

**DHAKA CITY: THE CITY IN YOUR HANDS**

**BY**

**MD. MIM MOSTAKIM HAQUE**  
**ID: 152-15-5774**

**AND**

**MD. ASHADUZZAMAN FARUQUE**  
**ID: 152-15-5698**

**AND**

**MD. SHAKIL MAHMUD**  
**ID: 152-15-5573**

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

**Supervised By**

**MD. JUEAL MIA**  
Lecturer  
Department of CSE  
Daffodil International University

**Co-Supervised By**

**SHAON BHATTA SHUVO**  
Senior Lecturer  
Department of CSE  
Daffodil International University



**DAFFODIL INTERNATIONAL UNIVERSITY**

**DHAKA, BANGLADESH**

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## **APPROVAL**

This Project titled “**Dhaka City: The City in Your Hands**”, submitted by Md. Mim Mostakim Haque, ID No: 152-15-5774, Md. Ashaduzzaman Faruque, ID No: 152-15-5698 and Md. Shakil Mahmud, ID No: 152-15-5573 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 2<sup>nd</sup> May, 2019.

### **BOARD OF EXAMINERS**

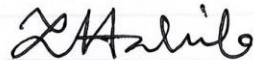
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**Dr. Syed Akhter Hossain**  
**Professor and Head**

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

**Chairman**

---



**Md. Tarek Habib**  
**Assistant Professor**

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

**Internal Examiner**

---

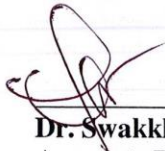


**Moushumi Zaman Bonny**  
**Senior Lecturer**

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

**Internal Examiner**

---



**Dr. Swakkhar Shatabda**  
**Associate Professor**

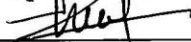
Department of Computer Science and Engineering  
United International University

**External Examiner**

## DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Md. Jueal Mia, 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:



**Md. Jueal Mia**

Lecturer

Department of CSE

Daffodil International University

Co-Supervised by:



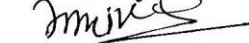
**Shaon Bhattacharya Shuvo**

Senior Lecturer

Department of CSE

Daffodil International University

Submitted by:



**Md. Mim Mostakim Haque**

ID: 152-15-5774

Department of CSE

Daffodil International University

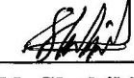


**Md. Ashaduzzaman Faruque**

ID: 152-15-5698

Department of CSE

Daffodil International University



**Md. Shakil Mahmud**

ID: 152-15-5573

Department of CSE

Daffodil International University

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## **ABSTRACT**

Our project is based on an android app and it's one kind of travel guide. It's a small tourist guide on Dhaka city which is the capital of Bangladesh. The ultimate goal of the project is to make the travelling easier especially for the new comers into the city. The users of this app will get to know about the historical and beautiful places of Dhaka and how to go there. And they will get these information in offline, so they won't need any internet connection primarily. Like everywhere else in the world the new comers will need some good places to stay. In this app they will get the information about proper accommodations in Dhaka. It will make travelling in Dhaka easier for everyone. There is another important goal of the project and that is to present the amazing beauty of Dhaka in front of everyone. We believe that the natural beauty of Dhaka can remove the tiredness of the city dwellers and conquer the heart of the new comers. And this app will present that beauty to all of them.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

Dhaka City is an android application which will work as a travel guide. The users will get important primary information needed to travel in the city offline. An internet connection will be necessary if they want to know more information or to connect to google map. They will know about the historical places of Dhaka and how to go there. They will get the information about hotels, restaurants, hospitals, ATM booths etc. which will be needed to travel in this city. This project will help them to travel easily. This app will also highlight the bright side of Dhaka and will increase the number of tourists.

### 1.2 Motivation

When we first came to Dhaka we faced many problems. We didn't have any idea about this city. We didn't know about different places. We didn't know how to go from one place to another. We didn't have the information about quality accommodation. We couldn't find good restaurants to eat quality food. We didn't know about healthy hospitals. We knew almost nothing about the city. We had to face many difficulties to live in this city when we first arrived here. Like us so many people face the same problems especially the foreigners. So we thought if we could build something to help the new comers of the city then it will be great.

We all know that Dhaka is the capital of Bangladesh and it's also the main point of almost everything of this country. That's why people of Bangladesh often have to visit the city. Many foreign people also have to visit here for many purposes. The environment and the places of the city feels very new an uncomfortable to the new comers. So we thought about something which would remove their uncomfortable feeling.

When people come to this city their first attraction is to visit the historical and beautiful places of the city. But most of them don't have any idea about the places and how to

get there. They need quality hotels to stay and information about the hospitals in case of emergency. They need information about restaurants to eat quality food. They need information about ATM booths to withdraw money and it's difficult to find ATM booths in this city. They have to search all these information in different places and it's hard to find them at once. So we thought if we can gather all these information together then it will be very helpful.

We all know many bad things about this city. It's one of the most populated city of the world. It is the 2<sup>nd</sup> worst city in the world for living. It is an unplanned city. There are many more bad things about this city. But there are some good sites of this city which most of the people don't have any idea about. So we thought if we can highlight the bright site of this city it will keep a very important effect in the lives of the city dwellers and the economy of Bangladesh.

### **1.3 Objectives**

Firstly, when people first come to Dhaka their very first interest is to visit some spectacular places. They need the proper information of those places like the history of that place, how to go there, etc. They will find all these information in this app.

Secondly, the people who doesn't have any relatives in Dhaka or the foreigners come to Dhaka they seek for hotels. In this app they will get some important information about the top hotels of different categories.

Thirdly, people will get some important information about hospitals which will be needed in case of emergency.

Fourthly, people will need the information about ATM booths as most of us now have bank accounts and we don't want to take the risk by having too many cash with us. We will provide ATM booths' locations in this app.

Fifthly, the people of Dhaka or we can say that the people of Bangladesh are foodie. SO it will be helpful for them if they find the information about some quality restaurants in Dhaka.

## **1.4 Expected Outcomes**

Firstly, this app will help people mentally. Because people become mentally helpless what they don't know about. This app will provide them proper information to remove their mental weakness.

Secondly, this app will work as a tourism guide to them. They can easily visit the awesome places of this city.

Thirdly, it will provide a probable cost idea so that people can easily make their plan according to their financial state.

Fourthly, people are afraid of the security to live in this city. We will provide secure places to live in through this app and it will help on their security concern.

Fifthly, people in case of emergency will get the hospital information which will help to save lives or to decrease the danger.

Sixthly, this app will increase the attraction and curiosity of the visitors about this city. And it will increase the number of tourist and visitors.

Seventhly, as it is increasing the number of tourists it will help increasing the economy of the country.

And the last but not the least, it will make easier for the users to travel in the city of magic.

## **1.5 Report Layout**

### Chapter 1: Introduction

In this chapter we have pointed out the motivation, objectives and the expected outcomes of our project following the report layout.

### Chapter 2: Background

In this chapter we will discuss about the works behind our project. We will also mention about the works we researched for our project similar to our app. We will indicate the obstacles we faced.

### Chapter 3: Requirements Discussion

We will elaborate all the requirements we needed for our project. We will show BPM, Use Case, Requirements Analysis, Database Model, Design Distributions.

### Chapter 4: Design Analysis

In this chapter we will irradiate on the processes of the design of different portions of our project.

### Chapter 5: Design Implementation and Testing

Here we will tell how we've implemented our project and show the results of the testing of our app.

### Chapter 6: Conclusion and Future Works

In the last chapter of this report we will draw the finish line of this project with the conclusion and our desire of future works regarding our app.

## **CHAPTER 2**

### **BACKGROUND**

#### **2.1 Introduction**

When we first thought about our idea of making this app we were aware of some related apps which provides almost as similar information as we were thinking to provide. But the information were in different apps. One has to install more than one app to get all kind of information. This is a problem for users. Huge of amount of storage is needed for this. Besides it is annoying to search different kinds of information in different apps. So we thought of providing all kind of information in one app. In our app users can find all kind of information to travel in Dhaka city. They don't have to use more than one app anymore. It will decrease their work and save their time and storage. That's why it is a more effective app.

#### **2.2 Similar Types of Works**

A lot of travel guide are found in our country. And also there are different types of apps for hospital information, restaurants information, hotel information and ATM booth information. We studied some of those apps for the betterment of our project. We analyzed those apps, their pros and cons to make our project better. We found out their weaknesses and strengths so that we can remove those weaknesses from our app and add more strengths to it. We analyzed many apps but here we will be discussing about few of those.

## 2.2.1 ঢাকার দর্শনীয় স্থান | Dhaka Tourism

It provides the information of some places of Dhaka district.

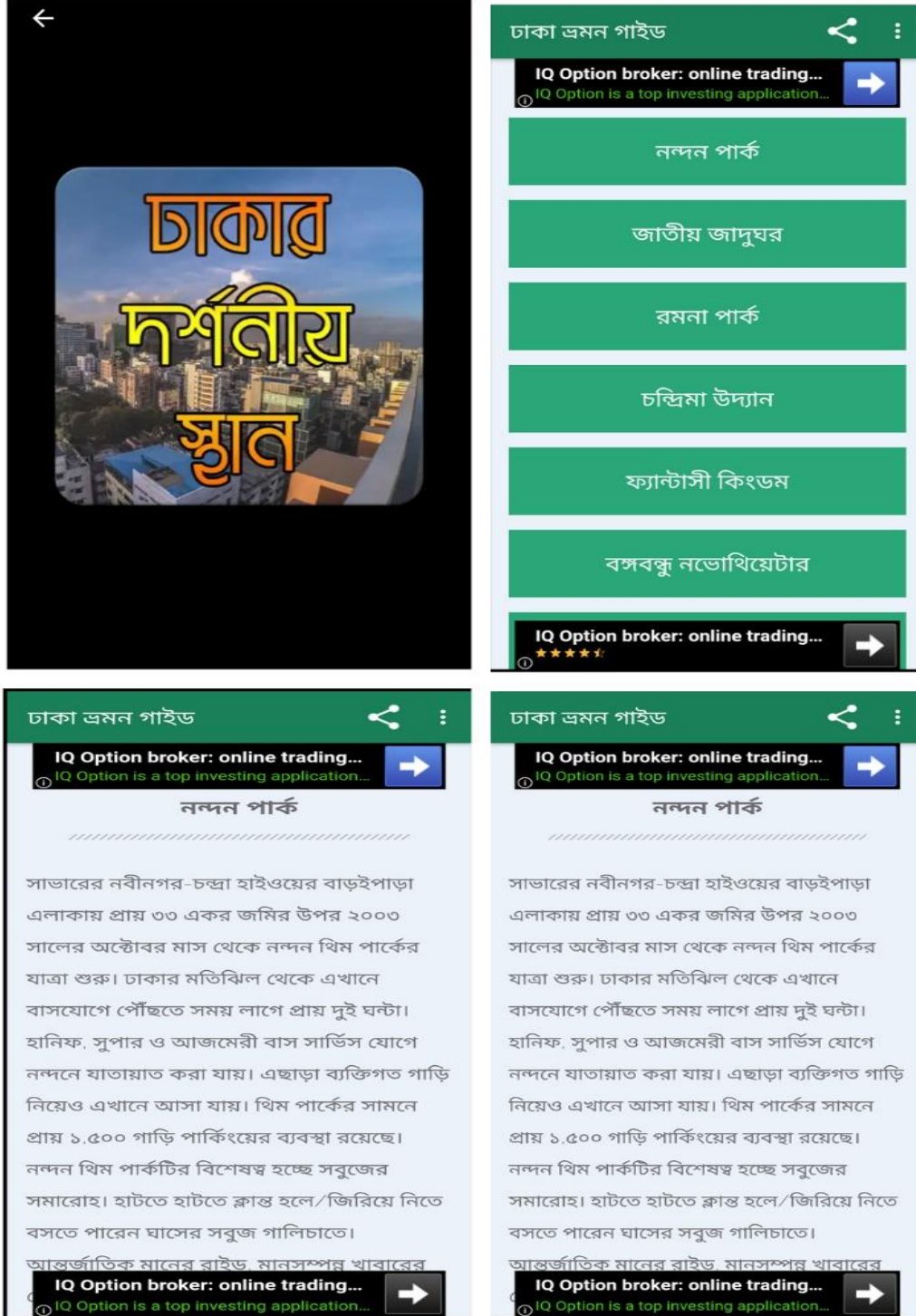


Figure 2.1: ঢাকার দর্শনীয় স্থান | Dhaka Tourism<sup>[1]</sup>



## 2.2.2 Hotels of Bangladesh- বাংলাদেশ এর হোটেল

This app provides the information of the hotels from different places of Bangladesh.

