

ALTERNATIVE ROAD FINDER

BY

HASANUL MURSHED SHAKIL

ID: 151-15-4744

AND

SHOHAG KUMAR BHOWMIK

ID: 151-15-5186

AND

SHANZIDA AFROZ

ID: 151-15-4669

This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science in Computer Science and Engineering

Supervised By

Shaon Bhatta Shuvo

Senior Lecturer

Department of CSE

Daffodil International University

Co-Supervised By

Nishat Sultana

Lecturer

Department of CSE

Daffodil International University



DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

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APPROVAL

This Project titled “**Alternative Road Finder**”, submitted by **Hasanul Murshed Shakil and Shohag Kumar Bhowmik and Shanzida Afroz** to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering (BSc) and approved as to its style and contents. The presentation has been held on 10 Dec 2018.

BOARD OF EXAMINERS

Dr. Syed Akhter Hossain
Professor and Head

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Chairman

Dr. Sheak Rashed Haider Noori

Associate Professor and Associate Head

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner

Md. Zahid Hasan

Assistant Professor

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Internal Examiner

Dr. Mohammad Shorif Uddin

Professor

Department of Computer Science and Engineering
Jahangirnagar University

External Examiner

DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Shaon Bhatta Shuvo, Senior Lecturer, Department of CSE**, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:

Shaon Bhatta Shuvo
Senior Lecturer
Department of CSE
Daffodil International University

Co-Supervised by:

Nishat Sultana
Lecturer
Department of CSE
Daffodil International University

Submitted by:

Hasanul Murshed Shakil
ID: -151-15-4744
Department of CSE
Daffodil International University

Shohag Kumar Bhowmik
ID: -151-15-5186
Department of CSE
Daffodil International University

Shanzida Afroz
ID: -151-15-4669
Department of CSE
Daffodil International University

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ABSTRACT

The main purpose of the “Alternative Road Finder” is to suggest an alternative and shortest path for a user. This application is very essential for those people who have no idea about all the roads in Dhaka city or who come from village with no idea about the roads of this city. As a result sometime they face lots of problem to find a best path for them. It will help them to find the best path to travel without any traffic. It also show the traffic details as well as the list of the bus with their details. As a result it will be helpful for a user to choose the right bus to reach their destination. Moreover it saves our time too.

We develop this application in Android field. To develop this application we use Android Studio as an android application development kit. We tried our level best to give it a nice user interface and make it user friendly. After implementation of all functions, the system is tested in different stages and it works successfully as a prototype.

TABLE OF CONTENTS

CONTENTS	PAGE
Board of examiners	i
Declaration	ii
Acknowledgements	iii
Abstract	iv
Table of contents	v
List of figures	viii
List of tables	x

CHAPTER

CHAPTER 1: INTRODUCTION	1-5
1.1 Introduction	1
1.2 Motivation	1
1.3 Objectives	2
1.4 Expected Outcome	2
1.5 Feature	2
1.6 Existing Applications and their Limitations	4
1.7 Report Layout	5

CHAPTER 2: BACKGROUND	6-7
2.1 Introduction	6
2.2 Related Works	6
2.3 Comparative studies	6
2.4 Scope of the Problem	7
2.5 Challenges	7
CHAPTER 3: REQUIREMENT SPECIFICATION	8-16
3.1 Business Process Modeling	8
3.2 Requirement Collection and Analysis	9
3.3 Use Case Modeling and Description	10
3.4 Flow Chart of This Project	15
3.5 Design Requirements	16
CHAPTER 4: DESIGN SPECIFICATION	17-19
4.1 Front-end Design	17
4.2 Back-end Design	18
4.3 Interaction Design and UX	18
4.4 Implementation Requirements	19

CHAPTER 5: IMPLEMENTTION AND TESTING	20-32
5.1 Implementation of Database	20
5.2 Implementation of Front-end Design	21
5.3 Implementation of Interactions	22
5.4 Testing Implementation	30
5.5 Test Result and Reports	32
CHAPTER 6: CONCLUSION AND FUTURE SCOPE	38-39
6.1 Discussion and Conclusion	38
6.2 Limitations of this project	38
6.2 Scope for Further Developments	39
APPENDIX	40
REFERENCES	50

LIST OF FIGURES

FIGURES	PAGE
Figure 3.1: BPM of the project	8
Figure 3.2: Use Case diagram of the project	10
Figure 3.3: Flow Chart of the project	15
Figure 4.4: Example of front-end design	17
Figure 5.5: Firebase database work with google cloud	20
Figure 5.6: First look of the application	21
Figure 5.7: Navigation Drawer	22
Figure 5.8: Search source location	22
Figure 5.9: Search destination location	23
Figure 5.10: Show the shortest path	23
Figure 5.11: Show the alternative path	24
Figure 5.12: Traffic details	25
Figure 5.13: Map page again	25
Figure 5.14: Bus details	26
Figure 5.15: Help page	26
Figure 5.16: About page	27
Figure 5.17: Admin login	27
Figure 5.18: Navigation drawer for admin	28
Figure 5.19: Add bus	29
Figure 5.20: Delete bus	29

Figure 5.21: Initialize the position	30
Figure 5.22: Initialize the path	31
Figure 5.23: Traffic on the road	31

LIST OF TABLES

TABLES	PAGE
Table 1: Test case table for set position	32
Table 2: Test case table for finding initial shortest path	33
Table 3: Test case table for finding alternative roads	34
Table 4: Test case table for traffic details	35
Table 5: Test case table for admin login	36
Table 6: Test case table for add bus	37
Table 7: Test case table for delete bus	37

CHAPTER 1

Introduction

1.1 Introduction

Alternative Road Finder is an android based application that helps people to find the roads as well as alternative roads of this roads too. This application always suggest the shortest path for a user and every time it suggest one way to reduce the confusion of a user. By using this application a user can get information about traffic on the road so that they can avoid the traffic jam if they want. This will help a user to reach their destination in time. This application also provides bus and their roads details too. This application can help many user to reduce their all of confusion about roads and buses information.

1.2 Motivation

People who coming from outside the Dhaka city or who do not know the alternative roads of Dhaka city, sometimes they face heavy traffic jam as a result they cannot reach their destination in time. So lack of information of roads when jam occurs people face many problem. If we know the alternative road of those jammed road than maybe we can reach in our destination in time.

On the other hand, in our daily life one of the greatest problem is traffic jam. People cannot go to work stations, institutions, office etc. in time due to traffic jam. Besides in Dhaka city many people are unknown about bus information that which bus is running on which roads. For this reason they also face trouble.

Again traffic jam can kill our valuable time. If we can reach our destination in time it can save our valuable time.

So we decide to make something to reduce this kind of problems and this problem motivate us to do something like this application.

1.3 Objectives

Objectives of our android application are mentioned below:

- To decrease the suffering of the users.
- To reduce the confusion of users about buses.
- To reduce the confusion of user about roads.
- To provide accurate information about journey to the users.
- For save the travel time of the user.
- To find the alternative road when user needs.
- When they want to find the bus for their travelling they can use bus details.
- User friendly application for the general people.

1.4 Expected Outcome

- Using this application user can reach their destination in time.
- User can travel avoiding the traffic jam.
- User can chose the shortest path for travel.
- User can gain information for their travel.
- It can save both time and money.

1.5 Feature

In application, a feature has several definition. One of the best definition is “A feature is a distinguishing characteristic of an application item” [1].

Our project application has many features. They are given below with a brief details.

1.5.1 Location Finding

This application can find the current location of the user using the GPS system. After finding the location it can show the user to their current location.

1.5.2 Location Searching

It has a searching option so that a user can search a location for visit or they want to go. After searching user get the exact location that they search in this application.

1.5.3 Initial Road

After searching, this application provide an initial roads for the user from their current location to their searched road. This road is basically the shortest road to reach in their destination. If user want, he can change the road by pressing alternative road button.

1.5.4 Alternative Road

After pressing the other path option, user get an alternative road for this initial road if any alternative road is available for this road. Alternative road helps the user to reach their destination when the initial road is full with traffic jam.

1.5.5 Traffic Details

This application has an option for traffic details. Using this option a user can see the traffic condition of a road that they want to travel. This option help a user to reach their destination without facing any traffic jam. It also save our time.

1.5.6 Bus Details

This is a new feature that we add in our application. Using this feature a user can see all the bus details with their roads. This will help a user to finding the right bus for them.

1.6 Existing Applications and their Limitations

Existing applications are very useful but they have many limitations. Existing applications cannot show users actual location all the time. Sometimes they show different location. It is very harmful for a user to finding the place where he is?

On the other hand existing applications cannot show every details that a user need. For example, existing system cannot provide bus details for a user. As a result user cannot find the actual bus that he need for his journey.

Moreover existing applications cannot show the actual traffic status all the time. So many time users trapped in a huge traffic jam on the road. It is also disgusting for a user and it kills the valuable time of a user.

Our application is totally free from those problems. Using our application, users will not face those problems that they face with the previous applications. Any user can use it for their travelling.

1.7 Report Layout

In Chapter 1, we discuss about the primary information about our project. We discuss about our motivation that what we chose this project and how we complete this project. We share some information about the outcome from this project. We also briefly describe about the features of this project as well as we describe about the special feature that we add in our project.

In Chapter 2, we discuss about the background of this project. Related works of this project and compare to that project why our project is better than those project is also describe in this chapter. Here we also discuss about the scope of problem of our project and the challenges that we face to develop this project as well.

