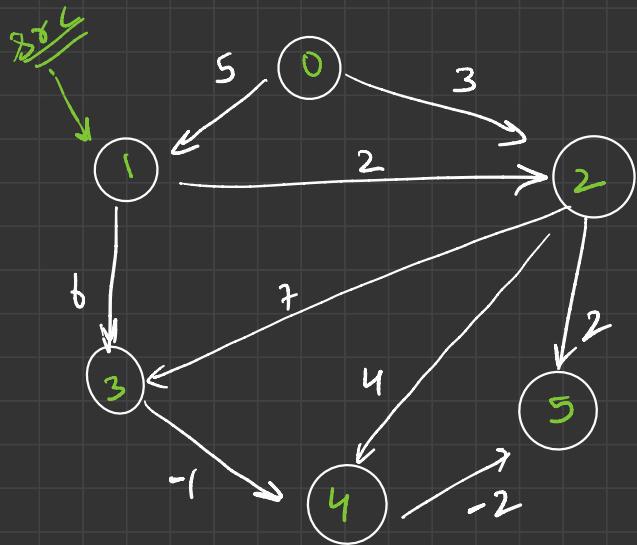



Shortest Path in DAG



$1 \rightarrow 0 \rightarrow \text{INF}$

$1 \rightarrow 1 \rightarrow 0$

$1 \rightarrow 2 \rightarrow 2$

$1 \rightarrow 3 \rightarrow 6$

$1 \rightarrow 4 \rightarrow 5$

$1 \rightarrow 5 \rightarrow 3$

$src \rightarrow t$

shortest path $\rightarrow \{ INF, 0, 2, 6, 5, 3 \}$

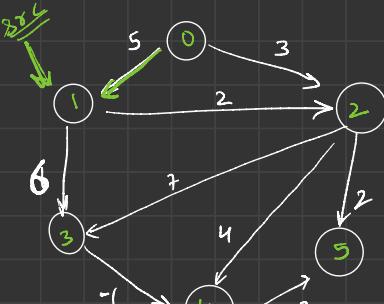
Approach :-

↓
visited

0	0 1
1	0 1
2	0 1
3	0 1
4	0 1
5	0 1

adj

- 0 $\rightarrow [1, 5], [2, 3]$
- 1 $\rightarrow [2, 2], [3, 6]$
- 2 $\rightarrow [3, 7], [4, 4], [5, 2]$
- 3 $\rightarrow [4, -1]$
- 4 $\rightarrow [5, -2]$
- 5 $\rightarrow [-]$



DAG

algo:-

Topological sort \rightarrow why?

Linear Ordering

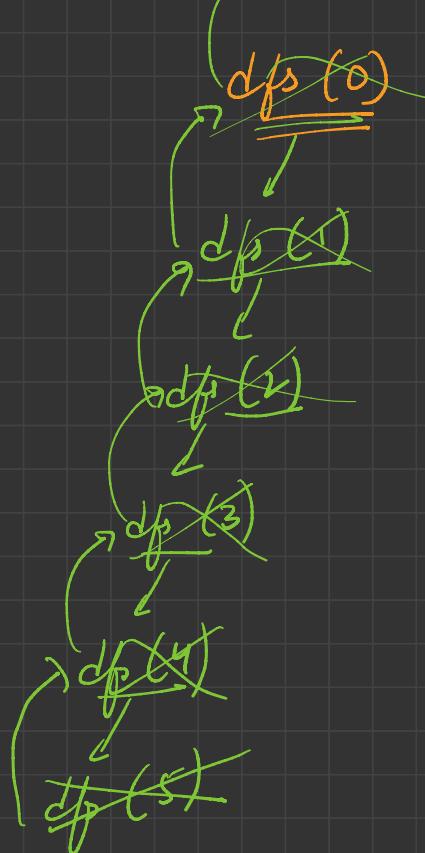
0
1
2
3
4
5

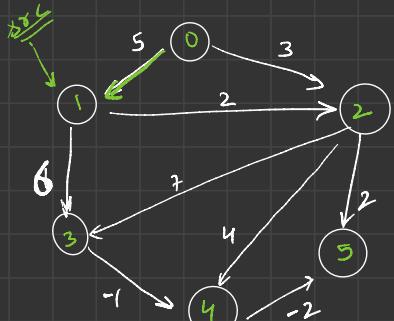
unordered_map
 \langle int, list<int> \rangle

stack /
unordered_map
 \langle int, list<pair<int, int>> adj.

distance array
update

```
for (int i = 0; i < n)
    if (!vis[i])
        dfs()
```





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

$| = \infty$

$$top = 0 \rightarrow$$

$$top \ 1 \rightarrow \boxed{0}$$

$$top \ 2 \rightarrow \ 2$$

$$top \ 4 \rightarrow \boxed{5}$$

$$top \ 5 \rightarrow \ 3$$

$$T.C \rightarrow O(N+E)$$

S.C

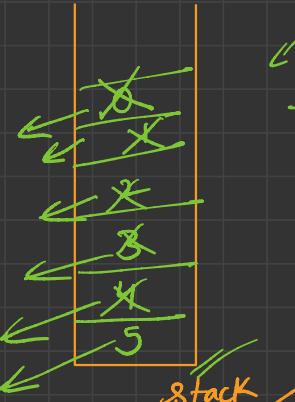
Confin' no if step

topological sort

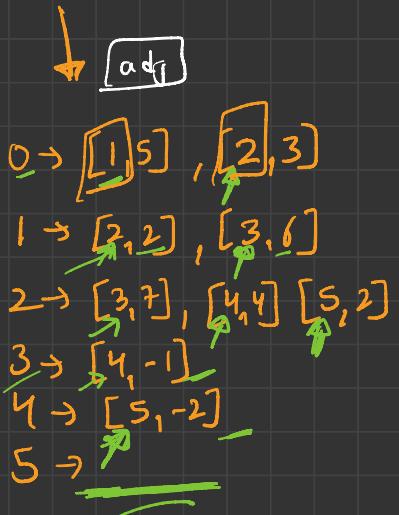
DRY RUN

$(4, 5)$ ex

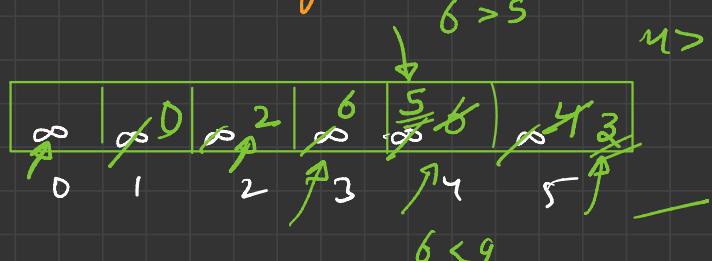
dry run



dist



$n > 3$



$b < 9$



$^3(5) \rightarrow$

$\text{dist} \rightarrow \{ \infty, 0, 1, 2, 6, 5, 3 \}$

