

## CS455 PA3 Report

Haoyu(Jerry) Wu

Email: wuhaoyu@bu.edu

The overall design and how it works is described:

Implement distance vector routing protocol by using the split horizon with poison reverse.

First initialize the distance table by putting the initial cost from this node to its neighbor into the table and send the distance to its neighbor. After the node received the distance from its neighbor, it updates its distance to other nodes and find the minimum cost to each of them.

Then it sends the minimum cost to its neighbor. If the minimum distance from one node to another node needs to pass through a node, then when this node sent its minimum cost to the node that it needs to pass through, it will set the distance to the destination into infinity, which is called poison reverse.

The link handler will update the cost table like the rupdate function and then find the minimum cost to other others and send to its neighbor.

Has compilation instructions:

```
javac Project3.java
```

```
java Project3
```

Sample output:

When Link\_change = 0:

Network Simulator v1.0

Enter trace level ( $\geq 0$ ): [0] 2

Enter seed ( $\geq 0$ ): [3322] 3322

MAIN: rcv event, t=0.092, at 2 src: 0, dest: 2, contents: 0 1 1 9999

Min cost is changed!

Packet sent to node 0

Packet is [1, 9999, 0, 2]

Packet sent to 1

Packet is [1, 2, 0, 2]

Packet sent to 3

Packet is [1, 2, 0, 2]

Here's the distance table

	via			
D2	0	1	3	
0	1	9999	9999	
dest 1	2	10	9999	
3	10000	9999	2	

MAIN: rcv event, t=0.104, at 0 src: 1, dest: 0, contents: 1 0 10 7

Min cost is changed!

Packet sent to node 1

Packet is [0, 1, 1, 9999]

Packet sent to 2

Packet is [0, 1, 1, 8]

Here's the distance table

```
      via
D0 |  1  2
----|-----
1 |  1 9999
dest 2 | 11  1
3 |  8 9999
```

MAIN: rcv event, t=0.115, at 1 src: 0, dest: 1, contents: 0 1 1 9999

Min cost is changed!

Packet sent to node 0

Packet is [1, 0, 9999, 7]

Packet sent to 2

Packet is [1, 0, 2, 7]

Packet sent to 3

Packet is [1, 0, 2, 7]

Here's the distance table

```
      via
D1 |  0  2  3
----|-----
0 |  1 9999 9999
dest 2 |  2 10 9999
3 | 10000 9999  7
```

MAIN: rcv event, t=0.447, at 2 src: 1, dest: 2, contents: 1 0 10 7

Here's the distance table

```
      via
D2 |  0  1  3
----|-----
0 |  1 11 9999
dest 1 |  2 10 9999
3 | 10000 17  2
```

MAIN: rcv event, t=0.884, at 3 src: 1, dest: 3, contents: 1 0 10 7

Min cost is changed!

Packet sent to node 1

Packet is [9999, 7, 2, 0]

Packet sent to 2

Packet is [8, 7, 2, 0]

Here's the distance table

```
      via
D3 |  1  2
----|-----
```

```

0| 8 9999
dest 1| 7 9999
2| 17 2
MAIN: rcv event, t=1.375, at 1 src: 2, dest: 1, contents: 1 10 0 2
Here's the distance table

```

```

      via
D1 | 0 2 3
----|-----
0| 1 11 9999
dest 2| 2 10 9999
3| 10000 12 7

```

```

MAIN: rcv event, t=1.410, at 1 src: 3, dest: 1, contents: 9999 7 2 0
Here's the distance table

```

```

      via
D1 | 0 2 3
----|-----
0| 1 11 10006
dest 2| 2 10 9
3| 10000 12 7

```

```

MAIN: rcv event, t=1.669, at 3 src: 2, dest: 3, contents: 1 10 0 2
Min cost is changed!
Packet sent to node 2
Packet is [9999, 7, 2, 0]
Packet sent to 1
Packet is [3, 7, 2, 0]
Here's the distance table