In Chapter 3, we discuss about the Requirements of this projects. We show our BPM (Business Process Modeling), in which we plan that how to develop this project. We also discuss about many kinds of requirements and analysis those requirements for this project. We also show the use case modeling that how user can use this application.

In Chapter 4, we discuss about design specification, which cover all the details about the front-end, back-end design as well as the User Experience (UX) of this project. In this chapter we also discuss about the requirements that we need to implement this application.

In Chapter 5, we try to cover all the topic related with the Implementation and Testing of this project. We show here the look of our application and how it is work with brief details. We also show the test results of our project.

In Chapter 6, we provide a summary of this project. We discuss the limitations of this project as well as the conclusion and the future plan that we have with this project. We also mention our future plans in this chapter.

CHAPTER 2

Background

2.1 Introduction

Our application “Alternative Road Finder” is an Android based application, so in this project some languages are used that is related with an Android project like xml, java. xml is used to design the user interface and java is used to control everything of this project.

2.2 Related Works

This project is related to Google map. Actually google map has some features as like as our project. Google map can show a direction when a user search any place to go. Google map can also show the live traffic details as well as our project. This application can also show some alternative at the same time when a user search any destination.

So in some prospective, this project is related with Google map application.

2.3 Comparative Studies

Compare with any previous application this project is better than any other application. All other application just think about the road, alternative road, traffic details etc. but in this project, there are not only included all those features but also there are all bus details with their each road and their stoppage. This feature make this application unique from any other previous applications. One more thing is, this project will give the user accurate information with the live traffic details compare to others.

2.4 Scope of the Problem

There are lots of problem in our traffic system. As a result user faces traffic jam every day. So there is a scope to overcome from this problem. By using this application the user can overcome this problem. If they know that their initial their initial travelling road is full of jam and they know the alternative roads of this initial road, then by using the alternative road they can avoid the traffic jam and also reach their destination in time. Moreover they can take help from bus details to avoid the confusion about the buses.

A user can get all those features together in our application.

2.5 Challenges

We face lots of challenges when we build this application. Some important challenges are:

- First of all, working with Android Studio is not an easy task.
- We face many bugs when we run our project.
- It needs a long run time which is really a big problem.
- There are lack of source which can help us to build this application.
- Survey for bus details was one of our big challenge.

CHAPTER 3

Requirement Specification

3.1 Business Process Modeling

Business Process Model or Business Process Management is actually a plan how to manage everything related with that business or related to develop a program. It includes that how to do this work, who will do this work, who will manage this work, consider customer requirements as well as what they want from this project everything. Without planning nothing will complete accurately. So for developing a project BPM is one of the important part [4].

The Business Process Model of our project is given below:

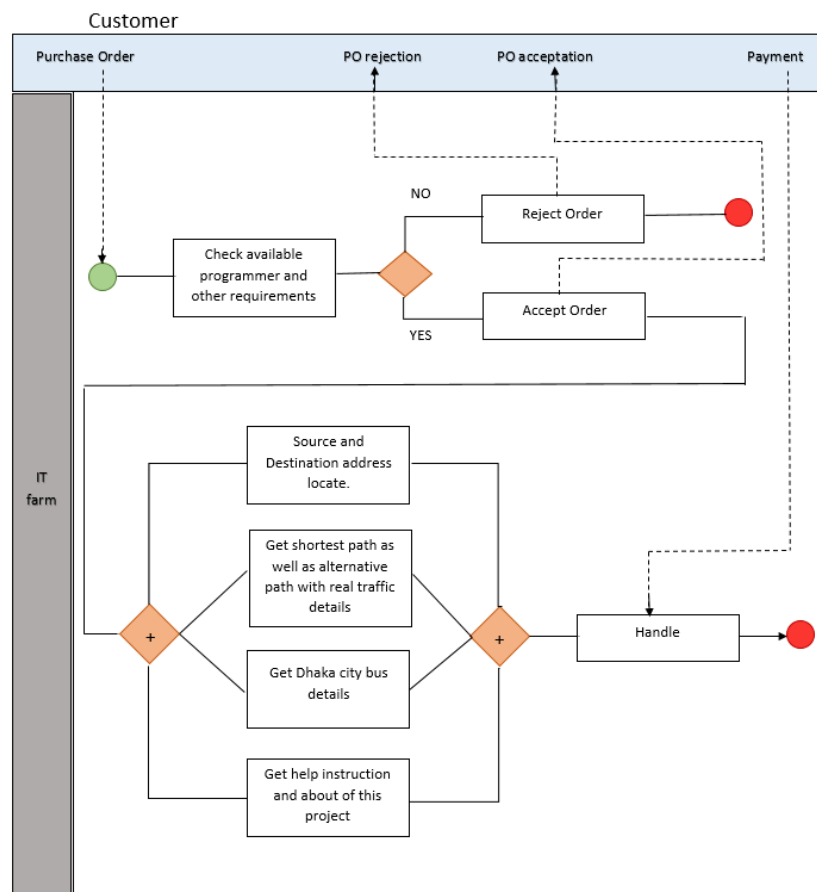


Figure 3.1: BPM of the project

3.2 Requirement Collection and Analysis

Requirement is an important part for developing an application. Requirements are those things, without it we cannot complete a project. On other words we can say that, without complete the requirements of a project, we cannot complete this project actually. So it is very important to collect the requirements and analysis those requirement carefully [2] [3].

We collect some requirements for our project. The requirements of our project are:

- This project have to find the user current location automatically.
- There must be an option to change the current location of a user.
- There must be a search bar to search the destination place.
- User need an option for show the alternative road.
- It must be able to show the live traffic details of the road.
- There must be some bus details for helping a user.

Requirements analysis is the process of determining user expectations for a new or modified product. Requirements analysis must be quantifiable, relevant and detailed. In project developing, such requirements are often called functional specifications. Requirements analysis is an important aspect of project management. Requirements analysis involves frequent communication with system users to determine specific feature expectations, resolution of conflict or ambiguity in requirements as demanded by the various users or groups of users.

3.3 Use Case Modeling and Description

Use case model of this project is given below:

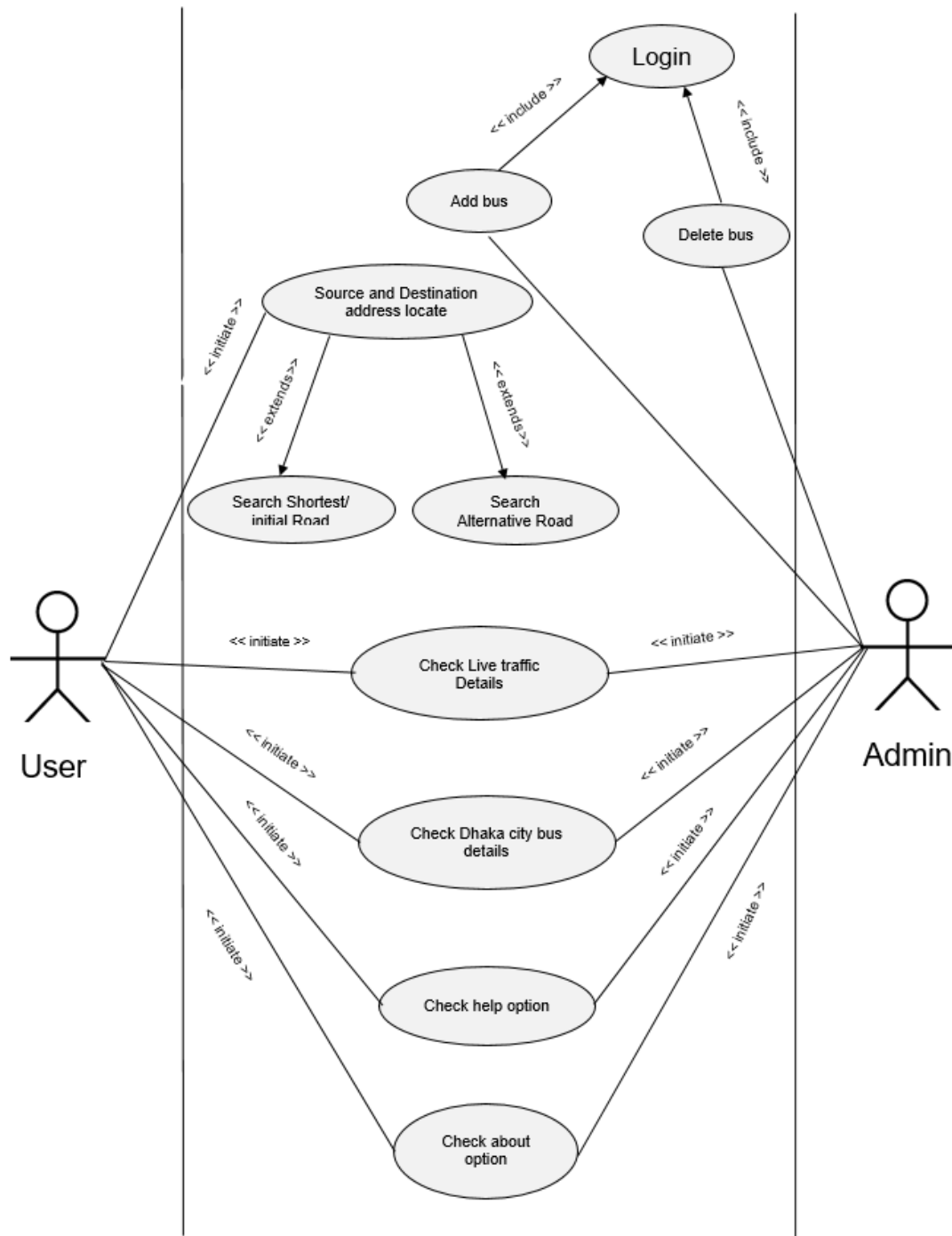


Figure 3.2: Use Case diagram of the project

All of the use case descriptions of this project is mentioned below:

3.3.1 Use Case: Source and Destination Address Locator.

Precondition: none.

