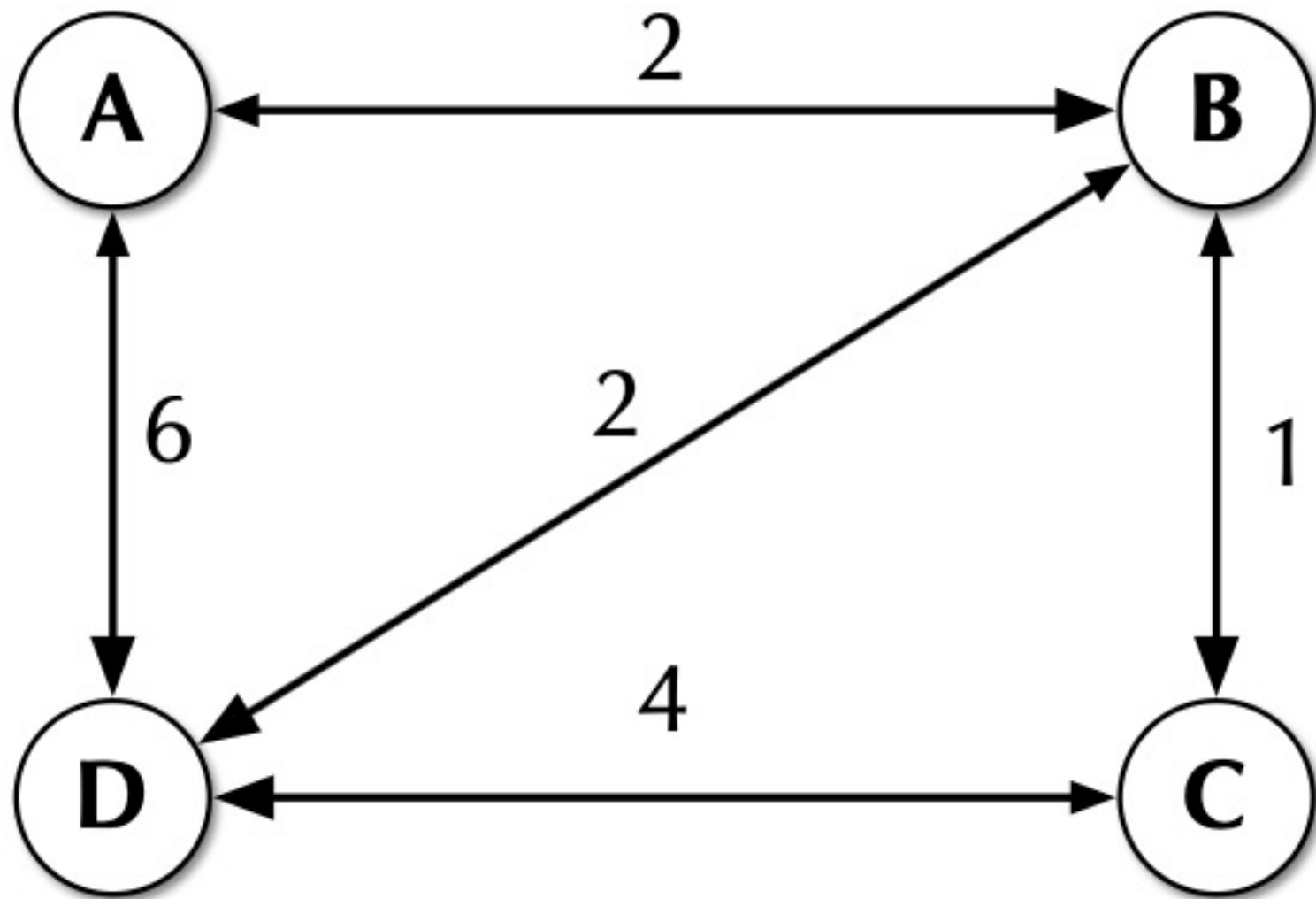
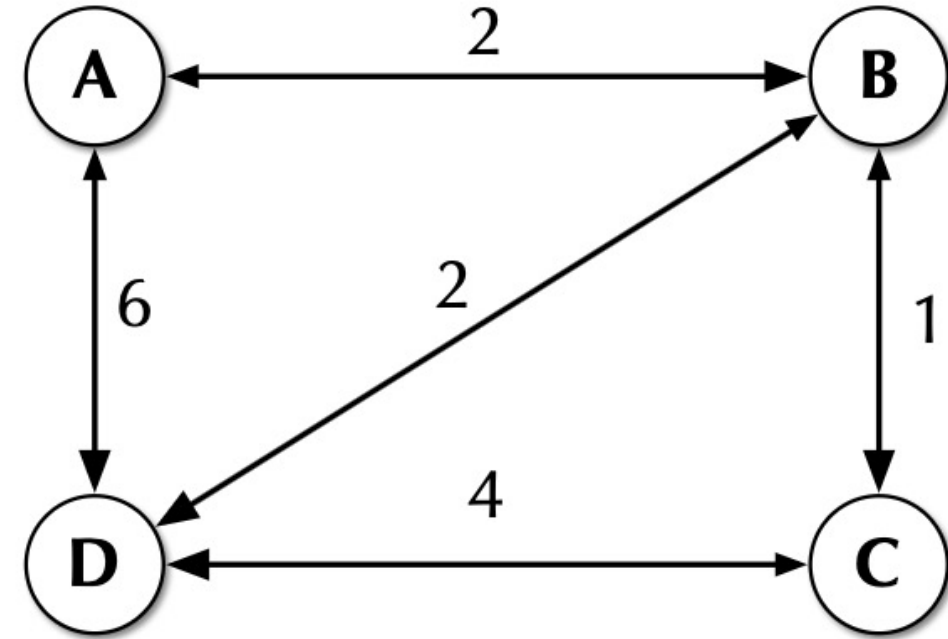


