

**“EASY RENT” - AN ANDROID PROJECT FOR LOCATION BASED TO-LET
SYSTEM**

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

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APPROVAL

This Project titled “Easy Rent- An Android Project For Location Based To-Let System”, submitted by Md. Tamim Bin Aziz, ID No: 163-15-8320 and Mohammad Didarul Alam, ID No: 163-15-8311 and Md. Tohidul Islam, ID No: 163-15-8291 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 6th December, 2019.

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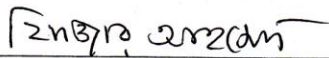
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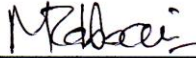
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DECLARATION

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

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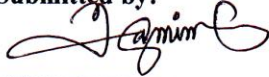
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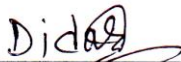


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ABSTRACT

A Location Based To-Let System is an android application for renters who are struggling to find a safe and convenient place to live in Dhaka with their family or as a bachelor. According to an estimate, there are around four million people who are living bachelor life in Dhaka. Every year a lot of people's comes in Dhaka and they face a very critical situation to find their living place. But we find a very easy and smart solution which is a location based to-let application. There are three categories of rental system, one is for flat, the second one is single room and the third one is hostel. By this app anyone can find their sweet home from anywhere by auto searching and any house owner promote their home by add post in this app. We use Java and XML for developing the app. We also use Google Map API. This location based to-let application is very useful for students who are come in Dhaka at first time.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Housing has a central importance to quality of life with considerable economic, social, cultural and personal significance. An online rental system will provide the information about Flats, Rooms, and Hostels /Seats which is available for family and bachelor. This application will make very easy to find the locations of flats, rooms, hostels /seats. For rental anyone can search his/her flats, rooms, hostels /sits from anywhere by auto searching. For house owner anyone can create their account and promote their house by giving advertisement in this app. It will make easy to upload the house location, owner contact no, expected rent, no. of rooms, facilities and other information of house. This application will be able to show the flats, room, hostels/sits with in a particular area in Dhaka selected by user.

Actually, there are many apps like to-let system in the market, they all are good but our app is better than their apps. Because, our application can auto search by track your present location.

1.2 Motivation

Finding perfect living place in Dhaka can be a real challenge, especially for students who are come in Dhaka at the first time. They need a living place near by their institute and for family they need their living place near by their office. Everyone wants to save their valuable time. They don't want to waste their valuable time for searching house and also they don't want to face uncomfortable situation. They always want everything easily. Our application will help to save time and decrease harassment. The owner of flats, rooms, hostel/seats will be relaxed. The owner can publish photos and several videos of his/her flat/house/hostel. And who will take rent house/flat/hostel he/she could see the advertisement. They will make communication with house owner. By this process both of them will be benefited and grateful. If any home owner creates accounts and posts their advertisement then the Google map auto take their location address and show the home location in the Google map.

1.3 Objectives

House rent system in proposed system is used to search the flat/room/hostel in particular place in apartment, office, University or other institute also. It is very user friendly android application.

- ◆ To find any specific area's flat, room, hostel/seats.
- ◆ To find the exact location by auto searching in Google maps
- ◆ To find any house with your budget by searching
- ◆ Owner post their advertisement
- ◆ No need to physically searching and face any harassment
- ◆ To save valuable time by online process
- ◆ To increase interactions among people by this system

1.4 Expected Outcome

In every day, every month, every year a lots of people comes in Dhaka for their education, office living for life purpose and many people stay here in permanently. At first, for living needs to find a perfect like own choice flat, room, hostel/seats. In this case we create a very easy and smart system to find flat, room, hostel/seats like choice. You can find your house by using Google maps or you can find manually search by button. You can also search any house in your particular area which is near by your education institute, office or admission center. You can booking any flat, room, hostel/seats which one you like most in advance. We are very positive for this Google maps. Hopefully it will reach all over the country. People will be connected with this application. They will know about the use of the system. People will be benefited from this system. Hopefully people will accept it very appreciably because the Google maps system is fully new and we use it at the first time. Searching by this Google maps you can reach to your booked house in a very easy way. The admission's students can find very useful help by this application because they come in Dhaka at the first time.