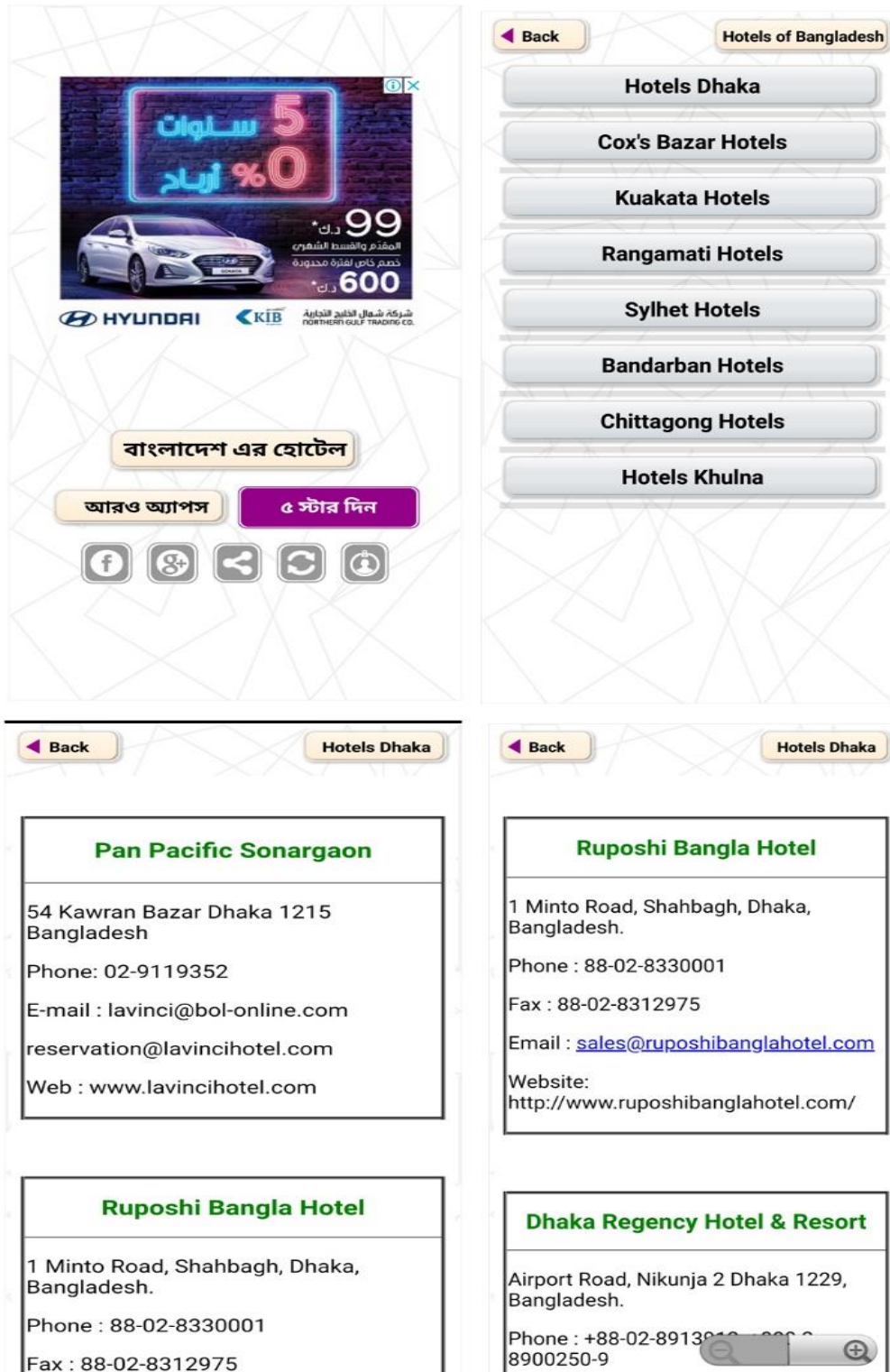


Figure 2.2: Hotels of Bangladesh- বাংলাদেশ এর হোটেল<sup>[2]</sup>

### 2.2.3 Hospital Number | Dhaka

This app provides the numbers of the hospitals of Dhaka.

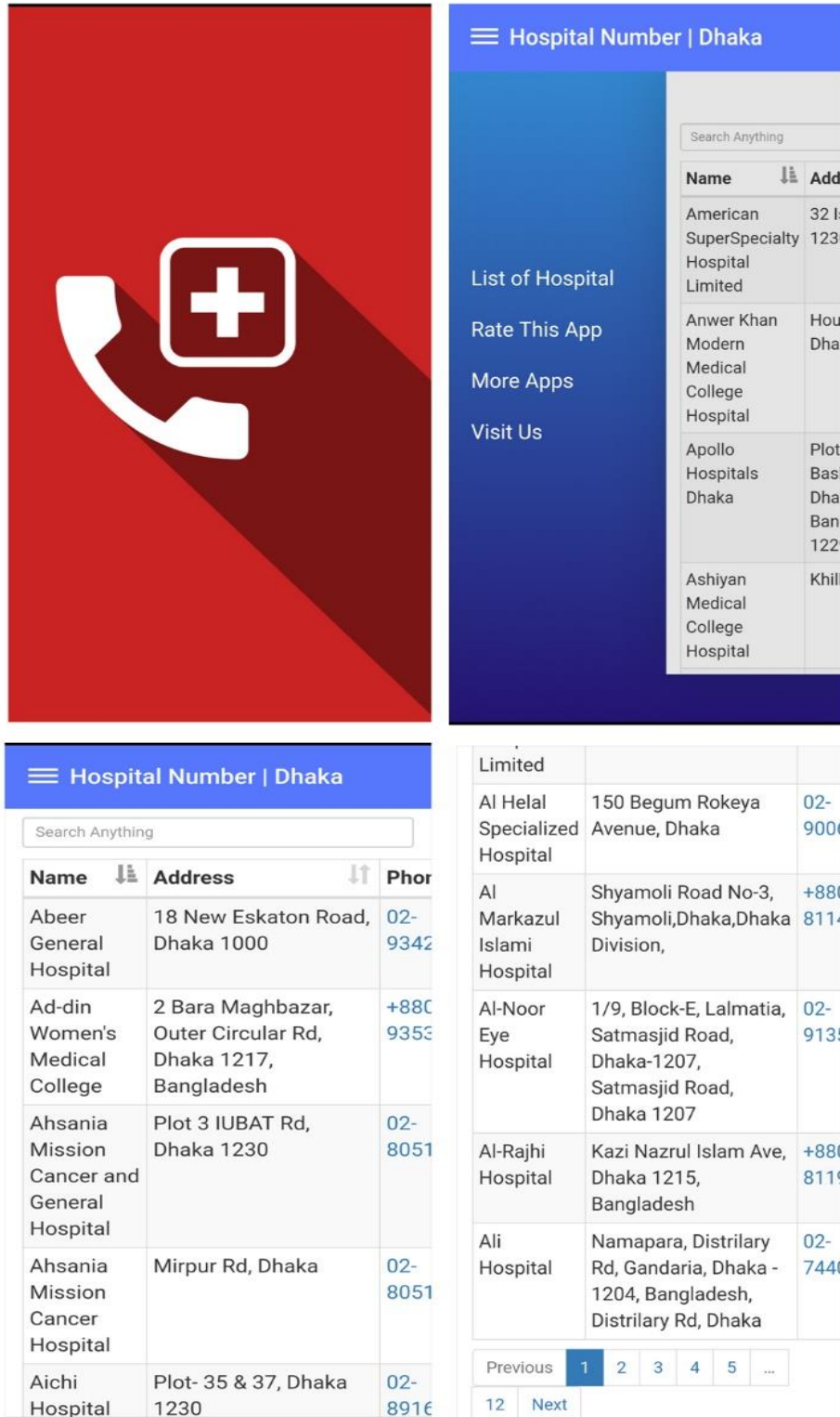


Figure 2.3: Hospital Number | Dhaka<sup>[3]</sup>

## 2.2.4 Find Restaurants Near Me – Free

This app provides Restaurants information in Dhaka.



Figure 2.4: Find Restaurants Near Me – Free<sup>[4]</sup>

## 2.2.5 Bank Info

This app provides the information of ATM booths of different banks.

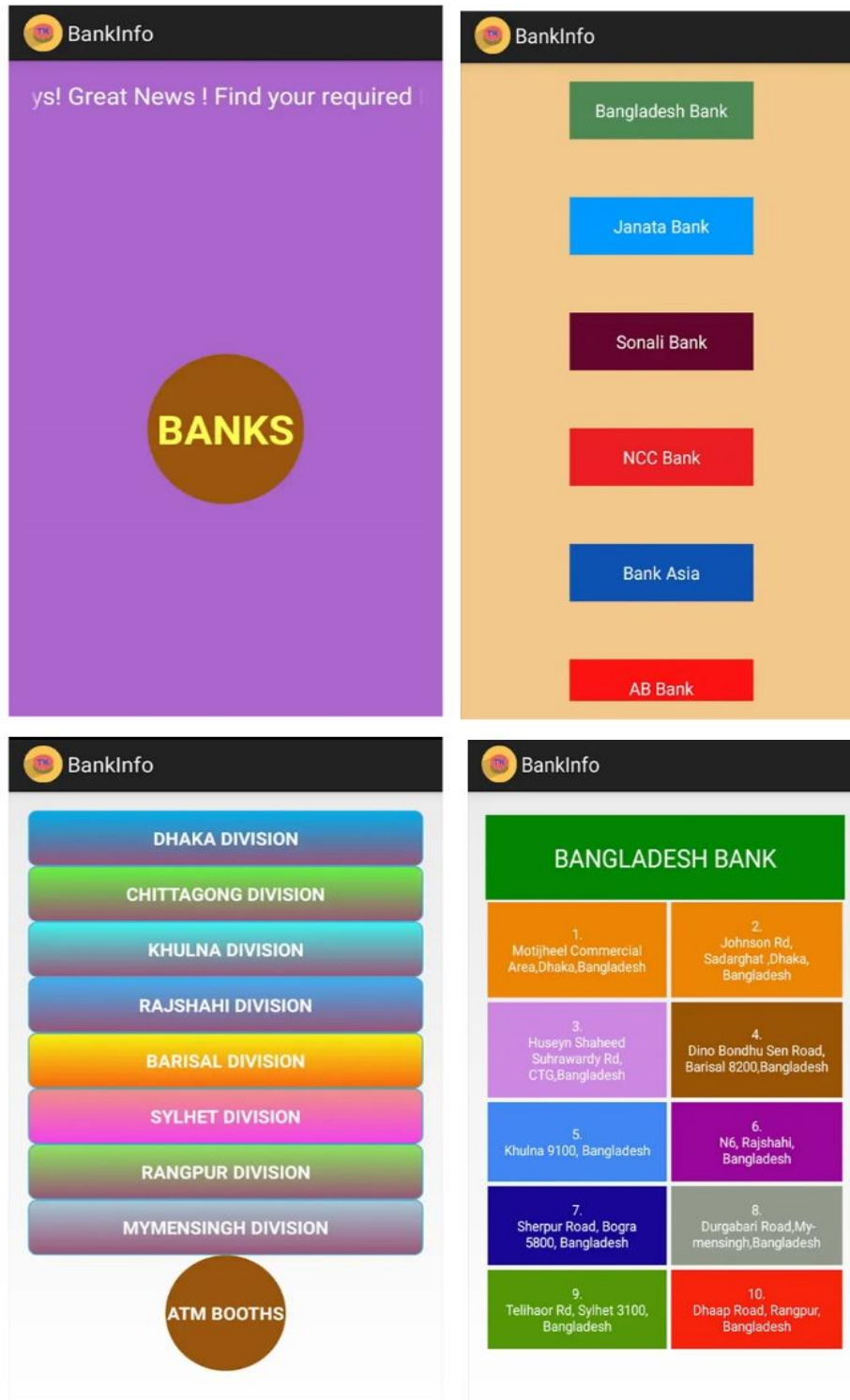


Figure 2.5: Bank Info<sup>[5]</sup>

## 2.3 Comparison with Other Works

People are using different apps currently in our country to get the information of Dhaka city. Those are helpful for users. But those apps have many limitations. Firstly almost all the apps provide the information in Bengali language which is helpful and easier to read for the people of Bangladesh. But these apps aren't helpful at all for the people from abroad. But as we are focusing on the foreigners also we have provided the information in English language so that people from all over the world including our country can read the information. Though it will be difficult for the people who are weak in English but whatever, most of the people who uses smartphone and like to travel are pretty smooth in reading English. So it won't be that much problem for our people but helpful for the foreigners. Secondly, most of the apps provides information of the places outside Dhaka city. They provide information of some places of the whole country. To do this they've missed many important places of Dhaka city. But we focused on only Dhaka city. Because when foreigners come to Bangladesh their first attraction is to travel the capital of the country. And also the people from outside of Dhaka also wants to visit the places of this city. And relating to this people won't need the information of hotels, restaurants and hospitals from outside of Dhaka while they are staying here. Those apps focused on the whole country and missed many important ATM booths, hotels, restaurants, hospitals and places of Dhaka city and we've shorten the area and increased the amount of places, hospitals, restaurants, hotels and ATM booths of Dhaka city only. Thirdly, the travel apps didn't provide the address of the places. So it will be difficult for the users to find those places offline. But in our app we provide the address so that the users can go to those places even if they are offline without searching the address on the internet. Fourthly, these apps didn't provide any short description on those places or any history of those places. We've provide a short description and some historical information for each and every places we've included. Fifthly, ATM booth finder apps only provide the address, not google map. We've provided the map to find them easily. In a word, we have developed a very good and helpful app which doesn't have the problems which the other apps has. Most of all we gathered these kinds of information all together in one app which no one ever did. So we hope it will be much more helpful than before and those apps for both the users from this country and from abroad.

## 2.4 Obstacles

If you want to do any work, I repeat, “any work”, there is no easy way to do that. Without facing any obstacle or challenge you can’t even think of doing any work. While we were doing our project work we faced so many problems. And facing them we’ve learnt a lot of things which will be helpful in our future life. Here we will point out those obstacles:

- We developed our app on android platform. We are new comers in this platform. That’s why it was very difficult for us to cope up with at the first place. There were so many problems developing our project. But we overcame those difficulties and implemented our project.
- We had to be sophisticated to ensure the database connection with the front end.
- It was difficult and time consuming to design a good user interface.
- It was very difficult designing other materials. Our app crashed so many times.
- There was a limitation in database.
- Without authentication we couldn’t get the access to database in Firebase<sup>[10]</sup>.
- Google map API was restricted.
- We faced difficulties collecting real time data.
- At a point no data was being showed in alert dialogue box.
- It was very difficult to bring google map auto complete text search box into our app.
- We didn’t have any higher configuration computer to develop our project. We faced so many problems for this.

