
TEST REPORT

LINK STATE ROUTING PROTOCOL USING SERVLETS & JSP

PROJECT

DESIGNED BY:

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COURSE: CS 542 COMPUTER NETWORKS 1 -
FUNDAMENTALS

TEST FILE

TEST CASE 1 (POSITIVE SCENARIO):

1. Test Matrix – 1

```
0 6 -1 -1 3 -1 -1 -1 -1
6 0 6 -1 3 3 -1 -1 -1
-1 6 0 6 -1 3 3 -1 -1
-1 -1 6 0 -1 -1 3 3 6
3 3 -1 -1 0 -1 -1 -1 -1
-1 3 3 -1 -1 0 -1 -1 -1
-1 -1 3 3 -1 -1 0 -1 -1
-1 -1 -1 3 -1 -1 -1 0 3
-1 -1 -1 6 -1 -1 -1 3 0
```

2. Display Homepage

The screenshot shows a web browser window with the address bar set to localhost. The page title is "Link State Routing Algorithm Simulation". Below the title, there is a section titled "Choose your option below:" with five radio button options: "Enter the Input Topology matrix", "Primary Connection Tables", "See the shortest path between the source and the destination", "Remove Node", and "Exit". At the bottom of this section, there are two buttons: "Submit" and "Reset". The page has a green header and footer bar. The footer bar displays the time "9:25:32 PM".

localhost

gse.gigaset.com/fileadmin/gigaset/extracted_files/import/How_to_create_a_web_application_in_eclipse.pdf Welcome

Link State Routing Algorithm Simulation

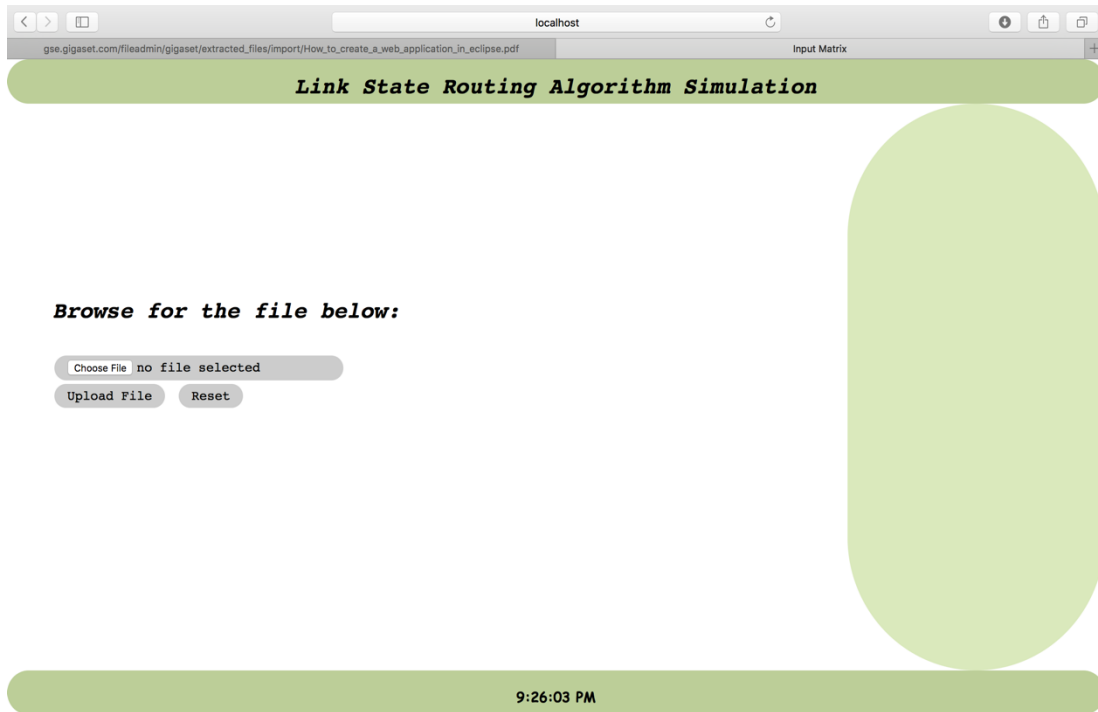
Choose your option below:

- ☐ Enter the Input Topology matrix
- ☐ Primary Connection Tables
- ☐ See the shortest path between the source and the destination
- ☐ Remove Node
- ☐ Exit