1.5 Report Layout

By this project we try to find an easy and smart solution of how to rent a flat, room, hostel/seats. Our major targeted traffics are student. For this application we collect some information about some rentable house. In chapter 2 we describe the challenges and facing problem which is making difficult to us. Another chapter 3 we describe the three stage of background. We also describe the requirement specification and try to disclose users demand. In, chapter 4 and 5 we disclose how we solve the problem and what we use to implement the project. In this project we discuss about the all process that how to use the app.

CHAPTER 2

BACKGROUND

2.1 Introduction

Introduction the software applies a beautiful design to a system and makes the system sufficiently interesting to increase the interest of people without any extrinsic force. The theory behind this comes from the social communication definition. It is primarily common because it is commonly used in social media to stimulate the interest of people.

2.2 Related Work

According to Figure 2.1 there are a lot of To-let system apps like To-let Bd, Basa khujun, Sopnobari, To-let Board, Bproperty, etc but they do not give the proper solution and most of them are not user friendly. Most people have tried to improve this device but have not done the job. But they're not all subjective. We research on their problem and we find solution. We worked on their problem and we successfully find some perfect solution.

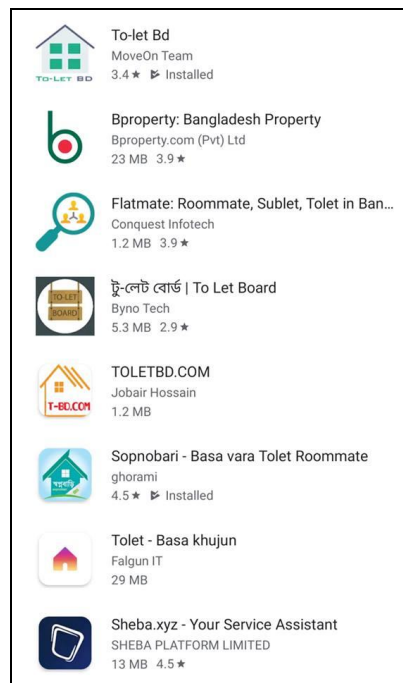


Figure 2.1 Bangladesh's top To-Let Apps

2.3 Comparative Studies

We used real-time firebase and simple user interface layout in our To-let app. For back end development we use Java and for the front end design we use XML. This app is essentially for local areas in Dhaka. We've used more categories than other To-let apps previously developed. We've put the range to give lots of room photographs. The RAJUK Approval Authentication facility has also been added to our app. The client will also be able to check the rentable room facilities and they can take all the opportunities.

2.4 Scope of the Problem

The project covers several fields ranging from business concept to field of computing, which involves many studies to be carried out in order to achieve the project goals. This application's field study was tougher. We faced a lot of challenges at the very first time. Some of them are information shortages, lack of reliability, lack of manpower, lack of stakeholders. But after all the process we've got the perfect solution of this to-let system.

2.5 Challenges

Challenges in an application are a very common feature. We've got some problems to go through. One of them is the database connection. What kind of information that was very difficult to generate. Another application is user-friendly. We're finally overcoming the challenges. The server is integrated with a very friendly user interface. Hopefully the request will be easily handled by everyone. The most challenging part in our app is using the Google maps. Because there are a lot of application but anyone did not use the Google maps in their application before. We use the Google maps in our application and it is the main feature of our project.

Considering those facts, we decided to develop a rental house app system that can solve all the problems experienced with the current manual system. The software has been designed to provide full user-friendly interface.

CHAPTER 3

REQUIREMENT SPECIFICATIONS

In this part we express about software requirement specification. A software requirement specification can represent the whole software analysis and implementation procedure. How will it work in this part we can express all relationship and module. It is crucial part of the report.

3.1 Business Process Model

Business process model can be expressed whole idea of the project. How to process the system. A Business Process Model is activity of representing of the process of an enterprise that current process can be improved, automated and analyze. Hence, the word ' business model ' is used in a very familiar way and describe core aspects of including intention, processes, organizational process and policies for a wide range of informal definitions.