```

```

      via
D3 | 1 2
----|-----
0| 8 3
dest 1| 7 12
2| 17 2

```

```

MAIN: rcv event, t=2.032, at 0 src: 2, dest: 0, contents: 1 10 0 2
Min cost is changed!
Packet sent to node 2
Packet is [0, 1, 1, 9999]
Packet sent to 1
Packet is [0, 1, 1, 3]
Here's the distance table

```

```

      via
D0 | 1 2
----|-----
1| 1 11
dest 2| 11 1

```

3| 8 3

MAIN: rcv event, t=2.138, at 0 src: 2, dest: 0, contents: 1 9999 0 2

Here's the distance table

```
      via
D0 | 1 2
----|-----
1 | 1 10000
dest 2 | 11 1
3 | 8 3
```

MAIN: rcv event, t=2.306, at 2 src: 3, dest: 2, contents: 9999 7 2 0

Here's the distance table

```
      via
D2 | 0 1 3
----|-----
0 | 1 11 10001
dest 1 | 2 10 9
3 | 10000 17 2
```

MAIN: rcv event, t=2.351, at 3 src: 2, dest: 3, contents: 1 2 0 2

Min cost is changed!

Packet sent to node 2

Packet is [9999, 9999, 2, 0]

Packet sent to 1

Packet is [3, 4, 2, 0]

Here's the distance table

```
      via
D3 | 1 2
----|-----
0 | 8 3
dest 1 | 7 4
2 | 17 2
```

MAIN: rcv event, t=2.434, at 0 src: 1, dest: 0, contents: 1 0 9999 7

Here's the distance table

```
      via
D0 | 1 2
----|-----
1 | 1 10000
dest 2 | 10000 1
3 | 8 3
```

MAIN: rcv event, t=2.690, at 1 src: 2, dest: 1, contents: 1 2 0 2

Here's the distance table

```
      via
D1 | 0 2 3
----|-----
0 | 1 11 10006
```

dest 2| 2 10 9

3| 10000 12 7

MAIN: rcv event, t=3.932, at 2 src: 0, dest: 2, contents: 0 1 1 8

Here's the distance table

via

D2 | 0 1 3

----|-----

0| 1 11 10001

dest 1| 2 10 9

3| 9 17 2

MAIN: rcv event, t=4.080, at 2 src: 1, dest: 2, contents: 1 0 2 7

Here's the distance table

via

D2 | 0 1 3

----|-----

0| 1 11 10001

dest 1| 2 10 9

3| 9 17 2

MAIN: rcv event, t=4.085, at 1 src: 0, dest: 1, contents: 0 1 1 9999

Here's the distance table

via

D1 | 0 2 3

----|-----

0| 1 11 10006

dest 2| 2 10 9

3| 10000 12 7

MAIN: rcv event, t=4.127, at 3 src: 1, dest: 3, contents: 1 0 2 7

Here's the distance table

via

D3 | 1 2

----|-----

0| 8 3

dest 1| 7 4

2| 9 2

MAIN: rcv event, t=5.360, at 1 src: 3, dest: 1, contents: 9999 7 2 0

Here's the distance table

via

D1 | 0 2 3

----|-----

0| 1 11 10006

dest 2| 2 10 9

3| 10000 12 7

MAIN: rcv event, t=5.945, at 2 src: 3, dest: 2, contents: 8 7 2 0

Here's the distance table

```

      via
D2 | 0  1  3
----|-----
0 | 1 11 10
dest 1| 2 10 9
3 | 9 17 2
MAIN: rcv event, t=6.352, at 1 src: 3, dest: 1, contents: 3 7 2 0
Here's the distance table

```

```

      via
D1 | 0  2  3
----|-----
0 | 1 11 10
dest 2| 2 10 9
3 | 10000 12 7
MAIN: rcv event, t=7.110, at 2 src: 3, dest: 2, contents: 9999 7 2 0
Here's the distance table

```

```

      via
D2 | 0  1  3
----|-----
0 | 1 11 10001
dest 1| 2 10 9
3 | 9 17 2
MAIN: rcv event, t=7.553, at 2 src: 0, dest: 2, contents: 0 1 1 9999
Here's the distance table

```

```

      via
D2 | 0  1  3
----|-----
0 | 1 11 10001
dest 1| 2 10 9
3 | 10000 17 2
MAIN: rcv event, t=7.562, at 1 src: 0, dest: 1, contents: 0 1 1 3

```

Min cost is changed!

