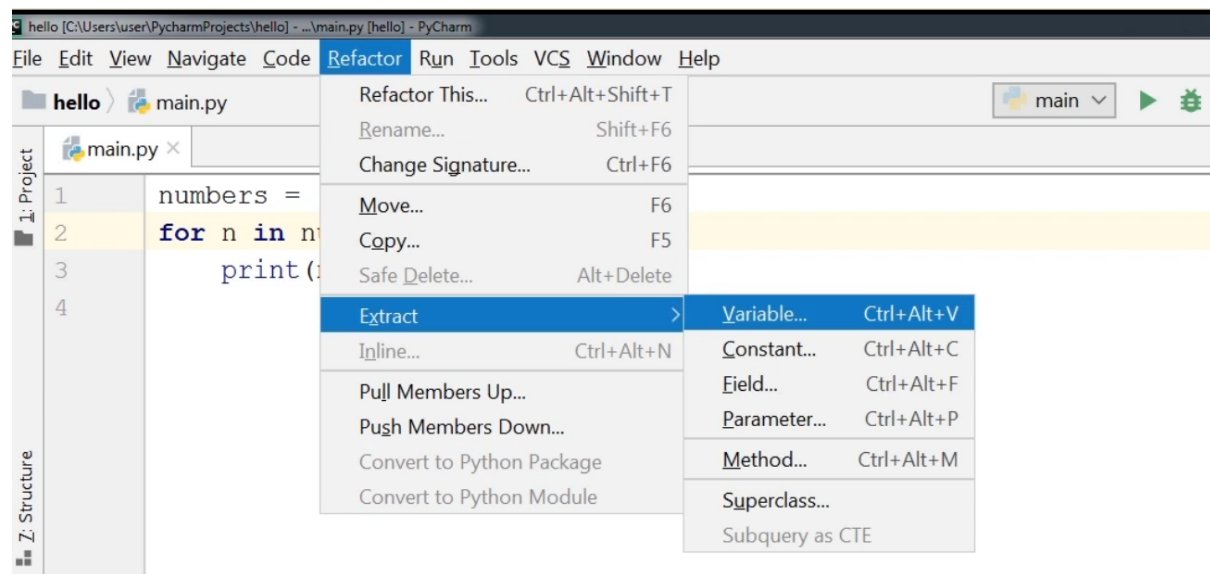
Running tests – we should check we are using the right configuration for right task otherwise it will give an error like using Nose tests to run the tests.

Writing Better Code

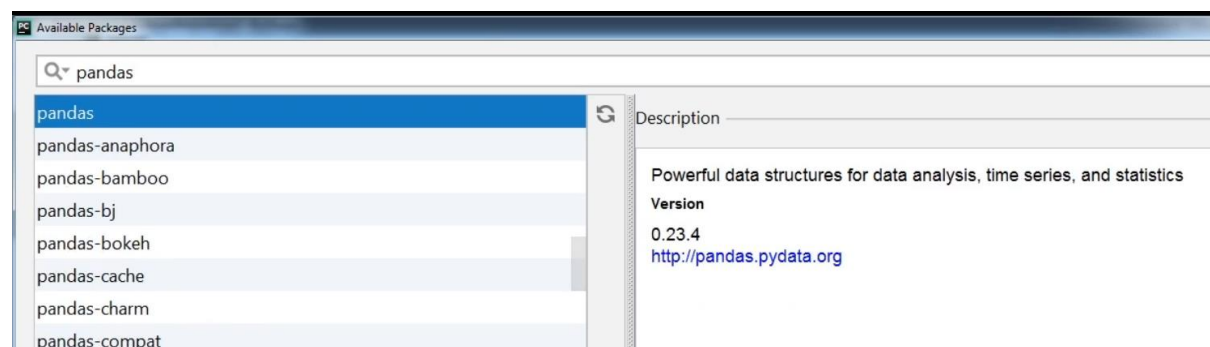
Code completion – use ctrl + q to see its documentation on intellisense, ctrl + shift + enter will take to the next line. Use alt + enter for opening the hint light bulb.

