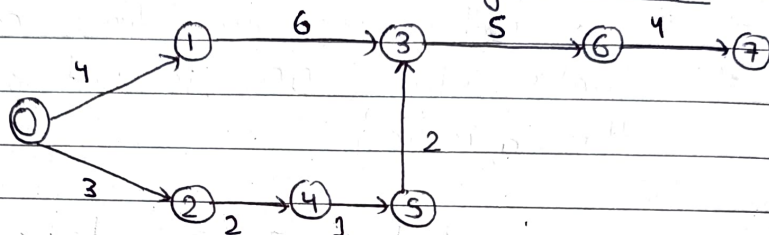


Day-207Graph-11* Shortest Path in Directed Acyclic Graph:

⇒ The numbers on the edge, we called it as weights.

⇒ We have return all the distances from source vertex.

⇒ If we use the previous day method then it will not give us correct answer.

⇒ If we use DFS then, we will visit the already visited nodes.

⇒ So, this will increase the time complexity.

⇒ we will do that we find the min distance of that node from source node.

⇒ $\text{dist}[3] = \min(6 + \text{dist}[1], 2 + \text{dist}[5])$

⇒ So, we will first calculate the min previous distances to go further.

⇒ So, we have to make a order —

0 2 4 1 5 3 6 7

(Order of ~~edges~~ vertex)

⇒ And this order is Topological sort.

⇒ When we are solving the question, we have which vertex is having edge on the current vertex.

⇒ For that, we have to check Adj. List.

⇒ But this will increase our T.C.

⇒ So, we will do relaxing of edges.

$$\text{dist}[\text{neigh.}] = \min(\text{dist}[\text{neigh.}], \text{weight}(\text{node, neigh.}) + \text{dist}[\text{node}])$$