TRACE BD - AN ANDROID BASED TRAVEL SYSTEM APPLICATION

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APPROVAL

This Project titled "Trace BD-an Android Based Travel System", submitted by Md. Farhad Islam Mim, Faria Afrose and Binita Biswas Chutumoni to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfilment 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 4-1-2022.

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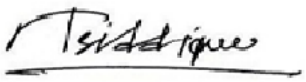

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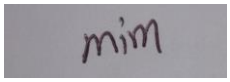

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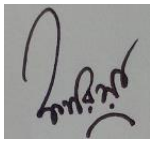

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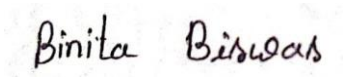

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ABSTRACT

Bangladesh is a safe country to visit so a lot of foreign tourists come to visit. When foreign tourists visit our country, they first want a good place to stay. How to get from the airport to their destination is also a big concern for them and the main problem they face is money conversion. This mobile app has been created keeping in mind all these problems. It is an ad-free mobile application with some options that can be accessed without an internet connection, and some with an internet connection. Where there is a list of high-quality hotels and resorts for tourists to stay in, they will be able to know the destination, they will also be able to convert money using a real-time database. As a result, they will not be deceived about extra rent or related issues. And one of the purposes of this app is to inform foreign tourists about the culture and various historical places of our country. Using real-time database, the related information is given here. They can easily book hotels using this application. They will also be able to give their feedback, the necessary information that will help us move the app forward. After all, using this system will allow them to get the information they need during the slop, which will make their trip more beautiful.

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CHAPTER 1

Introduction

1.1 Introduction

‘‘Trace BD’’ is an Android-primarily based totally journey gadget software, specially for foreigners. The concept is to create a clever journey manual software that users can get entry to whenever and everywhere in Bangladesh.

1.2 Motivation

Those who come from overseas are involved approximately cash conversion, that is the principle motive of this app in order that foreigners do now no longer get misled after coming to Bangladesh.

1.3 Objectives

Through this, we can have the ability to tell foreigners approximately our country and culture. “Trace BD” will permit them to recognize the honest charge and opportunity tour preparations in step with the place. They can be capable of recognize records approximately residential resorts and phone them. Users can be able to send feedback through feedback form.

1.4 Expected Outcomes

Expected outcome from this proposed project...

1.This project could create a new model of existing app. So foreigners will get all the information in one applications without having to switch between multiple applications.

2.Increase search results.

1.5 Project Management and Finance

We can learn more about project management and finance from the table and gantt chart below.

TABLE 1.5: PROJECT MANAGEMENT AND FINANCE

Task Name	Date	Day to Complete
1.Splash Screen	1-Dec-20	5
2. Home	12-Dec-20	18
3. Menu	10-Jan-21	10
4. Bus List	20-Jan-21	30
5. Search Route	25-Feb-21	35
6. Hotel	29-Mar-21	10
7. Place	25-Apr-21	6
8. Convert Money	29-Apr-21	65
9. Google Map	15-Jul-21	27
10. Feedback	10-Aug-21	7
11. Firebase	20-Aug-21	40
12. Dhaka	25-Sep-21	4
13. Barisal	29-Sep-21	9
14. Chattogram	7-Oct-21	5
15. Khulna	15-Oct-21	4
16. Rajshahi	20-Oct-21	3
17. Rangpur	27-Oct-21	8
18. Mymensingh	5-Nov-21	10
19. Sylhet	25-Nov-21	3

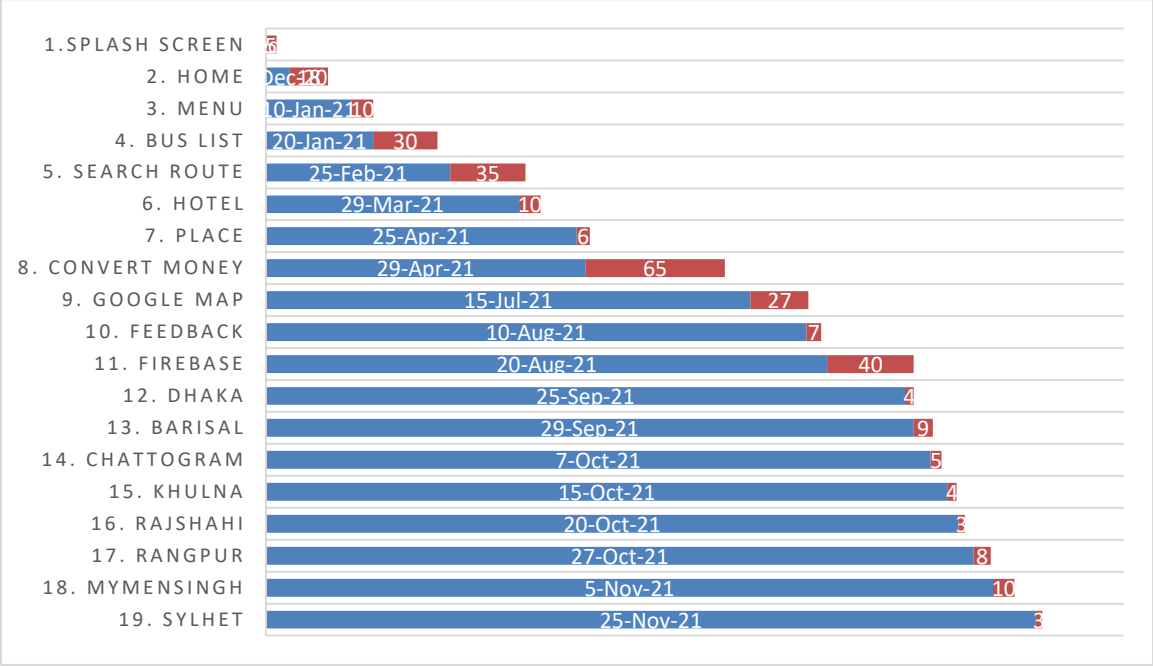


Figure 1.5.2: Gantt Chart According to the 1.5.1

1.6 Report Layout

In later chapters we can learn about below topics in details

1.Background

2.Requirement Specification

3.Design Specification

4.Implementation and Testing

5.Impact on Society, Environment, Sustainability

6.Conclusion and Future Scope

In next, we also work on references and appendices.

CHAPTER 2

Backgrounds

2.1 Preliminaries/Terminologies

The addition of current era technology. It is improving day by day. Nowadays most of the work is being shifted from manual system to automation system. Due to the development of technology, communication system is also advancing day by day. In addition to modern communication system, booking bus tickets through various mobile applications, knowing different information about which bus runs on which road, has brought a new dimension in the communication system. Users can easily do this from any place anytime. Tourist from abroad come to our country almost every year. Many countries outsides of us are already ahead in terms of technology. They are now looking for almost everything on online platforms. Where they want to easily get accurate information about transport, residence etc.

With this mind, we are thinking of creating a mobile application that will help the people of our country, especially foreign tourists to get the right idea about transport, residences, various tourist destinations etc. The most important thing for foreigners is money conversion. They will also get it in this app. This app has rating system. They can give rating there. Be able to give feedback by giving their opinion. If any user wants, he can inform if any new bus is running on any road. That information will come to the app authority. After checking it, the bus list will be included in the search bus.

2.2 Related Works

Already have a mobile application related to our mobile application called “Dhaka Wheels”. This mobile application lists all the buses plying inside Dhaka. This app can be accessed directly without login. This will allow user to know which bus runs on which road only. If the user wants, he can give his opinion about the advantages and disadvantages of the app. Users can go to the rating option and give the rate. The user will able to mail the

picture of the bus or any bus on any road stating it. There is a checking for new database option in the setting option. If user can click on it, the updated data will be input in the app. In this, the user will be able to know the updated data. FAG options are given. It has answers to common questions.

2.3 Comparative Analysis

There is talk of an app called “Dhaka Wheels” related to our app. There are several differences between the two apps. In “Dhaka Wheels” only work has been done on the buses plying inside Dhaka. Where the user can get the names of the buses according to the road. In two separate options the user can give information about a new bus and also send a picture of the bus. But it does not use any GPS system.

On the other hand, the app called "Trace BD" has the option of converting money using real time database for the convenience of foreigners as well as buses plying inside Dhaka. As soon as the current currency is updated, the system will also be updated. If they want, the divisional cities will also be able to know about the places of interest. Which will not be found in the “Trace BD” app. Again they will be able to give us feedback by giving us their valuable feedback. For which we have used Firebase.

In the end, our app will be quite convenient for users. It will save them both time and cost.

2.4 Scope of the Problems

Most of the time it is seen that foreigners come to our country and suffer from various difficulties in moving from one place to another. Sometimes it becomes more expensive than necessary and they also fall prey to fraud.

2.5 Challenges

Challenges encompass something which could gloomily have an effect on our system from the outside, together with deliver chain problems, shifts in marketplace requirements, or a scarcity of recruits. It’s a crucial to count on challenges and to take steps towards them earlier than we emerge as a suffer of them and our increase stalls.

Now a days, a few tech massive has possessed the marketplace. They can without problems release their software program withinside the marketplace on the way to be greater dynamic greater bendy for people. As an example, Facebook has created a platform wherein college students make their personal group, percentage publish without problems. Google has made Google meet though it has no categorized alternative however it's very well-known recently.

