Python Coding

https://pellcorp.github.io/coding/docs/python-coding.pdf

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”
- Whole Numbers (ints)
  - Numbers without decimal points
- Decimal Numbers (floats)
  - 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’]
  - Don’t worry too much about these, hopefully the sample lately will make a bit more sense

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
```

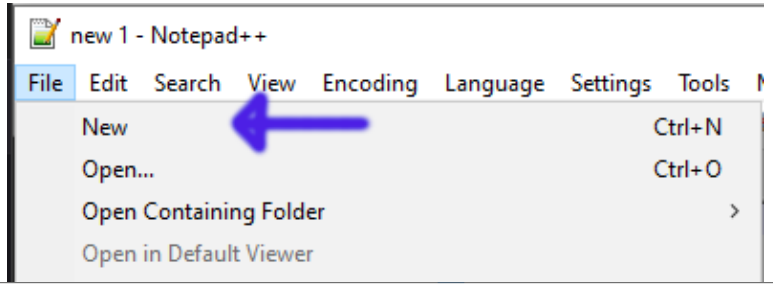
- Don’t worry too much about understanding it all, hopefully once we start hacking on the samples some of it will become a bit clearer.

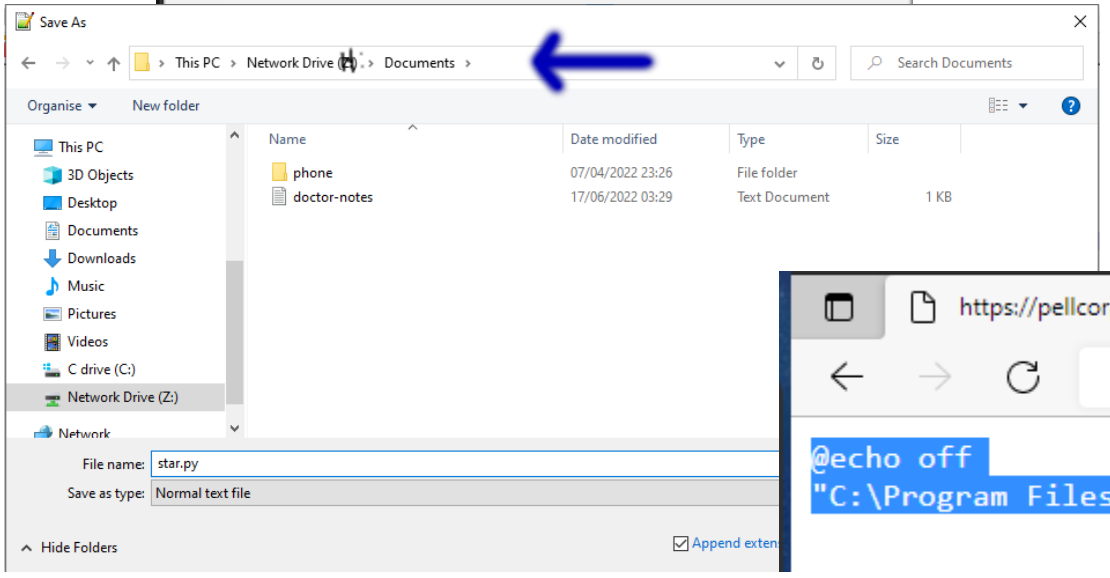
Python If Statement Conditions

- 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

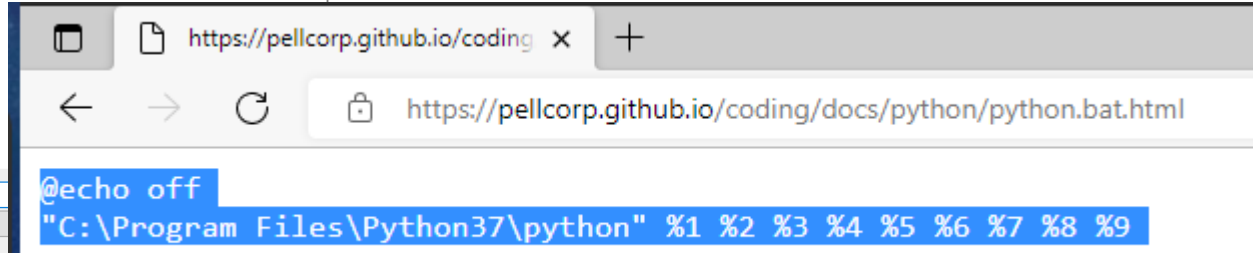
Save python.bat to H:\Documents

- Click the File → New





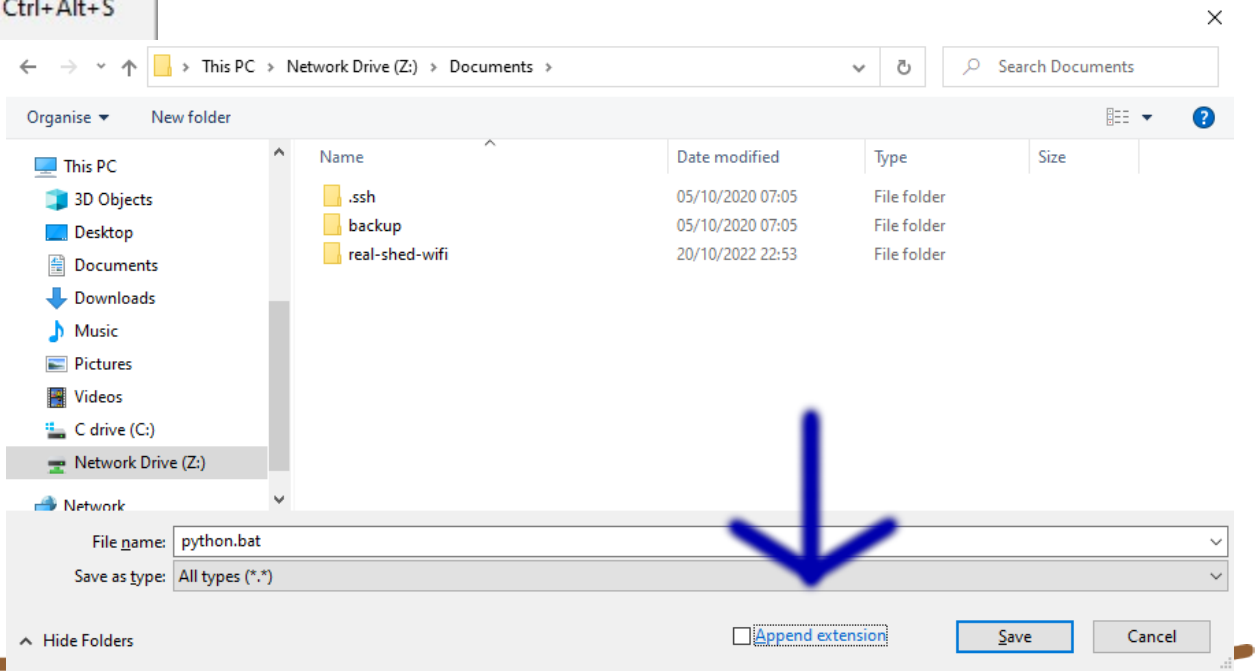
- Open Chrome or Edge (not firefox!!!)
- Visit: https://coding.pellcorp.com
- Click on the **python.bat** link
- Select all the code by using **CTRL** key and **A** key
- Copy the selected code by using **CTRL** key and **C** key
