Project Manual

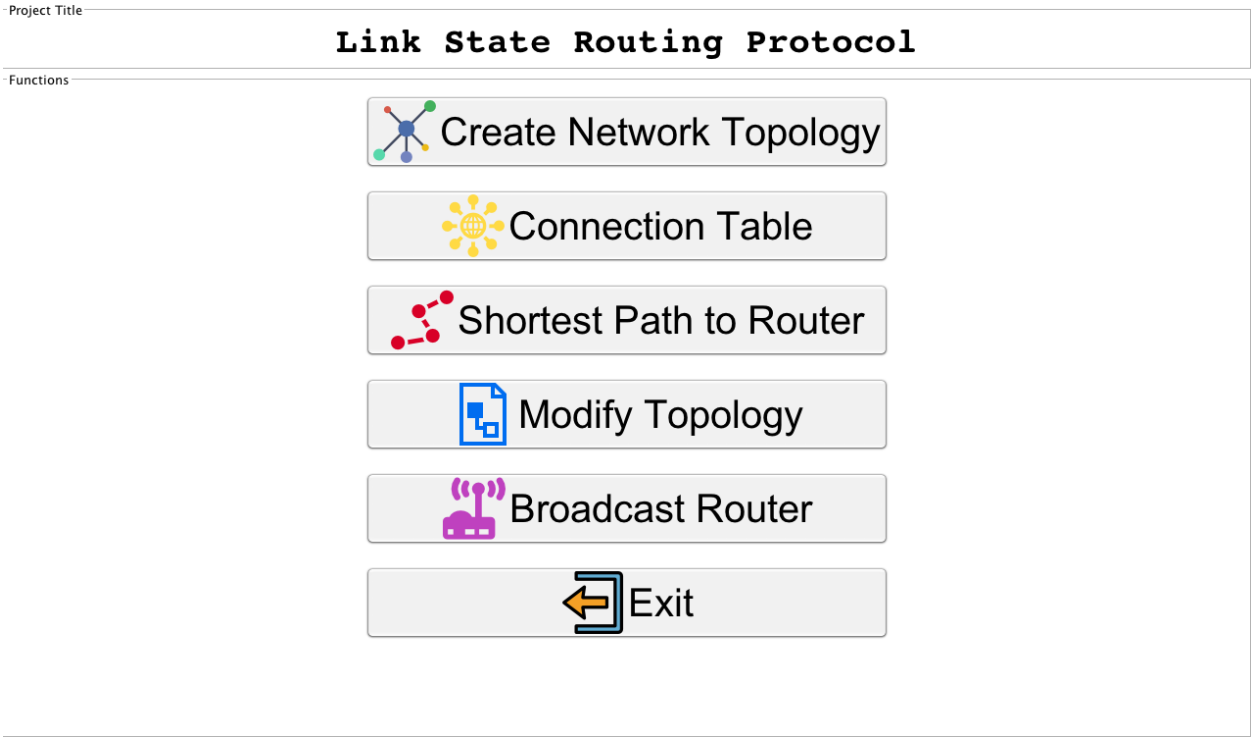
To Run project from Eclipse:

1. Go to File -> Import. The following dialog will appear.
2. Select **Existing Projects into Workspace**.
3. Click the radio button next to **Select archive file** and click the **Browse** button on the following dialog.
4. Find the archive file on your hard disk. Click **Open** to select it.
5. If you have selected an archive file containing an entire Eclipse project, the project name will appear in the box below, already checked. Click **Finish** to perform the import.
6. Now run TestCase_2.java file from eclipse.

To Run .JAR file

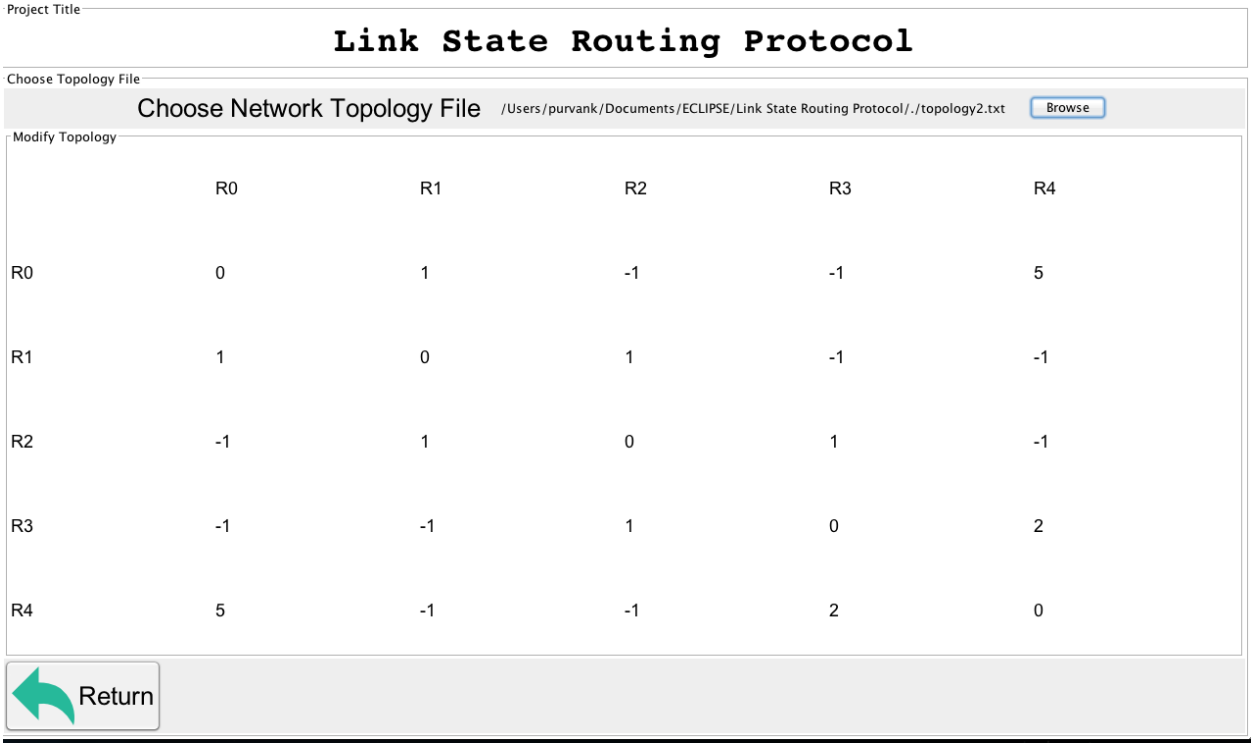
1. Check Your system has Java version 1.7 or greater.
2. In cmd or in terminal type following command to check java version
   Java -version
3. And Double click on CS542Project.jar file to run the project.

