Single Source Shortest Path : Bellman Ford

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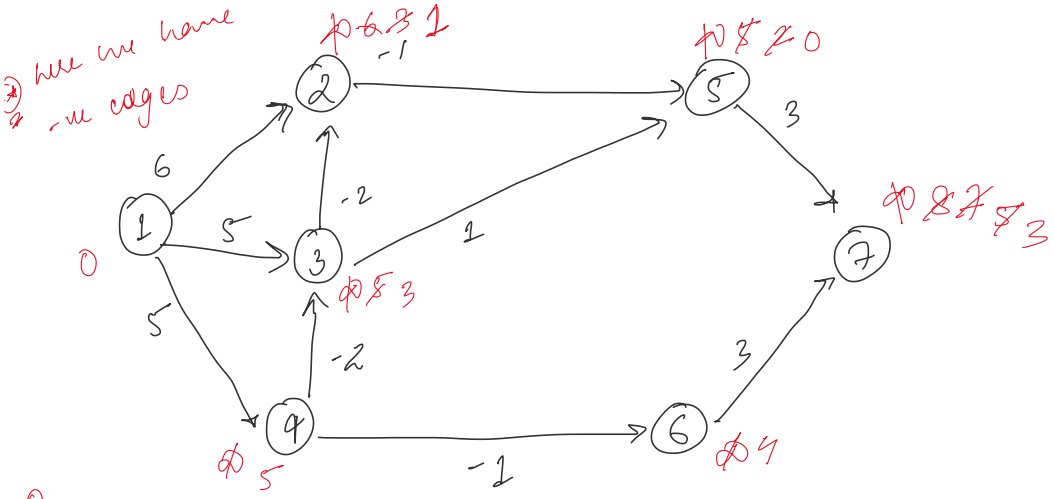

Q: In the directed weighted graph, we have to select one of the vertex & find out shortest path to all other vertex.

$|V| = n = 7$

from 1 to 7 there can be maximum 6 edges $|V|-1$.

Relaxation

If u, v are two vertex then

$$if(d[u] + c(u,v) < d[v])$$

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

edge list → (1,2), (1,3), (1,4), (2,5), (3,2), (3,5), (4,3), (4,6), (5,7), (6,7).

If there is cycle in a graph then this algorithm won't work as even after $|n-1|$ it will keep reducing.