Packet sent to node 0

Packet is [1, 0, 9999, 9999]

Packet sent to 2

Packet is [1, 0, 2, 4]

Packet sent to 3

Packet is [1, 0, 2, 4]

Here's the distance table

```

      via
D1 | 0  2  3
----|-----
0 | 1 11 10
dest 2| 2 10 9

```

3| 4 12 7

MAIN: rcv event, t=8.107, at 1 src: 3, dest: 1, contents: 3 4 2 0

Here's the distance table

via

D1 | 0 2 3

-----|-----

0| 1 11 10

dest 2| 2 10 9

3| 4 12 7

MAIN: rcv event, t=8.118, at 0 src: 1, dest: 0, contents: 1 0 9999 9999

Here's the distance table

via

D0 | 1 2

-----|-----

1| 1 10000

dest 2| 10000 1

3| 10000 3

MAIN: rcv event, t=8.408, at 2 src: 3, dest: 2, contents: 9999 9999 2 0

Here's the distance table

via

D2 | 0 1 3

-----|-----

0| 1 11 10001

dest 1| 2 10 10001

3| 10000 17 2

MAIN: rcv event, t=8.473, at 2 src: 1, dest: 2, contents: 1 0 2 4

Here's the distance table

via

D2 | 0 1 3

-----|-----

0| 1 11 10001

dest 1| 2 10 10001

3| 10000 14 2

MAIN: rcv event, t=8.485, at 3 src: 1, dest: 3, contents: 1 0 2 4

Here's the distance table

via

D3 | 1 2

-----|-----

0| 8 3

dest 1| 7 4

2| 9 2

Simulator terminated at t=8.484695, no packets in medium

Simulator terminated at time 8.484694967497788

When Link\_change = 1:

Network Simulator v1.0

Enter trace level ( $\geq 0$ ): [0] 2

Enter seed ( $\geq 0$ ): [3322] 3322

MAIN: rcv event,  $t=0.092$ , at 2 src: 0, dest: 2, contents: 0 1 1 9999

Min cost is changed!

Packet sent to node 0

Packet is [1, 9999, 0, 2]

Packet sent to 1

Packet is [1, 2, 0, 2]

Packet sent to 3

Packet is [1, 2, 0, 2]

Here's the distance table

		via		
D2	0	1	3	
0	1	9999	9999	
dest 1	2	10	9999	
3	10000	9999	2	

MAIN: rcv event,  $t=0.104$ , at 0 src: 1, dest: 0, contents: 1 0 10 7

Min cost is changed!

Packet sent to node 1

Packet is [0, 1, 1, 9999]

Packet sent to 2

Packet is [0, 1, 1, 8]

Here's the distance table

		via	
D0	1	2	
1	1	9999	
dest 2	11	1	
3	8	9999	

MAIN: rcv event,  $t=0.115$ , at 1 src: 0, dest: 1, contents: 0 1 1 9999

Min cost is changed!

Packet sent to node 0

Packet is [1, 0, 9999, 7]

Packet sent to 2

Packet is [1, 0, 2, 7]

Packet sent to 3

Packet is [1, 0, 2, 7]

Here's the distance table

via



```

D1 | 0 2 3
----|-----
0 | 1 9999 9999
dest 2 | 2 10 9999
3 | 10000 9999 7
MAIN: rcv event, t=0.447, at 2 src: 1, dest: 2, contents: 1 0 10 7
Here's the distance table

```

```

      via
D2 | 0 1 3
----|-----
0 | 1 11 9999
dest 1 | 2 10 9999
3 | 10000 17 2

