

# CS3205 : COMPUTER NETWORKS

## LAB - 5

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Test Case 1:

1 1 20

1 2 5 11

1 11 9 10

2 4 2 20

2 5 3 9

2 8 6 12

2 9 10 15

3 8 1 2

3 10 1 1

4 5 7 9

4 6 15 20

4 7 2 13

4 8 17 18

5 7 4 5

6 7 9 14

6 9 4 17

6 10 3 9

7 9 11 16

8 10 16 18

9 10 12 13

10 11 2 2

VS Code Explorer: LAB5, input.txt, input1.txt, input2.txt, Lab5-OSPF (1).pdf, OSPF.py, output-1.txt, output-2.txt, output-3.txt, output-4.txt, output-5.txt, output-6.txt, output-7.txt, output-8.txt, output-9.txt, output-10.txt, output-11.txt, run\_routers.py.

```
17 4 1-2-4 23
18 5 1-2-5 19
19 6 1-11-10-6 17
20 7 1-2-5-7 23
21 8 1-11-10-3-8 14
22 9 1-2-9 20
23 10 1-11-10 12
24 11 1-11 10
25 Routing Table for Node No. 1 at Time 6.0
26 Destination| Path | Cost
27 2 1-2 6
28 3 1-11-10-3 12
29 4 1-2-4 15
30 5 1-2-5 13
31 6 1-11-10-6 19
32 7 1-2-5-7 17
33 8 1-11-10-3-8 13
34 9 1-2-9 20
35 10 1-11-10 11
36 11 1-11 9
37 Routing Table for Node No. 1 at Time 9.0
38 Destination| Path | Cost
39 2 1-2 10
40 3 1-11-10-3 12
41 4 1-2-5-7-4 22
42 5 1-2-5 16
43 6 1-11-10-6 17
44 7 1-2-5-7 20
45 8 1-11-10-3-8 14
46 9 1-2-9 20
47 10 1-11-10 11
48 11 1-11 9
49 Routing Table for Node No. 1 at Time 12.0
50 Destination| Path | Cost
51 2 1-2 9
52 3 1-11-10-3 13
53 4 1-2-4 19
```

VS Code Explorer: LAB5, input.txt, input1.txt, input2.txt, Lab5-OSPF (1).pdf, OSPF.py, output-1.txt, output-2.txt, output-3.txt, output-4.txt, output-5.txt, output-6.txt, output-7.txt, output-8.txt, output-9.txt, output-10.txt, output-11.txt, run\_routers.py.

```
1 Routing Table for Node No. 2 at Time 0
2 Destination| Path | Cost
3 1 No path No Path
4 3 No path No Path
5 4 No path No Path
6 5 No path No Path
7 6 No path No Path
8 7 No path No Path
9 8 No path No Path
10 9 No path No Path
11 10 No path No Path
12 11 No path No Path
13 Routing Table for Node No. 2 at Time 3.0
14 Destination| Path | Cost
15 1 2-1 5
16 3 2-8-3 7
17 4 2-4 3
18 5 2-5 4
19 6 2-8-3-10-6 13
20 7 2-5-7 8
21 8 2-8 6
22 9 2-9 10
23 10 2-8-3-10 8
24 11 2-8-3-10-11 10
25 Routing Table for Node No. 2 at Time 6.0
26 Destination| Path | Cost
27 1 2-1 11
28 3 2-8-3 9
29 4 2-4 8
30 5 2-5 4
31 6 2-8-3-10-6 18
32 7 2-5-7 8
33 8 2-8 8
34 9 2-9 14
35 10 2-8-3-10 10
36 11 2-8-3-10-11 12
37 Routing Table for Node No. 2 at Time 9.0
```

