

ANDROID APPLICATION AMADER DHAKA

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

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APPROVAL

This Project titled “**Android Application Amader Dhaka**”, submitted by Mizanur Rahman, ID No: 161-15-7126 And Mahmudul Hasan Himel, ID No: 161-15-7140 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 and approved as to its style and contents. The presentation has been held on 7th December 2019.

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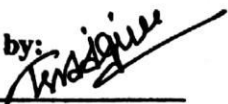
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DECLARATION

We hereby declare that, this project has been done by us under the supervision of of **Shah Md Tanvir Siddiquee, 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.

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ABSTRACT

Amader Dhaka is an android based mobile application development project. This application is especially made for that people who is new in Dhaka city. It is also made for those people who live in this city. There are many city buses running in Dhaka city. Each bus has different bus stand and different route. Someone who is new in Dhaka city it is hard for him to find the buses to go on a destination. Sometimes people suffer to get an Emergency help like nearest Hospital, Police station, Fire station, and their phone number also Ambulance phone number. So we try to develop a mobile application to remove this problem and give some more information about Dhaka city. The traditional way of finding bus to go on a destination is sometime hesitating or repellent for us. We need to call our relatives to know any information or we need to ask general people to know any information. And sometime we got information by this way sometime not. By using our mobile application it is possible to remove problem very easily. Sometime we see that people make quarrel to bus helper on the issue of bus fare. Bus helpers demand more than the exact fare or passenger give less than the exact fare. After built our mobile application we can remove this problem. It will be very user friendly to all kind of people.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

We are living in an age of science. In our country application development has increased day by day. To fulfill the dream of digital Bangladesh slowly we are heading towards this. Now-a day`s so many things are being developed for our smartphone such as online shopping to online transportation systems. For Food delivery, Hospital management, medical consultants we have different types of application. So we are looking for making an application named Amader Dhaka for those people who live inside Dhaka city and who come here for the first time from outside of Dhaka. We came up with an idea especially for those people who are new in this city and who suffer to find buses to go on a destination. By using this application user can set source and destination to search buses to go on a destination. Application will show the buses list and their fare for the route. There is some necessary information we need to know about a city. Sometime we need to know information about Educational institution, Restaurant, Mosque, Bank, Public toilet etc. We put all those information in our apps so that people can get those information easily by using this application.

1.2 Motivation

There is a reason behind everything. As a motivation many things worked together for making this mobile application. In this present world around 88% people are using android system. In our country we can see there are some mobile application is available for getting transportation help. But these applications do not give the information about buses. If someone want to travel through buses then he need to know which buses will help him to go to the destination and what are the fare of those buses. If someone knows that information then he can choose a bus by comparing fare and comfort to go to the destination. Especially when someone new in this city they have to faces some types of problem of buses like they don't know which bus travel on which route. What is the fare difference of buses. In our life we have to faces so

many problems. Sometime we need emergency help like ambulance phone number or nearest hospital and their phone numbers or nearest fire service station, police station and their number but we can't get those help quickly. So we try to remove this problem by giving all those emergency help information in a single application. It will be very helpful for all kind of people who live in this city.

1.3 Objective

- i. As a transportation system providing Bus services which are bus route, category, fare and nearest bus stand.
- ii. Ambulance phone numbers can get quickly.
- iii. Nearest Hospital location and phone numbers, Fire service station and phone numbers, Police station and phone numbers can find quickly.
- iv. Get information about Educational institution, Restaurant, Mosque, Bank, Public toilet etc.

1.4 Expected Outcome

In our mobile application we are looking for making Dhaka city as a smart city. And we are looking for help a human being by saving time and giving proper information. People who live here or who is new in this city they can be benefited by using this application. User can set source and destination and get those buses information which are using same route. Then they can choose a bus to go on a destination. So that people could not suffer in bus travelling in this city. While need an ambulance quickly, people can get ambulance phone number and call them through our mobile application. Sometime people faces problem to get emergency help through 999, so that we try to remove this problem by giving all emergency phone number in our application. When we need to know information about Educational institution, Restaurant, Mosque, Bank, Public toilet etc. we can get all those information by using an easy user interface designed mobile application. After built our application we expect that it will be useful for all kind of people. It will be also helpful for international visitors who come to know Dhaka city.

1.5 Report Layout

From this report a user can easily understand the aim of this project. This report consists of six chapters. What the need of this application, how it can be work, its model, feature, what result given this system etc. included this report.

- i. First Chapter, provides our project introduction, motivation, objective and expected outcome
- ii. Second Chapter provides background, related work, comparative studies and challenges
- iii. Third Chapter provides requirement specification of our project. That is business process model, requirement collection and analysis, dataflow diagram, unified modeling language.
- iv. Fourth Chapter provides design specification of our project. Front-end and Back-end design that we used our project
- v. Fifth Chapter, our project implementation and result will be provided
- vi. Sixth Chapter provided last conclusion and future scope of our project
- vii. At last Seventh Chapter added all references

CHAPTER 2

BACKGROUND

2.1 Introduction

There are so many mobile applications are developed day by day. In our country we are going to be digitalized in so many sectors. So developers are trying to developed mobile application by seeing previous work. We are trying to develop a mobile application by following some previous work. We try to remove the limitation of previous work. We try to remove the complexity in our application which we found in previous work. We look for upgrades the efficiency of our application. Now a day`s people are looking for less time consuming system. There are so many applications available in the market but not all applications are comfortable to use. We are concern about time consuming and make our apps comfortable to the users.

2.2 Related Works

To make this mobile application we researched about related works or project which already exists on internet. And we got something which is related to our work. One of the biggest listing sites in Rajshahi is Rajshahi Ad. Now people can find so many things of Rajshahi in this one site. By putting source and destination people can find buses by using Dhaka wheels. We are providing a literature review of “Amader Dhaka” which will describe the similarity and dissimilarity of our project with the existence.

2.3 Comparative Studies

There are many mobile application been made in our country. But we come up with an idea which will help to digitalize a city. Now we are looking for make Dhaka city as a smart city. To make “Amader Dhaka” we need some topics which are directly connected to make this application. So we do study about previous work and find something which can help to done this.

2.3.1 Rajshahi Ads

One of the biggest and finest directory portal in Rajshahi is Rajshahi Ad. By using this apps anyone can find their desire directory at ease. This mobile application helps anyone to get in touch with his expected listing information. All information they are providing is authenticated and original. But they do not provide any vehicles fare information. This is the main difference between two applications. They don not directly helped any one to go on a destination but we have a bus service section where people can search bus to go on a destination. Otherwise the complexity of two mobile applications is different. There are so many differences between the physical structures of two applications. We try to make apps more users friendly.