# CHAPTER 3

## REQUIREMENTS DISCUSSION

### 3.1 Business Process Modeling

When we represent the business processes or workflows of a company graphically then that graphical representation is called Business Process Modelling. The business process modeling of our project is given below in the figure 3.1.

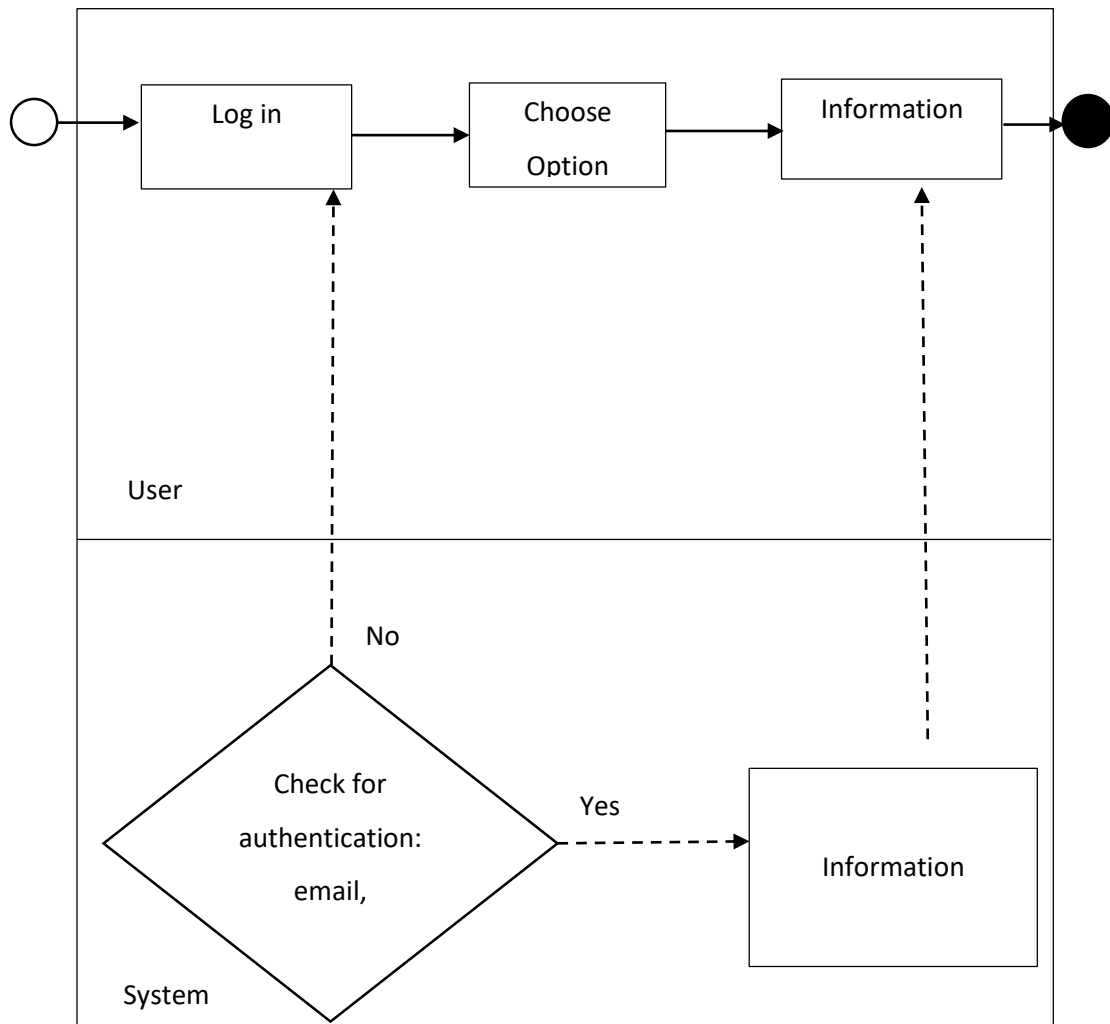


Figure 3.1: Business Process Model

## **3.2 Requirement Analysis**

Requirement Analysis is a procedure which describes user prospects for a new software to be made or modified. When it is a concern of software engineering, sometimes it is mentioned to loosely by names like requirements collecting or requirements capturing. Requirements analysis includes some tasks which control the necessities or circumstances to meet for a new or changed project. Requirements control the major features of an office information system. There are two types of requirements: Functional and Non-functional. In software engineering, a function of a system, where a function is defined as a specification of behavior between outputs and inputs is called functional requirement. And if a requirement specifies some conditions which can be used to evaluate the operation of a system is known as non-functional requirements.<sup>[6][7]</sup>

### **3.2.1 Functional Requirement**

From the perspective of our project, it had to have some functional requirements such as a registration segment, a login segment where only registered member can access, a navigation bar from where a user can go to different types of information.

### **3.2.2 Non-functional Requirement**

To ensure more effective and optimized performance, non-functional requirements are very helpful. It makes the performance smoother, and quick. Application's User Interface must be unique and beautiful so that the users can have outstanding experience.

## **3.3 Use Case Diagram and Explanation**

If a diagram represents the interaction of a user with a system that indicates the relationship between the user and some different cases in which the user is involved is called Use Case Diagram.<sup>[8]</sup>

There are some characteristics of use case diagram:

- It is used to establish functional requirements.
- We use it to make the model of the objectives of a system interactions.
- It is used to record the path from trigger point to objectives.



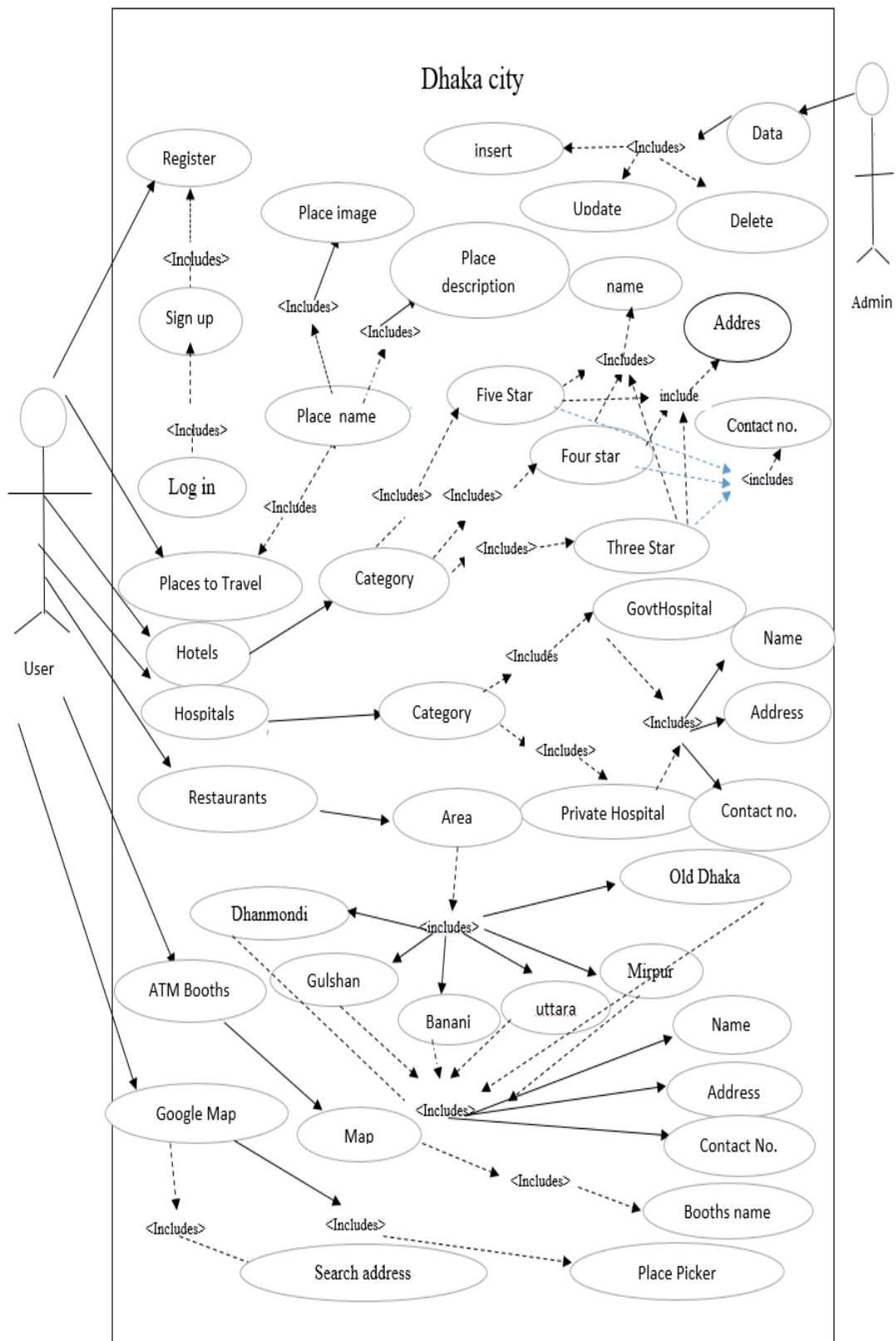


Figure 3.2: Use Case Diagram

Table 3.1: Use case description of Sign up

Use Case	Sign up
Primary Actor	User
Secondary Actor	Null
Pre-condition	Null
Scenario	<ul style="list-style-type: none"> <li>• Email Address</li> <li>• Password</li> </ul>
Post-condition	<ul style="list-style-type: none"> <li>• Sign up successful or failed</li> <li>• Sign in</li> </ul>

Table 3.2: Use case description of Sign in

Use Case	Sign in
Primary Actor	User
Secondary Actor	Null
Pre-condition	Sign up as User
Scenario	<ul style="list-style-type: none"> <li>• Email Address</li> <li>• Password</li> </ul>
Post-condition	<ul style="list-style-type: none"> <li>• Sign in successful or failed</li> <li>• Browse app and choose options</li> </ul>

Table 3.3: Use case description of Places to Travel

Use Case	Place to travel
Primary Actor	User
Secondary Actor	Null
Pre-condition	Sign in as user
Scenario	<ul style="list-style-type: none"> <li>• Place name</li> <li>• Place image</li> <li>• Place address</li> <li>• Place description</li> </ul>
Post-condition	<ul style="list-style-type: none"> <li>• Go back Navigation items</li> </ul>

Table 3.4: Use case description of Hotels

Use Case	Hotels
Primary Actor	User
Secondary Actor	Null
Pre-condition	Sign in as user
Scenario	<ul style="list-style-type: none"> <li>• Hotel name</li> <li>• Hotel Address</li> <li>• Hotel contact No.</li> </ul>
Post-condition	<ul style="list-style-type: none"> <li>• Go back</li> </ul>

Table 3.5: Use case description of Hospitals

Use Case	Hospitals
Primary Actor	User
Secondary Actor	Null
Pre-condition	Sign in as user
Scenario	<ul style="list-style-type: none"> <li>• Hospital name</li> <li>• Hospital Address</li> <li>• Hospital contact No.</li> </ul>
Post-condition	<ul style="list-style-type: none"> <li>• Go back</li> </ul>

Table 3.6: Use case description of Restaurants

Use Case	Restaurants
Primary Actor	User
Secondary Actor	Null
Pre-condition	Sign in as user
Scenario	<ul style="list-style-type: none"> <li>• Restaurant name</li> <li>• Restaurant address</li> <li>• Restaurant Contact No.</li> </ul>
Post-condition	<ul style="list-style-type: none"> <li>• Go back</li> </ul>

Table 3.7: Use case description of ATM Booths

Use Case	ATM Booths
Primary Actor	User
Secondary Actor	Null
Pre-condition	Internet Connection GPS ON
Scenario	<ul style="list-style-type: none"> <li>• ATM name</li> <li>• Location</li> <li>• Marker in ATM</li> </ul>
Post-condition	<ul style="list-style-type: none"> <li>• Go back</li> </ul>

### 3.4 Database Model

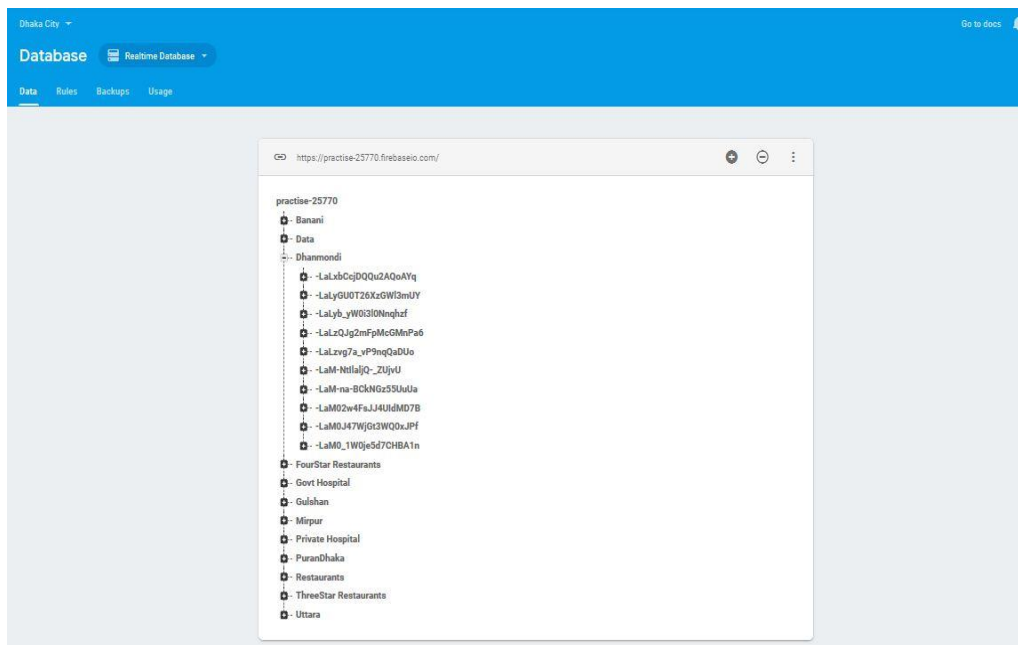


Figure 3.3: Database Model

### **3.5 Design Distributions**

The design specification is one of the most significant part of an application. It is the key factor to distinguish the project among other current applications. It's what makes an application different from others. It makes an application unique. We focused on better user experience while developing our project.

