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Spotted Python

Week 2 Tutorial

- Markdown
- Modules
- Lists and Arrays

Markdown

- Text-to-HTML conversion tool
- Can be used in Jupyter Notebooks for annotation of code

Element	Markdown Syntax
Heading	# Heading 1
Bold	**Bold text** or __Bold text__
Italic	*Italic text* or _Italic text_
Highlight	==Highlighted text==
Unordered List	- First item
Link	[title](https://www.example.com)

- Allows mathematical expressions in LaTeX-style syntax
- Cheat sheet: https://www.markdownguide.org/cheat-sheet/
- Complete **Exercise 1**

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BODMAS with Python

- Operators in Python are applied much like the rules we learnt in primary school. Specifically:
  1. () Brackets
  2. ** (not ^) Exponentiation
  3. *, /, //, % Multiplication, Division, Floor Division, Modulus
  4. +, - Addition, Subtraction
- Complete **Exercise 2**

Note:
Using comments and easily interpreted variable names makes code easier to read. But make sure your variable name starts with a letter and is not a reserved word within Python.

Modules

- A file containing Python definitions and statements that can be imported into another script
- Common modules and how they are imported:
  - import numpy as np
    - Manipulation of arrays
  - import matplotlib.pyplot as plt
    - Create static, animated and interactive visualisations
  - from astropy.io import fits
    - Contains range of tools for astronomical computations
    - FITS (Flexible Image Transport System) is a digital file format containing multi-dimensional arrays

Data Types

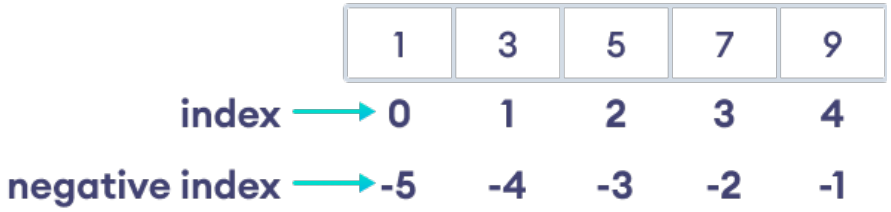
- A file of different data types:

Data Type	Meaning
Integer	No decimal point
Floating point	With decimal
Complex number	
String	Text

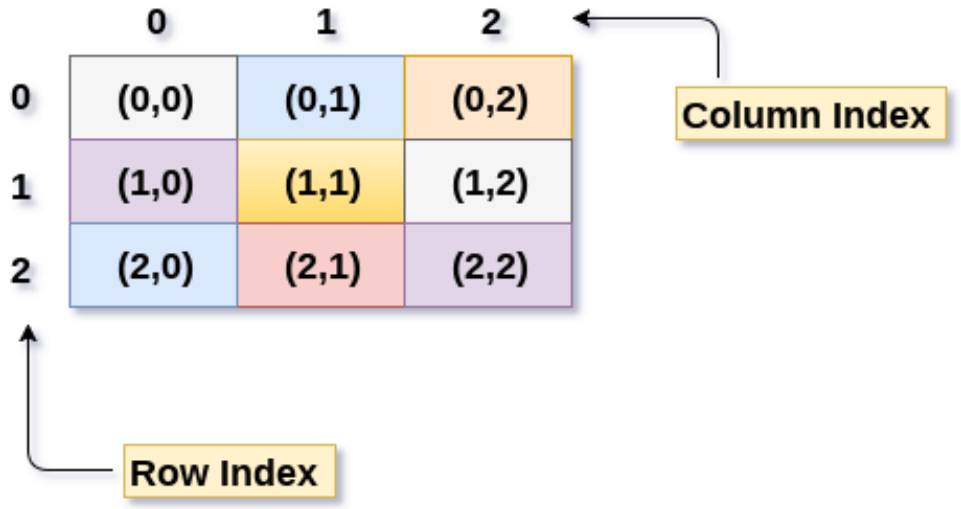
- Cannot add or subtract strings with an integer
- To work with the data types, you can convert them into the same type

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:
- Complete **Exercise 3**



Notice that indexing starts from 0



Group Meeting Time

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