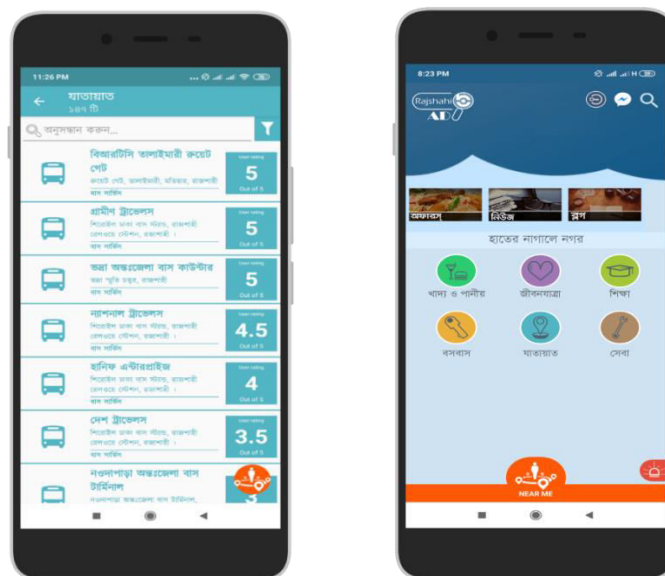


Figure: 2.3.1 Rajshahi Ad application

Here we show the Rajshahi Ads application some features so that easily can compare the difference of two applications. They done it by the help of govt. and provides so many information by working long time on their project. We also try to provide all necessary information in our apps.

2.3.2 Dhaka Wheels

In this mobile application user can search various types bus search such as searching source and destination. Dhaka wheels apps let anyone do this by simply tapping search button. But they do not provide the fare of different types of buses. User can only find the route of buses but we provide route and fare of different types of buses. In Dhaka wheels aps they do not provide all other information such as emergency help, educational information, restaurant, nearest mosque, bank, public toilet etc. but we provide in our apps. These are the similarity and dissimilarity between two apps.

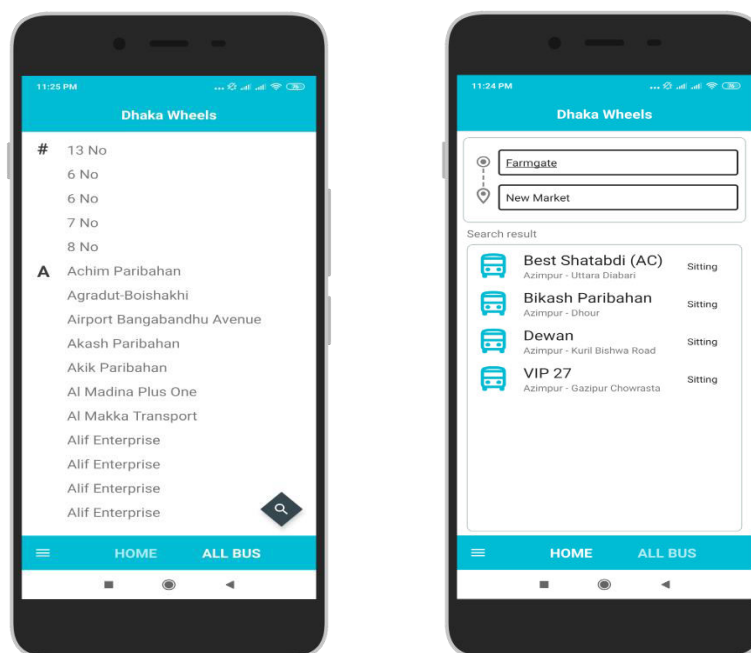


Figure: 2.3.2 Dhaka Wheels Application

In Dhaka wheels applications they provide only the bus information of Dhaka city. In the figure we can see their features are very simple. And they provide just buses route that which bus are going in a route. But we provide buses fare on the basis of distance of route. And also all the buses list that travel in a same route.

2.4 Scope of Problem

- i. Finding route of the buses. There are so many buses are running in Dhaka city and each bus has different route.
- ii. Giving exact fare of buses could be a problem. Because there are different company`s bus are running in Dhaka city.
- iii. Inserting all information correctly into database. Because our target is to help people by giving correct information

2.5 Challenges

When we start to developed this project we have faced some difficulties. To developing this mobile application is also a challenging task for us. Some of challenges we have faced so far are given below:

- i. Interactive application. Because now a day`s in android base applications one of the major concerns is interactions.
- ii. Finding fare of the buses was a big challenge for us. Different types of bus are running in Dhaka city so different fare of different buses.
- iii. Building a simple user interface. Function of the apps should be user friendly otherwise user can fade up of using our apps.
- iv. Giving all information correctly. Our application design for the peoples who need helps, so we are concerns to give all information correctly.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Model

Business process model is actually provides how the process work and it's functionality. It is the graphical representation of processes which is done by various kinds of graphical methods such as flow charts, data flow diagram etc. To understand the process of our work we provide a flow chart of our mobile application “Amader Dhaka”. In this flow chart we can understand how the systems start and how it ends by different type of task.

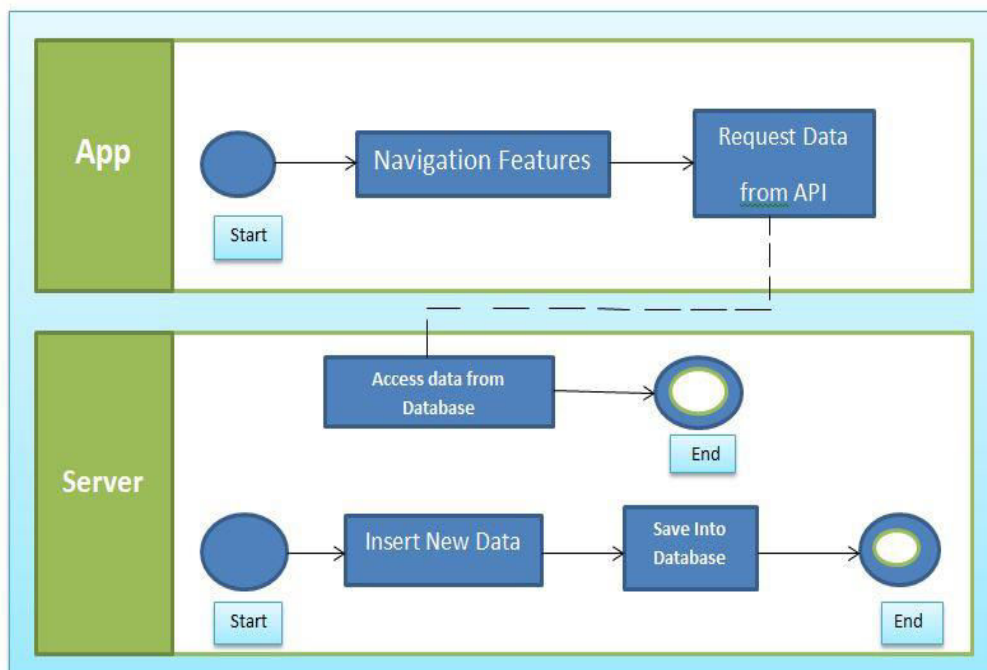


Figure: 3.1 Business Process Model (BPM) of the system.