Basic Ctrl + Space	Statement Ctrl + Shift + Enter	Intentions Alt + Enter
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Use refactor menu for refactoring the code –



Install libraries like below – ctrl + alt + s



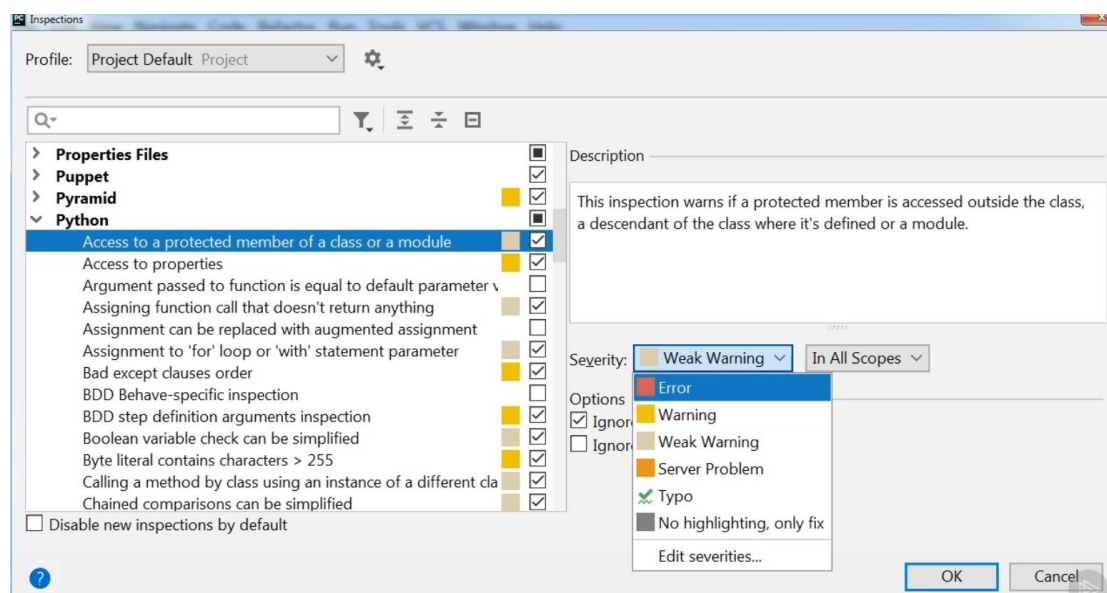
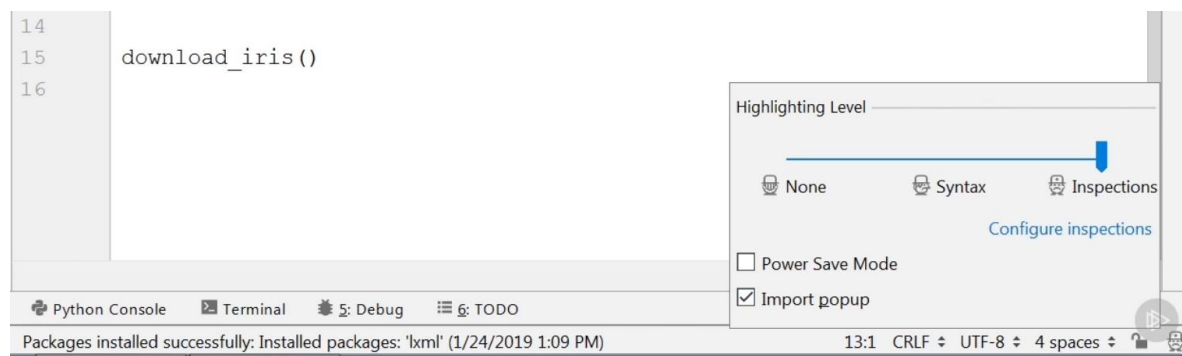
If code completion doesn't work then use the debugger window to see them by debugging it.