Tutorial 4

csc458

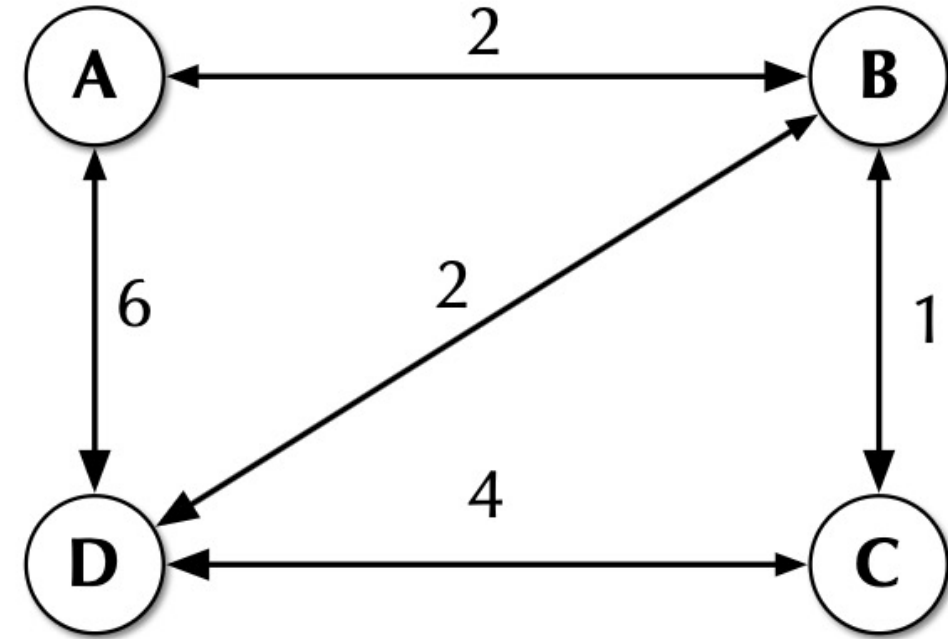


BellmanFord –
initial state



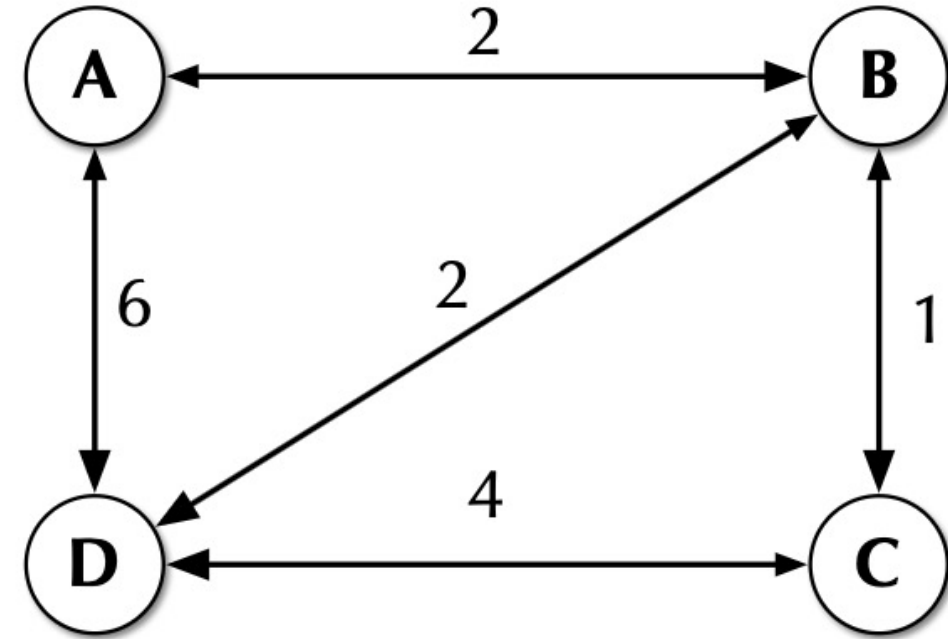
A:Dest	A:Cost	A:Next	B:Dest	B:Cost	B:Next	C:Dest	C:Cost	C:Next	D:Dest	D:Cost	D:Next
A			A			A			A		
B			B			B			B		
C			C			C			C		
D			D			D			D		

BellmanFord – round 1



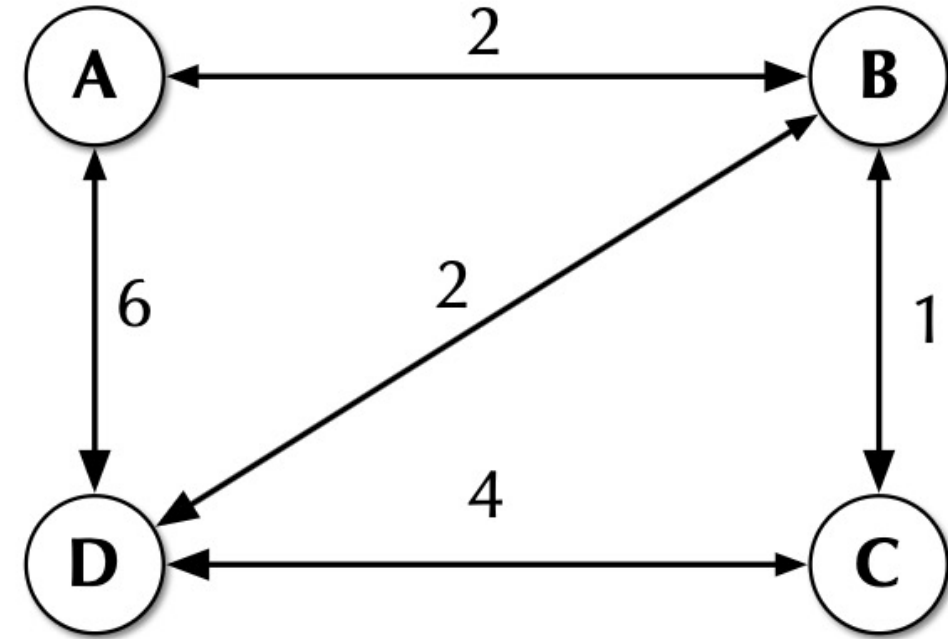
A:Dest	A:Cost	A:Next	B:Dest	B:Cost	B:Next	C:Dest	C:Cost	C:Next	D:Dest	D:Cost	D:Next
A	0		A	2	A	A	inf		A	6	A
B	2	B	B	0		B	1	B	B	2	B
C	inf		C	1	C	C	0		C	4	C
D	6	D	D	2	D	D	4	D	D	0	