So, it's a great challenge for us to be a competitor of those giants like Google, Facebook, and Amazon. Though we're structured totally on those system to put it up for sale or proportion the application. There also are copyright declare trouble is available.

Another challenge is vulnerable net connection. It's authentic that during this U.S.A. there are lot of locations wherein net connection isn't always to be had properly. Even on that rural place human begins can't find the money for net easily. Though we are able to be alert to take minimum bandwidth to run the software however it's a wonderful mission for us due to the fact vulnerable sign can be abate the flavor of the software.

CHAPTER 3

Requirement Specification

3.1 Business Process Modelling

The following figure 3.1 shows basic business process model. This is a flowchart model, according to our plan from start to finish, what steps can be taken to model through the business processing model. Through this, we can understand the specific process through visual representation. If we can understand the whole process through code then it will be a little complicated, through flowchart anyone can easily understand the idea of the process. In the case of our project, when the user opens the app, the user will first go to the home screen. From the home screen, Bus list, search route, place, map, converter, hotel, and resorts. The user will get 6 card views. If the user clicks on the bus list then it will take the user to the next activity from there and if the user wants to back then the back button will take the user back to the home screen. In this way, every card view will work. There will be an about us, contributor here, and a feedback option from Manu. Feedback and contribute here have a relationship with the admin, if the user sends feedback then the admin will receive it. If the user wants to contribute, it will be stored in the database. And user can exit the home page after clicking the exit button. This improves the communication of this process, increases control, and consistency gains a competitive advantage.

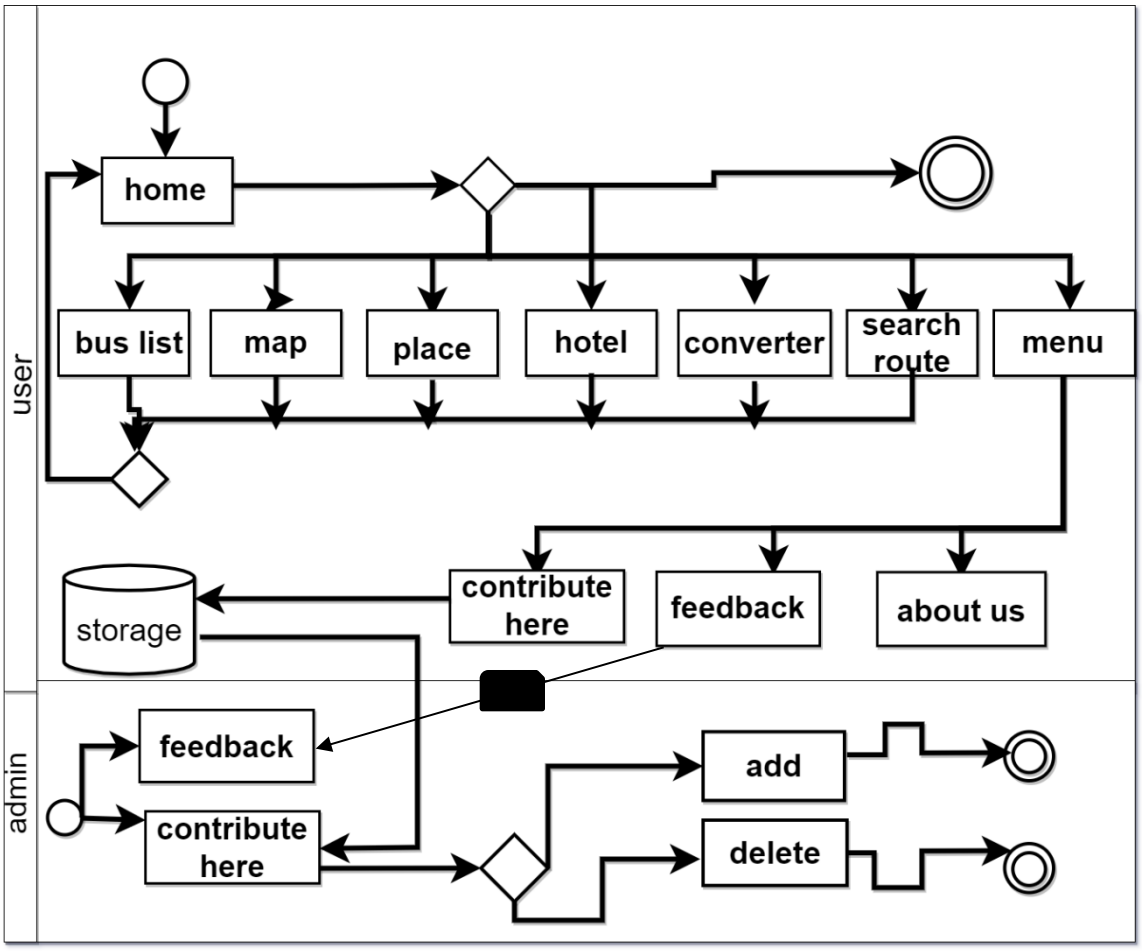


Figure 3.1: Business Process Modelling

3.2 Requirement Collection and Analysis

There are many travel apps through which we get information about the bus and where the bus goes. When tourists need information, they don't get it all at once. They have to collect information from one place to another which is time-consuming. When foreign tourists visit our country, they face many problems. According to data from the Internet, the main problem for most foreign tourists is that they have difficulty converting money properly, so they are deceived by high fares. Moreover, their communication problems, finding a safe place. We have worked on this app with the main problem or maximum percentage. There will be transportation information, users will be able to use Google Maps directly from the app, see the distance between the two locations, convert money. We will also be

able to inform them about the history of our country by providing quality hotel booking information. Through this app, we have collected and provided all the information they need. This will enable them to meet their needs and save time.

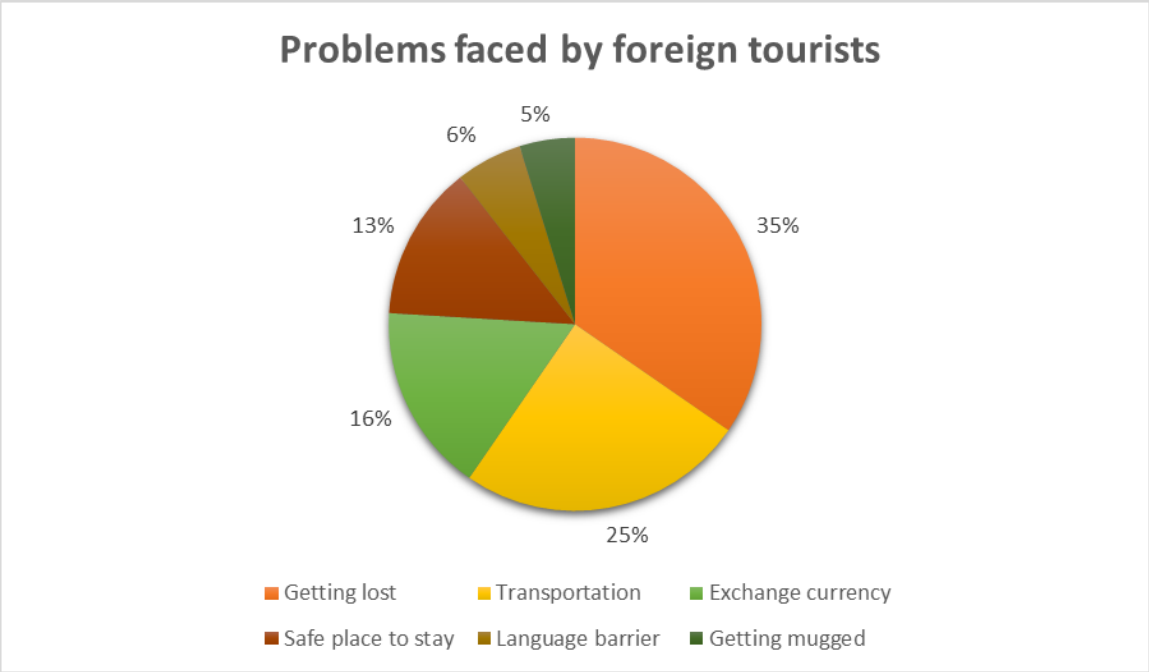


Figure 3.2: Requirement Collection and Analysis

3.3. Use Case Modelling and Description

We have built our app by analyzing the data from the internet on the problems faced by foreign tourists. If we look at our use cased diagram then here are two actors. A user and another actor is admin. Here the primary actor is the user. Here users can view the bus list, place, hotel, location, can search route. Money can be converted and also can contribute and admin can add or delete data that user contributes, the user can give feedback to the admin through text message.

Use Case: Home

Actor: User, Admin

Primary Actor: User

Description: User can view list, place, hotel info, can search route, convert money , search location.

Pre-condition: Users must have the app installed on their Android phones.

Post-condition: Before using Hotel Information, Google Map, Converter, the user needs to connect to the net.