The methodology's key features are based on the graph as a ' flow diagram'. Where I will be using the Data Flow Diagram to explain my business model of the projects. Data Flow Diagram [1] usually explains from Google type and how data flows are processed through a system or plan. A Data Flow Diagram (DFD) depends what type of information the system will input and output, how the data will proceed through the system, and where the data will be processed. Unlike a traditional structure flowchart that focused on control flow, it's like a diagram, it doesn't show information about process timing or whether processes will operate in sequence or parallel. Which remains in all applications. Because it is the main application and comprehension structure.

A developer must understand how it can function through business model and that's the main point. Where they use it, and where the model of use-case. A designer has always been trying by his own way to design his business model. In that each application is distinctive, it means different from one another. A workflow diagram of UML operation which depicts command as well as data flow as a single model. Every user use the application for his better solution. It is very easy to rental management system. The Business Process Model is analyze the user demand and how to easy online searching system and find the destination house without any help. Each module and process very easily explain and visualize through the Business Process Model.

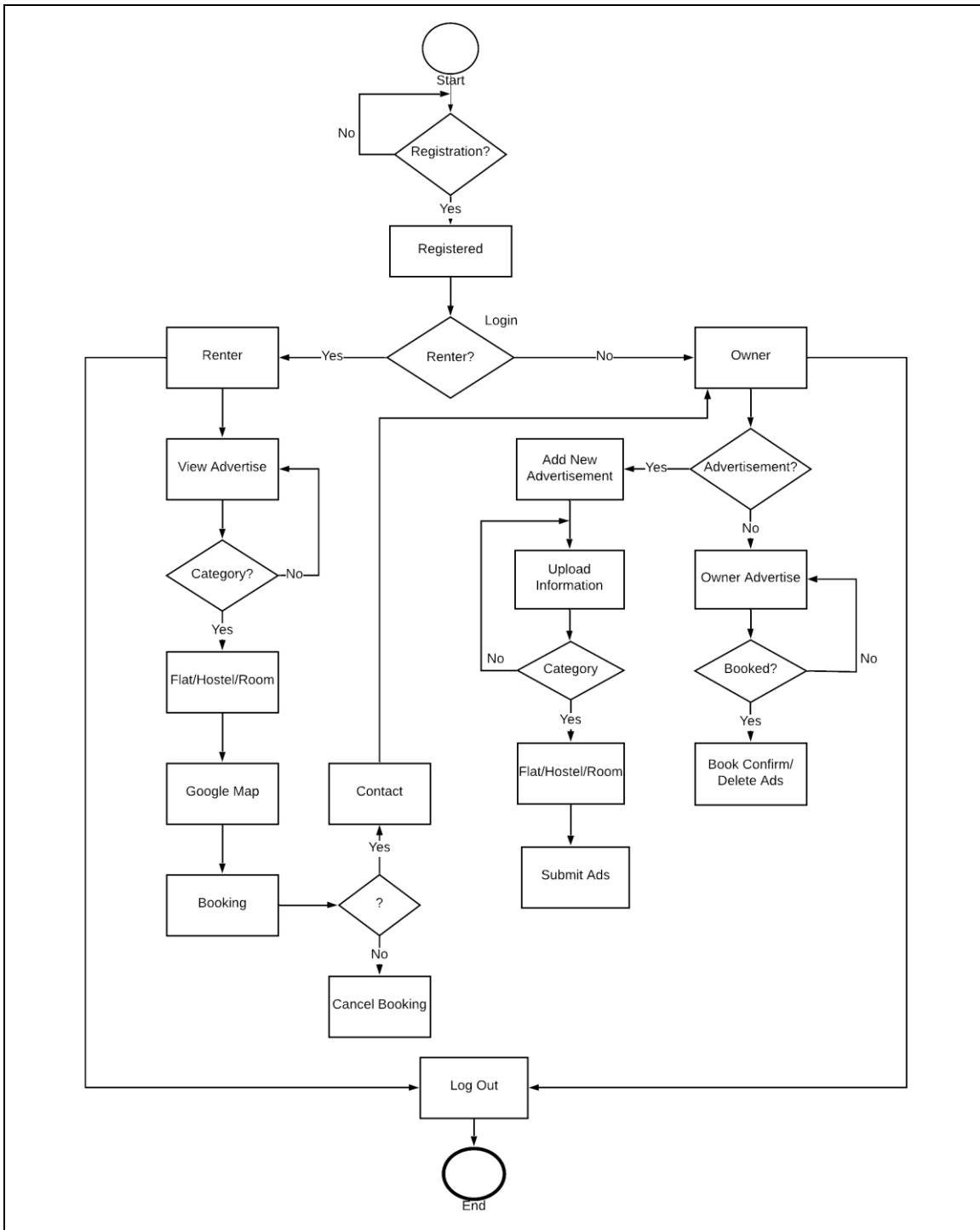


Figure 3.1: The Business Process Model of House Rental System

According to Figure 3.1 House Rental Management System has two types of user such as Owner and Renter. These type of user must be need to first registration this system. Then user can login to this system When the owner/provider login to the, then they can publish advertise his/her house, which he/she give to rent the home with include house image. A

renter need to login the system, if the renter is registered. If we can see in Figure 3.1 the renter search his house, which he/she want. It is very easy searching for the renter. When the renter match his requirement with the owner then give to booking confirmation on this advertise then renter contact with owner. If the house/flat/room is already booked then the owner would like to delete this advertise, he/she can do it.