BellmanFord – round 2



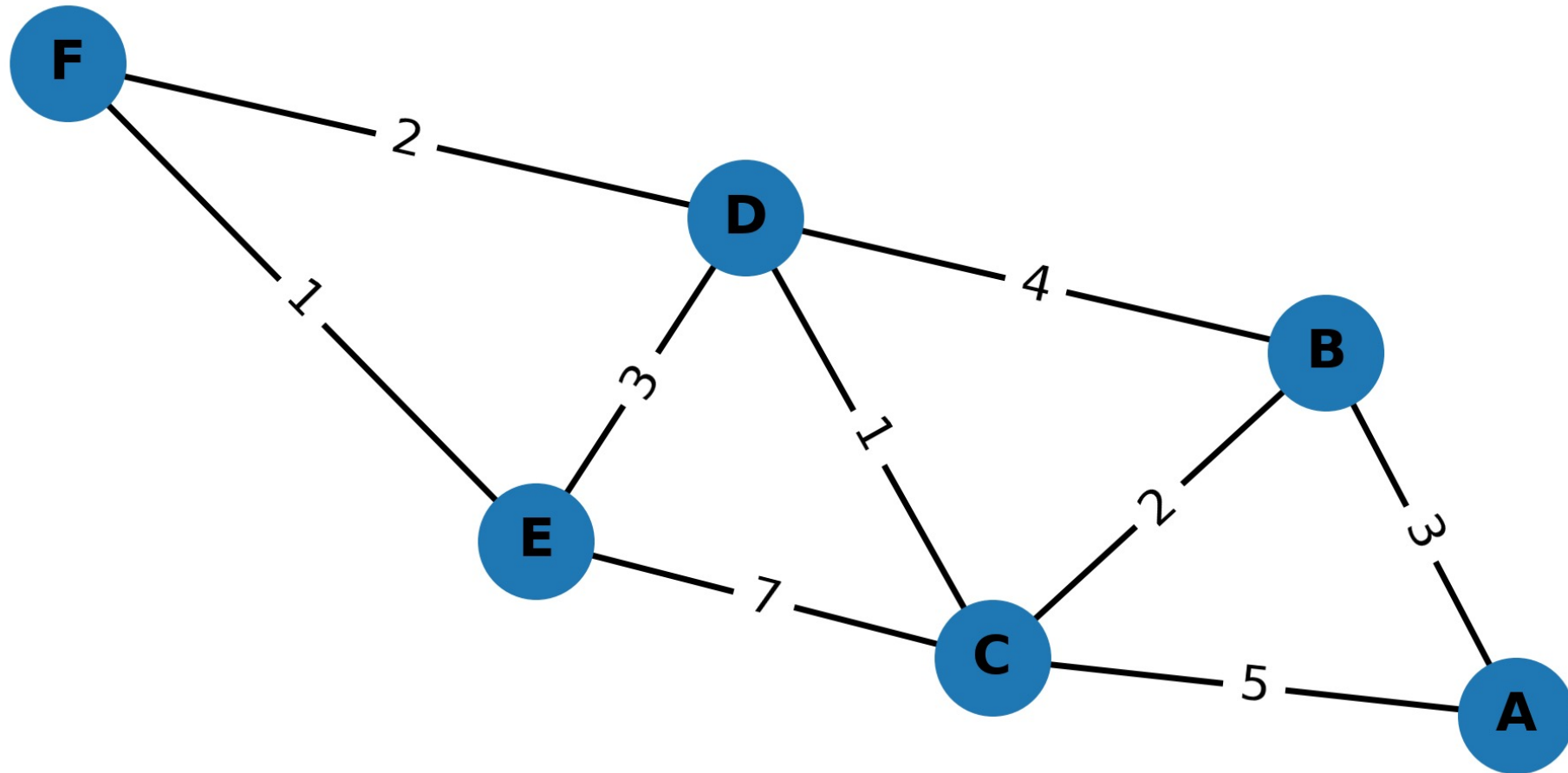
A:Dest	A:Cost	A:Next	B:Dest	B:Cost	B:Next	C:Dest	C:Cost	C:Next	D:Dest	D:Cost	D:Next
A	0		A	2	A	A	3	B	A	4	B
B	2	B	B	0		B	1	B	B	2	B
C	3	B	C	1	C	C	0		C	3	B
D	4	B	D	2	D	D	3	B	D	0	

BellmanFord – round 3

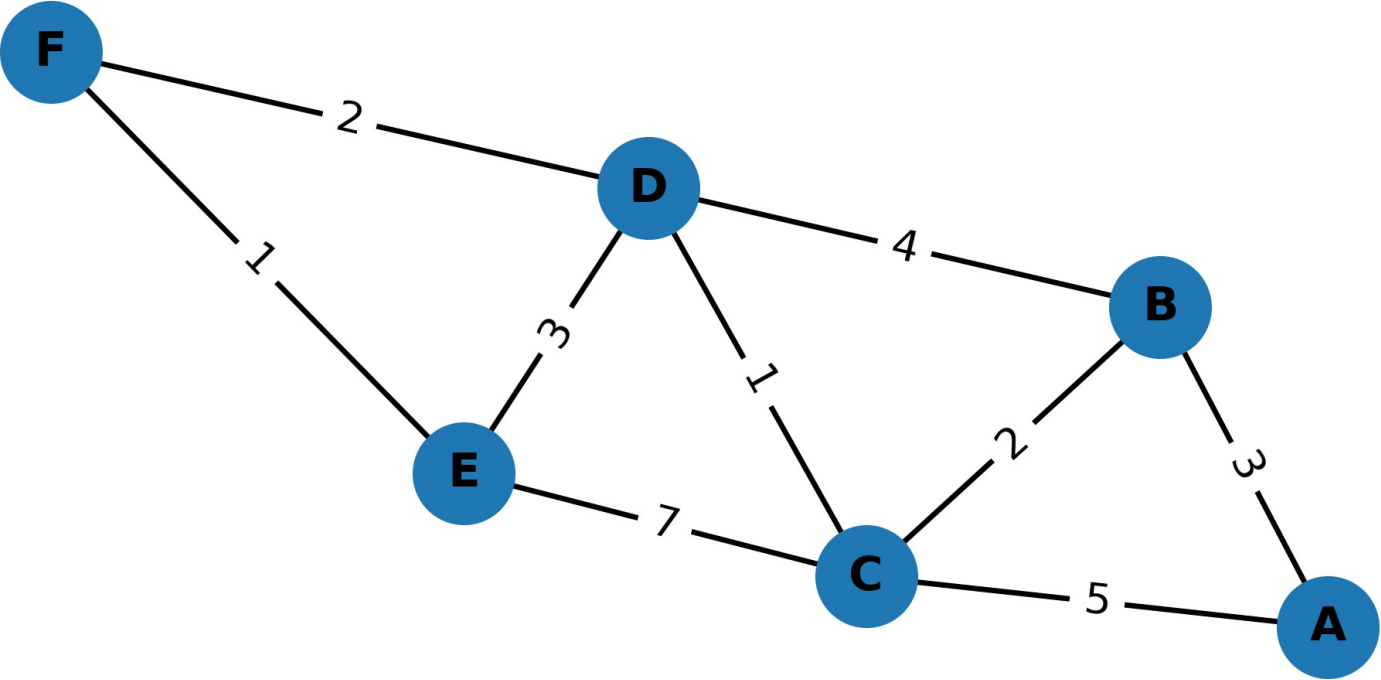


A:Dest	A:Cost	A:Next	B:Dest	B:Cost	B:Next	C:Dest	C:Cost	C:Next	D:Dest	D:Cost	D:Next
A	0		A	2	A	A	3	B	A	4	B
B	2	B	B	0		B	1	B	B	2	B
C	3	B	C	1	C	C	0		C	3	B
D	4	B	D	2	D	D	3	B	D	0	

