

# Project3

Friday, July 26, 2019 12:00 AM

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C:\Users\mstro\OneDrive\Documents\cs1652-2019\project3  
\1652Project3\Code>java Project

Network Simulator v1.0

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

Will the link change (1 = Yes, 0 = No): [0] 1

Enter random seed: [random] 12345

Initializing entity 0 at time: 0.0

Sending first distance vector from 0 to 1 at 0.0

Sending first distance vector from 0 to 2 at 0.0

Sending first distance vector from 0 to 3 at 0.0

Initializing entity 1 at time: 0.0

Sending first distance vector from 1 to 0 at 0.0

Sending first distance vector from 1 to 2 at 0.0

Initializing entity 2 at time: 0.0

Sending first distance vector from 2 to 0 at 0.0

Sending first distance vector from 2 to 1 at 0.0

Sending first distance vector from 2 to 3 at 0.0

Initializing entity 3 at time: 0.0

Sending first distance vector from 3 to 0 at 0.0

Sending first distance vector from 3 to 2 at 0.0

main(): event received. t=2.4243988896568207, node=0

src=3, dest=0, contents=[7, 999, 2, 0]

Packet received in 0 via 3 at time: 2.4243988896568207

The distance vector in 0 was not updated

via

D0 | 1 2 3

----+-----

1 | 999 999 999

2 | 999 999 999

3 | 999 2 0

main(): event received. t=3.119714115828627, node=2

src=1, dest=2, contents=[1, 0, 1, 999]

Packet received in 2 via 1 at time: 3.119714115828627

Distance vector changed in 2

Updated distance vector for 2:

[2, 1, 0, 2]

• 2's distance vector

via

D2 | 0 1 3

----+-----

0| 999 999 999

1| 1 0 999

3| 999 999 999

Sending distance vector from 2 to 0 at: 3.119714115828627

Sending distance vector from 2 to 1 at: 3.119714115828627

Sending distance vector from 2 to 3 at: 3.119714115828627

main(): event received. t=3.9382818061413363, node=0

src=1, dest=0, contents=[1, 0, 1, 999]

Packet received in 0 via 1 at time: 3.9382818061413363

Distance vector changed in 0

Updated distance vector for 0:

[0, 1, 2, 7]

via

D0 | 1 2 3

----+-----

1| 0 1 999

2| 999 999 999

3| 999 2 0

Sending distance vector from 0 to 1 at: 3.9382818061413363

Sending distance vector from 0 to 2 at: 3.9382818061413363

Sending distance vector from 0 to 3 at: 3.9382818061413363

main(): event received. t=4.14203820962395, node=0

src=2, dest=0, contents=[3, 1, 0, 2]

Packet received in 0 via 2 at time: 4.14203820962395

Distance vector changed in 0

Updated distance vector for 0:

[0, 1, 2, 5]

via  
D0 | 1 2 3  
----+-----  
1 | 0 1 999  
2 | 1 0 2  
3 | 999 2 0

Sending distance vector from 0 to 1 at: 4.14203820962395

Sending distance vector from 0 to 2 at: 4.14203820962395

Sending distance vector from 0 to 3 at: 4.14203820962395

main(): event received. t=4.256227964444246, node=1

src=0, dest=1, contents=[0, 1, 3, 7]

Packet received in 1 via 0 at time: 4.256227964444246

Distance vector changed in 1

Updated distance vector for 1:

[1, 0, 1, 8]

via

D1 | 0 2

----+-----

0 | 0 3

2 | 999 999

3 | 999 999

Sending distance vector from 1 to 0 at: 4.256227964444246

Sending distance vector from 1 to 2 at: 4.256227964444246

main(): event received. t=5.032698694238366, node=1

src=2, dest=1, contents=[3, 1, 0, 2]

Packet received in 1 via 2 at time: 5.032698694238366

Distance vector changed in 1

Updated distance vector for 1:

[1, 0, 1, 3]