3.2 Requirement Analysis

Analysis of requirements is also referred to as requirement engineering which is the process of determining user expectations for a new system. Such characteristics, known as specifications, must be quantifiable, specific and accurate. Analysis of requirements involves frequent communication with users of the system to determine specific expectations of features. Conflict resolution and inconsistency in specifications as requested by the different users or user groups, avoidance of feature creep and documentation of all facets of the project development process from beginning to end.

Requirement analysis can expressed these process. There seem to be two kinds of requirements for the project development process. Functional requirements are one and non-functional specifications are another.

3.3 Functional Requirement

Functional requirements define a function that can be performed by a process or device component. Functional requirement is that many of those relevant to the system's technological capabilities because that can perform application software. The software has many practical specifications from the point of view of our process, such as maintaining the database and maintaining the server where only admin individual can access it. There are some working builds.

3.4 Non-Functional Requirement

Non-functional requirements are characteristics apart from functional requirements. Non-functional requirement is a requirement which enforces criteria which can be used to judge a system's operation under specific conditions that instead of specific behaviors as the application seems to be how efficient, user-friendly, application performance issues etc. From our system's point of view, that application has several functional requirements as far more efficient, appropriate, performance optimization, memory user and smoother running, fast loading and online data manipulation as soon as possible. The user interface of software is also so user-friendly and stunning for an outstanding user experience. Also use many non-functional builds in function here.

3.5 Use Case

A use case diagram is a visual representation of the interactions between the roles and achieve goals of the system. Use-case is always used to consider the user while we redouble our efforts to achieve efficiency.