3.2 Requirement Collection and Analysis

In development of a project requirement collection and analysis is an important phase of any project. We need to clear understanding of the system that how the system will interact to the user. We think as a user so that we can understand their needs and problem to the proposed system. We analyzed all the user requirements to our project

team. We also need some software requirements and hardware requirements which are given below in design requirements points.

3.3 Data Flow Diagram

Data flow diagram is a graphical representation of the interactions among the elements of a system. We used this methodology in our system analysis to identify, clarify and organized system requirements. It will represent the function or process talking or manipulate, store or distribute data between the components of the system.

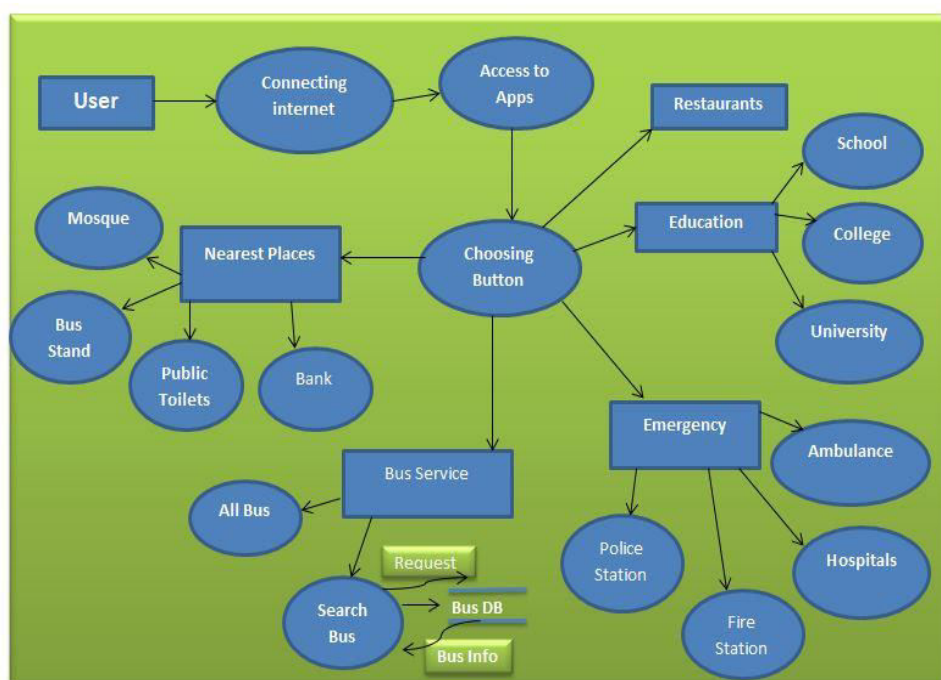


Figure: 3.3 Data Flow Diagram (DFD) of the system

In the following data flow diagram we use user, restaurants, education, emergency, nearest places and bus service as an external entity. In bus service there is a process search bus in this process there is a data store Bus DB where data is stored on the database. And process Search Bus send request to database and get bus information for database. There are many processes in the diagram which is help to understand whole system requirements.

3.4 Unified Modeling Language

To visually representing of our system we used UML along with its main actors, roles, actions, artifacts, or classes in order to better understand, alter, maintain, or documents information about the system. In the software engineering field it is a standard way to visualize the design of a system.



Figure: 3.4 Unified Modeling Language (UML)

Here in the UML we show how the classes are connected to each other. Main activity class is connected to BusSearch, AllBus, EducationalActivity, EmergencyActivity, RestaurantsActivity, NearestPlacesActivity classes. EducationalActivity, Emergency Activity, RestaurantsActivity are connected to DetailActivity class. We show the attributes of those classes and the functionality of those classes. We also show the types of attributes and the Access specifier of all classes. It will help us to understand the design requirements of our project.

3.5 Design Requirements

3.5.1 Software Requirements

To develop android application we need some software which will help to develop our android mobile application. To complete our project software requirements are:

- i. Android studio IDE
- ii. Android virtual device (AVD Manager)
- iii. Android Debug Bridge (ADB)
- iv. Database: MySQL
- v. Sublime Text 3
- vi. Adobe XD

3.5.2 Hardware Requirements

To develop android application we also need some hardware which will help to develop our android mobile application. To complete our project hardware requirements are:

- i. Operating system: Windows
- ii. Android supported mobile
- iii. Java Development kit (JDK)
- iv. Computer configuration:

RAM-4GB (min)

Hard Disk Space at least 1GB for Android SDK

Processor-1.5 GHz (min)

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-End Design

In front-end design we try to keep our (UI) user interface design unique and simple, because user interface allows user to interact with the mobile users. The design of user interface is usually refers to the (GUI) graphical user interface.

4.1.1 Home Screen

We keep our user interface simple and avoid unnecessary elements. We are careful to placement of item and purposeful in page layout. In design strategically used the color and texture. We ensure that the interface has elements that are easy to access.

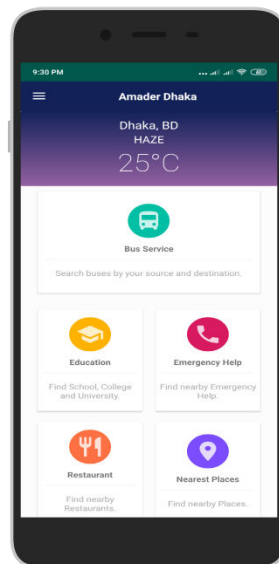


Figure: 4.1.1 Home Screen of Application

In home screen user can find five options which are Bus Service, Emergency Help, Education, Restaurant, Nearest Places and user can find the weather updates of Dhaka city.

4.1.2 Navigation

The navigation drawer is a UI panel that shows our apps main navigation menu. From this navigation drawer user can navigate to many screens or functionality of the app. In the following figure it gives us knowledge about the navigation drawer of the apps. The drawers open upon tapping the navigation menu icon in the bottom app bar. From here user can get all features in short cut way. It can be helpful to get services quickly.