```

```

MAIN: rcv event, t=0.884, at 3 src: 1, dest: 3, contents: 1 0 10 7
Min cost is changed!
Packet sent to node 1
Packet is [9999, 7, 2, 0]
Packet sent to 2
Packet is [8, 7, 2, 0]
Here's the distance table

```

```

      via
D3 | 1 2
----|-----
0 | 8 9999
dest 1 | 7 9999
2 | 17 2

```

```

MAIN: rcv event, t=1.375, at 1 src: 2, dest: 1, contents: 1 10 0 2
Here's the distance table

```

```

      via
D1 | 0 2 3
----|-----
0 | 1 11 9999
dest 2 | 2 10 9999
3 | 10000 12 7

```

```

MAIN: rcv event, t=1.410, at 1 src: 3, dest: 1, contents: 9999 7 2 0
Here's the distance table

```

```

      via
D1 | 0 2 3
----|-----
0 | 1 11 10006
dest 2 | 2 10 9
3 | 10000 12 7

```

```

MAIN: rcv event, t=1.669, at 3 src: 2, dest: 3, contents: 1 10 0 2
Min cost is changed!

```

Packet sent to node 2

Packet is [9999, 7, 2, 0]

Packet sent to 1

Packet is [3, 7, 2, 0]

Here's the distance table

```
      via
D3 | 1  2
----|-----
0 | 8  3
dest 1 | 7 12
      2 | 17 2
```

MAIN: rcv event, t=2.032, at 0 src: 2, dest: 0, contents: 1 10 0 2

Min cost is changed!

Packet sent to node 2

Packet is [0, 1, 1, 9999]

Packet sent to 1

Packet is [0, 1, 1, 3]

Here's the distance table

```
      via
D0 | 1  2
----|-----
1 | 1 11
dest 2 | 11 1
      3 | 8  3
```

MAIN: rcv event, t=2.138, at 0 src: 2, dest: 0, contents: 1 9999 0 2

Here's the distance table

```
      via
D0 | 1  2
----|-----
1 | 1 10000
dest 2 | 11 1
      3 | 8  3
```

MAIN: rcv event, t=2.306, at 2 src: 3, dest: 2, contents: 9999 7 2 0

Here's the distance table

```
      via
D2 | 0  1  3
----|-----
0 | 1 11 10001
dest 1 | 2 10 9
      3 | 10000 17 2
```

MAIN: rcv event, t=2.351, at 3 src: 2, dest: 3, contents: 1 2 0 2

Min cost is changed!

Packet sent to node 2

Packet is [9999, 9999, 2, 0]

Packet sent to 1

Packet is [3, 4, 2, 0]

Here's the distance table

```
      via
D3 | 1  2
----|-----
0 | 8  3
dest 1 | 7  4
2 | 17  2
```

MAIN: rcv event, t=2.434, at 0 src: 1, dest: 0, contents: 1 0 9999 7

Here's the distance table

```
      via
D0 | 1  2
----|-----
1 | 1 10000
dest 2 | 10000 1
3 | 8  3
```

MAIN: rcv event, t=2.690, at 1 src: 2, dest: 1, contents: 1 2 0 2

Here's the distance table

```
      via
D1 | 0  2  3
----|-----
0 | 1 11 10006
dest 2 | 2 10  9
3 | 10000 12  7
```

MAIN: rcv event, t=3.932, at 2 src: 0, dest: 2, contents: 0 1 1 8

Here's the distance table

```
      via
D2 | 0  1  3
----|-----
0 | 1 11 10001
dest 1 | 2 10  9
3 | 9 17  2
```

MAIN: rcv event, t=4.080, at 2 src: 1, dest: 2, contents: 1 0 2 7

Here's the distance table

```
      via
D2 | 0  1  3
----|-----
0 | 1 11 10001
dest 1 | 2 10  9
3 | 9 17  2
```

