

A Project on Travel Planning

Submitted by

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Roll: 1409

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Motivation of This Project

- ❑ Providing a hassle free and simple travel planning process.
- ❑ Overcoming the time constrain problem.
- ❑ Provide a budget friendly travel plan.
- ❑ Provide an efficient travel plan by streamlining the entire process.

About The Project

- Implementing the graph theory and related algorithms
- Viewing the route according to user's requirement by implementing related algorithm.
- Visualization of the end result

Features

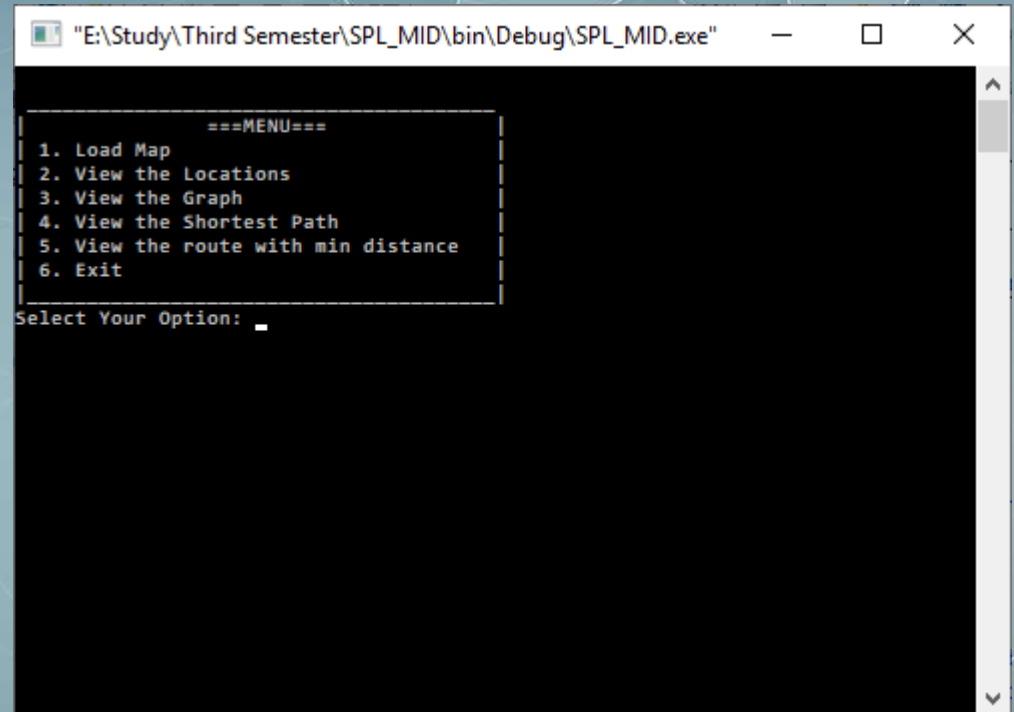
- Creating a graph from the given co-ordinates
- Viewing the shortest path from source to destination
- Viewing the shortest possible route, starting at the source, travelling every location and returning to the source.
- Providing a budget friendly travel plan
- Providing a plan with maximum destination coverage in shortest possible time.
- Representing a visualization of the route

Algorithms Used in This Project

- Dijkstra's Algorithm
- Branch and Bound Algorithm

Menu

A menu will be given to choose what operation the user wants to perform. The program will terminate when “Exit” is selected



```

E:\Study\Third Semester\SPL_MID\bin\Debug\SPL_MID.exe

===MENU===
1. Load Map
2. View the Locations
3. View the Graph
4. View the Shortest Path
5. View the route with min distance
6. Exit
Select Your Option: _
```

Load Map:

This will initialize the graph using the given locations, co-ordinates and weights.

```
"E:\Study\Third Semester\SPL_MID\bin\Debug\...

====MENU====
1. Load Map
2. View the Locations
3. View the Graph
4. View the Shortest Path
5. View the route with min distance
6. Exit

Select Your Option: 1

***Map LOADED***

====MENU====
1. Load Map
2. View the Locations
3. View the Graph
4. View the Shortest Path
5. View the route with min distance
6. Exit

Select Your Option: _
```

```
input.txt - Notepad
File Edit Format View Help

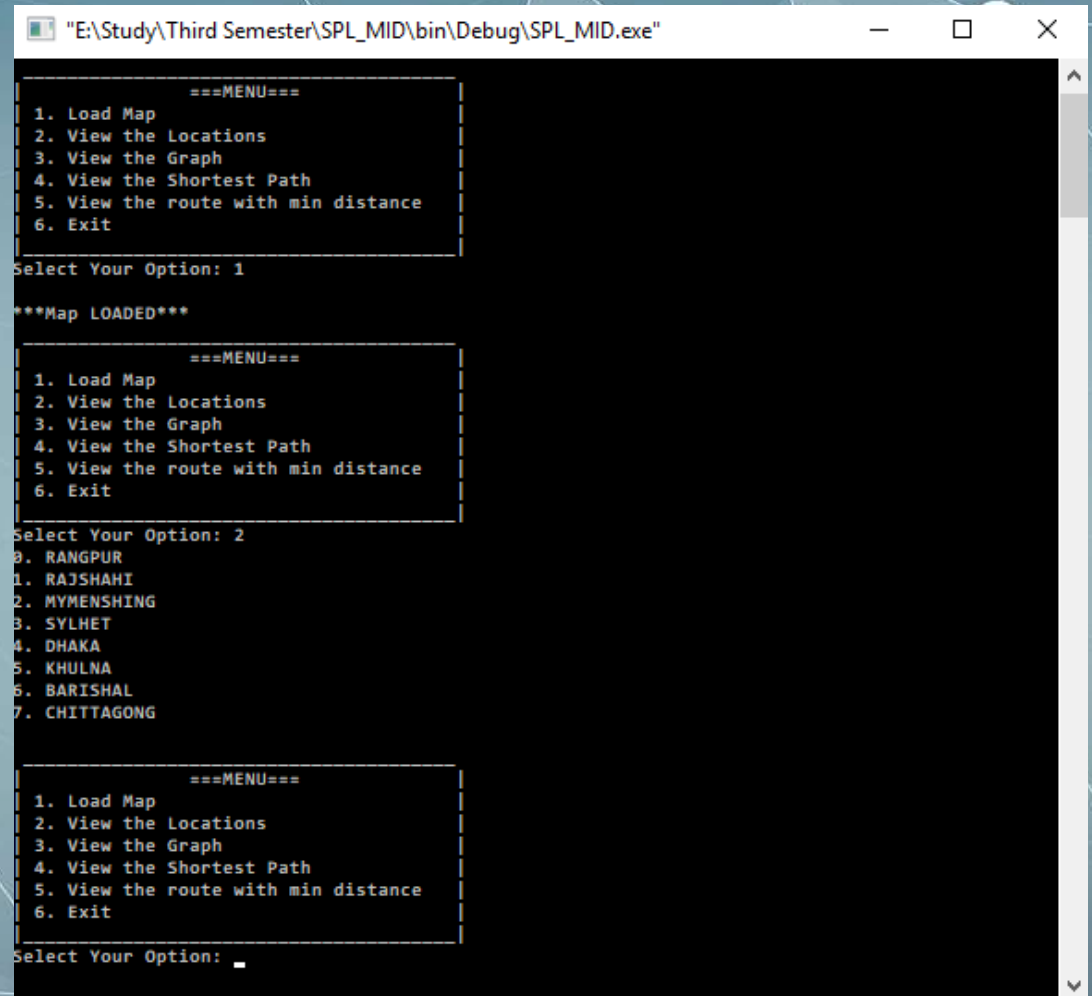
8
RANGPUR 25.7494 89.2611
RAJSHAHI 24.3746 88.6004
MYMENSHING 24.7460 90.4179
SYLHET 24.9048 91.8600
DHAKA 23.8041 90.4152
KHULNA 22.8088 89.2467
BARISHAL 22.7133 90.3496
CHITTAGONG 22.3752 91.8349
```

```
input.txt - Notepad
File Edit Format View Help

RANGPUR RAJSHAHI 219
RANGPUR MYMENSHING 297
RANGPUR SYLHET 503
RANGPUR DHAKA 301
RANGPUR KHULNA 397
RANGPUR BARISHAL 464
RANGPUR CHITTAGONG 555
RAJSHAHI MYMENSHING 246
RAJSHAHI SYLHET 451
RAJSHAHI DHAKA 250
RAJSHAHI KHULNA 256
RAJSHAHI BARISHAL 322
RAJSHAHI CHITTAGONG 503
MYMENSHING SYLHET 281
MYMENSHING DHAKA 112
MYMENSHING KHULNA 332
MYMENSHING BARISHAL 293
MYMENSHING CHITTAGONG 365
SYLHET DHAKA 235
SYLHET KHULNA 438
SYLHET BARISHAL 400
SYLHET CHITTAGONG 355
DHAKA KHULNA 219
DHAKA BARISHAL 180
DHAKA CHITTAGONG 252
KHULNA BARISHAL 116
KHULNA CHITTAGONG 440
BARISHAL CHITTAGONG 244
```


View the Locations:

This will show the list of locations from the given data.



```
"E:\Study\Third Semester\SPL_MID\bin\Debug\SPL_MID.exe"

====MENU====
1. Load Map
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4. View the Shortest Path
5. View the route with min distance
6. Exit
Select Your Option: 1

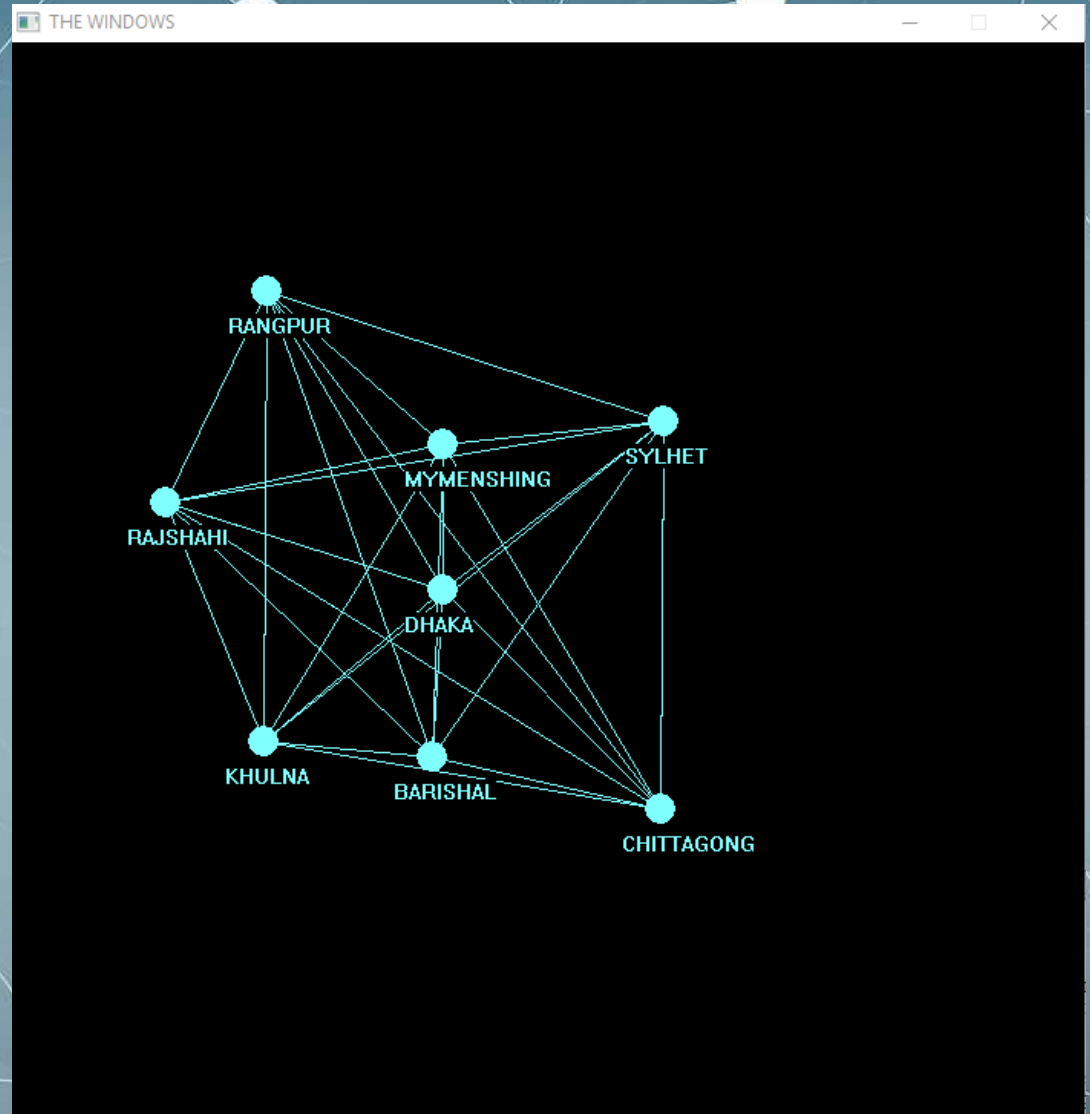
***Map LOADED***

====MENU====
1. Load Map
2. View the Locations
3. View the Graph
4. View the Shortest Path
5. View the route with min distance
6. Exit
Select Your Option: 2
0. RANGPUR
1. RAJSHAHI
2. MYMENSINGH
3. SYLHET
4. DHAKA
5. KHULNA
6. BARISHAL
7. CHITTAGONG

====MENU====
1. Load Map
2. View the Locations
3. View the Graph
4. View the Shortest Path
5. View the route with min distance
6. Exit
Select Your Option: 2
```


View the Graph:

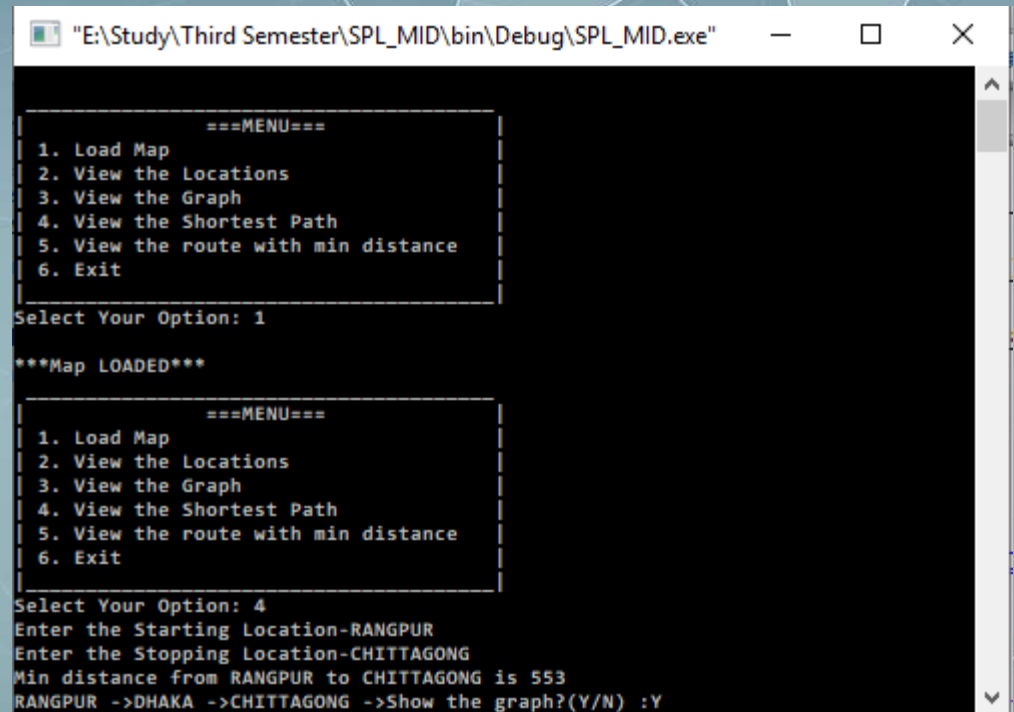
A visual representation of the map will be showed using the given co-ordinates with the help of graphics.h header file.



View the shortest path:

The user will be asked to input the source location and destination location. Then, Dijkstra's Algorithm will be applied and route will be shown to the user.

The user can visually see the route by entering 'Y'.



