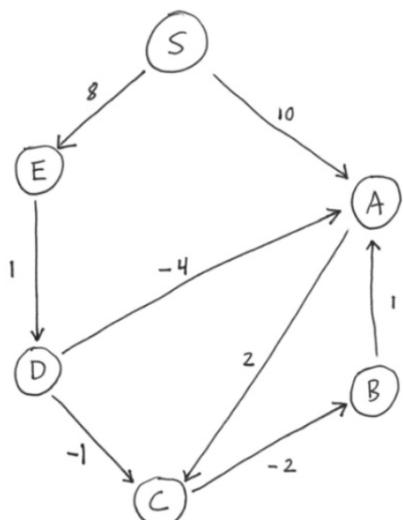


BELLMAN-FORD (not greedy)

shortest path from one node to all other nodes

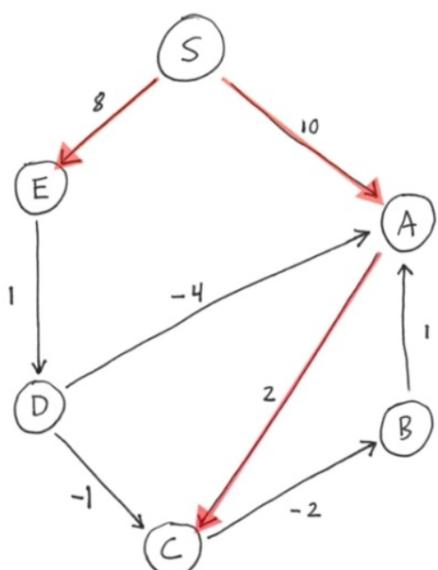
It works with negative edge weights.

Doesn't work with negative cycles.



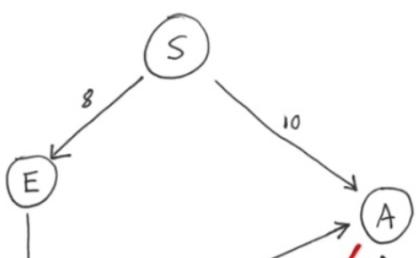
0	∞	∞	∞	∞	∞
S	A	B	C	D	E

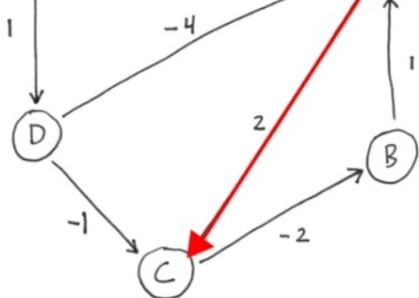
$\Theta(V \cdot E)$



0	10	∞	∞	∞	8
S	A	B	C	D	E

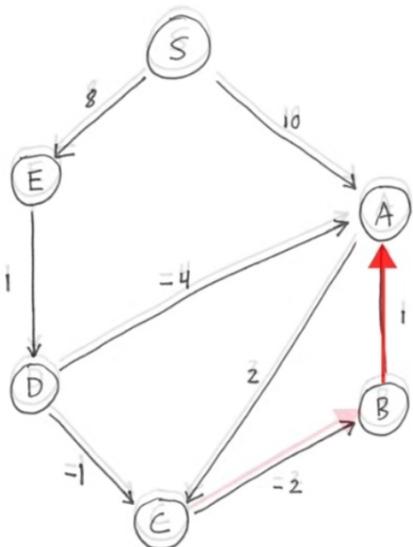
1st Iteration





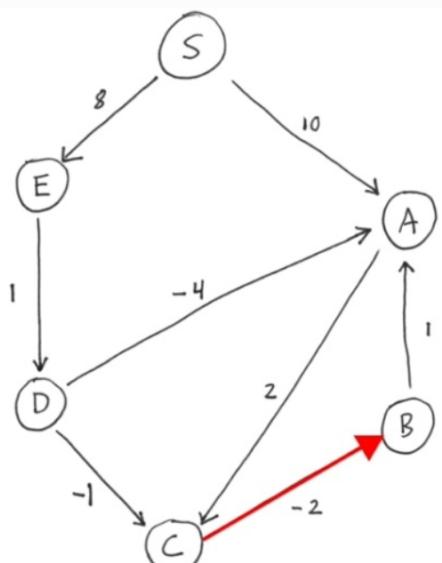
0	10	∞	$\cancel{\infty}$	∞	8
S	A	B	C	D	E

