

Spotted Python

Week 3 Tutorial

- ★ Lists and Arrays
- ★ Functions
- ★ Logical Statements
- ★ Simple Graphing

Lists and Arrays

- ★ Lists are a sequence of objects enclosed in `[]` and separated by commas
- ★ Arrays are an arrangement of numbers or objects formatted into rows and columns
- ★ Indexing:

	1	3	5	7	9
index	0	1	2	3	4
negative index	-5	-4	-3	-2	-1

Notice that indexing starts from 0

	0	1	2	
0	(0,0)	(0,1)	(0,2)	← Column Index
1	(1,0)	(1,1)	(1,2)	
2	(2,0)	(2,1)	(2,2)	
↑ Row Index				

- ★ Complete **Exercise 1**

Functions

- ★ A set of instructions that will be repeated
- ★ Code written for a specific task. For example, calculating the gravitational acceleration
- ★ Complete **Exercise 2**

Logical and if-else Statements

- ★ Python can evaluate logical statements
- ★ `==, >=, <=, !=, >, <`
- ★ *if* statement executes a block of code (indented) if the given condition is True
- ★ *else* statement executes a different block of code, if the *if* condition is False
- ★ *elif* statement allows the execution of multiple conditions in sequence
- ★ Complete **Exercise 3**

Simple Graphing

- ★ Matplotlib is the most used tool for visualisation
- ★ Documentation: <https://matplotlib.org/stable/>
- ★ List of in-built colours:
https://matplotlib.org/stable/gallery/color/named_colors.html
- ★ List of in-built colourmaps:
<https://matplotlib.org/stable/users/explain/colors/colormaps.html>
- ★ Module to import alternative colourmaps:
<https://cmasher.readthedocs.io/index.html>
- ★ Tool to create colourmap: <https://gka.github.io/palettes>

Group Meeting Time