Another example

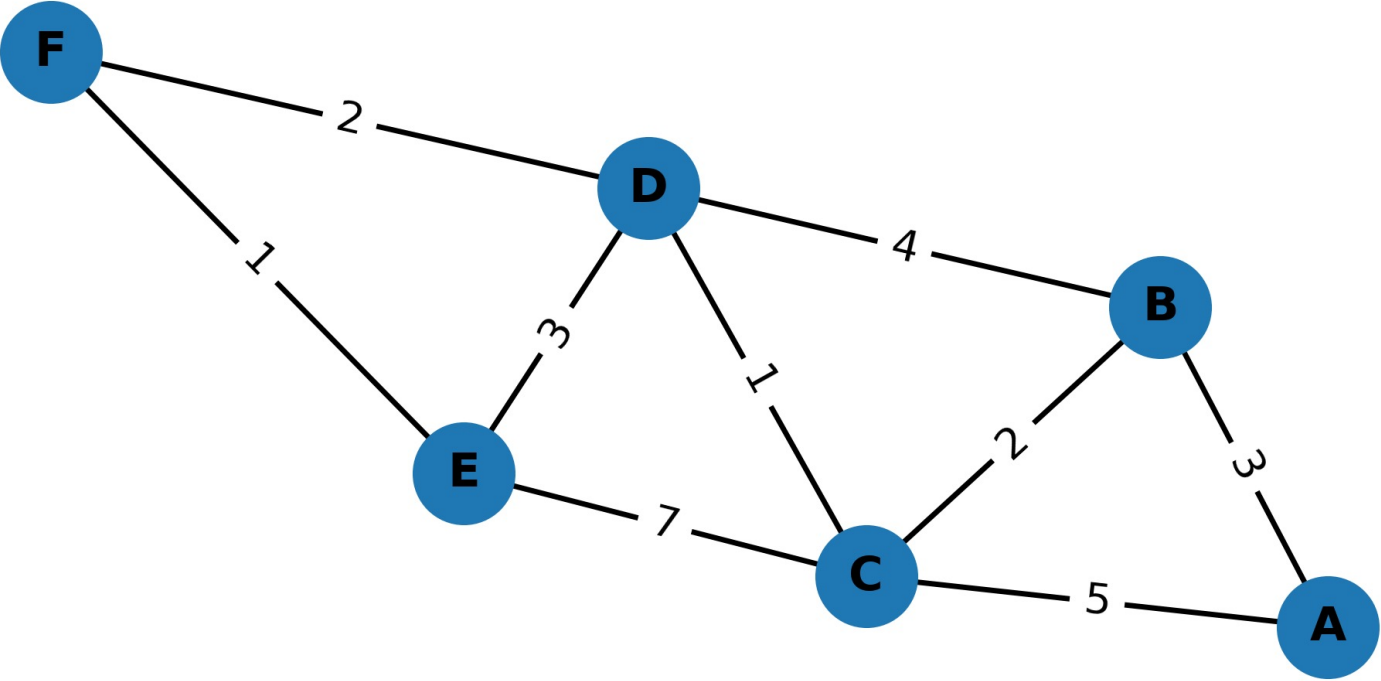


Round 1



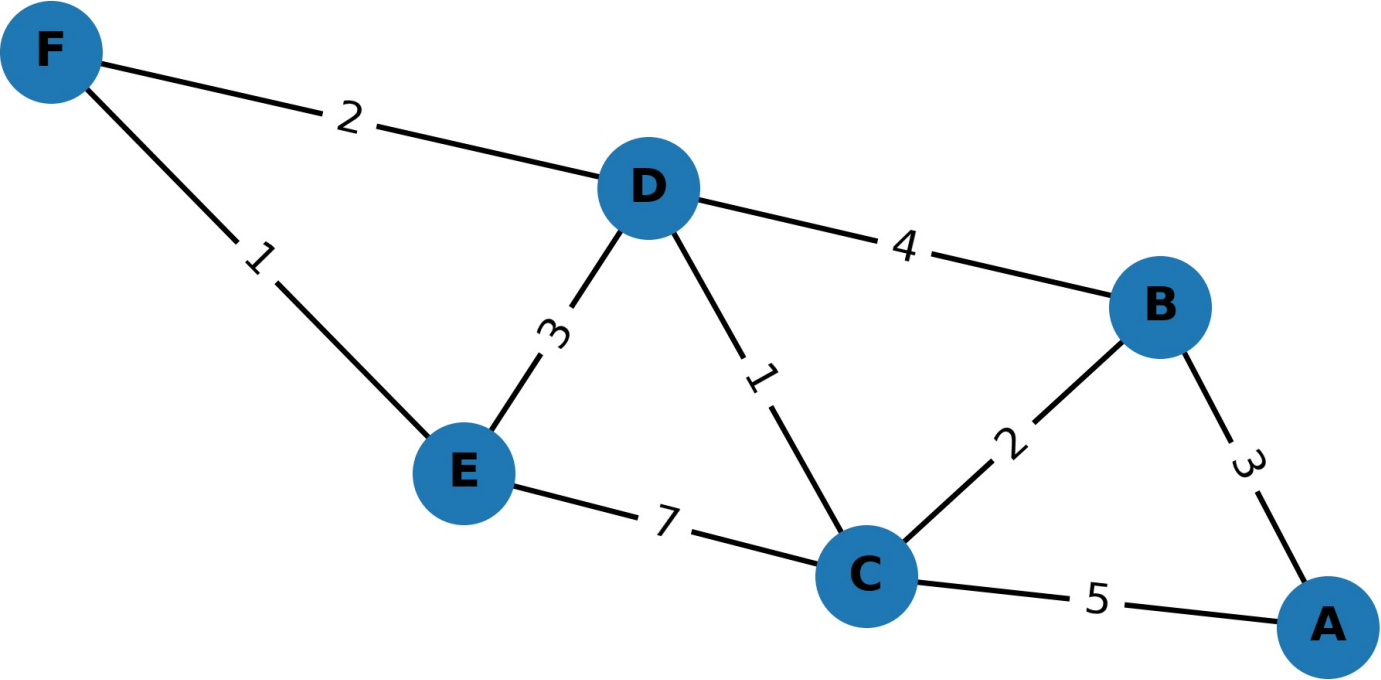
Round	A: Dest	A: Cost	A: Next	B: Dest	B: Cost	B: Next	C: Dest	C: Cost	C: Next	D: Dest	D: Cost	D: Next	E: Dest	E: Cost	E: Next	F: Dest	F: Cost	F: Next
1	A	0		A	3	A	A	5	A	A	inf		A	inf		A	inf	
1	B	3	B	B	0		B	2	B	B	4	B	B	inf		B	inf	
1	C	5	C	C	2	C	C	0		C	1	C	C	7	C	C	inf	
1	D	inf		D	4	D	D	1	D	D	0		D	3	D	D	2	D
1	E	inf		E	inf		E	7	E	E	3	E	E	0		E	1	E
1	F	inf		F	inf		F	inf		F	2	F	F	1	F	F	0	