Inspections – automated code reviews – on the fly and on demand – ctrl + f1

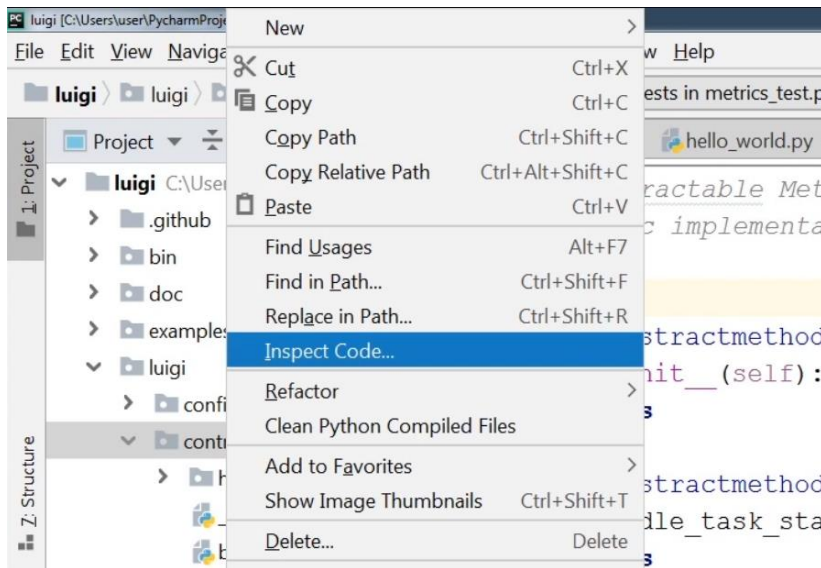


Use f2 to go the error and then again for next error then ctrl + f1.

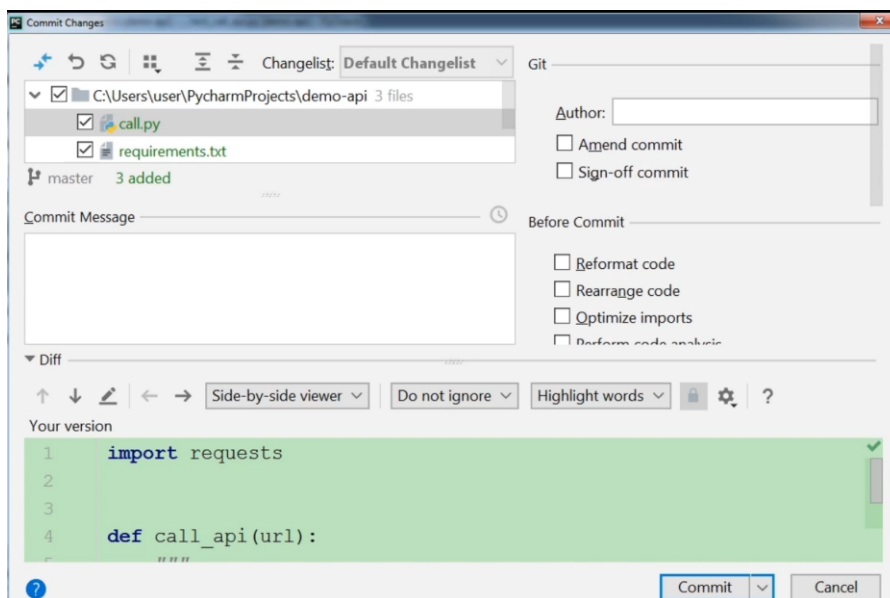
Highlighting level of inspection or setting up custom inspection



