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Miscellaneous - Part I

Complete Course on Algorithms - GATE

Subbarao Lingamgunta • Lesson 52 • May 18, 2023

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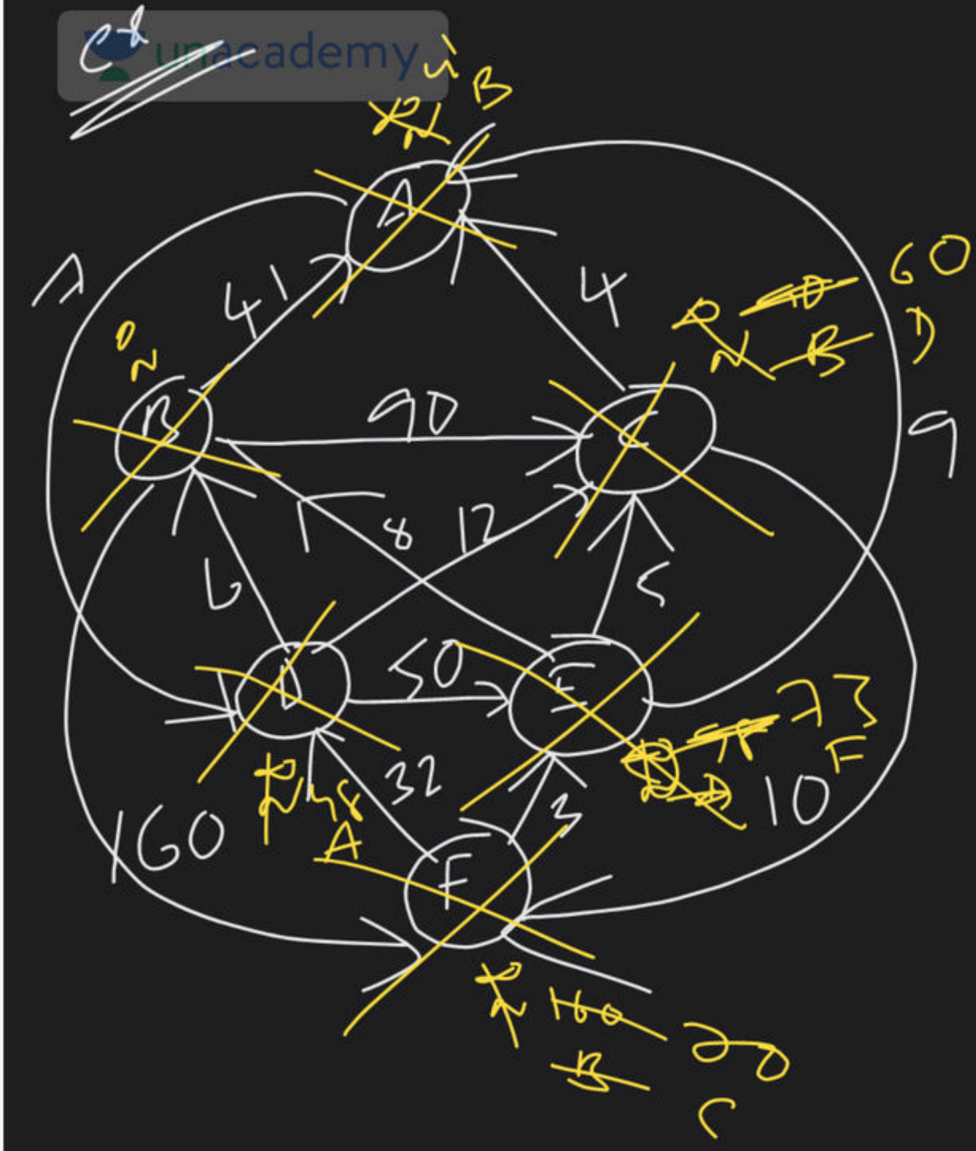
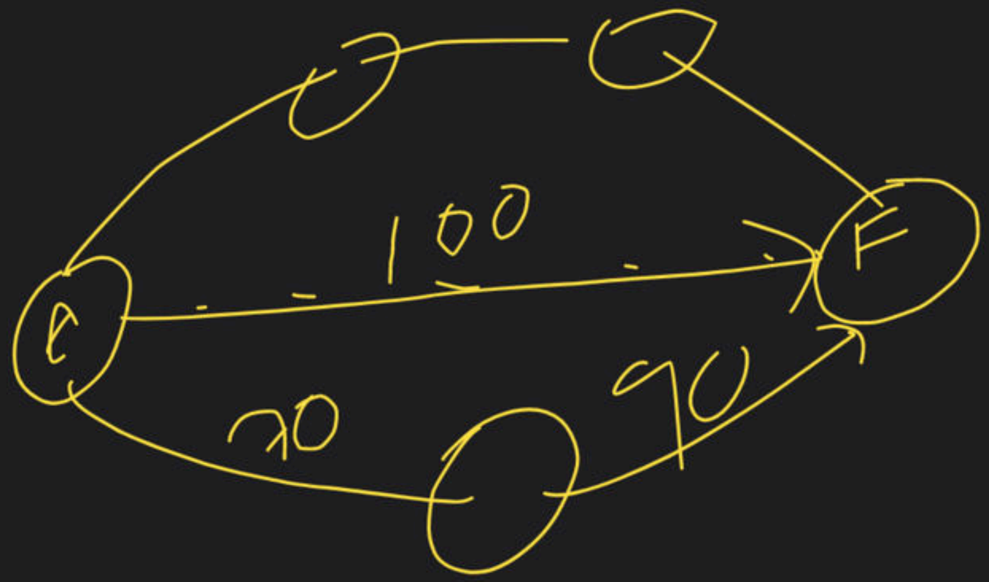