- Back to Notepad++
- Paste the code using **CTRL** key and **V** key



Save python.bat to H:\Documents Cont.

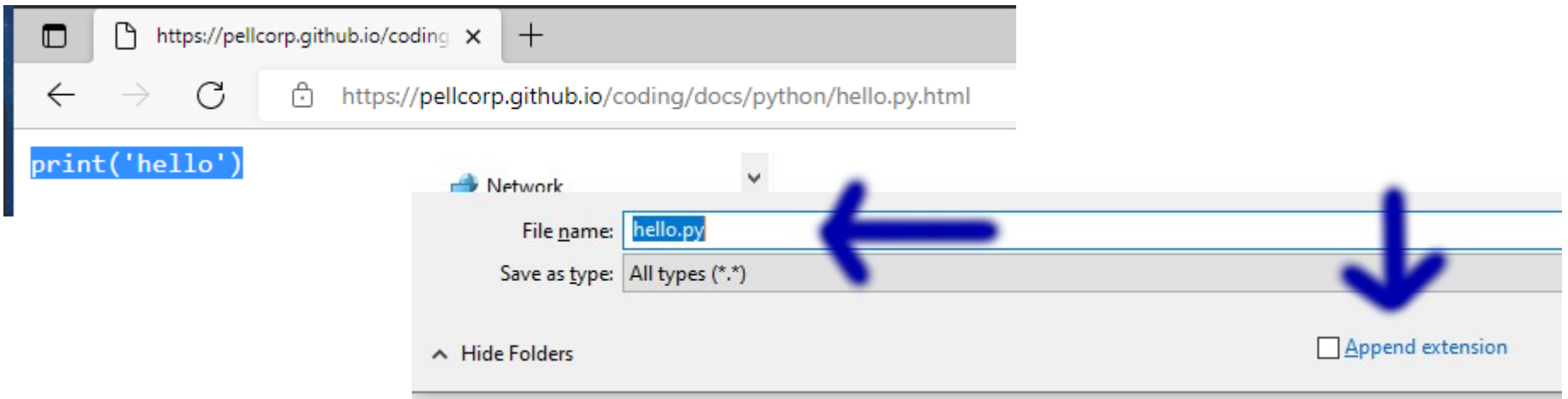
- Click File → Save As

- Save to **H:\Documents** folder with **python.bat** as the File name
- Make sure to *uncheck* **Append extension**



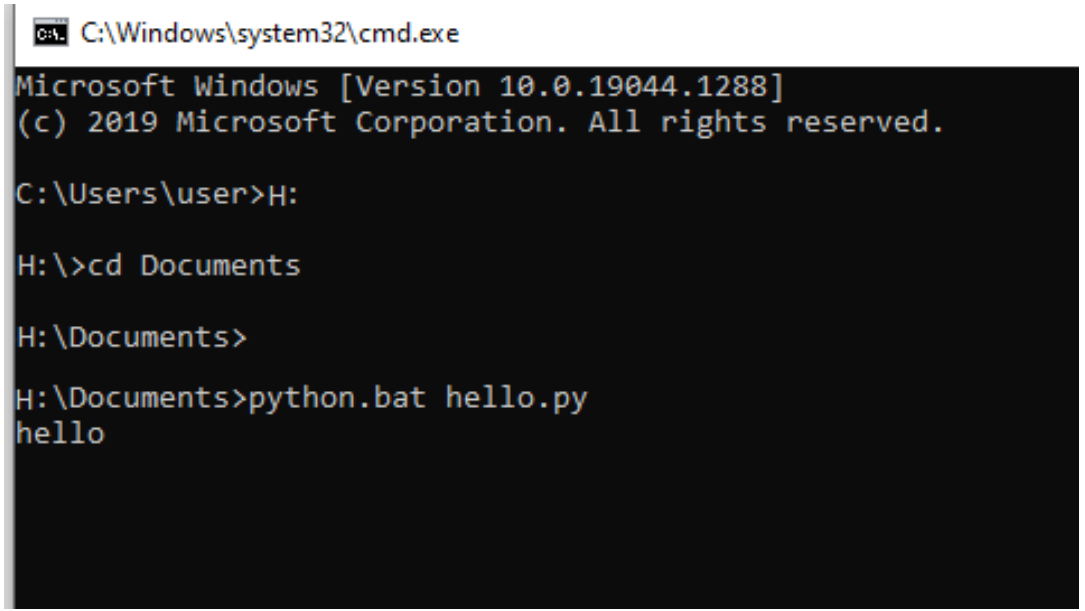
Save hello.py to H:\Documents

- Open Chrome or Edge (not firefox!!!)
- Visit: https://coding.pellcorp.com
- Click the **hello.py** link
- Save to **H:\Documents** folder with **hello.py** as the File name
- Make sure to *uncheck* **Append extension**



Running Python from Windows Terminal

- Remember Windows Terminal?
- **Windows** Key + **R** Key
- Then **cmd** and **Enter** key



Change the drive letter to H: by typing **H:** and **Enter** key

- Change to H:\Documents by typing **cd Documents** and **Enter** key
- Run the hello.py with python.bat:

Windows Terminal Tips

- In windows Terminal you can use the arrow keys

- The up and down arrows can be used to use previous commands
- The left and right arrows can be used to edit a command in place.
- The TAB key can be used for command completion.
- For instance, I want to change to the Documents folder, I can type **cd Do** and then the TAB key and CMD will complete the command for me
- CTRL key + V key can be used in Terminal to paste text you have previously copied

Samples

- The samples are available here:

  https://pellcorp.github.io/coding/docs/python/intro/

Save these scripts to H:\ Documents:

- 1-variables.py
- 2-boolean-condition.py
- 3-string-condition.py
- 4-int-condition.py
- 5-float-condition.py
- 6-list-condition.py

Exercises

- Hack the hello.py
  - Change the text that is printed from ‘hello’ to whatever you want, just be sure to keep the single quotes!
  - See what happens if you remove the quotes!?
- Run the 1-variables.py
  - See how each of the different types of variables is printed, hack around with it if you like :-)

- Hack the condition scripts:
  - 2-boolean-condition.py
  - 3-string-condition.py
  - 4-int-condition.py
  - 5-float-condition.py
  - 6-list-condition.py
- Change the code so that it prints different message(s) in elif and else statements.