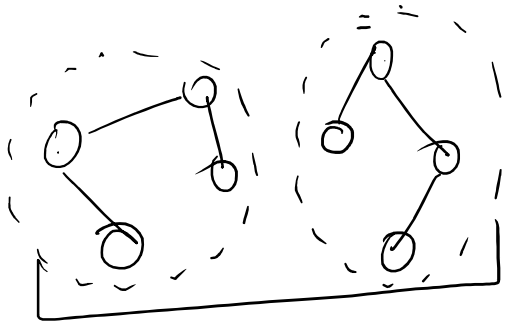
X section

24 March 2025 06:26

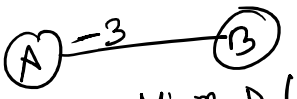
Djikstra Algo –

Src Node ⟶ Other nodes.
Distance.

1. Directed & Undirected Graph.
2. Graph connected.
3. Weighted Graph.
4. No Negative edges

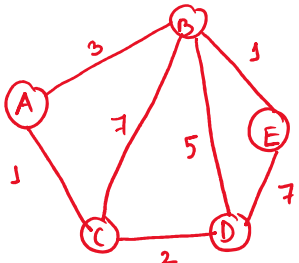


A to B = −3
B to A = −3
A to B = −3
−9



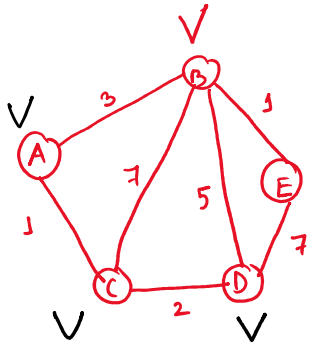
Minm D (A to B) = −3

Djikstra – distance of every other node from a single source.



Source = C.

Node C ⟶ A
C ⟶ D
C ⟶ B
C ⟶ E
} Minm Distance.



u ↓ Selected Node

V ⟶

Distance of node from source				
A	B	C	D	E
∞	∞	0	∞	∞
1	7		2	∞
	4		2	∞
	4			9
				5

C
A
D
B

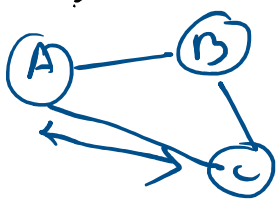
d(src to v) = d(src to u) + d(u to v).

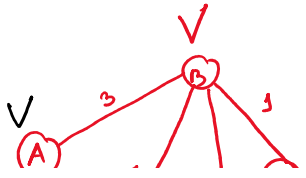
d(src to E) = d(src to B) + d(B to E)
= 5.

Path array

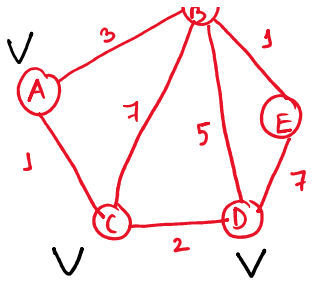
C	A	C	B
A	B	C	D	E

d(AC) = d(A B) + d(B C).





Shortest Path



Shortest Path

CA → AC = 1

CB → BAC = CA + AB = 1 + 3 = 4

Path array