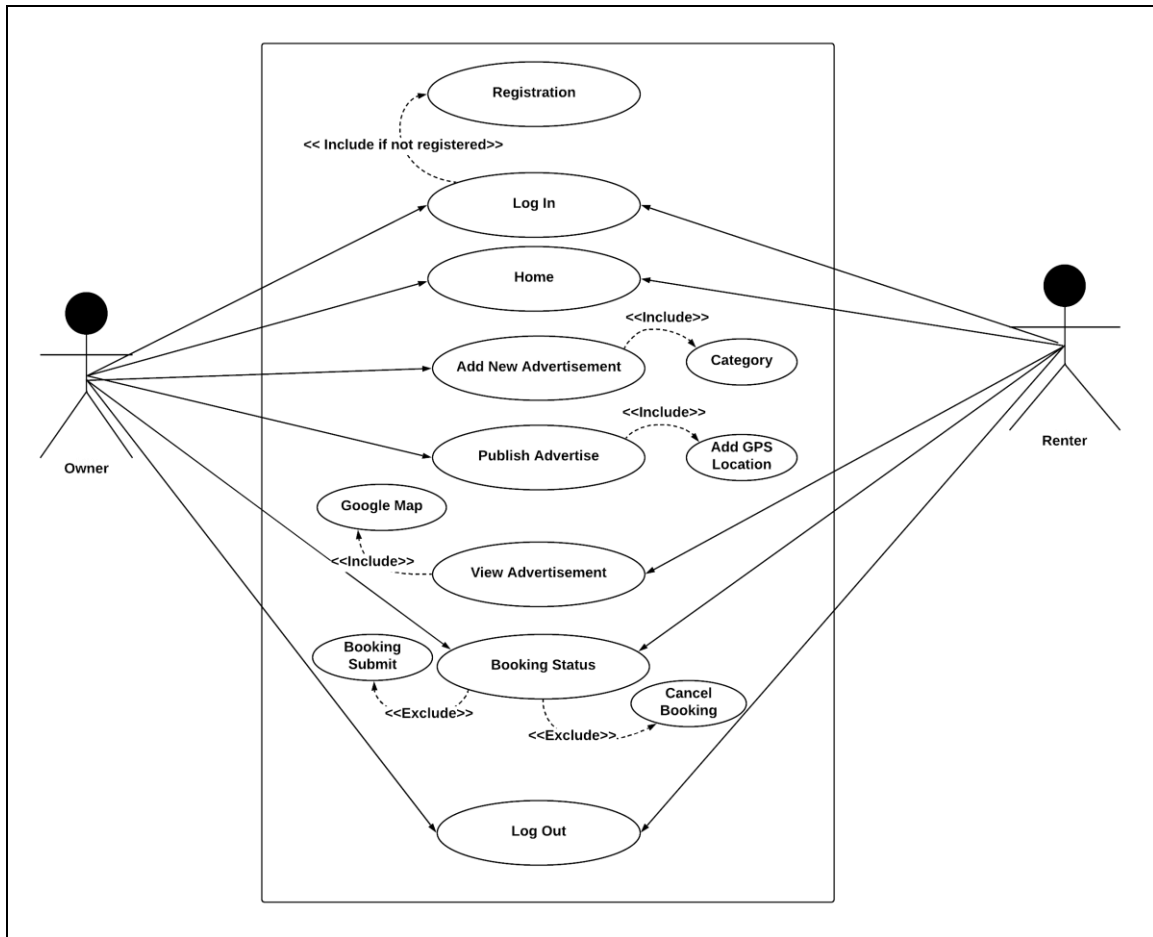


Figure 3.2: Use-case diagram of House Rental System

Here in figure 3.2 [2] show that how to use this application and then all steps of procedure. If you are not registered user you can't login the system and it's included. There are two types of actor owner and renter. When the user login the application then will come Home page. Then owner actor can add new advertise and then publish advertise. Another actor renter login the application then renter actor view the all advertise then renter actor can booking this advertise.

3.6 Logical Data Model

A logical data model can express relationship between two or more entity. It consists of entity, attribute, key, relationship etc. One entity one more attributes can associate with another entity. In which information and business rules of the company are established and the relationship between them is regulated. In our application we make a relational data model in Figure 3.3 express data model of house rental system. We use the main object oriented and the XML front-end as a back-end. There is a database section and Firebase as a database server in our application. In our application is house rental advertisement purpose so there will remain database part and it also it will remain relational schema.

