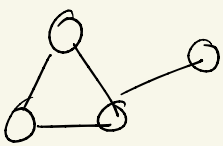
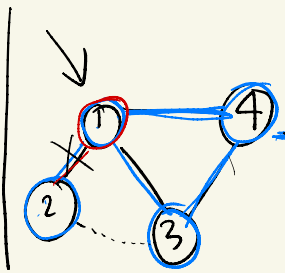
Graph:

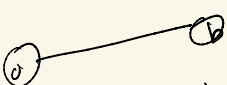





| (0,1) | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| 1 | X | 1 | 1 | 1 |
| 2 | 1 | 0 | 0 | 0 |
| 3 | 1 | 0 | 0 | 1 |
| 4 | 1 | X | 1 | X |

→ Adjacency matrix

→ List




mat(a,b) == T

① → ② 3, 4

② → 1, 3

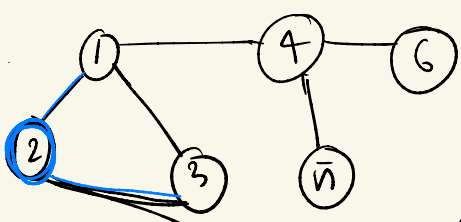
③ → 1, 4, 2

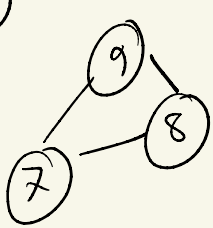
④ → 1, 3

Space Complexity,

$O(n^2)$

{1,2} = blocked.

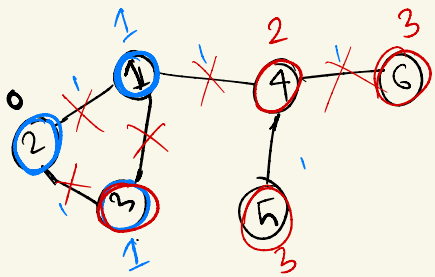


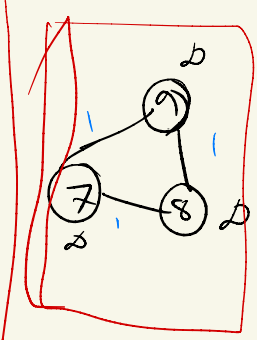




from $n_1$, we want to see whether we can reach $n_2$

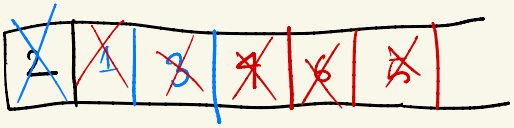
Graph reachability problem.

