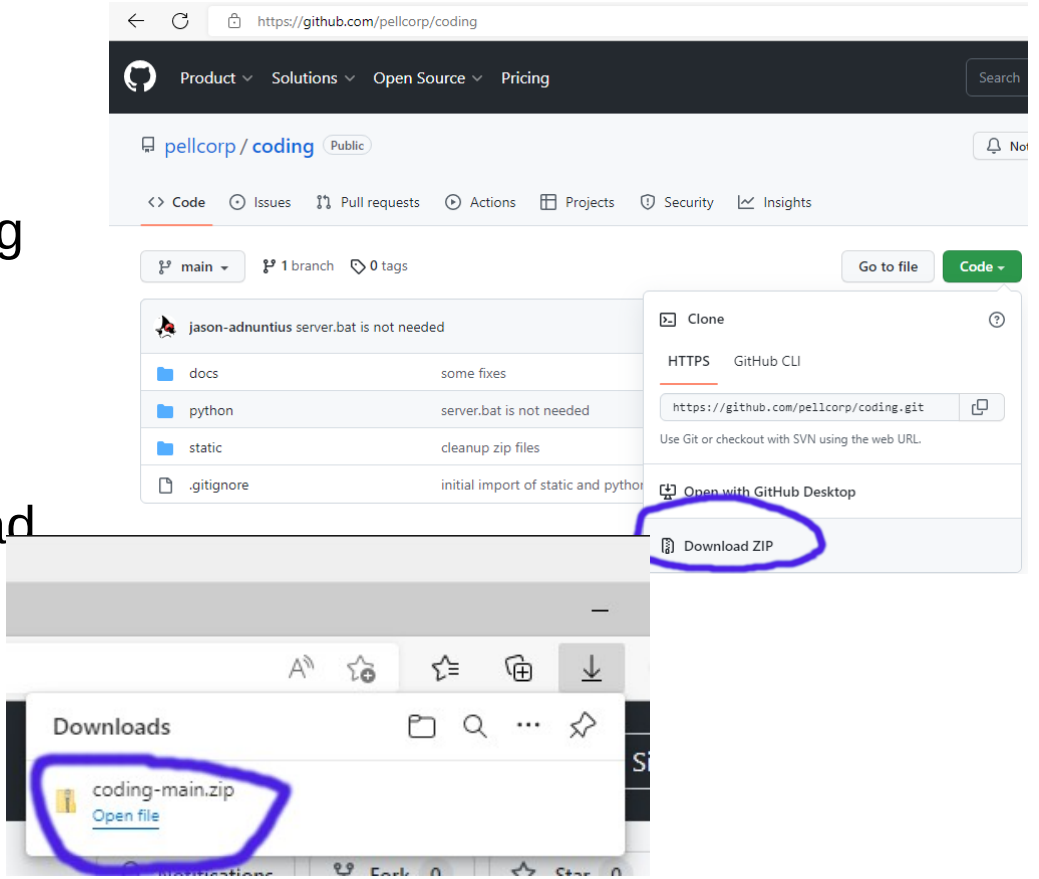
Python Coding

https://raw.githubusercontent.com/pellcorp/coding/main/docs/python-coding-notepad.pdf

