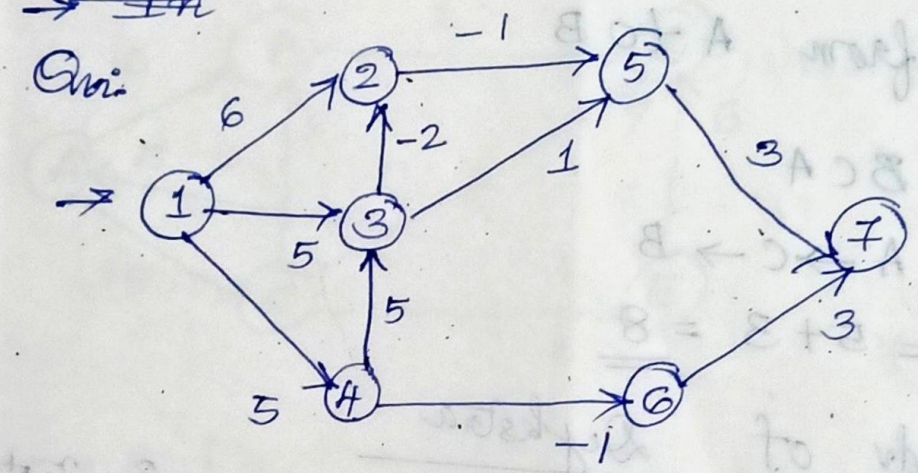
Bellman-Ford - Single Source shortest path

→ use dynamic programming

→ Dynamic prog and greedy approaches both are used for optimization problem.

→ ~~In~~

Qui.



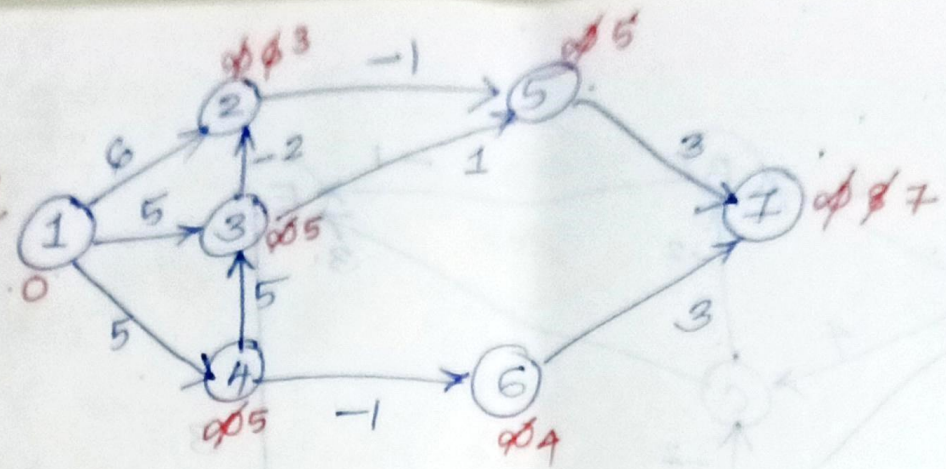
List of edges

(1,2) (1,3) (1,4) (2,5) (3,2) (3,5)
(4,3) (4,6), (5,7) (6,7)