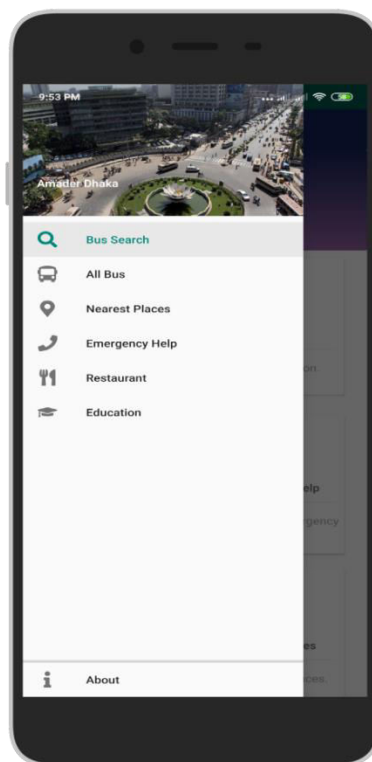


Figure: 4.1.2 Navigation Drawer

In the drawer of our apps user can find the features like Bus search, All Bus, Nearest places, Emergency help, Education, Restaurants etc. In about us we try to give a short description of our apps and the details of the developers of “Amader Dhaka” apps.

4.1.3 Bus Service

Bus service provides a search box at the top of the screen. The search dialog can provides search suggestion as the user types. Suppose user type g and search dialog will show all places name with g. When a user executes a search the system sends the search query to a searchable activity that performs the search. By Onclick Bus Service buttons provides a search box and then do all those activity.

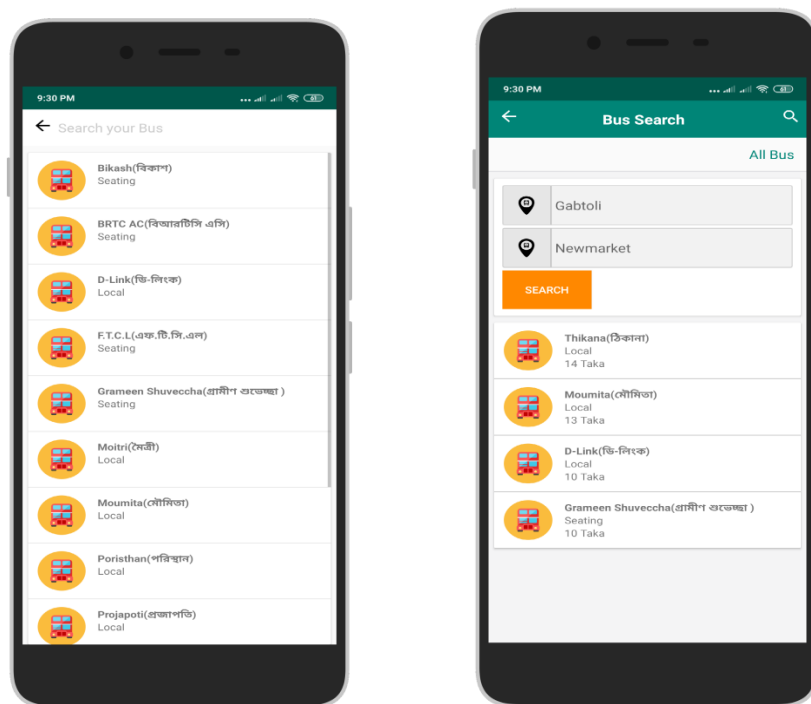


Figure: 4.1.3 Bus Service

In Bus service option user can find buses by given source and destination and simply click search. User can also find bus details by all bus option. We provide all route and fare of buses.

4.1.4 Emergency Help

From emergency option user can find Police Station, Fire Station, Hospital, Ambulance details. User can find all the information very quickly and by clicking once they call go to the dialing option of the mobile with desire mobile number.

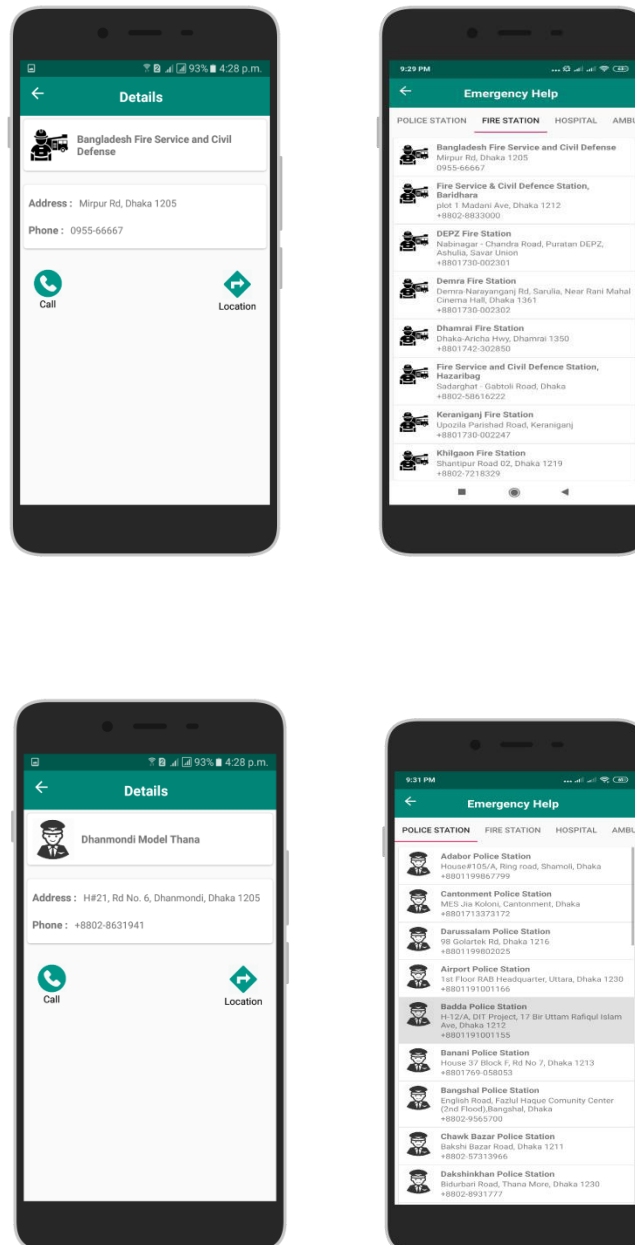


Figure 4.1.4 Emergency Help

4.1.5 Education

From Education option user can find school, college, university details by clicking here. They can choose their option by sliding and clicking any school, college, university they can go inside to details and find best route to go there by clicking Location options.

