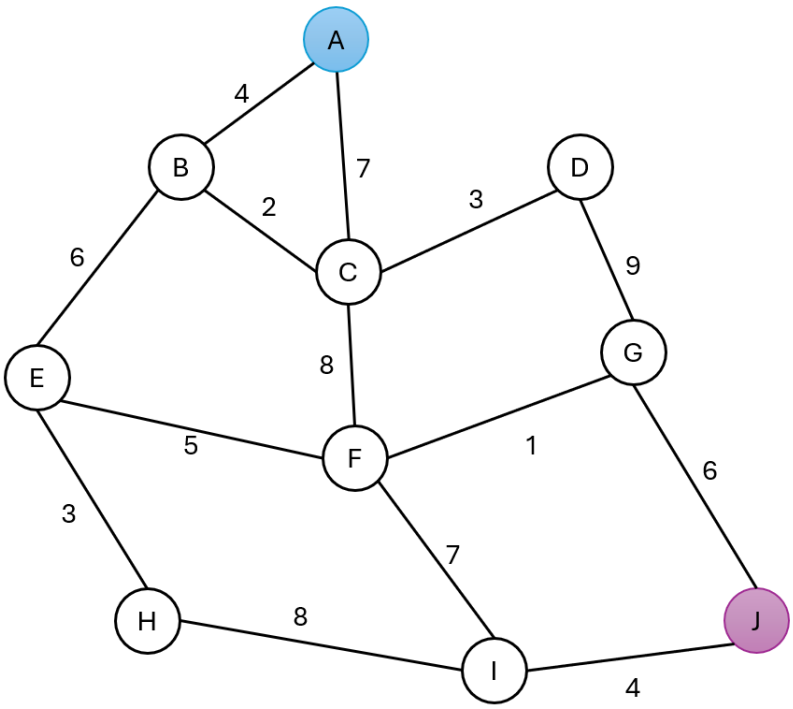
CENG 466 – Homework 1

Part I: (100 points)

Consider the following graph with 10 nodes and weighted edges:



Set the starting node as `A` and the goal node as `J`.

1. **Draw search trees** for each of BFS, DFS, and UCS. Show the order of exploration (i.e: first A then B and C. then E etc.) on the tree.

2. Write the paths found by each algorithm and calculate the total cost for each path.

3. Discuss which algorithm finds **the shortest path in terms of edges** and which finds **the most cost-efficient path**.

Part II: Bonus

Implement BFS, DFS and UCS using python for the example in Part I.