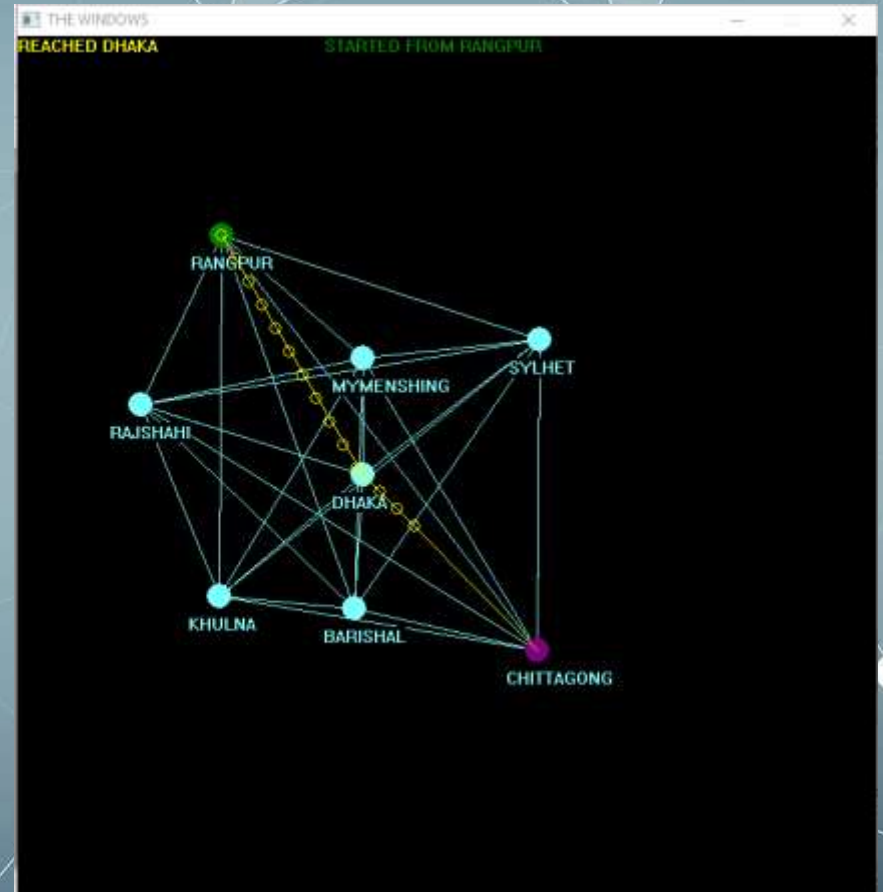
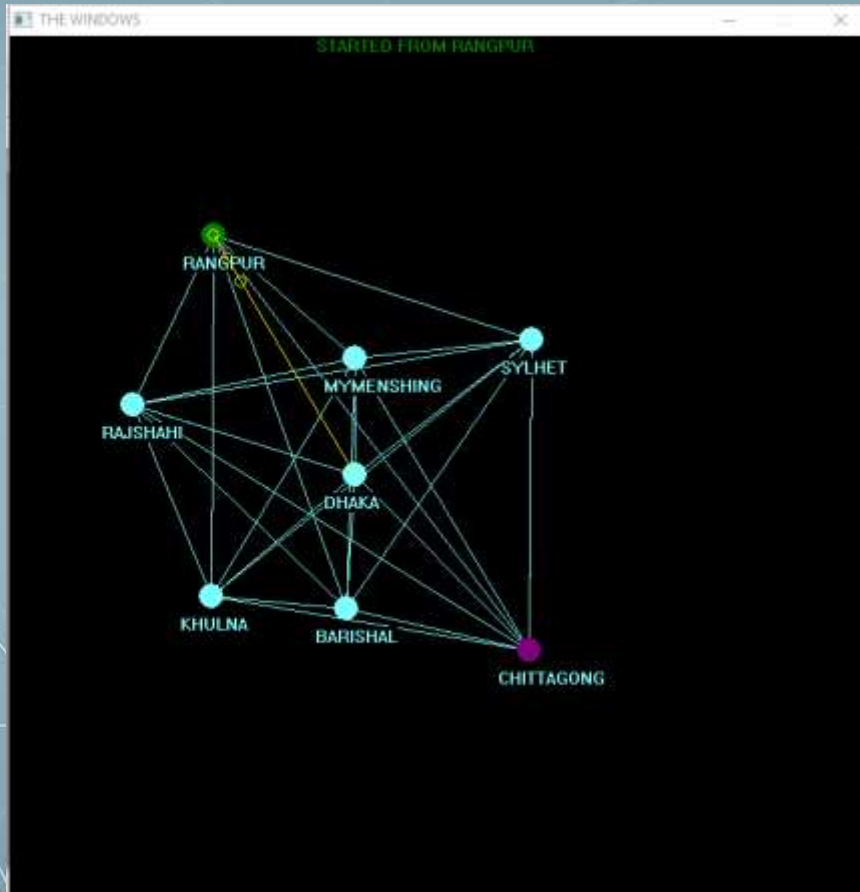
```
"E:\Study\Third Semester\SPL_MID\bin\Debug\SPL_MID.exe"

====MENU====
1. Load Map
2. View the Locations
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4. View the Shortest Path
5. View the route with min distance
6. Exit
Select Your Option: 1

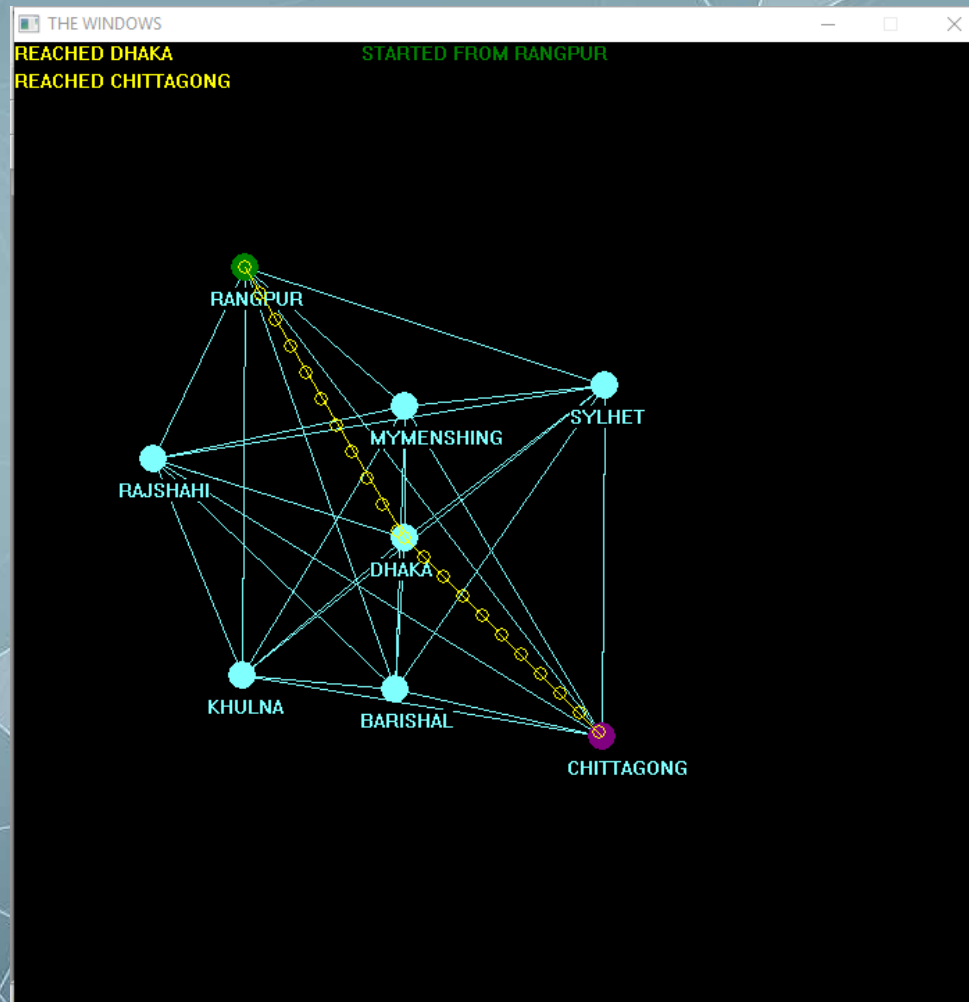
***Map LOADED***

====MENU====
1. Load Map
2. View the Locations
3. View the Graph
4. View the Shortest Path
5. View the route with min distance
6. Exit
Select Your Option: 4
Enter the Starting Location-RANGPUR
Enter the Stopping Location-CHITTAGONG
Min distance from RANGPUR to CHITTAGONG is 553
RANGPUR ->DHAKA ->CHITTAGONG ->Show the graph?(Y/N) :Y
```