- We have designed a registration segment in our app so that a user can be registered to our app providing their information.
- We have designed a login segment which is needed to see the information we've provided.
- We have designed a navigation bar from which a user can choose his/her desired option.
- We have designed some segments to keep different kinds of information from which the information will be shown to the users.
- We designed a logout segment so that the users can sign out from the app when they are finished.

# CHAPTER 4

## DESIGN ANALYSIS

### 4.1 Design of the Front-End

The visual part of an android application is the front end design of it. People who uses the app interacts with this part of the app. It is one of the most significant function of an android application. Front end design of an app illustrate the primary level. The users can interact with the front end directly. It shows the information of the app in a significant way to the users.

We had to be very careful and creative while designing and building the front end design and Graphical User Interface (GUI) of our application. Because building up the front end and GUI upfront and comprehensible plays a very much vital role. A optimize front end design can fulfill the users' demands and can provide a better user experience. That's why we tried very hard to retain our front end design as simple as we could when developing our application. For this the users can use the app easily and comfortably.

We will be showing the front end design of our app from now on:

Here, figure 4.1 shows the home page of our app and figure 4.2 shows the navigation bar.

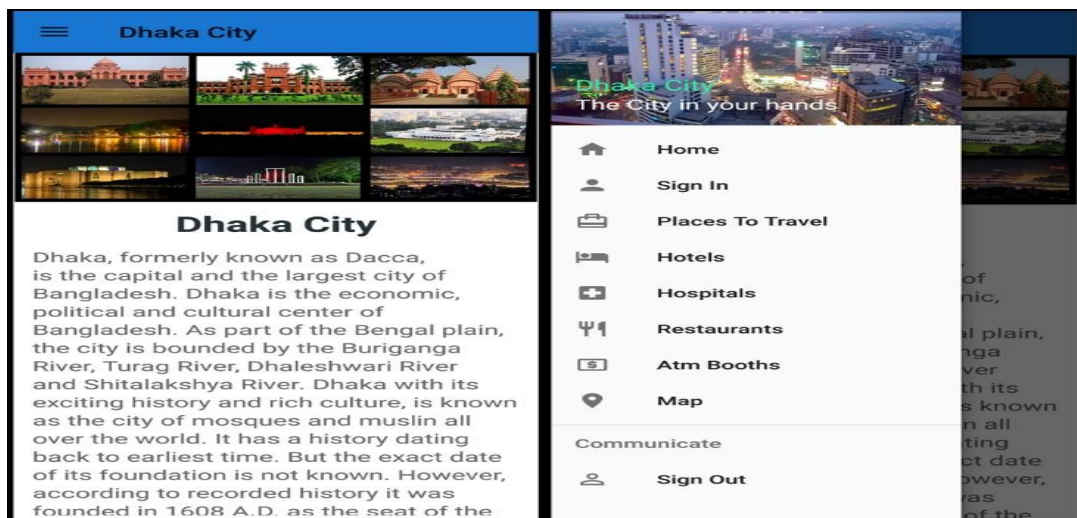


Figure 4.1: Home Page

Figure 4.2: Navigation Bar

Here, figure 4.3 shows the sign in page and figure 4.4 shows the sign up page.

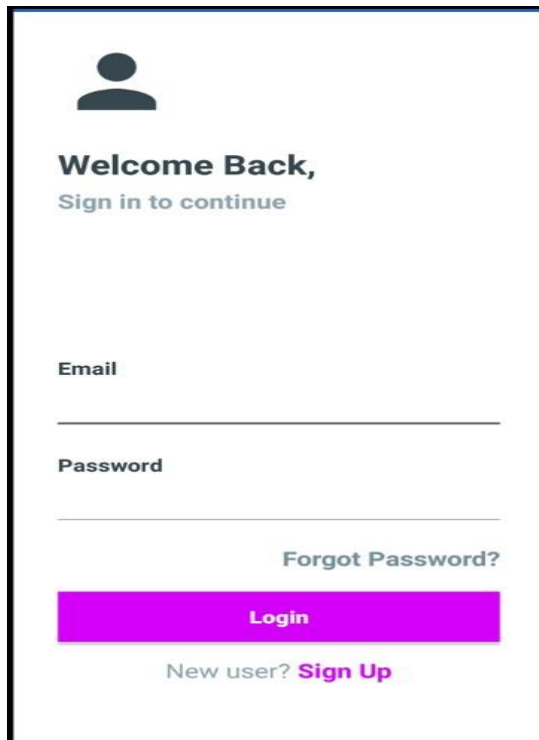


Figure 4.3: Sign In

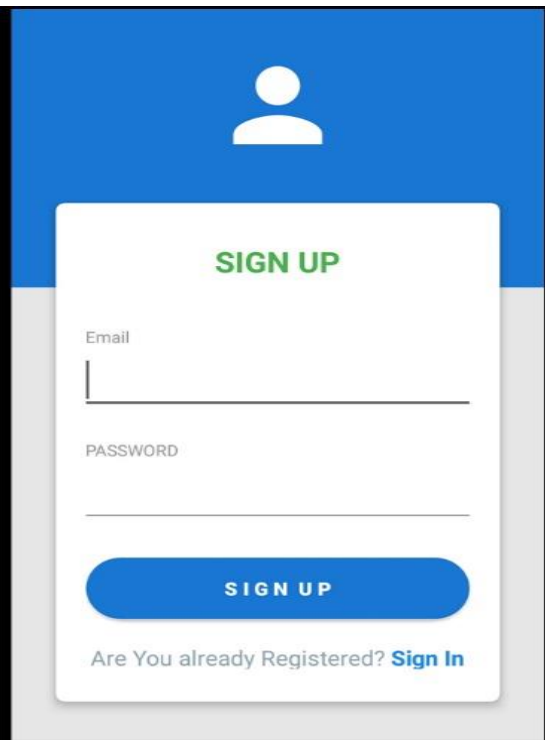


Figure 4.4: Sign Up

Here, figure 4.5 shows the list of historical places and figure 4.6 shows the information of a place.



Figure 4.5: List of Historical Places



Figure 4.6: Information of a Place



Here, figure 4.7 shows the categories of hotels, figure 4.8 shows the list of hotels of a certain category and figure 4.9 shows the information of a certain hotel.

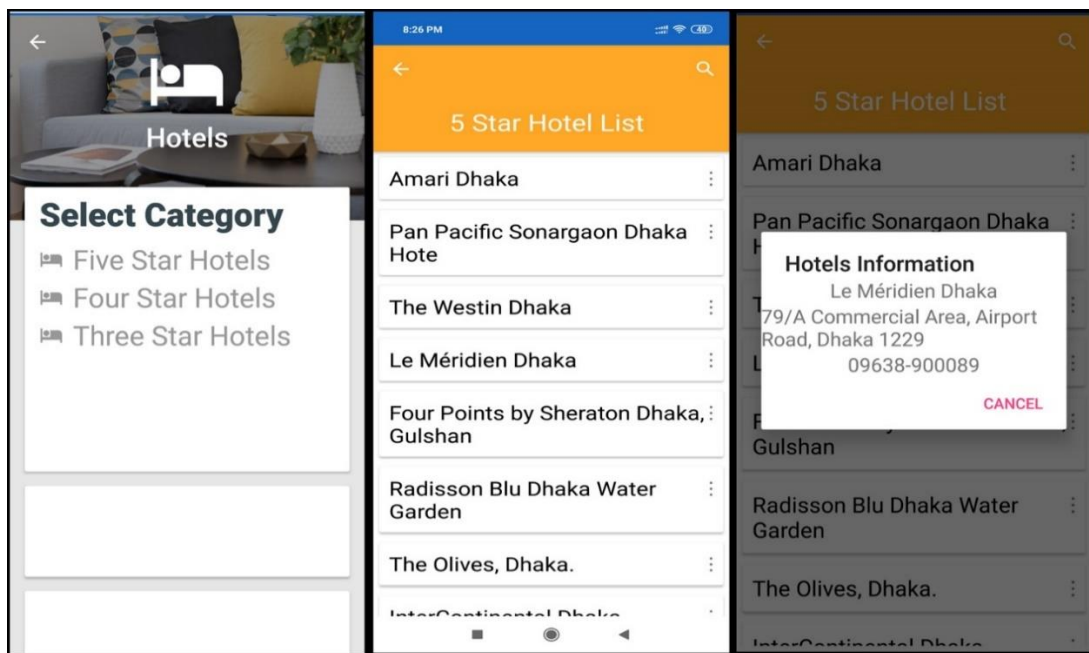


Figure 4.7: Hotel Categories    Figure 4.8: Hotel List    Figure 4.9: Hotel Info.

Here, figure 4.10 shows the categories of hospitals, figure 4.11 shows the list of hospitals of a certain category and figure 4.12 shows the information of a certain hospital.

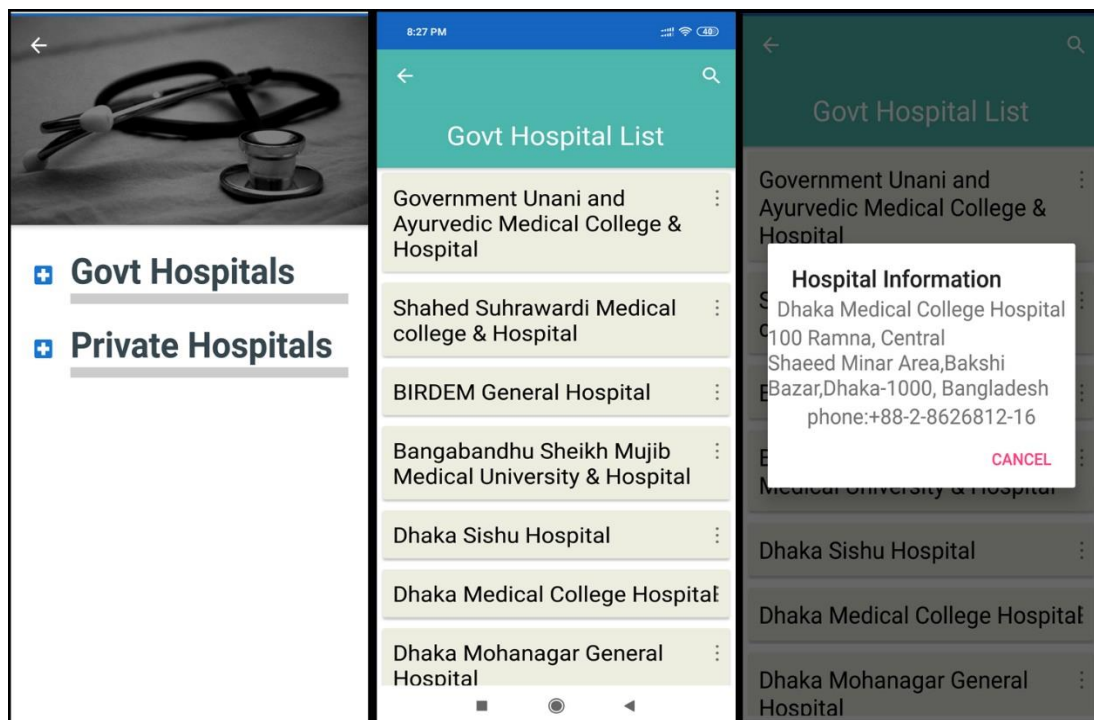


Figure 4.10: Hosp. Categories    Figure 4.11: Hosp. List    Figure 4.12: Hosp. Info.

Here, figure 4.13 shows the name of some important areas of Dhaka, figure 4.14 shows the restaurants list of a certain area and figure 4.15 shows the information of a restaurant.