BFS / DFS

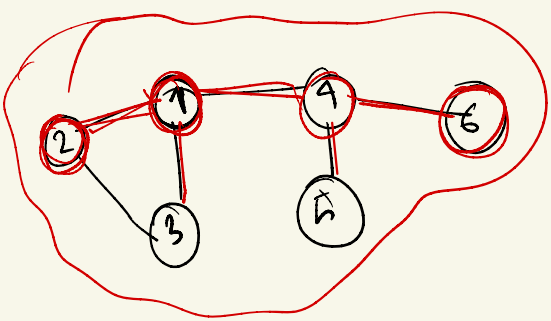


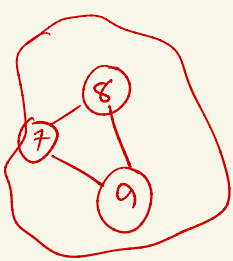



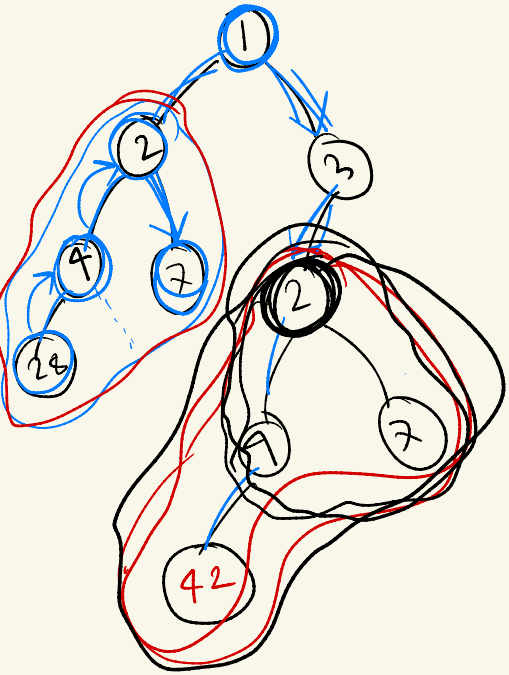

2 → 6

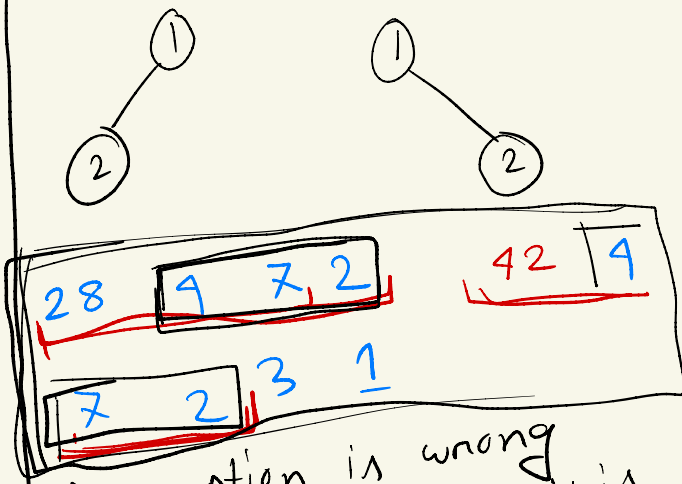



check whether dist[6] == ∞



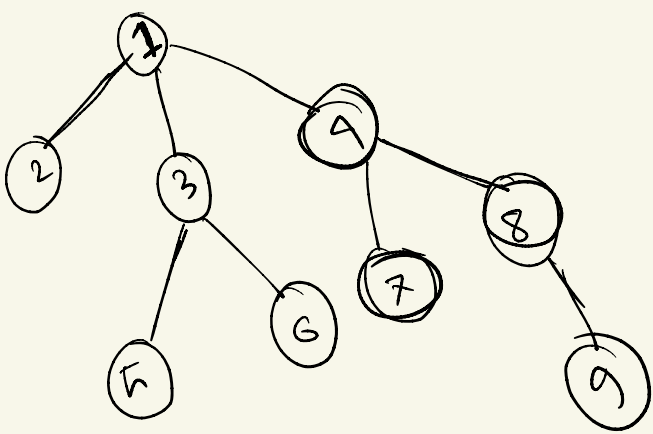



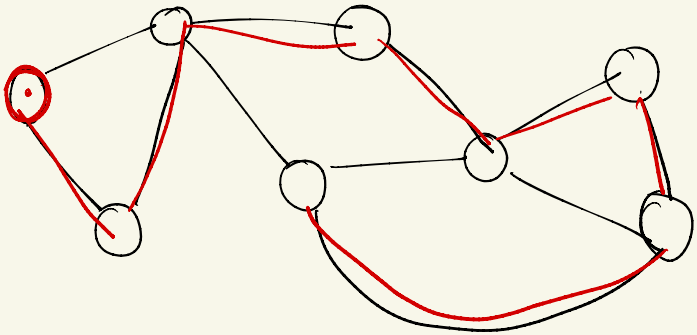


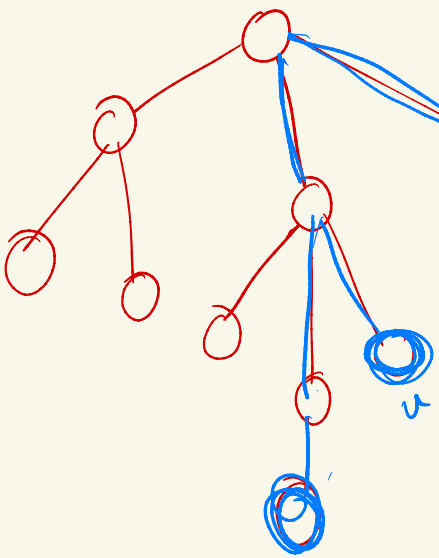

Assumption is wrong

H.W: Find a soln to this problem.





7




$O(n^2)$

Longest path in tree.