B A D C F E

(2) SP ⟹ B − E ⟹ B → A → D → C → F → E

(3) cost − SP ⟹ B − E ⟹ 73



$V \lg V + E + E \lg V + V$

$(V+E) \lg V$

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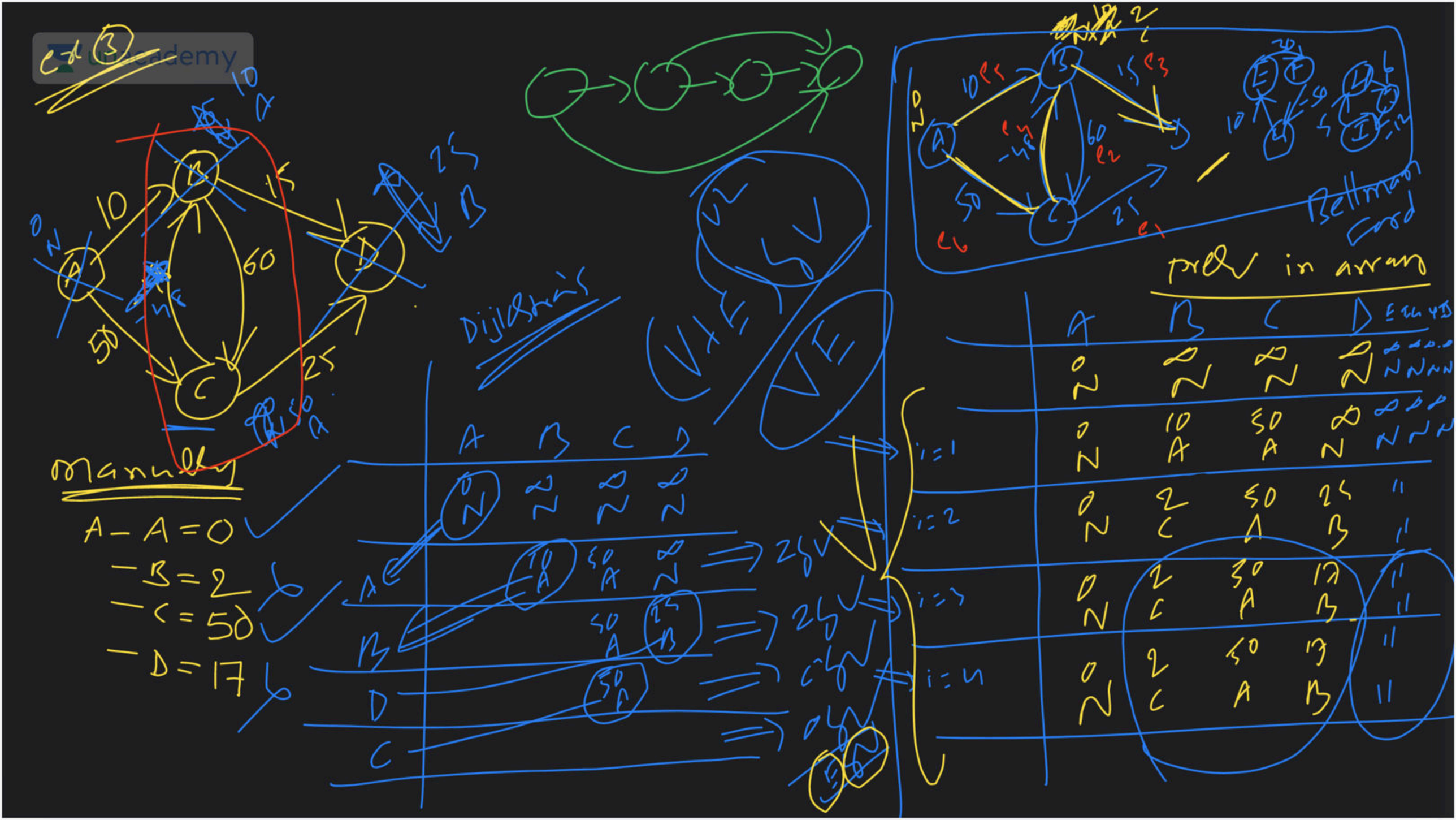
Vertex - A - relaxed: all A-adjacent vertices perform decrease key operation.