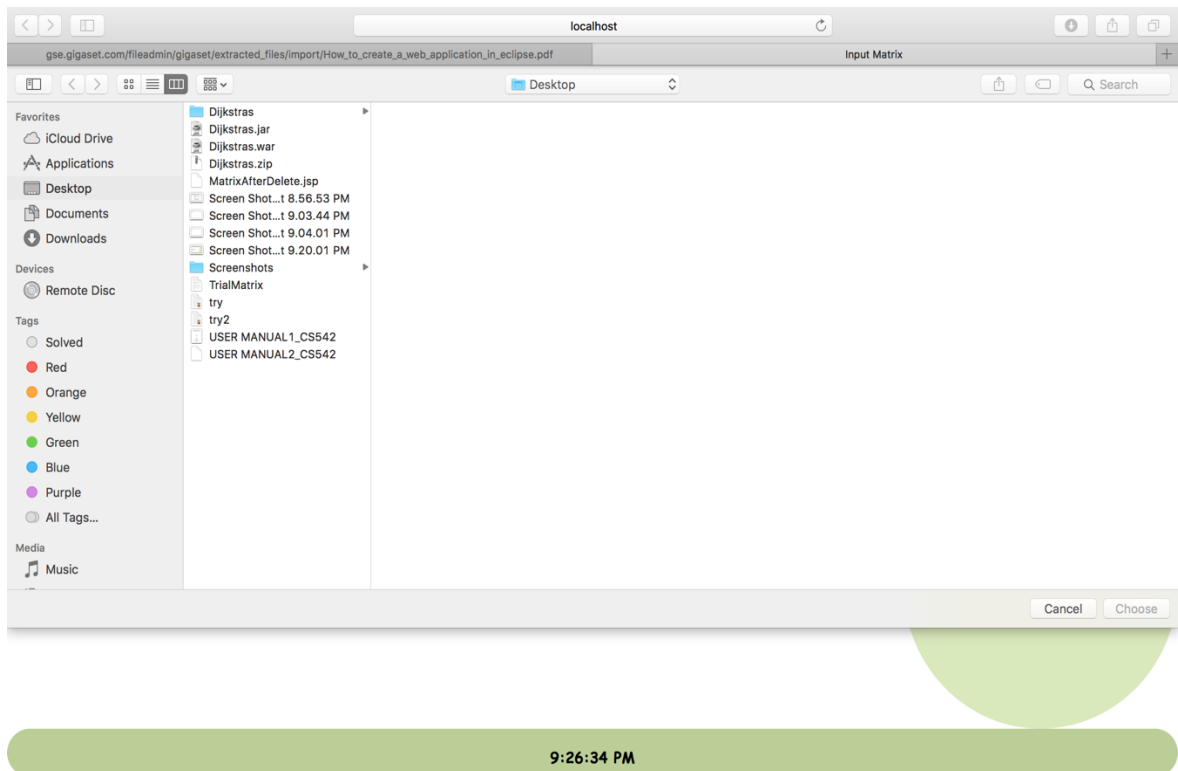
Submit Reset

9:25:32 PM

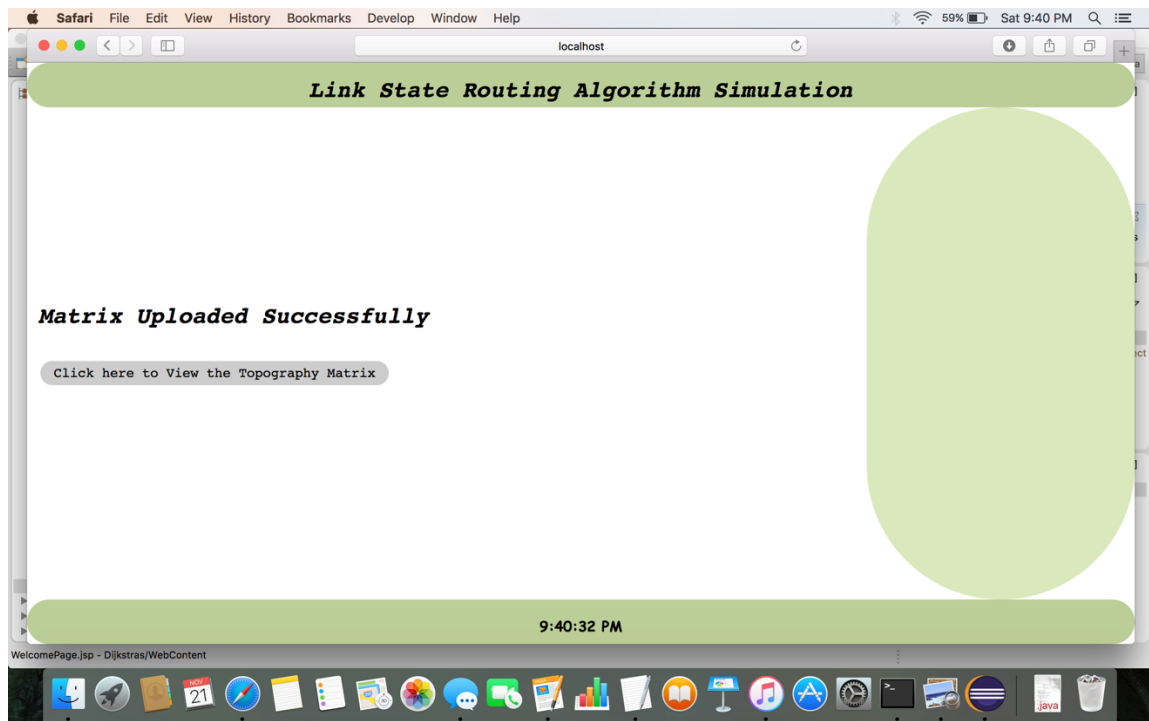
3. Upload matrix file to the page.



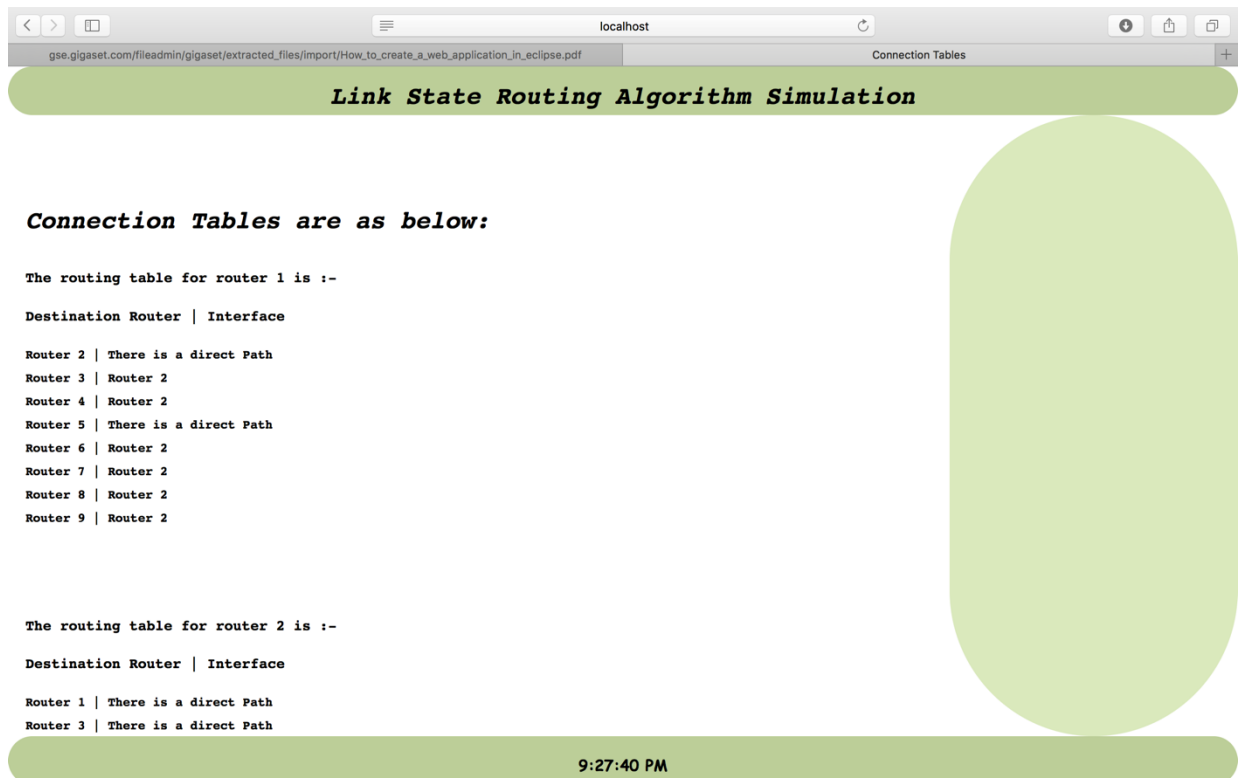
4. Select Choose File and Click Upload File