1st Iteration



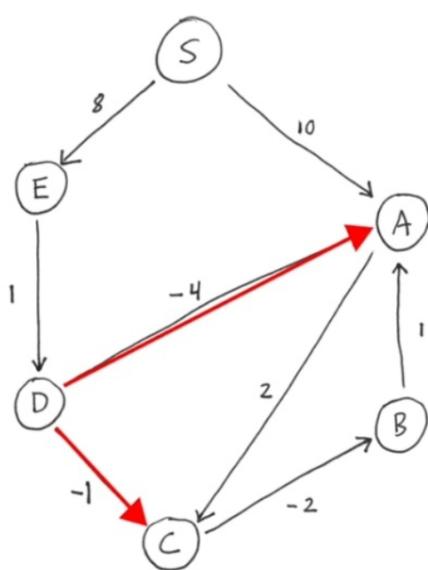
0	10	∞	12	∞	8
S	A	B	C	D	E

1st Iteration



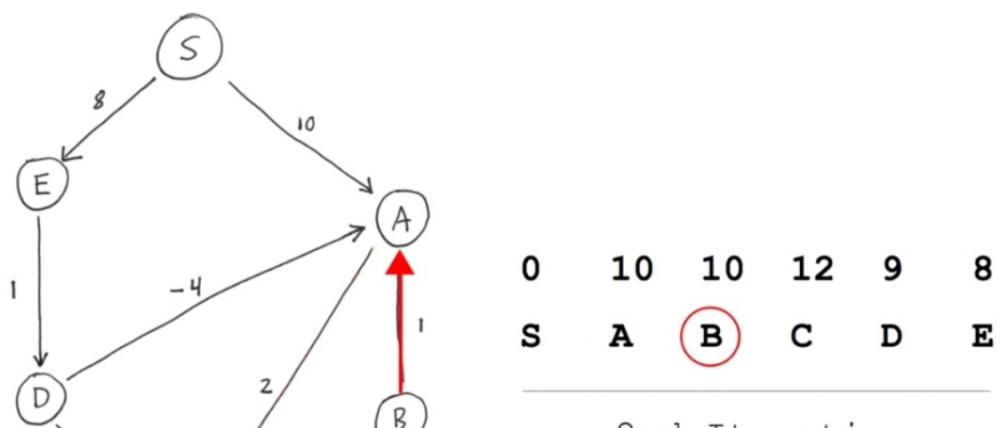
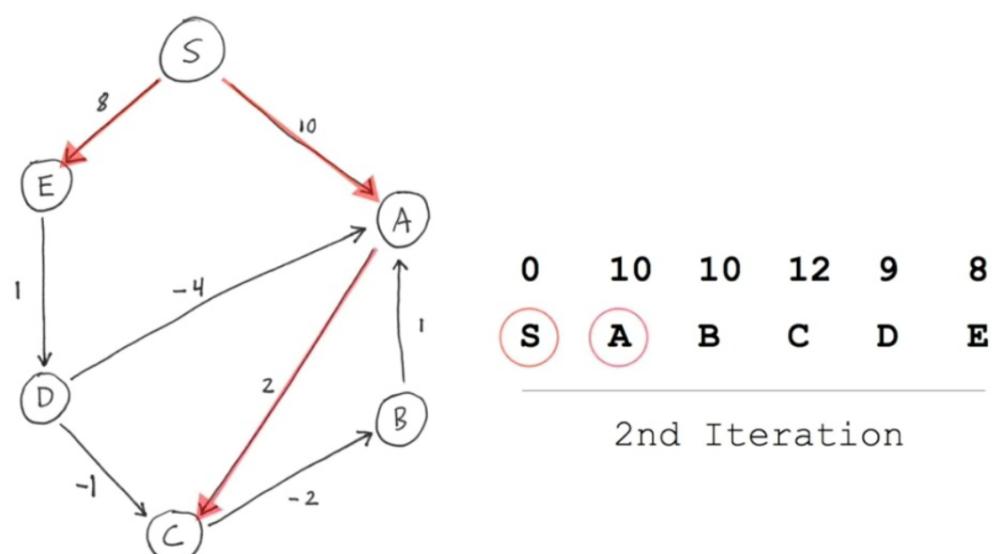
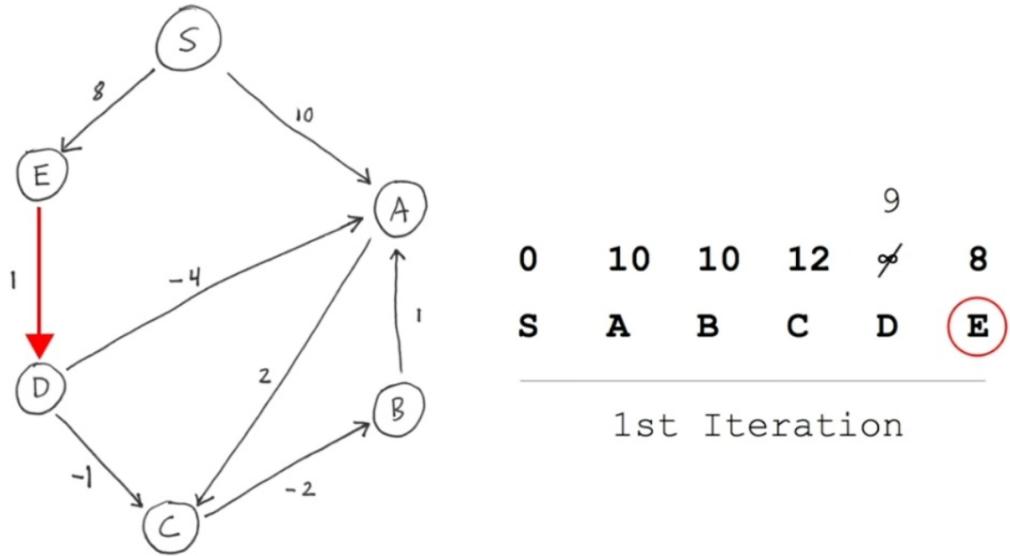
0	10	∞	12	∞	8
S	A	B	C	D	E