MAIN: rcv event, t=4.085, at 1 src: 0, dest: 1, contents: 0 1 1 9999

Here's the distance table

```
      via
```

```

D1 | 0 2 3
----|-----
0 | 1 11 10006
dest 2 | 2 10 9
3 | 10000 12 7
MAIN: rcv event, t=4.127, at 3 src: 1, dest: 3, contents: 1 0 2 7
Here's the distance table

```

```

      via
D3 | 1 2
----|-----
0 | 8 3
dest 1 | 7 4
2 | 9 2
MAIN: rcv event, t=5.360, at 1 src: 3, dest: 1, contents: 9999 7 2 0
Here's the distance table

```

```

      via
D1 | 0 2 3
----|-----
0 | 1 11 10006
dest 2 | 2 10 9
3 | 10000 12 7
MAIN: rcv event, t=5.945, at 2 src: 3, dest: 2, contents: 8 7 2 0
Here's the distance table

```

```

      via
D2 | 0 1 3
----|-----
0 | 1 11 10
dest 1 | 2 10 9
3 | 9 17 2
MAIN: rcv event, t=6.352, at 1 src: 3, dest: 1, contents: 3 7 2 0
Here's the distance table

```

```

      via
D1 | 0 2 3
----|-----
0 | 1 11 10
dest 2 | 2 10 9
3 | 10000 12 7
MAIN: rcv event, t=7.110, at 2 src: 3, dest: 2, contents: 9999 7 2 0
Here's the distance table

```

```

      via
D2 | 0 1 3
----|-----
0 | 1 11 10001
dest 1 | 2 10 9

```

3| 9 17 2

MAIN: rcv event, t=7.553, at 2 src: 0, dest: 2, contents: 0 1 1 9999

Here's the distance table

```
      via
D2 | 0  1  3
----|-----
0 | 1 11 10001
dest 1| 2 10 9
3 | 10000 17 2
```

MAIN: rcv event, t=7.562, at 1 src: 0, dest: 1, contents: 0 1 1 3

Min cost is changed!

Packet sent to node 0

Packet is [1, 0, 9999, 9999]

Packet sent to 2

Packet is [1, 0, 2, 4]

Packet sent to 3

Packet is [1, 0, 2, 4]

Here's the distance table

```
      via
D1 | 0  2  3
----|-----
0 | 1 11 10
dest 2| 2 10 9
3 | 4 12 7
```

MAIN: rcv event, t=8.107, at 1 src: 3, dest: 1, contents: 3 4 2 0

Here's the distance table

```
      via
D1 | 0  2  3
----|-----
0 | 1 11 10
dest 2| 2 10 9
3 | 4 12 7
```

MAIN: rcv event, t=8.118, at 0 src: 1, dest: 0, contents: 1 0 9999 9999

Here's the distance table

```
      via
D0 | 1  2
----|-----
1 | 1 10000
dest 2| 10000 1
3 | 10000 3
```

MAIN: rcv event, t=8.408, at 2 src: 3, dest: 2, contents: 9999 9999 2 0

Here's the distance table

```
      via
D2 | 0  1  3
```

```

----|-----
0| 1 11 10001
dest 1| 2 10 10001
3| 10000 17 2

```

MAIN: rcv event, t=8.473, at 2 src: 1, dest: 2, contents: 1 0 2 4

Here's the distance table

```

      via
D2 | 0 1 3
----|-----
0| 1 11 10001
dest 1| 2 10 10001
3| 10000 14 2

```

MAIN: rcv event, t=8.485, at 3 src: 1, dest: 3, contents: 1 0 2 4

Here's the distance table

```

      via
D3 | 1 2
----|-----
0| 8 3
dest 1| 7 4
2| 9 2

```

MAIN: rcv event, t=10000.000, at -1

The cost at node 0 to node 1 is changed to 20

Packet sent to node 2

Packet is [0, 20, 1, 9999]

Packet sent to node 1

Packet is [0, 20, 1, 3]

Here's the distance table

```

      via
D0 | 1 2
----|-----
1| 20 10000
dest 2| 10000 1
3| 10000 3