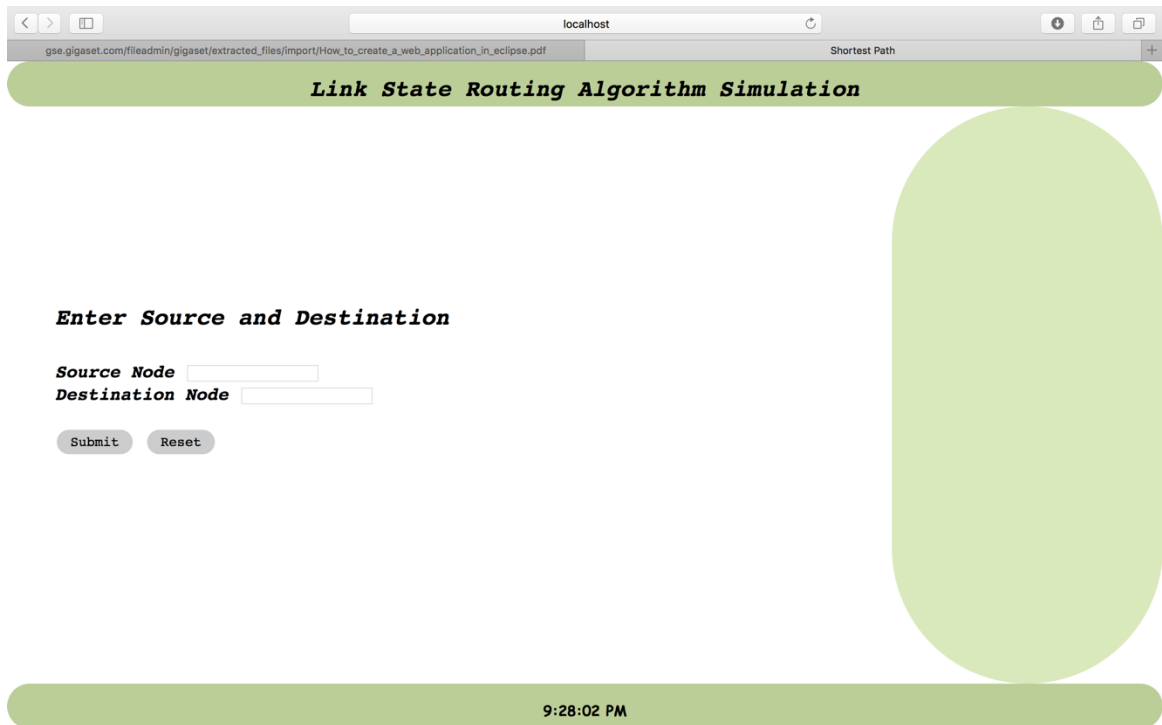
5. Upload Successful!!



6. Displaying Primary Connection Tables for the given matrix

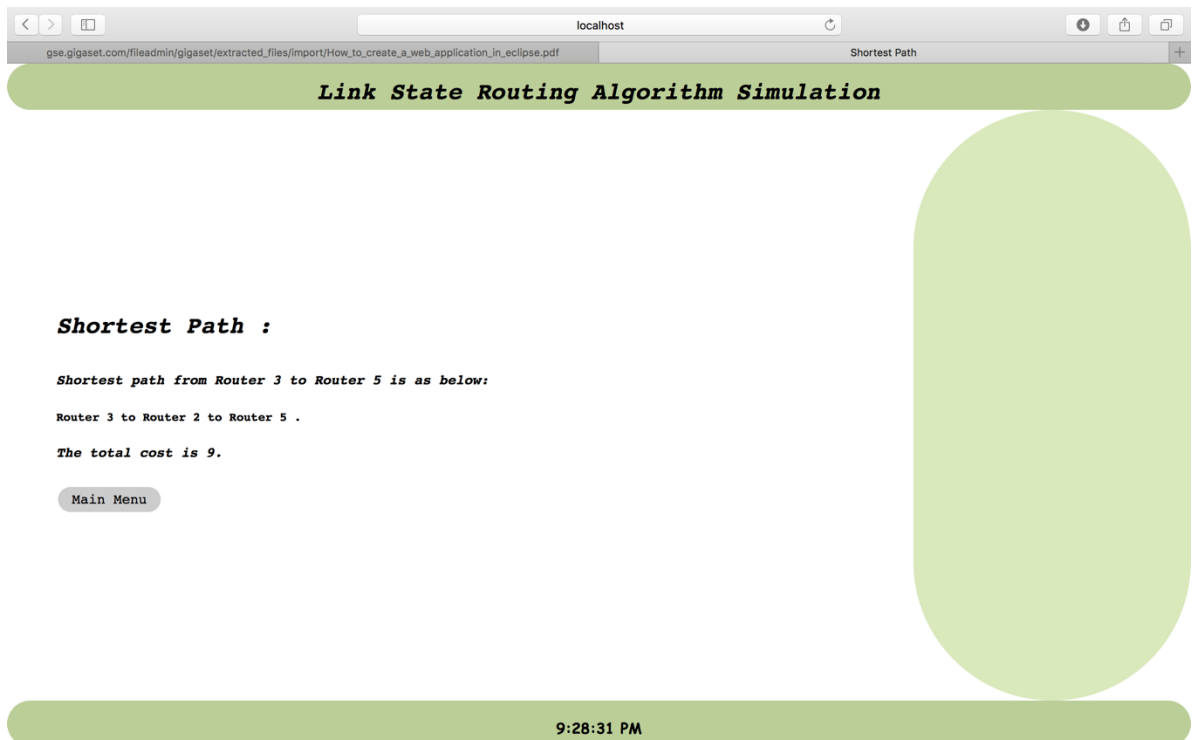


7. Now from the homepage, select the option for seeing shortest path



The screenshot shows a web browser window with the address bar set to localhost. The page title is "Link State Routing Algorithm Simulation". Below the title, there is a section titled "Enter Source and Destination". This section contains two input fields: "Source Node" and "Destination Node". Below these fields are two buttons: "Submit" and "Reset". A green bar at the bottom of the page displays the time "9:28:02 PM".

Enter source and destination nodes.



The screenshot shows the same web browser window, but now the "Shortest Path" section is displayed. It contains the following text: "Shortest Path :", "Shortest path from Router 3 to Router 5 is as below:", "Router 3 to Router 2 to Router 5 .", and "The total cost is 9.". Below this text is a button labeled "Main Menu". A green bar at the bottom of the page displays the time "9:28:31 PM".

Shortest path displayed.

8. Select Remove Node from the Homepage.

Link State Routing Algorithm Simulation

Choose your option

Enter the Node you want to delete :

5

delete reset

Main Menu

9:49:42 PM

After Deleting

Link State Routing Algorithm Simulation

The Matrix is as below:

0	6	-1	-1	-1	-1	-1	-1	-1	-1
6	0	6	-1	-1	3	-1	-1	-1	-1
-1	6	0	6	-1	3	3	-1	-1	-1
-1	-1	6	0	-1	-1	3	3	6	-1
-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
-1	3	3	-1	-1	0	-1	-1	-1	-1
-1	-1	3	3	-1	-1	0	-1	-1	-1
-1	-1	-1	3	-1	-1	-1	0	3	-1
-1	-1	-1	6	-1	-1	-1	3	0	-1

Connection Tables

9:29:45 PM

From the above screen shot we can see that the 5th node displays only “-1” in both its rows and columns, indicating that it has been removed.

