**Python**

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Description automatically generatedPython is an interpreted, general purpose, loosely typed programming language. It was designed to be easily understood/read by humans and thus is regarded as a good introductory programming language. It relies heavily on indenting to distinguish different code blocks which in JavaScript and other languages is normally done with curly bracket **{}**. Python code can often seem like you are writing pseudocode or simple English when in fact you are coding.

Python was created in 1991 and gets its name from the British comedy group Monty Python which were big in the 1970s.

Python is primarily used for data analytics (it’s great with numbers), machine learning, task automation, data visualization, reading and writing files, software, and web development. Because of its ease of use and wide-reaching applications many non-programmers have adopted it for their everyday tasks.

**Versions of Python**

You may have heard me mention how “JavaScript had introduced new features” from time to time in our earlier classes. Well versioning with Python is a lot more explicit. New features are added or removed over time so it’s important to know what’s relevant with the current version. You might find yourself on Stack Overflow reading an answer that is no longer relevant to the current version of Python so keep an eye out for that and check the dates on Stack Overflow to make sure it’s relevant.

For instance, a variable data type called **dictionary** (a collection element with key value pairs (like an object)) is ordered in Python version 3.7. Prior to this version however, **dictionaries** were not ordered.

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**Getting Started with Python**

With JavaScript we could just create a HTML file, add **<script>** tags, write JavaScript code and then open the file with a browser to see the results. Python is very different, however. We must first download and install Python on our computer \*Note that it may already be installed on your computer. Secondly, we use the computer’s command line interface (**Command Prompt** on Windows and **Terminal** on Mac) to either run Python scripts or tell the computer to read a Python file (file.py) and run it through the Python interpreter.

**Checking if Python is Installed & Installing Python**

1. Installing Python. Open up your command line interface (**Command Prompt** on Windows and **Terminal** on Mac).
2. Type -**python --version-** and hit enter.
3. If it returns with the word Python and a version number, it means Python is installed on your computer and you do not need to download Python.

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1. If it doesn’t then you will need to download Python from here <https://www.python.org/>

Now that you know you have Python, lets dive into it.

**Python Command Line Interface**

If you type **-python-** or simply **-py-** into the command line you open up the Python command line. Think of this as the console window of a browser for JavaScript. You can type in basic Python commands here and watch them execute. You will know you’re in the Python command line due to the presence of **->>>-** in the window. This is a nice quick place for testing out simple Python commands. To exit out of this and to return to the normal command line interface, simple type **-exit()-** and hit enter.

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**Reading a Python File**

You will be spending most time of your time with Python by writing your Python script in a separate file ending with **.py**. You will instruct the command line interface to read and interpret the script and it will output in the command line.

Use the below steps every time we work on an In Class Task.

1. Create a folder and give it an appropriate name.
2. Create or add your **.py** file to this folder e.g. **myFirstPython.py**
3. Navigate to this folder in Command Prompt/Terminal. This can be done easily by typing the command **-cd-** followed by a space and then drag and drop the folder onto the Command Prompt/Terminal window. Then press enter to execute. **cd** stands for “change directory”. You will know that this was successful as your current directory will have changed on the left side.

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1. Now that you are in the same folder as your Python file, all you have to do in your command line is type **-python-** followed by your file name. This will then interpret the file, execute the Python code, and any output such as those from **print()**, will be displayed in the command line. **-python myFirstPython.py-**

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1. A handy shortcut in your command line is to press the up-arrow key. This will input the previous text you entered in the command line. If you make changes and saved them in your **.py** file and want to quickly see the output, press the up-arrow key, and hit enter in Command Prompt or Terminal. Another handy command for windows is -**cls**-. Inputting this will clear the Command Prompt window.