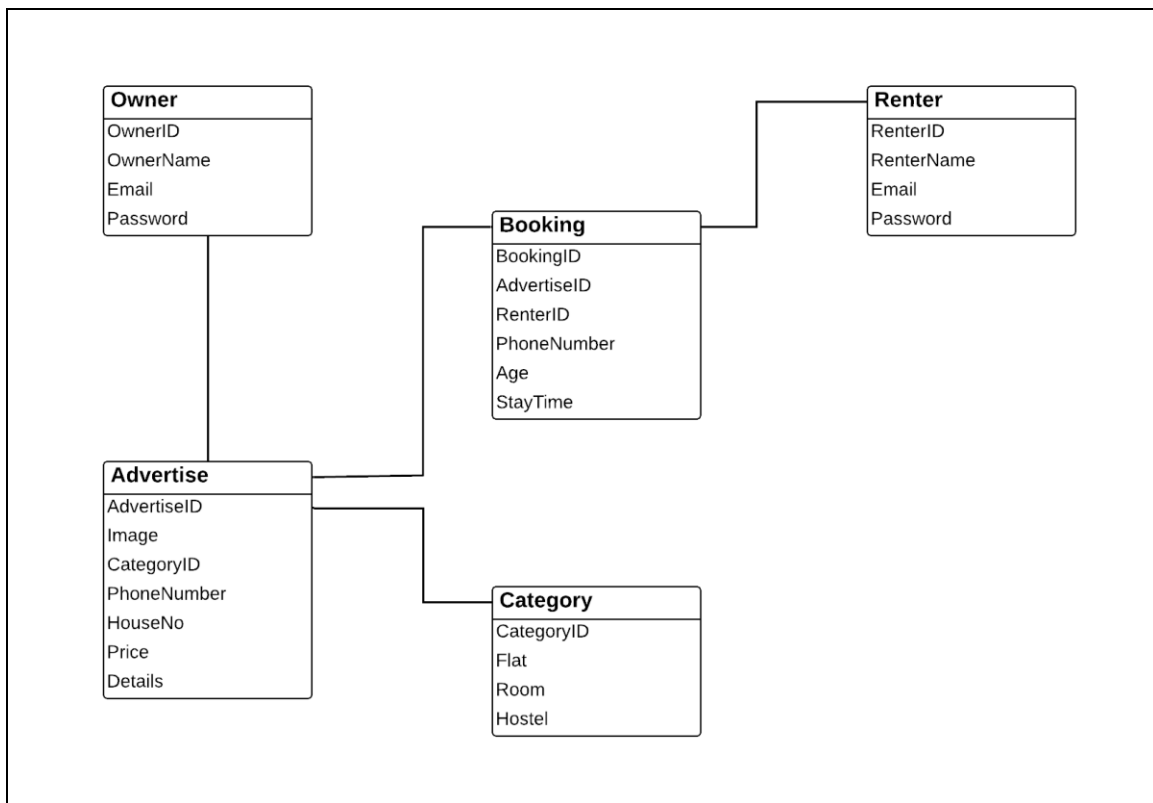


Figure 3.3: The logical data model of House Rental System

3.7 Data Flow Diagram

In Figure 3.4 Data Flow Diagram(DFD) design the process by showing External entities through which the information flows and the tests emerge, Processes that transform data flow, Data stores through which the data is read or in which the processes write data. A DFD design can express the process of input and output how to through the internal ©Daffodil International University

external connection with database and the system. In our application House Rental System we describe to our DFD design. In Figure 3.4 House Rental System and Home Rental advertise are two process in this application. It has also two user and database. Database which data through data diagram according to input and output.