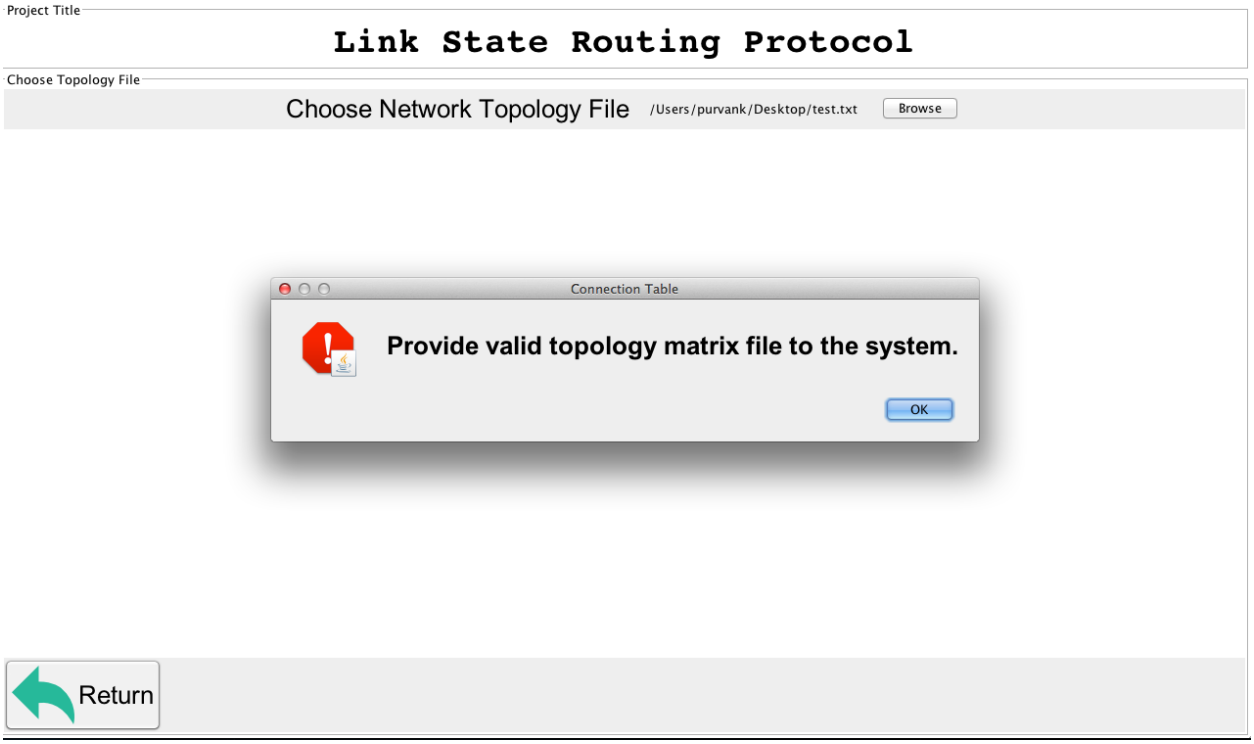
Steps to use GUI:



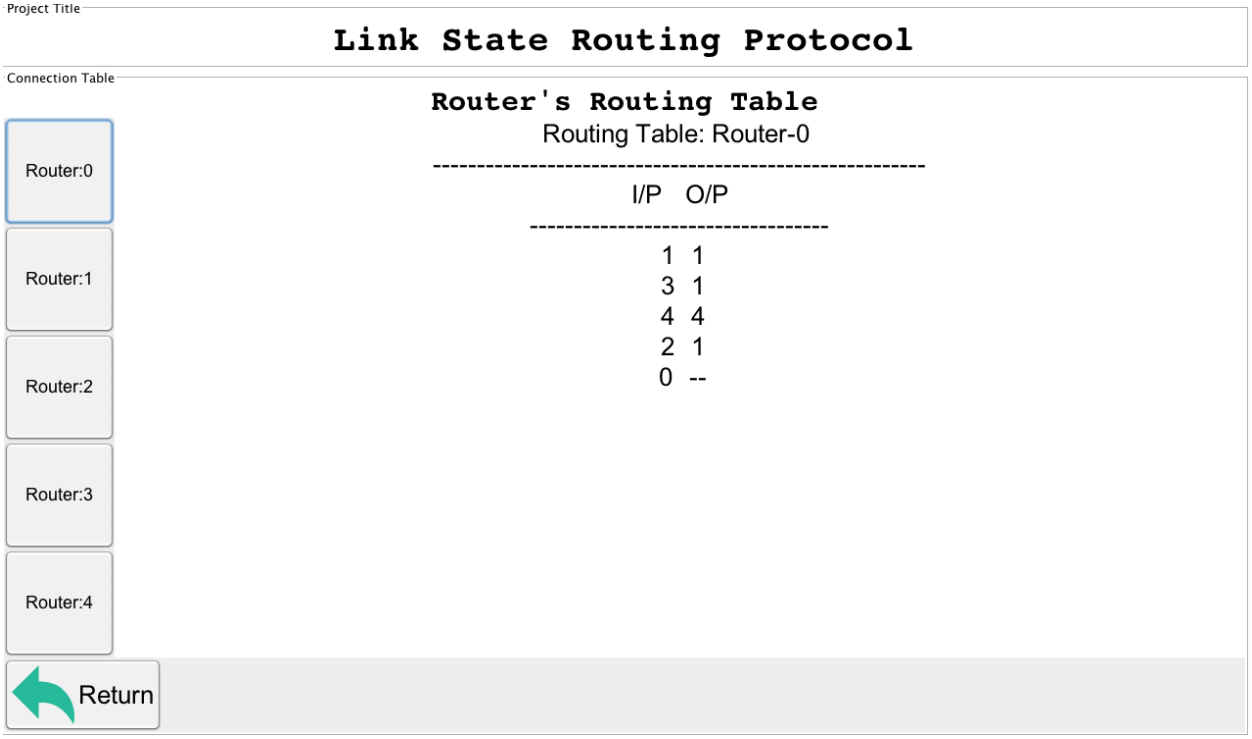
(Welcome Screen)

1. First, we have to upload a valid text file that contains a network topology using a create network topology option on a welcome screen. If the selected file isn't valid, or it contains an invalid network topology it will throw an error.