Actor: User

Primary Path:

- i. Enter source address.
- ii. Enter destination address.

Exceptional Path:

- i. GPS is not connected.

3.3.2 Use Case: Search Shortest/ Initial Path.

Precondition: Source and destination address locator.

Actor: User

Primary Path:

- i. Click on the “NEXT” button.

Exceptional Path:

- i. Network connection failed.
- ii. Enter valid source and destination address.
- iii. GPS is not connected.

3.3.3 Use Case: Search Alternative Road.

Precondition: Source and destination address locator.

Actor: User.

Primary Path:

- i. Click on the “OTHER PATH” button.

Exceptional Path:

- i. Network connection failed.
- ii. Enter valid source and destination address.
- iii. GPS is not connected.

3.3.4 Use Case: Check Live Traffic Details.

Precondition: None.

Actor: User.

Primary Path:

- i. Click on the “TRAFFIC” button.

Exceptional Path:

- i. Network connection failed.
- ii. GPS is not connected.

3.3.5 Use Case: Check Dhaka City Bus Details.

Precondition: None.

Actor: User.

Primary Path:

- i. Click on the “Buses” option.
- ii. Select bus.

Exceptional Path:

- i. Network connection failed.
- ii. GPS is not connected.

3.3.6 Use Case: Check Help Option.

Precondition: None.

Actor: User.

Primary Path:

- i. Click on the “HELP” option.

Exceptional Path:

- i. Network connection failed.
- ii. GPS is not connected.

3.3.7 Use Case: Check About Option.

Precondition: None.

Actor: User.

Primary Path:

- i. Click on the “ABOUT” option.

Exceptional Path:

- i. Network connection failed.
- ii. GPS is not connected.

3.3.8 Use Case: Admin login.

Precondition: None.

Actor: Admin.

Primary Path:

- i. Click on the app icon 5 times.
- ii. Enter user name.
- iii. Enter password.
- iv. Press “OK” button.

Exceptional Path:

- i. Network connection failed.
- ii. Login failed.

3.3.9 Use Case: Add bus details.

Precondition: Login.

Actor: Admin.

Primary Path:

- i. Enter bus name.
- ii. Enter stoppages.
- iii. Press “Save” button.

Exceptional Path:

- i. Network connection failed.

3.3.10 Use Case: Delete bus details.

Precondition: Login.

Actor: Admin.

Primary Path:

- i. Select a bus.
- ii. Press “OK” button.

Exceptional Path:

- i. Network connection failed.

3.4 Flow Chart of This Project

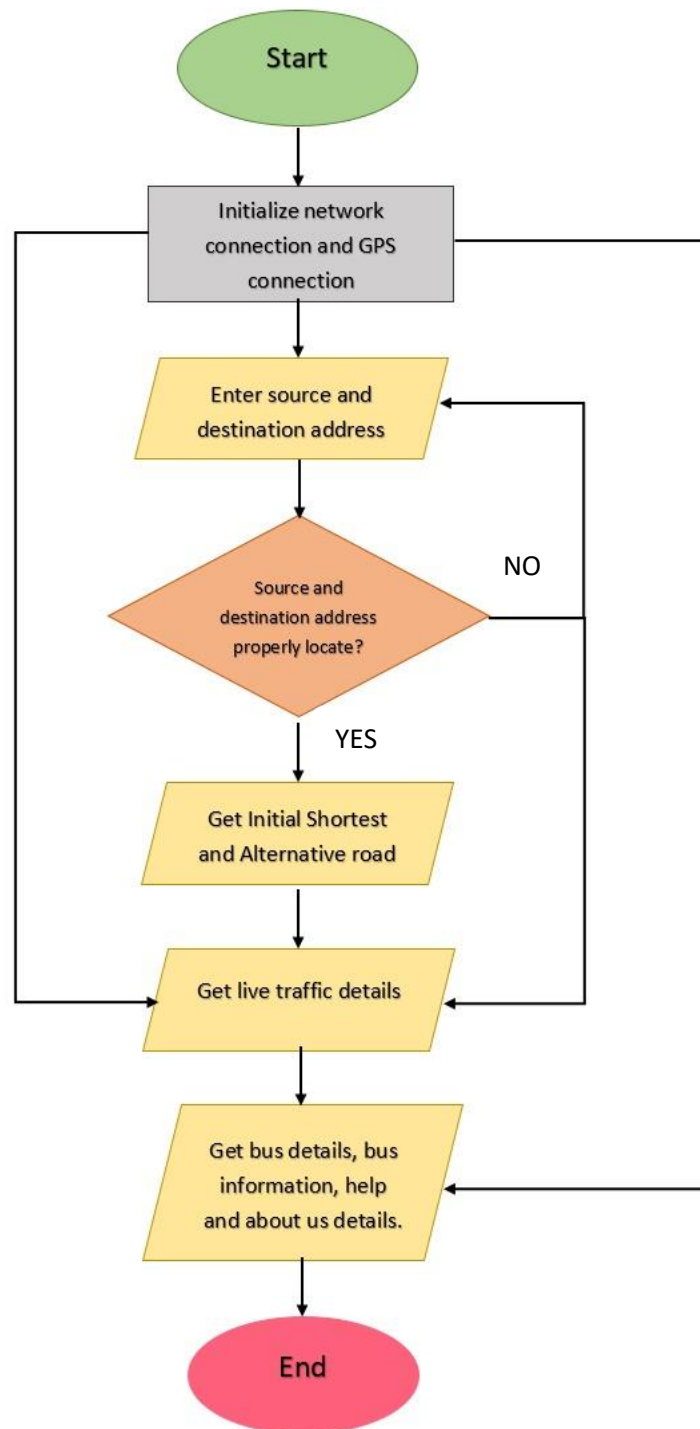


Figure 3.3: Flow Chat of this project

3.5 Design Requirements

Requirements are those things which is necessary for developing a project. There are always some requirements to develop a project. Design requirements are also very important because it defines how we design our application's user interface [5]. It helps us to design user interface and make a project very user friendly. To give a nice look, every project need some requirement. We also have some requirements, they are mentioned below:

- A nice search bar to search something.
- A text box to view some text.
- Button to interact with application.
- Radio button to select something.
- Navigation drawer to organize everything nicely.
- Some images and icons to make the application wonderful etc.

Those are the important design requirements for our android application. They actually help us to give a wonderful look to our project and make this project more user friendly.

CHAPTER 4

Design Specification

4.1 Front-end Design

Front-end design is nothing but a set of codes that make a nice user interface of an application. In other words we can say that, the codes which helps to make a wonderful user interface is actually Front-end design. Without front end designing no one can design user interface and without those things a user cannot interact with an application. So front-end design is important to give a nice look to an application [6] [7].

For example in this project, we also use here front end design to design our user interface. We use lots of images in our project. To view an image, we have to make an Image View (ImageView). Then we can set an image there and user can see this image in our project. Front-end design helps us to make this Image View. Front-end design also enable us to define the size of this image, its shape, pixels, border everything. Using xml code we can apply this front-end design in our project. Then it makes our application looking great.

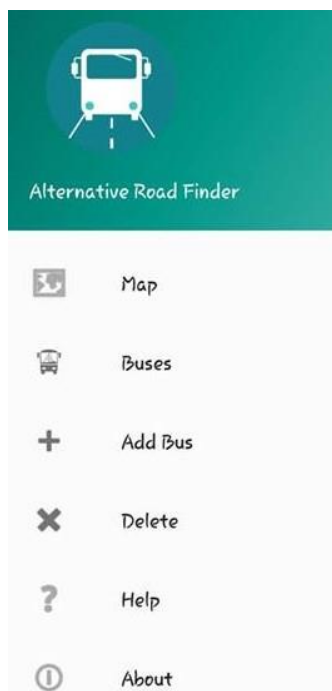


Figure 4.4: Example of front-end design

4.2 Back-end Design

Back-end design is also some set of codes that make a connection between a user and a project or application. When we click on a button it do something for us that we expect from this application. How this task performed? This is the back-end design. Using some java code we give the instruction do this task. Back-end designing is also very important like front-end designing. Without one of this rest of others are useless. For example in our project, we use a button that help to show the bus details. But how it show this bus details or how this works? This was actually done by the java code that we write in our project as Back-end design. So we can say that, some code that helps to perform a task in an application is actually back-end designing.

For the shortest path we use here the Dijkstra algorithm. Dijkstra is an algorithm that is use for finding the shortest path between nodes. Mainly it is used in road networks. So here we use it for the initial shortest path. When we get data for source to destination address from google by the API then the data is used in Dijkstra algorithm for shortest path measuring from their distance value. From this distance value the application provide the alternative path which distance value is high than the shortest path. In this application we use retrofit. That is mainly used to retrieve and upload JSON data by the REST based web service. For example it is used in get bus details information.

4.3 Interaction Design and UX

Interaction design and User Experience (UX) are something similar but actually they are not same thing.

