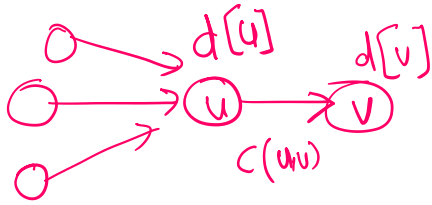
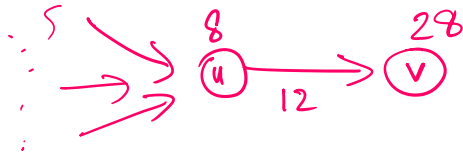


Relaxation



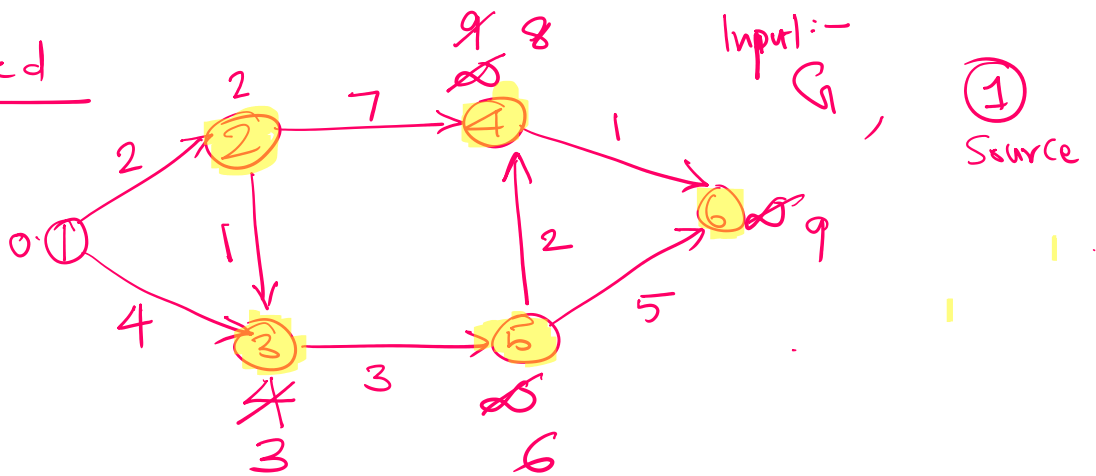
$$\text{if } (d[u] + c(u,v) < d[v])$$

$$d[v] = d[u] + c(u,v)$$



$d[v]$ is to be updated to 20

Directed



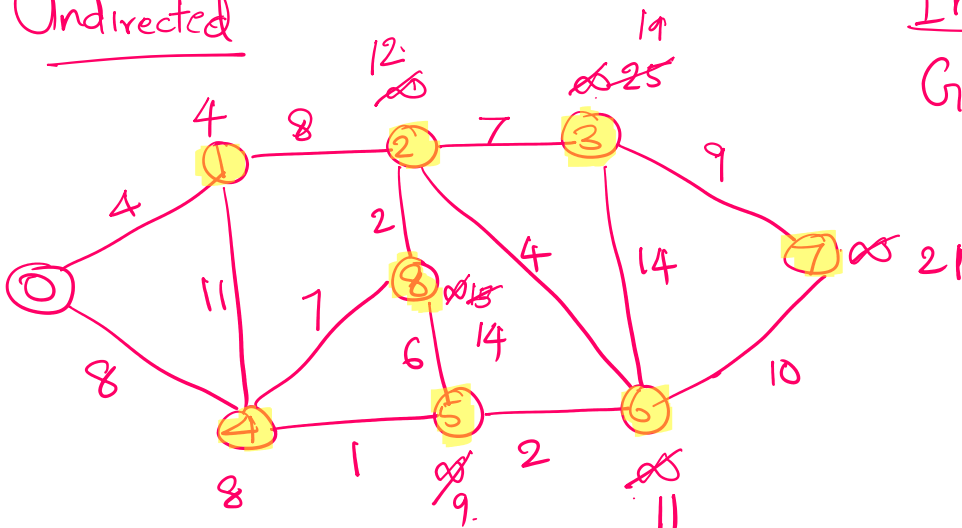
Input:-

G ,

①
Source

u	1	2	3	4	5	6
$d[u]$	0	2	3	8	6	9

Undirected



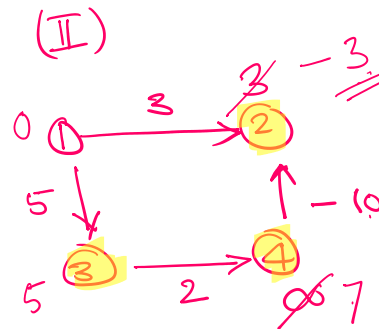
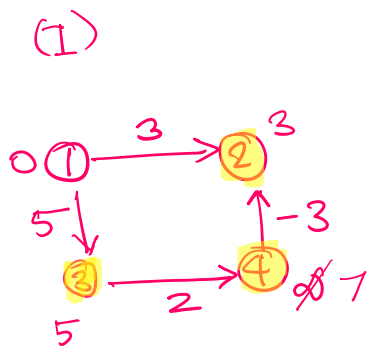
Inputs:-

G , 0

U	0	1	2	3	4	5	6	7	8
d[u]	0	4	12	19	8	9	11	21	14

Failure Cases:-

③



⇒ Dijkstra's may fail for graphs with $-ve$ weighted edges

⇒ We are not guaranteed to get s/p.

⇒ Can be avoided by Bellman-Ford algo.