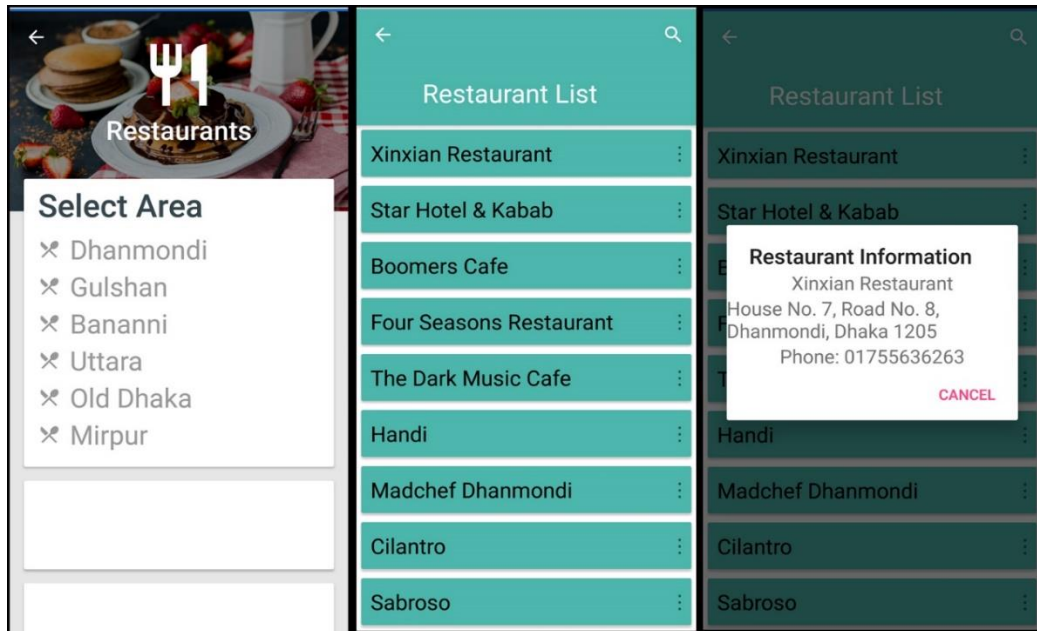


Figure 4.13: Rest. Areas Figure 4.14: Rest. List Figure 4.15: Rest Info.

Here, figure 4.16 shows the nearby ATM booths of the device location and figure 4.17 shows the name of a specific ATM Booth selected by the user.

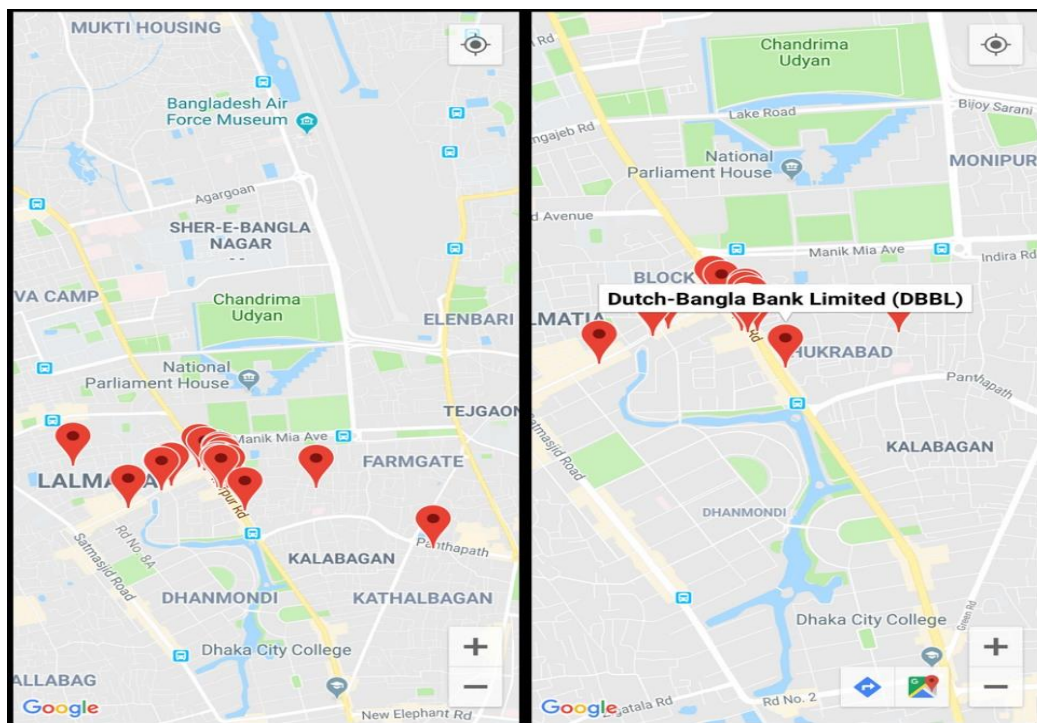


Figure 4.16: Nearby ATM Booths

Figure 4.17: ATM Booth Name

Here, figure 4.18 shows the map pointed at the device location, figure 4.19 shows a searched place, figure 4.20 shows the action of place picker.

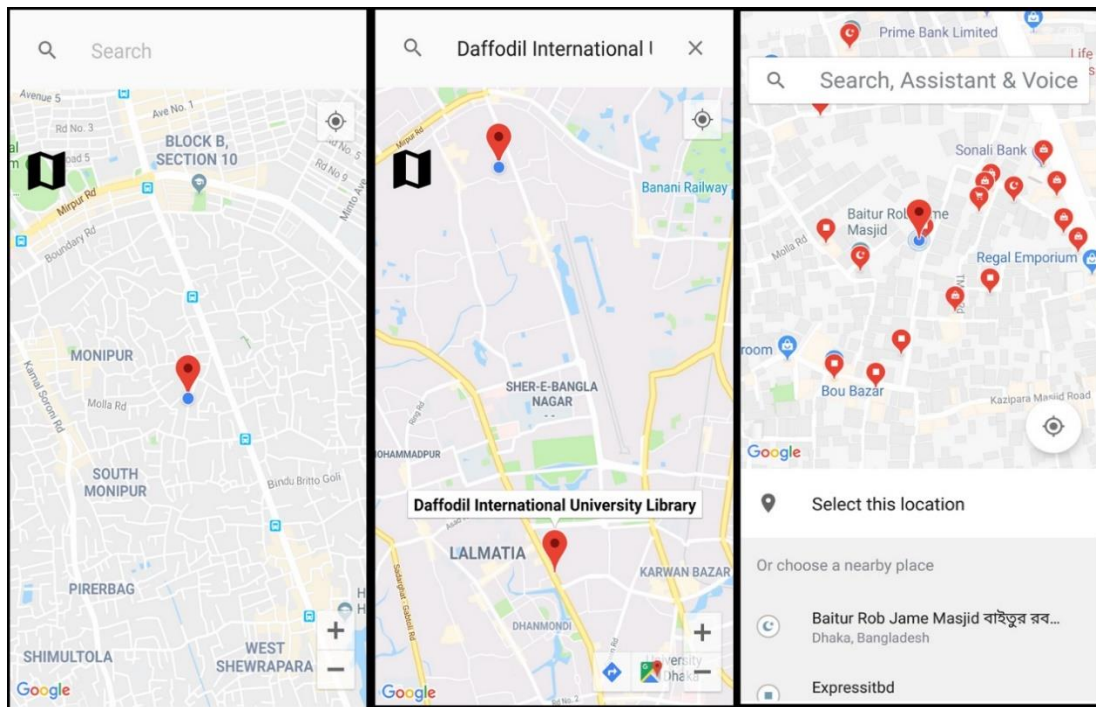


Figure 4.18: Dev. Location Figure 4.19: Searched Place Figure 4.20: Place Picker

Here, figure 4.21 shows a place picked by place picker, figure 4.22 shows the information of that place and figure 4.23 shows the nearby places of the location of the device.

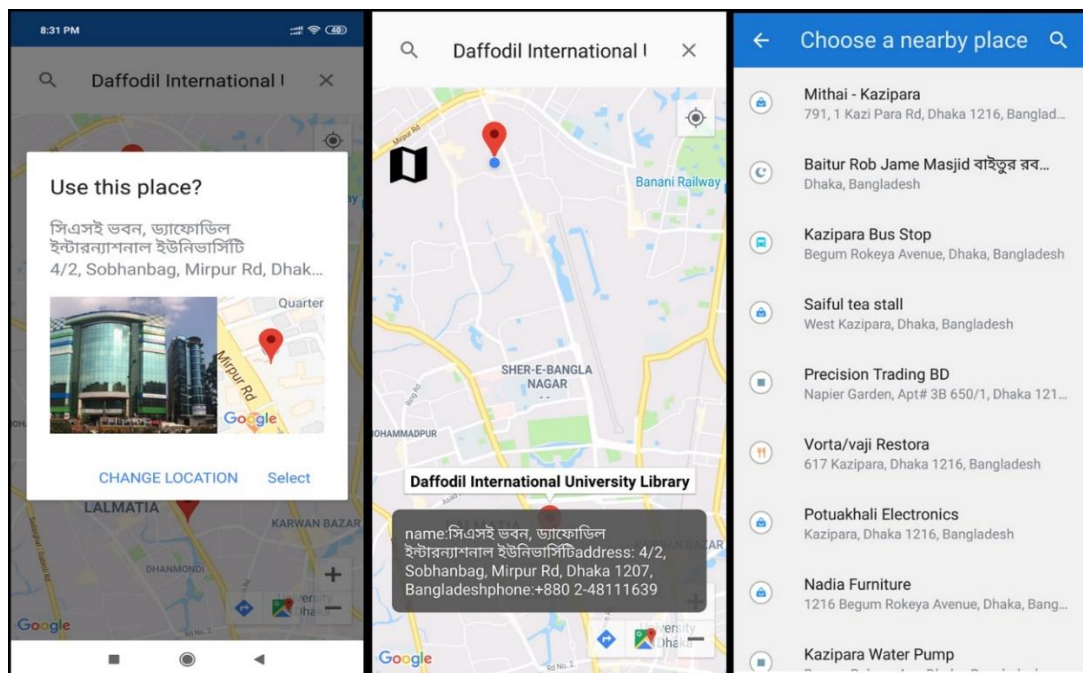


Figure 4.21: A Place Figure 4.22: Place Info. Figure 4.23: Nearby Places

## 4.2 Design of the Back-End

One of the most important thing behind an android application is its back end design. It is the portion which works as the background of the app. Only developers of that app can see or use or modify that part. They also can delete that part. No user can use or see the back end design of an app. The users can communicate with the app only by the front end design. They can't even see how the back end design works. The back end is that vital portion which does and controls almost the whole thing that are occurred on the server of an application. It's a very complex and difficult thing to handle the back end of an android application. There are difficulties organizing the data in the back end. That's why we were forced to keep the back end of our app as simple as possible.

We used Firebase<sup>[10]</sup> as the Database of our application to develop and maintain the back end segment. We used the realtime database.

We will be showing the back end design of our app from now on:

Here, figure 4.24 shows the whole database list of our app.

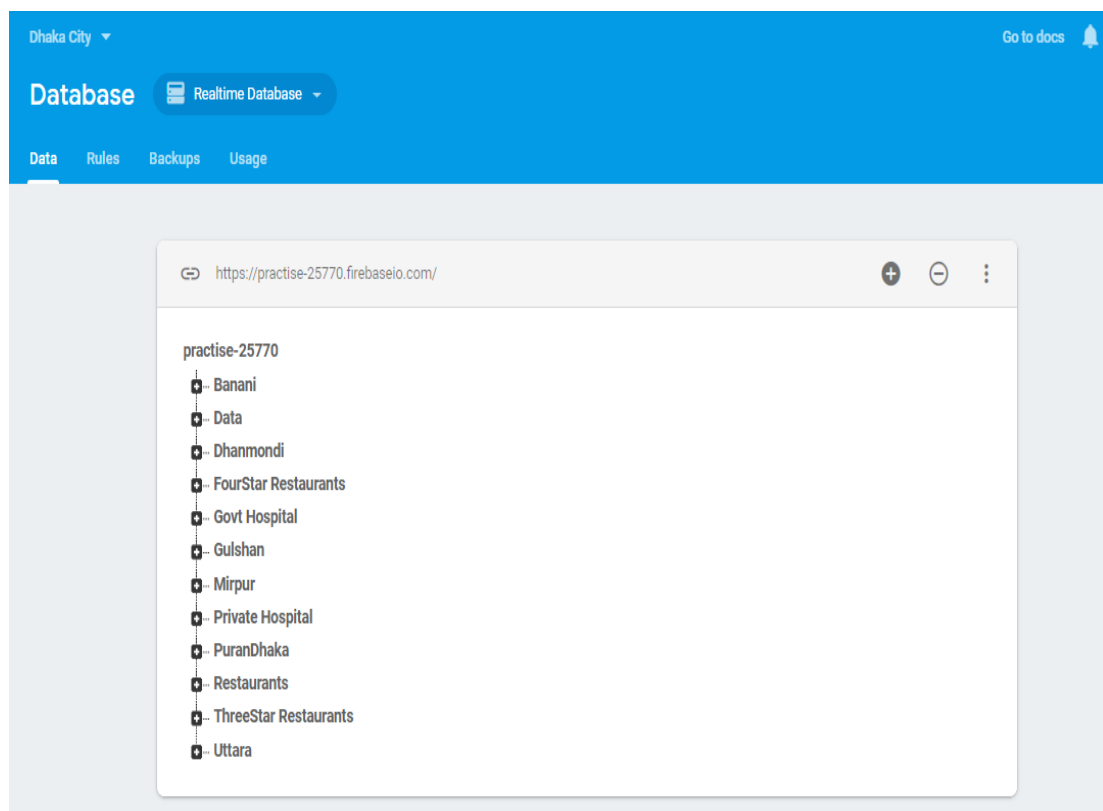


Figure 4.24: Database List

Here, figure 4.25 shows the database of the restaurants of Banani.



Figure 4.25: Database of the restaurants of Banani

Here, figure 4.26 shows the database of historical places.



Figure 4.26: Database of historical places

Here, figure 4.27 shows the database of the restaurants of Dhanmondi.

