

Python 1

Objectives

- Variables, assignment, loops and conditionals
- Using an external Python library
- Read tabular data from a file
- Subset and analyse data
- Display some simple graphs

Obtaining the working directory

Navigate to your Desktop on the command line and:

```
git clone https://github.com/callaghanmt/sc-python-1.  
git
```

(all on one line)

Using IPython Notebook (Jupyter)

- An interactive lab book that runs in your browser
- Run code, add text and comments
- Save a notebook
- Share via Github

At the end of the day...

I'll upload a completed version of the notebook at the end of the day.

How?

cd into the newly-cloned directory

Then, at the command line:

```
ipython notebook
```

and then choose:

01-intro-python.ipynb

Question 1:

Is Python case sensitive when dealing with identifiers?

- a) yes
- b) no
- c) sometimes only
- d) none of the mentioned

Question 2:

What is the maximum possible length of an identifier?

- a) 31 characters
- b) 63 characters
- c) 79 characters
- d) none of the mentioned

Question 3:

Which of the following is an invalid variable?

a) my_string_1

b) 1st_string

c) foo

d) _

Challenge 1:

- Import the data from `A2_mosquito_data.csv`
- Create a new variable that holds the data frame with only the weather data
- Print the means and standard deviations for the weather data

Challenge 2:

- Using the data in `A2_mosquito_data.csv`
- Plot the relationship between the number of mosquitos and temperature
- Plot the relationship between the number of mosquitos and rainfall

Key points (1)

- Import a library into a program using `import libraryname`.
- Use the pandas library to work with data tables in Python.
- Use `variable = value` to assign a value to a variable.
- Use `print something` to display the value of something.
- Use `dataframe['columnname']` to select a column of data.
- Use `dataframe[start_row:stop_row]` to select rows from a data frame.

Key points (2)

- Indices start at 0, not 1.
- Use `dataframe.mean()`, `dataframe.max()`, and `dataframe.min()` to calculate simple statistics.
- Use `for x in list:` to loop over values
- Use `if condition:` to make conditional decisions
- Use the `pyplot` library from `matplotlib` for creating simple visualisations.