On demand inspection

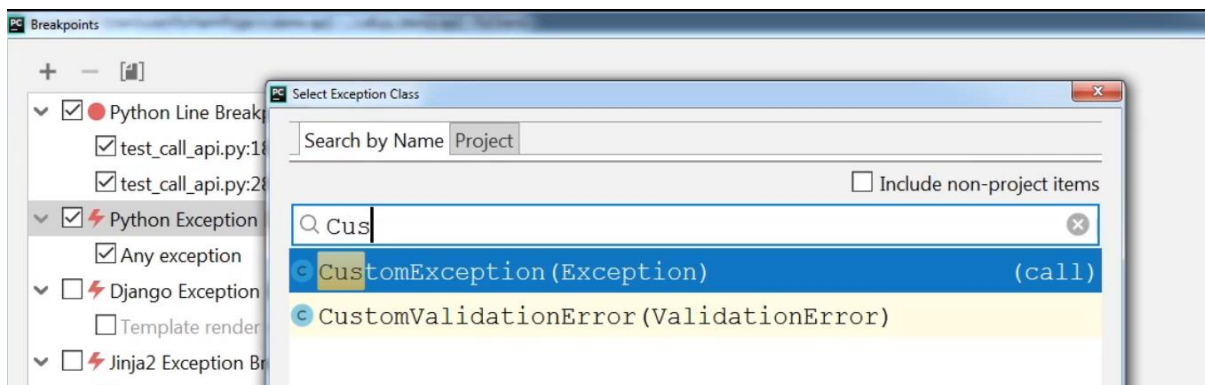


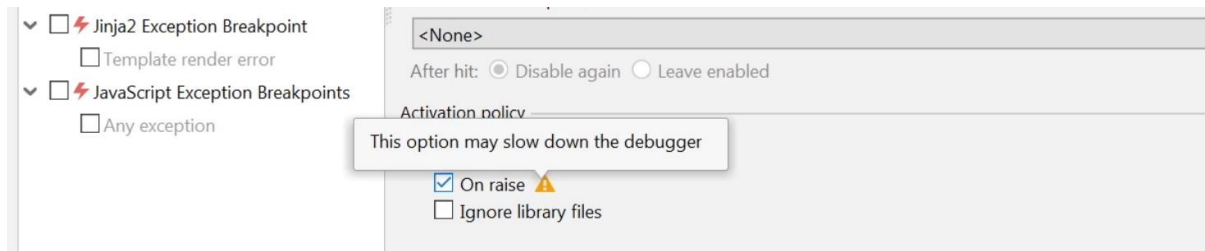
Enable version control system with Git.



Debugging Code

Breakpoints type s- line, conditional, exception. For exception breakpoint in case of custom exception use ctrl + shift + 8 and add it like below with 'On raise' setting





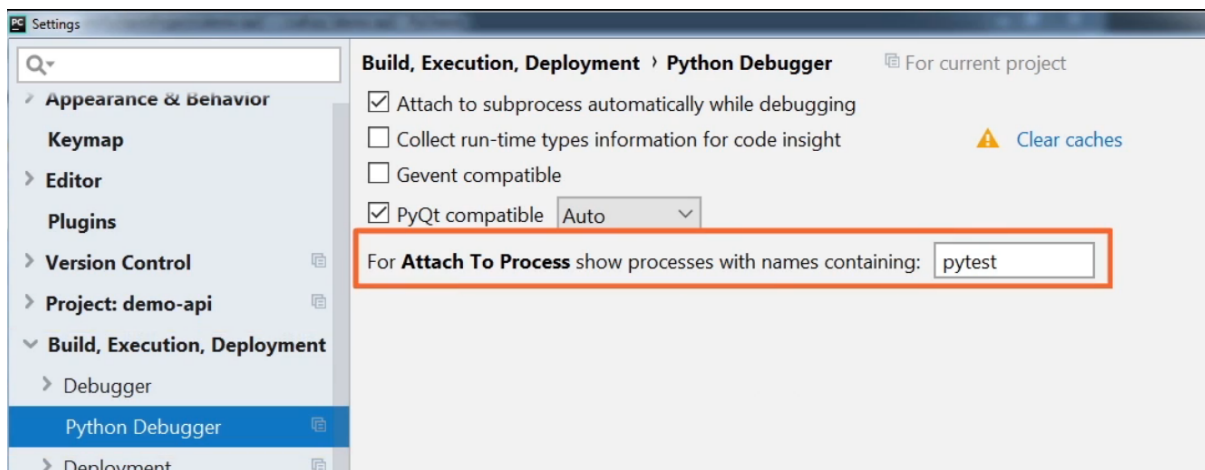
While debugging the code it is a good practice to avoid adding print statements into our code as it pollutes and obfuscate code.

Use frames pane in debugger which debugging to go back in time.