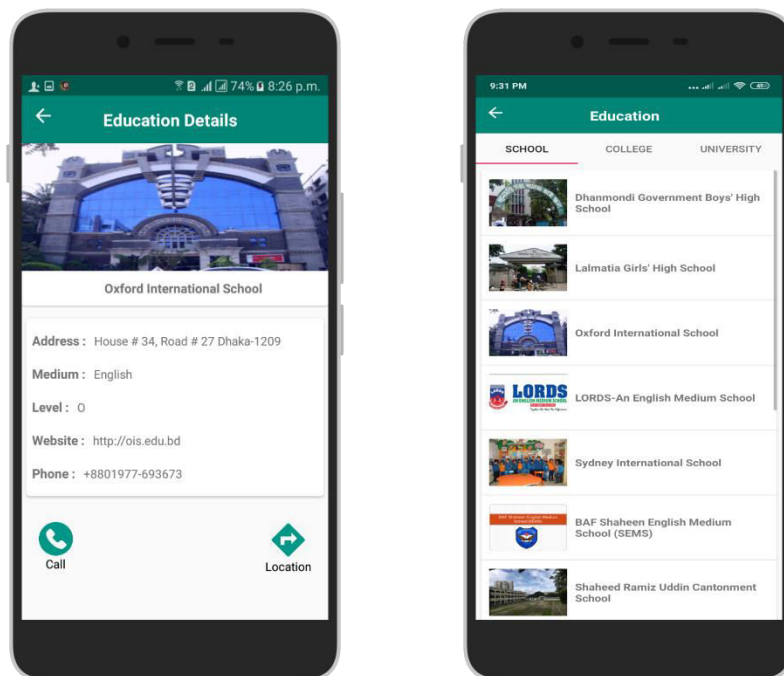


Figure: 4.1.5 Educational Information

In the figure we can see there is a slider which will allow users to make selections from school, college or university. From slider bar user may select a single value then it will react to the next page. Here user can see address, medium, level, website, phone number and a location icon. From location button they can directly go to the map. And when click on call button it will pass phone number to the calling option where user can call to the desire address.

4.1.6 Restaurants

In home screen there is another option which is restaurants. In restaurants option user can find some restaurants details of Dhaka city. They can choose a restaurant and find its location by clicking any restaurant.

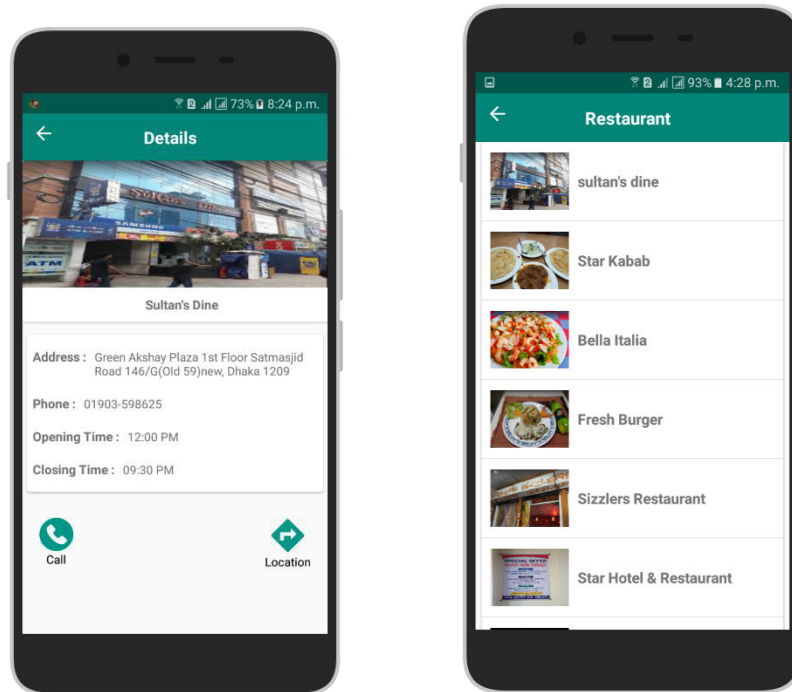


Figure: 4.1.6 Restaurants Information

Restaurant options also provide a sliding option where user can see all the restaurants of Dhaka city as we stored on the database. After selecting a value they can go to the next page where application will show information such as address, phone number, opening time, closing time. And from location user can go on the map which will provide best route to go there.

4.1.7 Nearest Places

There is another section nearest places. In this section user can find the nearest Mosque, Bank, Public toilets. By clicking the desire option user can find location and path on the maps.

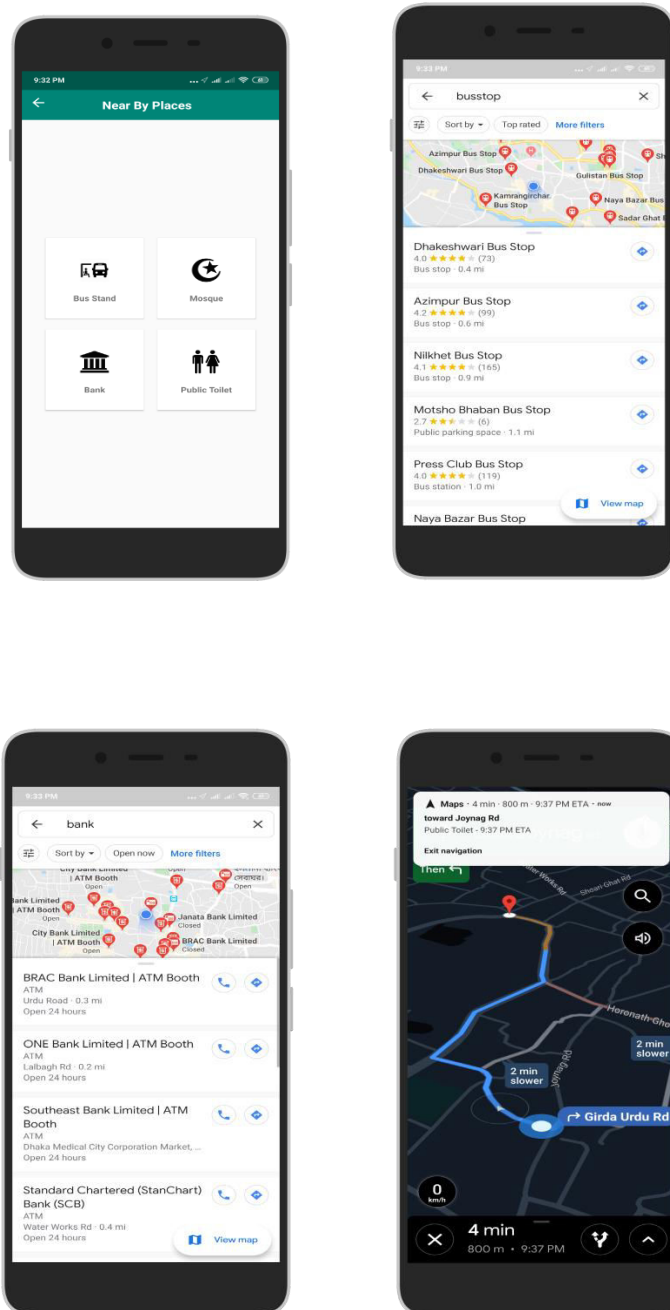


Figure: 4.1.7 Nearest Places

4.2 Back-End Design Specification

4.2.1 Data Insertion

Our mobile application will give many different types of information so that we need to work with database. And for this we work with MYSQL database. We need to create a database and store all the data and information in MYSQL database. For different data and information of different features or section will store in different categories in database. When a user will navigate to a feature into the application then the application will request to the specified API from the server. From MYSQL database server will get data. And it will pass to the application through JSON.