Round 2



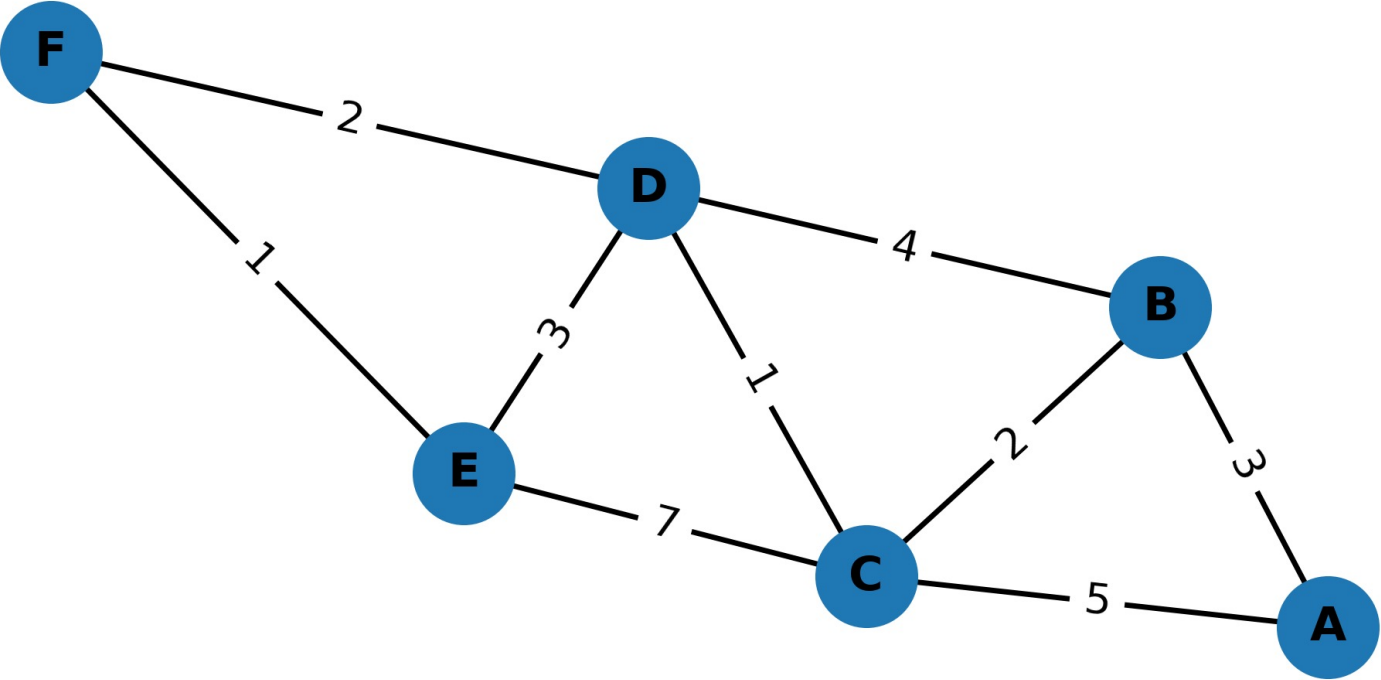
Round	A: Dest	A: Cost	A: Next	B: Dest	B: Cost	B: Next	C: Dest	C: Cost	C: Next	D: Dest	D: Cost	D: Next	E: Dest	E: Cost	E: Next	F: Dest	F: Cost	F: Next
2	A	0		A	3	A	A	5	A	A	6	C	A	12	C	A	inf	
2	B	3	B	B	0		B	2	B	B	3	C	B	7	D	B	6	D
2	C	5	C	C	2	C	C	0		C	1	C	C	4	D	C	3	D
2	D	6	C	D	3	C	D	1	D	D	0		D	3	D	D	2	D
2	E	12	C	E	7	D	E	4	D	E	3	E	E	0		E	1	E
2	F	inf		F	6	D	F	3	D	F	2	F	F	1	F	F	0	

Round 3



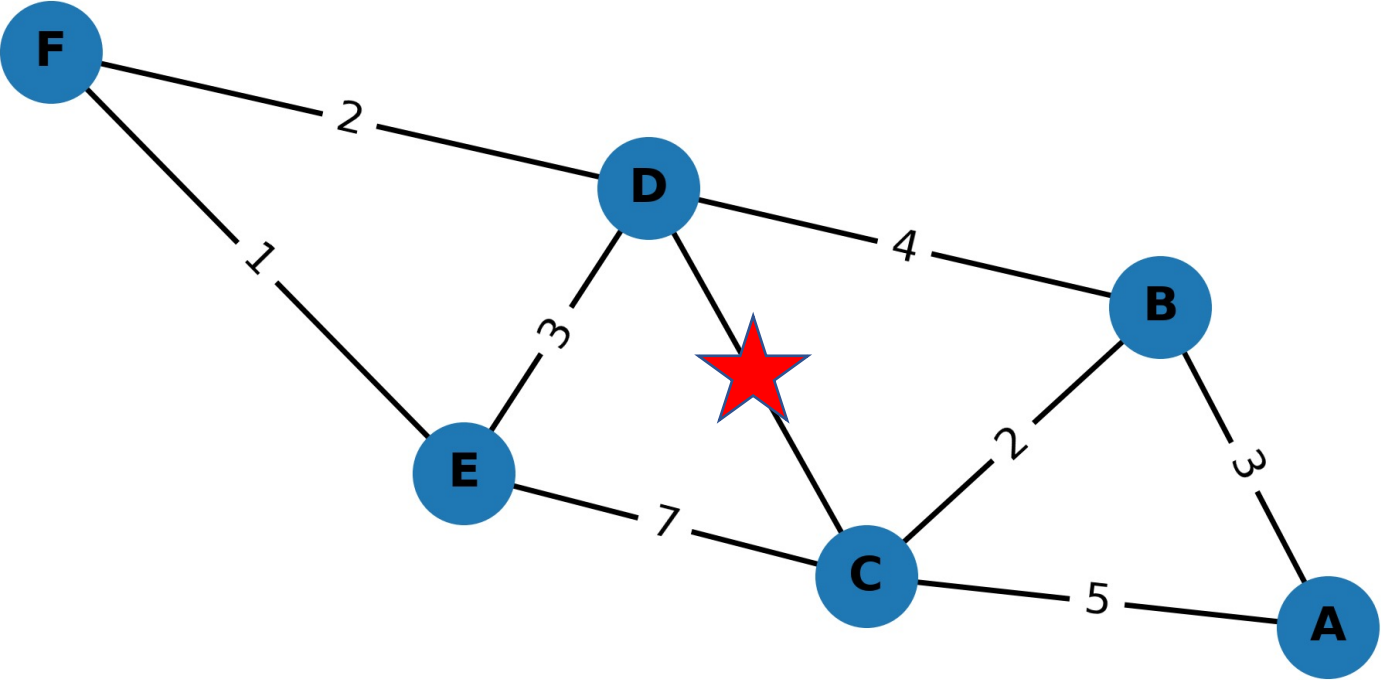
Roun d	A: Dest	A: Cost	A: Next	B: Dest	B: Cost	B: Next	C: Dest	C: Cost	C: Next	D: Dest	D: Cost	D: Next	E: Dest	E: Cost	E: Next	F: Dest	F: Cost	F: Next
3	A	0		A	3	A	A	5	A	A	6	C	A	9	D	A	8	D
3	B	3	B	B	0		B	2	B	B	3	C	B	6	D	B	5	D
3	C	5	C	C	2	C	C	0		C	1	C	C	4	D	C	3	D
3	D	6	C	D	3	C	D	1	D	D	0		D	3	D	D	2	D
3	E	9	C	E	6	C	E	4	D	E	3	E	E	0		E	1	E
3	F	8	C	F	5	C	F	3	D	F	2	F	F	1	F	F	0	

