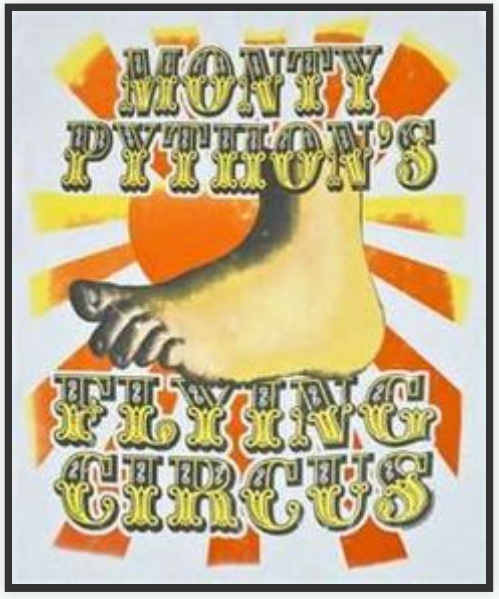
PYTHON

Getting up and running in as few steps as possible

```
def Python():
    return "And now for something completely different"
```



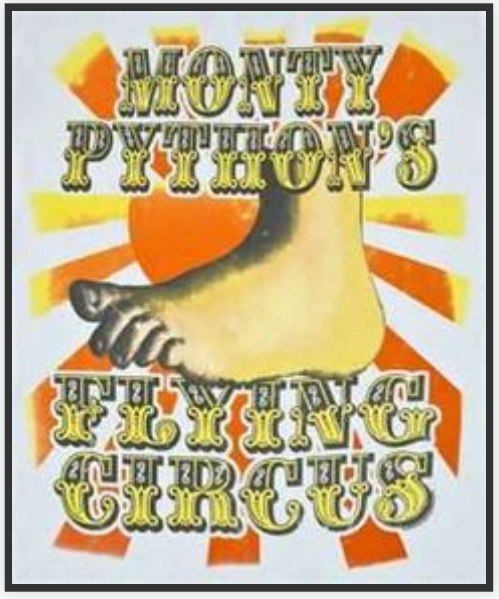
AGENDA

1. What is Python?
2. What do I need to get started?
3. Dive in!

WHAT IS PYTHON?

Python is an interpreted, high-level, dynamically typed, general purpose language

Named after Monty Python's Flying Circus



Released in 1991 by Guido Van Rossum

Now managed by the non-profit Python Software Foundation

Python is open source and runs on Windows, Mac and Linux

Available for free from https://www.python.org

INGREDIENTS

1. Python Runtime (3.4+)
2. Text Editor or IDE

AND/OR use Pip/Conda to install Jupyter

And that's it!

OPTION 1 - PYTHON

https://www.python.org

This provides the bare minimum you need to start writing Python

Use Pip to install all the libraries you need

```
pip install ...
```

OPTION 2 - ANACONDA

---

https://www.anaconda.com/

Anaconda Distribution is a free and comes with a bundle of related software.

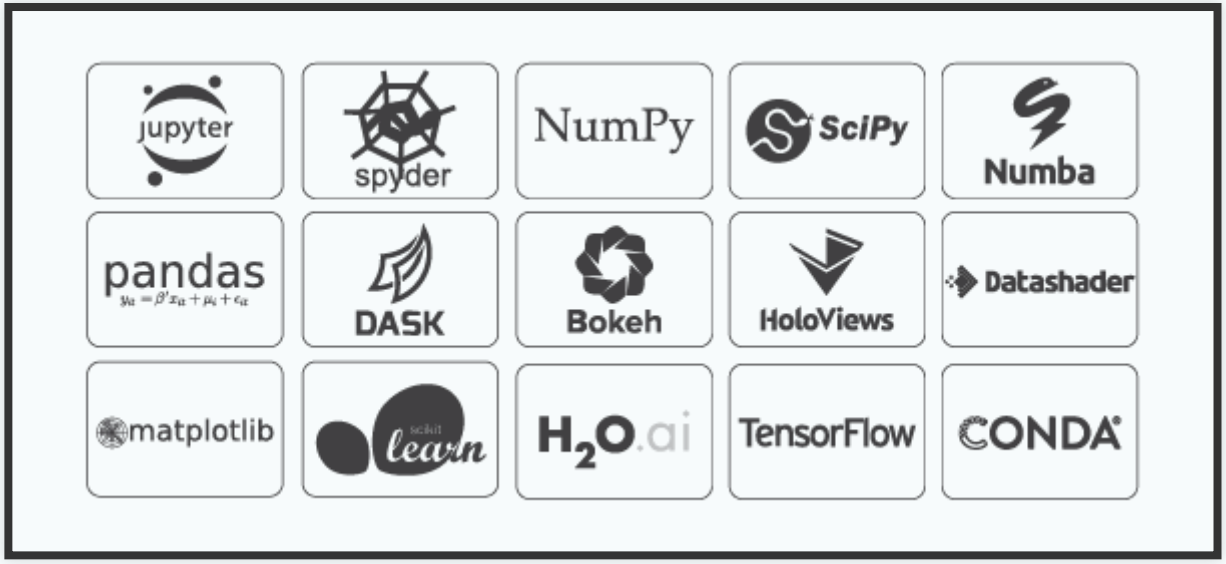
```
# Install additional libraries with

conda install ...
```