The screenshot shows the Visual Studio Code interface with the Explorer sidebar on the left. The file explorer shows a project named 'LAB5' with several files including 'input.txt', 'input1.txt', 'input2.txt', 'input3.txt', 'output-1.txt' through 'output-11.txt', 'run\_routers.py', and 'UDPEchoClient.py'. The main editor window displays the output of 'OSPF.py' for 'output-3.txt'. The output shows three routing tables for Node No. 3 at different times: 6.0, 9.0, and 12.0. Each table lists destinations, paths, and costs.

```
15 1 3-10-11-1 13
16 2 3-8-2 9
17 4 3-8-4 19
18 5 3-8-2-5 18
19 6 3-10-6 6
20 7 3-10-6-7 20
21 8 3-8 2
22 9 3-10-9 14
23 10 3-10 1
24 11 3-10-11 3
25 Routing Table for Node No. 3 at Time 6.0
26 Destination| Path | Cost
27 1 3-10-11-1 12
28 2 3-8-2 14
29 4 3-8-4 20
30 5 3-8-2-5 21
31 6 3-10-6 9
32 7 3-10-6-7 22
33 8 3-8 2
34 9 3-10-9 13
35 10 3-10 1
36 11 3-10-11 3
37 Routing Table for Node No. 3 at Time 9.0
38 Destination| Path | Cost
39 1 3-10-11-1 13
40 2 3-8-2 11
41 4 3-8-4 19
42 5 3-8-2-5 17
43 6 3-10-6 7
44 7 3-10-6-7 18
45 8 3-8 1
46 9 3-10-9 13
47 10 3-10 1
48 11 3-10-11 3
49 Routing Table for Node No. 3 at Time 12.0
50 Destination| Path | Cost
51 1 3-10-11-1 12
```

The screenshot shows the Visual Studio Code interface with the Explorer sidebar on the left. The file explorer shows a project named 'LAB5' with several files including 'input.txt', 'input1.txt', 'input2.txt', 'input3.txt', 'output-1.txt' through 'output-11.txt', 'run\_routers.py', and 'UDPEchoClient.py'. The main editor window displays the output of 'OSPF.py' for 'output-4.txt'. The output shows three routing tables for Node No. 4 at different times: 6.0, 9.0, and 12.0. Each table lists destinations, paths, and costs.

```
15 1 4-2-1 25
16 2 4-2 16
17 3 4-8-3 18
18 5 4-5 8
19 6 4-6 18
20 7 4-7 9
21 8 4-8 17
22 9 4-7-9 25
23 10 4-8-3-10 19
24 11 4-8-3-10-11 21
25 Routing Table for Node No. 4 at Time 6.0
26 Destination| Path | Cost
27 1 4-5-2-1 22
28 2 4-5-2 13
29 3 4-8-3 19
30 5 4-5 9
31 6 4-7-6 18
32 7 4-7 4
33 8 4-8 18
34 9 4-7-9 17
35 10 4-8-3-10 20
36 11 4-8-3-10-11 22
37 Routing Table for Node No. 4 at Time 9.0
38 Destination| Path | Cost
39 1 4-5-2-1 22
40 2 4-5-2 14
41 3 4-8-3 19
42 5 4-5 8
43 6 4-6 19
44 7 4-7 10
45 8 4-8 17
46 9 4-7-9 24
47 10 4-8-3-10 20
48 11 4-8-3-10-11 22
49 Routing Table for Node No. 4 at Time 12.0
50 Destination| Path | Cost
51 1 4-2-1 18
```

---

TEST CASE 2:

10 15

1 3 8 10

1 4 7 20

2 4 11 12

2 5 8 8

2 6 10 20

3 5 3 50

3 7 4 10

4 6 3 3

4 7 3 10

5 10 3 8

6 7 4 4

6 8 8 10

7 8 2 4

7 9 4 9

9 10 9 15

EXPLORER

- LAB5
  - input.txt
  - input1.txt
  - input2.txt
  - Lab5-OSPF (1).pdf
  - OSPF.py
  - output-1.txt
  - output-2.txt
  - output-3.txt
  - output-4.txt
  - output-5.txt
  - output-6.txt
  - output-7.txt
  - output-8.txt
  - output-9.txt
  - output-10.txt
  - output-11.txt
  - run\_routers.py

OSPF.py

output-1.txt

```

10 9 No path No Path
11 10 No path No Path
12 Routing Table for Node No. 1 at Time 3.0
13 Destination| Path | Cost
14 2 1-4-2 19
15 3 1-3 8
16 4 1-4 7
17 5 1-4-2-5 27
18 6 1-4-6 10
19 7 1-4-7 10
20 8 1-4-7-8 14
21 9 1-4-7-9 16
22 10 1-4-7-9-10 26
23 Routing Table for Node No. 1 at Time 6.0
24 Destination| Path | Cost
25 2 1-4-2 28
26 3 1-3 8
27 4 1-4 16
28 5 1-4-2-5 36
29 6 1-3-7-6 19
30 7 1-3-7 15
31 8 1-3-7-8 19
32 9 1-3-7-9 21
33 10 1-3-7-9-10 34
34 Routing Table for Node No. 1 at Time 9.0
35 Destination| Path | Cost
36 2 1-4-2 19
37 3 1-3 8
38 4 1-4 7
39 5 1-3-5 23
40 6 1-4-6 10
41 7 1-4-7 10
42 8 1-4-7-8 14
43 9 1-4-7-9 15
44 10 1-4-7-9-10 24
45 Routing Table for Node No. 1 at Time 12.0
46 Destination| Path | Cost
47 2 1-3-5-7 26