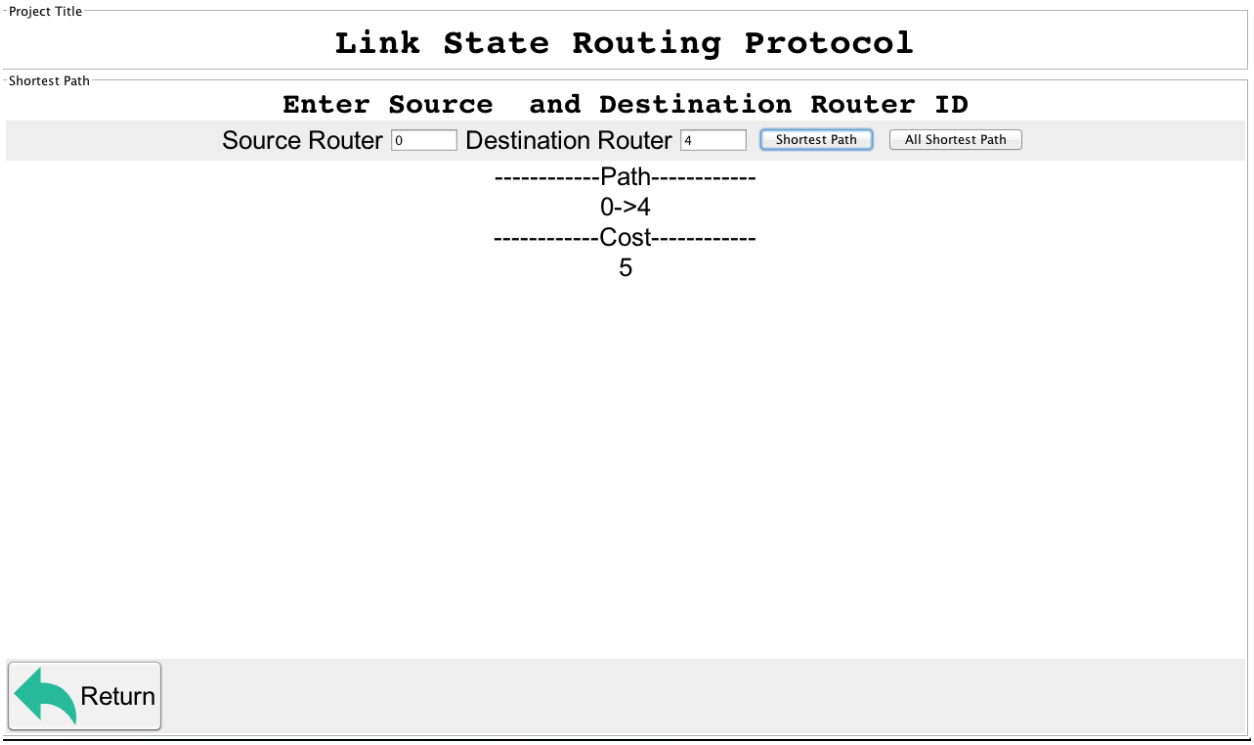


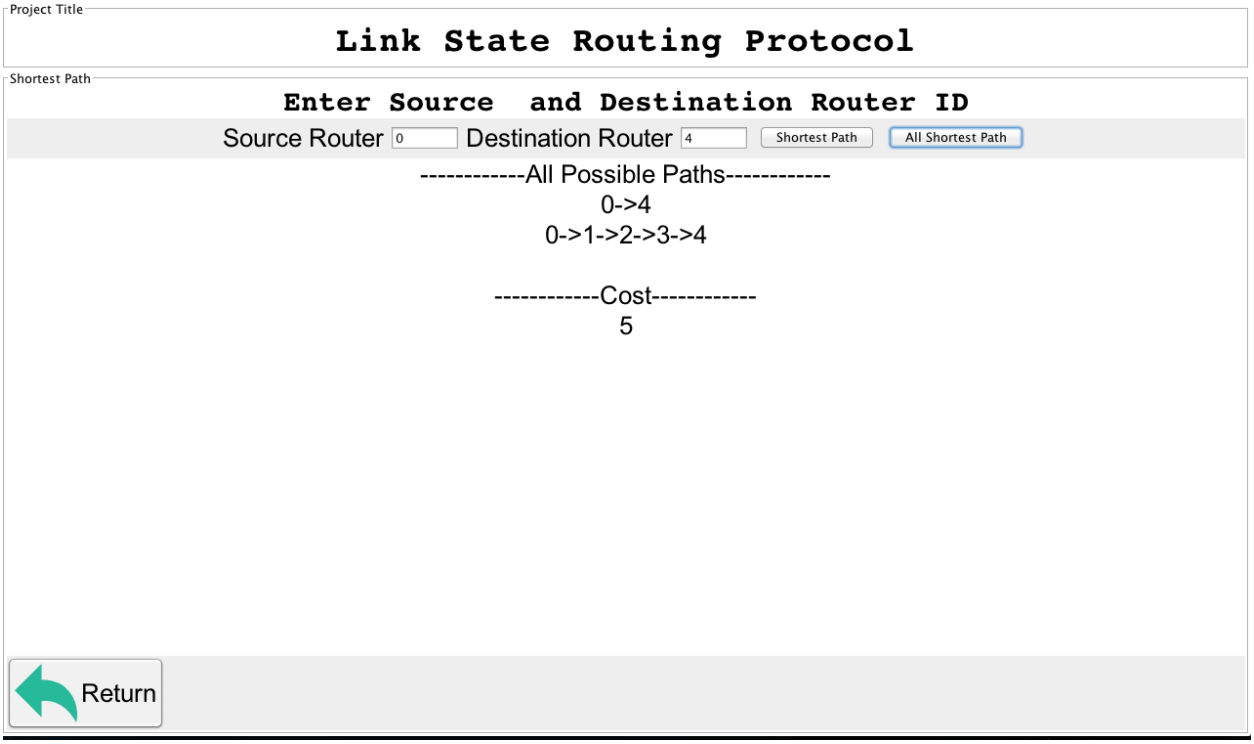


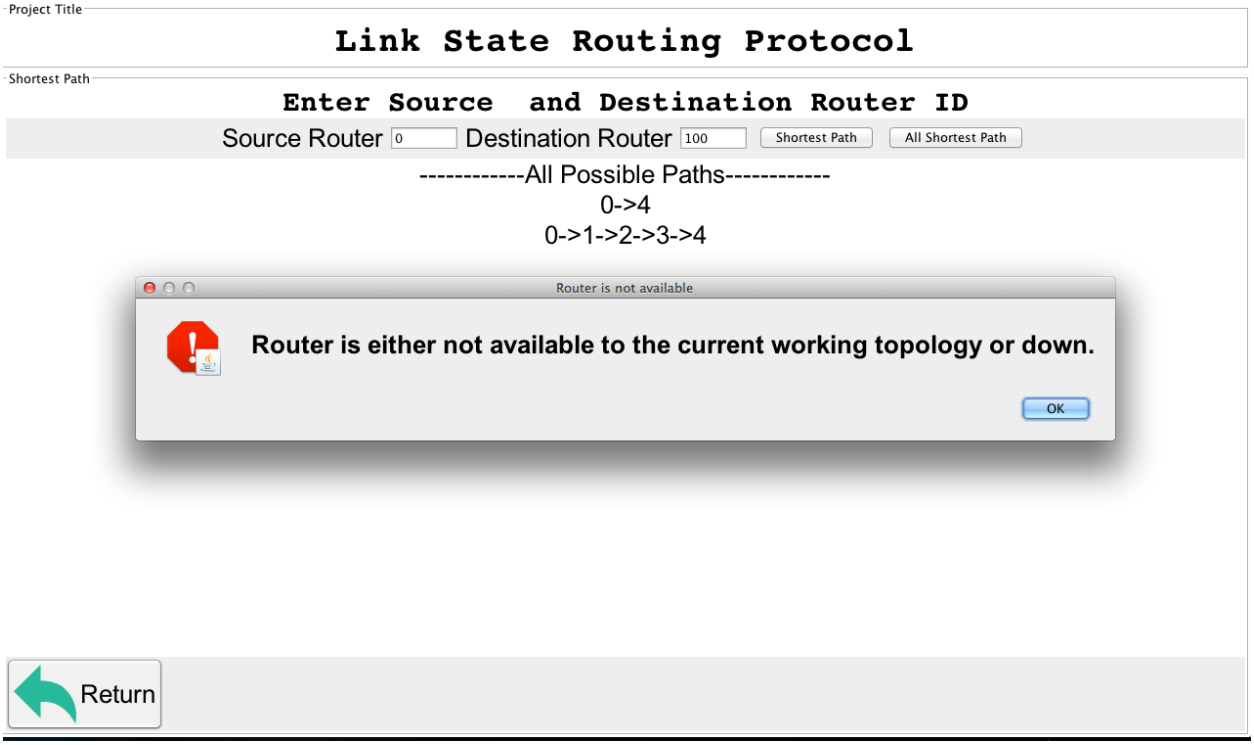
2) To create a connection table user have to go to the welcome screen using the return to main menu button at the bottom of the GUI, from the welcome screen user can select the connection table button to create a connection table for all the routers present in the network topology.



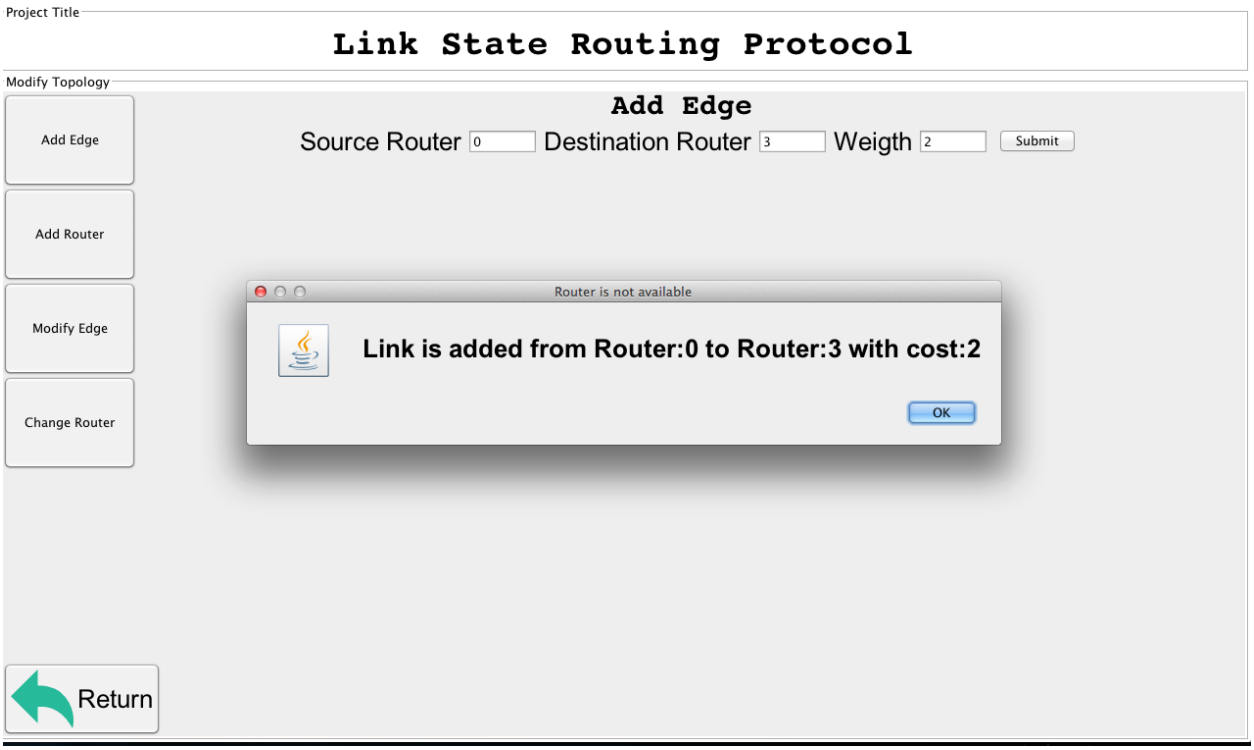
3) To find the shortest path between two routers again we have to go to the main menu using the return button. There is an option called shortest path to router. We have to select that option. It will then ask for source and destination router. If any one of them is not present or down, it will throw an error. If there are multiple shortest path present in the network and users wants to see them user can click the all shortest path button. It will show all the shortest path present with the same cost.

