



Green University of Bangladesh
Department of Computer Science and Engineering (CSE)
Faculty of Sciences and Engineering
Semester: (Summer, Year:2022), B.Sc. in CSE (Day)

Course Title: Algorithms Lab
Course Code: CSE 206 Section: D4

Lab Project Name: Intra City Bus Transport Ally

Student Details

Name		ID
1.	Mahbubullah	211002084

Submission Date : 06-09-2022
Course Teacher's Name : Ms. Sultana Umme Habiba

[For Teachers use only: **Don't Write Anything inside this box**]

Lab Project Status

Marks:

Signature:

Comments:

Date:

Table of Contents

Chapter 1	3
Introduction	3
1.1 Introduction	3
.....	3
1.2 Design Goals/Objective	3
Chapter 2	3
Design/Development/Implementation of the Project	3
2.1 Function:	3
Chapter 3	4
Problem	4
Chapter 4	5
Results	5
4.1 Output.....	5
.....	5
Chapter 5	6
Conclusion.....	6
5.1 Introduction	6
5.1 Practical Implications.....	6
5.2 Scope of Future Work	6

Chapter 1

Introduction

1.1 Introduction

“Intra City Bus Transport Ally” is a basic C++ program where people could visualize their routes and booked bus ticket in a secure way. These systems work to coordinate communications between computer and peoples. This system exists to simplify information tracking a bus ticket.

1.2 Design Goals/Objective

Since I want to be a computer programmer, I’ve to practice solving any of the problems in my daily life using advanced technology. Hence I am going to make a project to maintain bus route visualization and ticket booking by using a computer program. It would be:

- To buy a bus ticket without sufferings
- To visualize the bus’s shortest route

Chapter 2

Design/Development/Implementation of the Project

2.1 Function:

In this project I’ve used about 5 users define functions. Which are described below:

- ❖ routevisual(): Used for visualise all buses route.
- ❖ TicketCounter(): Used for enter ticket counter function .
- ❖ add_info () : Used for booked a ticket.
- ❖ fnd_info () : Used for find a ticket information from the database.
- ❖ display_all() : Used for display all ticket information in one time.