• 1's distance vector

via

D1 | 0 2

-----+-----

0| 0 3

2| 3 0

3| 999 999

Sending distance vector from 1 to 0 at: 5.032698694238366

Sending distance vector from 1 to 2 at: 5.032698694238366

main(): event received. t=6.1812020694213885, node=2

src=1, dest=2, contents=[1, 0, 1, 8]

Packet received in 2 via 1 at time: 6.1812020694213885

The distance vector in 2 was not updated

via

D2 | 0 1 3

-----+-----

0| 999 999 999

1| 1 0 8

3| 999 999 999

main(): event received. t=6.622964060724313, node=1

src=2, dest=1, contents=[2, 1, 0, 2]

Packet received in 1 via 2 at time: 6.622964060724313

The distance vector in 1 was not updated

via

D1 | 0 2

-----+-----

0 | 0 3

2 | 2 0

3 | 999 999

main(): event received. t=6.743376494054817, node=3

src=2, dest=3, contents=[3, 1, 0, 2]

Packet received in 3 via 2 at time: 6.743376494054817

Distance vector changed in 3

Updated distance vector for 3:

[5, 3, 2, 0]

via

D3 | 0 2

-----+-----

0 | 999 999

1 | 999 999

2 | 3 0

Sending distance vector from 3 to 0 at: 6.743376494054817

Sending distance vector from 3 to 2 at: 6.743376494054817

main(): event received. t=7.919992541728081, node=2

src=3, dest=2, contents=[7, 999, 2, 0]

Packet received in 2 via 3 at time: 7.919992541728081

The distance vector in 2 was not updated

via

D2 | 0 1 3

-----+-----

0 | 999 999 999

1 | 1 0 8

3 | 7 999 0

main(): event received. t=8.497822140739213, node=3

src=0, dest=3, contents=[0, 1, 3, 7]

Packet received in 3 via 0 at time: 8.497822140739213

The distance vector in 3 was not updated

via

D3 | 0 2

-----+-----



0| 0 3

1| 999 999

2| 3 0

main(): event received. t=8.928851229238663, node=2

src=1, dest=2, contents=[1, 0, 1, 3]

Packet received in 2 via 1 at time: 8.928851229238663

The distance vector in 2 was not updated

via

D2 | 0 1 3

-----+-----

0| 999 999 999

1| 1 0 3

3| 7 999 0

main(): event received. t=9.396941367596868, node=2

src=0, dest=2, contents=[0, 1, 3, 7]

Packet received in 2 via 0 at time: 9.396941367596868

The distance vector in 2 was not updated

via

D2 | 0 1 3

----+-----

0| 0 1 7

1| 1 0 3

3| 7 999 0

main(): event received. t=9.557466317248007, node=1

src=0, dest=1, contents=[0, 1, 2, 7]

Packet received in 1 via 0 at time: 9.557466317248007

The distance vector in 1 was not updated

via

D1 | 0 2

----+-----

0| 0 2

2| 2 0

3| 999 999

main(): event received. t=10.025020386587439, node=0

src=3, dest=0, contents=[5, 3, 2, 0]

Packet received in 0 via 3 at time: 10.025020386587439

The distance vector in 0 was not updated

via

D0 | 1 2 3

-----+-----

1| 0 1 999

2| 1 0 2

3| 3 2 0

main(): event received. t=10.254830429659705, node=0

src=1, dest=0, contents=[1, 0, 1, 8]

Packet received in 0 via 1 at time: 10.254830429659705

The distance vector in 0 was not updated

via

D0 | 1 2 3

-----+-----

1| 0 1 8

2| 1 0 2

3| 3 2 0

main(): event received. t=13.390218940347001, node=2

src=0, dest=2, contents=[0, 1, 2, 7]

Packet received in 2 via 0 at time: 13.390218940347001

The distance vector in 2 was not updated

```
      via
D2 |  0  1  3
----+-----
0 |  0  1  7
1 |  1  0  3
3 |  7 999  0
```

main(): event received. t=13.647699329192216, node=0

src=2, dest=0, contents=[2, 1, 0, 2]

