

## Lab Assignment 4

### Task 1

1) First make an  $n \times n$  adjacency matrix ~~consisting~~ consist only of value 0. Then, ~~Every edge's~~ Every edge's equivalent index ~~is~~ replaced with the edge's weight.

2) First make an array for every vertex. Then, ~~Add~~ <sup>edge</sup> append the ~~vertex~~ with his weight as tuple in the vertex's corresponding index.

## Task-2

First make a queue. Then, store the first element of the graph. Then, dequeue the element ~~and~~ enqueue every element which is connected to that ~~vertex~~ and also not visited before. Do this until queue is empty.

## Task 3

Start from vertex-1, If you find a edge that is not ~~vis~~ visited already, explore again from that vertex. Do this until every vertex is visited.

## Task-4

After exploring the graph with DFS, if one back edge is found, then graph has cycle. Otherwise No..

## Task #5

In bfs, we explore the vertex directly connected with the present vertex. ~~If we~~ So, I have track down the distance and store with <sup>two</sup> arrays and find the shortest path.

## Task 6

While using BFS, If we find '#', we won't explore any of the adjacency value. Other wise If we find 'D', we will count 1 and if ~~we find~~ then explore. Again, If we find dot, we will just explore.