Interaction design is actually the discipline which check the interaction between an application and user. On other words we can say that, how a user interact with an application is decided by the interaction design [8].

On the other hand User Experience (UX) means the overall experience between a user and an application.it is not only think about the interaction element but also the overall look, feel or machinate to deliver expected output [8].

4.4 Implementation Requirements

Implementation requirement is one kind of requirement which is necessary to implement a project or an application. Without those requirement, implementation of a project is impossible. So this is also really very important for a project.

Every project had some implementation requirements. We have also some requirements of our project. Our implementation requirements are:

- Android studio: This is a tools to implement an android application.
- Virtual device: This is a tool that help to run an android application in a computer while it is developing.
- Real device: This is an alternative of Virtual device. Virtual device needs lots of time, sometimes it is really boring to work with virtual device. So real device is used to run a developing application faster than virtual device on a real phone.
- API: In our project we use some Application Programming Interface (API) to implement the google map in our project. Without those API, the implementation of map was impossible. By the API we get data from google for our specific purpose.

Those was the important implementation requirements for our project. They really helps us to successfully implement our project.

CHAPTER 5

Implementation and Testing

5.1 Implementation of Database

Database is actually a set of organized data, from where we can do some operation such as store data, delete data also we can use this data in many purpose [10]. In this project we use firebase database to store and get data for specific purpose. And by the help of API we collect real-time data from google firebase for our specific operation.

Firebase is a mobile stage or platform that is provide from google that help to build high quality mobile application rapidly. It has many services that help to build an application [11].

Firebase is real time database from google. It is a part of google cloud platform. By this google provide real time data to specific application which is based on google cloud platform. It is also a cloud hosted database. By this data can be stored and get in real time for every user [12]. By the help of these we get JSON data for the specific work and also store data in firebase. If any data become update or insert by admin in database then all user will get the update or new data instantly [13].

How this database work with google cloud is given below:

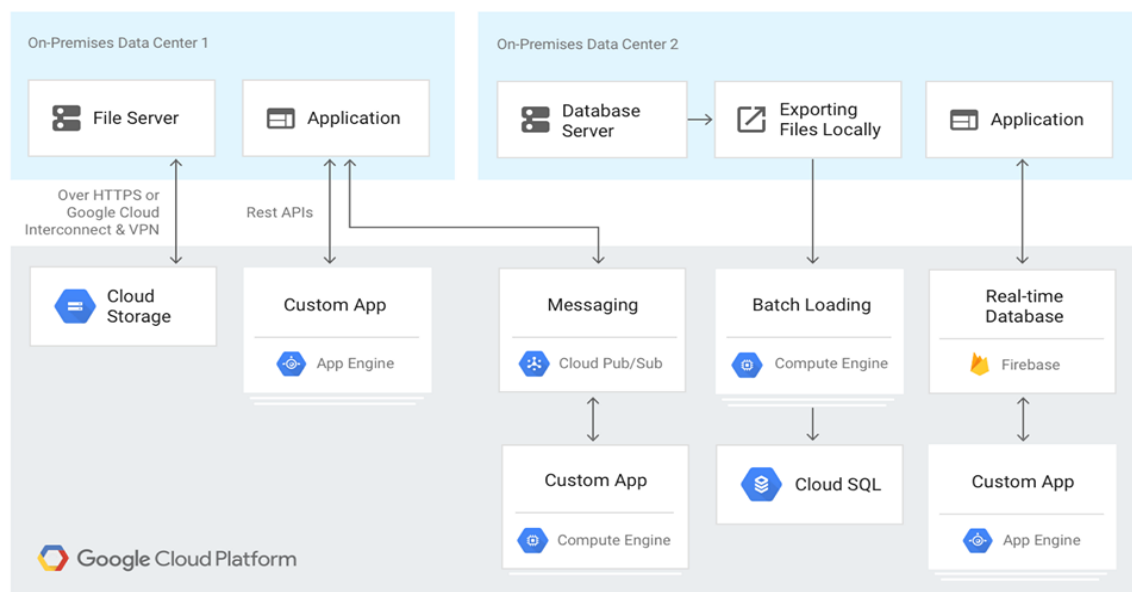


Figure 5.5: Firebase database work with Google Cloud

In our application by the help of firebase we get real time data quickly. For example when we search source and destination address it helps to get real time data and then use it for finding shortest path as well as alternative path. It is also use to get data for traffic details. In firebase database we also store our bus details data and retrieve it when we want.

5.2 Implementation of Front-end Design



Figure 5.6: First look of the application

The Figure 5.6 is the main page when our application is opened. Here we can see that the source and destination address search bars. Above the search bar we see our application name. Left side of the application name the navigation drawer is situated. Right side of the search bar the current location icon is situated. At the bottom of this page there are three buttons. First next, second other paths and third is the traffic button. And whole page contain the custom map.

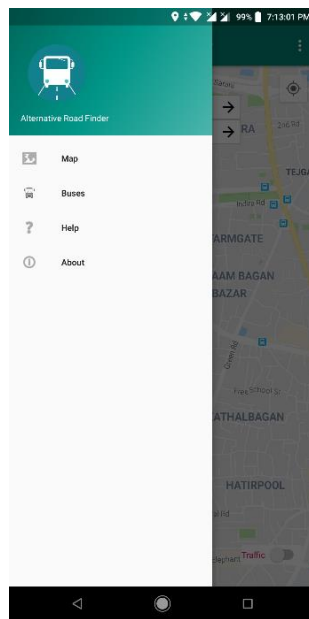


Figure 5.7: Navigation drawer

The Figure 5.7 is contain the navigation drawer contents. Like map option, buses option, help option and about option. And above of this option the application name with icon is situated.

5.3 Implementation of Interactions

5.3.1 For user:



Figure 5.8: Search source location

Here in this Figure 5.8, we can see that when user search the source address is source address search bar, it will show the source address in the map. And the location is point with red color icon.



Figure 5.9: Search destination location

In Figure 5.9, when user search the destination address in the destination address search bar, it will show the destination address in the map. And the location is point with green color icon.

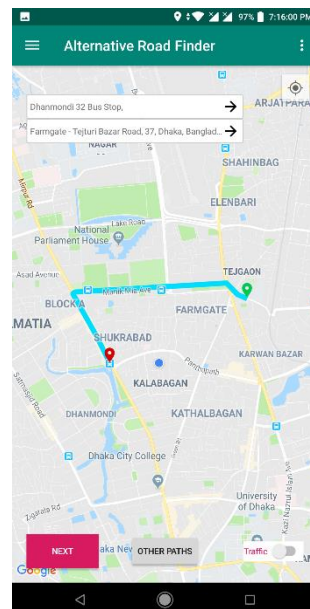


Figure 5.10: Show the shortest path

In Figure 5.10, we can see that when user click the Next button after enter the source and destination address the application provide the best shortest path between the source and destination location using Dijkstra algorithm. The color of the shortest path is sky.



Figure 5.11: Show the alternative path

In Figure 5.11, we can see that when user click the other paths button then the application shows the alternative path between the source and destination address. The color of alternative path is red.



Figure 5.12: Traffic details

In Figure 5.12, we can see that when user click the traffic button then the application provide the real time traffic details by the map. For the shortest path and the alternative path the traffic details also show.



Figure 5.13: Map page again

In Figure 5.13, from the navigation drawer when user click the map option the application open the main page.

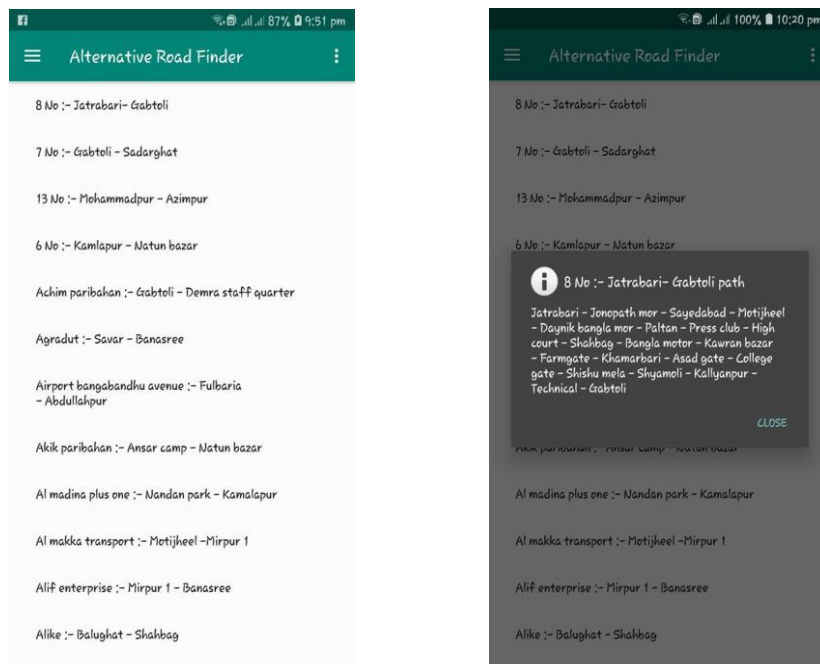


Figure 5.14: Bus details

In Figure 5.14, we can see that when user click the buses option from navigation drawer it show the bus details along with the stoppages when a user select a bus.