Packet received in 0 via 2 at time: 13.647699329192216

The distance vector in 0 was not updated

```
      via
D0 |  1  2  3
----+-----
1 |  0  1  8
2 |  1  0  2
3 |  3  2  0
```

main(): event received. t=15.035457955244045, node=3

src=2, dest=3, contents=[2, 1, 0, 2]

Packet received in 3 via 2 at time: 15.035457955244045

Distance vector changed in 3

Updated distance vector for 3:

[4, 3, 2, 0]

• 3's distance vector

via

D3 | 0 2

-----+-----

0 | 0 3

1 | 999 999

2 | 2 0

Sending distance vector from 3 to 0 at: 15.035457955244045

Sending distance vector from 3 to 2 at: 15.035457955244045

main(): event received. t=15.184607470151414, node=2

src=3, dest=2, contents=[5, 3, 2, 0]

Packet received in 2 via 3 at time: 15.184607470151414

The distance vector in 2 was not updated

via

D2 | 0 1 3

-----+-----

0| 0 1 7

1| 1 0 3

3| 5 3 0

main(): event received. t=15.730604219073927, node=3

src=0, dest=3, contents=[0, 1, 2, 7]

Packet received in 3 via 0 at time: 15.730604219073927

The distance vector in 3 was not updated

via

D3 | 0 2

-----+-----

0| 0 2

1| 999 999

2| 2 0

main(): event received. t=16.461467186332673, node=0

src=3, dest=0, contents=[4, 3, 2, 0]

Packet received in 0 via 3 at time: 16.461467186332673

The distance vector in 0 was not updated

via

D0 | 1 2 3

-----+-----

1 | 0 1 8

2 | 1 0 2

3 | 3 2 0

main(): event received. t=17.54279372389734, node=3

src=0, dest=3, contents=[0, 1, 2, 5]

Packet received in 3 via 0 at time: 17.54279372389734

The distance vector in 3 was not updated

via

D3 | 0 2

-----+-----

0 | 0 2

1 | 999 999

2 | 2 0

main(): event received. t=17.547979044931378, node=2

src=0, dest=2, contents=[0, 1, 2, 5]

Packet received in 2 via 0 at time: 17.547979044931378

The distance vector in 2 was not updated

via

D2 | 0 1 3

-----+-----

0 | 0 1 5

1 | 1 0 3

3 | 5 3 0

main(): event received. t=17.991100653020034, node=2

src=3, dest=2, contents=[4, 3, 2, 0]

Packet received in 2 via 3 at time: 17.991100653020034

The distance vector in 2 was not updated

via

D2 | 0 1 3

-----+-----

0 | 0 1 5

1 | 1 0 3

3 | 4 3 0

main(): event received. t=18.803526120866138, node=1



src=0, dest=1, contents=[0, 1, 2, 5]

Packet received in 1 via 0 at time: 18.803526120866138

The distance vector in 1 was not updated

via

D1 | 0 2

-----+-----

0 | 0 2

2 | 2 0

3 | 999 999

main(): event received. t=19.75405545678855, node=0

src=1, dest=0, contents=[1, 0, 1, 3]

Packet received in 0 via 1 at time: 19.75405545678855

Distance vector changed in 0

Updated distance vector for 0:

[0, 1, 2, 4]

• 0's distance vector  
final distance  
table for  
entity 0  
before link  
change

via

D0 | 1 2 3

-----+-----

1 | 0 1 3

2 | 1 0 2

change

2 | 1 0 2

3 | 3 2 0

Sending distance vector from 0 to 1 at: 19.75405545678855

Sending distance vector from 0 to 2 at: 19.75405545678855

Sending distance vector from 0 to 3 at: 19.75405545678855

main(): event received. t=22.839068912714534, node=3

src=0, dest=3, contents=[0, 1, 2, 4]