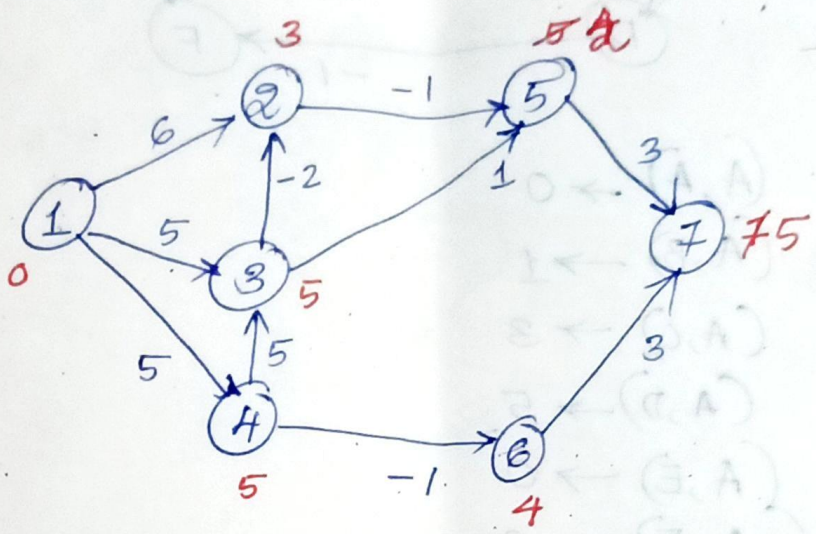
Relax for (n-1) times

n = 7 - relax for 6 times

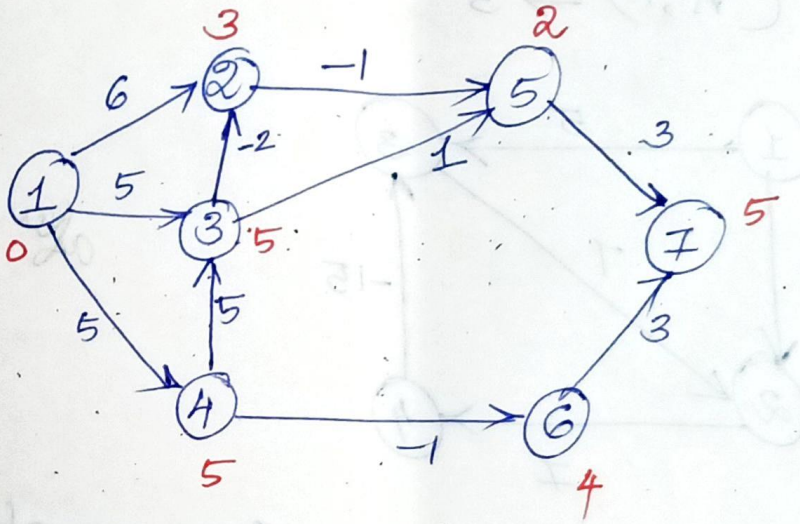
Iteration 1



Iteration 2



Iteration 3

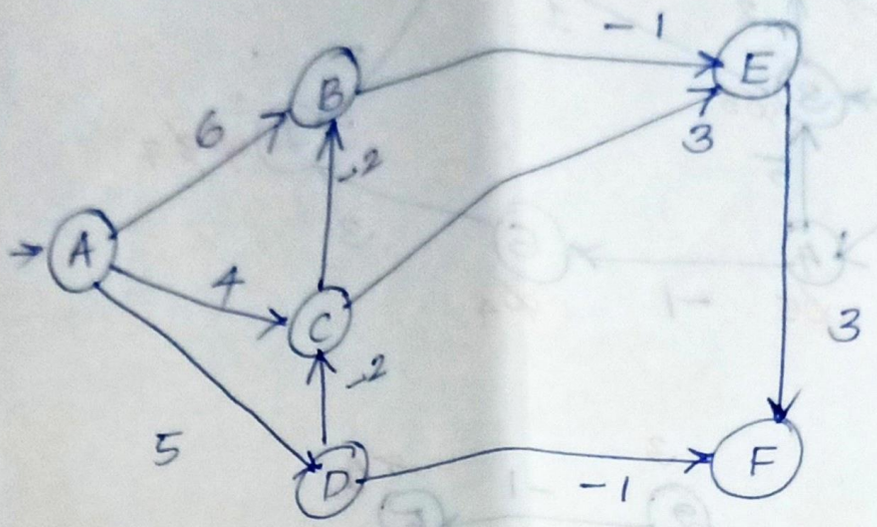


~~Not~~ change in cost

(1,1) → 0
(1,2) → 3
(1,3) → 5
(1,4) → 5
(1,5) → 2
(1,6) → 4
(1,7) → 5

=

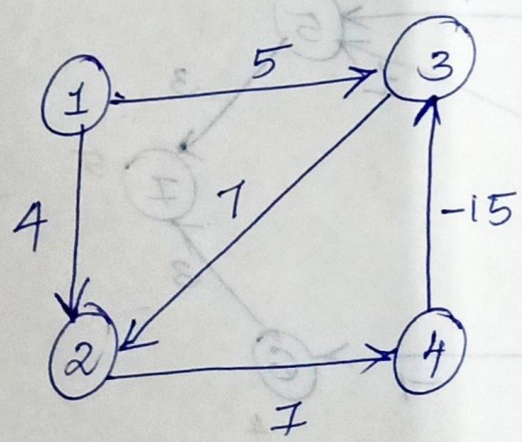
Qn:



Ans:

(A, A) → 0
(A, B) → 1
(A, C) → 3
(A, D) → 5
(A, E) → 0
(A, F) → 3

Qn:



after 3rd iteration, it is changing

⇒ BF does not work for graph containing negative cycles