**Tutorial 2 – Jupyter notebook and Python revision**

Aim:

* Some definitions
* Create a jupyter notebook
* Revise Python

This tutorial will serve as revision for Python and help you to become proficient in using Jupyter lab notebooks.

1. Imagine you are at a party and someone asks you what is Artificial Intelligence?

Without looking at the lecture of searching Google, try to answer the question in your own words?

You will also likely be asked when you think human level AI will be achieved or are we likely to enter a new AI winter? Discuss with your tutor.

Make a prediction based on your own views, and try to remember to check back to see if you were correct in the future.

1. Recreate the Tutorial-week2.html file in a jupyter lab notebook

Note the Software requirements tab on the Blackboard site. There are alternative ways to use python and jupyter notebooks from local Python installation with Jupyter via pip, through to cloud based installations like Google Colab. We suggest you use Google Colab for its convenience in the labs, but having a local installation for use with your favourite editor, like VS Code is also helpful.

Start jupyter notebook using Google Colab or Anaconda Navigator.

Download and open the attached Tutorial-week2.html file that I exported from a notebook I created.

Now recreate the contents of the HTML file in your own Jupyter notebook ensuring that you create code and text cells accordingly. Your seminar tutor can help you if you get stuck.

Once you have completed creating and working through the notebook, try the next exercise for a challenge.

1. Python exercise

Write a program that reads in a text file and prints out the word frequencies. Use the Jupyter lab notebook to document the development of your program. Example

**Input text**: “The rain fell on the car. The rain fell on the ground.”

**Output**: the-3, rain-2, fell-2, on-2, car-1, ground-1   
  
Break the problem down into subproblems. Please do not use ChatGPT to generate the solution until you have had a go at implementing it yourself.

1. Finally

Examine this matplotlib notebook for an example of how well a jupyter notebook can serve as a means of illustrating and disseminating scientific research.

https://nbviewer.jupyter.org/github/jrjohansson/scientific-python-lectures/blob/master/Lecture-4-Matplotlib.ipynb