

## CS164- Computer Networks

Homework #4 - 11/27/2019

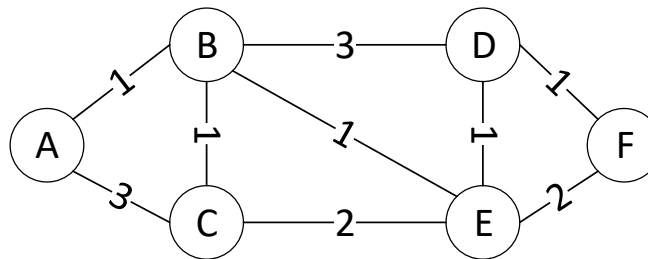
Due:12/04/2019-11:59pm

Kai Wen Tsai

Ktsai017

861261944

- Based on the following network topology, indicate the steps followed by Dijkstra's algorithm for getting the shortest path from A to all the other graph nodes. Then fill the forwarding table by using the outcome. Also, draw the shortest path tree. (25 points)



Step	N'	D(B), p(B)	D(C), p(C)	D(D), p(D)	D(E), p(E)	D(F), p(F)
0	A	1, A	3, A	Inf	Inf	Inf
1	AB		2, B	4, B	2, B	Inf
2	ABC			4, B	2, B	Inf
3	ABCE			3, E		4, E
4	ABCED					4, E
5	ABCEDF					

Destination	Link
B	(A,B)
C	(A,B)
D	(A,B)
E	(A,B)
F	(A,B)

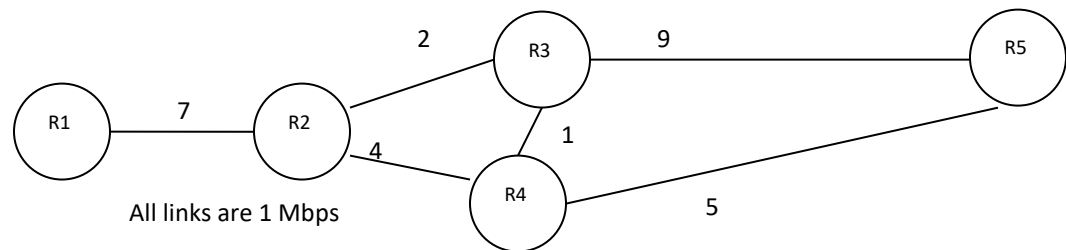
## CS164- Computer Networks

Homework #4 - 11/27/2019

Due:12/04/2019-11:59pm

---

2. Show the start-up steps of the Distance Vector protocol for this graph. Then, starting from time 0, show the transferred DV packets and changes in algorithm tables for each time slot until reaching the consistent state when further updates do not change the shortest path.



	R1	R2	R3	R4	R5
R1	0	7	9	10	15
R2	7	0	2	3	8
R3	9	2	0	1	6
R4	10	3	1	0	5
R5	15	8	9	5	0

## CS164- Computer Networks

Homework #4 - 11/27/2019

Due:12/04/2019-11:59pm

---

Finally show the **routing table** at R2:

	R1	R3	R4
R1	7	11	14
R3	16	2	5
R4	17	3	4
R5	22	8	9

Good Luck!