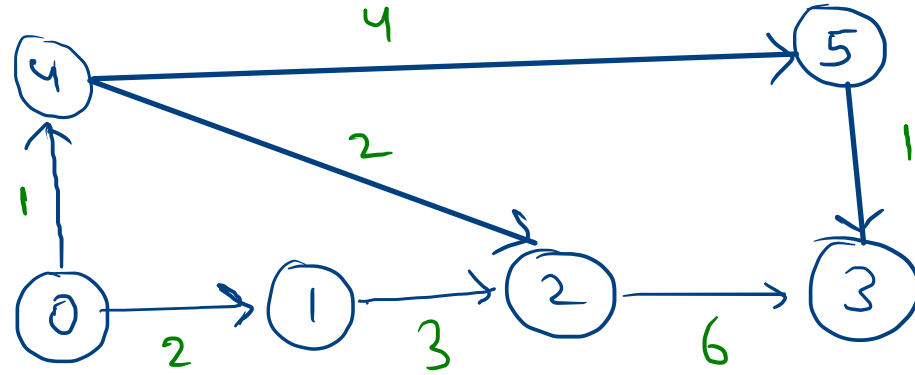
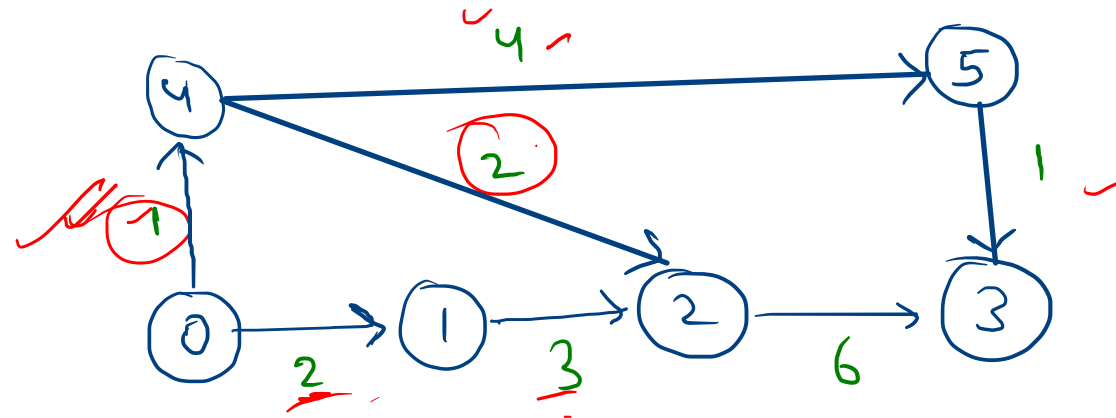


Shortest Path in DAG (Directed Acyclic Graph)