```

Run Testcases 0 0 Live Share Ln 13, Col 21 Spaces: 4 UTF-8 LF Plain Text

EXPLORER

- LAB5
  - input.txt
  - input1.txt
  - input2.txt
  - Lab5-OSPF (1).pdf
  - OSPF.py
  - output-1.txt
  - output-2.txt
  - output-3.txt
  - output-4.txt
  - output-5.txt
  - output-6.txt
  - output-7.txt
  - output-8.txt
  - output-9.txt
  - output-10.txt
  - output-11.txt
  - run\_routers.py

OSPF.py

output-2.txt

```

9 8 No path No Path
10 9 No path No Path
11 10 No path No Path
12 Routing Table for Node No. 2 at Time 3.0
13 Destination| Path | Cost
14 1 2-4-1 30
15 3 2-4-7-3 24
16 4 2-4 12
17 5 2-5 8
18 6 2-4-6 15
19 7 2-4-7 15
20 8 2-4-7-8 19
21 9 2-5-10-9 20
22 10 2-5-10 11
23 Routing Table for Node No. 2 at Time 6.0
24 Destination| Path | Cost
25 1 2-4-1 23
26 3 2-5-3 23
27 4 2-4 11
28 5 2-5 8
29 6 2-4-6 14
30 7 2-4-7 15
31 8 2-4-7-8 19
32 9 2-4-7-9 21
33 10 2-5-10 16
34 Routing Table for Node No. 2 at Time 9.0
35 Destination| Path | Cost
36 1 2-4-1 18
37 3 2-4-7-3 21
38 4 2-4 11
39 5 2-5 8
40 6 2-4-6 14
41 7 2-4-7 14
42 8 2-4-7-8 18
43 9 2-4-7-9 19
44 10 2-5-10 16
45 Routing Table for Node No. 2 at Time 12.0
46 Destination| Path | Cost

```

Run Testcases 0 0 Live Share Ln 1, Col 1 Spaces: 4 UTF-8 LF Plain Text

The screenshot shows a code editor with a file explorer on the left and a code editor on the right. The file explorer shows a directory named 'LAB5' containing several files: 'input.txt', 'input1.txt', 'input2.txt', 'Lab5-OSPF (1).pdf', 'OSPF.py', 'output-1.txt', 'output-2.txt', 'output-3.txt' (selected), 'output-4.txt', 'output-5.txt', 'output-6.txt', 'output-7.txt', 'output-8.txt', 'output-9.txt', 'output-10.txt', 'output-11.txt', 'run\_routers.py', and 'UDPEchoClient.py'. The code editor shows the content of 'output-3.txt', which displays the output of the OSPF.py script. The output shows the routing table for Node No. 3 at three different times: 3.0, 6.0, and 9.0. The routing table lists the destination, path, and cost for each destination. The output also shows the routing table for Node No. 3 at Time 12.0.

```
10 9 No path No Path
11 10 No path No Path
12 Routing Table for Node No. 3 at Time 3.0
13 Destination| Path | Cost
14 1 3-1 8
15 2 3-7-6-2 26
16 4 3-7-4 15
17 5 3-7-9-10-5 29
18 6 3-7-6 12
19 7 3-7 8
20 8 3-7-8 12
21 9 3-7-9 14
22 10 3-7-9-10 24
23 Routing Table for Node No. 3 at Time 6.0
24 Destination| Path | Cost
25 1 3-1 10
26 2 3-7-6-2 22
27 4 3-7-6-4 13
28 5 3-7-6-2-5 30
29 6 3-7-6 10
30 7 3-7 6
31 8 3-7-8 10
32 9 3-7-9 12
33 10 3-7-9-10 25
34 Routing Table for Node No. 3 at Time 9.0
35 Destination| Path | Cost
36 1 3-1 9
37 2 3-5-2 13
38 4 3-7-4 12
39 5 3-5 5
40 6 3-7-6 9
41 7 3-7 5
42 8 3-7-8 9
43 9 3-7-9 10
44 10 3-5-10 13
45 Routing Table for Node No. 3 at Time 12.0
46 Destination| Path | Cost
```

Random costs will get set to edges using HELLO and HELLOREPLY and then LSA packets send adjacent weights of every node to every node. After a LSA packet reaches every node it gets dropped due to the restrictions on sequence numbers