Round 4



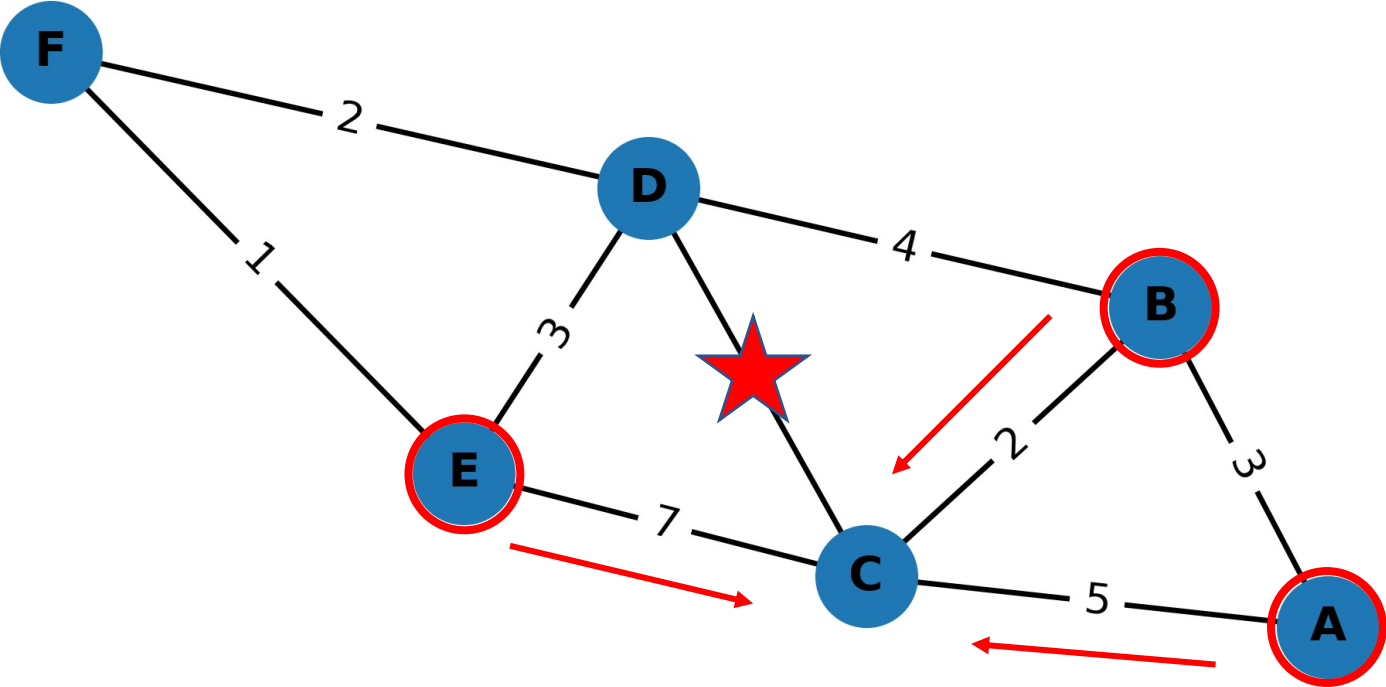
Round	A: Dest	A: Cost	A: Next	B: Dest	B: Cost	B: Next	C: Dest	C: Cost	C: Next	D: Dest	D: Cost	D: Next	E: Dest	E: Cost	E: Next	F: Dest	F: Cost	F: Next
4	A	0		A	3	A	A	5	A	A	6	C	A	9	D	A	8	D
4	B	3	B	B	0		B	2	B	B	3	C	B	6	D	B	5	D
4	C	5	C	C	2	C	C	0		C	1	C	C	4	D	C	3	D
4	D	6	C	D	3	C	D	1	D	D	0		D	3	D	D	2	D
4	E	9	C	E	6	C	E	4	D	E	3	E	E	0		E	1	E
4	F	8	C	F	5	C	F	3	D	F	2	F	F	1	F	F	0	

Round 4
Link Failure



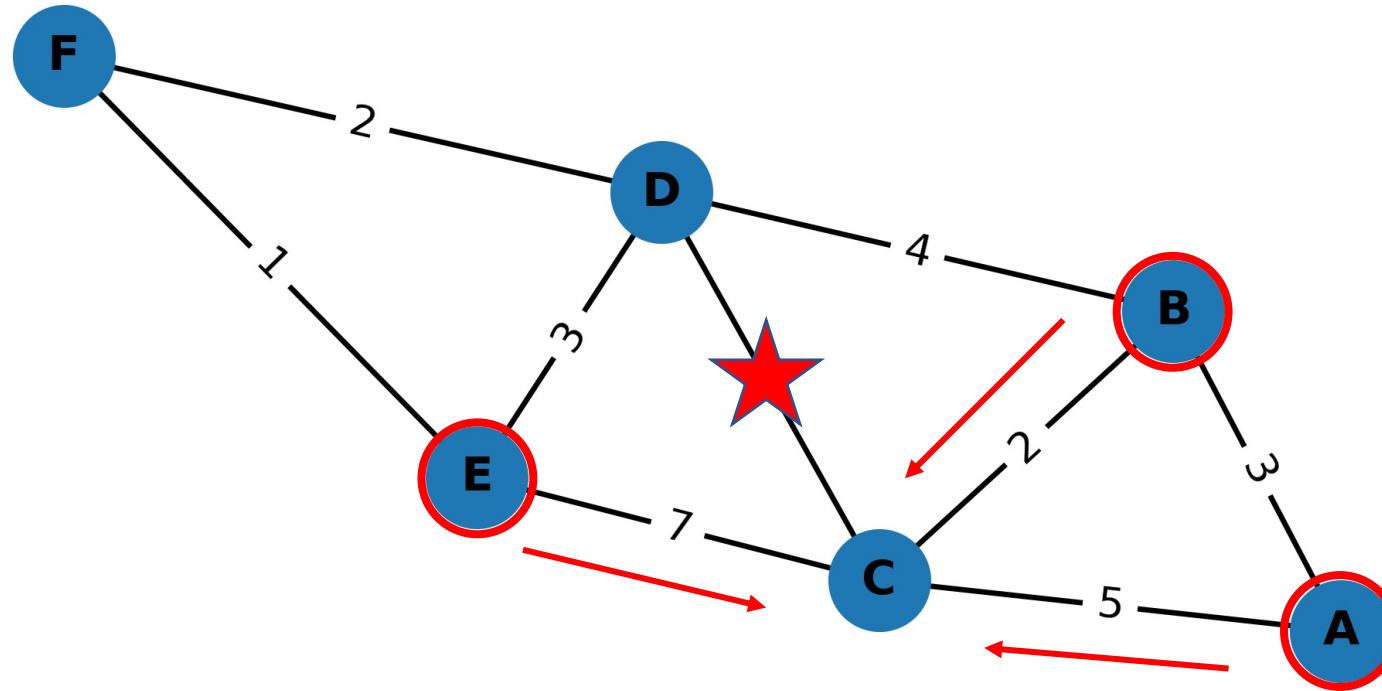
Round	A: Dest	A: Cost	A: Next	B: Dest	B: Cost	B: Next	C: Dest	C: Cost	C: Next	D: Dest	D: Cost	D: Next	E: Dest	E: Cost	E: Next	F: Dest	F: Cost	F: Next
4	A	0		A	3	A	A	5	A	A	6	C	A	9	D	A	8	D
4	B	3	B	B	0		B	2	B	B	3	C	B	6	D	B	5	D
4	C	5	C	C	2	C	C	0		C	1	C	C	4	D	C	3	D
4	D	6	C	D	3	C	D	inf		D	0		D	3	D	D	2	D
4	E	9	C	E	6	C	E	4	D	E	3	E	E	0		E	1	E
4	F	8	C	F	5	C	F	3	D	F	2	F	F	1	F	F	0	