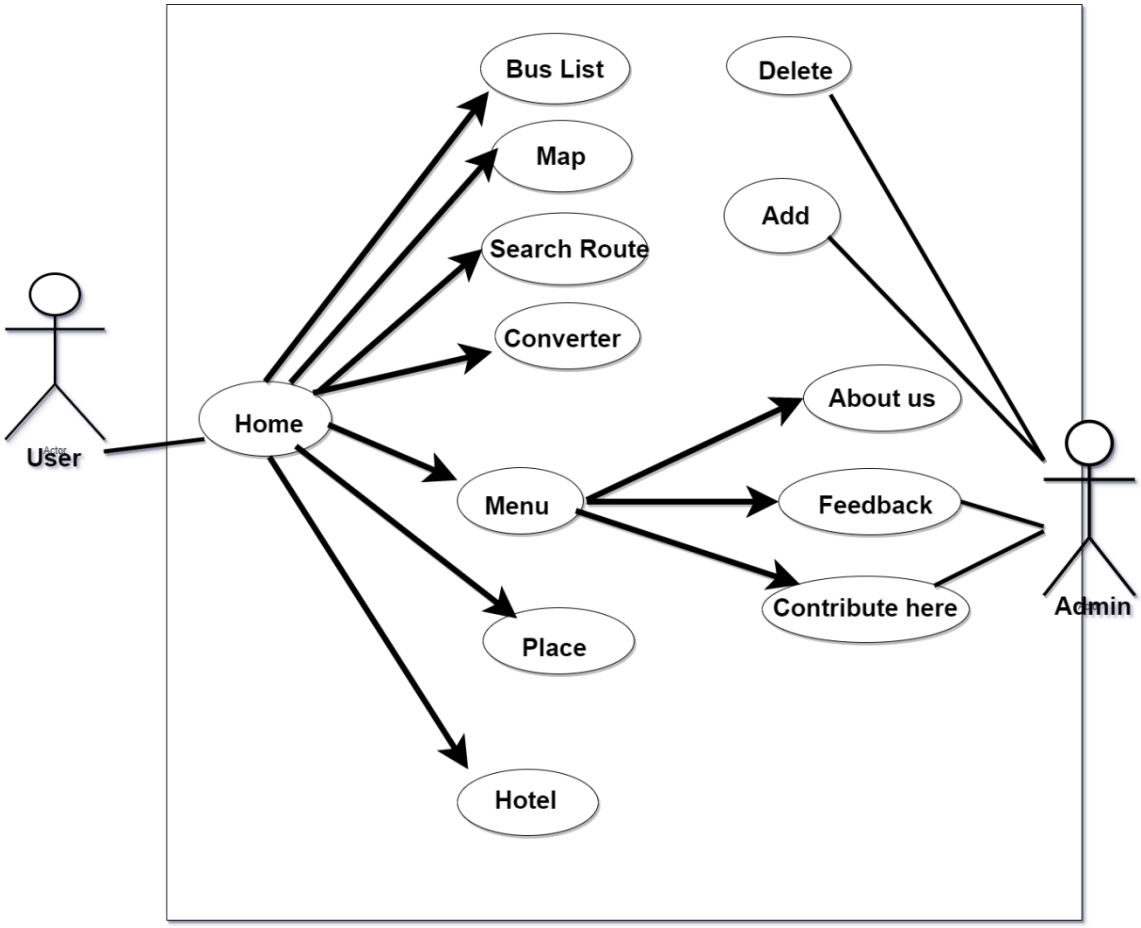


Figure 3.3: Use Case Modelling and Description

3.4 Logical Data Model

It is an entity-relationship diagram. Represents the data model on a logical basis. It defines the architecture of the system, what the entity is, what the relationship is between entities, and their dependence logically on each ether. It will help us to what components we need for our project and how we can make relations between the components. There are many tables in the database like home, bus list, map, search, hotel, converter, these are entities. Here the user can go to all entities from the home page. Under home's entity has Menu entities and under menu has another 3 sub-entities such as Feedback, About Us, and

Contribute Here. Feedback has some attributes called name, text, and Contribute Entity has Emailed, Bus Name, Bus Route. Users can contribute to Bus Name and Route and admin can add or delete it.

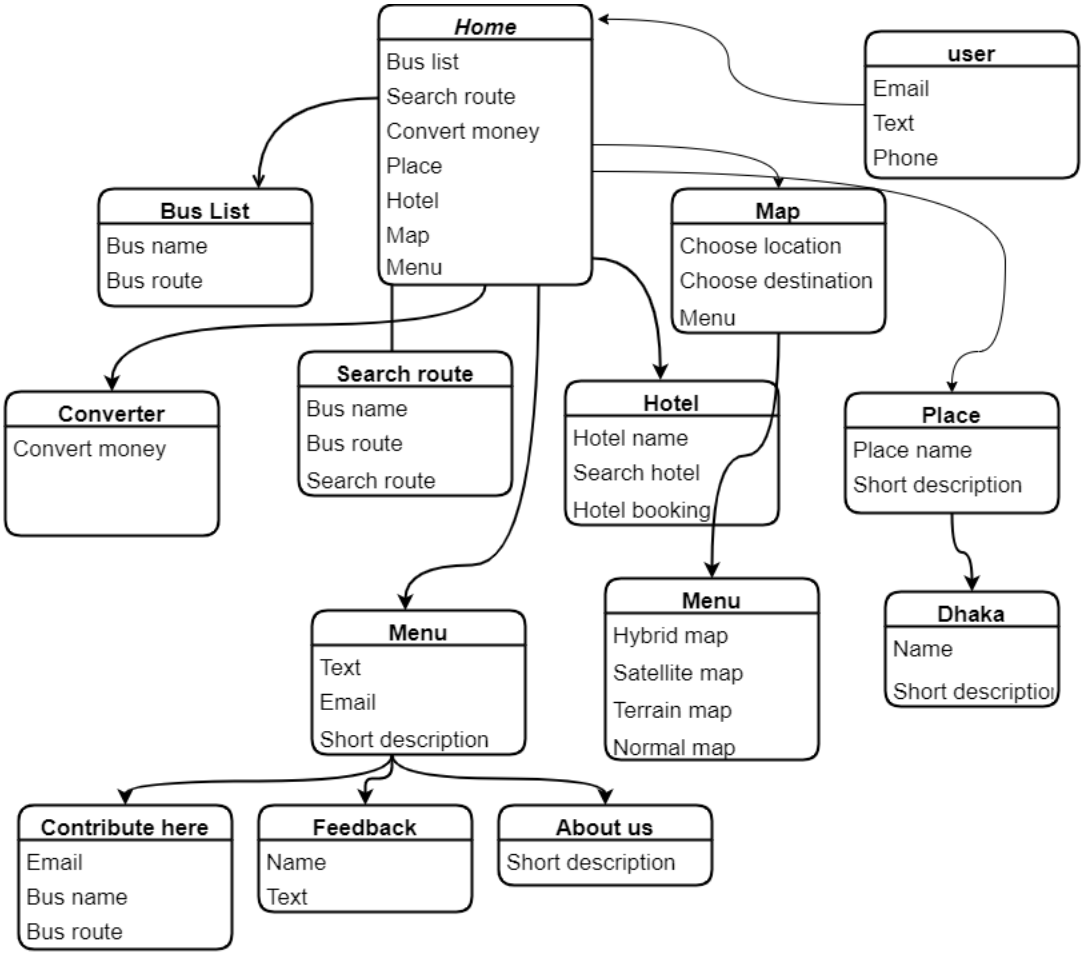


Figure 3.4: Logical Data Model

3.5 Design Requirements

By collecting and analyzing the references we need, it's easy for users to navigate, invite, keep their data secure, and make them feel comfortable using it. With that in mind, we designed it, where it has.

Home page: Here we used Cardview to make it look beautiful and tidy. Users can go to all the activities from the home page and users can go back to the home page from all the activities.

Bus list: Expandable listview is used in the bus list. Through which the user will be able to see information by clicking on.

Search Route: Here the user can easily find the bus route through filtering.

Money convert: There will be money conversion activity according to the requirement. If you select the country with the amount, you will convert the currency as the output. Here spinner is used for that users can easily select the country.

Map: By giving the location of two places on the map, they will get all the information between that place in Google Map and from Google Maps, it will back to the app, so user can easily use it.

Feedback: Users can text to tell if the app is good or not. Their email, phone number will be safe with the admin. No user other than admin will get this information.

By designing in this way, the user will be comfortable and feel safe, the user will feel satisfied using it.

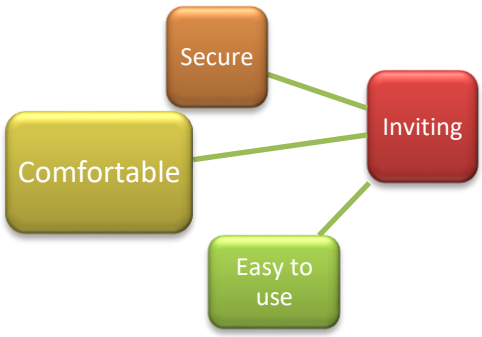


Figure 3.5: Design Requirement

CHAPTER 4
Design Specification

4.1 Front-end Design

There are a whole lot of IDEs for developing android apps like Android Studio, Visual Studio, and Droid script. In our project we have got used android studio. Because Android Studio is one of the first-rate IDE for Android improvement. This improvement device is made via way of means of Google and has acquired raved critiques via way of means of cell app builders anywhere the planet. There are a whole lot of benefits to the use of Android Studio as an Android improvement environment. Using this software program the front give up and back-give up improvement maybe executed in a easy environment.

