Programming with Python

- Course notes:

https://uomresearchit.github.io/Programming-With-Python

- These slides:

https://uomresearchit.github.io/Programming-With-Python/documents/programming_with_python_in_person_slides.pdf

Feedback

- Note: there is no attendance sheet - please complete the feedback instead
- Constructive comments and suggestions are very welcome
- If you would recommend the course, please feel free to post on LinkedIn and mention ResearchIT

Research-related IT Services

Our website is: https://research-it.manchester.ac.uk/

We provide:

- Training courses teaching computing skills for Research
- General guidance and advice about research software
- Access to specialist support and consultancy e.g. code reviews
- Access to High Performance Computing (HPC) systems
- Data storage and management
- Full list of services on offer

For help and support use the Support Centre

Housekeeping

- Rough Course timing:
  - 9.30 – 10.30
  - 11.00 – 12.00
  - 13.00 – 14.30
  - 15.00 – 16.00

Aims of the day

- Strengthening python knowledge, oriented towards python numerical tools
- We will not teach all of Python or all data analysis with Python
- The aim is to teach you enough, so you know how to find out more

Course Schedule

1. Python Essentials Recap
2. Dictionaries
3. Numpy Essentials
4. Defensive Programming
5. Units & Quantities
6. Pandas Essential
7. Conda Package Management

Teaching methods

Interactive workshop-style course

- Based on Software Carpentry method
- Type along with the examples
- Test your understanding in the exercise sessions

- Course notes:
  - https://uomresearchit.github.io/Programming-With-Python/
  - All examples and exercises are in the course notes
  - Notes and slides will remain online after the course

Getting help (in-person)

- Use the provided post-it notes to get help
  - Use a green post-it if you are happy
  - Use a yellow post-it if you need help
  - Also feel free to raise your hand to ask for help or a question
- Do interrupt us to ask questions
- Peer learning
  - During exercises, please help each other as required

Creating your Workspace (1)

- Launch a **JupyterHub** Service from a web browser:
  - https://jupyter.its.manchester.ac.uk/
  - Login using your university credentials
  - **Firefox** or **Chrome** are the best browsers to use, if you find one doesn't work then try using the other
  - Once you are logged in, open a terminal window by clicking on the **+ symbol** to open a new launcher tab, and click the **Terminal** icon (in Other)

Creating your Workspace (2)

- To download the course material
  - Commands
    - `wget https://uomresearchit.github.io/Programming-With-Python/data/python-intermediate-data.zip`
    - `unzip python-intermediate-data.zip`
  - Check that the data is there after unzipping, and remove zip file if it is
    - `ls –ltr data/`
    - `rm python-intermediate-data.zip`
- Click the **+ symbol** to open a new launcher tab, and then click on the **Python 3 (ipykernel)** button to open a Jupyter notebook