Round 4
Link Failure



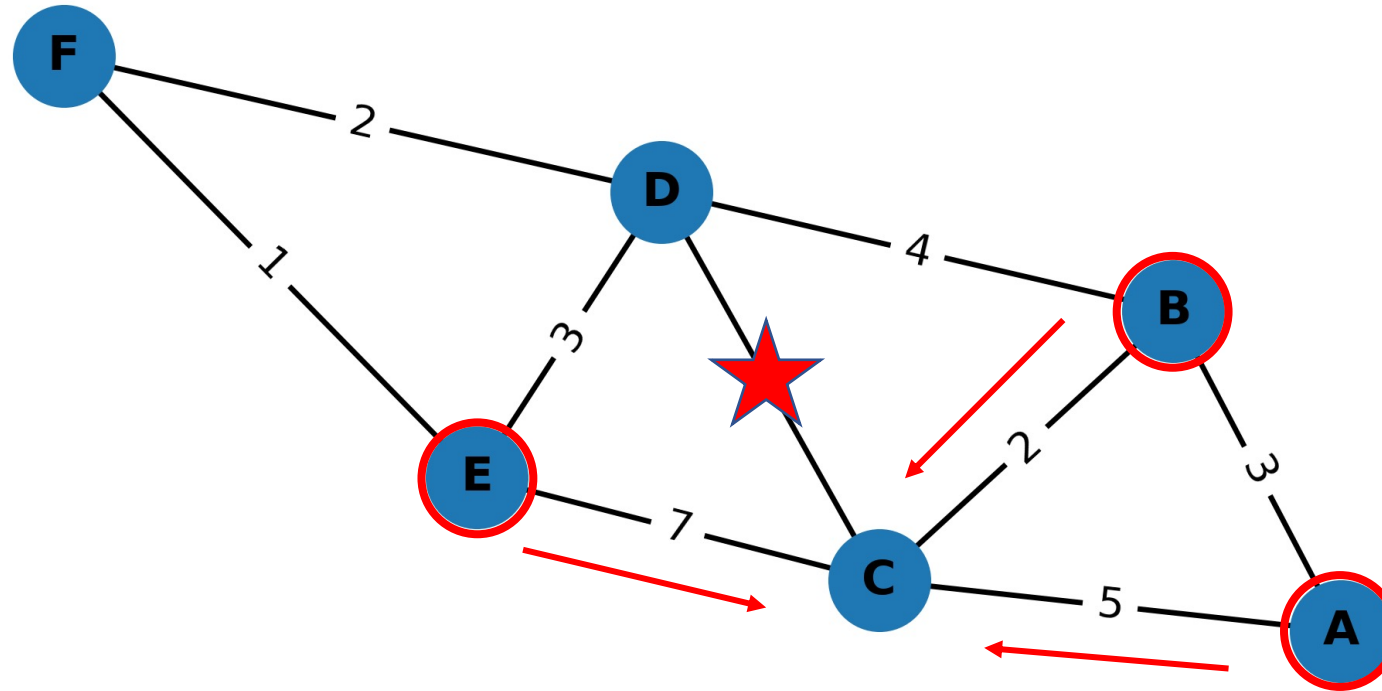
Round	A: Dest	A: Cost	A: Next	B: Dest	B: Cost	B: Next	C: Dest	C: Cost	C: Next	D: Dest	D: Cost	D: Next	E: Dest	E: Cost	E: Next	F: Dest	F: Cost	F: Next
4	A	0		A	3	A	A	5	A	A	6	C	A	9	D	A	8	D
4	B	3	B	B	0		B	2	B	B	3	C	B	6	D	B	5	D
4	C	5	C	C	2	C	C	0		C	1	C	C	4	D	C	3	D
4	D	6	C	D	3	C	D	inf		D	0		D	3	D	D	2	D
4	E	9	C	E	6	C	E	4	D	E	3	E	E	0		E	1	E
4	F	8	C	F	5	C	F	3	D	F	2	F	F	1	F	F	0	

Round 4
Link Failure



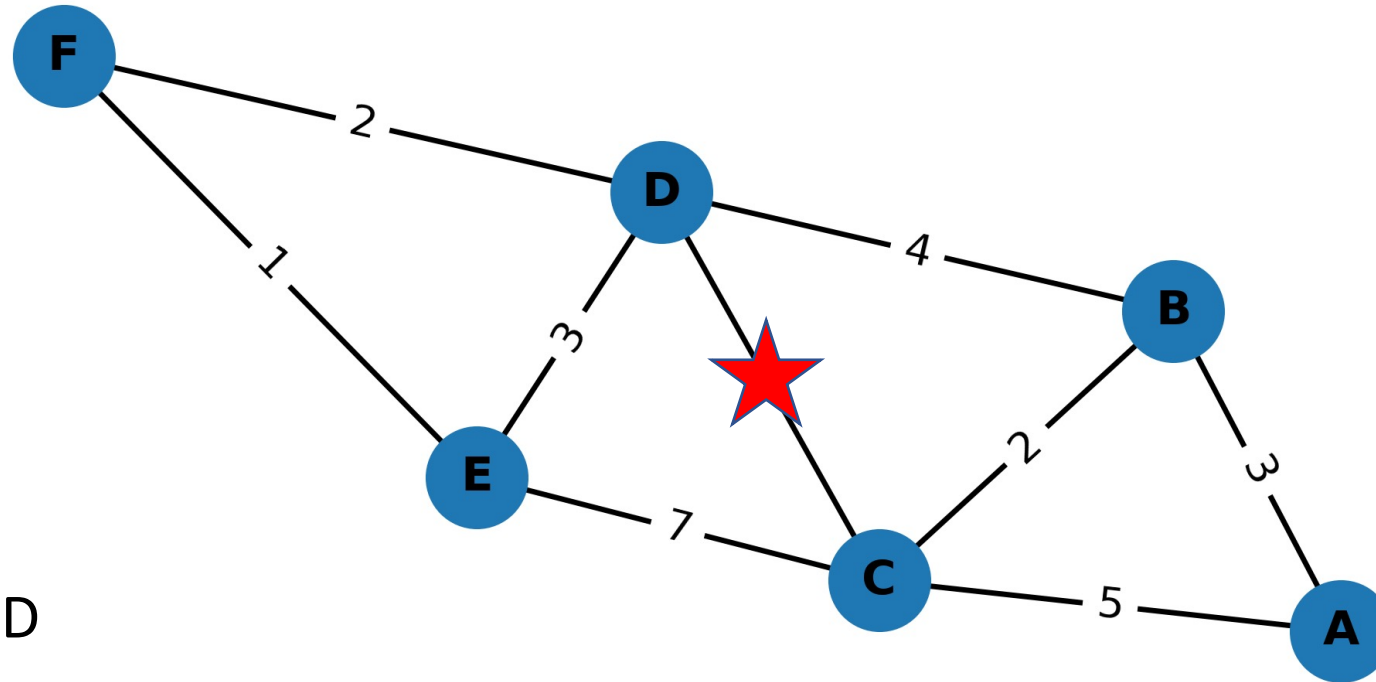
Round	A: Dest	A: Cost	A: Next	B: Dest	B: Cost	B: Next	C: Dest	C: Cost	C: Next	D: Dest	D: Cost	D: Next	E: Dest	E: Cost	E: Next	F: Dest	F: Cost	F: Next
4	A	0		A	3	A	A	5	A	A	6	C	A	9	D	A	8	D
4	B	3	B	B	0		B	2	B	B	3	C	B	6	D	B	5	D
4	C	5	C	C	2	C	C	0		C	1	C	C	4	D	C	3	D
4	D	6	C	D	3	C	D	inf		D	0		D	3	D	D	2	D
4	E	9	C	E	6	C	E	4	D	E	3	E	E	0		E	1	E
4	F	8	C	F	5	C	F	3	D	F	2	F	F	1	F	F	0	

