## Assignment 6

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## Task 1 Itab > ( wind ) [ will sib ) with I would be the

In Dijkstra's algorithm, we find the shortest path from source node to an other nodes in a non-negative graph. Here, there is a priority appeal. We take the node with the least distance and update the distances for all of its neighbours such that dist[u] + cost<sub>u,v</sub> < dist[v] where U = current node, V = neighbour node. This process continues until the avera is empty. The unreable nodes are to be marked with -1 so I have checked for the infinities in the distance array in a while loop and swapped them with -1 until there are none left.

## Task 2

Here, for two people-Alice and Bob, we run dijkstra twice from each of their starting node. So, we get two parays with the shortest distances. We compare both array elements in pairs and check if for the minimum of the all the maximums of each pair, This is the time made where the two will meet. However, this check will not be applicable if the node is unreachable by any of the two. The (index +1) is the node where they will meet.

Fask 3

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Here, we modify the dijustra algorithm from task 1.

Here, we check for max(dist[v], costu, v) < dist[v]

instead. By doing so, we're getting the max danger

for the nodes from the source node. Among there,

the result is the danger for the last node.

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