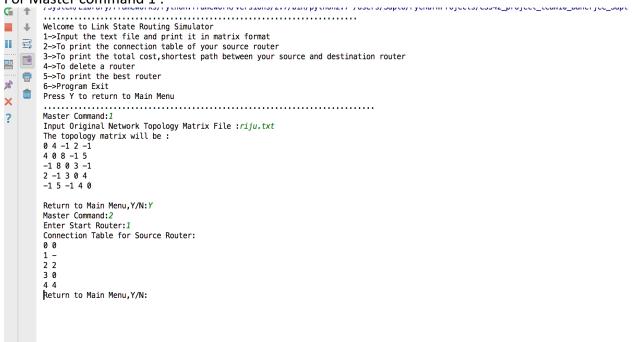# TEST REPORT

The following are the two sample test cases used to generate output results.

1.
```
0 4 -1 2 -1
4 0 8 -1 5
-1 8 0 3 -1
2 -1 3 0 4
-1 5 -1 4 0
```

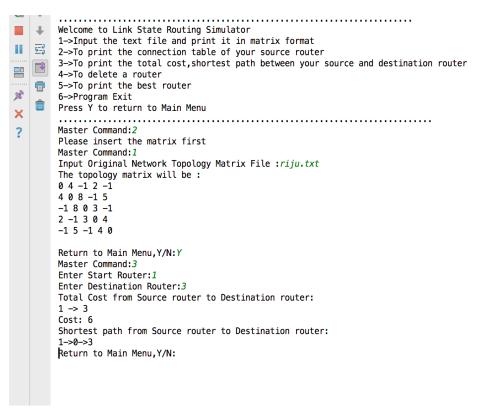This is a topology matrix file containing 5 routers.

For Master command 1 :

```
/System/Library/Frameworks/Python.framework/Versions/2.7/bin/python2.7 /Users/Supto/PycharmProjects/cs542_project_team10_banerjee_supt
.................................................................
Welcome to Link State Routing Simulator
1->Input the text file and print it in matrix format
2->To print the connection table of your source router
3->To print the total cost,shortest path between your source and destination router
4->To delete a router
5->To print the best router
6->Program Exit
Press Y to return to Main Menu
.................................................................
Master Command:1
Input Original Network Topology Matrix File :riju.txt
The topology matrix will be :
0 4 -1 2 -1
4 0 8 -1 5
-1 8 0 3 -1
2 -1 3 0 4
-1 5 -1 4 0

Return to Main Menu,Y/N:Y
Master Command:2
Enter Start Router:1
Connection Table for Source Router:
0 0
1 -
2 2
3 0
4 4
Return to Main Menu,Y/N:
```

The file riju.txt is taken as an input

The output is printed in the form of a topology matrix for the given file .

```
/System/Library/Frameworks/Python.framework/Versions/2.7/bin/python2.7 /Users/Supto/PycharmProjects/CS542_project_team10_banerjee_Supt
...............................................................
Welcome to Link State Routing Simulator
1->Input the text file and print it in matrix format
2->To print the connection table of your source router
3->To print the total cost,shortest path between your source and destination router
4->To delete a router
5->To print the best router
6->Program Exit
Press Y to return to Main Menu
...............................................................
Master Command:1
Input Original Network Topology Matrix File :riju.txt
The topology matrix will be :
0 4 -1 2 -1
4 0 8 -1 5
-1 8 0 3 -1
2 -1 3 0 4
-1 5 -1 4 0

Return to Main Menu,Y/N:Y
Master Command:2
Enter Start Router:1
Connection Table for Source Router:
0 0
1 -
2 2
3 0
4 4
Return to Main Menu,Y/N:
```

when master command 2 is pressed, and start router entered 1
The connection table of start router 1 is printed

```
...............................................................
Welcome to Link State Routing Simulator
1->Input the text file and print it in matrix format
2->To print the connection table of your source router
3->To print the total cost,shortest path between your source and destination router
4->To delete a router
5->To print the best router
6->Program Exit
Press Y to return to Main Menu
...............................................................
Master Command:2
Please insert the matrix first
Master Command:1
Input Original Network Topology Matrix File :riju.txt
The topology matrix will be :
0 4 -1 2 -1
4 0 8 -1 5
-1 8 0 3 -1
2 -1 3 0 4
-1 5 -1 4 0

Return to Main Menu,Y/N:Y
Master Command:3
Enter Start Router:1
Enter Destination Router:3
Total Cost from Source router to Destination router:
1 -> 3
Cost: 6
Shortest path from Source router to Destination router:
1->0->3
Return to Main Menu,Y/N:
```

For master command 3, we input start router 1 and destination router 3 and it gives an output
printing total cost that is 6 and prints the shortest path between 1 and 3

```
Return to Main Menu,Y/N:Y
Master Command:4
Enter the router to delete:2
Router Deleted
........The Update Connection Table:.........
Connection Table for Source Router:
0 2
1 1
2 2
3 -
Return to Main Menu,Y/N:
```

For master command 4 , when we enter router 2 to delete ,the program deletes router 2 and modifies the topology and returns the connection table of the source router 1 which was given in option 3.