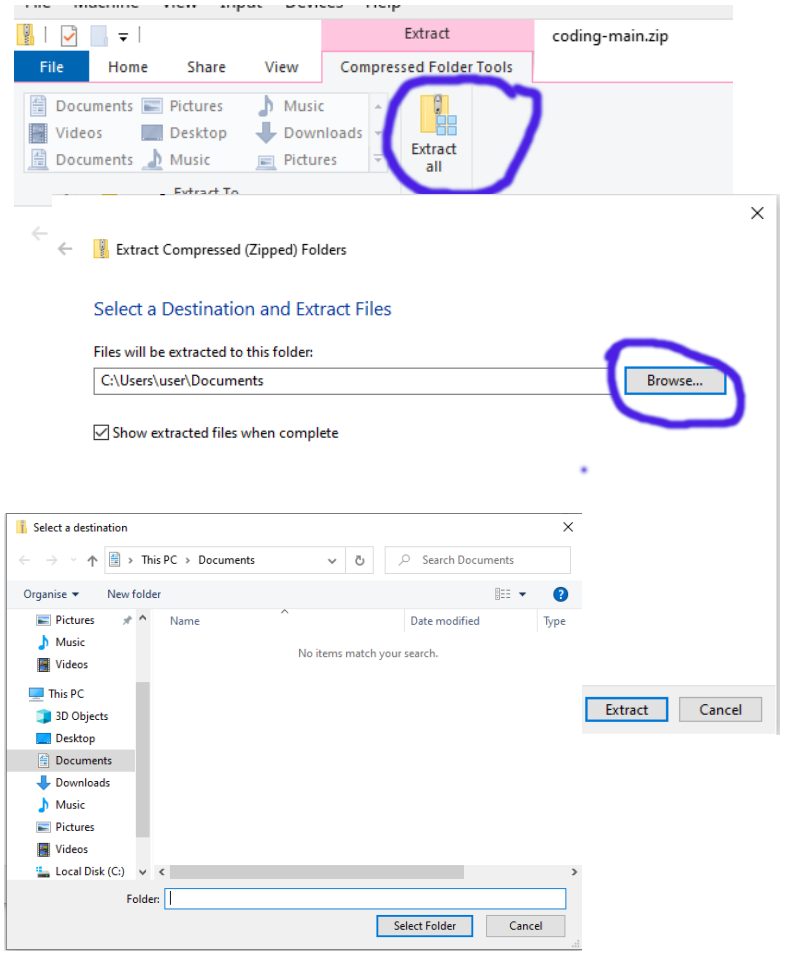
Getting the Sample Code

- 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.



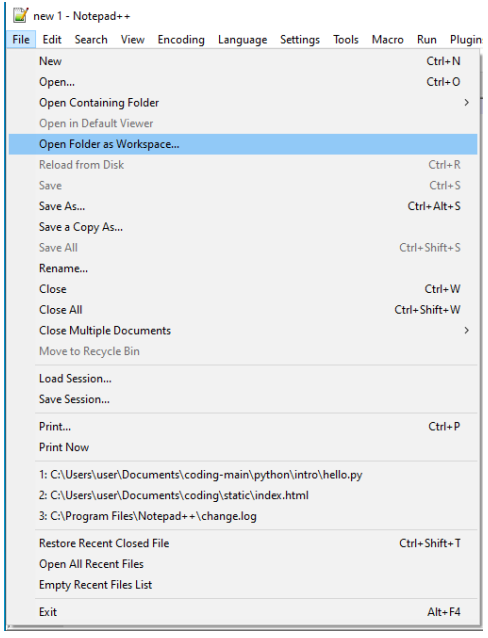
Getting the Sample Code Cont.

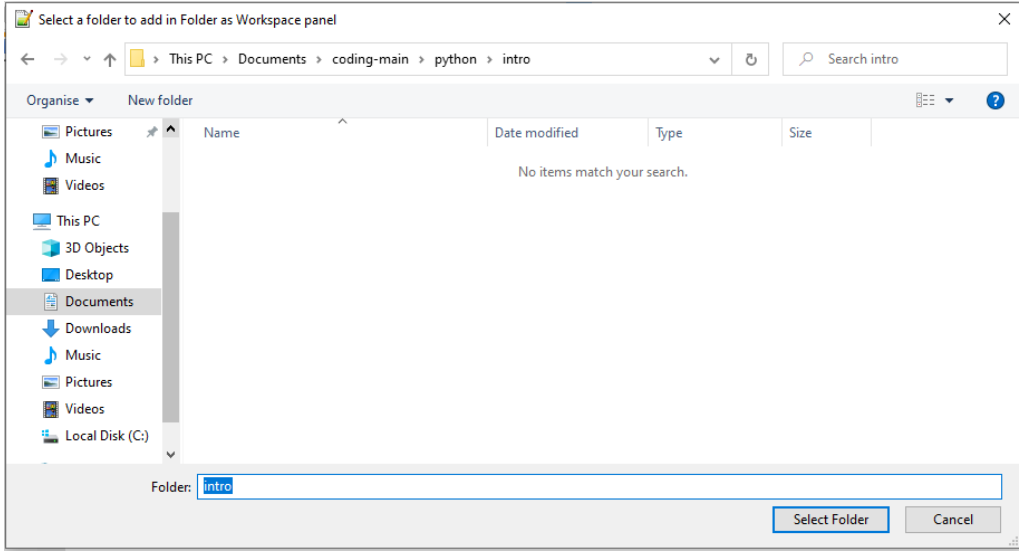
- Click the Extract all button
- When Prompted to **Select a Destination and Extract Files**, click the **Browse…** button
- And choose your *School Drive* Folder
- Click Extract