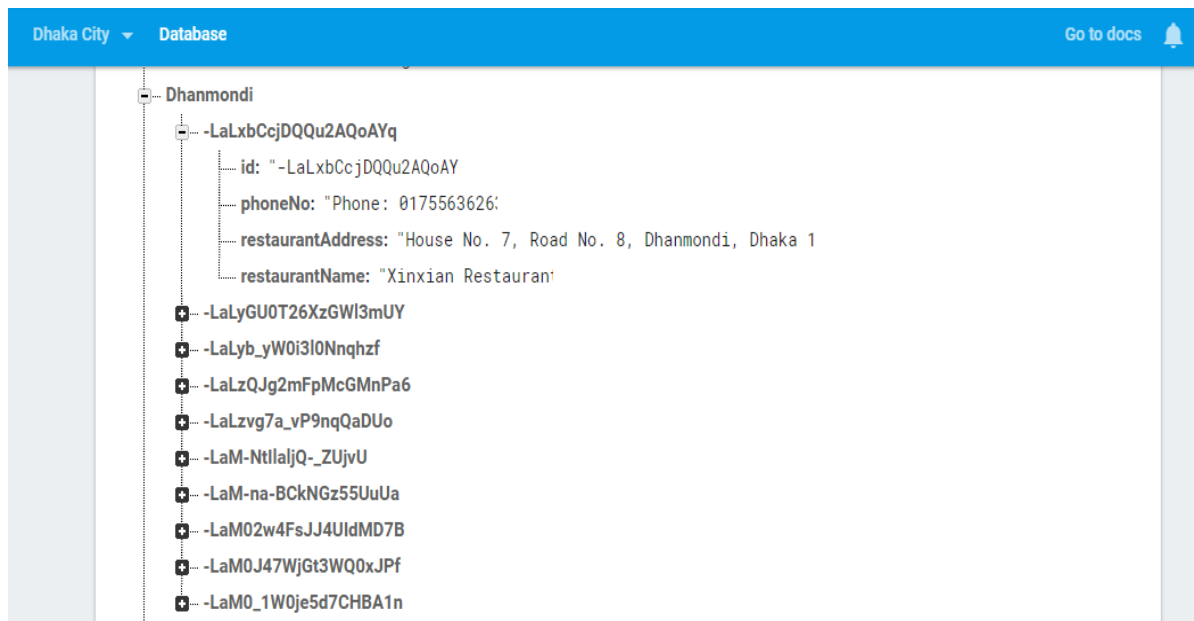


Figure 4.27: Database of the restaurants of Dhanmondi

Here, figure 4.28 shows the database of four star hotels.

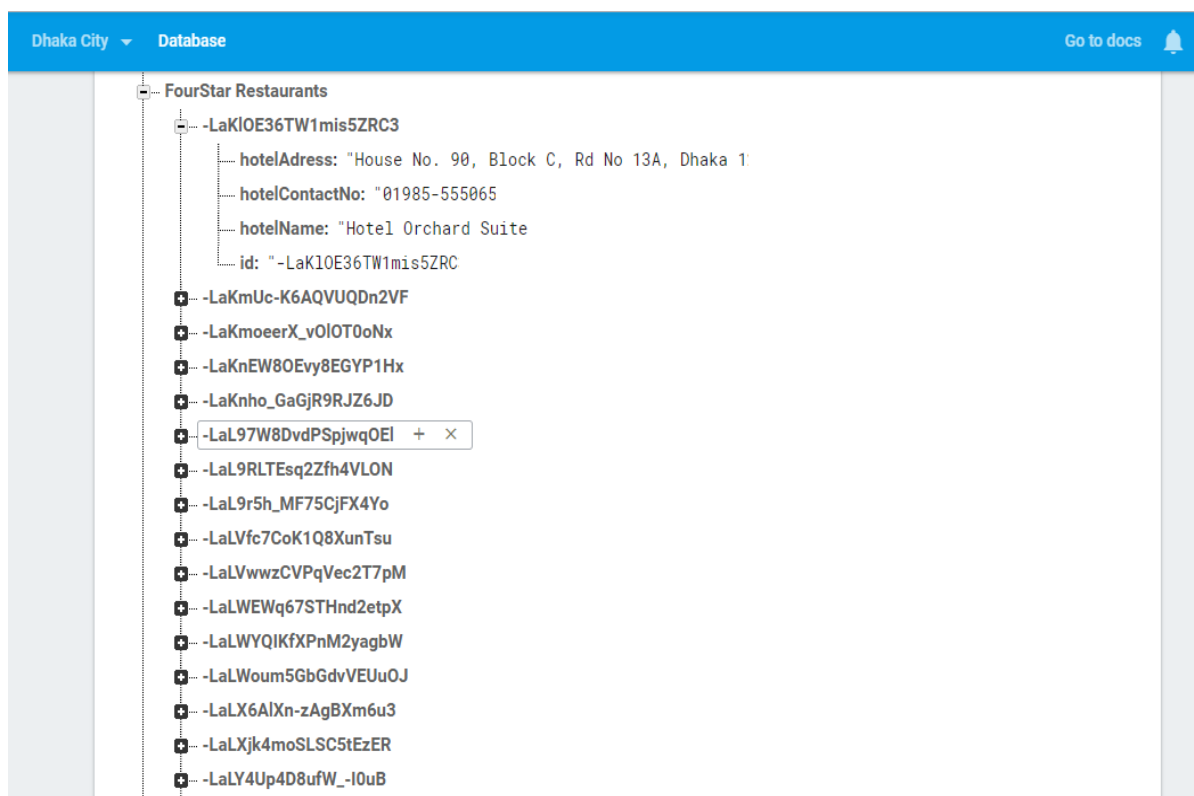


Figure 4.28: Database of four star hotels

Here, figure 4.29 shows the database of government hospitals.

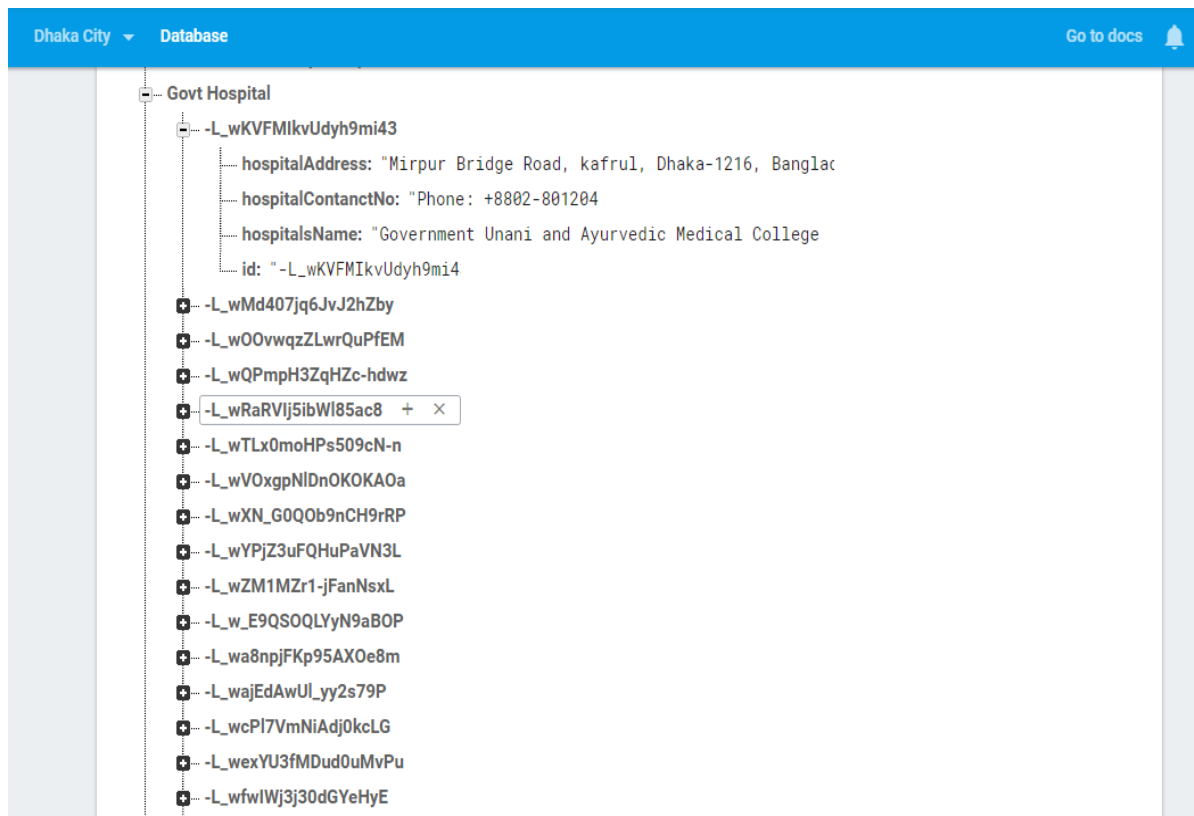


Figure 4.29: Database of the govt. hospitals

Here, figure 4.30 shows the database of the restaurants of Gulshan.

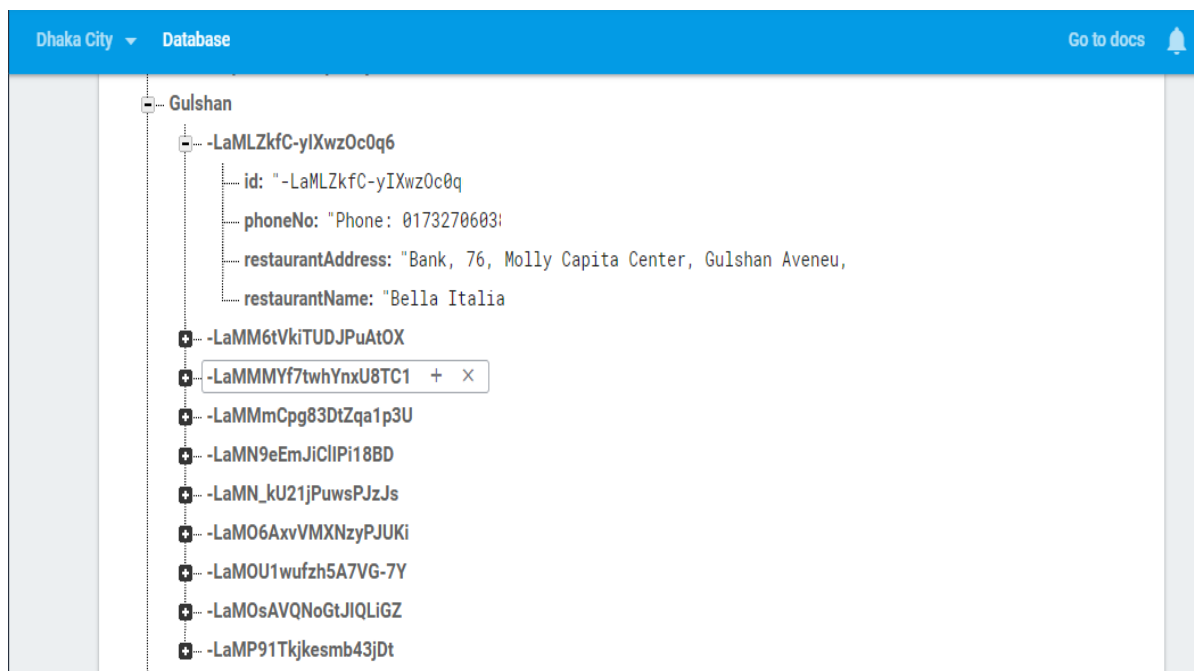


Figure 4.30: Database of the restaurants of Gulshan

Here, figure 4.31 shows the database of the restaurants of Mirpur.

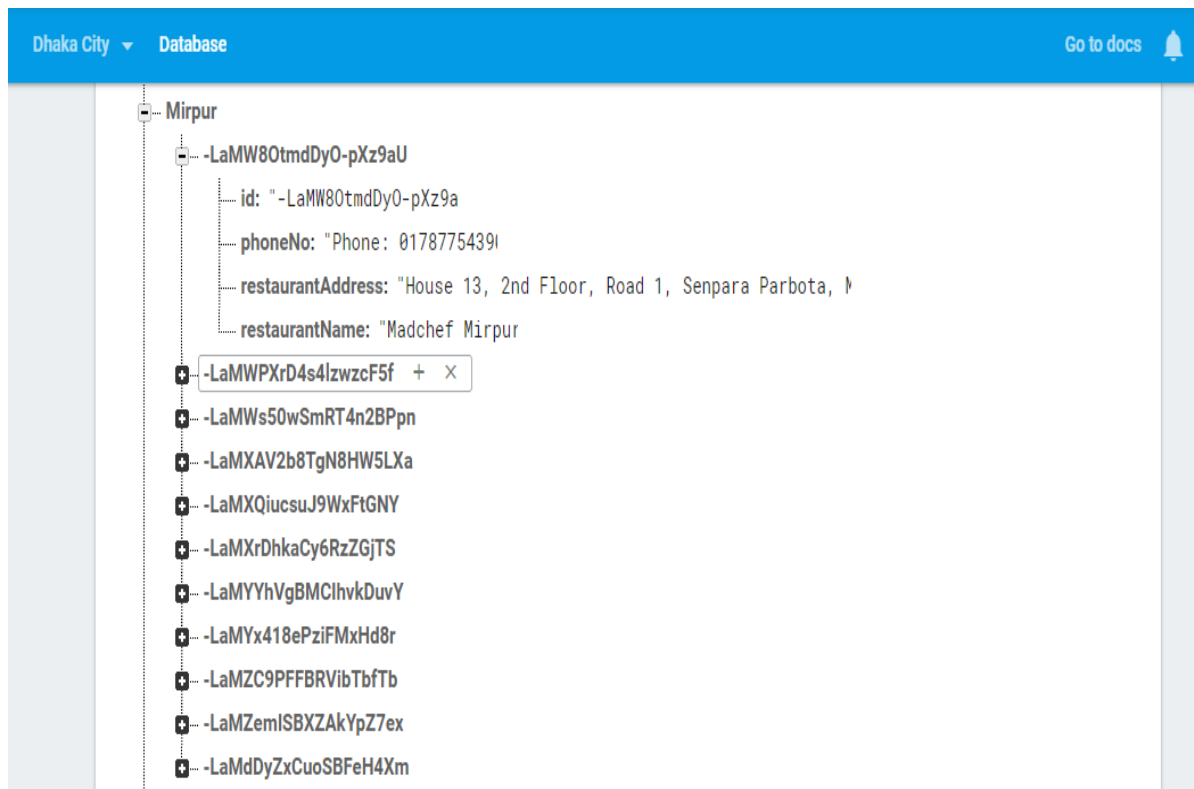


Figure 4.31: Database of the restaurants of Mirpur

Here, figure 4.32 shows the database of private hospitals.

