

CSE 221
LAB ASSIGNMENT - 04
Fall 2021

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Sec : 02

Task_03

⇒ Problem 1 time complexity:

for taking input = $O(T \times M)$
↳ #Test-case.

for dijkstra = $O(N + M \log N)$

∴ $O(N + M \log N) + O(T \times M)$

OR $O(N + M \log N)$ → for small number of testcase.

⇒ Problem 2 time complexity:

for problem_2 we need more memory than problem-1. But the time complexity is remain almost same.

⇒ If the number of titans in each road is exactly 1, then we could find the shortest path with BFS. which is an $O(N + M)$ algorithm. Then in input we don't have to give the number of titans. Because it is same for all roads. This algorithm gives us minimum possible roads.