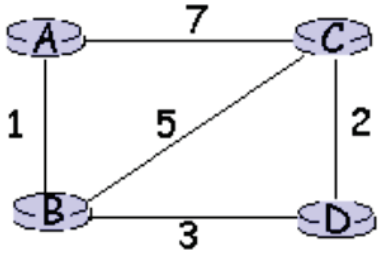
CNT 4704 (Fall 2012) Distance Vector Routing Example

Consider the network shown below, and assume that each node initially knows the costs to each of its neighbors. Assume all nodes receive their neighbors' update message at the same time and update their own distance table at the same time (similar to the example shown in Page 32,33 in Chapter4-part2.ppt). Show the distance table update procedure in the similar way as Page 33 in Chapter4-part2.ppt.



Answer:

Round 1 → Round 2 → Round 3

Node A Table

	A	B	C	D
A	*0*	*1*	*7*	*00*
B	00	00	00	00
C	00	00	00	00

	A	B	C	D
A	*0*	*1*	*6*	*4*
B	1	0	5	3
C	7	5	0	2

	A	B	C	D
A	*0*	*1*	*6*	*4*
B	1	0	5	3
C	6	5	0	2

Node B Table

	A	B	C	D
A	00	00	00	00
B	*1*	*0*	*5*	*3*
C	00	00	00	00
D	00	00	00	00

	A	B	C	D
A	0	1	7	00
B	*1*	*0*	*5*	*3*
C	7	5	0	2
D	00	3	2	0

	A	B	C	D
A	0	1	6	4
B	*1*	*0*	*5*	*3*
C	6	5	0	2
D	4	3	2	0

Node C Table

	A	B	C	D
A	00	00	00	00
B	00	00	00	00
C	*7*	*5*	*0*	*2*
D	00	00	00	00

	A	B	C	D
A	0	1	7	00
B	1	0	5	3
C	*6*	*5*	*0*	*2*
D	00	3	2	0

	A	B	C	D
A	0	1	6	4
B	1	0	5	3
C	*6*	*5*	*0*	*2*
D	4	3	2	0

Node D Table

	A	B	C	D
B	00	00	00	00
C	00	00	00	00
D	*00*	*3*	*2*	*0*

	A	B	C	D
B	1	0	5	3
C	7	5	0	2
D	*4*	*3*	*2*	*0*

	A	B	C	D
B	1	0	5	3
C	6	5	0	2
D	*4*	*3*	*2*	*0*

"00" represents "infinity". Node B only broadcasts its distance vector once; the other three nodes broadcast their distance vectors twice.