9. After the node is deleted, try viewing the topology again and the following **updated topology** is being displayed.

Link State Routing Algorithm Simulation

Updated Connection Tables are as below:

The routing table for router 1 is :-

Destination Router	Interface
Router 2	There is a direct Path
Router 3	Router 2
Router 4	Router 2
Router 5	De-activated
Router 6	Router 2
Router 7	Router 2
Router 8	Router 2
Router 9	Router 2

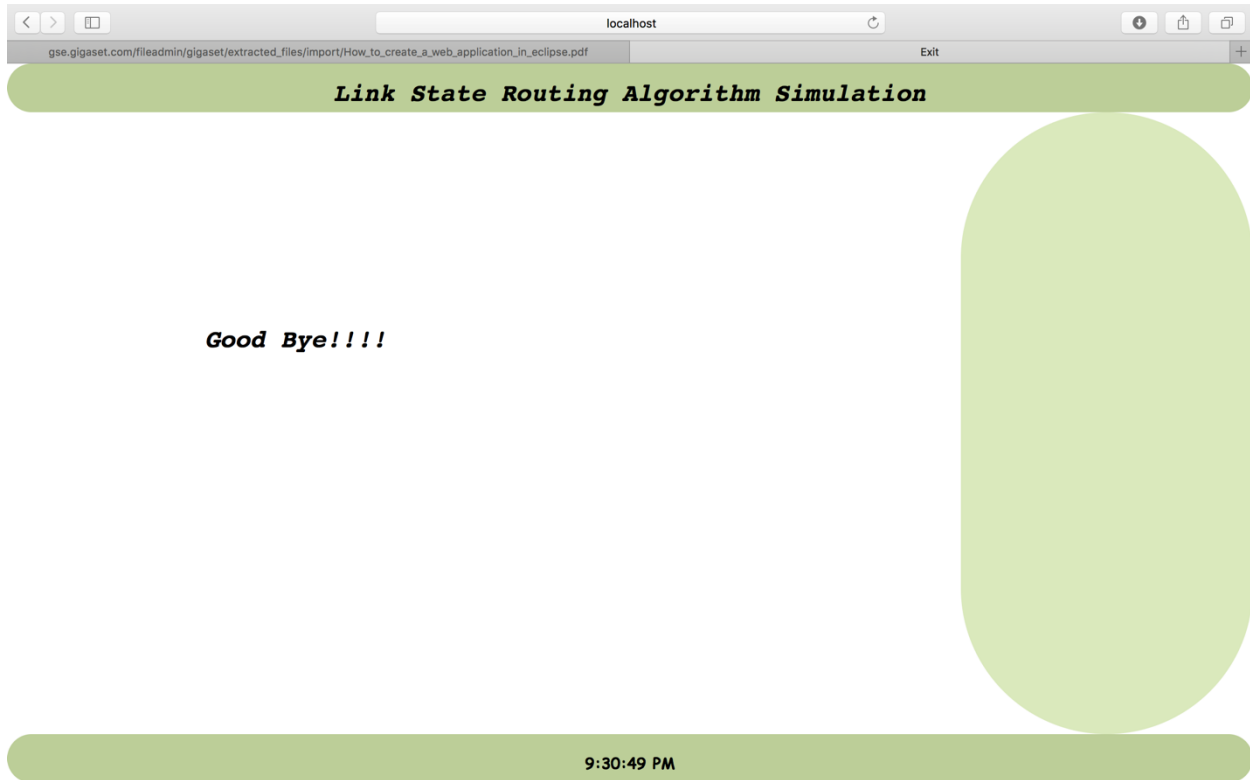
The routing table for router 2 is :-

Destination Router	Interface
Router 1	There is a direct Path
Router 3	There is a direct Path
Router 4	Router 3
Router 5	De-activated
Router 6	There is a direct Path

9:30:20 PM

Router 5 → shows Deactivated.

10. Select Exit from Homepage, and the following will be displayed:

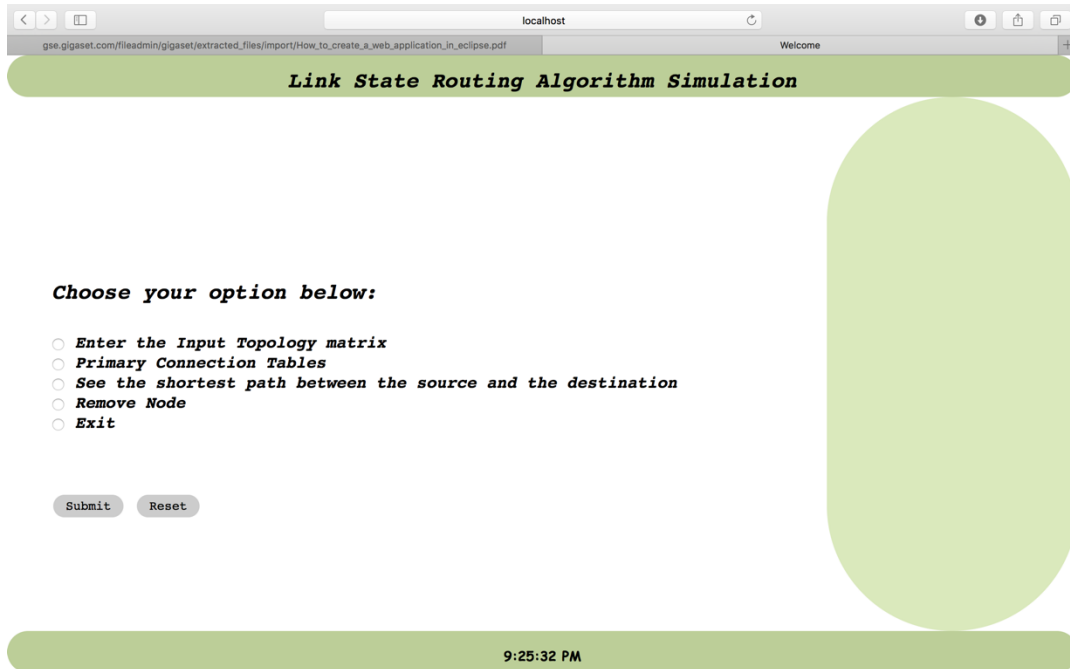


TEST CASE 2 (NEGATIVE SCENARIO):