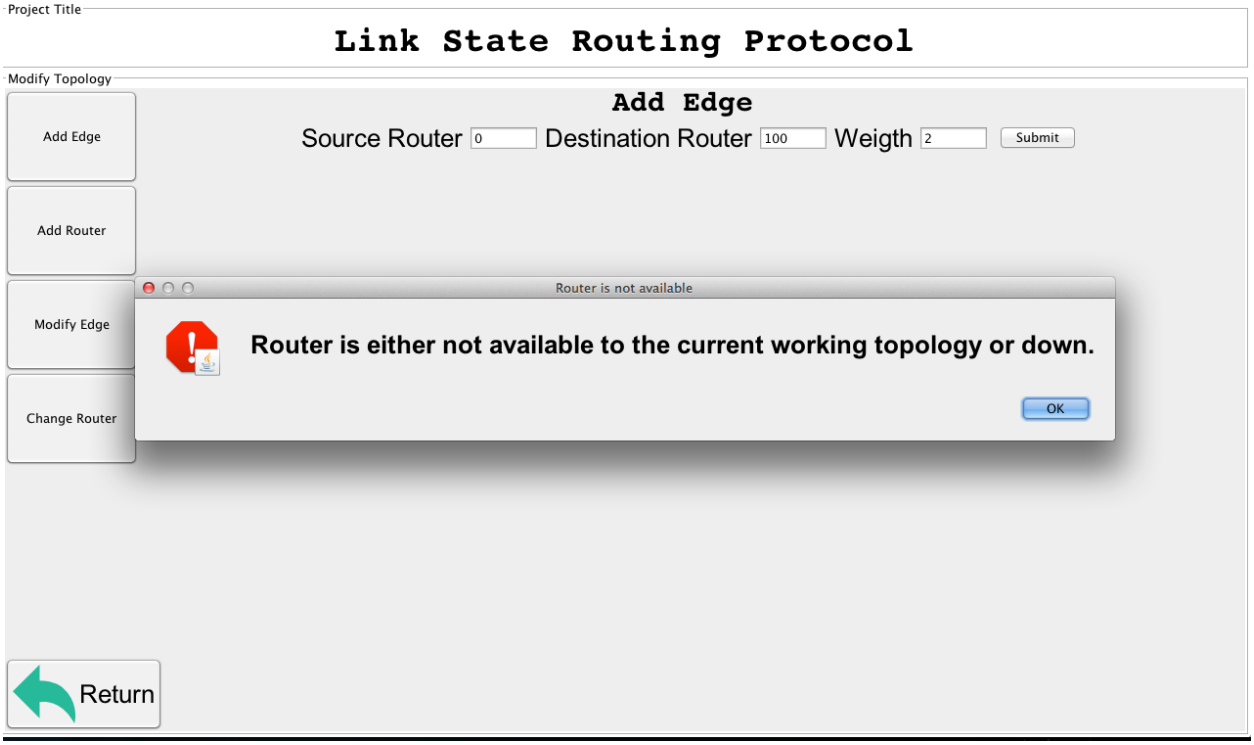

Project Title
Link State Routing Protocol
Shortest Path
Enter Source and Destination Router ID
Source Router 0 Destination Router 4 Shortest Path All Shortest Path
----------Path----------
0->4
----------Cost----------
5
Return