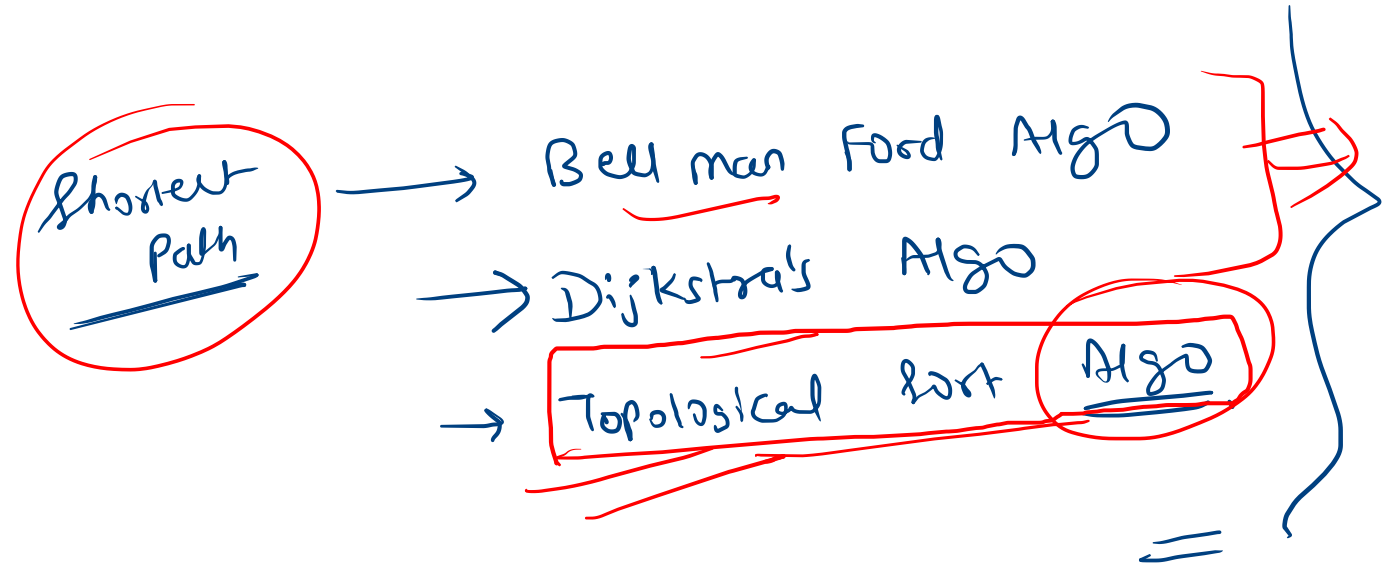
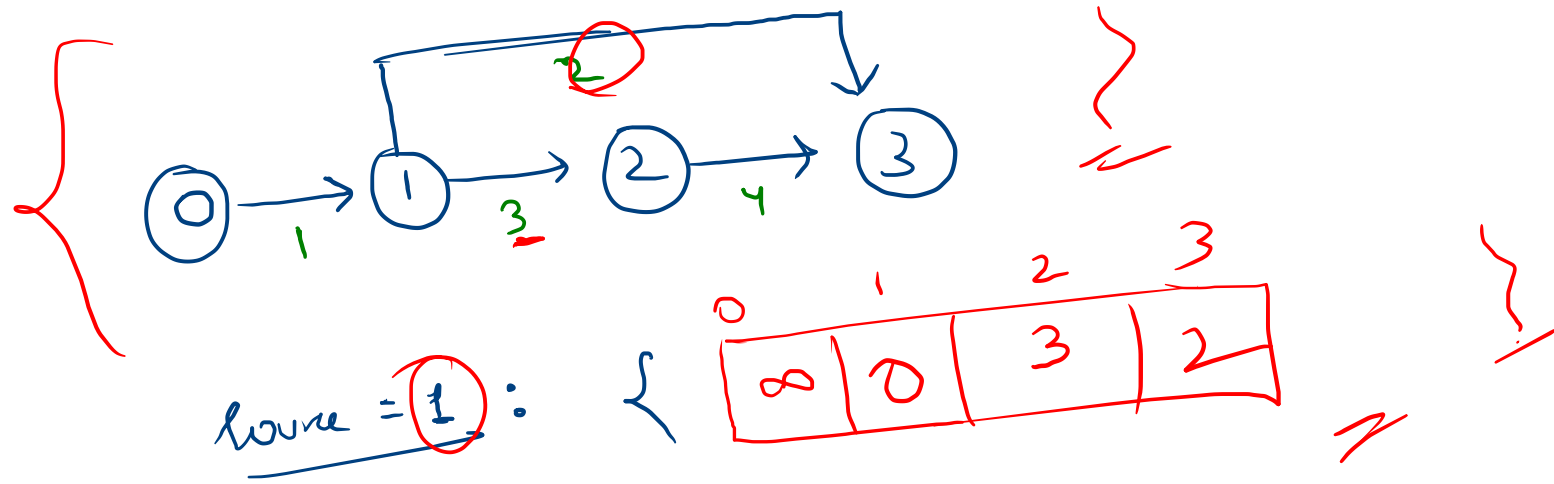


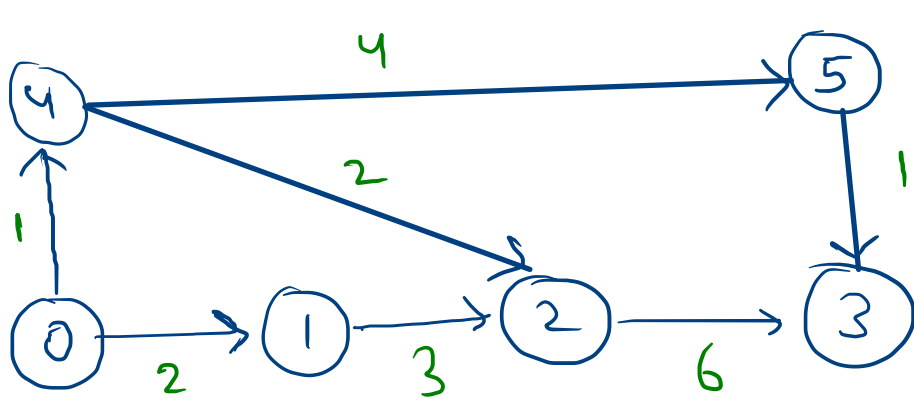
source 0:

Shortest Path in DAG (Directed Acyclic Graph)



Source: 0 : { ⁰0 ¹2 ²3 ³6 ⁴1 ⁵5 } ✓





Topological sort:

Ans

①

$\text{dist}[v] = \{\infty, \infty, \infty, \infty, \infty\}$

②

$\text{dist}[5] = 0$

③

find A topological sort of Graph

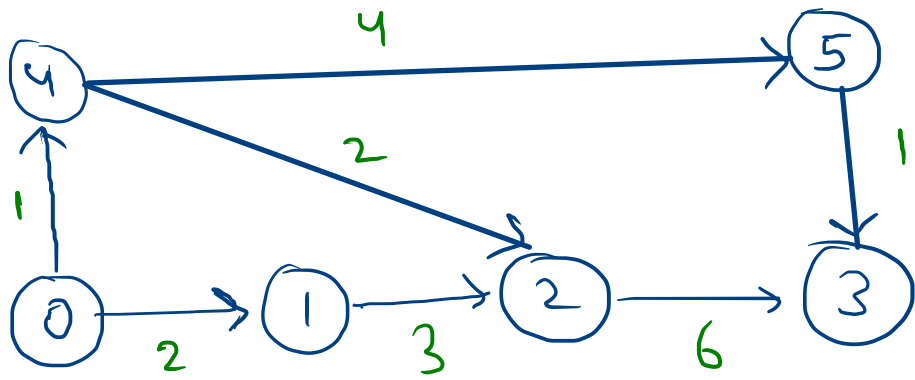
④

for every vertex u in a topological sort

↓

for (every adjacent v of u)