Round 4
Link Failure



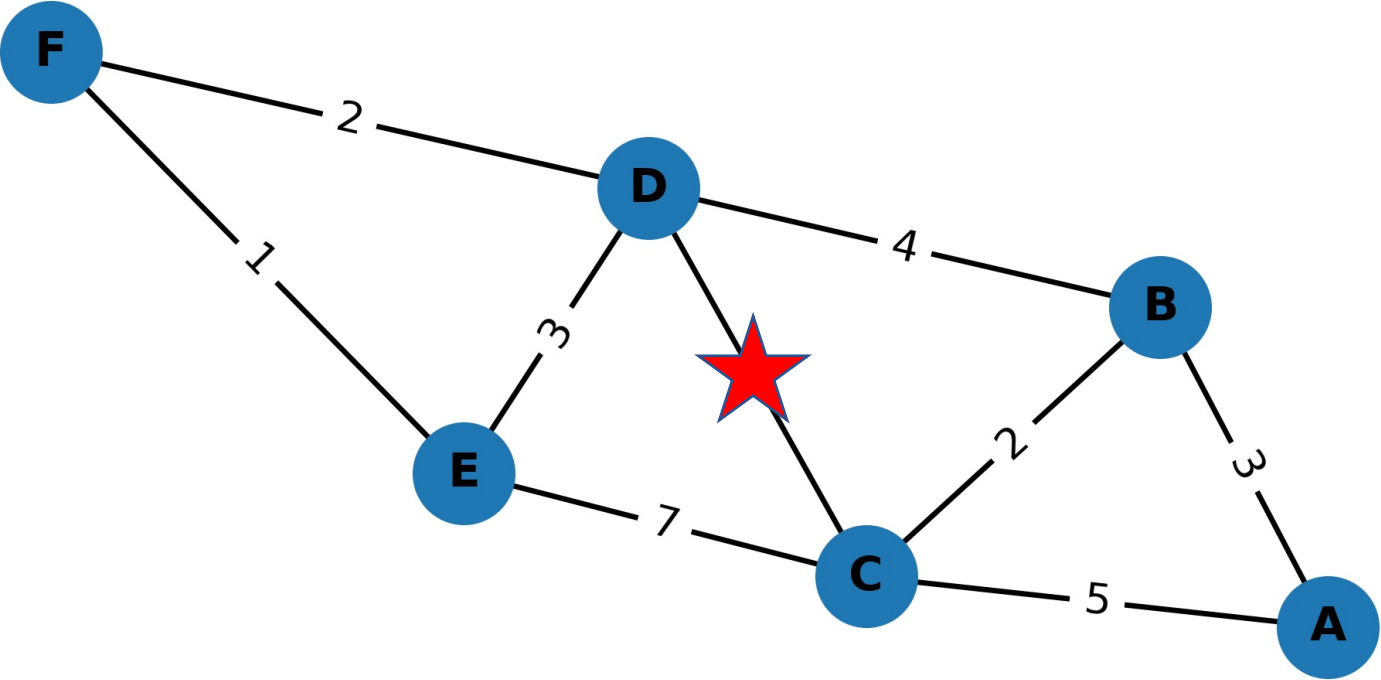
Round	A: Dest	A: Cost	A: Next	B: Dest	B: Cost	B: Next	C: Dest	C: Cost	C: Next	D: Dest	D: Cost	D: Next	E: Dest	E: Cost	E: Next	F: Dest	F: Cost	F: Next
4	A	0		A	3	A	A	5	A	A	6	C	A	9	D	A	8	D
4	B	3	B	B	0	B	B	2	B	B	3	C	B	6	D	B	5	D
4	C	5	C	C	2	C	C	0		C	1	C	C	4	D	C	3	D
4	D	6	C	D	3	C	D	inf		D	0		D	3	D	D	2	D
4	E	9	C	E	6	C	E	4	D	E	3	E	E	0		E	1	E
4	F	8	C	F	5	C	F	3	D	F	2	F	F	1	F	F	0	

Round 4
Link Failure
Update C and D



Round	A: Dest	A: Cost	A: Next	B: Dest	B: Cost	B: Next	C: Dest	C: Cost	C: Next	D: Dest	D: Cost	D: Next	E: Dest	E: Cost	E: Next	F: Dest	F: Cost	F: Next
4	A	0		A	3	A	A	5	A	A	7	B	A	9	D	A	8	D
4	B	3	B	B	0		B	2	B	B	4	B	B	6	D	B	5	D
4	C	5	C	C	2	C	C	0		C	5	F	C	4	D	C	3	D
4	D	6	C	D	3	C	D	5	B	D	0		D	3	D	D	2	D
4	E	9	C	E	6	C	E	7	E	E	3	E	E	0		E	1	E
4	F	8	C	F	5	C	F	7	B	F	2	F	F	1	F	F	0	

Round 11



Round	A: Dest	A: Cost	A: Next	B: Dest	B: Cost	B: Next	C: Dest	C: Cost	C: Next	D: Dest	D: Cost	D: Next	E: Dest	E: Cost	E: Next	F: Dest	F: Cost	F: Next
11	A	0		A	3	A	A	5	A	A	7	B	A	10	D	A	9	D
11	B	3	B	B	0		B	2	B	B	4	B	B	7	D	B	6	D
11	C	5	B	C	2	C	C	0		C	6	B	C	7	C	C	8	D
11	D	7	B	D	4	D	D	6	B	D	0		D	3	D	D	2	D
11	E	10	B	E	7	D	E	7	E	E	3	E	E	0		E	1	E
11	F	9	B	F	6	D	F	8	B	F	2	F	F	1	F	F	0	