

Week 02 Tutorial

Python Setup and Basic Graph Traversal

Aims

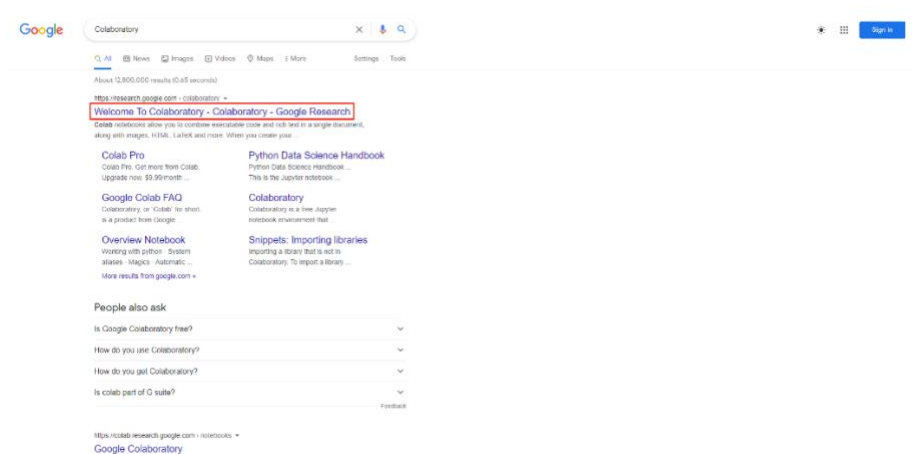
This exercise aims to get you to:

- Manually load a graph via basic Python
- Implement graph traversal algorithms (DFS, BFS, connectivity)
- Implement complex graph structures (directed, weighted)

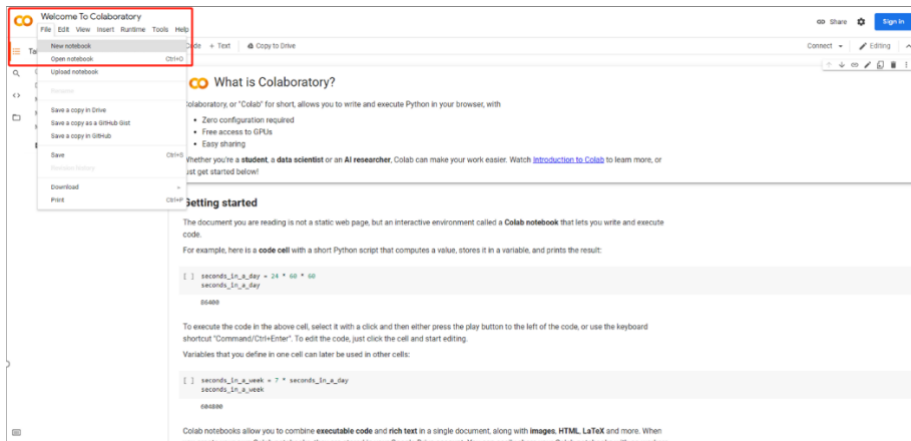
Exercise 1: Graph Setup

We introduce 'Colaboratory' which is a free web tool to run Python codes easily. Feel free to use other tools if you like.

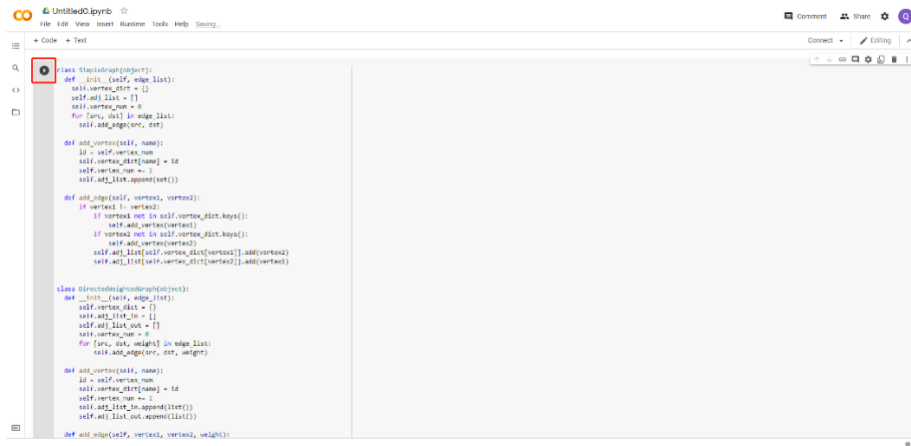
1. Google search 'Colaboratory' and click the first link shown.



2. Click 'File' → 'New notebook'



- a. Copy the codes in 'tutorial_1.py' to the editor, fill in your codes for the following exercises, then click the marked button to run your codes.



3. Understand the implementation of class 'SimpleGraph' in tutorial_1.py via basic python. Manually load the graph in Figure 1 using 'SimpleGraph' and output the degrees of all the vertices. Please refer to the function **getAllDegrees(G)**.

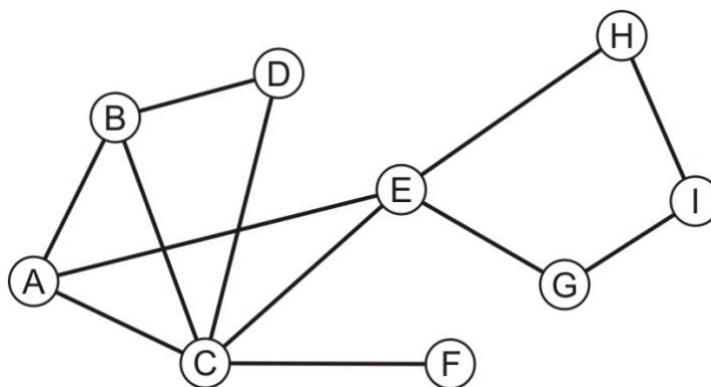


Figure 1