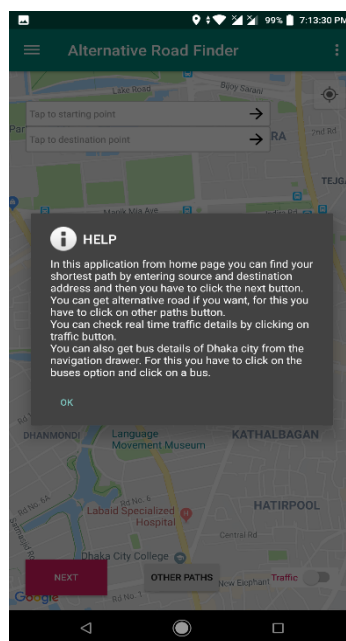


Figure 5.15: Help page

In Figure 5.15, we can see that when user click the help option from navigation drawer it show what does application do and how to do it.

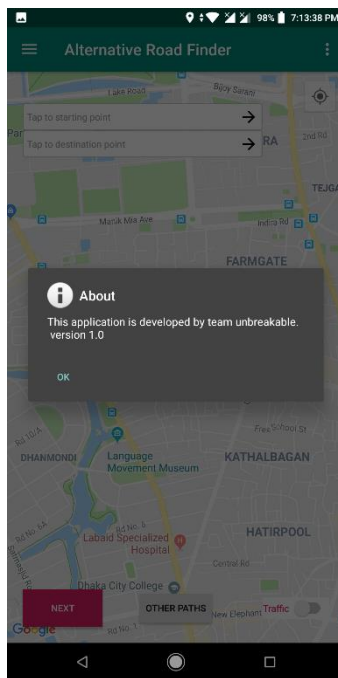


Figure 5.16: About page

In Figure 5.16, we can see that when user click the about option from navigation drawer it shows application info.

5.3.2 For admin:

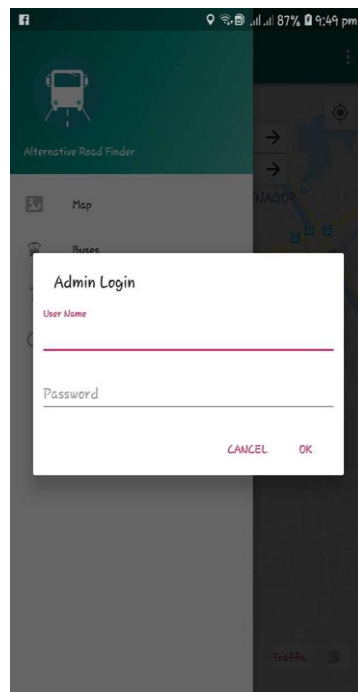


Figure 5.17: Admin login

In Figure 5.17, by clicking the app icon 5 times, an admin can get access to this log in page. Admin can login through this page.

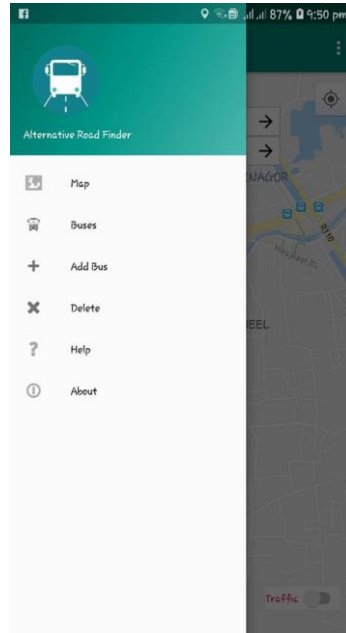


Figure 5.18: Navigation drawer for admin

In Figure 5.18, we can see that a new navigation drawer. This is different from previous one. There are two new options for add and delete bus. This two option only an admin can use.

Alternative Road Finder

Bus Name

Bus Route

Arrival Time

SAVE

Figure 5.19: Add bus

In Figure 5.19, enter the correct information of a bus, an admin can add a bus details from this page. By clicking save button, bus details will be saved in the database.

Alternative Road Finder

8 No :- Jatrabari- Gabteli	
7 No :- Gabteli - Sadarghat	
13 No :- Mohammadpur - Azimpur	
6 No :- Kamlapur - Natun bazar	
Achim paribahan :- Gabteli - Demra staff quarter	
Agradut :- Savar - Banasree	
Airport bangabandhu avenue :- Fulbaria - Abdullakpur	
Akik paribahan :- Ansar camp - Natun bazar	
Al madina plus one :- Nandan park - Kamalapur	
Al makka transport :- Motijheel - Mirpur 1	

Figure 5.20: Delete bus

In Figure 5.20, by clicking the icon that placed in the right side of a bus name, an admin can delete a bus details from this page.

An admin also can do everything that a user can do like check bus details or finding a place and alternative roads.

5.4 Testing Implementation

If any user want to go 'Farmgate' to 'Square hospital' for his any purpose, he can easily use our application and go to his destination easily.

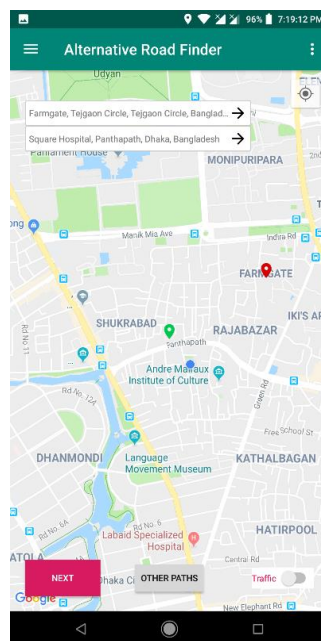


Figure 5.21: Initialize the position

When user enter his 'Farmgate' as source address and 'Square hospital' as destination address the application provide the source address with red icon and destination address with green icon. Which is shown in Figure 5.21.

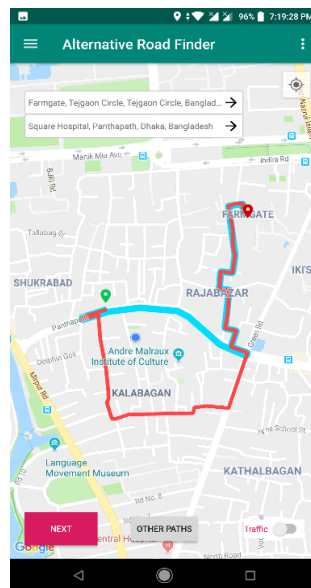


Figure 5.22: Initialize the path

For the shortest path and alternative path user click the next and other paths button one after one .Then the application show the shortest path with sky color and alternative with red color. Which is shown in Figure 5.22.

If now user need to decide which path he take based on traffic details then user need to click the traffic button.

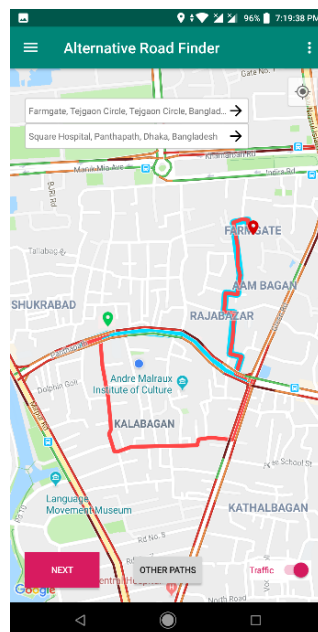


Figure 5.23: Traffic on the road

In Figure 5.23, by clicking the traffic button he get the real time traffic details. Based on this details he take his decision which path he will take.

5.5 Test Result and Reports

Test is actually a process to check a project or a system that how it works. It can be done in many ways. Writing those results in a table is known as test case table [9].

Here in this above scenario user gets the actual details what user wants. By this application based on the traffic details user can easily reach his destination. It provides proper details when the network connection and GPS connection is properly established.

Test case results of this project are given below:

Table 1: Test case table for set position

Test case	Test input	Expected outcome	Actual outcome	Result	Tested on
1	i. Valid source ii. Invalid/Blank destination	Destination could not found	Destination is not there	Passed	09-11-18
2	i. Valid source ii. Valid destination	Positioning successful	Both positions are there	Passed	09-11-18
3	i. Invalid/Blank source ii. Valid destination	Source could not found	Source is not there	Passed	09-11-18
4	i. Invalid/Blank source ii. Invalid/Blank destination	Source and Destination could not found	Source and Destination are not there	Passed	09-11-18

Table 2: Test case table for finding initial shortest path

Test case	Test input	Expected outcome	Actual outcome	Result	Tested on
1	i. Valid source ii. Invalid/ Blank destination iii. Click on NEXT	Path could not found	No path referred	Passed	09-11-18
2	i. Valid source ii. Valid destination iii. Click on NEXT	Shortest path found	Shortest path referred	Passed	09-11-18
3	i. Invalid/ Blank source ii. Valid destination iii. Click on NEXT	Path could not found	No path referred	Passed	09-11-18
4	i. Invalid/ Blank source ii. Invalid/ Blank destination iii. Click on NEXT	Path could not found	No path referred	Passed	09-11-18

Table 3: Test case table for finding alternative roads

Test case	Test input	Expected outcome	Actual outcome	Result	Tested on
1	i. Valid source ii. Invalid/ Blank destination iii. Click on OTHER PATHS	Path could not found	No path referred	Passed	09-11-18
2	i. Valid source ii. Valid destination iii. Click on OTHER PATHS	Alternative road found	Alternative road referred	Passed	09-11-18
3	i. Invalid/ Blank source ii. Valid destination iii. Click on OTHER PATHS	Path could not found	No path referred	Passed	09-11-18
4	i. Invalid/ Blank source ii. Invalid/ Blank destination iii. Click on OTHER PATHS	Path could not found	No path referred	Passed	09-11-18