4.2 Back-end Design

For developing the back-end part of our project we have used JAVA as programming language. Java is an object-orientated language. It is magnificence primarily based totally all purposed language and runs on any platform. It calls for some dependencies as feasible which could be very fancy. The run time code operates in the Java Virtual Machine (JVM) as compiled code. Basically, Android Application are often evolved in JAVA language the use of Android Software Development Kit (SDK). It is maximum desired and often used programming language for Android App Development.

Actually, the principle motive at the back of Android expansion software changed into to create a platform software surroundings that could run on each device. It’s very clean to make the app as dynamic system. As all of us recognize java has this type of well-known so java changed into selected for android development.

4.3 Interaction design and User Experience (UX)

Using xml, we've got designed our project interface for making the project. If we speak approximately xml, it stands for Extension Markup Language. It’s a markup language like HTML used to explain data. Xml is properly legible each with the aid of using human and machine. In Android we use xml for designing our layouts due to the fact xml is light-

weight language so it doesn't make our format heavy. Actually, the entire idea of xml is described the usage of the hierarchy of View and View Group objects.

Below are some screenshots for ease of understanding.

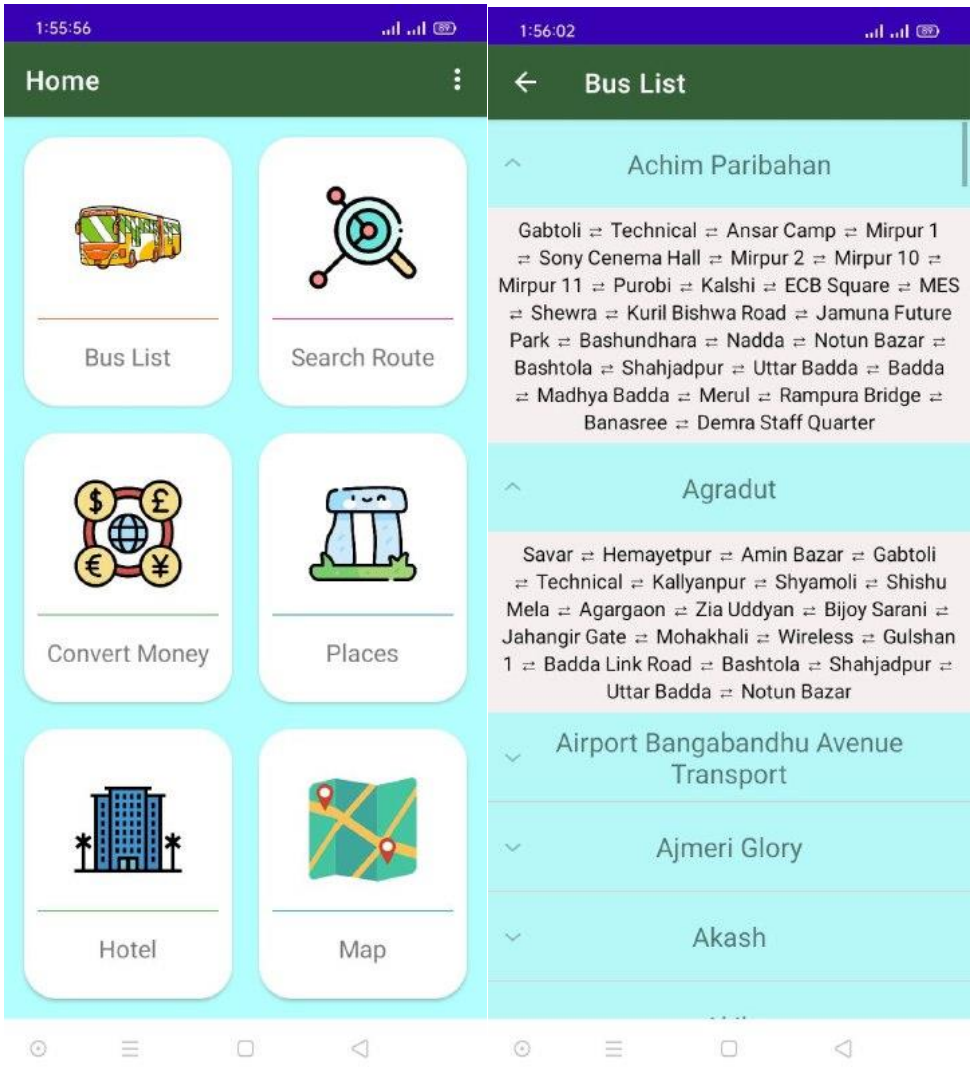


Figure 4.3.1: Bus List

This app is easy to use because users can access it without any login. Clicking on the bus list option on the home page will get the name of the bus. If you click on the name of the bus, user will also get the road on which the bus runs. According to the screenshot, if user click on the arrow at the top left, he/she will get the home page again.

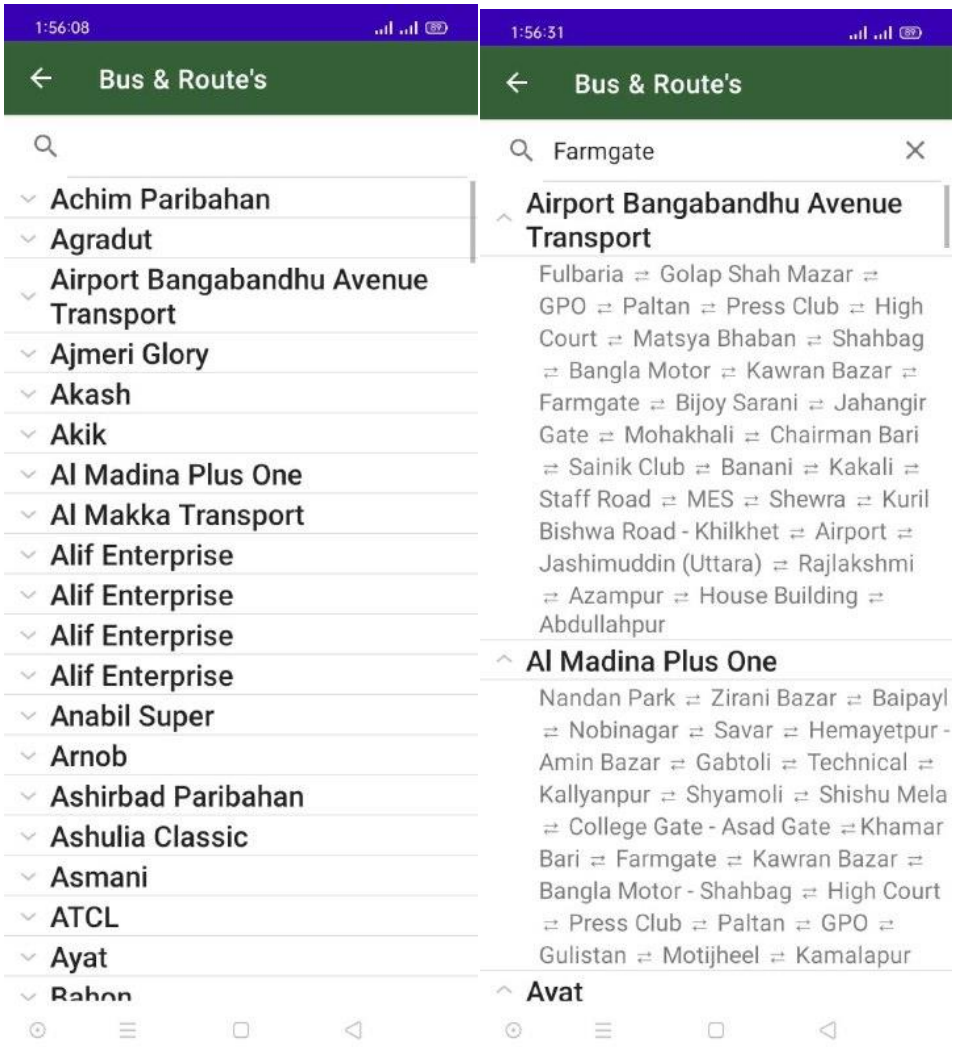


Figure 4.3.2: Bus and Route's

If you click on the search road, a search will come up. If you search for the name of the road there, you will get the information about the road on which the bus is moving along with the name of the bus.