In dijkstra's every vertex will be relaxed only once $\Longrightarrow E$ & V

In bellman-ford every edge will be relaxed V times


Manually
A - A = 0
- B = 2
- C = 50
- D = 17
Dijkstra's
Bellman Ford
prev in array
A
B
C
D
E
i = 1
i = 2
i = 3
i = 4

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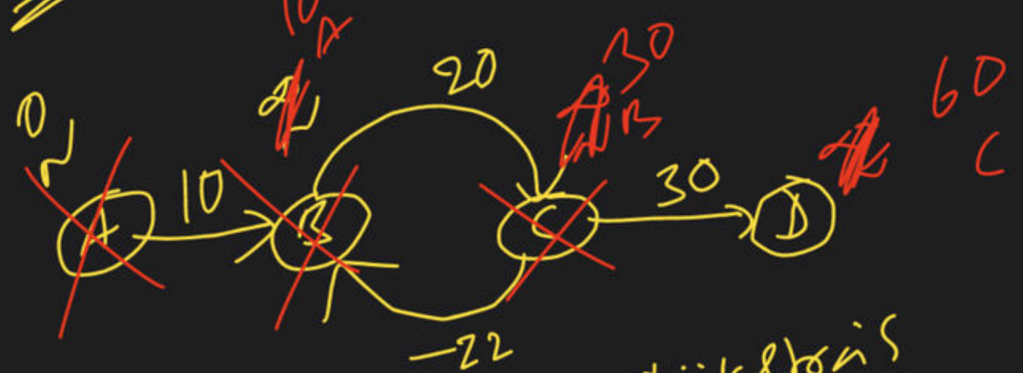


Manually

A — A = 0

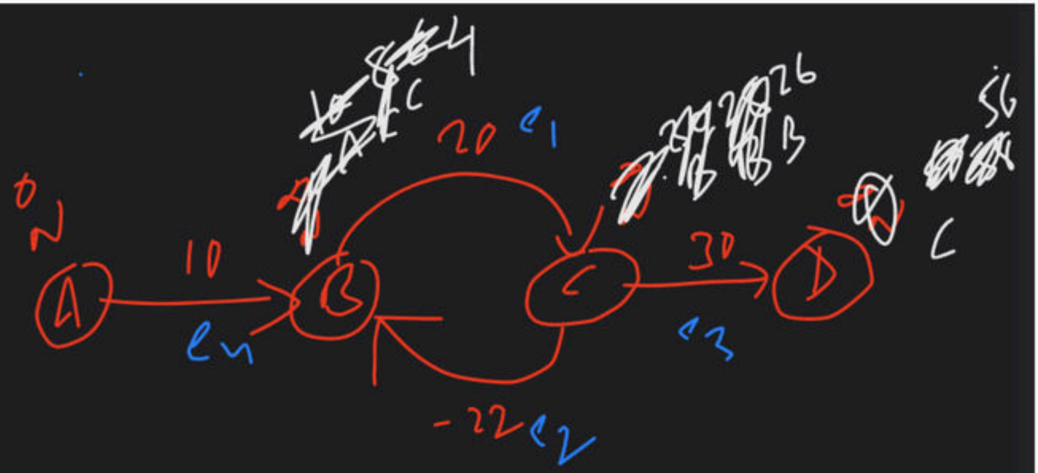
— B = −∞

— C = −∞

— D = −∞

Dijkstra's

A	B	C	D
0 N	∞ N	∞ N	∞ N
	10 A		
		30 B	
			60 C



	A	B	C	D
	0 N	∞ N	∞ N	∞ N
i=1	0 N	10 A	∞ N	∞ N ⇒ Exit
i=2	0 N	8 C	30 B	60 C ⇒ Exit
i=3	0 N	6 C	28 B	36 C ⇒ Exit
i=4	0 N	6 C	26 B	36 C ⇒ Exit

−∞ −∞ −∞