What is Python?

- Originally created in 1991

  - Current version is python 3.* (2008)
  - Avoid python 2.*

- Scripting Language

  - Interpreter instead of a compiler
  - OS-agnostic
  - JavaScript, PHP, Bash, ...

- Readable

  - `print("hello")`

- Interprets white space

```python
for i in range(3):
    print("inside_for_loop")
print("outside_for_loop")
```

Python in Industry

- Web Development

- Mathematics

- System Scripting

- Research (NLP)

- Back-end Software

- Data analysis and visualization

Why is Python good for Data Analysis / Visualization

- Commonly used across academia and industry

- Active groups means more packages to use

- Can easily be used with other software components

- Large support for machine learning and is capable of handling a large amount of data

- More popular than R

Installing Python

- Already on Linux Distributions (Ubuntu, Red Hat, . . .)

    - Might need to upgrade to version 3
    - Never uninstall python from these machines

- Can install python from `https://www.python.org/downloads/`

- Installation comes with *pip* (package installer for python)

- Other package installer: Conda

- Packages are pre-written python scripts

    - Anyone can contribute to the list
    - Some require admin privileges
    - What to do if you are not an admin?
        * Virtual environment

IDE - Integrated Development Environment

- Visual Studio Code

- Sublime

- PyCharm

- Vim

- There are many more

Run a Python Script

- Run from command line

- Can run from IDEs

- Python script ends with `.py`

- if Python is on your PATH:

    - `python runScript.py`

- if Python is not on your PATH:

    - `C:\location\of\python\binar\python runScript.py`

Python Activity

- Create a `.py` file in your editor of choice

- Add the line `print("hello world!")`

- Save the file

- Open cmd, terminal, console, Powershell, etc.

- Use the `cd` command to navigate to where your file is

- Run `python <name_of_file>`

  - It should print out the string `hello world!`
  - You may need to run `python3 <name_of_file>`