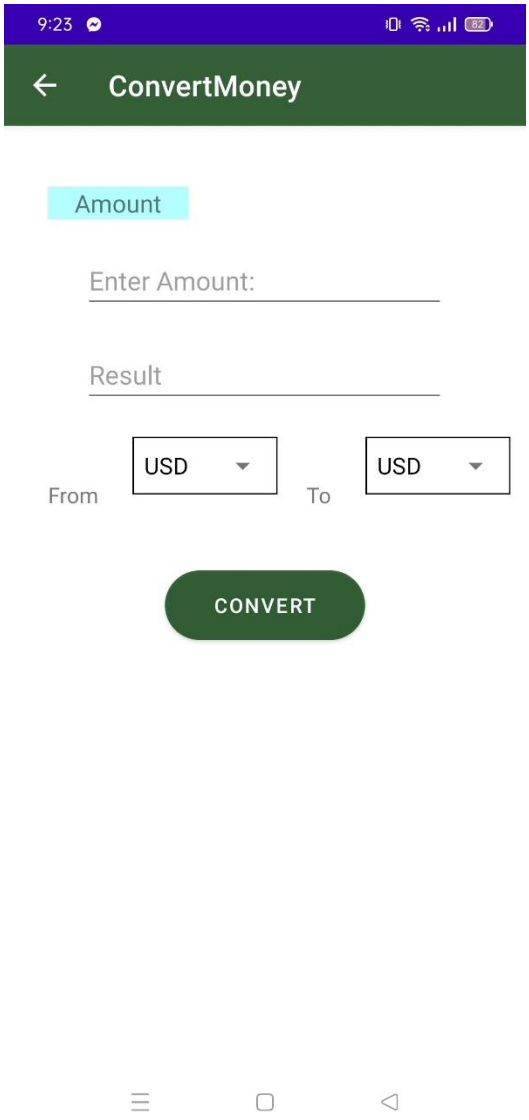


Figure 4.3.3: Convert Money

In the “Enter Amount” option the user will give the currency of his own country. Then clicking on the "Convert" option will show the converting value according to the previous input in the “Result” option.

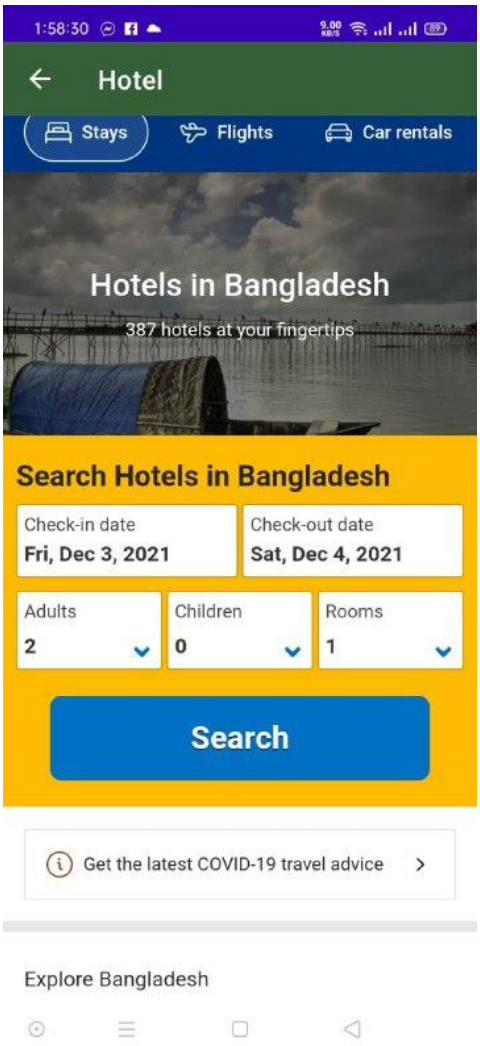


Figure 4.3.4: Hotel

From this site users can book the hotel of their choice. For that, he must fill in the information of check in date, check out date, how many adults are there, how many children, and how many rooms they need, then click on “Search” option. If the hotels have arrangements according to their needs, they can easily book there.

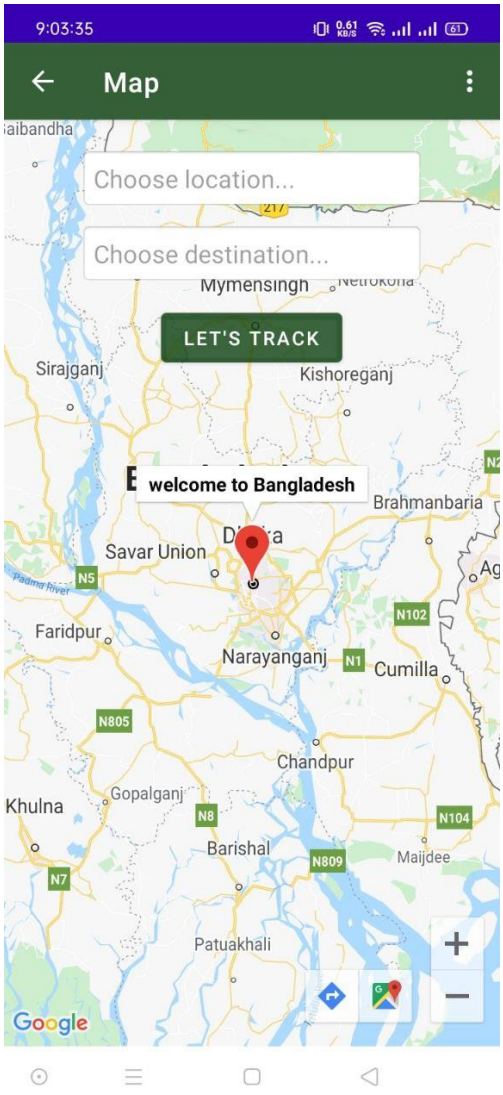


Figure 4.3.5: Map

On this page the user will give the name of his destination place as input in the “From to” option. In the "From where" option, the user will enter the name of the place where he will stay as input. Then clicking on the “LET’S TRACK” option will show the exact location on the map.

Figure 4.3.6: Places

Clicking on the "Places" option on the home page will bring up a new page with the names of the eight divisions of Bangladesh. Clicking on any one of the names will bring up the names of the sights of that city. Once user click on the picture of the places, he/she will know the details about that picture. All the work has been done by Card view. So they can only know about the places fixed here.

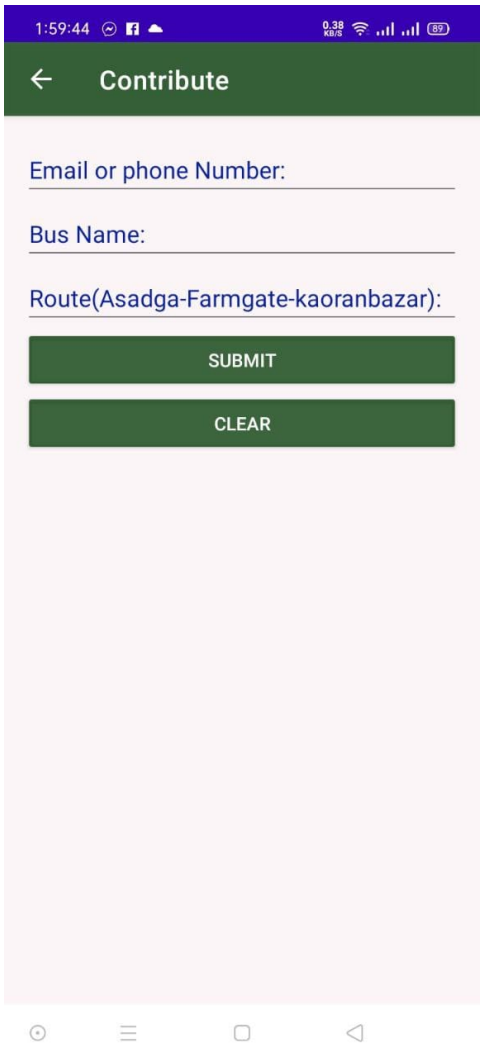


Figure 4.3.7: Contribute

To use this option, the user must enter one of his phone number or email. Then he has to input the name of the new bus and the route he is going on. User have to input which route to follow. When user click on the submit option, the information will come to the developer.

Clicking on the “CLEAR” option will delete the text in the input box.

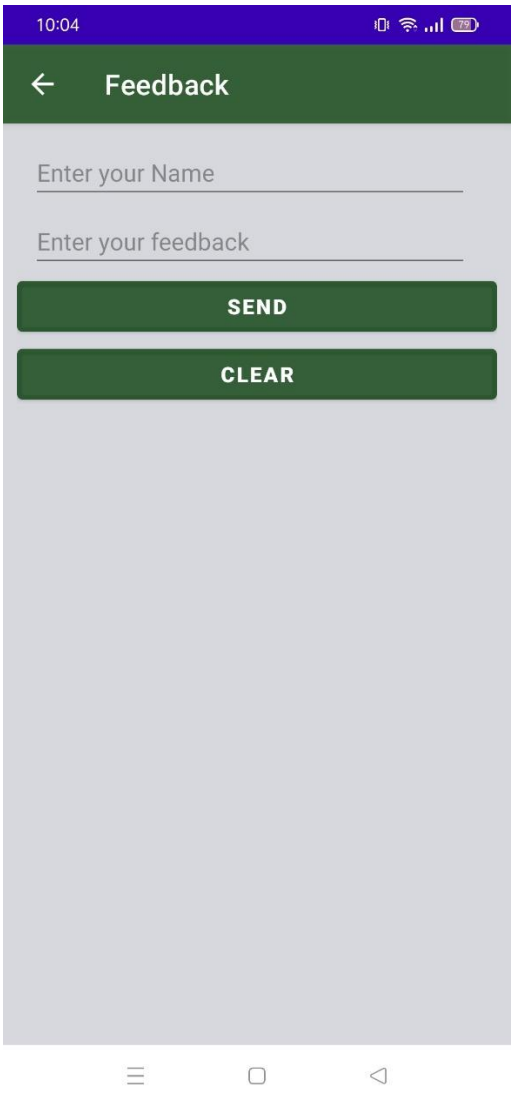


Figure 4.3.8: Feedback

Each user must enter his name in the "Enter your name" option. In the "Enter your feedback" option the user will click on the "SEND" option to express his opinion. It will immediately go to the authority.