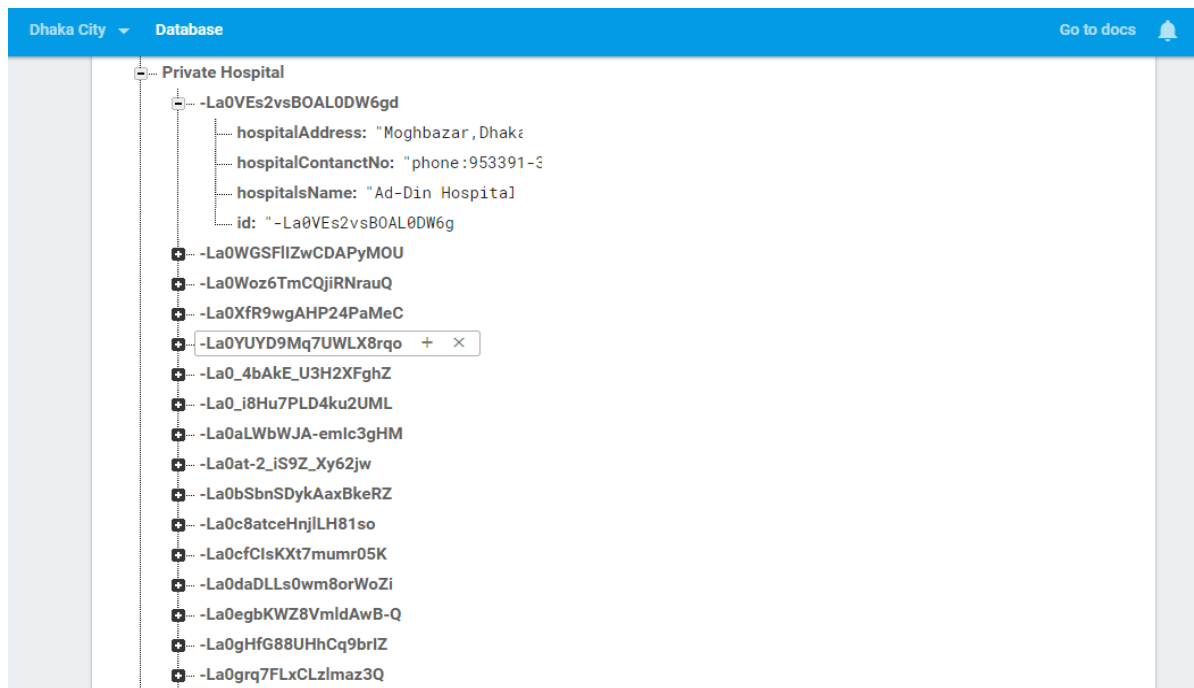


Figure 4.32: Database of private hospitals



Here, figure 4.33 shows the database of the restaurants of Old Dhaka.

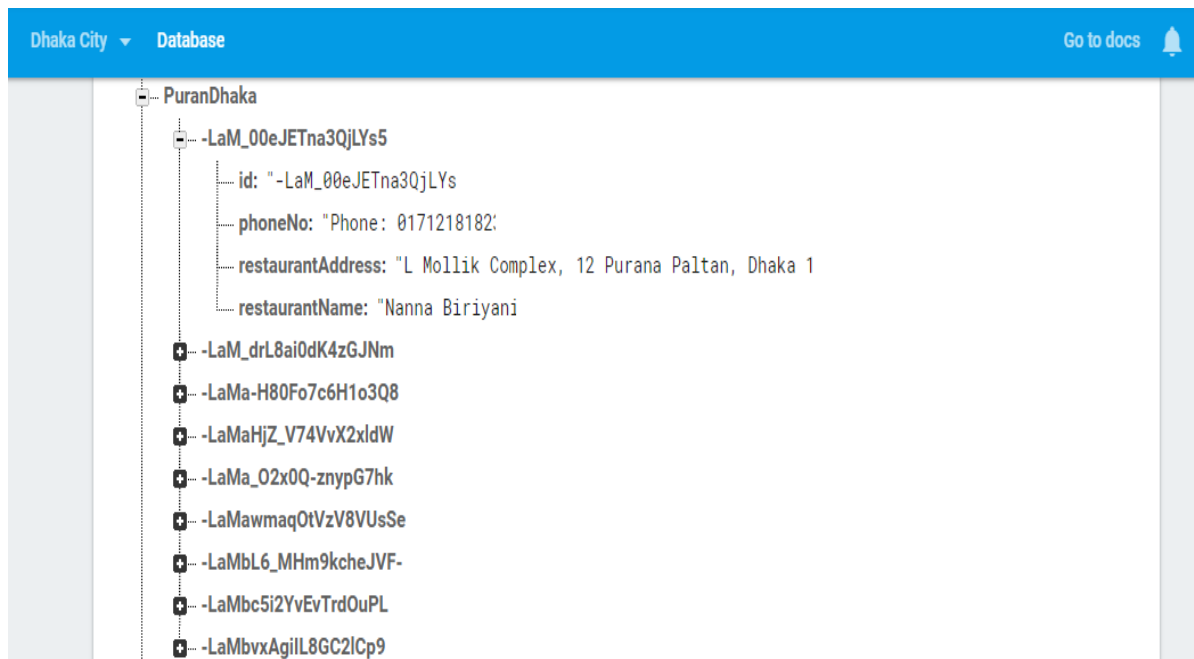


Figure 4.33: Database of the restaurants of Old dhaka

Here, figure 4.34 shows the database of five star hotels.

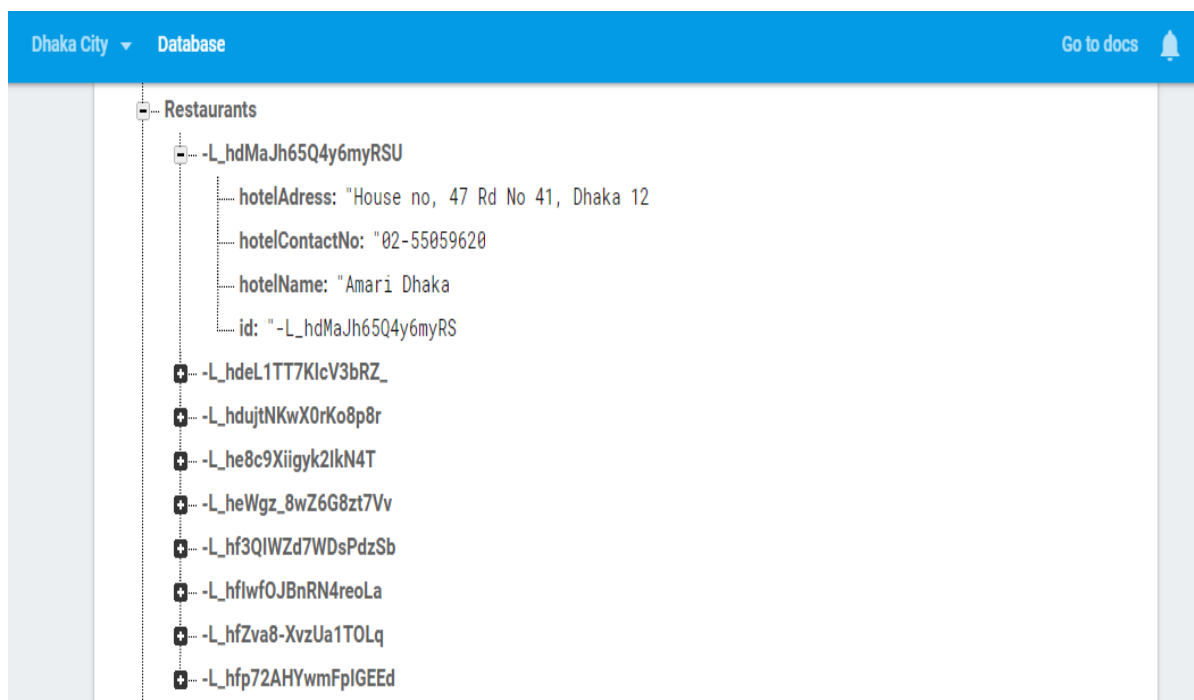


Figure 4.34: Database of five star hotels

Here, figure 4.35 shows the database of three star hotels.

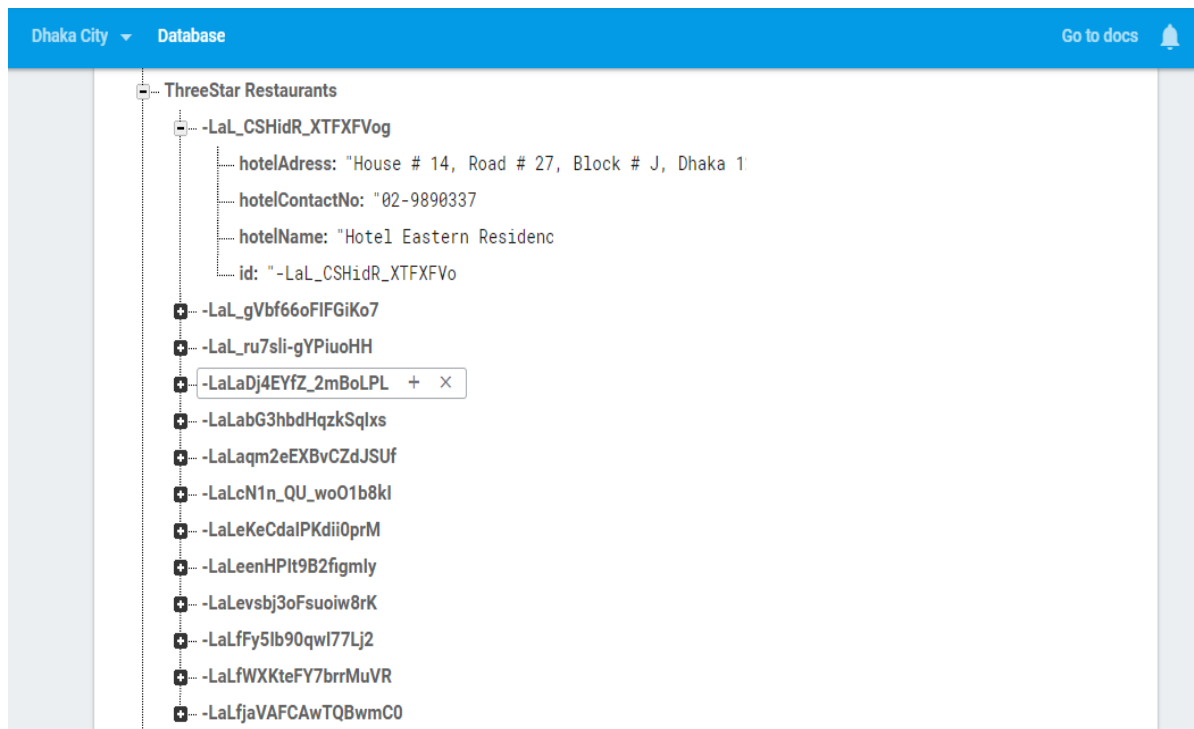


Figure 4.35: Database of three star hotels

Here, figure 4.36 shows the database of the restaurants of Uttara.