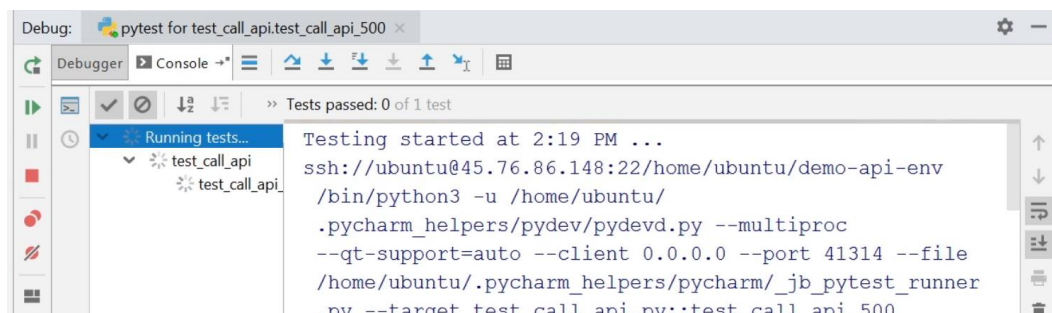
Stepping



Attaching to a process – if python code is started outside of the pycharm. Also apply below filter to see only relevant process

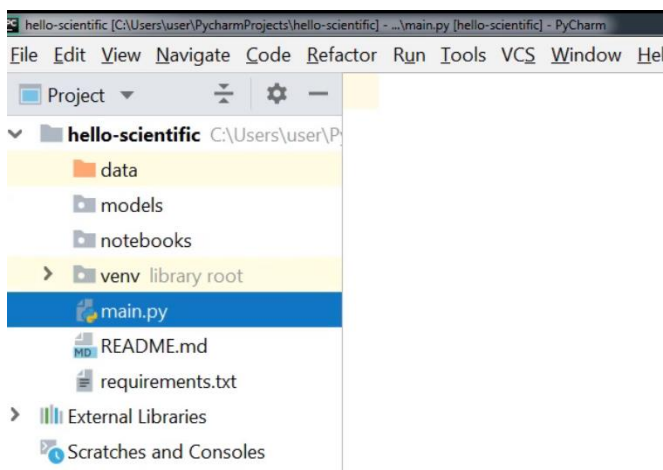
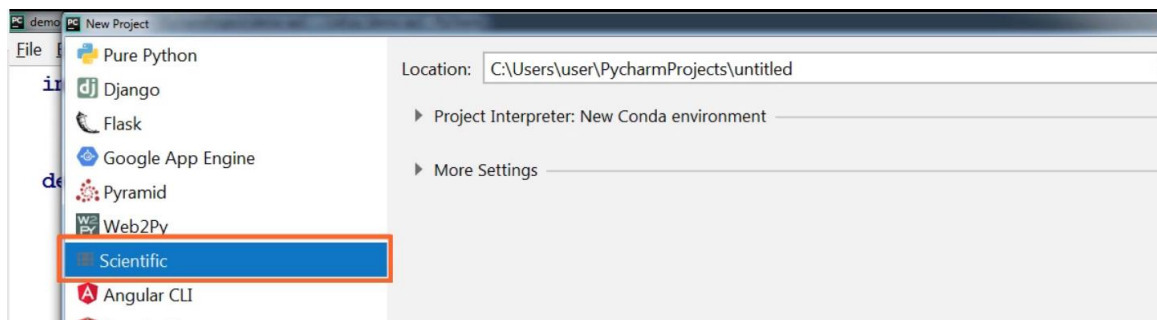


Remote debugging – to debug if our code is running on some other server.