4.4 Implementation Requirements

There are numerous matters that want to be executed to finish this project. Some matters want to be clear.

A good knowledge of the programming language (JAVA). Android Software Development Kit (Android SDK). Essential knowledge of Extensible Markup Language (XML). Some

real time databases have been used in the project. Again some fixed data has been used. We need to know about Firebase while working with real time database. Again fixed data work has been done using array adapter. So we have to have a clear idea about the adapter. We also need to have a good idea about Cardview, Spinner's work.

CHAPTER 5
Implementation and Testing

5.1 Implementation of Database

A database is an prepared series of based information, or records, commonly saved electronically in computer system. Database security, and records protection, are stringently regulated. A secured database includes the heart of an automation system. In our project we're the usage of Firebase database below room database to save records.

Firebase is a software program back-end system. It is software program that permits customers to have interaction with a relational database. It's a Google evolved platform that is used to interactive cellular app and internet applications. That's why we are able to say that it's a Google back-end utility which gives first-rate provider like solving app crashes, analytics record and monitoring feature. In Firebase, a database is saved in a single file — a trait that distinguishes it from different database engines**.**

The essential cause of the usage of firebase is to make the utility as real-time. Because firebase is the real starting platform in which we are able to get the carrier of real-time study and write carrier. The database desk is saved right here as hierarchical technique that's why it's very smooth to get right of entry to the number one key through calling the basis data.

When a user sees a new bus on the road, if they think it is not included in our app, they can let the developers know. And for that the user must access the process via email or phone number. And the name of the bus, the road on which the bus operates must be properly input. The authorities will verify that. In the subsequent screenshot of databases, we are able to give an explanation for the information easily.

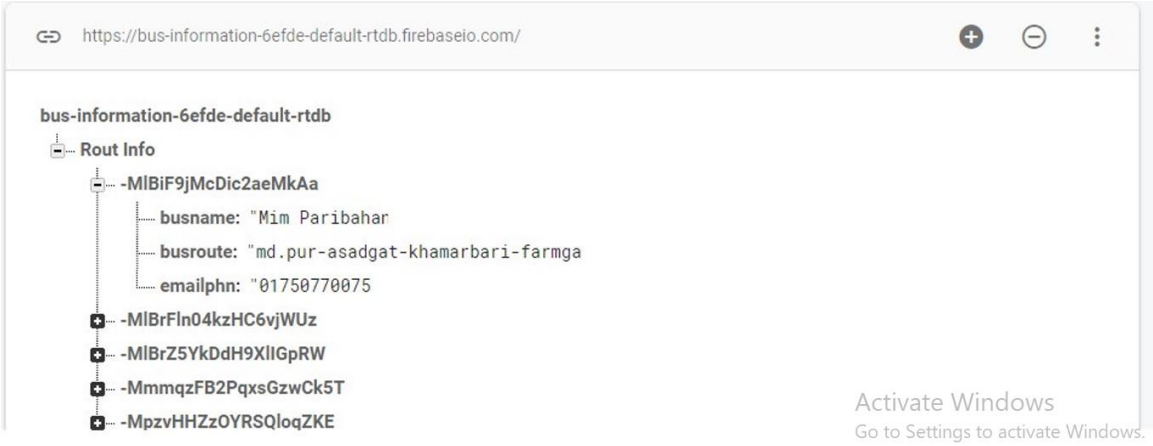


Figure 5.1: Firebase (Real Time Database)

5.2 Implementation of Front-end Design

The front-end is everything the user sees on a mobile app, including the design of the app. Simply put, the front end of the mobile app is what the user experiences. You may be familiar with the term "user experience" or "UX"; the front end is where the user experiences and interacts with these things.

Only part of this XML activity is included here to understand the design.

XML Code

Homepage

There are total of six icons on the home page. We used CardView to show the home page icons.

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#b3ffff"
    android:gravity="center"
    android:orientation="vertical"
    android:padding="5dp"
    android:weightSum="3"
    tools:context=".MainActivity">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1"
        android:clipToPadding="false"
        android:gravity="center"
        android:orientation="horizontal">

        <androidx.cardview.widget.CardView
            android:id="@+id/idbuslist"
            android:layout_width="0dp"
            android:layout_height="match_parent"
            android:layout_margin="10dp"
            android:layout_weight="1"
            android:background="#b3ffff"
```

Convert money activity

```
    <Spinner
        android:id="@+id/convert_from"
        android:layout_width="100dp"
        android:layout_height="40dp"
        android:layout_gravity="center"

        />
</RelativeLayout>
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="To "
    android:textSize="15dp"
    android:layout_margin="20dp"
    />
<RelativeLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:background="@drawable/border_for_moneyconvert"

    >
    <Spinner
        android:layout_width="100dp"
        android:layout_height="40dp"
```

We have used CardView to select a country from different countries. This way user can easily convert money by selecting the country.