Visualization



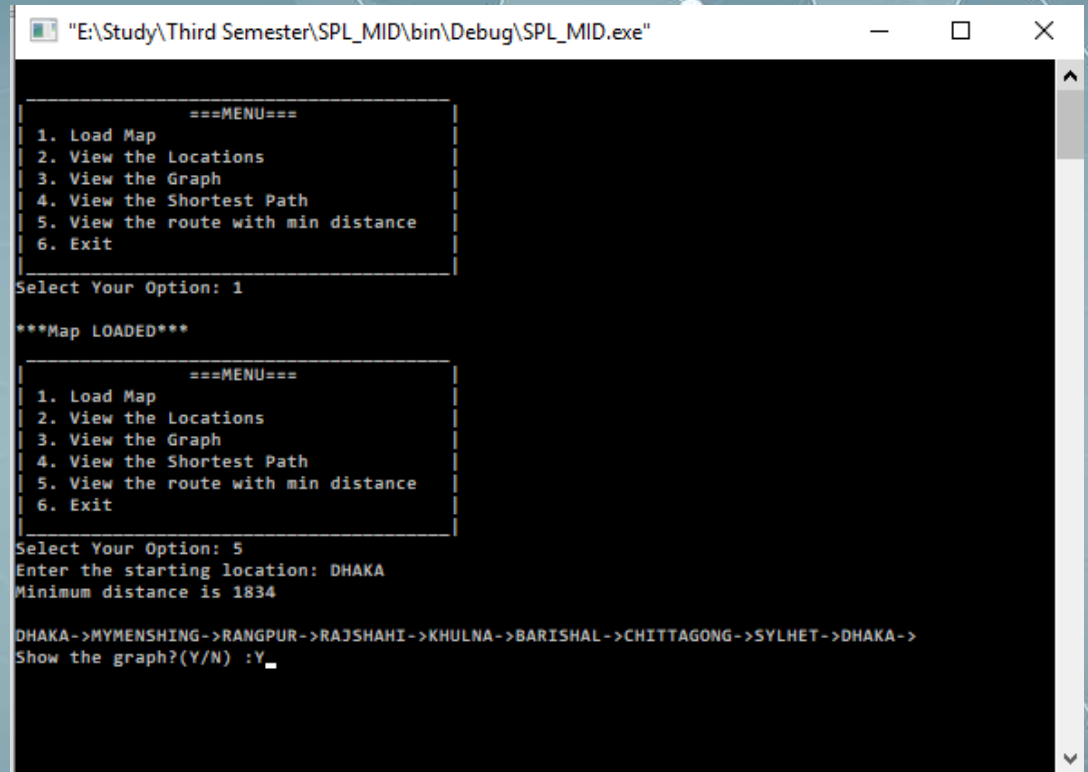
Visualization



View route with minimum distance:

The user will be asked to input the source location. The problem is similar to the Travelling Salesperson Problem. So, Branch and Bound Algorithm will be applied to find the desired route.