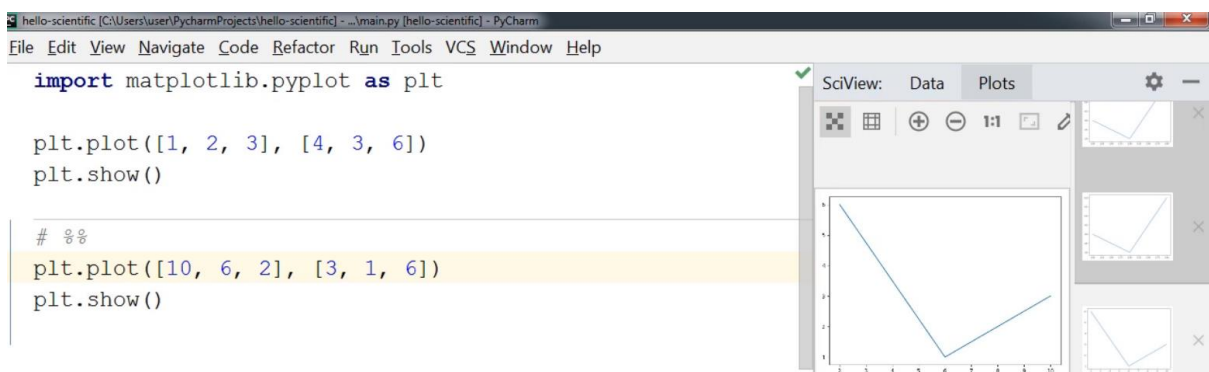


Exploring Data

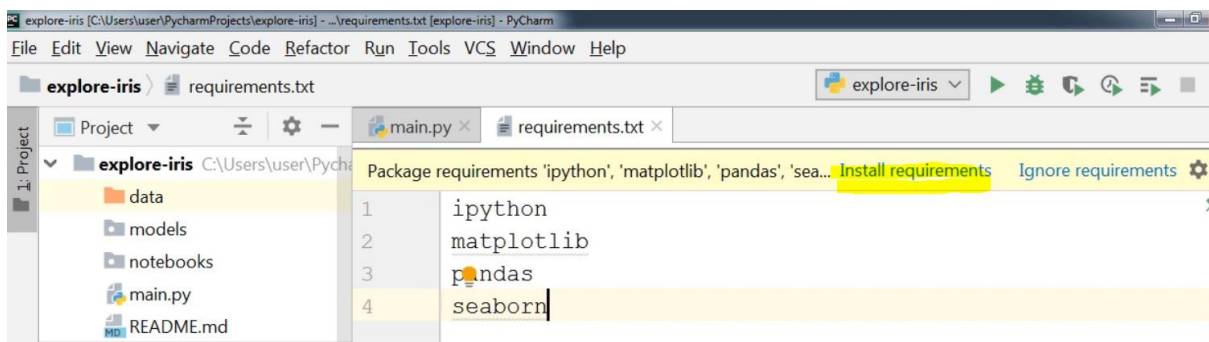
Using scientific mode which is more of data oriented –