When master command 5 is pressed

```
Return to Main Menu,Y/N:Y
Master Command:5
The mapping of every router with their total sum of distances:
{12: 2, 15: 3}
The Best Router Will be : 2
Return to Main Menu,Y/N:
```

when master command 5 is pressed the program returns the best router name which is 2 here . It has the minimum cost to all the other routers in the matrix.

When master command 6 is pressed ,the program terminates printing the message "Exit CS542-04 2016 Fall project"

Master Command:1
Input Original Network Topology Matrix File :riju.txt
The topology matrix will be :
0 4 -1 2 -1
4 0 8 -1 5
-1 8 0 3 -1
2 -1 3 0 4
-1 5 -1 4 0

Return to Main Menu,Y/N:Y
Master Command:6
Exit CS542-04 2016 Fall project

TEST CASE 2:
```
0 4 −1 −1 −1 −1 −1 8 −1
4 0 8 −1 −1 −1 −1 11 −1
−1 8 0 7 −1 4 −1 −1 2
−1 −1 7 0 9 14 −1 −1 −1
−1 −1 −1 9 0 10 −1 −1 −1
−1 −1 4 14 10 0 2 −1 −1
−1 −1 −1 −1 −1 2 0 1 6
8 11 −1 −1 −1 −1 1 0 7
−1 −1 2 −1 −1 −1 6 7 0|
```

This is the input matrix file in .txt format
The number of nodes in the input file is 9

```
...........................................................
Welcome to Link State Routing Simulator
1−>Input the text file and print it in matrix format
2−>To print the connection table of your source router
3−>To print the total cost,shortest path between your source and destination router
4−>To delete a router
5−>To print the best router
6−>Program Exit
Press Y to return to Main Menu
...........................................................
Master Command:1
Input Original Network Topology Matrix File :testcase2.txt
The topology matrix will be :
0 4 −1 −1 −1 −1 −1 8 −1
4 0 8 −1 −1 −1 −1 11 −1
−1 8 0 7 −1 4 −1 −1 2
−1 −1 7 0 9 14 −1 −1 −1
−1 −1 −1 9 0 10 −1 −1 −1
−1 −1 4 14 10 0 2 −1 −1
−1 −1 −1 −1 −1 2 0 1 6
8 11 −1 −1 −1 −1 1 0 7
−1 −1 2 −1 −1 −1 6 7 0
```

When the first master command is pressed, the program takes the .txt file as input and prints
the resulting matrix topology

```
Return to Main Menu,Y/N:Y
Master Command:2
Enter Start Router:3
Connection Table for Source Router:
0 2
1 2
2 2
3 —
4 4
5 2
6 2
7 2
8 2
Return to Main Menu,Y/N:
```

When master command 2 is pressed, the program takes a source router as input and prints the connection table. Here we can see for source router 3 the resulting connection table will be .

```
Return to Main Menu,Y/N:Y
Master Command:3
Enter Start Router:2
Enter Destination Router:4
Total Cost from Source router to Destination router:
2 -> 4
Cost: 14
Shortest path from Source router to Destination router:
2->5->4
Return to Main Menu,Y/N:
```
3)

when master command 3 is pressed, the program takes a source router and a destination router as input and here the start router input is 2 and destination router input is 4.After taking the input the total cost is printed that is 14 and also the shortest path between 2 to 4.

```
Master Command:4
Enter the router to delete:4
Router Deleted
........The Update Connection Table:........
Connection Table for Source Router:
0 1
1 1
2 -
3 3
4 4
5 4
6 4
7 7
Return to Main Menu,Y/N:
```
4.

when master command 4 is pressed the program asks for a input name of router to delete .
Here router 4 is deleted the topology is modified and the connection table of router which was
the start router of previous option 3 was printed. The modified connection table.
Master command 4 can only be executed after master command 3.

5.
```
Return to Main Menu,Y/N:Y
Master Command:5
The mapping of every router with their total sum of distances:
{72: 1, 77: 0, 46: 2, 49: 5, 51: 6, 54: 7, 88: 3}
The Best Router Will be : 2
Return to Main Menu,Y/N:
```

when master command 5 was given, the program prints out the name of the best router which
is 2 in this topology matrix.

```
Master Command:6
Exit CS542-04 2016 Fall project
```

6.
When master command 6 was given the program terminates and prints the message "Exit
CS542-04 2016 Fall project."