The user can visually see the route by entering 'Y'.



```
"E:\Study\Third Semester\SPL_MID\bin\Debug\SPL_MID.exe"

===MENU===
1. Load Map
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4. View the Shortest Path
5. View the route with min distance
6. Exit

Select Your Option: 1

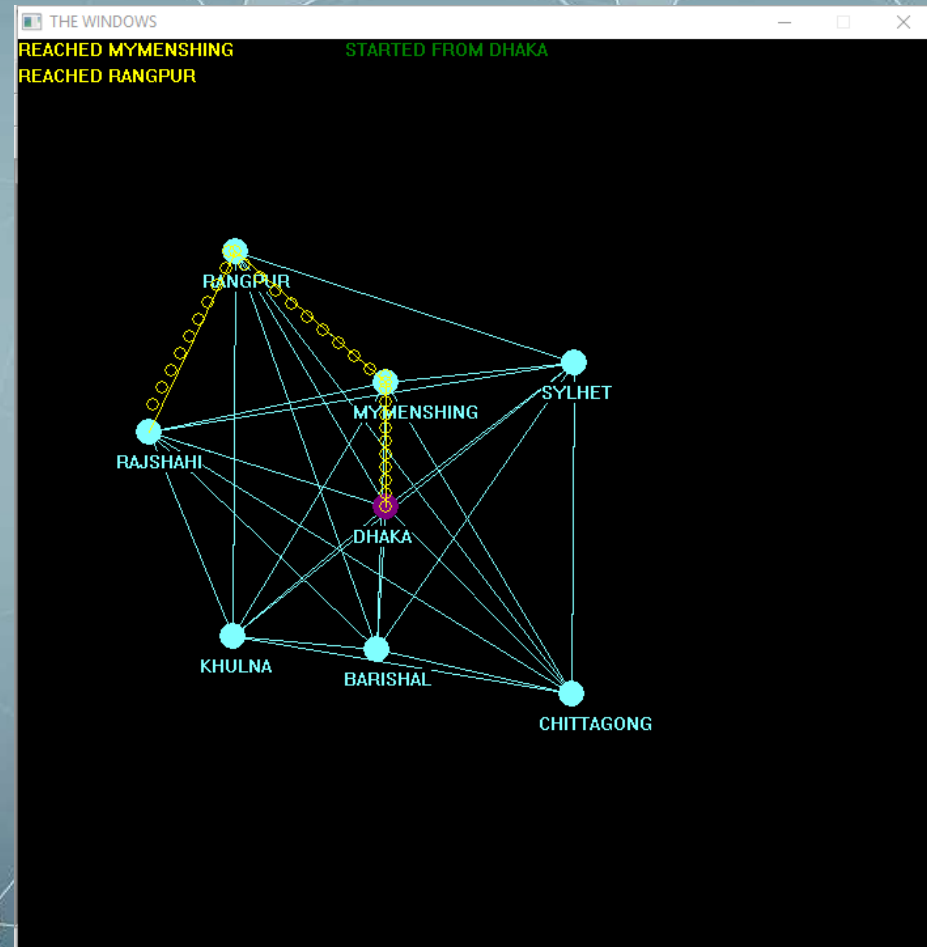
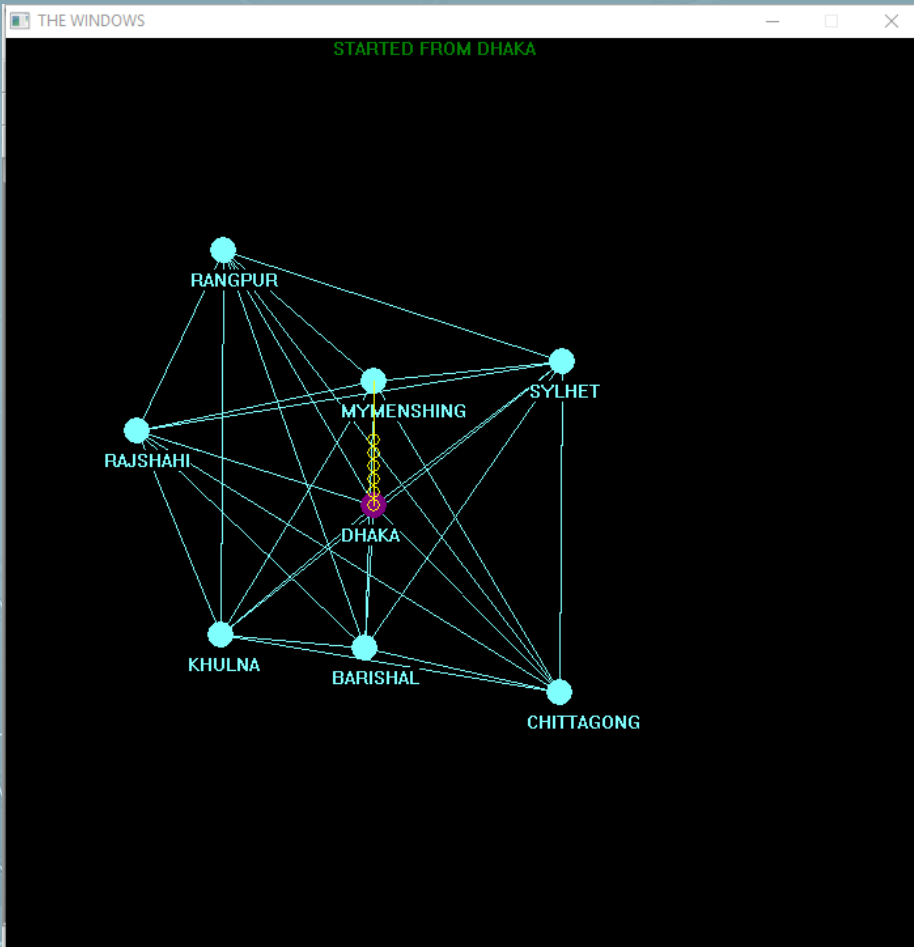
***Map LOADED***

===MENU===
1. Load Map