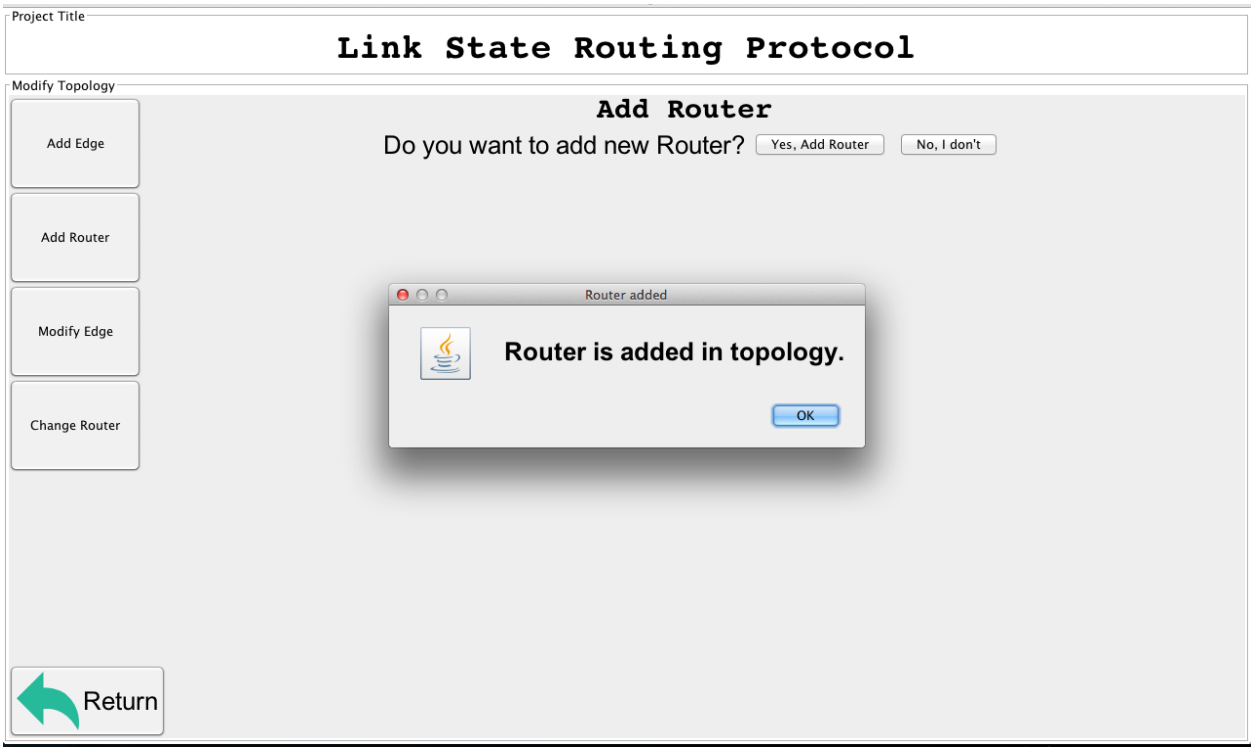

Project Title
Link State Routing Protocol
Shortest Path
Enter Source and Destination Router ID
Source Router 0 Destination Router 4 Shortest Path All Shortest Path
----------All Possible Paths----------
0->4
0->1->2->3->4
----------Cost----------
5
Return

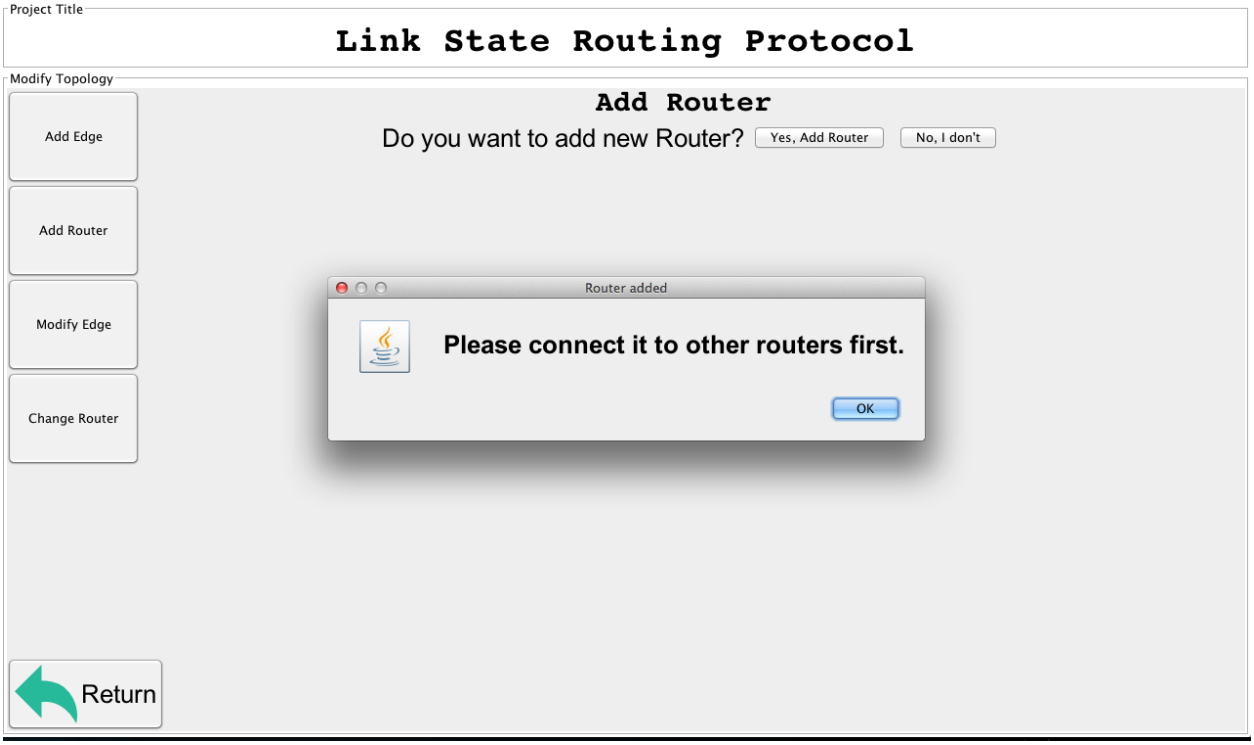


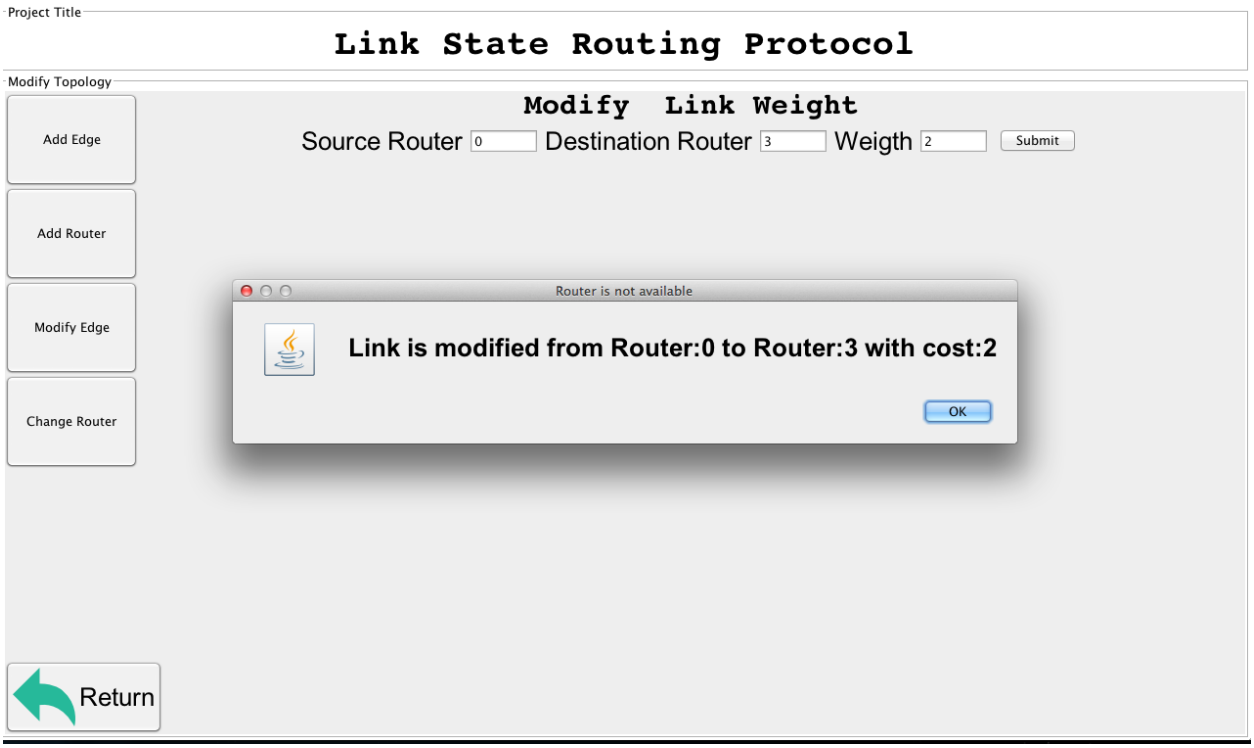
4) If the user wants to modify network topology, user can do that using the modify topology button on the welcome screen. User can add an edge, add a router, modify a cost of an existing edge, and user can change the status of the router. If the router or edge that is being modified isn't present in the network it will throw an error. To add an edge user have to click the add edge button and provide the source and destination router along with the edge cost. If the user wants to add a router, he/she has to click the add router button, it will add the router, but it will ask user to provide connection to the other routers in the network. User can modify weight of an edge using the modify weight button. User can change the status of the router using the change router button. If the router is up, it will make it down, and if it is down it will make it up.