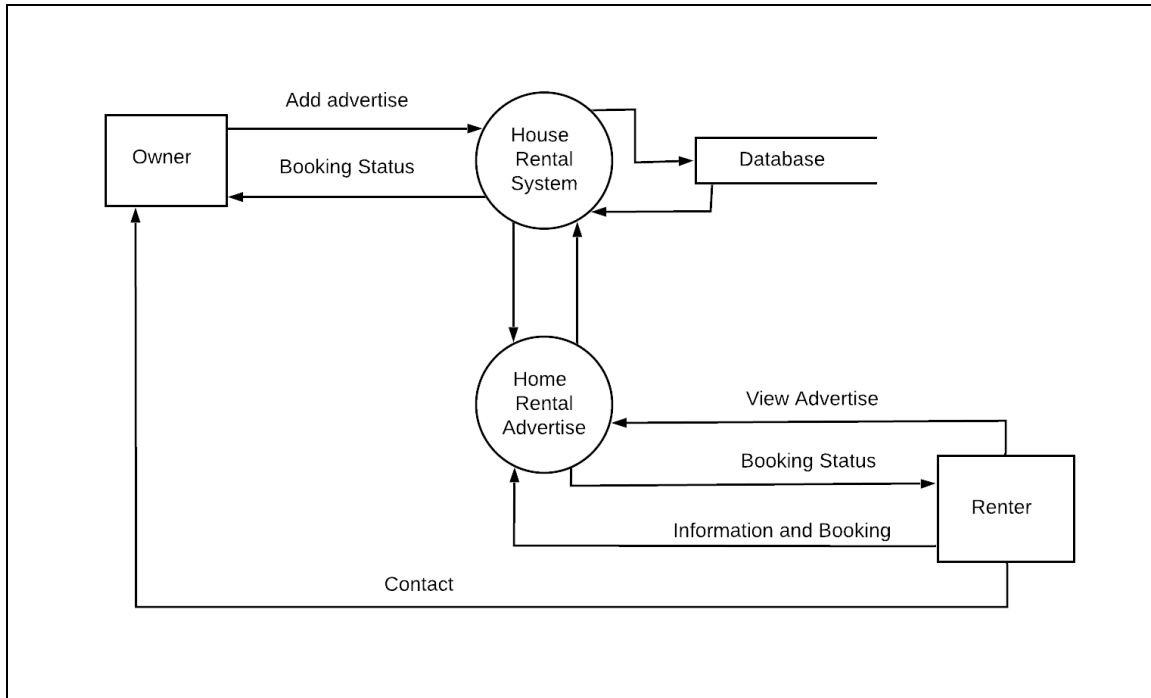


Figure 3.4: DFD model of House Rental

3.8 Design Requirements

Our project's design requirements will differentiate from the other projects because our project will work on our specific problem statement and the product, system, or experience that we design. Our project design to all public who lives in Dhaka city or urban area, whose need to house for rent, we designed very easy and user friendly. Our project designed where two types of user one is owner and another is renter. Those users need to login, when the user registered. Registered user must be provides his/her information. Owners add to new advertise of his/her house/flat/hostel which give to rent. Renter get to search location based advertise and booking his/her destination house, or contact with owner. We designed this process according to describe above.

1. In our application have two types of user, so it has user authentication system because this app is location based and need to valid user. So, designed registration and login system
2. Our application we designed two types of user such as renter and provider. So it has strong profile system. We design a user profile where need to user information.
3. In this application we designed user interface, we try to our best design, which are simple and easy navigation system. User can easily understand.
4. Our application we use English language, all information and input output system describe English language.
5. This is application most important feature Google Map API. It is use for a user can easily find his sweet home. We try to use Google map API so that easily find his/her destination home.
6. People who lives in city area, they can use our application they need to give appropriate information and must be registered user who knows English.
7. House owner can give advertise and delete advertise. Also this type of user confirmed booking and cancel booking system.
8. Renter easily see the all advertise of house/flat/hostel on his/her location based. We try to interface for the user. Renter search his/her destination without any help like as third person.
9. User interface we design simple color and suitable for all user.
10. A user must be need to an android device and GPS system for the use to our application. And also connected with internet.

Hopefully our android project can easy to property rental system. A user do not suffer any static harassment. We are trying to give simplify for the user. It will be user friendly.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end Design

For the graphical aspect of an application, the frontend design functions and with this, a user may communicate with the software. The main thing here for a client is the front-end design. This means, in the case of the coder, the languages used to construct an app's UX. An app needs to be user-friendly and understandable in order to have a good experience for a user. I tried to make this application user-friendly so that the user could easily understand it and use it. The application's user interface is also known as front-end design. XML was used here to construct the user interface. There are many pages to-let has. Therefore, for both the owner and the renter, there was a lot of designing aspect for different purposes. The front-end design of our project is as follow



Figure 4.1: A Screenshot of Front-end Design of Easy Rent (Mobile Application)

Figure 4.1 shows the opening page of our app which is our application logo and a line of short slogan. User can see this every entrance time. Actually the logo will come every time with a beautiful animation. We tried to design our application front-end design as simple as possible. We tried our best to give the user best experience. We hope that the users will find it easily accessible and get benefited from our app.