Table 4: Test case table for traffic details

Test case	Test input	Expected outcome	Actual outcome	Result	Tested on
1	i. Turn on TRAFFIC ii. Weak network	No traffic details	No traffic details display	Passed	09-11-18
2	i. Turn on TRAFFIC ii. Strong network	Show traffic details	Traffic details display	Passed	09-11-18
3	i. Turn off TRAFFIC ii. Strong network	No traffic details	No traffic details display	Passed	09-11-18
4	i. Turn off TRAFFIC ii. Weak network	No traffic details	No traffic details display	Passed	09-11-18

Table 5: Test case table for admin login

Test case	Test input	Expected outcome	Actual outcome	Result	Tested on
1	i. Valid user name ii. Invalid/Blank password	Login failed	Login failed	Passed	04-12-18
2	i. Valid user name ii. Valid password	Login successful	Login successful	Passed	04-12-18
3	i. Invalid/Blank user name ii. Valid password	Login failed	Login failed	Passed	04-12-18
4	i. Invalid/Blank user name ii. Invalid/Blank password	Login failed	Login failed	Passed	04-12-18

Table 6: Test case table for add bus

Test case	Test input	Expected outcome	Actual outcome	Result	Tested on
1	i. Bus name ii. Blank stoppage	Something wrong	Bus not added	Passed	04-12-18
2	i. Bus name ii. Stoppage	Bus successfully added	Successfully added	Passed	04-12-18
3	i. Blank bus name ii. Stoppage	Something wrong	Bus not added	Passed	04-12-18
4	i. Blank bus name ii. Blank stoppage	Something wrong	Bus not added	Passed	04-12-18

Table 7: Test case table for delete bus

Test case	Test input	Expected outcome	Actual outcome	Result	Tested on
1	iii. Click on delete icon iv. Weak network	Something wrong	Bus not deleted	Passed	04-12-18
2	iii. Click on delete icon iv. Strong network	Bus successfully deleted	Successfully deleted	Passed	04-12-18

CHAPTER 6

Conclusion and Future Scope

6.1 Discussion and Conclusion

This application “Alternative Road Finder” has been successfully implemented. After testing this application, all features and functionalities are work perfectly as we expected. The workflow and user interface is user friendly and efficient enough to work with this application.

When we develop this application we do it carefully because many user need this application in their day to day life. All the features of this application are included to make it helpful for a user when they travel. This system also helps a user to take a right decision on their travelling. This project is meant for describing all the features and procedures that were followed while developing this application. This document specially mentions the details of the project that how it was developed, the primary requirement, as well as how this application actually works.

6.2 Limitations of this project

Some limitations of our project are given below:

- This project is only developed in android platform. That means it is only for the android device. It will not work in another devices except android device.
- This project does not support multi language. This project is developed in English language. So it support only English language. For support multi language we have to do further work. For now it supports only English language.
- This project need strong internet connection to run. Without strong network it cannot get connection with google cloud. So strong network connection is mandatory for this application.

6.3 Scope for Further Developments

We have a lots of plan with this project. Our further plans are mentioned below:

- We have plan to provide more details information.
- Add navigation to get the live direction.
- Add a voice speaker which say the direction to the user when he is busy to drive.
- Add a bus ticked booking system with thus project to make it more easy to book a ticket using only this application.
- Make this application more user-friendly for all age user.
- Work with big area included the other divisions of our country.
- Add “Bengali” language as well as English language for well understanding to all.
- We want to develop this application in another platforms too.

APPENDIX

Part A:

Project Reflection

From fall 2017 semester we would have begun our journey to create an application where a user can get help for their safe journey and they can avoid the traffic jam by using alternative road. They can also see the live traffic jam as a result traffic jam cannot suffer a user. We achieved our goal finally in fall 18 semester and we will try to continuously upgrading our project.

Bus data that we used are given below:

All bus details data

- **13 No :-Mohammdpur- Azimpur.**
Mahammadpur bus stand, Shankar, Star kabab, Dhanmondi 15, Jigatola, City college, New market, Nilkhet, Azimpur.
- **6 No :-Kamlapur- Natun bazar.**
Kamlapur, Motijheel, Gulistan, GPO, Paltan, Kakrail, Shantinagar, Malibagh mor, Mouchak, Moghbazar, Bangla motor, Kawran bazar, Farmgate, Jhangir gate, mohakhali, Wireless gate, Gulshan 1, Gulshan 2, Natun bazar.
- **7 No :-Gabtoli- Sadarghat.**
Gabtoli, Technical, Kallyanpur, Shyamoli, Shishu mela, College gate, Asad gate, Dhanmondi 27, Dahnmondi 32, Kalabagan, Science lab, Katabon, Shahbag, High court, Press club, Paltan, GPO, Golap shah mazar, Gulistan, Naya bazar, Ray shaheb bazar, Sadarghat.
- **8 No :-jatrabari- Gabtoli.**
Jatrabari, Jonopath mor, Sayedabad, Motijheel, Daynik bangla mor, Paltan, Press club, High court, Shahbag, Bangla motor, Kawran bazar, Farmgate, Khamarbari, Asad gate, College gate, Shishu mela, Shyamoli, Kallyanpur, Technical, Gabtoli.
- **Achim paribahan :-Gabtoli- Demra staff quarter.**
Gabtoli, Technical, Ansar camp, Mirpur 1, Sony hall, Mirpur 2, Mirpur 10, Mirpur 11, Purobi, Kalashi, ECB square, MES, Shewra, Kuril bishaw road, Bashudhara, Nadda, Natun bazar, Bashtola, Shahjadpur, Uttar badda bazar, Badda, Madhya badda, Merul, Rampura bridge, Banasree, Demra staff quarter.
- **Agradut :-Savar- Banasree.**
Savar, Hemayetpur, Gabtoli, Technical, Kallyanpur, Shyamoli, Shishu mela, Agargoan, Ziya uddan, Bijoy sarani, Jahangir gate, Mohakhali, Wireless more, Ghulshan Bridge, Ghulshan 1, Badda, Rampura bridge, Banasree.
- **Airport bangabandhu avenue :-Fulbaria- Abdullahpur.**
Fulbaria, Golap shah mazar, GPO, Paltan, Press club, High court, Motsho bhaban, Shahbag, Bangla motor, Kawran bazar, Farmgate, Jahangir gate, Mohakhali, Chairman bari, Shainik club, Banani, Kakoli, Staff road, MES, Shewra, Kuril bishaw road, Khilkhet, Airport, Jasimuddin, Rajlakshmi, Azampur, House building, Abdullahpur,
- **Akik paribahan :-Ansar camp- Natun bazar.**
Ansar camp, Mirpur 1, Sony hall, Mirpur 2, Mirpur 10, Mirpur 11, Purobi, Kalashi, ECB square, MES, Shewra, Kuril bishaw road, Bashundhara, Nadda, Natun bazar.

- **Al madina plus one :-Nandan park- Kamalapur.**
Nandan park, Zirani bazar, Baipayl, Nabinagar, Savar, hemayetpur, Aminbazar, Gabtoli, Technical, , Kallyanpur, Shyamoli, Shishu mela, College gate, Asad gate, Khamarbari, Farmgate, Kawran bazar, Bangla motor, Shahbag, High court, Press club, Paltan, GPO, Gulistan, Motijheel, Kamalapur.
- **Al makka transport :-Motijheel-Mirpur 1.**
Motijheel, Gulistan, GPO, Paltan, Kakrail, Malibagh, Mouchak, Moghbazar, Nabisco, Mohakhali, Chairman bari, Kakoli, Banani, Ecb square, Kalshi, Purobi, Mirpur 10, Mirpur 2, Mirpur 1.
- **Alif enterprise :-Mirpur 1- Banasree.**
Mirpur 1, Mirpur 2, Mirpur 10, Kazipara, Shewrapara, Agargaon, Bijoy sarani, Jahangir gate, Mohakhali, Wireless mor, Gulshan bridge, Ghulshan 1, Badda, Rampura bridge, Banasree.
- **Alif enterprise 2 :-Shia masjid- Banasree.**
Shia masjid, japan garden city, Ring road, Adabor, Shyamoli, Shishu mela, Agargaon, Zia uddan, Bijoy sarani, Old airport, Jahangir gate, Mohakhali, Wireless mor, Ghulshan 1, Link road, Badda, Madhya badda, Merul, Rampura bridge, banasree.
- **Alike :-Balughat- Shahbag.**
Balughat, Manikdi bazar, ECB square, MES, Banani, Kakoli, Mohakhali, Farmgate, Bangla motor, Shahbag.
- **Anabil :-Sign Board- Gazipur chowrasta.**
Sign board, Sonir akhra, Jatrabari, Sayedabad, Mugdabad, Basabo, khilgaon, Malibagh, Rampura, Merul, Badda, Natun Bazar, Nadda, Kuril bishwa road, Khilkhet, Airport, House building, Abdullapur, Tongi, Gazipur chowrasta.
- **Ashirbad paribahan :-Mirpur duaripara- Azimpur.**
Duaripara, Pallabi, Purobi, Mirpur 11, Mirpur 10, Mirpur 2, Mirpur 1, Ansar camp, Technical, Kallyanpur, Shyamoli, Shishu mela, College gate, Asad gate, Dhanmondi 27, Dhanmondi 32, Kalabagan, City college, New market, Nilkhet, Azimpur.
- **Asmani paribahan :- Dhour- Mahanpur.**
Dhour, Abdhullapur, House building, Azampur, Rajlakshmi, Jasimuddin, Airport, Khilkhet, Kuril bishwa road, Jamuna future park, Nadda, Natun bazar, Shahjampur, Uttar badda bazar, Badda, Madhya badda, Merul, Rampura, Banasree, Demra staff quarter, Tarabo, Madanpur.
- **Ayat :- Chiriakhana- Kamalapur.**
Chiriakhana, Sony hall, Mirpur 2, Mirpur 10, Kazipara, Shewrapara, Taltola, Agargaon, Khamarbari, Farmgate, Kawran bazar, Bangla motor, Moghbazar, Mouchak, Malibagh mor, Rajarbagh, kamalapur.