Packet received in 3 via 0 at time: 22.839068912714534

The distance vector in 3 was not updated

via

D3 | 0 2

-----+-----

0 | 0 2

1 | 999 999

2 | 2 0

final distance  
table for  
entity 3  
before link  
change

main(): event received. t=24.33622582436163, node=2

src=0, dest=2, contents=[0, 1, 2, 4]

Packet received in 2 via 0 at time: 24.33622582436163

The distance vector in 2 was not updated

via				
D2	0	1	3	
-----+				
0	0	1	4	
1	1	0	3	
3	4	3	0	

• final distance table for entity 1 before link change

main(): event received. t=28.405368396796703, node=1

src=0, dest=1, contents=[0, 1, 2, 4]

Packet received in 1 via 0 at time: 28.405368396796703

The distance vector in 1 was not updated

via		
D1	0	2
-----+		
0	0	2
2	2	0
3	999	999

• final distance table for entity 1 before link change

main(): event received. t=10000.0, node=0

Link cost change.

Link cost change detected in 0 for : Link 1 with newCost: 20 at time: 10000.0

link cost  
increase

Distance vector changed in 0

Updated distance vector for 0:

[0, 4, 3, 5]

0's distance vector

via

D0 | 1 2 3

-----+

1 | 0 1 3

2 | 1 0 2

3 | 3 2 0

Sending distance vector from 0 to 1 at: 10000.0

Sending distance vector from 0 to 2 at: 10000.0

Sending distance vector from 0 to 3 at: 10000.0

Link cost change detected in 1 for : Link 0 with newCost: 20 at time: 10000.0

Distance vector changed in 1

Updated distance vector for 1:

[3, 0, 1, 3]

via

D1 | 0 2

-----+-----

0| 0 2

2| 2 0

3| 999 999

Sending distance vector from 1 to 0 at: 10000.0

Sending packet from 1 to 0 in init

Sending distance vector from 1 to 2 at: 10000.0

Sending packet from 1 to 2 in init

main(): event received. t=10001.599752599835, node=2

src=0, dest=2, contents=[0, 4, 3, 5]

Packet received in 2 via 0 at time: 10001.599752599835

The distance vector in 2 was not updated

via

D2 | 0 1 3

-----+-----

0| 0 4 5

1| 1 0 3

3| 4 3 0

main(): event received. t=10001.924149081846, node=3

src=0, dest=3, contents=[0, 4, 3, 5]

Packet received in 3 via 0 at time: 10001.924149081846

The distance vector in 3 was not updated

via

D3 | 0 2

-----+-----

0 | 0 3

1 | 999 999

2 | 2 0

main(): event received. t=10002.404125088864, node=1

src=0, dest=1, contents=[0, 4, 3, 5]

Packet received in 1 via 0 at time: 10002.404125088864

The distance vector in 1 was not updated

via

D1 | 0 2

-----+-----

0 | 0 3

2 | 2 0

3 | 999 999

main(): event received. t=10004.399968033475, node=2

src=1, dest=2, contents=[3, 0, 1, 3]

Packet received in 2 via 1 at time: 10004.399968033475

Distance vector changed in 2

Updated distance vector for 2:

[3, 1, 0, 2]

2's distance vector

via

D2 | 0 1 3

-----+-----

0 | 0 4 5

1 | 3 0 3

3 | 4 3 0

Sending distance vector from 2 to 0 at: 10004.399968033475

Sending distance vector from 2 to 1 at: 10004.399968033475

Sending distance vector from 2 to 3 at: 10004.399968033475

main(): event received. t=10006.323733762363, node=0

src=1, dest=0, contents=[3, 0, 1, 3]

Packet received in 0 via 1 at time: 10006.323733762363

The distance vector in 0 was not updated

via

D0 | 1 2 3

----+-----

1| 0 1 3

2| 1 0 2

3| 3 2 0

main(): event received. t=10009.86089685751, node=0

src=2, dest=0, contents=[3, 1, 0, 2]