```

The cost at node 1 to node 0 is changed to 20

Packet sent to node 3

Packet is [9999, 0, 9999, 9999]

Packet sent to node 0

Packet is [9999, 0, 9999, 9999]

Packet sent to node 2

Packet is [10, 0, 2, 4]

Here's the distance table

```

      via
D1 | 0 2 3
----|-----

```

```

    0| 20 11 10
dest 2| 2 10 9
    3| 4 12 7
MAIN: rcv event, t=10000.619, at 2 src: 0, dest: 2, contents: 0 20 1 9999
Min cost is changed!
Packet sent to 0
Packet is [1, 10, 0, 2]
Packet sent to 1
Packet is [1, 10, 0, 2]
Packet sent to 3
Packet is [1, 10, 0, 2]
Here's the distance table

```

```

      via
D2 | 0 1 3
----|-----
    0| 1 11 10001
dest 1| 21 10 10001
    3| 10000 14 2

```

```

MAIN: rcv event, t=10000.723, at 1 src: 0, dest: 1, contents: 0 20 1 3
Min cost is changed!
Min cost is changed!
Packet sent to node 3
Packet is [9999, 0, 9999, 7]
Packet sent to 0
Packet is [10, 0, 9, 7]
Packet sent to 2
Packet is [10, 0, 9, 7]
Here's the distance table

```

```

      via
D1 | 0 2 3
----|-----
    0| 20 11 10
dest 2| 21 10 9
    3| 23 12 7

```

```

MAIN: rcv event, t=10000.806, at 1 src: 2, dest: 1, contents: 1 10 0 2
Here's the distance table

```

```

      via
D1 | 0 2 3
----|-----
    0| 20 11 10
dest 2| 21 10 9
    3| 23 12 7

```

```

MAIN: rcv event, t=10001.498, at 0 src: 1, dest: 0, contents: 9999 0 9999 9999
Here's the distance table

```

```

      via
D0 | 1  2
----|-----
1 | 20 10000
dest 2 | 10019  1
3 | 10019  3
MAIN: rcv event, t=10001.877, at 3 src: 1, dest: 3, contents: 9999 0 9999 9999
Here's the distance table

```

```

      via
D3 | 1  2
----|-----
0 | 10006  3
dest 1 | 7  4
2 | 10006  2
MAIN: rcv event, t=10001.953, at 3 src: 2, dest: 3, contents: 1 10 0 2
Min cost is changed!
Packet sent to node 2
Packet is [9999, 7, 2, 0]
Packet sent to 1
Packet is [3, 7, 2, 0]
Here's the distance table

```

```

      via
D3 | 1  2
----|-----
0 | 10006  3
dest 1 | 7 12
2 | 10006  2
MAIN: rcv event, t=10001.985, at 2 src: 1, dest: 2, contents: 10 0 2 4
Here's the distance table

```

```

      via
D2 | 0  1  3
----|-----
0 | 1 20 10001
dest 1 | 21 10 10001
3 | 10000 14  2
MAIN: rcv event, t=10002.167, at 1 src: 3, dest: 1, contents: 3 7 2 0
Here's the distance table

```

```

      via
D1 | 0  2  3
----|-----
0 | 20 11 10
dest 2 | 21 10  9
3 | 23 12  7
MAIN: rcv event, t=10002.384, at 0 src: 2, dest: 0, contents: 1 10 0 2

```



Min cost is changed!

