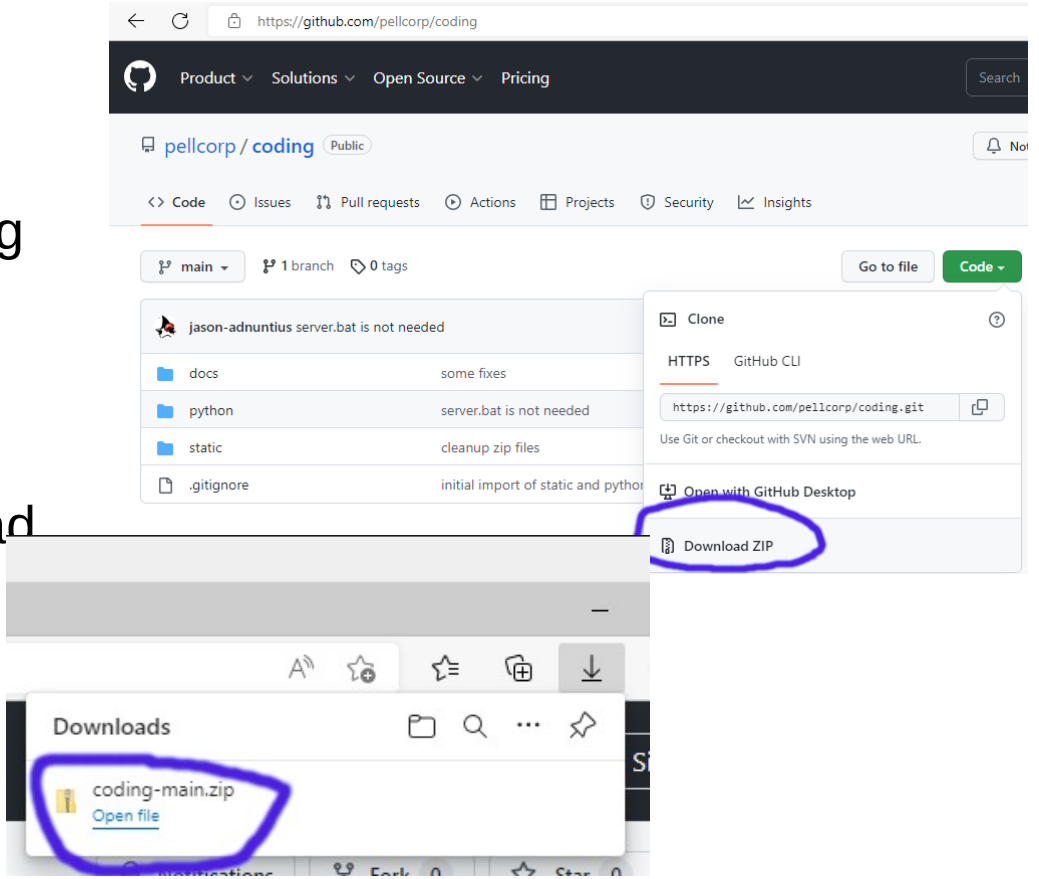
Python Coding

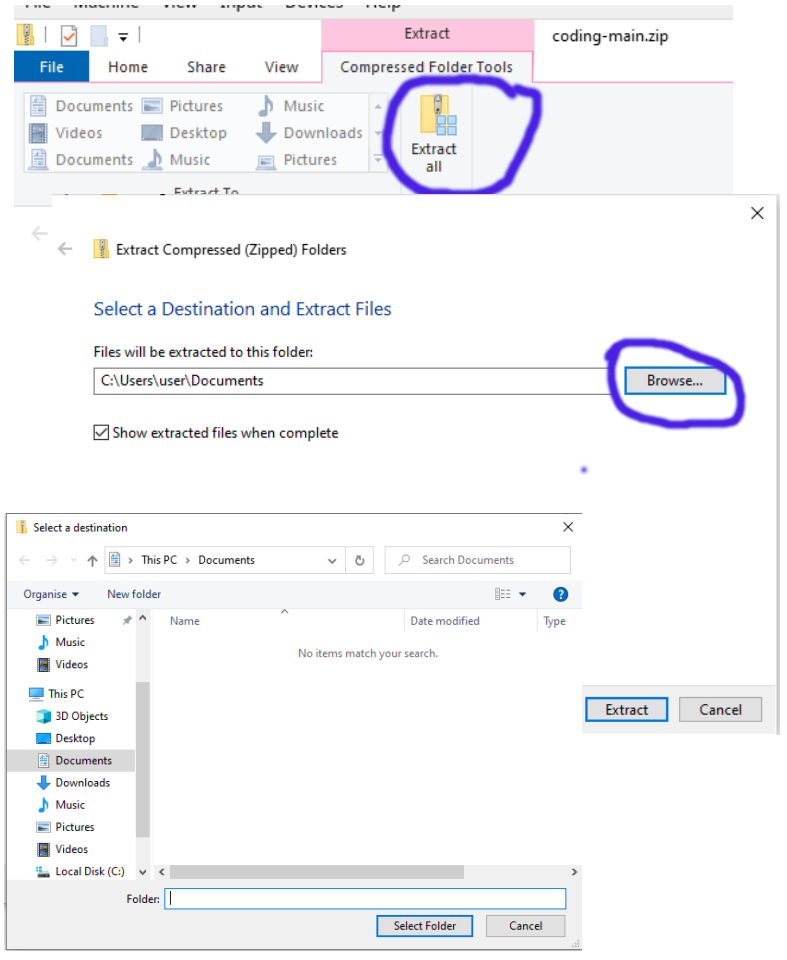
Getting the Sample Code

- Open Chrome or Edge and navigate to: https://github.com/pellcorp/coding
- Click the *green* **Code** button and then the **Download ZIP** button
- Click **open file** for **coding-main.zip** in the browser download window.



Getting the Sample Code Cont.

- Click the Extract all button
- When Prompted to **Select a Destination and Extract Files**, click the **Browse…** button
- And choose your *School Drive* Folder
- Click Extract



Visual Studio Code (VSC)

- Visual Studio Code is also a text editor
- But it also makes it easy to run our python scripts directly.
- There a few important parts of Visual Studio Code you should familiarise yourself with.

- Important buttons:

Explorer – Like File Explorer

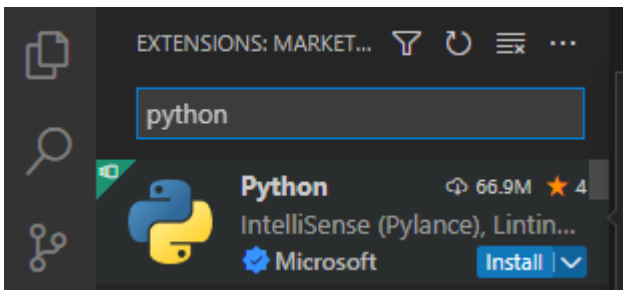
Search – Search in Files

Extensions – Install Extensions

- Don’t worry too much about the others for now

VSC: Add the Python Extension

- Start up Visual Studio Code
- Click the Extensions  button
- Search for **python** and click the install button



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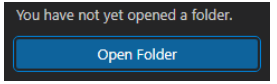
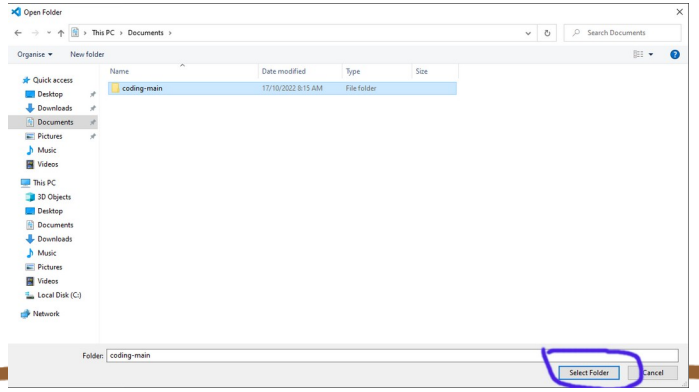
And then Wait for it to finish *installing*

And that is it, once its done we will be able to do some python coding!

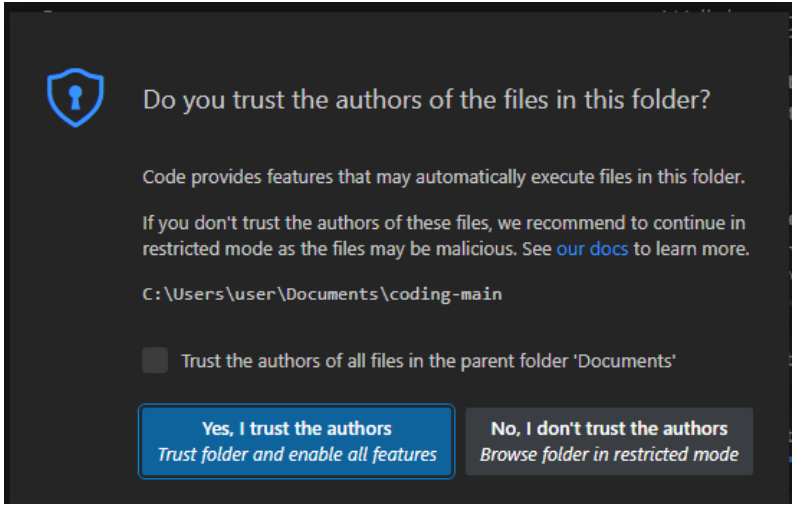
VSC: The Sample Code

- Click the Explorer  button
- Click the Open Folder 

button
- Navigate to the **coding-main** folder you extracted earlier into your *School Drive* Folder
- Click **Select Folder**

