Task ob in graphtist: it is distribled to I to I tend to I tend (Task 1) : Tray top > 41 impost heaps det dijlestra (graph, source); dist = { } Misch Skug prev = dict() . voice tob previo. for vin graph: (dist [v] = & prevIVI = Nonel bienfamos emit oust [source] = 0 Pa. []
Reapp. Heappush (pa. (dust [30wire] 50wire)) U= heapq. heappop (pq) []

it dist [u] == Hoat ("int"):

break. Partile Pail + (VI+M)

For vingraph [ii] 1

alt = dist [vi] + graph [vi] Ev]

if alt < dist [vi]: push distri Otoib = Kerry return dust prev. · Hon via graph: Therefore time complement 5 0(M 69N) dist (somsos) = 0 Formograph 2 O(M+N) 13.19 Overall = 0 (M+N) + 0 (MlogN)

: (Orz., Man (O (M+N), O (MlogN)) Hadrago of tilans in alassin function trom same dijkstra Jask 1 and boo moldong ett solo det solve (graph, souce, on) dist, prev = dijlustra (grayen, source) path = [n] artile n! 2 source: n = prev [n] path. append (n) posth. reverse() return path.

Here the over all time complexity

2 O(M WgN) + O(M+N)

If the number of titans in each road is exactly in then the also to solve the preblem will be BFS. dot solve (Araph, soude on) dist prev = distribution (graph, source 100 LOS [01] Messile on 12 source: In I prev [n] Cos presdio ypod