Notepad++

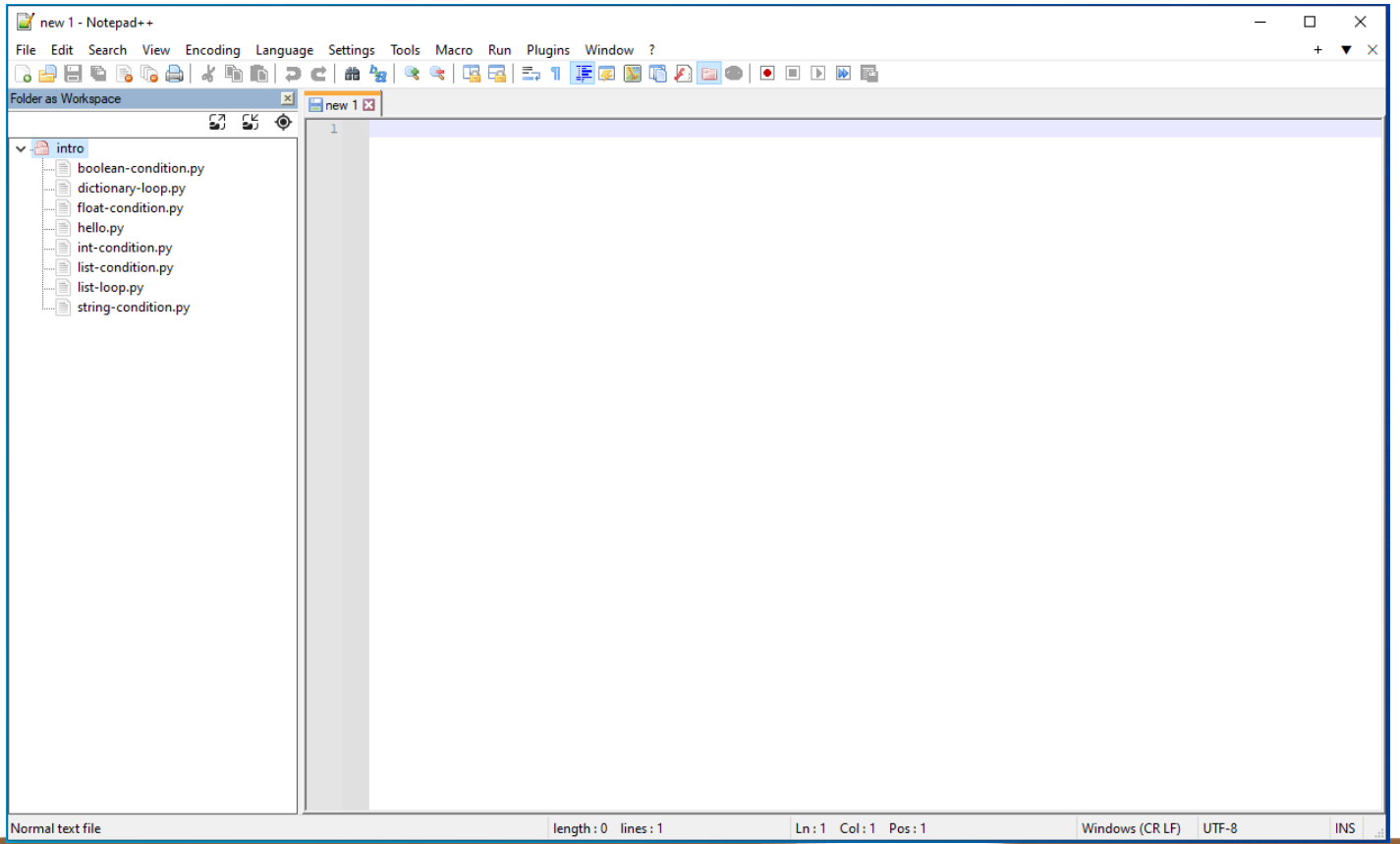
- **Open** coding-main/python/intro **Folder as Workspace**





Notepad++ Sample Code

- 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

- The turtle if we have time!

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.