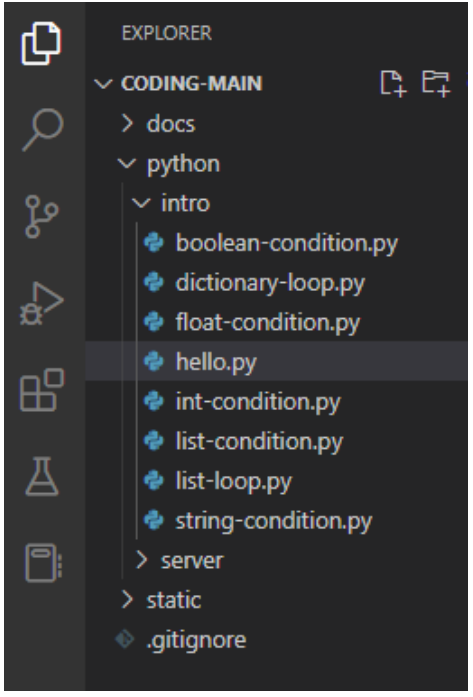


- In the next window, Click the Yes, I trust the authors button.



VSC: The Sample Code Cont.

- You should see this now:



What is Python

- A programming language which is very popular, especially for beginners.
- We are going to learn by doing, including playing with and changing sample code.

- What are we going to do:
  - Output – printing to the console
  - Variables
  - Conditional Statements
  - Loops

Python - Variables

- Strings
  - “Hello World”
- Integer Numbers
  - Are whole numbers, numbers without decimal points
- Floating Point Numbers
  - Are numbers with a decimal points.
- Booleans
  - True or False
  - Boolean arithmetic

- Lists
  - A way to group values into a structure, so that python can operate on them together, an example would be:
    - states = [‘VIC’, ‘NSW’, ‘TAS’, ‘SA’, ‘NT’, ‘QLD’, ‘WA’]

Python If Statements

- We are going to be playing with IF statements today, they look like this:

```
if <condition>:
   statement
elif <condition>:
   statement
else:
   statement
```

- Don’t worry too much about understanding it all, hopefully once we start hacking on the samples some of it will become a bit clearer.

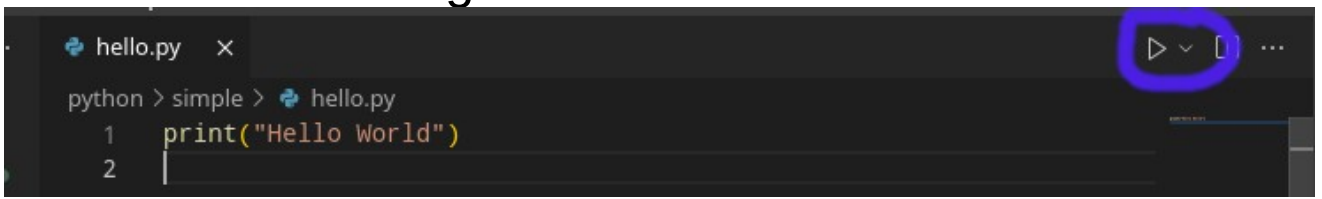
Python If Statement Conditions

- A condition is something that evaluates to true or false, and example would be.
- A condition is of the format:
  - value or variable **<operator>** value or variable