```
    >
    <Spinner
        android:layout_width="100dp"
        android:layout_height="40dp"
        android:id="@+id/convert_to"
        android:layout_gravity="center"
```

5.3 Testing Implementation

Software Testing is a way to test whether or not the real software program product fits anticipated necessities and to make certain that software program product is Defect free. The reason of software program trying out is to perceive errors, gaps or lacking necessities in assessment to real necessities.

In our project there are a few factors which need to be run perfectly due to the fact fulfillment is depending on them flawlessly. Like intent from one activity to another activity, accurately show the indicated place on the map etc. The maximum essential factor is proper net connectivity. Without Internet connection a few alternative our device will now no longer be capable of access. Free API has been used here. So the mapping system must have internet connection. Since the work of money conversion has been done using real time database. If the net connection is off, users can't hit the database. As a result, they'll now no longer get notification well on the right time.

During testing, all of the exception have to carry out because of any errors. All the toast and errors message have to be proven perfectly.

Now here we talk approximately the implementation system of the trying out result.

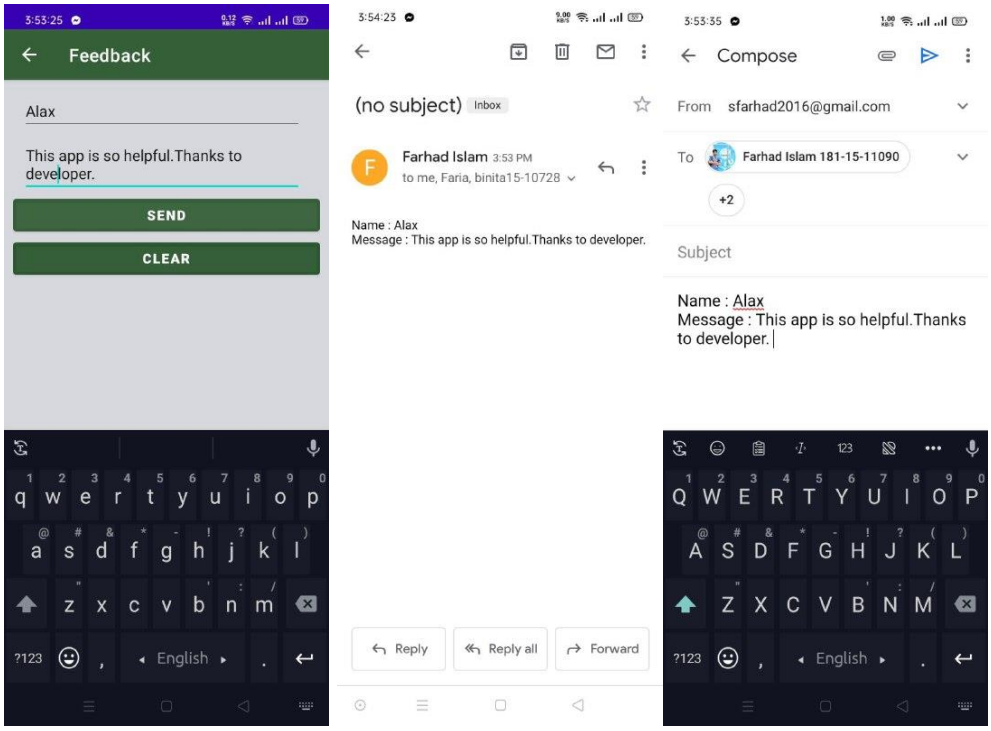


Figure 5.3: Testing Implementation

For example, the user needs to select the "Send" option to send a message to the developer. Clicking on the "Clear" option will delete the text. If the developer's email address is incorrect, the message will not reach the developer. User need an internet connection to do this. Otherwise an error will come in the message send.

5.4 Test Results and Reports

All test results and the implementation process define the outcome of this project. The whole task should be done more clearly if the user interface is simple and good. In this project, the user interface is very easy to use. We already know from the above chapter that we have some lacking in our app. Except all the other outputs are found correctly. We will know better about the test results by looking at some screenshots.

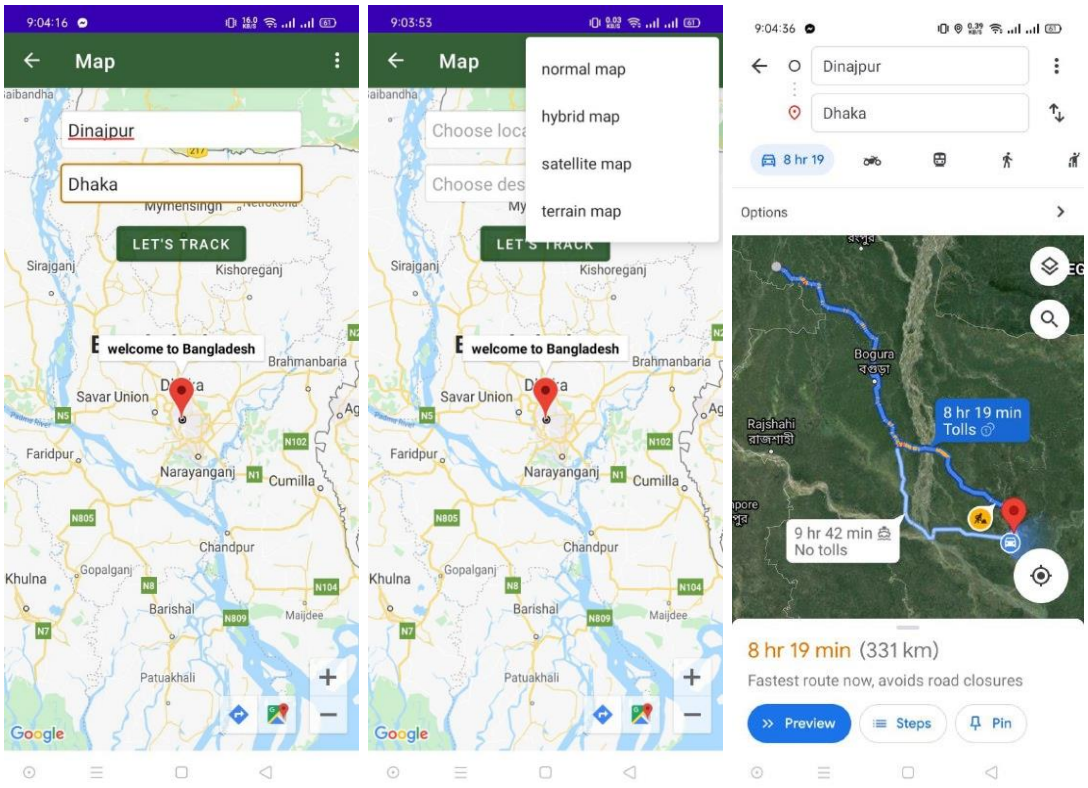


Figure 5.4.1: Map Testing Result

If user search by inputting the required data in the location and destination, the destination will show on the location map. Clicking on this location will bring up a welcome message.

Clicking the three dates in the top right corner will bring up different types of map options. Click on any one to see the map of the new design. Below is the option to zoom-in, zoom-out in the right-side corner. Next to it, there is also the option to go directly to Google Map. From the pictures, it is clear that all the options are output properly.

Figure 5.4.2: Contribute Testing Result with Firebase Result

The screenshots also show that the output is perfect. If the internet connection is not slow, the application that runs on the internet will give the correct output.

CHAPTER 6

Impact on Society, Environment, Sustainability

6.1 Impact on Society

Mobile packages have an extensive style of Apps. Currently, we've got main structures Android & iOS. "Trace BD'' is one kind of android app. It has made a few main wonderful contributions to our lives. Some amazing modifications and achievements are indexed below.

1.It has made communications easier.
2.All the records and update is without problems accessible.
3.It has made traveling smooth through its wonderful navigations system.
4.Foreigners will be aware of our country by using this app, which is very helpful in developing the image of our country.

The above-referred to contributions are meaningful.

6.2 Impact on Environment

An environmental effect is described as any alternate to the environment, whether or not unfavorable or beneficial, due to a facilities activities, products or services. In different phrases it's far the impact that people's movements have at the environment.

6.3 Ethical Aspects

It's a detail-oriented report actually outlining the goals of the project like technical, phrases and economic components of the software program project. These software program proposals allow the Business Professionals to automate ordinary tasks.
Keep user privacy safe is our first priority.
Having correct data approximately user allows us to offer user with a smooth, efficient, and custom designed experience. The dada we might also additionally acquire through the Application relies upon at the content material and substances user use.

Our app wishes to show on location while establishing the view map feature. This is wanted to calculate user modern-day role accurately. User ought to know, we do now no longer acquire user are facts with distinct cope with to our server. Link to the privateness coverage of third-party service providers utilized by the app Google Play Services, Firebase & Google Maps. None of user data is exchanged, stored, or utilized by any third-party or through us.

If the user provides any information, it verifies properly and may revoke it, if it deems it inappropriate to the authority. The user has to accept that.

We desire this note explains how we can use the private records which user have furnished to us and assures user that we're treating user pretty and lawfully.

6.4 Sustainability Plan

The present age is technology dependent, as well as infinite competition. Today an app has been created, after a while another new app with some new features is coming and reducing the value of the previous app. In this competition we have some far-reaching plans to keep our app sustainable.

Users will be able to download this mobile app for free. If you search for any information, you can get it in less time. It will be much more comfortable to use ad-free. We will enter into agreements with bus, hotel, resort authorities, where our app users will get a discount in each sector every time they use the app, which will motivate them to use our app. There is a problem in our application. Convert Money, Hotel, Map These three formats cannot be used without internet connection. When internet connection is off, these systems do not run successfully. The page turns white. So, in the future, we will work on the mentioned errors so that no message can be seen on the page since it is not white.

CHAPTER 7
Conclusion and Future Plan

7.1 Discussion and Conclusion

In this generation established world, seeing that the appearance of android the area of cellular software has witnessed a big chance. The predominant motives at the back of which are android being an open-supply OS. Although Android app is available in every sector, but it is missing in the fields according to the demand of foreigners in our country. This automation system can undoubtedly bring about a radical change in this sector.

This app is definitely a useful platform for the people of our country. However, this work has been done especially for the foreign tourists. So they will be especially benefited by using this app. There are many times when many people try to deceive when they see a newcomer or a foreigner in one place. They give wrong information without showing the right place or the right bus. If they have this app in their hands, they will get the correct information of bus movement through it. There will be no possibility of being deceived by anyone. Money converting has brought a new dimension to this system. Which is very convenient for foreigners. On the same platform they are getting to know about the historical places of Bangladesh. Also getting to know about the famous hotel resort. GPS system has also been used.

After all, this manual system is the best way to make a trip comfortable. Necessary information is easily available at hand. Since there is no login system, accessing the app is also very easy. Travel in Bangladesh can be a comfortable zone for foreigners. Which will also help in developing the image of our country in front of them.

7.2 Scope for Further Development

We have worked on buses plying inside Dhaka. will expand it further in the future. Will work with buses that travel from one place to another all over Bangladesh.

In the work that has been done with GPS, the current location can be seen. This option has not been kept. In future we will add the current location here. Which will be convenient for the user. The fare of a bus rent according to the road will also be updated in the future.

On the other hand, this project is an android based application IOS consumer may be deprived. So, in close to destiny we can increase this project into responsive internet software. Moreover, for making sure unique cell system and kind of users we can increase this project. We may also work on interface to make it extra consumer friendly.

APPENDIX

Appendix-A Backend Code

This element is an expand a part of chapter 4.2: Back-end design. Here we've got proven the real java code of a particular task.

Convert Money