- **Azmery glory :- Sadarghat- Chandra.**
Sadarghat, Ray shaheb bazar, Naya bazar, Golap shah mazar, GPO, Paltan, Kakrail, Shantinagar, Malibagh mor, Mouchak, Moghbazar, Nabisco, Mohakhali, Chairman bari, Shainik Club, Banani, Kakoli, Staff road, MES, Shewra, Kuril bishaw road, Khilket, Airport, Jasimuddin, Rajlakshmi, Azampur, House building, Abdullahpur, Tongi, Station road, Mill gate, Board bazar, Gazipur bypass, Konabari, Chandra.
- **BRTC :- Madanpur- Savar.**
Madanpur, Kachpur, Chittagong road, Sign board, Shonir akhra, Jatra bari, Sayedabad, Gulistan, GPO, Paltan Press club, High court, Shahbag, Bangla motor, Kawran bazar, Farmgate, Khamarbari, Asad gate, Shyamoli, Kallyanpur, Technical, Gabtoli, Savar.
- **BRTC 2 :- Motijheel- Tongi.**
Motijheel, Gulistan, GPO, Paltan, Press club, High court, Shahbag, Bangla motor, Kawran bazar, Farmgate, Khamarbari, Jahangir gate, Mohakhali, Chairman bari, Kakoli, Banani, Staff road, Shewra, Kuril bishaw road, Khilket, Airport, House building, Abdullahpur, Tongi.
- **BRTC 3 :- Motijheel- Chandra.**
Motijheel, Gulistan, GPO, Paltan, Press club, High court, Shahbag, Bangla motor, Kawran bazar, Farmgate, Khamarbari, Asad gate, College gate, Shishu mela, Shyamoli, Kallyanpur, Technical, Gabtoli, Aminbazar, Hemayetpur, Baipayl, Zirani Bazar, Chandra.
- **BRTC 4 :- Mohammadpur- Kuril Bishaw road.**
Mohammadpur, Wireless gate, Ghulshan 1, Badda, Shahjampur, Natun bazar, Nadda, Bashundhara, Jamuna future park, Kuril bishaw road.
- **BRTC 5 :- Kamalapur- Kuril bishaw road.**
Kamalapur, Motijheel, Gulistan, GPO, Press club, Shahbag, Bangla motor, Kawran bazar, Farmgate, Jahangir gate, Mohakhali, Wireless, Ghulshan 1, Badda, Shahjampur, Natun bazar, Bashundhara, Jamuna future park, Kuril bishaw road.
- **Bahon :-Mirpur 14- Khilgaon.**
Mirpur 14, Mirpur 10, Mirpur 2, Mirpur 1, Ansar camp, Bangla college, Technical, Darussalam, Kallyanpur, Shyamoli, Shishu mela, College gate, Asad gate, Dhanmondi 27, Dhanmondi 32, Kalabagan, Science lab, High court, Press club, Paltan, Daynik Bagla mor, Motijheel, Arambagh, Kamalapur, Mugdapara, Basabo, Khilgaon.
- **Balaka paribahan :-Sayedabad- Abdullahpur.**
Sayedabad, Ittefaq, Motijheel, Kamalapur, Malibagh, Mouchak, Moghbazar, Satrasta, Nabisco, Mohakhali, Chairman bari, Bonani, Kakoli, Shewra, Kuril bishaw road, Khilket, Airport, Jasimuddin, Rajlakshmi, Azampur, House building, Abdullahpur.

- **Best transport :- Mirpur 10- Jatrabari.**
Mirpur 10, Kazipara, Shewrapara, Taltola, Agargaon, Khamarbari, Farmgate, Kawran bazar, Bangla motor, Shahbag, Mostso bhaban, High court, Press club, Paltan, Daynik bangla mor, Motijheel, Ittefaq, Sayedabad, Jatrabari.
- **Bihanga paribahan :- Mirpur duaripara- Sadarghat.**
Duaripara, Pallabi, Purobi, Mirpur 11, Mirpur 10, Kazipara, Shewrapara, Taltola, Agargaon, Khamarbari, Farmgate, Kawran bazar, Bangla motor, Shahbag, Mostso bhaban, High court, Press club, Paltan, GPO, Golap shah mazar, Naya bazar, Ray shaheb bazar, Sadarghat.
- **Bikalpa auto service :- Mirpur 12- Motijheel.**
Mirpur 12, Pallabi, Purobi, Mirpur 11, Mirpur 10, Kazipara, Shewrapara, Taltola, Agargaon, Bijoy sarani, Farmgate, Kawran bazar, Bangla motor, Shahbag, Mostso bhaban, High court, Press club, Paltan, Gulistan, Motijheel.
- **Bikalpa city super service :- Mirpur 12- Dhakeshwari.**
Mirpur 12, Pallabi, Purobi, Mirpur 11, Mirpur 10, Kazipara, Shewrapara, Taltola, Agargaon, Dhanmondi 27, Dhanmondi 32, Kalabagan, City college, New market, Nilkhet, Azimpur, Dhakeshwari.
- **Bikash Paribahan :- Azimpur- Dhour.**
Azimpur, Nilkhet, New market, City college, Kalabagan, Dhanmondi 32, Dhanmondi 27, Khamarbari, Farmgate, Jahangir gate, Mohakhali, Chairman bari, Shainik club, Banani, kakoli, Staff road, MES, Shewra, Kuril bishaw road, Khilkhet, Airport, Jashimuddin, Rajlakshmi, Azampur, House building, Abdullahpur, Kamarpara, Dhour.
- **Bornomala paribahan :- Azimpur- Banasree.**
Azimpur, Nilkhet, New market, City college, Kalabagan, Panthapath, Kawran bazar, Farmgate, Bijoy saroni, Mohakhali, Wireless gate, Ghulshan 1, Badda, Madhya badda, Merul, Rampura, Banasree.
- **Cantonment mini service :- Mirpur 14- Kakoli.**
Mirpur 14, Kochukhet, Mirpur cantonment, Shainik club, Kakoli.
- **Champion :- Vashantek- Gabtoli.**
Vashantek, Mirpur 14, Mirpur 10, Mirpur 2, Sony hall, Mirpur 1, Ansar camp, Technical, Gabtoli.
- **D link :- Gulistan- Dhamrai.**
Fulbaria, Chankar pul, Bakshi bazar, Azimpur, Nilkhet, New market, City college, kalabagan, Dhanmondi 32, Dhanmondi 27, Asad gate, College gate, Shishu mela, Shyamoli, Kallyanpur, Technical, Gabtoli, Aminbazar, Hemayetpur, Savar, Dhamrai.

- **Dhaka paribahan :- Motijheel- Shibbari.**
Motijheel, Gulistan, GPO, Paltan, Press club, High court, Shahbag, Kawran bazar, Framgate, Jahangir gate, Mohakhali, Chairman bari, banana, Kakoli, MES, Shewra, Kuril bishaw road, Khilkhet, Airport, House building, Abdullahpur, Tongi, Board bazar, Gazipur chowrasta, Shibbari.
- **Dipon :- Arambagh- Tajmahal road.**
Tajmahal road, Salimullah road, Jakir Hossain road, Shankar, Star kabab, Dhanmondi 15, Jigatola, City college, Science lab, Bata signal, Shahbag, Motso Bhaban, High court, Press club, Paltan, Baitul mukarram, Gulistan, Motijheel, Arambagh.
- **Dishari paribahan :- Chiriakhana- Keraniganj.**
Chiriakhana, Mirpur 1, Techniacal, Shyamoli, College gate, Farmgate, Bangla motor, Motsho bhaban, Paltan, GPO, Naya bazar, Keraniganj.
- **Doyel Paribahan :- Gabtoli- Abdullahpur.**
Gabtoli, Technical, Mirpur 1, Mirpur 2, Mirpur 10, Mirpur 11, Purobi, Kalshi, ECB square, MES, Shewra, Khilkhet, Airport, Jasimuddin, House building, Abdullahpur.
- **Everest paribahan :- Keraniganj – Chiriakhana.**
Keraniganj, kodomtoli, Babu bazar, Naya bazar, Golap shah mazar, GPO, Paltan, Press Club, High court, Bangla motor, Farmgate, Asad gate, Shyamoli, Kollyanpur, Technical, Mirpur 1, Chiriakhana.
- **FTCL :- Mohammadpur- Arambagh.**
Mohammadpur, Shankar, Star kabab, Dhanmondi 15, Jigatola, Science lab, Shahbag, Press club, Paltan, GPO, Gulistan, Motijheel, Arambagh.
- **Gazipur paribahan :- Gulistan- Gazipur.**
Fulbaria, GPO, Paltan, Kakrail, Shantinagar, Mouchak, Moghbazar, Nabiscoo, Chairman bari, Kakoli Staff road, MES, Shewra, Airport, Rajlakshmi, Abdullahpur, Tongi, Mill gate, Board bazar, Gazipur.
- **Grameen shubecha :- Fulbaria- Chandra.**
Fulbaria, Chankar pul, Azimpur, Nilkhet, City college, Kalabagan, Dhanmondi 32, Dhanmondi 27, College gate, Shyamoli, Kallyanpur, Technical, Gabtoli, Aminbazar, Savar, Zirani bazar, Nandan park, Chandra.
- **Himachol paribahan :- Mirpur 1- Khilgaon.**
Mirpur 1, Mirpur 2, Mirpur 10, Kazipara, Shewrapara, Bijoy sarani, Mohakhali, Wireless mor, Ghulshan 1, Rampura, Malibagh, Khilgaon.
- **Itihas paribahan :- Savar- Postagola.**
Savar, Hamayetpur, Aminbazar, Gabtoli, Technical, Kallyanpur, Shayamoli, College gate, Asad gate, College gate, Farmgate, Bangla motor, Shahbag, Kakrail, paltan, Gulistan, Doygonj road, Postagola.

