

## LAB 4 Explain

① Task 1a: Here I used values for vertex and edges to build a matrix. First I ~~initiated~~ made a blank matrix then used the values from input to complete.

② Task 1b: Here in same way I used values to build a graph but using a dictionary. In the dictionary keys are the nodes from starting and points and values are the connected nodes.

③ Task 2: In this code I implemented BFS algorithm to go through the graph. Here visited list is used to check if nodes are visited or not.



Q1 Task 3 In this code I implemented DFS algorithm. Here if any node is visited then I searched for the ~~com~~ connected & non visited node.

Q1 Task 4 In this code I used a modified BFS. I used a visited and a queue

list. If any node is in process ~~then~~ and it checks out again, then it will count as a cycle.

Q1 Task 5 In this code I also used BFS. I made a ~~set~~ separate dictionary for parent searching and used that to find a shortest path.

Q1 Task 6 I did not finish.