Table-1: Bus Information Table

ID	1	2	3
Source	Azimpur	Newmarket	Gabtolli
Destination	Farmgate	Asadgate	Savar
Bus Name	Bikash	D-Link	Thikana
Bus type	Seating	Local	Local
Fare	12 Taka	5 Taka	20 taka

In the following table we show some information of Bus service which is needed to add into the database. In implementation of database point we show that database which we create and insert data into database.

Table-2: Emergency Information Table

ID	1	2
Name	Adabor police station	Bangladesh fire service
Lat	23.770913	23.738460
Lon	90.359244	90.395245
Area	Ring road, shamoli, dhaka	Mirpur Rd,Dhaka
Type	Police station	Fire station
Phone_no	01199867799	02-55165760

Table-3 Educational Information table

Id	1	2
Name	Oxford international school	Queen's school and college
Area	House#34, Road#27, Dhaka	1132/c Adabor, dhaka
Lat	23.753829	23.772426
Lon	90.370841	90.360237
Medium	English	Bangla
Level	O	A
Website	http://ois.edu.bd	http://www.queenscollege.edu.bd
Phone number	01977693673	01717755511
Image	Oxford.jpg	Queencollege.jpg
Type	school	College

In the table we show the information that we collect and store on the database. We create database on MySQL and then insert all information into the database then access it later. In the implementation section we show how we implement this database.

4.2.2 API Access

After creating database and store all different information into database we need to access it. And data can be accessed via API where will collect the specific section from the database. Then it will pass or return in JSON format. When user will navigate to a feature into the application then the application will request to the specified API from the server and the server will get data from the MYSQL database and pass through JSON to the application. The application will parse the JSON data and populate into a listview to make the application more interactive. For the map interface or navigation interface we took help from google map API to display specific route or position into the google map also it will help the user to get the navigation features step by step to go to a right direction.

```

}
protected String doInBackground(String... args) {
    String xml = "";
    String urlParameters = "";
    xml = Function.executeGet( targetURL: "http://amardhaka.studentsoxygen.com/bussearch.php?source="+args[0]+"&destination="+args[1]);
    return xml;
}

```

Figure: 4.2.2 Bus API Access

4.3 Interaction Design and UX

Despite of being a huge system of backend work load we have tried to make comfortable, easy to understand user interface by android X materials and library files the extension we've use is a android X's life cycle extension. UX design is all about shaping the experience of using a system product, and most part of that experience involve some interaction between the user and the system. The goal of our interaction design is to create product that allows the user to achieve their objective in the best way possible. We keep our button label meaningful and simple to understand.

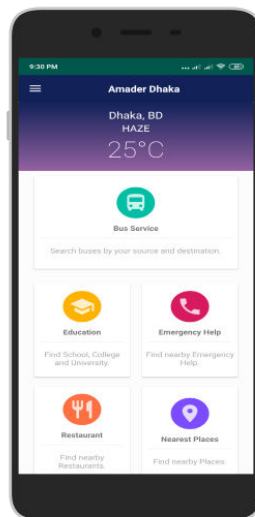


Figure: 4.3 Interaction Design of System

We concerns about the graphical elements like images, typography and icon that users interact with. A smartphones uses by user's fingers so we concerns about what kind of physical space needed for user. We also concern about timing and behavior of the interface that we designed.

4.5 Implementation Requirements

To implement our proposed project we need some hardware and software and many other things which are given below:

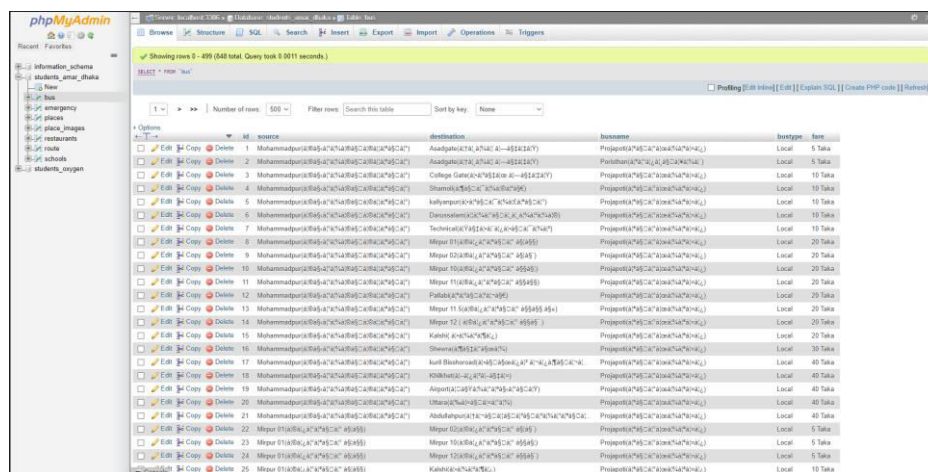
- i. We needs some technology e.g. Android X, XML, MYSQL
- ii. In programming or scripting language we need to know JAVA, XML
- iii. We need to know MYSQL database.
- iv. From tools and sites we need Android Studio
- v. In Server site we must have WI-FI Router and WAMP or XAMPP
- vi. And a stable teamwork needed with active team member.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

We used MySQL database into a linux based apache shared hosting to store all of our data. MYSQL works so fast even with a large dataset. As we used MySQL database into our on hosting so the amount of store is unlimited. It depends on the storage of our server. All the data is stored its own table.