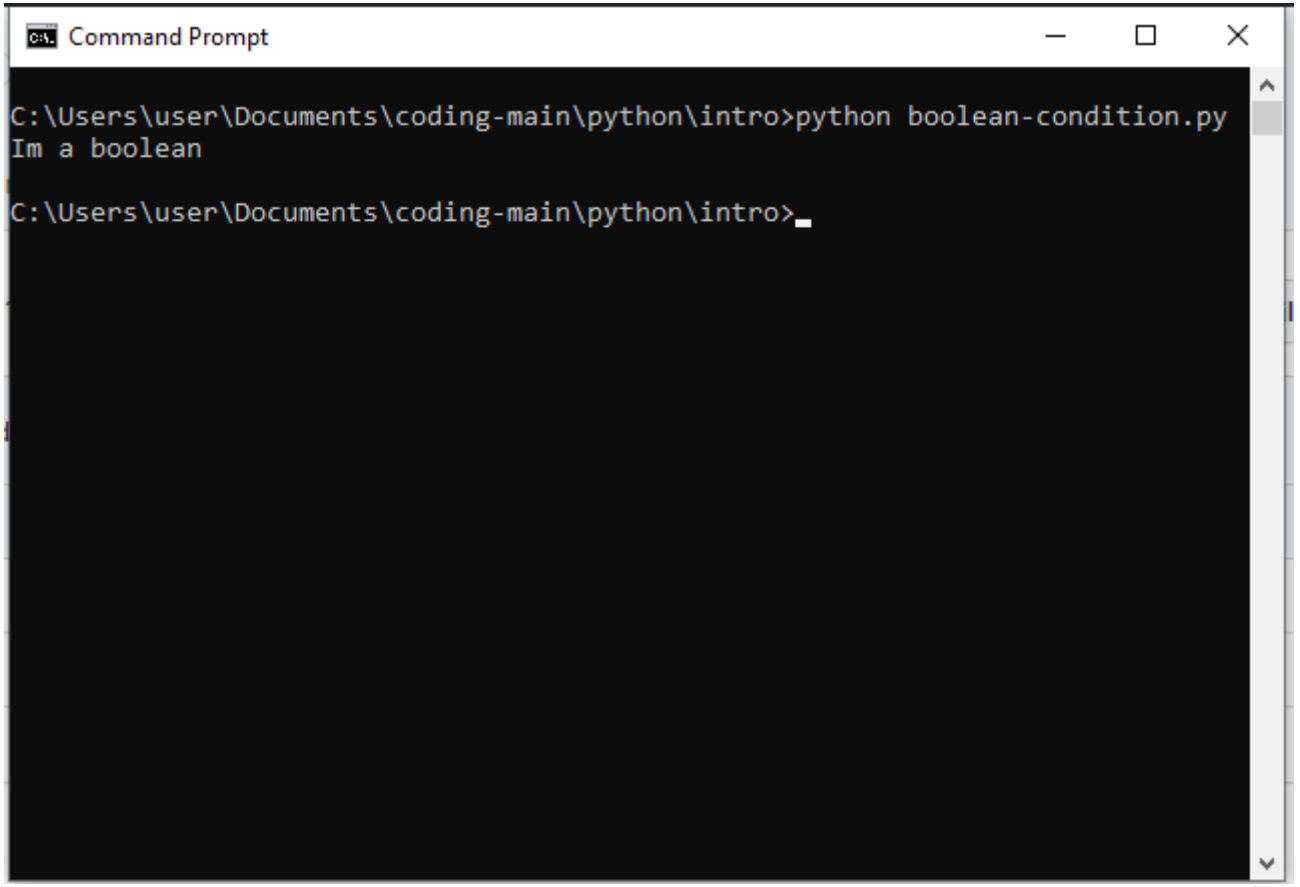
Python If Statement Conditions

- 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 Windows Terminal

- Remember Windows Terminal?
- Windows Key + R
- Then **cmd** and Enter
- Cd to the coding-main directory
- `python <python file>`



Samples

- The python intro folder

```
 Directory of C:\Users\user\Documents\coding-main\python\intro

25/10/2022  10:34 AM    <DIR>          .
25/10/2022  10:34 AM    <DIR>          ..
25/10/2022  10:34 AM               100 boolean-condition.py
25/10/2022  10:34 AM               228 dictionary-loop.py
25/10/2022  10:34 AM               241 float-condition.py
25/10/2022  10:34 AM                21 hello.py
25/10/2022  10:34 AM               196 int-condition.py
25/10/2022  10:34 AM               159 list-condition.py
25/10/2022  10:34 AM               114 list-loop.py
25/10/2022  10:34 AM               252 string-condition.py
               8 File(s)          1,311 bytes
               2 Dir(s)  26,107,473,920 bytes free
```

- The Basics:
  - Hello World
  - If Statements
  - Lists
  - Dictionaries
- Functions
- The Turtle

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.

- Run the turtle/star.py
  - See if you can get it to draw different things, for help go to:

https://docs.python.org/3/library/turtle.html