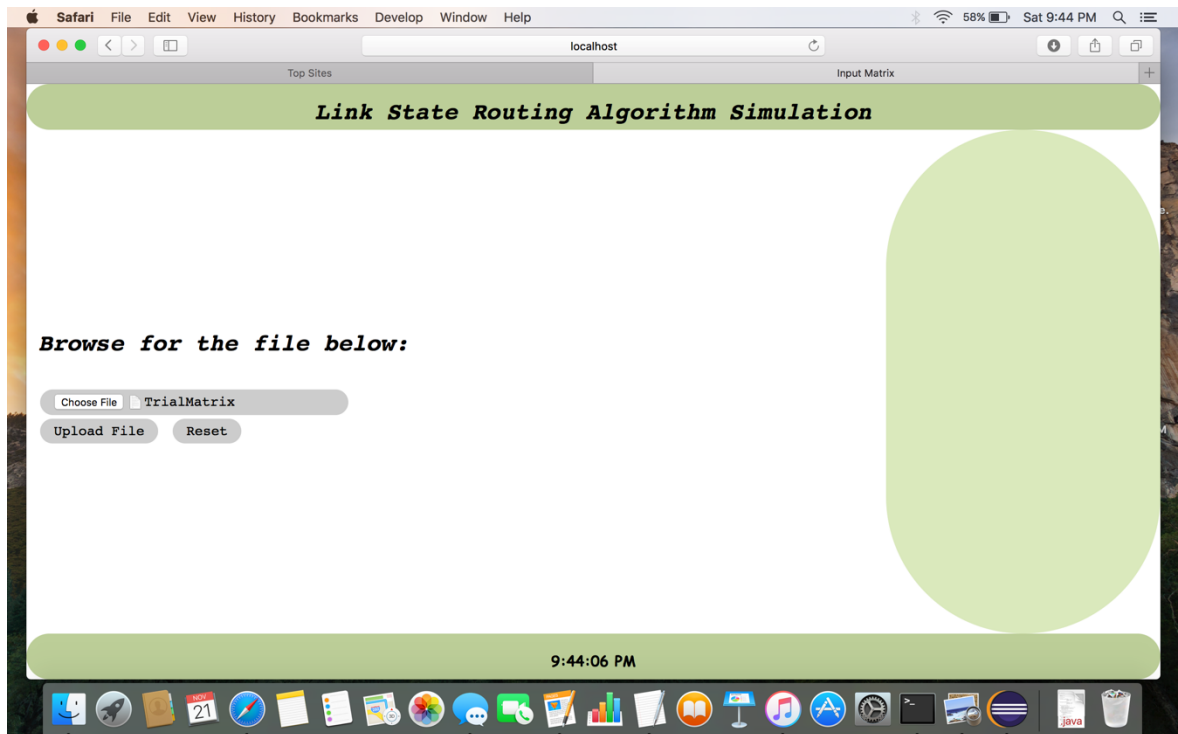
1. Test Matrix – 2

```
0 -1 -1 -1 -1 1 -1 -1 1 5 8 9 6 7 9
2 0 2 -1 -1 -1 -1 -1 -1 -1 5 7 9|
-1 2 0 4 -1 -1 -1 -1 -1 -1
-1 -1 4 0 2 -1 -1 -1 4 2
-1 -1 -1 2 0 -1 4 -1 -1 -1
-1 -1 -1 -1 -1 0 2 -1 -1 5
-1 -2 -1 -1 4 2 0 6 -1 -1
-1 -1 -1 -1 -1 -1 6 0 8 -1
1 -1 -1 4 -1 -1 -1 8 0 -1
5 -1 -1 2 -1 5 -1 -1 -1 0
```

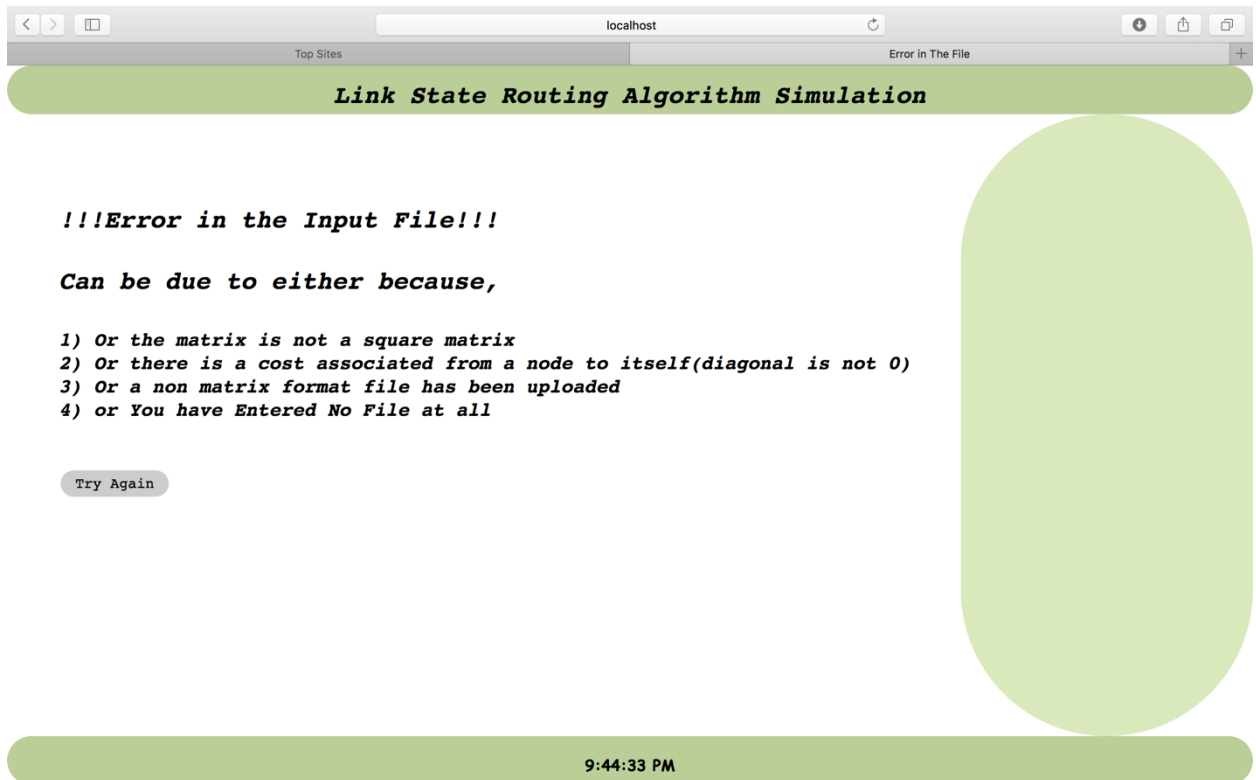

2. Display homepage



3. Upload Matrix to the page.



4. Select Choose File and Click Upload File



Error Reported because the Entry in the file is not as expected (i.e. Matrix Form).

TEST CASE 3 (NEGATIVE SCENARIO):