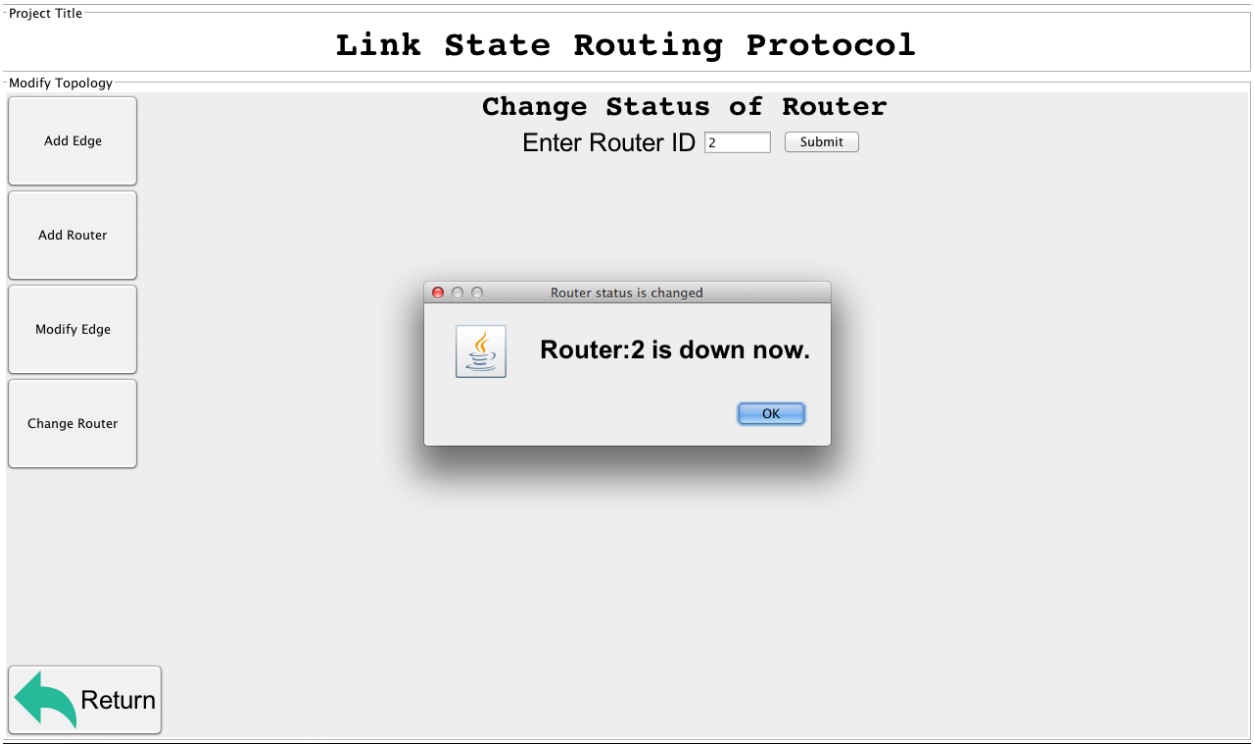

Project Title
Link State Routing Protocol
Modify Topology
Add Edge
Add Router
Modify Edge
Change Router
Add Edge
Source Router 0 Destination Router 3 Weigth 2 Submit
Router is not available
Link is added from Router:0 to Router:3 with cost:2
OK
Return