Packet sent to node 2

Packet is [0, 9999, 1, 9999]

Packet sent to 1

Packet is [0, 11, 1, 3]

Here's the distance table

```
      via
D0 | 1  2
----|-----
1 | 20 11
dest 2 | 10019  1
3 | 10019  3
```

MAIN: rcv event, t=10002.924, at 3 src: 1, dest: 3, contents: 9999 0 9999 7

Here's the distance table

```
      via
D3 | 1  2
----|-----
0 | 10006  3
dest 1 |  7 12
2 | 10006  2
```

MAIN: rcv event, t=10003.464, at 1 src: 0, dest: 1, contents: 0 11 1 3

Here's the distance table

```
      via
D1 | 0  2  3
----|-----
0 | 20 11 10
dest 2 | 21 10  9
3 | 23 12  7
```

MAIN: rcv event, t=10003.640, at 2 src: 1, dest: 2, contents: 10 0 9 7

Here's the distance table

```
      via
D2 | 0  1  3
----|-----
0 |  1 20 10001
dest 1 | 21 10 10001
3 | 10000 17  2
```

MAIN: rcv event, t=10003.787, at 0 src: 1, dest: 0, contents: 10 0 9 7

Here's the distance table

```
      via
D0 | 1  2
----|-----
1 | 20 11
dest 2 | 29  1
3 | 27  3
```

MAIN: rcv event, t=10005.615, at 2 src: 3, dest: 2, contents: 9999 7 2 0

Min cost is changed!

Packet sent to node 3

Packet is [1, 9999, 0, 2]

Packet sent to 0

Packet is [1, 9, 0, 2]

Packet sent to 1

Packet is [1, 9, 0, 2]

Here's the distance table

```
      via
D2 | 0  1  3
----|-----
0 | 1 20 10001
dest 1 | 21 10 9
3 | 10000 17 2
```

MAIN: rcv event, t=10005.640, at 1 src: 2, dest: 1, contents: 1 9 0 2

Here's the distance table

```
      via
D1 | 0  2  3
----|-----
0 | 20 11 10
dest 2 | 21 10 9
3 | 23 12 7
```

MAIN: rcv event, t=10005.797, at 0 src: 2, dest: 0, contents: 1 9 0 2

Min cost is changed!

Packet sent to node 2

Packet is [0, 9999, 1, 9999]

Packet sent to 1

Packet is [0, 10, 1, 3]

Here's the distance table

```
      via
D0 | 1  2
----|-----
1 | 20 10
dest 2 | 29 1
3 | 27 3
```

MAIN: rcv event, t=10005.904, at 1 src: 0, dest: 1, contents: 0 10 1 3

Here's the distance table

```
      via
D1 | 0  2  3
----|-----
0 | 20 11 10
dest 2 | 21 10 9
3 | 23 12 7
```

MAIN: rcv event, t=10006.612, at 2 src: 0, dest: 2, contents: 0 9999 1 9999

Here's the distance table

```
      via
D2 | 0  1  3
----|-----
0 | 1 20 10001
dest 1 | 10000 10 9
3 | 10000 17 2
```

MAIN: rcv event, t=10007.382, at 3 src: 2, dest: 3, contents: 1 9999 0 2

Here's the distance table

```
      via
D3 | 1  2
----|-----
0 | 10006 3
dest 1 | 7 10001
2 | 10006 2
```

MAIN: rcv event, t=10007.607, at 2 src: 0, dest: 2, contents: 0 9999 1 9999

Here's the distance table

```
      via
D2 | 0  1  3
----|-----
0 | 1 20 10001
dest 1 | 10000 10 9
3 | 10000 17 2
```

MAIN: rcv event, t=20000.000, at -1

The cost at node 0 to node 1 is changed to 1

Packet sent to node 2

Packet is [0, 1, 1, 9999]

Packet sent to node 1

Packet is [0, 1, 1, 3]

Here's the distance table

```
      via
D0 | 1  2
----|-----
1 | 1 10
dest 2 | 29  1
3 | 27  3
```

The cost at node 1 to node 0 is changed to 1

Packet sent to node 3

Packet is [1, 0, 9999, 7]

Packet sent to node 0

Packet is [1, 0, 9, 7]

Packet sent to node 2

Packet is [1, 0, 9, 7]

Here's the distance table

```
      via
D1 | 0  2  3
----|-----
0 | 1 11 10
dest 2 | 21 10 9
3 | 23 12 7
```

MAIN: rcv event, t=20000.633, at 3 src: 1, dest: 3, contents: 1 0 9999 7

Here's the distance table

```
      via
D3 | 1  2
----|-----
0 | 8  3
dest 1 | 7 10001
2 | 10006 2
```

MAIN: rcv event, t=20000.856, at 2 src: 0, dest: 2, contents: 0 1 1 9999

Min cost is changed!