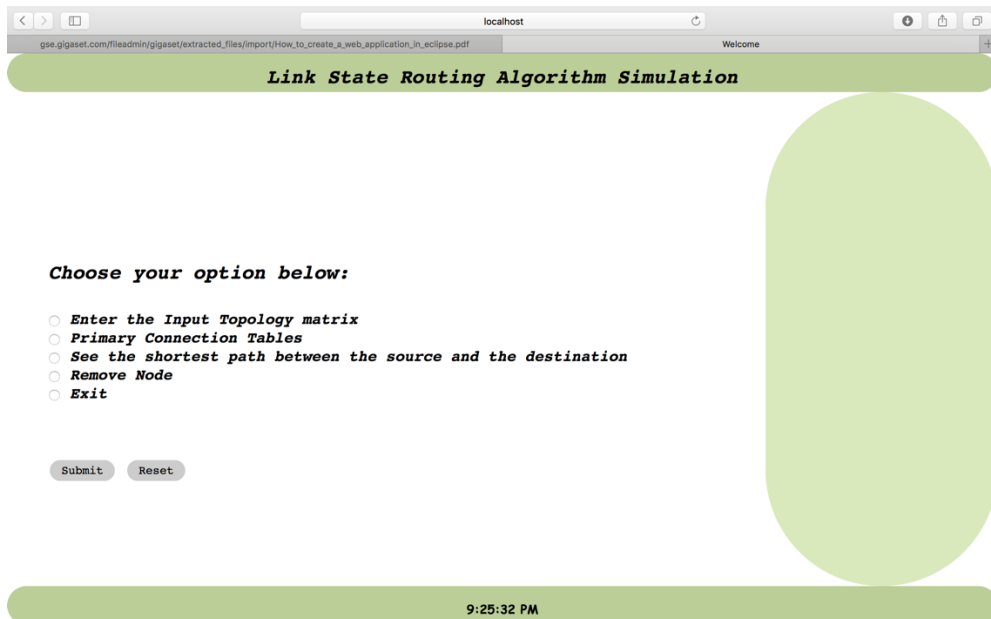
1. Test Matrix – 3

```

0 6 -1 -1 3 -1 -1 -1 -1
6 0 6 -1 3 3 -1 -1 -1
-1 6 0 6 -1 3 3 -1 -1
-1 -1 6 0 -1 -1 3 3 6
3 3 -1 -1 0 -1 -1 -1 -1
-1 3 3 -1 -1 0 -1 -1 -1
-1 -1 3 3 -1 -1 0 -1 -1
-1 -1 -1 3 -1 -1 -1 0 3
-1 -1 -1 6 -1 -1 -1 3 0

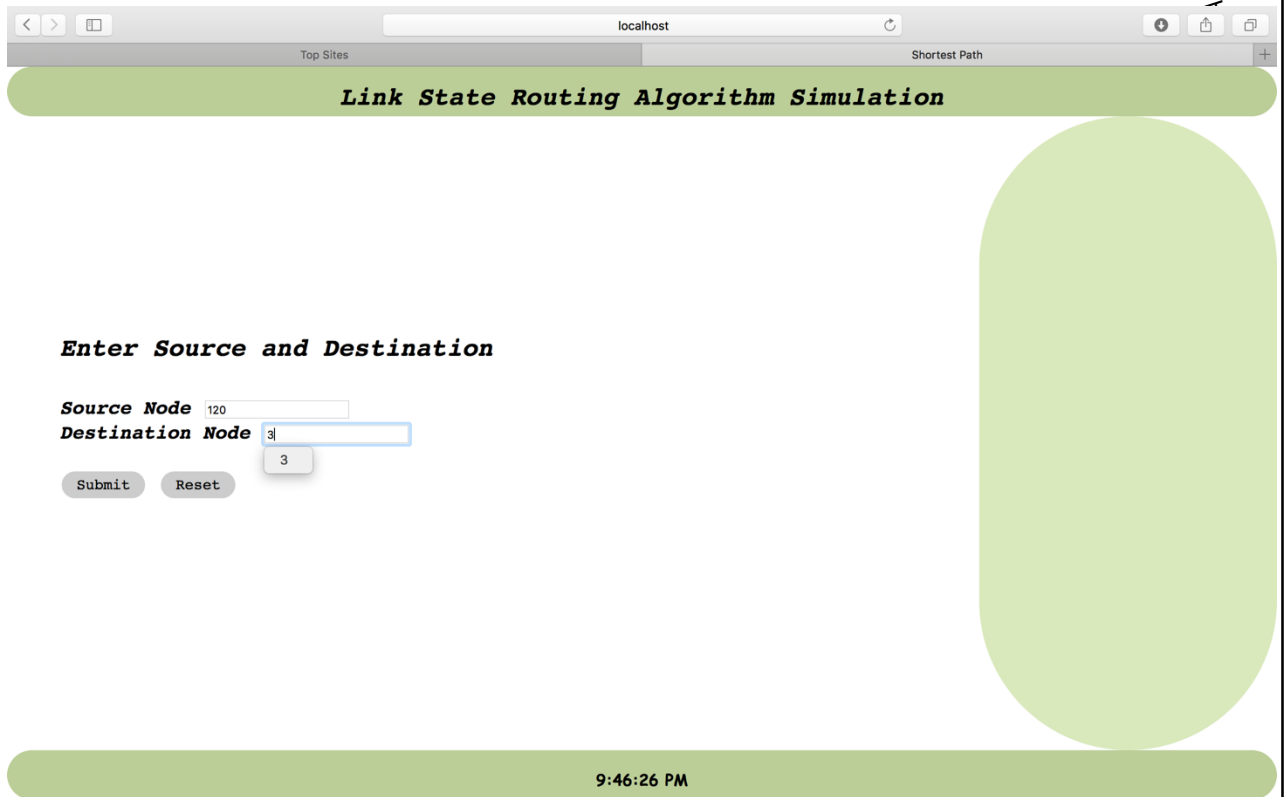
```

2. Display homepage



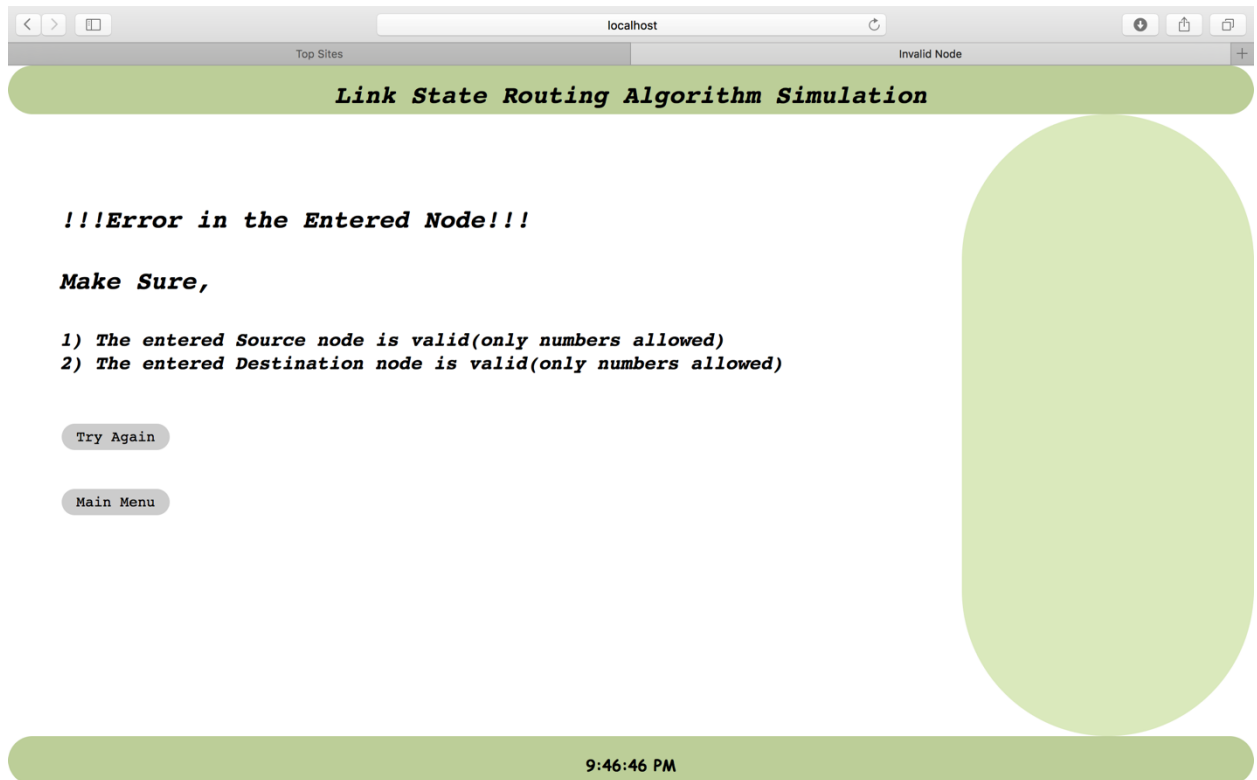
A screenshot of a web browser displaying the homepage of a 'Link State Routing Algorithm Simulation'. The browser's address bar shows 'localhost' and the page title is 'Welcome'. The main heading is 'Link State Routing Algorithm Simulation'. Below it, the text 'Choose your option below:' is followed by a list of five radio button options: 'Enter the Input Topology matrix', 'Primary Connection Tables', 'See the shortest path between the source and the destination', 'Remove Node', and 'Exit'. At the bottom of the options are 'Submit' and 'Reset' buttons. A green bar at the very bottom of the page displays the time '9:25:32 PM'.