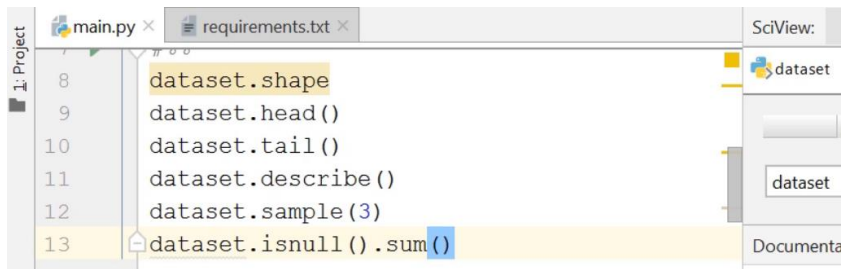
Also we can use code cells using # %%



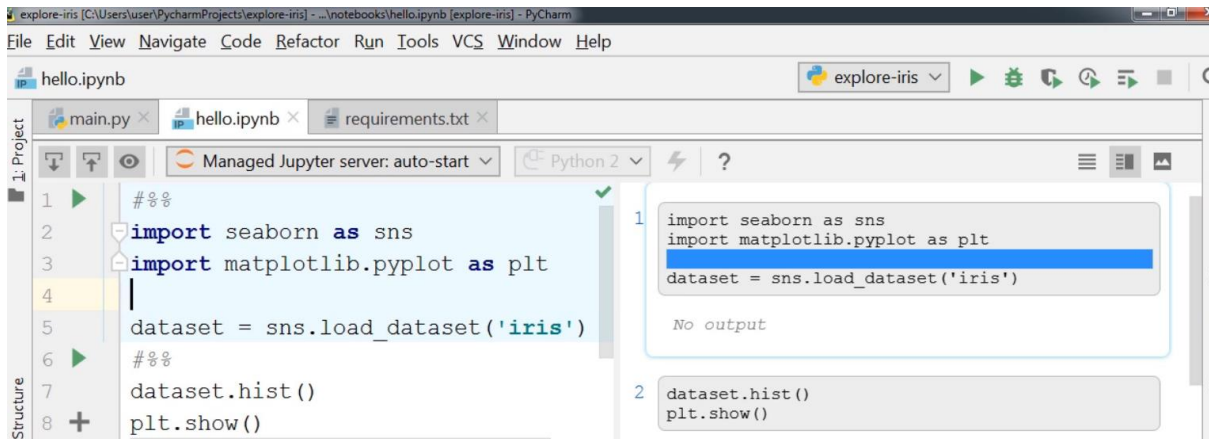
To install packages, create requirements.txt file and client install requirement link:



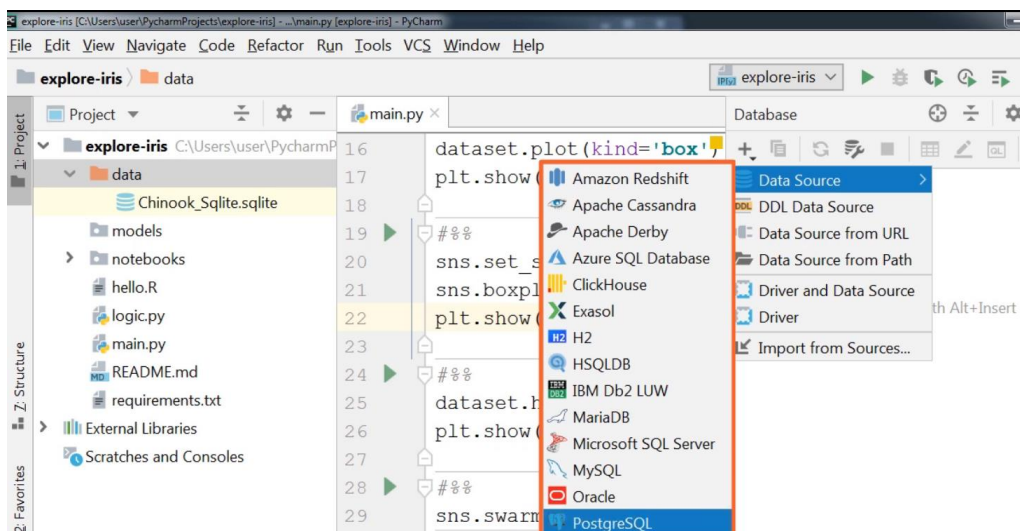
Use alt + shift + e to execute.



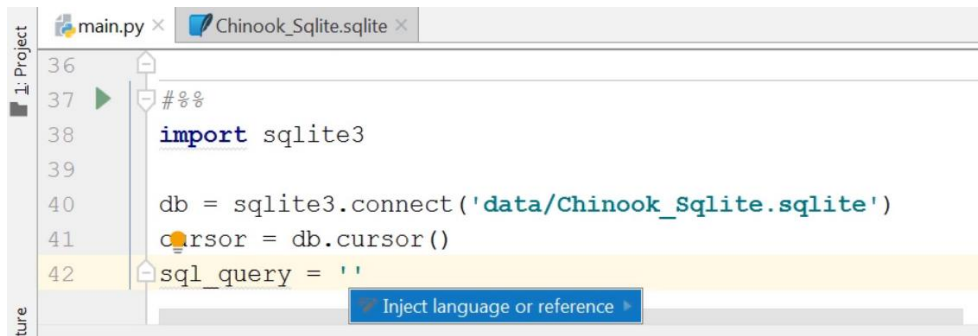
Jupyter Notebooks – we can install jupyter package and add jupyter notebook in pycharm also it provides various features like code completion, cells debugging and code refactoring.