ANACONDA CONTINUED...

Available in Python 3.7 or 2.7 (don't ask) and is designed to give a "headstart" for Data Science projects, including:

- Libraries like MatplotLib, NumPy and Pandas
- Jupyter
- Spyder and more


jupyter
spyder
NumPy
SciPy
Numba
pandas
DASK
Bokeh
HoloViews
Datashader
matplotlib
scikit learn
H2O.ai
TensorFlow
CONDA

PYTHON INSTALLED...

WHAT NEXT?

Jupyter is a great way to play with Python (as well as for analytics and demos!)

```
# Run the following in CmdLine, PowerShell or Bash

pip install jupyter
mkdir notebooks
cd notebooks
jupyter notebook
```

Open up your browser to:

http://localhost:8888

(might be opened automatically)

DEMOS

BASICS

Variables, lists and basic syntax

CONTROL FLOWS

If, Else If (elif), For, While

Try...Except

FUNCTIONS AND CLASSES

Like any good language!

LIBRARIES

External libraries are a **huge** part of the Python ecosystem

My libraries at time of writing:

```
arrow==0.13.0
astroid==2.1.0
backcall==0.1.0
binaryornot==0.4.4
bleach==3.0.2
certifi==2018.11.29
chardet==3.0.4
Click==7.0
colorama==0.4.1
cookiecutter==1.6.0
cycler==0.10.0
Cython==0.29.2
decorator==4.3.0
defusedxml==0.5.0
entrypoints==0.2.3
ezodf==0.3.2
```

DEMO - USING LIBRARIES

DEV TOOLS

- Python can be run from the command line
- Idle Python shell is pretty basic
- For best results...

VISUAL STUDIO CODE

PYCHARM

SPYDER

DEMO

INTERACTIVE VS CODE

DEMO - FLASK

- Flask is a well known and widely used "microframework" web server
- It contains the barebones for creating a fully fledged web service including routing and RESTful request dispatching
- You bring the other components you need e.g. ORM/ODM

http://flask.pocoo.org

DEMO - FLASK

Also, this Presentation is running on a flask app (see the source code on GitHub)

```
// Run from the command line:
python app.py
```

Full disclosure, it's actually written in MarkDown and Reveal.js

MYTHS

PYTHON IS SLOW

- It is a high level language but can be compiled down to C using Cython, a superset of Python which also allows methods to be written directly in C
- Make up for "slow" performance (compare to low level languages like C++) with significant productivity gains

PYTHON IS ONLY FOR DATA SCIENCE

- Python is a multi-purpose language and can be used in
- BUT Python saw significant growth in 2018 in Data Science and consistently features in the TIOBE top 10

PYTHON IS ONLY USED FOR PROTOTYPES

- Python is a full programming language and has numerous uses.
- Eve Online, for example, is built in Python with some C-optimisations for performance.
- Netflix, Facebook, Apple and Microsoft have all adopted Python into their portfolio

RESOURCES

- Python official Site - https://www.python.org/
- Anaconda - https://www.anaconda.com/
- Talk Python to me weekly audio Podcast - https://talkpython.fm/
- Local Python Meetups - https://www.meetup.com/Exeter-Python/
- These Slides - https://github.com/SimonStride/Presentations