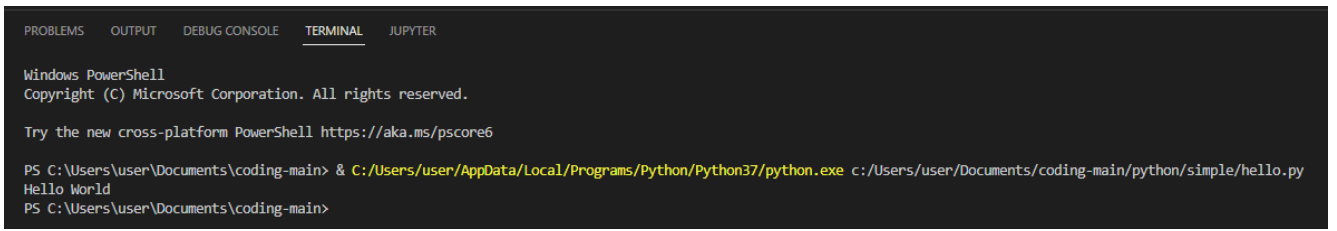
- Condition **operator**s include:
  - **==** equals
  - **!=** not equals
  - **>** greater than
  - **>=** greater than or equal
  - **<** less than
  - **<=** less than or equal
  - **in** value in a list or string.
  - **not in** value not in a list or string

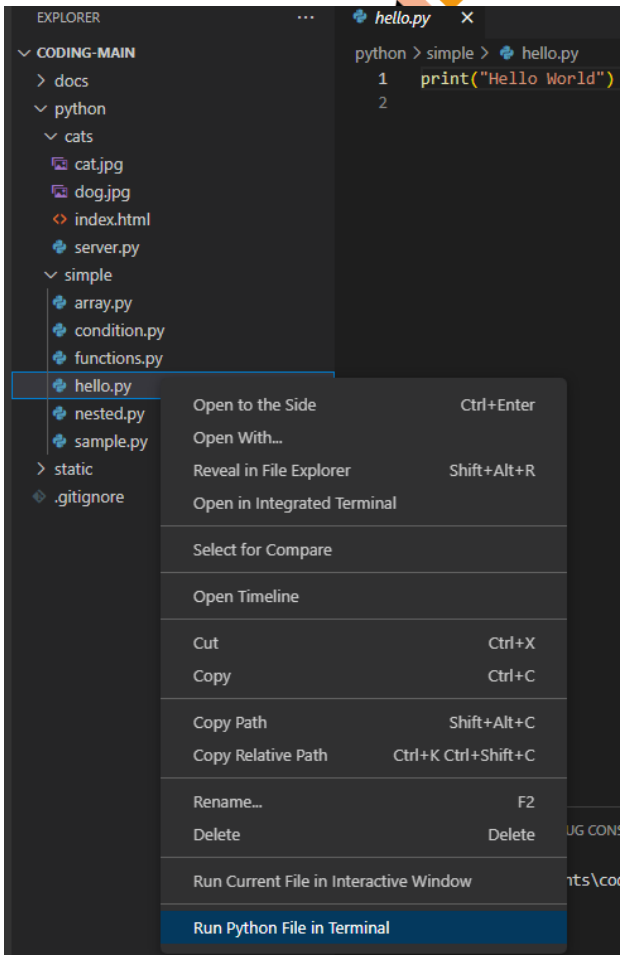
Running Python from VSC

- Right Click on a .py file (for example hello.py) and choose Run Python File in Terminal
- You can also click the Play button over on the right



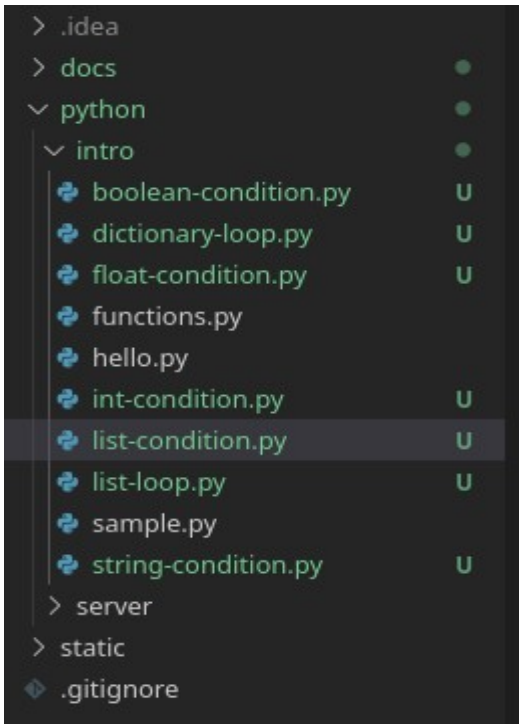
- The output is in the Terminal





Samples

- The python intro folder



- The Basics:
  - Hello World
  - If Statements
  - Lists
  - Dictionaries
- Functions
- All together now!

Exercises

- Run the hello.py
  - Change the text that is printed to the VSC Terminal window
- Hack the following scripts:
  - string-condition.py
  - int-condition.py
  - float-condition.py
  - boolean-condition.py
  - list-condition.py
- Change the code so that it prints different message(s) in elif and else statements.