```
//Initialization
currencyConverted = (EditText) findViewById(R.id.currency_converted);
currencyToBeConverted = (EditText) findViewById(R.id.currency_to_be_converted);
convertToDropdown = (Spinner) findViewById(R.id.convert_to);
convertFromDropdown = (Spinner) findViewById(R.id.convert_from);
button = (Button) findViewById(R.id.button);
//Adding Functionality
String[] dropDownList = {"USD", "AED","AFN","ALL","AMD","ANG","AOA","ARS", "AUD","AWG","AZN","BAM","BBD","BDT","BGN", "BHD","BIF","BMD","BND","BOB",
        "BRL","BSD", "BTN","BWP","BYN","BZD","CAD","CDF","CHF", "CLP","CNY","COP","CRC","CUC","CUP","CVE", "CZK","DJF","DKK","DOP","DZD","EGP","ERN", "ETB","EUR","FJD","FKP","FOK",
        "GBP","GEL", "GGP","GHS","GIP","GMD","GNF","GTQ","GYD", "HKD","HNL","HRK","HTG","HUF","IDR","ILS", "IMP","INR","IQD","IRR","ISK","JMD","JOD", "JPY","KES","KGS","KHR","KID",
        "KMF","KRW", "KWD","KYD","KZT","LAK","LBP","LKR","LRD", "LSL","LYD","MAD","MDL","MGA","MKD","MMK", "MNT","MOP","MRU","MUR","MVR","MWK","MXN", "MYR","MZN","NAD","NGN","NIO","NOK","NPR",
        "NZD","OMR","PAB","PEN","PGK","PHP","PKR", "PLN","PYG","QAR","RON","RSD","RUB","RWF", "SAR","SBD","SCR","SDG","SEK","SGD","SHP", "SLL","SOS","SRD","SSP","STN","SYP","SZL",
        "THB","TJS","TMT","TND","TOP","TRY","TTD", "TVD","TWD","TZS","UAH","UGX","UYU","UZS", "VES","VND","VUV","WST","XAF","XCD","XDR", "XOF","XPF","YER","ZAR","ZMW"};
ArrayAdapter<String> adapter = new ArrayAdapter<>( context: this, R.layout.support_simple_spinner_dropdown_item, dropDownList);
convertToDropdown.setAdapter(adapter);
convertFromDropdown.setAdapter(adapter);
button.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        //
        RetrofitInterface retrofitInterface = RetrofitBuilder.getRetrofitInstance().create(RetrofitInterface.class);
        Call<JsonObject> call = retrofitInterface.getExchangeCurrency(convertFromDropdown.getSelectedItem().toString());
        call.enqueue(new Callback<JsonObject>() {
            @Override
            public void onResponse(Call<JsonObject> call, Response<JsonObject> response) {
                try {
                    JsonObject res = response.body();
                    JsonObject rates = res.getAsJsonObject("rates");
                    double currency = Double.valueOf(currencyToBeConverted.getText().toString());
                    double multiplier = Double.valueOf(rates.get(convertToDropdown.getSelectedItem().toString()).toString());
                    double result = currency * multiplier;
                    currencyConverted.setText(String.valueOf(result));
                } catch (Exception e){
                    Toast.makeText(getApplicationContext(),"Please Enter Amount",Toast.LENGTH_SHORT).show(); } }
            @Override
            public void onFailure(Call<JsonObject> call, Throwable t) {
```

Feedback

```
    sendbutton = findViewById(R.id.idsendbutton);
    clearbutton = findViewById(R.id.idclearbutton);
    nameedittext = findViewById(R.id.idnameedittext);
    feedbackedittext = findViewById(R.id.idfeedbackedittext);
    sendbutton.setOnClickListener(this);
    clearbutton.setOnClickListener(this); }
@Override
public void onClick(View v) {
    try {
        String name = nameedittext.getText().toString();
        String msg = feedbackedittext.getText().toString();
        if (v.getId() == R.id.idsendbutton) {
            Intent intent = new Intent(Intent.ACTION_SEND);
            intent.setType("text/emai");
            intent.putExtra(Intent.EXTRA_EMAIL, new String[]{"farhad15-11090@diu.edu.bd", "faria15-11098@diu.edu.bd", "binita15-10728@diu.edu.bd"});
            intent.putExtra(Intent.EXTRA_TEXT, value: "Name : " + name + "\n Message : " + msg);
            startActivity(Intent.createChooser(intent, title: "feedback with"));
        }
        if (v.getId() == R.id.idclearbutton) {
            nameedittext.setText("");
            feedbackedittext.setText("");
        }
    } catch (Exception e) {
        Toast.makeText(getApplicationContext(), "Error:" + e, Toast.LENGTH_SHORT).show();

    }
```

Contribute Here

```
@Override
public void onClick(View v) {

    if(v.getId()==R.id.idsubmitbutton)
    {
        saveData();
    }
    if(v.getId()==R.id.idclearbutton)
    {
        emailphnedittext.setText("");
        busnameedittext.setText("");
        busrouteedittext.setText(""); } }
private void saveData() {

    String emailphn=emailphnedittext.getText().toString().trim();
    String busname=busnameedittext.getText().toString().trim();
    String busroute=busrouteedittext.getText().toString().trim();

    String key=databaseReference.push().getKey();
    Information information=new Information(emailphn,busname,busroute);
    databaseReference.child(key).setValue(information);
    Toast.makeText(getApplicationContext(),"Added",Toast.LENGTH_LONG).show();
    emailphnedittext.setText("");
    busnameedittext.setText("");
    busrouteedittext.setText("");
```

Search Route

```
    SearchManager searchManager = (SearchManager) getSystemService(Context.SEARCH_SERVICE);
    //display the list
    search = (SearchView) findViewById(R.id.search);
    search.setSearchableInfo(searchManager.getSearchableInfo(getComponentName()));
    search.setIconifiedByDefault(false);
    search.setOnQueryTextListener(this);
    search.setOnCloseListener(this);
    displayList();
}
private void expandAll() {
    int count = listAdapter.getGroupCount();
    for (int i = 0; i < count; i++){
        myList.expandGroup(i); } }
private void displayList() {
    //display the list
    loadSomeData();
    //get reference to the ExpandableListView
    myList = (ExpandableListView) findViewById(R.id.expandableList);
    //create the adapter by passing your ArrayList data
    listAdapter = new MyListAdapter(getApplicationContext(), continentList);
    //attach the adapter to the list
    myList.setAdapter(listAdapter);
}
private void loadSomeData() {
    ArrayList<Country> countrylist = new ArrayList<>();

    //Start A
    Country country = new Country( name: "Gabtoli ⇄ Technical ⇄ Ansar Camp ⇄ Mirpur 1 ⇄ Sony Cenema Hall ⇄ Mirpur 2 ⇄ Mirpur 10 ⇄  Mirpur 11 ⇄  Purobi ⇄ Kalshi ⇄ ECB Square
    countrylist.add(country);
    Continent continent = new Continent( name: "Achim Paribahan",countrylist);
    continentList.add(continent);
```

Map Output

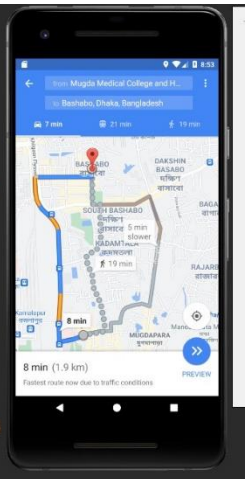
```
private void Displaytrack(String sourceText,String destinationText ) {
    try{
        //Toast.makeText(getApplicationContext(),"TRY",Toast.LENGTH_SHORT).show();


        // Uri uri=Uri.parse("https://www.google.com/maps/dir" + sourceText+"/"+ destinationText);
        Intent intent= new Intent(Intent.ACTION_VIEW);
        intent.setData(Uri.parse("https://www.google.com/maps/dir/" + sourceText+"/"+ destinationText));

        //intent.setPackage("com.google.android.apps.maps");
        intent.setFlags(Intent.FLAG_ACTIVITY_NEW_TASK);
        Intent intent1 =Intent.createChooser(intent, title: "done");
        startActivity(intent1);
    } catch (ActivityNotFoundException e){

        // Toast.makeText(getApplicationContext(),"Catch",Toast.LENGTH_SHORT).show();

        Uri uri1=Uri.parse("https://play.google.com/store/apps/details?id=com.google.android.apps.maps");
        Intent intent =new Intent( Intent.ACTION_VIEW,uri1);
        intent.setFlags(Intent.FLAG_ACTIVITY_NEW_TASK);
        startActivity(intent);
```



Appendix-B Database Design

This section is an expand a part of chapter 5.1: Implementation of Database. Here we have shown a table of the firebase which are Realtime.

Figure B: Realtime Database of Route Information

Appendix-C GUI Design

This section is an expand a part of chapter 4.3: Interaction Design and User Interface. On there we've shown a few essential GUI of our project. Here we've got additionally connected a few any other interface of sub activity of our project.

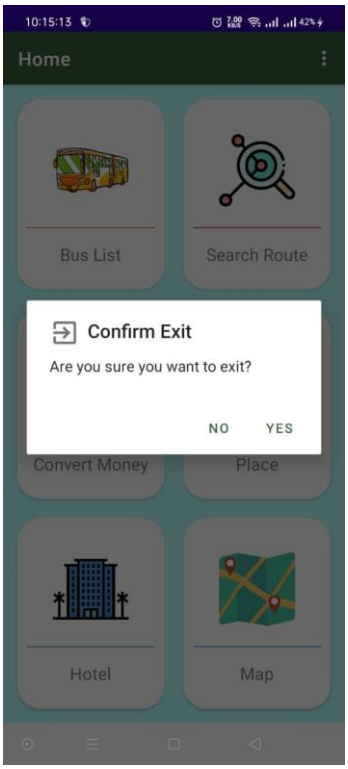


Figure C1: Exit Option

Figure C2: About Us

Here in Figure C1 is the exit option. Users can exit from the home page after using the facilities on this app. They can exist from the home page by clicking the back button from the home page. By clicking the back button there a pop-up message will be shown. There have two options one is yes and the other is no. By clicking yes, the user will exit from the app, and by clicking on it will stay at the home screen.

Here in Figure C2 About Us, From the menu bar user can go to the About us option. In about us, they can view about app and developer information**.**

Trace BD Report

ORIGINALITY REPORT

3%	1%	0%	2%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.goodfirms.co Internet Source	1%
2	Submitted to Cork Institute of Technology Student Paper	1%
3	Submitted to Manipal University Student Paper	1%
4	woz-u.com Internet Source	<1%
5	Submitted to Gitam University Student Paper	<1%
6	Submitted to Campbellsville University Student Paper	<1%
7	Submitted to Florida International University Student Paper	<1%
8	seal.ics.uci.edu Internet Source	<1%

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