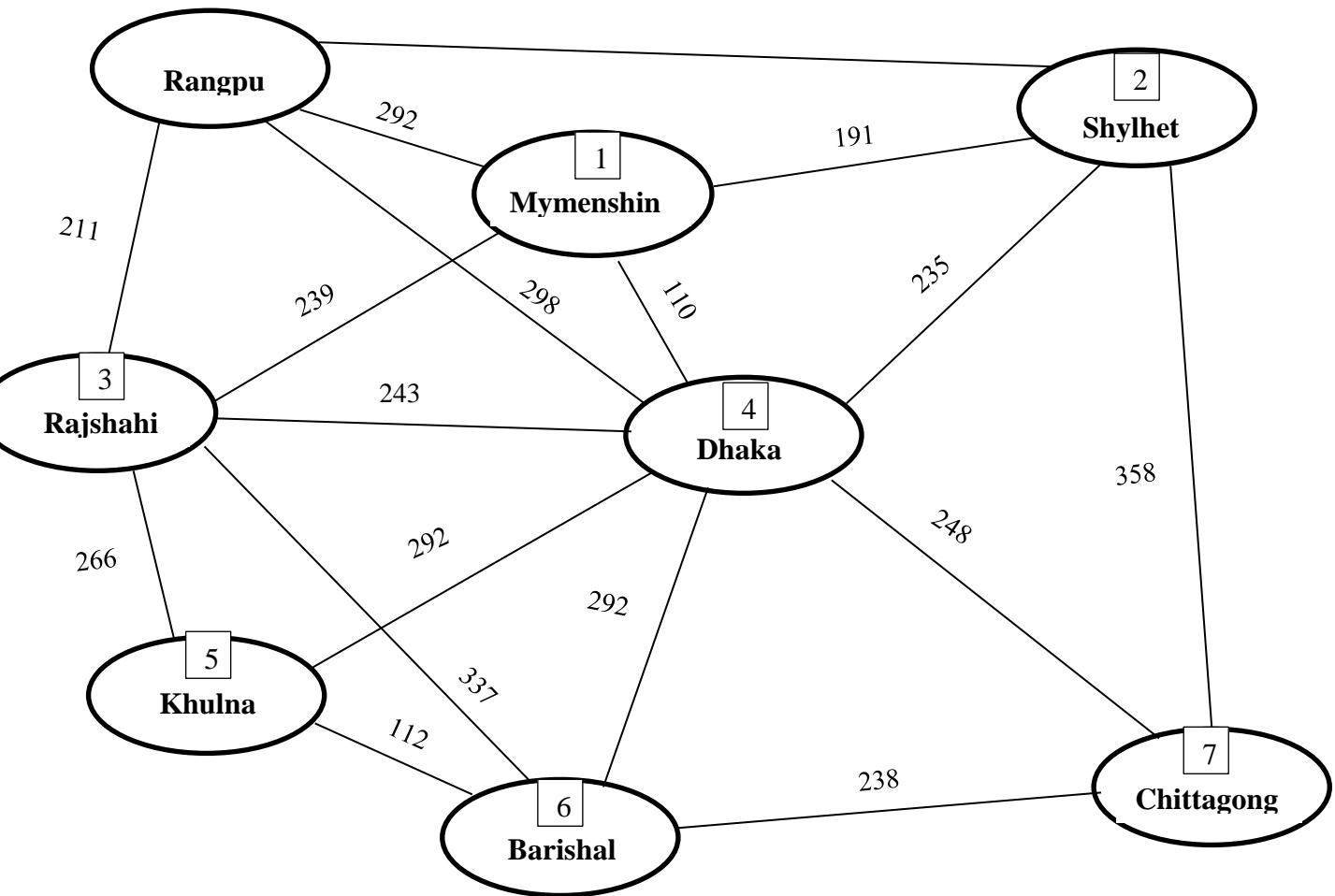
2.2 TOOLS & TECHNOLOGIES

- CodeBloacks IDE
- C++ Programming language.

Chapter 3

Problem

Graph:



Adjacency Matrix:

Matrix	0	1	2	3	4	5	6	7
0	0	292	503	211	298	∞	∞	∞
1	292	0	191	239	110	∞	∞	∞
2	503	191	0	∞	235	∞	∞	358
3	211	239	∞	0	243	266	337	∞
4	298	11	235	243	0	211	182	248
5	∞	∞	∞	266	221	0	112	∞
6	∞	∞	∞	337	182	112	0	238
7	∞	358	∞	∞	248	∞	238	0

Dijkstra Pseudocode:

1. INITIALIZE-SINGLE-SOURCE(V, s)
2. $S \leftarrow \emptyset$
3. $Q \leftarrow V[G]$
4. while $Q \neq \emptyset$
5. do $u \leftarrow \text{EXTRACT-MIN}(Q)$
6. $S \leftarrow S \cup \{u\}$
7. for each vertex $v \in \text{Adj}[u]$
8. if $d[v] > d[u] + w(u, v)$
9. then $d[v] \leftarrow d[u] + w(u, v)$
10. $\pi[v] \leftarrow u$

Chapter 4 Results

4.1 Output

```
1. Route Visualization
2. Ticket Counter
3. Exit

ENTER YOUR CHOICE: 1
-----
| 0.Rangpur
| 1.Mymensingh
| 2.Sylhet
| 3.Rajshahi
| 4.Dhaka
| 5.Khulna
| 6.Barisal
| 7.Chittagong
|-----
Enter Current Location: 0

Distance: 292 | Ticket Price: 642.4 | Route: MYM<-RAN
Distance: 483 | Ticket Price: 1062.6 | Route: SYL<-MYM<-RAN
Distance: 211 | Ticket Price: 464.2 | Route: RAJ<-RAN
Distance: 298 | Ticket Price: 655.6 | Route: DHK<-RAN
Distance: 477 | Ticket Price: 1049.4 | Route: KHL<-RAJ<-RAN
Distance: 480 | Ticket Price: 1056 | Route: BAR<-DHK<-RAN
Distance: 546 | Ticket Price: 1201.2 | Route: CTG<-DHK<-RAN
```

Fig: Route visualization

```
ENTER YOUR CHOICE: 2

1. Book Ticket
2. Find Ticket Information
3. Display All
4. Exit from Ticket Counter

ENTER YOUR CHOICE
1
Enter Ticket No: 1
Enter Customer Name: Mahbubullah
Enter Phone number: 01909598003
Enter Route: Dhaka
Enter Payment Date: 06-09-2022
Enter Payable: 450.6
Total Paid: 500
Returned: 49.4
```

Fig: Book Ticket

```
ENTER YOUR CHOICE
2
Enter Ticket No: 1
-----
Ticket No: 1
Customer Name: Mahbubullah
Phone number: 1909598003
Route: Dhaka
Payment Date: 06-09-2022
Total Payable: 450.6
Total Paid: 500
Returned: 49.4
-----
```

Fig: Find Ticket Information

```
ENTER YOUR CHOICE
3
No data found!
-----
Ticket No: 1
Customer Name: Mahbubullah
Phone number: 1909598003
Route: Dhaka
Payment Date: 06-09-2022
Total Payable: 450.6
Total Paid: 500
Returned: 49.4
-----
Ticket No: 2
Customer Name: Habib
Phone number: 1862000584
Route: Rangpur
Payment Date: 06-09-2022
Total Payable: 700
Total Paid: 700
Returned: 0
-----
```

Fig: Display all Ticket Information

Chapter 5

Conclusion

5.1 Introduction

Good management offers better productivity and hence more progress towards development. Since The Interface of the program is user-friendly, the program is easy to use and it is possible to use for any bus transport.

5.2 Practical Implications

When we implement “**Intra City Bus Transport Ally**” software it allows us to reduce our expenses and increase our efficiency at the same time. There are so many benefits of being able to maintain various services at a really low cost, reducing the number of people employed to manage the transport, automating the entire operation of administration, etc. This means that as a bus transport company we get a lot of freedom from manual work.

5.3 Scope of Future Work

A few more minor tweaks here and there for making the application, Tracking and Analytics. The whole project will be made available as an android app for more ease of use and mobility