- **Itihas paribahan 2 :- Mirpur 14- Zirani bazar.**
Mirpur 14 , Mirpur 10, Mirpur 2, Sony hall, Mirpur 1, Ansar camp, Technical, Gabtoli, Aminbazar, Savar, Nobinagar, Zirani bazar.
- **Jabale nur paribahan :- Ansar camp- Natun bazar.**
Ansar camp, Mirpur 1, Sony hall, Mirpur 2 , Mirpur 10, Mirpur 11, Purobi, Kalshi, ECB square, MES, Shewra, Bashundhara, Nadda, Natun bazar.
- **Khajababa paribahan :- Mirpur 12- Jatrabari.**
Mirpur 12, Pallabi, Purobi, Mirpur 11, Mirpur 10, kazipara, Shewrapara, taltola, Agargaon, Farmgate, Kawran bazar, Bangla motor, Shahbag, High court, Press club, Paltan, GPO, Gulistan, Sayedabad, jatrabari.
- **Labbaik :- Savar- Signboard.**
Savar, Hamayetpur, Aminbazar, Gabtoli, Technical, Kallyanpur, Shayamoli, College gate, Asad gate, College gate, Farmgate, Bangla motor, Malibagh mor, Basabo, Golapbag, Jatrabari, Kazla, Rayerbag, Matuali, Signboard.
- **MTCL 2 :-Mohammadpur- Arambagh.**
Mohammadpur, Asad gate, Dhanmondi 27, dhanmondi 32, Kalabagan, Bata signal, High court, Press club, Paltan, GPO, Motijheel, Arambagh.
- **Mirpur link :- Dhakeshwari- Mirpur 12.**
Dhakeshwari, Azimpur, New market, City college, Shyamoli, Technical, Mirpur 1, Mirpur 10, Mirpur 12.
- **Moitri :- Mohammadpur- Arambagh.**
Mohammadpur, Shakar, Star kabab, Jigatola, City college, Shahbag, High court, Press club, Paltan, GPO, Motijheel, Arambagh.
- **Nisrogo :- Mirpur 14- Azimpur.**
Mirpur 14, Mirpur 10, Kazipara, Shwra, Taltola, Shishu mela, Asad gate, Mohammadpur, Shakar, Star kabab, Jigatola, City college, New market, Nilkhet, Azimpur.
- **Nur e makka paribahan :- Chiriakhana – Aftab nagar.**
Chiriakhana, Sony hall, Mirpur 2, Mirpur 11, Purobi, Kalshi, ECB square, MES, Shewra, Nadda, Natun bazar, Bastola, Shahjadpur, Badda, Merul, Rampura bridge, Aftab nagar.
- **Pallabi super service :- Gabtoli- Kamarpara.**
Gabtoli, Technical, Ansar camp, Mirpur 1, Mirpur 2, Mirpur 11, Purobi, Kalshi, ECB square, MES, Shewra, Khilkhet, Airport, Jasimuddin, House building, Abdullahpur, Kamarpara.

- **Projapoti paribahan :- Bosila- Kamarpara.**
Bosila, Mohammadpur, Asad gate, College gate, Shyamoli, Kallyanpur, Technical, Ansar camp, Mirpur 1, Mirpur 2, Mirpur 11, Purobi, Kalshi, ECB square, MES, Shewra, Khilket, Airport, Jasimuddin, House building, Abdullahpur, Kamarpara.
- **Rabrab paribahan :- Gabtoli- Banasree.**
Gabtoli, Technical, Ansar camp, Mirpur 1, Mirpur 2, Mirpur 11, Purobi, Kalshi, ECB square, MES, Banani, Kakoli, Chiarman bari, Wireless mor, Ghulshan 1, Badda, Rampura bridge, Banasree.
- **Rojonighondha :- Meghna ghat- Mohammadpur.**
Meghna ghat, Mogra para, Kachpur, Chittagonj road, Sign road, Shonir akhra, Jatrabari, Gulistan, GPO, Press club, Shahbag, Science lab, Jigatola, Dhanmondi 15, Star kabab, Shankar, Mohammadpur.
- **Safety enterprise :- Dhakeshwari- Mirpur 12.**
Dhakeshwari, Azimpur, New market, City college, New market, City college, kalabagan, Dhanmondi 32, Dhanmondi 27, Khamarbari, Agargaon, Taltola, Shewrapara, Kazipara, Mirpur 10, Mirpur 11, Purobi, Pallabi, Mirpur 12.
- **Savar paribahan :- Sadarghat – Nandan park.**
Sadarghat, Golap sham azar, GPO, Press club, High court, Shahbag, Science lab, Kalabagan, Dhanmondi 32, Dhanmondi 27, Asad gate, College gate, Shishu mela, Shyamoli, Kallyanpur, Technical, Gabtoli, Amin bazar, Savar, Zirani bazar, Nandan park.
- **Shikor paribahan :- Jatrabari- Mirpur 12.**
Jatrabari, Syedabad, Gulistan, GPO, Paltan, Press Club, High court, Shahbag, Bangla motor, Kawran bazar, Farmgate, Bijoy sarani, Agargaon, IDB, Taltola, Kazipara, Mirpur 10, Mirpur 11, Mirpur 12.
- **Sodesh paribahan :- Mirpur 12- Azimpur.**
Mirpur 12, Mirpur 10, Mirpur 2, Mirpur 1, Ansar camp, Technical, Kallyanpur, Shyamoli, College gate, Asad gate, Mohammadpur, Shankar, Star kabab, Dhanmondi 15, Jigatola, Nilket, Azimpur.
- **Tanjil paribahan :- Sadarghat- Chiriakhana.**
Sadarghat, Naya bazar, GPO, Paltan, Press club, High court, Shahbag, Bangla motor, Farmgate, Asad gate, Shishu mela, Shyamoli, Technical, Ansar camp, Mirpur 1, Chiriakhana.
- **Thikana :- Sign board- Savar.**
Sign board, Gulistan, Bakshi bazar, Azimpur, Nilket, New market, City college, Kalabagan, Dhanmondi 32, Dhanmondi 27, Asad gate, College gate, Shyamoli, Technical, Gabtoli, Aminbazar, Hemayetput, Savar.

- **Transilva :- Jatrabari- Mirpur 1.**
Jatrabari, Syedabad, Gulistan, GPO, Paltan, Press Club, High court, Shahbag, Bata signal, Science lab, Kalabagan, Dhanmondi 32, Dhanmondi 27, Asad gate, College gate, Shyamoli, Kallyanpur, Technical, Ansar camp, Mirpur 1.
- **Trust transport service :- Mirpur D.O.H.S – Gulistan.**
Mirpur D.O.H.S, Kalshi, ECB square, Adamje school, Workshop, Jahangir gate, Farmgate, Kawran bazar, Bangla motor, Shahbag, Hogh court, Press club, Paltan, Gulistan.
- **Trust transport service 2 :-Mirpur 10- Banani.**
Mirpur 10, Mirpur 13, Mirpur 14, Kochukhet, Shainik club, Banani.
- **VIP 27 :- Azimpur- Gazipur.**
Azimpur, Nilkhet, New market, City college, Kalabagan, Dhanmondi 27 , Dhanmondi 32, Farmgate, Jahangir gate, Mohakhali, Chairman bari, Shainik club, Banani, Kakoli, Staff road, MES, Shewra, Kuril bishaw road, Khilkhet, Airport, Jasimuddin, Azampur, Abdullahpur, Tongi, Statin road, Mill gate, board bazar, Gazipur.
- **Winar transport :- Azimpur- Kuril bishaw road.**
Azimpur, Nilkhet, New market, City college, Kalabagan, Panthapath, Kawran bazar, Bot tola, Nabisco, Mohakhali, Wireless gate, Ghulshan 1, Badda, Bashtola, Natun bazar, Nadda, Basundhara, Kuril bishaw road.
- **Welcome :- Motijheel- Nandan park.**
Motijheel, Gulistan, GPO, Paltan, Press club, High court, Shahbag, Bangla motor, Kawran bazar, Farmgate, Khamarbari, Asad gate, College gate, Shishu mela, Shyamoli, Kallyanpur, Technical, Gabtoli, Aminbazar, Hemayetpur, Savar, Nobinagar, Baipayl, Zirani bazar, Nandan park.

Part B:
Plagiarism

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