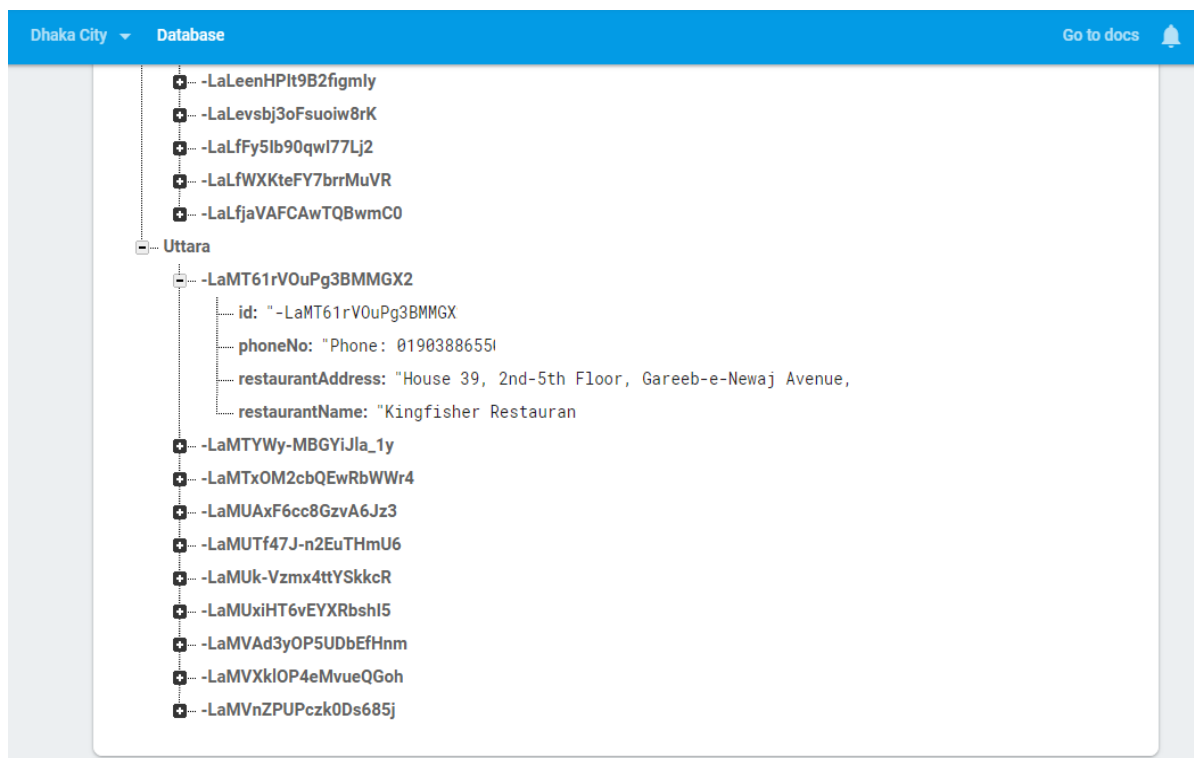


Figure 4.36: Database of the restaurants of Uttara

Here, figure 4.37 shows the authentication rule.

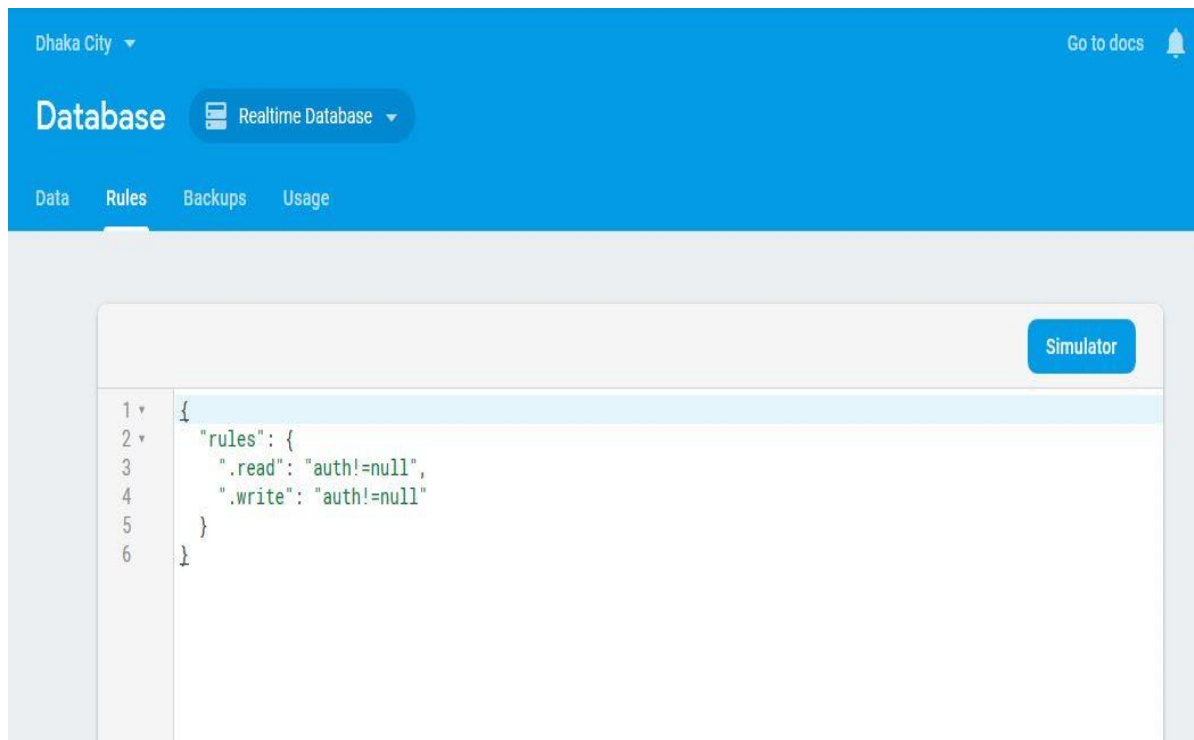


Figure 4.37: Authentication Rule

### 4.3 Design of Interaction and UX

That particular section of an app which observes the interaction of the users with it with the help of a user interface is known as interaction design. It is the part that controls in which formation or how the information of an app will be shown to its users. It focuses on this to ensure that the user can understand the information easily.

User Experience design is used for ensuring the better user experience. It focuses on the overall experience of the users of an app. It plays a vital role when it comes to user experience. It is concerned with the interactive features, the look of the features and delivering certain outputs.

## **4.4 Requirements for Implementation**

Implementation of a project is the most important thing for the developers. If someone can't implement his project properly then all of his works goes in vain. To implement a project properly he needs some good tools. We used various types of tools and mechanisms to develop our project.

### **4.4.1 Android Studio**

We all are very familiar with Android Studio.<sup>[9]</sup> We know that it is hugely used to develop or make an android app. It is the most speediest tool to make an android project. We used Android Studio<sup>[9]</sup> (version 3.3) to develop our project.

## **CHAPTER 5**

### **IMPLEMENTATION AND TESTING**

#### **5.1 Database Implementation**

In this portion we will discuss about our implementation process of the database of our app. We've already indicated before that we used Firebase<sup>[10]</sup> database for our project. It's a real time database. Firebase<sup>[10]</sup> has some unique features. Real Time Database, Hosting, Cloud Storage, Cloud Messaging, Crash Reporting, Remote Configuration, Authentication, Test Lab, Notifications, App Indexing, Dynamic Links, Invites, AdWords, AdMob are the main of them. We had a privilege of Firebase<sup>[10]</sup> being a real time database. For this privilege we didn't have to use direct SQL query to execute any act. We also didn't use MySQL because we haven't created any website for our project. We used Java language for all of our database tables and insertions. We used it also for query and connecting the database with the front end of our app. It was our only programming language which we used for developing our app.

#### **5.2 Front-End Design Implementation**

The front end of an android application is a very important part. Usage number of the app depends on the easy and understandable design and usability of the app. If the users can easily understand what the front end of app is showing or telling or meaning and can easily use all the features then the number of user increases. Regarding our app, whenever a user opens the app he/she will see the front end design at the first place. There are various types of android devices in the world nowadays. There are variations from device to device according to their model, design, hardware, software, look, size, storage, and other things. As android is a production of Google, it is releasing updated versions of Android operating system with time. For this reason we had to very careful while designing our app. We had to make our design as device independent. It was very challenging for us. We had to do a lot of hard works to do that. We tried our very best to make our design stunning, aesthetic and user friendly. We have kept our UI design very simple. That's why the users will easily understand and use our app.

We used Android Studio<sup>[9]</sup> to design the front end of our app.

### 5.3 Interactions Implementation

It's very important how and android app interacts with its users. If the users can communicate with the app easily it helps the app to be famous. If they can interact with the app comfortably and satisfied with the app then it can be said that the system is successful to fulfill its purpose. That's why it is very important to make a system interactive with the users.

We have implemented our app system with quickly reactive UI. It will make sure of better user experience. We used some familiar icons, text view, button etc. For its understandable and beautiful UI the users will be able to communicate with the app easily.

We used JSON, jQuery etc. for our app.

### 5.4 Testing of the App

Testing of an app helps the developers to know the reaction, feedback and amount of satisfaction of the users. It also helps them to find out if there is any bug in the app. We can find out the limitation of the app. The users' feedback helps us to make our app more effective.

We have tested our app on different types of android devices which had different versions of android OS. We checked whether our app is user friendly or not, if the users can use it easily and comfortably or not. We checked the response time of our app, how quick it is to provide the information. Each and every segments were checked to ensure the effectiveness of the app.

Table 5.1: Testing of the project

Name of the Test	Testing Input	Desired Output	Real Output	Conclusion	Date of the Testing
1. Installation of the	Tested on different versions of Android –	Installed on all those Android versions	Installed Successfully	Passed	31/03/19

Application	6.0, 7.0, 8.1.0				
2. Sign Up	Blank or Invalid	Won't be registered	Not Registered	Passed	31/03/19
3. Sign Up	Email, Password	Will be registered	Registration Successful	Passed	31/03/19
4. Email	Blank or Incorrect or Invalid	Warning for Email	Invalid Email	Passed	31/03/19
5. Password	Blank or Incorrect	Warning for Password	Incorrect Password	Passed	31/03/19
6. Sign in Home Page	Email and Password Correct	Will be Signed In	Signed in and brought back to the Home Page	Passed	31/03/19
7. Historical Places	Null	Beautiful Places	List of Places	Passed	31/03/19
8. Tap on a Places	Null	Place Details	Place Description	Passed	31/03/19
9. Hotels	Null	Categories of Hotels	Name, Information	Passed	31/03/19
10. Hospitals	Null	Emergency Number	Name, Address, Number	Passed	31/03/19
11. Restaurants	Null	Name, Address	Information	Passed	31/03/19
12. ATM Booths	Null	Address	ATM Location, Nearby ATMs	Passed	31/03/19
13. Map	Null	Google Map	Device Location, Place Picker, Search Box	Passed	31/03/19
14. Map	Name of a Location	Show Location	Location, Address	Passed	31/03/19
15. Sign Out	Null	To log out	Signed Out Successfully	Passed	31/03/19

## **5.5 Results of the Testing and Reports**

The users of our app gave a positive feedback. We found out about some new features that we are planning to add in near future. At the end of our testing we were very happy with the satisfaction level of the users of our app.



## **CHAPTER 6**

### **CONCLUSION AND FUTURE WORKS**

#### **6.1 Discussion and Conclusion**

This project will provide some important information regarding Dhaka city which includes some of its historical places, hotels, restaurants, hospitals, ATM booths and Google Map. We created this app to be helpful to the new comers in Dhaka. The users will be able to travel and stay in this city easily with the help of this app.

#### **6.2 Abridgements**

We are only human beings. We are no experts on Android. We are only beginners on this platform. So there are some abridgements of our projects:

- We wanted to show the data offline but we couldn't.
- There is a necessity of an internet connection to see the information. But it's pretty difficult to have it always.
- We wanted to give an estimate cost of travelling but we couldn't do that.
- We couldn't provide current images of all the places.
- We couldn't provide a broader description of the places.

#### **6.3 Future Works**

We have huge plan regarding our app. We will work on some new features in near future:

- We will add the bus routes of Dhaka city.
- We will try to add the directions from the bus stoppages, railway stations, airports, river ports to the hotels, restaurants and historical places and the directions from the hotels to the historical places, hospitals, and the restaurants.
- We've only provide nearby ATMs of the device location till now. We will provide nearby restaurants, hotels and hospitals of the device location also with marker on their names.
- We will try to give an estimate cost of travelling.
- We will try to provide offline map.
- We will provide offline data.
- We will upload the app on Google Play Store.

## REFERENCES

- [1] ঢাকার দর্শনীয় স্থান | Dhaka Tourism, available at <<[https://play.google.com/store/apps/details?id=aplove.dhaka\\_tourism&hl=fi](https://play.google.com/store/apps/details?id=aplove.dhaka_tourism&hl=fi)>>, last accessed on 31-03-2019 at 09:00am.
- [2] Hotels of Bangladesh- বাংলাদেশ এর হোটেল”, available at <<[https://play.google.com/store/apps/details?id=com.jituhasan.hotel\\_of\\_bangladesh](https://play.google.com/store/apps/details?id=com.jituhasan.hotel_of_bangladesh)>>, last accessed on 31-03-2019 at 09:10am.
- [3] Hospital Number | Dhaka, available at <<<https://play.google.com/store/apps/details?id=net.crelip.hospitalinfodhk>>>, last accessed on 31-03-2019 at 09:20am.
- [4] Find Restaurants Near Me – Free, available at <<<https://play.google.com/store/apps/details?id=com.pidigi.findrestaurants>>>, last accessed: 31-03-2019 at 09:30am.
- [5] Bank Info, available at <<<https://play.google.com/store/apps/details?id=com.bank.example.bankinfo>>>, last accessed on 31-03-2019 at 09:40am.
- [6] Requirement Analysis, available on <<<https://www.visual-paradigm.com/guide/requirements-gathering/requirement-analysis-techniques/>>>, last accessed on 31-03-2019 at 09:50am.
- [7] Use Case Diagram, available at <<[https://en.wikipedia.org/wiki/Use\\_case\\_diagram](https://en.wikipedia.org/wiki/Use_case_diagram)>>, last accessed on 31-03-2019 at 10:00am.
- [8] Android Studio, available at <<<https://developer.android.com/studio>>>, last accessed on 31-03-2019 t 10:10am.
- [9] Firebase, available at <<<https://firebase.google.com/>>>, last accessed on 31-03-2019 at 10:20am.

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