{ if ($\text{dist}[v] > \text{dist}[u] + \text{weight}(u, v)$)
 $\text{dist}[v] = \text{dist}[u] + \text{weight}(u, v)$;



Topological sort:

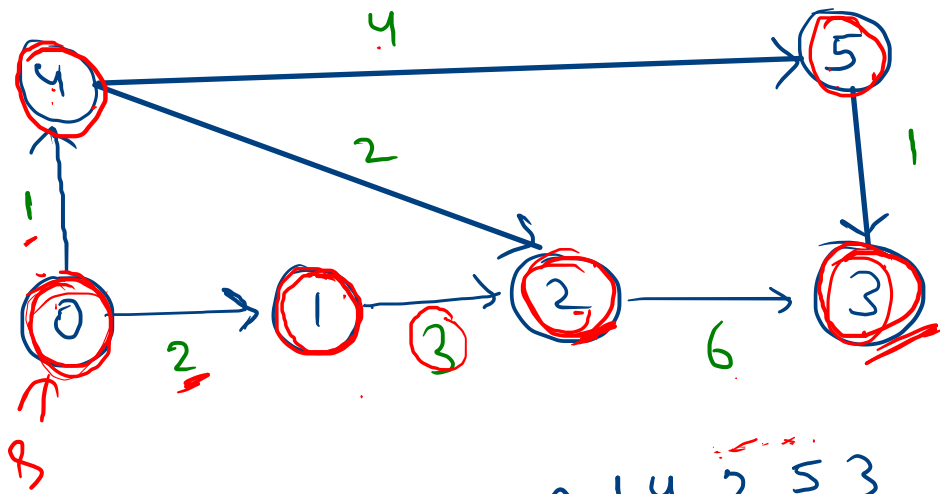
~~1~~ $\text{dist}[v] = \{\infty, \infty, \infty, \infty, \infty\}$

2 $\text{dist}[5] = 0$

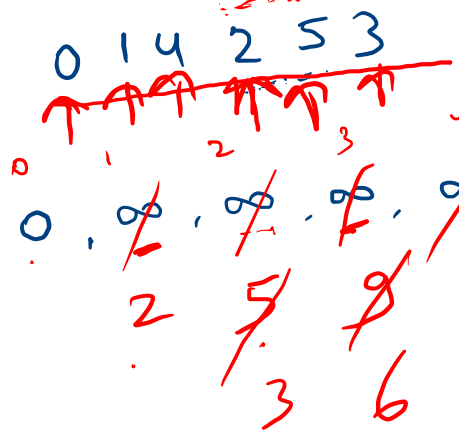
3 find A topological sort of Graph

4 for every vertex u in a topological sort

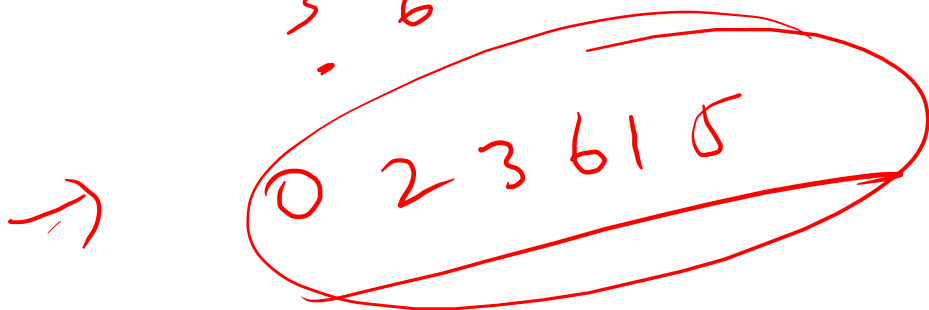
↓
for (every adjacent v of u)
{ if (dist[v] > dist[u] + weight(u, v))
 dist[v] = dist[u] + weight(u, v) ;



Topological sort:



$$\text{dist}[v] = \{ 0, \infty, \infty, \infty, \infty, \infty \}$$



$$\text{dist}[v] = \{ \infty, \infty, \infty, \infty, \infty \}$$

$$\text{dist}[5] = 0$$

[find A topological sort of Graph]
for every vertex u in a topological sort

for (every adjacent v of u)
if ($\text{dist}[v] > \text{dist}[u] + \text{weight}(u, v)$)
 $\text{dist}[v] = \text{dist}[u] + \text{weight}(u, v)$

$$\text{dist}[5] > \text{dist}[4] + \text{dist}(4, 2)$$

$$9 > 5 + 1$$