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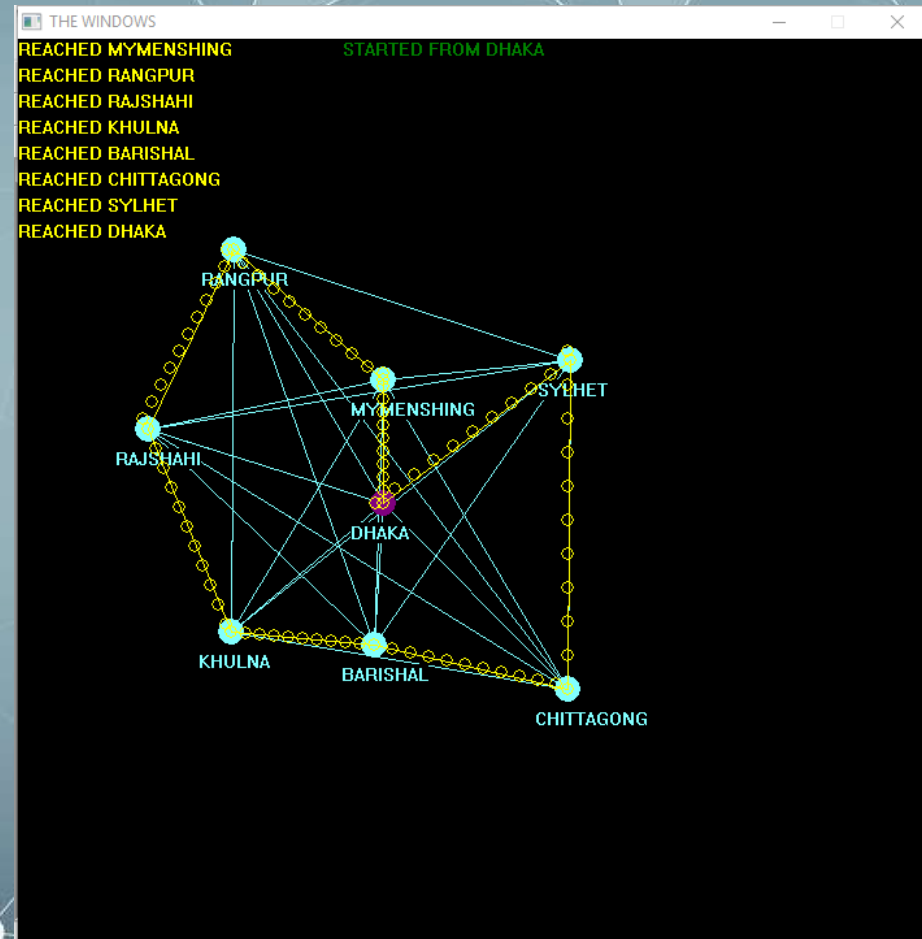
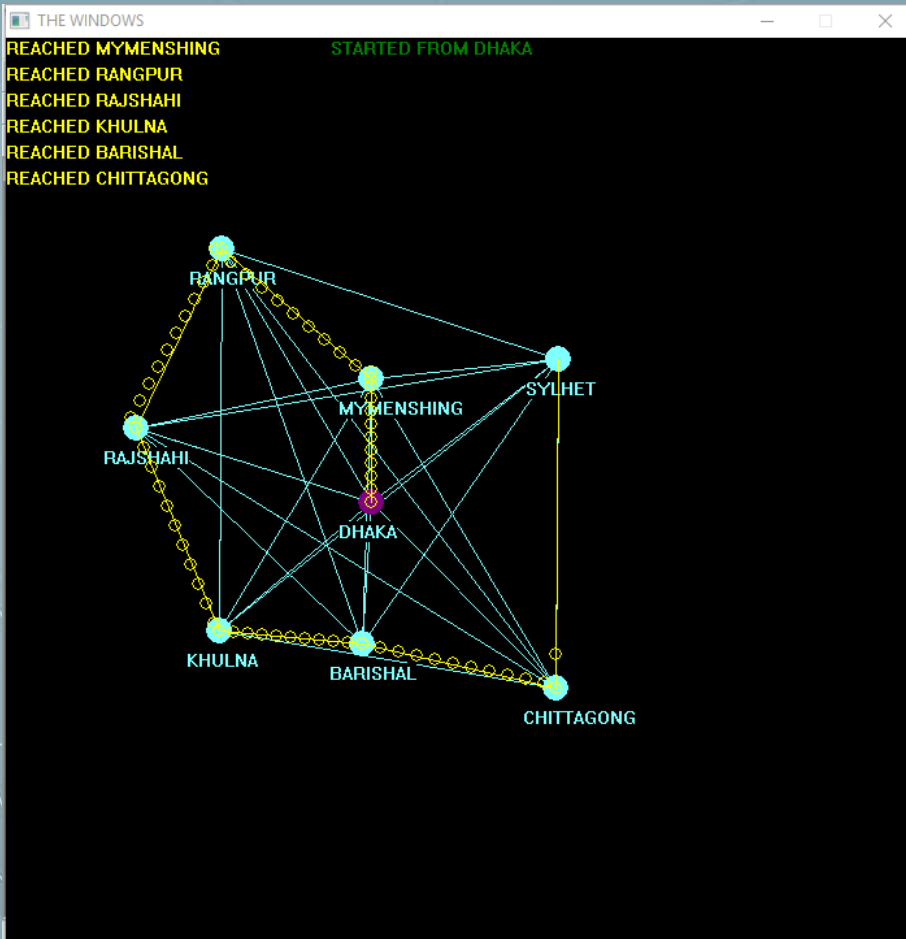
Select Your Option: 5
Enter the starting location: DHAKA
Minimum distance is 1834

DHAKA->MYMENSHING->RANGPUR->RAJSHAHI->KHULNA->BARISHAL->CHITTAGONG->SYLHET->DHAKA->
Show the graph?(Y/N) :Y_
```

Visualization



Visualization





My GitHub Repository

<https://github.com/redowansami/SPL-1>

THANK YOU