CSE-221

LAB-04

Mohammad Rakibul Hasan Mahin

20201220

08

~~N~~

Task: 3

i) N places → Vertex → V

M roads → Edges → E

Time complexity of Dijkstra in Task 1 and Task 2 is $O(V+E)\lg V$ or $O((N+M)\lg N)$

This includes the time complexity of the min-heap which is $O(\lg N)$

ii) In Task-2 we needed to find the path In our ~~pat~~ prev array we get ~~outt~~ the prev nodes of each vertex ~~the~~ (shortest one). Lets say number of Path be P ∴ Time Complexity of Task-2 is $O(N+M)\lg N + P$

iii) As All nodes need to be visited we can use BFS. And as nuber of Titan is 1, it will add 1 after each exploration

BFS(graph, starting_pos)

~~Pseudocode is~~