3. Upload the Matrix as done in above cases.
4. Select in the homepage to see for the shortest path between a source and destination.
5. And enter Invalid node values.



A screenshot of the same web application, but now showing the 'Shortest Path' section. The browser's address bar still shows 'localhost', and the page title is 'Shortest Path'. The main heading is 'Link State Routing Algorithm Simulation'. Below it, the text 'Enter Source and Destination' is followed by two input fields: 'Source Node' with the value '120' and 'Destination Node' with the value '3'. Below these fields are 'Submit' and 'Reset' buttons. A green bar at the very bottom of the page displays the time '9:46:26 PM'.

6. Error will be displayed.

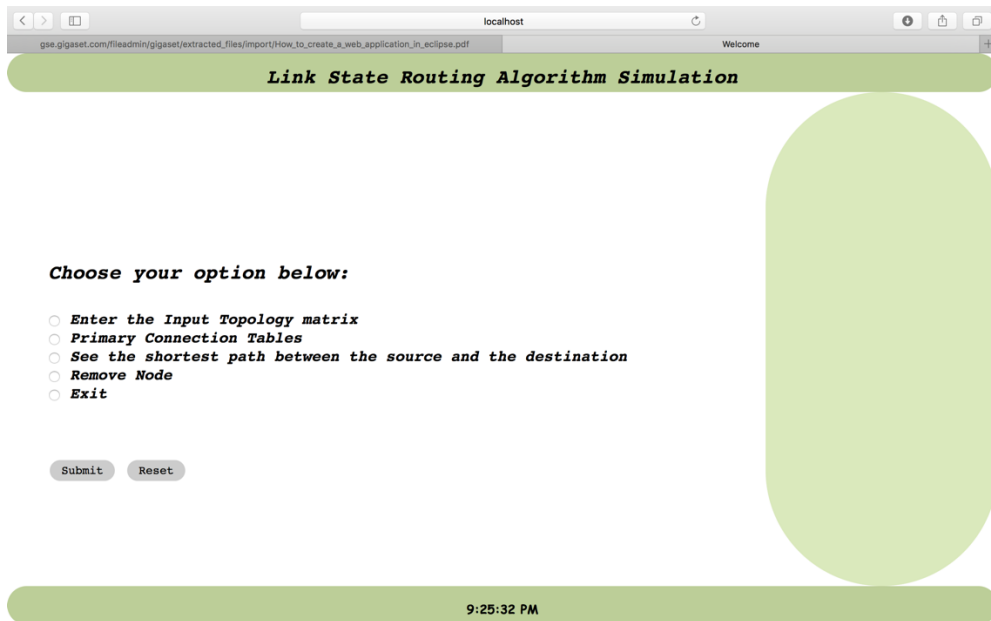


TEST CASE 4 (NEGATIVE SCENARIO):

1. Test Matrix – 3

```
0 6 -1 -1 3 -1 -1 -1 -1
6 0 6 -1 3 3 -1 -1 -1
-1 6 0 6 -1 3 3 -1 -1
-1 -1 6 0 -1 -1 3 3 6
3 3 -1 -1 0 -1 -1 -1 -1
-1 3 3 -1 -1 0 -1 -1 -1
-1 -1 3 3 -1 -1 0 -1 -1
-1 -1 -1 3 -1 -1 -1 0 3
-1 -1 -1 6 -1 -1 -1 3 0
```

2. Display homepage



The screenshot shows a web browser window with the title "Link State Routing Algorithm Simulation". The page has a green header bar with the title. Below the header, there is a section titled "Choose your option below:" with five radio button options: "Enter the Input Topology matrix", "Primary Connection Tables", "See the shortest path between the source and the destination", "Remove Node", and "Exit". Below the options are two buttons: "Submit" and "Reset". At the bottom of the page, there is a green footer bar displaying the time "9:25:32 PM".

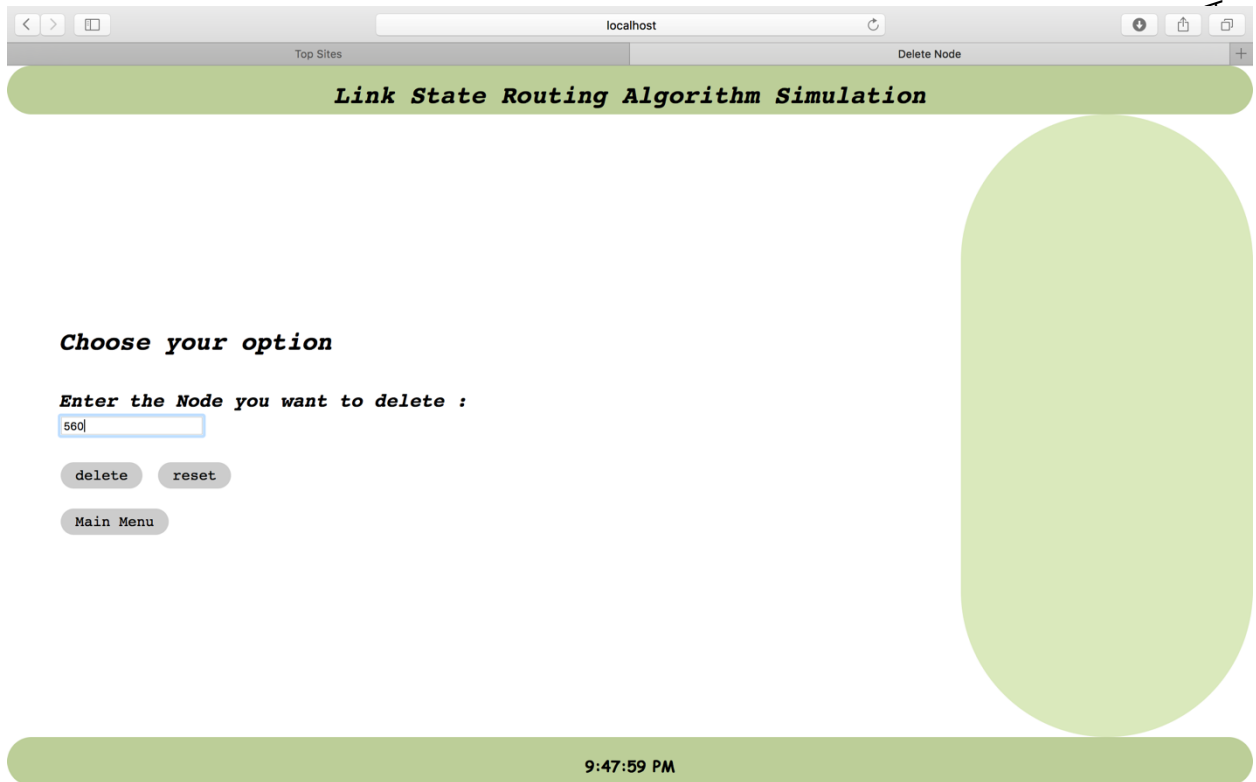
Link State Routing Algorithm Simulation

Choose your option below:

- ☐ Enter the Input Topology matrix
- ☐ Primary Connection Tables
- ☐ See the shortest path between the source and the destination
- ☐ Remove Node
- ☐ Exit

9:25:32 PM

3. Upload the Matrix as done in above cases.
4. Select the Remove Node option from the homepage.
5. Enter some Invalid Node value for removing from the network



The screenshot shows a web browser window with the title "Link State Routing Algorithm Simulation". The page has a green header bar with the title. Below the header, there is a section titled "Choose your option" with a sub-section titled "Enter the Node you want to delete :". Below this, there is a text input field containing the value "560". Below the input field are two buttons: "delete" and "reset". At the bottom of the page, there is a green footer bar displaying the time "9:47:59 PM".

Link State Routing Algorithm Simulation

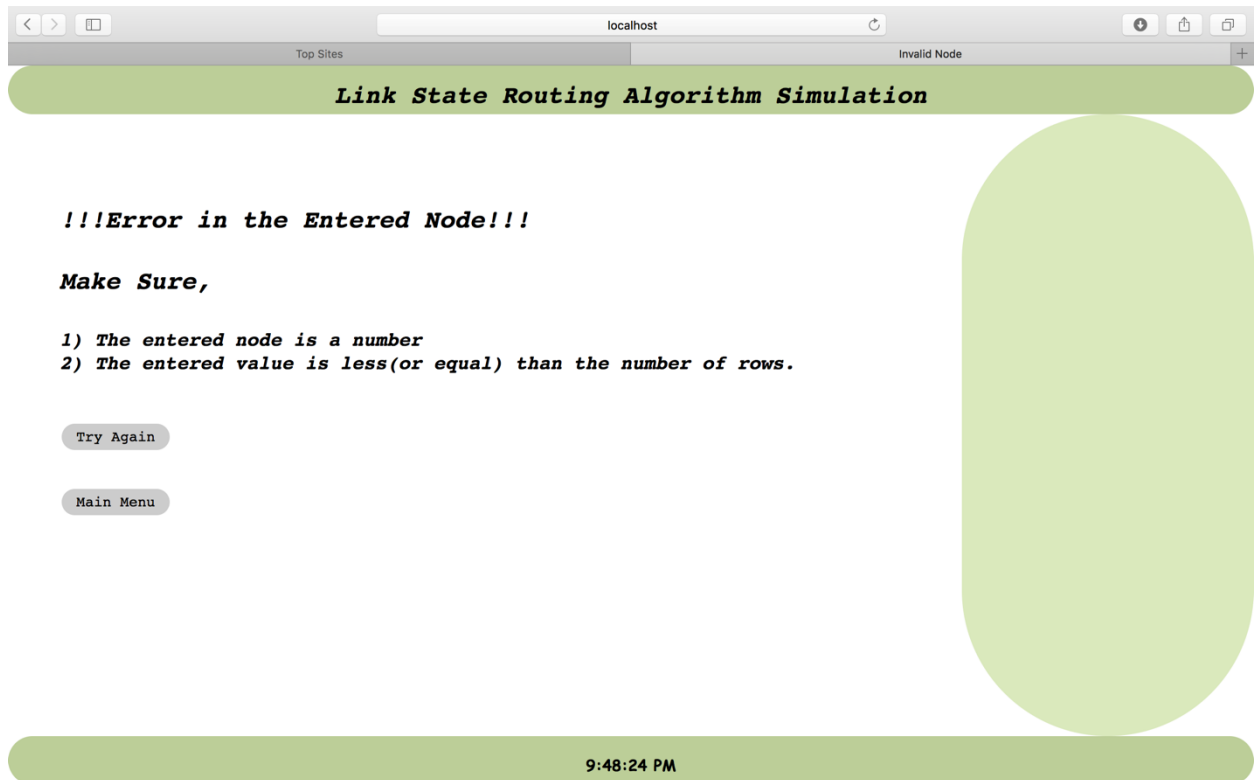
Choose your option

Enter the Node you want to delete :

560

9:47:59 PM

6. Following Error is displayed.

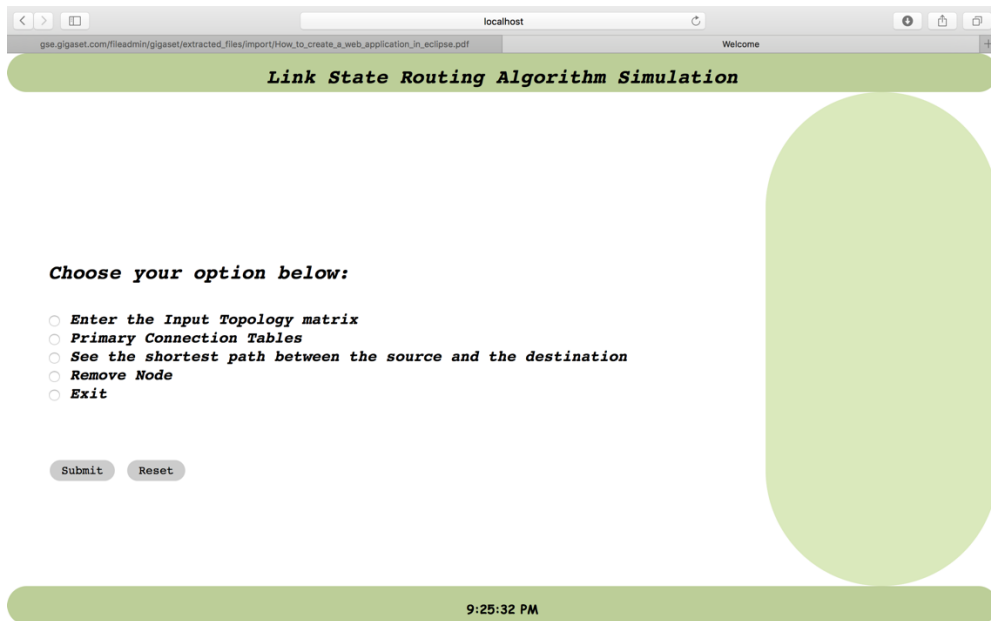


TEST CASE 5 (NEGATIVE SCENARIO):

1. Test Matrix – 3

```
0 6 -1 -1 3 -1 -1 -1 -1
6 0 6 -1 3 3 -1 -1 -1
-1 6 0 6 -1 3 3 -1 -1
-1 -1 6 0 -1 -1 3 3 6
3 3 -1 -1 0 -1 -1 -1 -1
-1 3 3 -1 -1 0 -1 -1 -1
-1 -1 3 3 -1 -1 0 -1 -1
-1 -1 -1 3 -1 -1 -1 0 3
-1 -1 -1 6 -1 -1 -1 3 0
```

2. Display homepage



3. Select **Remove Node** from the homepage before Uploading the File.

4. Following **Error** will be displayed.