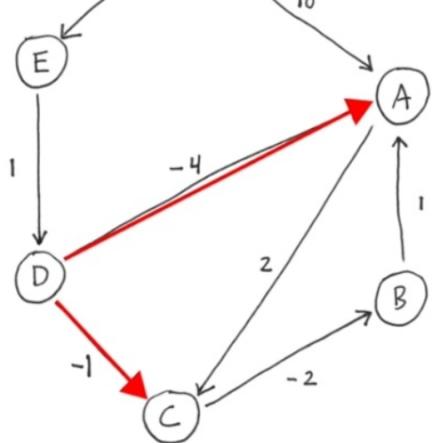
1st Iteration



0	10	10	12	∞	8
S	A	B	C	D	E

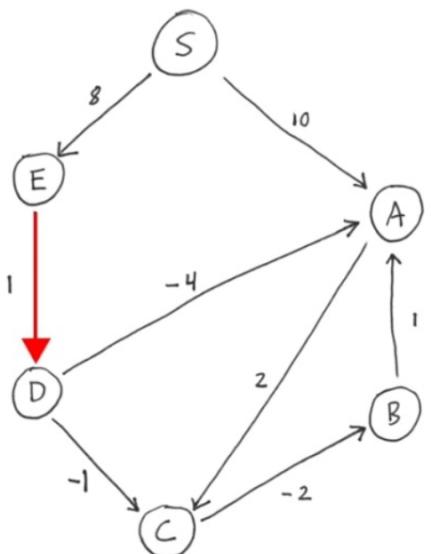
1st Iteration





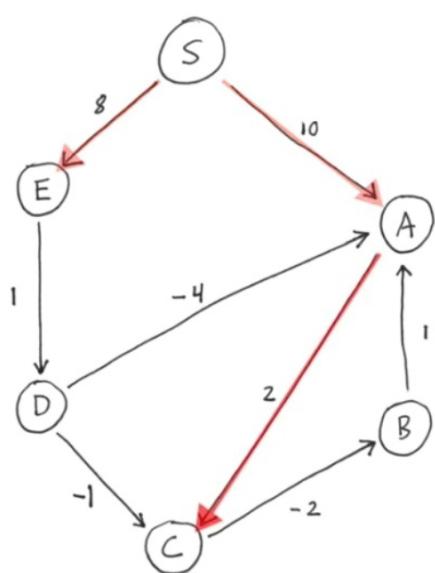
	5	8			
0	10	10	12	9	8
S	A	B	C	D	E

2nd Iteration



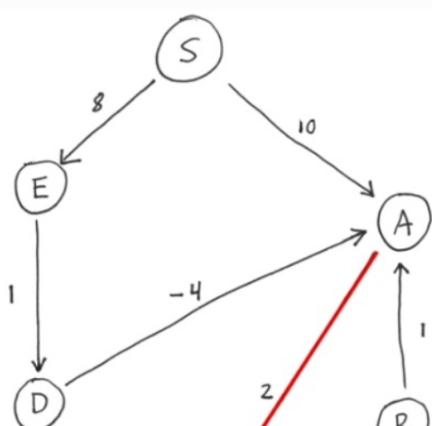
	5	10	8	9	8
0	5	10	8	9	8
S	A	B	C	D	E

2nd Iteration



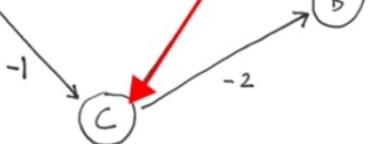
	5	10	8	9	8
0	5	10	8	9	8
S	A	B	C	D	E

3rd Iteration



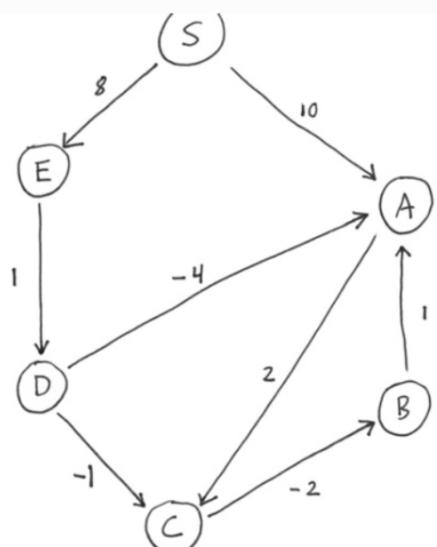
	5	10	8	9	8
0	5	10	8	9	8
S	A	B	C	D	E

3rd Iteration



5	0	5	10	7	9	8
S	A	B	C	D	E	

3rd Iteration



5	0	5	5	7	9	8
S	A	B	C	D	E	

after 4th iteration
nothing change
finish