Packet received in 0 via 2 at time: 10009.86089685751

The distance vector in 0 was not updated

via

D0 | 1 2 3

----+-----

1| 0 1 3

2| 1 0 2

3| 3 2 0

main(): event received. t=10010.772193549055, node=1

src=2, dest=1, contents=[3, 1, 0, 2]

Packet received in 1 via 2 at time: 10010.772193549055



Distance vector changed in 1

Updated distance vector for 1:

[4, 0, 1, 3]

• 1's distance vector

via				
D1		0	2	
-----+-----				
0		0	3	
2		3	0	
3		999	999	

• final distance  
table for  
entity 1  
after link  
increase

Sending distance vector from 1 to 0 at: 10010.772193549055

Sending distance vector from 1 to 2 at: 10010.772193549055

main(): event received. t=10012.57917319127, node=0

src=1, dest=0, contents=[4, 0, 1, 3]

Packet received in 0 via 1 at time: 10012.57917319127

The distance vector in 0 was not updated

via				
D0		1	2	3
-----+-----				
1		0	1	3
2		1	0	2

```
main(): event received. t=10013.476542783523, node=2
src=1, dest=2, contents=[4, 0, 1, 3]
```

Packet received in 2 via 1 at time: 10013.476542783523

The distance vector in 2 was not updated

via

D2		0	1	3
----	--	---	---	---

— + —

0	0	4	5
---	---	---	---

1 | 4 0 3

3 | 4 3 0

```
main(): event received. t=10013.603840305866, node=3
src=2, dest=3, contents=[3, 1, 0, 2]
```

Packet received in 3 via 2 at time: 10013.603840305866

## Distance vector changed in 3

Updated distance vector for 3:

[5, 3, 2, 0]

- 3's distance vector

• final distance  
1.12 for

via

via		
D3	0	2
-----+		
0	0	3
1	999	999
2	3	0

• final distance  
table for  
entity 3  
after link  
increase

Sending distance vector from 3 to 0 at: 10013.603840305866

Sending distance vector from 3 to 2 at: 10013.603840305866

main(): event received. t=10019.344347164491, node=0

src=3, dest=0, contents=[5, 3, 2, 0]

Packet received in 0 via 3 at time: 10019.344347164491

The distance vector in 0 was not updated

via			
D0	1	2	3
-----+			
1	0	1	3
2	1	0	2
3	3	2	0

• final distance  
table for  
entity 0  
after link  
increase

main(): event received. t=10023.261683467023, node=2

src=3, dest=2, contents=[5, 3, 2, 0]

Packet received in 2 via 3 at time: 10023.261683467023

The distance vector in 2 was not updated

via				
D2	0	1	3	
-----+				
0	0	4	5	
1	4	0	3	
3	5	3	0	

• final distance  
table for  
entity 2  
after link  
increase

main(): event received. t=20000.0, node=0

Link cost change.

Link cost change detected in 0 for : Link 1 with newCost: 1 at time: 20000.0

Distance vector changed in 0

Updated distance vector for 0:

[0, 1, 2, 4]

• link cost  
decrease

• 0's distance vector

via				
D0	1	2	3	
-----+				
1	0	1	3	

2 | 1 0 2

3 | 3 2 0

Sending distance vector from 0 to 1 at: 20000.0

Sending distance vector from 0 to 2 at: 20000.0

Sending distance vector from 0 to 3 at: 20000.0

Link cost change detected in 1 for : Link 0 with new cost: 1 at time: 20000.0

Distance vector changed in 1

Updated distance vector for 1:

[1, 0, 1, 3]

• 1's distance vector

via

D1 | 0 2

-----+-----

0 | 0 3

2 | 3 0

3 | 999 999

Sending distance vector from 1 to 0 at: 20000.0

Sending packet from 1 to 0 in init

Sending distance vector from 1 to 2 at: 20000.0

Sending packet from 1 to 2 in init

main(): event received. t=20001.016960636403, node=2

src=1, dest=2, contents=[1, 0, 1, 3]

Packet received in 2 via 1 at time: 20001.016960636403

Distance vector changed in 2

Updated distance vector for 2:

[2, 1, 0, 2] • 2's distance vector

	via			
D2		0	1	3
-----+				
0		0	4	5
1		1	0	3
3		5	3	0

Sending distance vector from 2 to 0 at: 20001.016960636403

Sending distance vector from 2 to 1 at: 20001.016960636403

Sending distance vector from 2 to 3 at: 20001.016960636403

main(): event received. t=20005.31820264754, node=1

src=0, dest=1, contents=[0, 1, 2, 4]

Packet received in 1 via 0 at time: 20005.31820264754

The distance vector in 1 was not updated

via

D1 | 0 2

----+-----

0 | 0 2

2 | 3 0

3 | 999 999

main(): event received. t=20005.349850182505, node=0

src=1, dest=0, contents=[1, 0, 1, 3]

Packet received in 0 via 1 at time: 20005.349850182505

The distance vector in 0 was not updated

via

D0 | 1 2 3

----+-----

1 | 0 1 3

2 | 1 0 2

3 | 3 2 0

main(): event received. t=20005.631397151123, node=2

src=0, dest=2, contents=[0, 1, 2, 4]

Packet received in 2 via 0 at time: 20005.631397151123

The distance vector in 2 was not updated

	via
D2	0 1 3
-----+	
0	0 1 4
1	1 0 3
3	5 3 0

main(): event received. t=20007.280652164478, node=1

src=2, dest=1, contents=[2, 1, 0, 2]

Packet received in 1 via 2 at time: 20007.280652164478

The distance vector in 1 was not updated

	via
D1	0 2
-----+	
0	0 2
2	2 0
3	999 999

final distance  
table for  
entity 1  
after link  
decrease

main(): event received. t=20007.500672285496, node=0

src=2, dest=0, contents=[2, 1, 0, 2]



Packet received in 0 via 2 at time: 20007.500672285496

The distance vector in 0 was not updated

```
      via
D0 |  1  2  3
----+-----
1 |  0  1  3
2 |  1  0  2
3 |  3  2  0
```

main(): event received. t=20008.24323596357, node=3

src=0, dest=3, contents=[0, 1, 2, 4]

Packet received in 3 via 0 at time: 20008.24323596357

The distance vector in 3 was not updated

```
      via
D3 |  0  2
----+-----
0 |  0  2
1 | 999 999
2 |  3  0
```

main(): event received. t=20008.254744298072, node=3

src=2, dest=3, contents=[2, 1, 0, 2]

Packet received in 3 via 2 at time: 20008.254744298072

Distance vector changed in 3

Updated distance vector for 3:

[4, 3, 2, 0]

3's distance vector

final distance  
table for  
entity 3  
after link  
decrease

	via
D3	0 2
-----+	
0	0 2
1	999 999
2	2 0

Sending distance vector from 3 to 0 at: 20008.254744298072

Sending distance vector from 3 to 2 at: 20008.254744298072

main(): event received. t=20010.365481081968, node=2

src=3, dest=2, contents=[4, 3, 2, 0]

Packet received in 2 via 3 at time: 20010.365481081968

The distance vector in 2 was not updated

	via
D2	0 1 3

final distance  
n

D2	0	1	3
----	---	---	---

-----+			
--------	--	--	--

0	0	1	4
---	---	---	---

1	1	0	3
---	---	---	---

3	4	3	0
---	---	---	---

final distance  
table for  
entity 2  
after link  
decrease

main(): event received. t=20015.021932634005, node=0

src=3, dest=0, contents=[4, 3, 2, 0]

Packet received in 0 via 3 at time: 20015.021932634005

The distance vector in 0 was not updated

via

D0	1	2	3
----	---	---	---

-----+			
--------	--	--	--

1	0	1	3
---	---	---	---

2	1	0	2
---	---	---	---

3	3	2	0
---	---	---	---

final distance  
table for  
entity 0  
after link  
decrease

Simulator terminated at t=20015.021932634005, no packets in medium.

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\1652Project3\Code>