The pandas library is great when working with relatively small datasets, however for large datasets pandas might require more memory than what is available on our machine, for this scenario SQL scripts need to use as they are highly optimized for working with large dataset. By SQL, we will extract a data subset and analyse it with pandas.



Using alt + enter we can inject a language in a string for intellisense inside a string and also execute it



Keep pycharm keymap reference sheet handy and key promoter helper for shortcut helps

PyCharm		
Find any action inside the IDE	Ctrl+Shift+A	
CREATE AND EDIT		
Show intention actions	Alt+Enter	
Basic code completion	Ctrl+Space	
Smart code completion	Ctrl+Shift+Space	
Type name completion	Ctrl+Alt+Space	
Complete statement	Ctrl+Shift+Enter	
Parameter information/context info	Ctrl+P / Alt+Q	
Quick definition	Ctrl+Shift+I	
Quick / external documentation	Ctrl+Q / Shift+F1	
Generate code	Alt+Insert	
Override / implement members	Ctrl+O / Ctrl+I	
Surround with...	Ctrl+Alt+T	
Comment with line comment	Ctrl+/	
Extend / shrink selection	Ctrl+W / Ctrl+Shift+W	
Optimize imports	Ctrl+Alt+O	
Auto-indent lines	Ctrl+Alt+I	
Cut / Copy / Paste	Ctrl+X / Ctrl+C / Ctrl+V	
Copy document path	Ctrl+Shift+C	
Paste from clipboard history	Ctrl+Shift+V	
Run/Debug current line or selection	Ctrl+F8	
MASTER YOUR IDE		
Find action...	Ctrl+Shift+A	
Open a tool window	Alt+[0-9]	
Synchronize	Ctrl+Alt+Y	
Quick switch scheme...	Ctrl+`	
Settings...	Ctrl+Alt+S	
Jump to source / navigation bar	F4 / Alt+Home	
Jump to last tool window	F12	
Hide active / all tool windows	Shift+Esc / Ctrl+Shift+F12	
Go to next / previous editor tab	Alt+Right / Alt+Left	
Go to editor (from a tool window)	Esc	
Close active tab / window	Ctrl+Shift+F4 / Ctrl+F4	
FIND EVERYTHING		
Search everywhere	Double Shift	
Find / replace	Ctrl+F / R	
Find in path / Replace in path	Ctrl+Shift+F / R	
Next / previous occurrence	F3 / Shift+F3	
Find word at caret	Ctrl+F3	
Go to class / file	Ctrl+N / Ctrl+Shift+N	
Go to file member	Ctrl+F12	
Go to symbol	Ctrl+Alt+Shift+N	
NAVIGATE FROM SYMBOLS		
Declaration	Ctrl+B	
Jump to declaration if class/enum/struct	Ctrl+Shift+B	
ANALYZE AND EXPLORE		
Show error description	Ctrl+F1	
Next / previous highlighted error	F2 / Shift+F2	
Run inspection by name...	Ctrl+Alt+Shift+J	
Type / call hierarchy	Ctrl+H / Ctrl+Alt+H	
NAVIGATE IN CONTEXT		
Select in...	Alt+F1	
Recently viewed / changed files	Ctrl+E / Ctrl+Shift+E	
Last edit location	Ctrl+Shift+Back	
Navigate back / forward	Ctrl+Alt+Left / Right	
Go to previous / next method	Alt+Up / Down	
Line / Column...	Ctrl+G	
Go to code block end / start	Ctrl+] / [
Add to favorites	Alt+Shift+F	
Toggle bookmark	F11	
Toggle bookmark with mnemonic	Ctrl+F11	
Go to numbered bookmark	Ctrl+[0-9]	
Show bookmarks	Shift+F11	
BUILD, RUN, AND DEBUG		
Run context configuration	Ctrl+Shift+F10	
Run / debug selected configuration	Alt+Shift+F10 / F9	
Run / debug current configuration	Shift+F10 / F9	
Step over / into	F8 / F7	
Smart step into	Shift+F7	