Packet sent to node 0

Packet is [1, 9999, 0, 2]

Packet sent to 1

Packet is [1, 2, 0, 2]

Packet sent to 3

Packet is [1, 2, 0, 2]

Here's the distance table

```
      via
D2 | 0  1  3
----|-----
0 | 1 20 10001
dest 1 | 2 10 9
3 | 10000 17 2
```

MAIN: rcv event, t=20000.975, at 1 src: 0, dest: 1, contents: 0 1 1 3

Min cost is changed!

Packet sent to node 0

Packet is [1, 0, 9999, 9999]

Packet sent to 2

Packet is [1, 0, 2, 4]

Packet sent to 3

Packet is [1, 0, 2, 4]

Here's the distance table

```
      via
D1 | 0  2  3
----|-----
0 | 1 11 10
dest 2 | 2 10 9
```

3| 4 12 7

MAIN: rcv event, t=20001.257, at 1 src: 2, dest: 1, contents: 1 2 0 2

Here's the distance table

```
      via
D1 | 0  2  3
----|-----
0 | 1 11 10
dest 2| 2 10 9
3 | 4 12 7
```

MAIN: rcv event, t=20001.402, at 0 src: 1, dest: 0, contents: 1 0 9 7

Here's the distance table

```
      via
D0 | 1  2
----|-----
1 | 1 10
dest 2| 10 1
3 | 8  3
```

MAIN: rcv event, t=20001.614, at 3 src: 2, dest: 3, contents: 1 2 0 2

Min cost is changed!

Packet sent to node 2

Packet is [9999, 9999, 2, 0]

Packet sent to 1

Packet is [3, 4, 2, 0]

Here's the distance table

```
      via
D3 | 1  2
----|-----
0 | 8  3
dest 1| 7  4
2 | 10006 2
```

MAIN: rcv event, t=20001.670, at 1 src: 3, dest: 1, contents: 3 4 2 0

Here's the distance table

```
      via
D1 | 0  2  3
----|-----
0 | 1 11 10
dest 2| 2 10 9
3 | 4 12 7
```

MAIN: rcv event, t=20002.080, at 2 src: 1, dest: 2, contents: 1 0 9 7

Here's the distance table

```
      via
D2 | 0  1  3
----|-----
0 | 1 11 10001
```

dest 1| 2 10 9  
3| 10000 17 2

MAIN: rcv event, t=20002.565, at 3 src: 1, dest: 3, contents: 1 0 2 4

Here's the distance table

via  
D3	1 2
0| 8 3  
dest 1| 7 4  
2| 9 2

MAIN: rcv event, t=20002.570, at 0 src: 2, dest: 0, contents: 1 9999 0 2

Here's the distance table

via  
D0	1 2
1| 1 10000  
dest 2| 10 1  
3| 8 3

MAIN: rcv event, t=20003.202, at 0 src: 1, dest: 0, contents: 1 0 9999 9999

Here's the distance table

via  
D0	1 2
1| 1 10000  
dest 2| 10000 1  
3| 10000 3

MAIN: rcv event, t=20003.640, at 2 src: 1, dest: 2, contents: 1 0 2 4

Here's the distance table

via  
D2	0 1 3
0| 1 11 10001  
dest 1| 2 10 9  
3| 10000 14 2

MAIN: rcv event, t=20005.281, at 2 src: 3, dest: 2, contents: 9999 9999 2 0

Here's the distance table

via  
D2	0 1 3
0| 1 11 10001  
dest 1| 2 10 10001  
3| 10000 14 2

Simulator terminated at t=20005.281045, no packets in medium

Simulator terminated at time 20005.28104495376