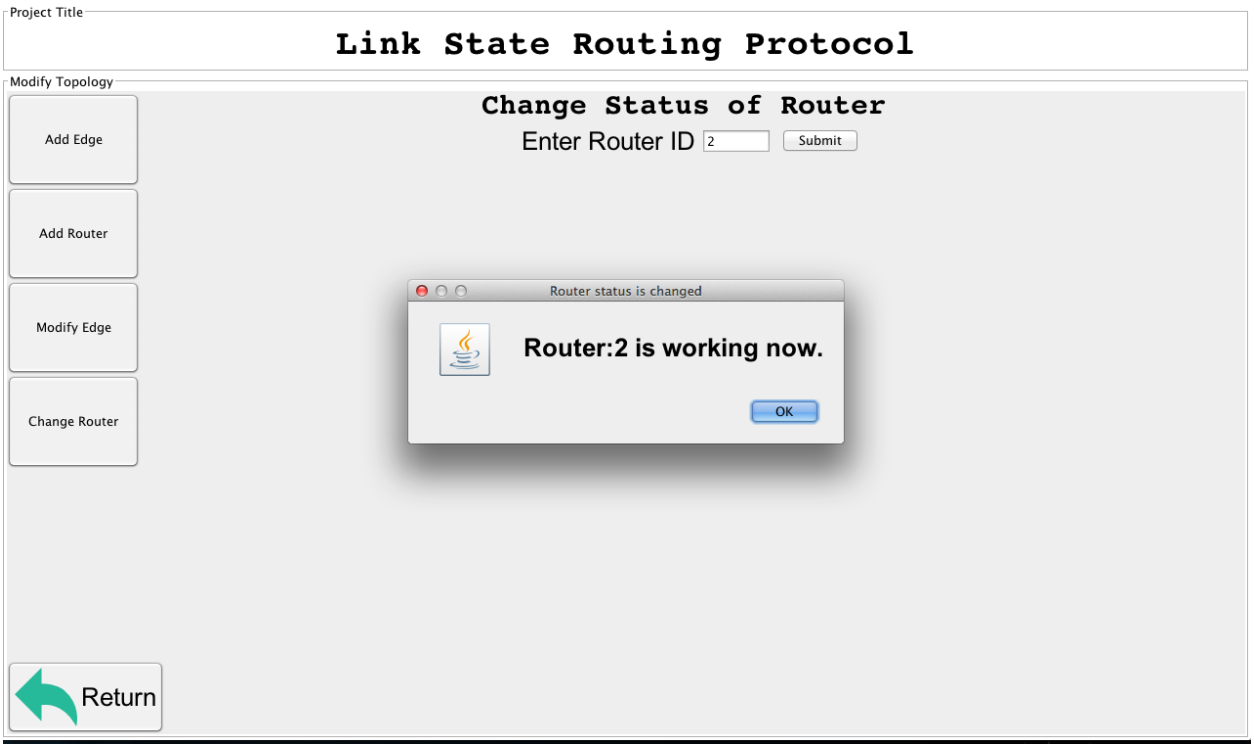

Project Title
Link State Routing Protocol
Modify Topology
Add Edge
Add Router
Modify Edge
Change Router
Add Edge
Source Router 0 Destination Router 100 Weigth 2 Submit
Router is not available
Router is either not available to the current working topology or down.
OK
Return


Project Title
Link State Routing Protocol
Modify Topology
Add Edge
Add Router
Modify Edge
Change Router
Add Router
Do you want to add new Router?
Yes, Add Router
No, I don't
Router added
Router is added in topology.
OK
Return

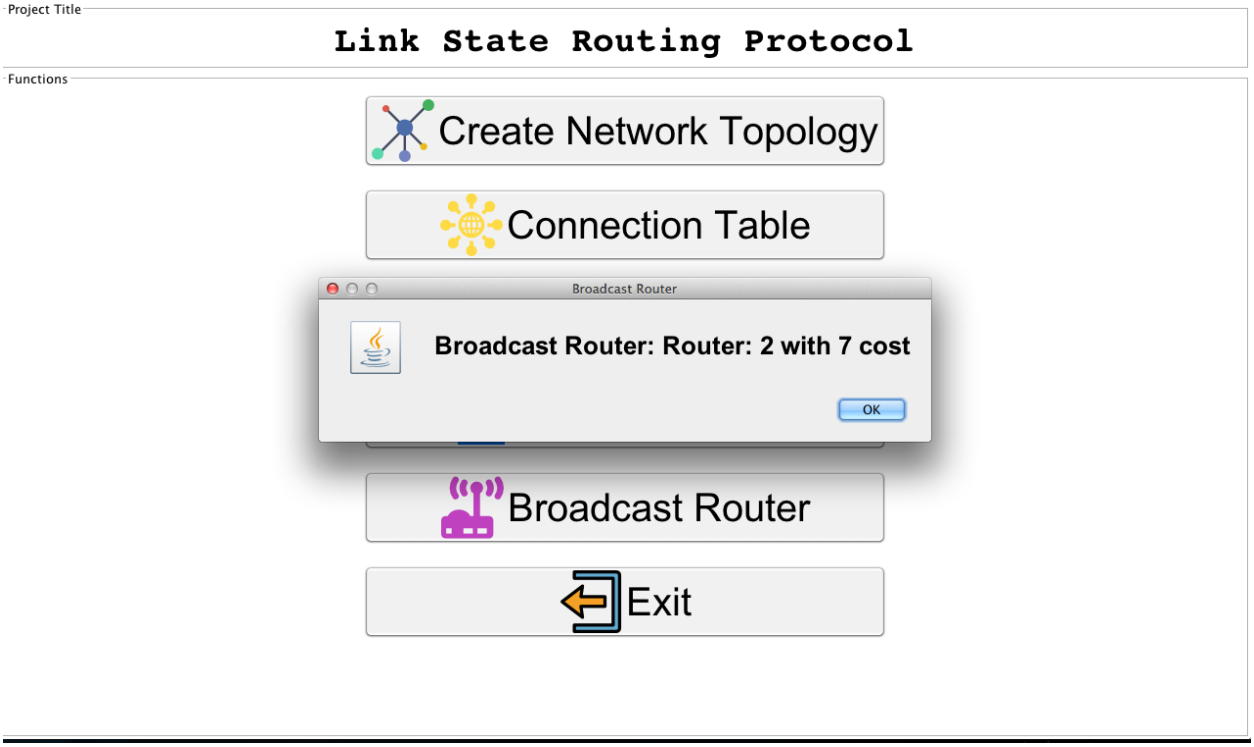

Project Title
Link State Routing Protocol
Modify Topology
Add Edge
Add Router
Modify Edge
Change Router
Add Router
Do you want to add new Router?
Yes, Add Router
No, I don't
Router added
Please connect it to other routers first.
OK
Return


Project Title
Link State Routing Protocol
Modify Topology
Add Edge
Add Router
Modify Edge
Change Router
Modify Link Weight
Source Router 0 Destination Router 3 Weigth 2 Submit
Router is not available
Link is modified from Router:0 to Router:3 with cost:2
OK
Return


Project Title
Link State Routing Protocol
Modify Topology
Add Edge
Add Router
Modify Edge
Change Router
Change Status of Router
Enter Router ID 2 Submit
Router status is changed
Router:2 is down now.
OK
Return



5) User can find the best router to broadcast, using the best router to broadcast button at the welcome screen. It will show the router that has the shortest path to all other routers in the network.



6) User can exit the GUI using the exit button at the welcome screen.