The screenshot shows the phpMyAdmin interface with a table containing 25 rows of bus data. The table has columns for id, source, destination, busname, bustype, and fare. The data includes various bus routes and their associated details.

id	source	destination	busname	bustype	fare
1	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Kashgan (11-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	5 Taka
2	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Kashgan (11-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	5 Taka
3	Mohammadpur (845-A7474849-C8B3A749-C8A7)	College Gate (4-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	10 Taka
4	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Shamoli (455-C8A74849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	10 Taka
5	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Kalyanpur (4-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	10 Taka
6	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Dharmapuri (455-C8A74849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	10 Taka
7	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Techno (455-C8A74849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	10 Taka
8	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Moyar (11-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	20 Taka
9	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Moyar (11-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	20 Taka
10	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Moyar (11-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	20 Taka
11	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Moyar (11-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	20 Taka
12	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Palashi (455-C8A74849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	20 Taka
13	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Moyar (11-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	20 Taka
14	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Moyar (11-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	20 Taka
15	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Kalshi (4-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	20 Taka
16	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Shamoli (455-C8A74849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	20 Taka
17	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Kalshi (4-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	40 Taka
18	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Kalshi (4-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	40 Taka
19	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Alipor (455-C8A74849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	40 Taka
20	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Shamoli (455-C8A74849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	40 Taka
21	Mohammadpur (845-A7474849-C8B3A749-C8A7)	Abadpur (455-C8A74849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	40 Taka
22	Moyar (11-A7474849-C8B3A749-C8A7)	Moyar (11-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	5 Taka
23	Moyar (11-A7474849-C8B3A749-C8A7)	Moyar (11-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	5 Taka
24	Moyar (11-A7474849-C8B3A749-C8A7)	Moyar (11-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	5 Taka
25	Moyar (11-A7474849-C8B3A749-C8A7)	Kalshi (4-A7474849-C8B3A749-C8A7)	Propertika (745-C8A74849-C8B3A749-C8A7)	Local	10 Taka

Figure: 5.1 Database Implementation

```
Keyboard shortcuts

1 <?php
2 include ('conn.php');
3
4
5 $main = array();
6
7 $sql = "SELECT * FROM `bus` GROUP BY busname";
8 $query = mysqli_query($con, $sql);
9 while ($row = mysqli_fetch_assoc($query)) {
10     $id = $row['id'];
11     $source = $row['source'];
12     $destination = $row['destination'];
13     $busname = $row['busname'];
14     $bustype = $row['bustype'];
15     $fare = $row['fare'];
16
17     $main[] = array("id" => $id, "source" => $source,
18                     "destination" => $destination, "busname" =>
19                     $busname, "bustype" => $bustype, "fare" =>
20                     $fare);
21
22 }
23
24 $myJSON = json_encode($main);
25 echo $myJSON;
26 >>
```

Figure 5.1.1 Implementation of MySQL database

5.2 Implementation of Front-End Design

We try to keep our front-end design simple and attractive. To implement the design idea of our mobile application we have to use navigation layout, scroll view layout, search bar, buttons etc. we use the necessary features in front-end design by using that kinds of tools of android application which is necessary to implement in coding section

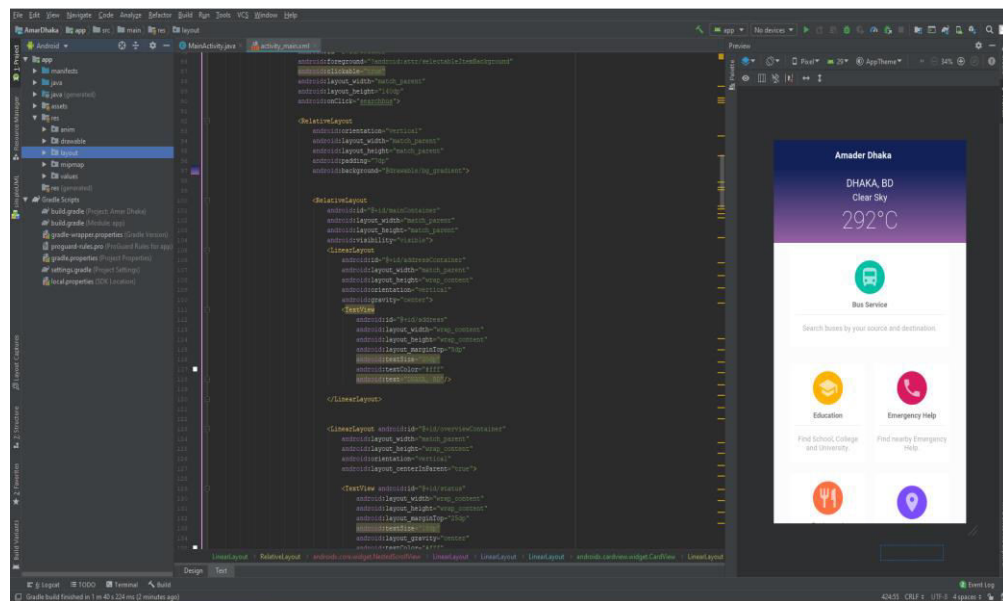


Figure: 5.2 Implementation of Front-End Design

5.3 Implementation of Interaction

5.3.1 Finding Bus

When a user needs to find a bus to go on a destination he or she needs to click on the Bus Service option. Then user can find a searching option there. By using source and destination and clicking search they can find the list of those buses which uses the same route. User can also find an option which is All Bus. And from this option they can find all the buses of Dhaka city and their route details.

5.3.2 Find Emergency Number

To find all emergency help user needs to choose emergency option from front page then they can find four kinds of emergency help in this which are Police station, Fire station, Hospitals, Ambulance. By sliding user can easily use those options and clicking on the desire option they can find more information on maps. Maps will show them best route. Otherwise they can call by using phone numbers very quickly.

5.3.3 Information about Education

The information about educational institute of Dhaka city are cover in three sliding option in Education option. User can choose school, college, university very easily by sliding and they can click on their desire option. When they click they can find some necessary information there also a location button. Form the location button they can find best route from the maps to go there.

5.3.4 Choosing Restaurants

User can find an option which is restaurants and by clicking this option they can find information about restaurants in Dhaka city. By clicking restaurants initially they can find restaurants name, area and by clicking in any restaurants they directly go on the maps and show the best route to go there.

5.3.5 Nearest Places

In this option user can find another four options about Mosque, Bank, Bus stand, public toilets. And they can choose any option by on clicking they can directly find nearest mosque, bank, bus stand or public toilets.

5.4 Testing Implementation

5.4.1 Usability Test

After implementing all our idea we should go for some test of our project. There are so many way to test a project. We test our apps among some users to know whether it is user friendly or not. We also make a survey to know the necessity of our mobile

application. We test our application in low network that how it work. For all test we direct go to the user in an on field test. We show our apps to the male and female person on different types of age of people and we got some good response from them. We do this survey among 50 users aged between 18 to 40 where 30 of them male and 20 of them female. To understand the output of our survey we use a Bar Chart which is given below:

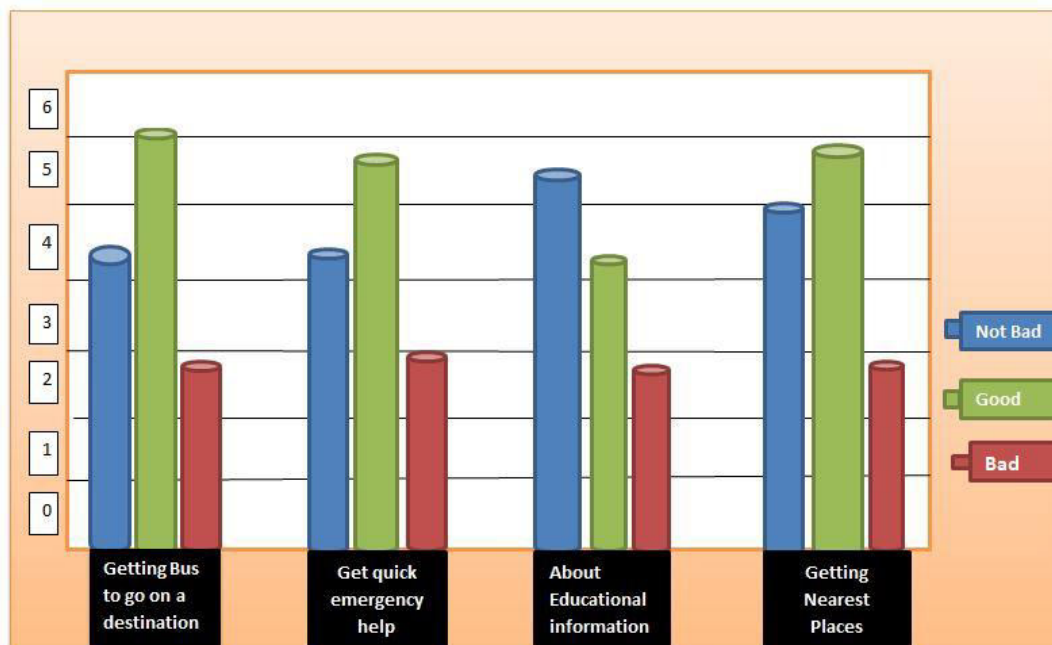


Figure: 5.4.1 Usability Test Bar Chart

5.4.2 Android Version test

The latest version of android is Android 10.0 version. But it is not available to every smart phone. We need to use a version which will capture more devices of the market. We use Minimum SDK version 16. Android 4.2 jelly bean. By using this version we try to capture maximum number of devices and users. We run our application in different types of android version mobile phone and check that works or not. We find that it works well.

5.5 Test Result and Reports

After surveying our mobile application we find some good response from the users. We go to users on field test so that we can clearly observe everything about testing. We find some good response from our female users because they tell use it will be very useful for them because sometime they don't know exact bus to reached their destination and sometimes they feel unsecured when they go outside of the home. And this application gives their emergency all help very quickly so that if they can use this app it will be very helpful. We talked with some new comer in this city they give us so many good response because they don't know properly this city and they couldn't find enough information to visit this city alone. But know they can get all information so easily that will help them a lot. We got some students who come to give admission test they give some good feedback that it will be very helpful application for them. Otherwise there are some people who already live in this city and regularly travel through bus they said that sometime helpers of bus demand more than the exact money. So if we can provide valuable information about fare of the buses then it will be so useful for them who are travel through bus.

CHAPTER 6

CONCLUSION AND FUTURE WORK

6.1 Conclusion

Our main target was to make a mobile application which can help people to find all necessary information in Dhaka city. And we hope we done it as well as possible. We try to finish our work with some essential features. We have experienced with difficulties and challenges but we have learned so many things during built this project such as technical, ethical and professional. The traditional way of finding bus transportation information was not that much good enough. So after we developed this mobile application now we hope people will be satisfied by find that information by using our apps. Actually there are so many things we can add our apps in futures but still we have enough good features in application. Initially we just look for done it by using necessary features.

6.2 Scope for Further Development

The idea of our mobile application is such an idea which can extend in so many in future. And for that govt. help is regarded. In future if we can implement this application in such a way that anyone go outside of Dhaka city he can find that city`s information as well. Any traveller can easily travel by finding his or her desire information. It will be very helpful for international traveller in Dhaka city or other city. And it can help our country`s economy if we can extend this mobile application in this way.

REFERENCE

[1] Dhaka Wheels - Local Bus Route, available at:

<<<https://play.google.com/store/apps/details?id=com.hexamid.studios.dhakawheelsfi&hl=en&fbclid=IwAR2DTwHEPi5QagWcnf1iVcaKHBBfwmDVh2g58TNfncpW-5KY7ju4j8yKRWE>>> last access on 03-11-19 at 1:39 AM

[2] Rajshahi Ad, available at:

<<https://play.google.com/store/apps/details?id=com.bluehillsit.rajshahiadapp&hl=en&fbclid=IwAR10AETgC9_LGriJEmu2mHkNJ7CneFwNmBVaAYazrceiY6-wGxcNgNx6eMk>> last access on 03-11-19 at 1:38 AM

APPENDIX

Appendix A: Project Reflection

We have taken in a great deal by doing this project. Now have a better idea in android development than previous. We have found out how to manage time and now we are very acquainted with the clients need in reasonable manner. We have learned about the android studio's new things what we don't know in the past. The intensive effort needed was ultimately an honest issue. We insert a thousand of data in the database and we did it very carefully because our main goal is to help someone by giving information. By doing this project we learned that how to remove a problem from our society and how to make a city digital.

Appendix B: Related Diagram

When a user will navigate to a feature into the application then the application will request to the specified API from the server. From MYSQL database server will get data. And it will pass to the application through JSON.

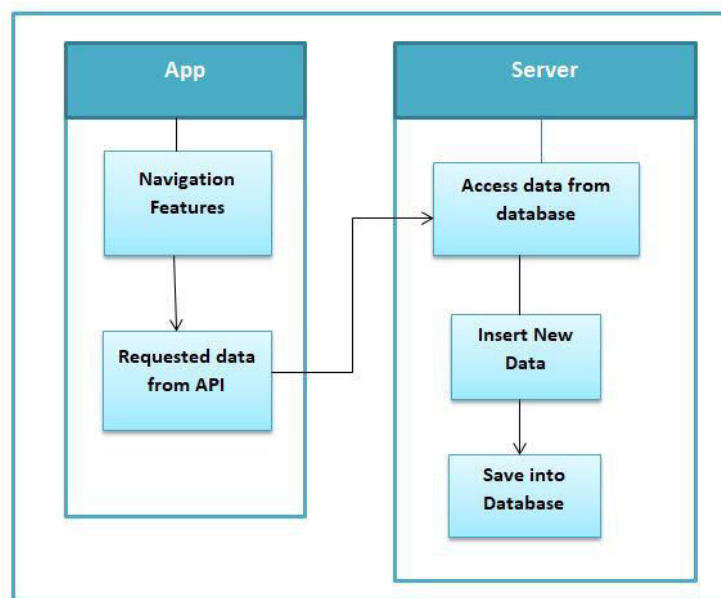


Figure: B1

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