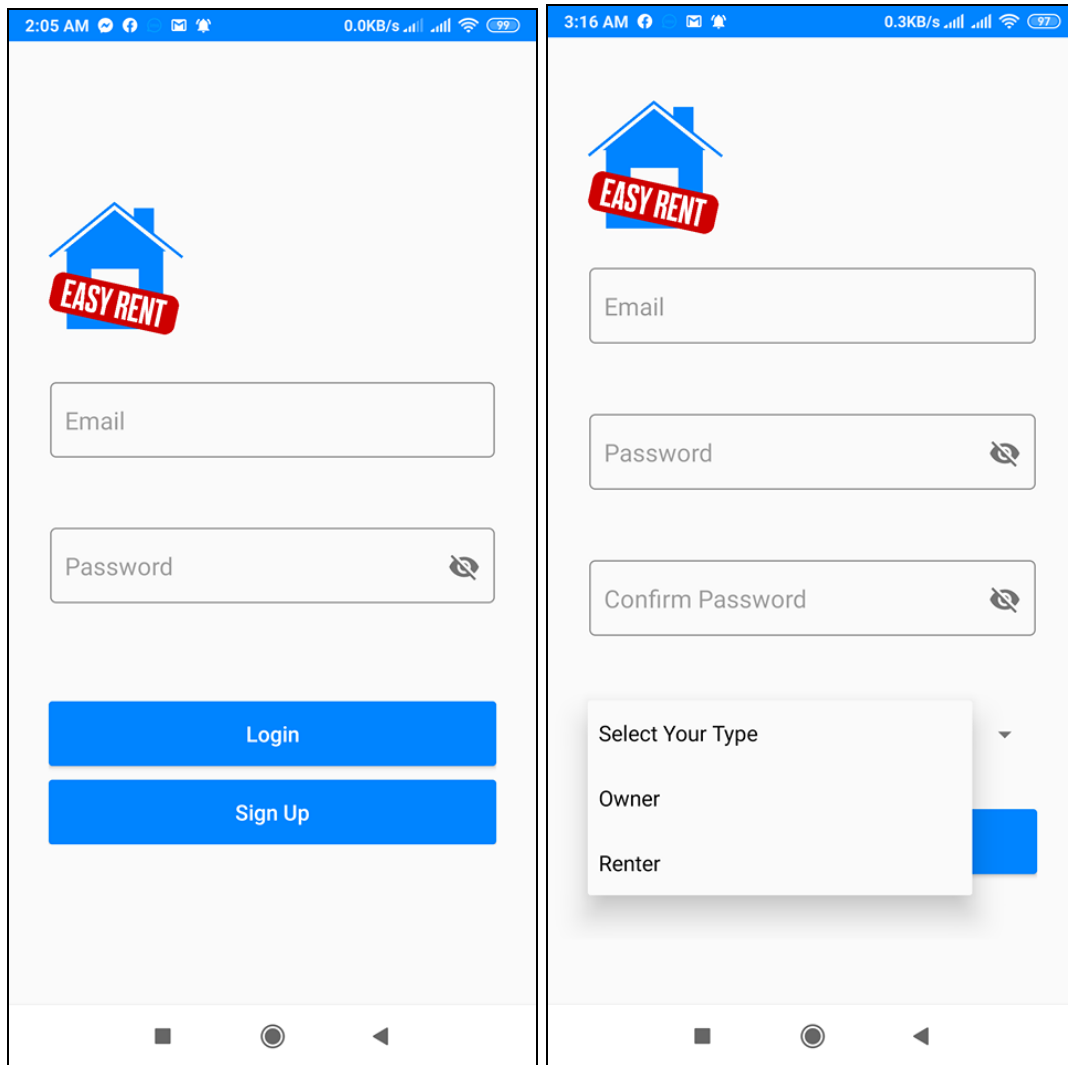


Figure 4.2: Owner/Renter Login and Sign Up Page

Figure 4.2 show us the Owner/Renter login and Sign Up page with valid email address. User can create both accounts. If anyone input the wrong email or password then they can no enter in the app. If you want login into the page then you have an account which is you opened. Owner can enter by their email and the renter can enter by their email too. The app can understand that you are an owner or a renter.

Sign Up button for the unregistered people. While a person wants to enter the application at the first time then you should need to create an account by Sign Up directly.

Figure 4.2 also shows us the Sign Up page for the owner and renter. Anyone can create an account with a valid email address. When the user creates an account, at that time the user needs to select the type of user that they are, an owner or a renter.

Figure 4.3 shows us the owner profile. After filling up the owner profile form, then you will get the owner profile. There are area, address, mobile number, and road name/no, etc.

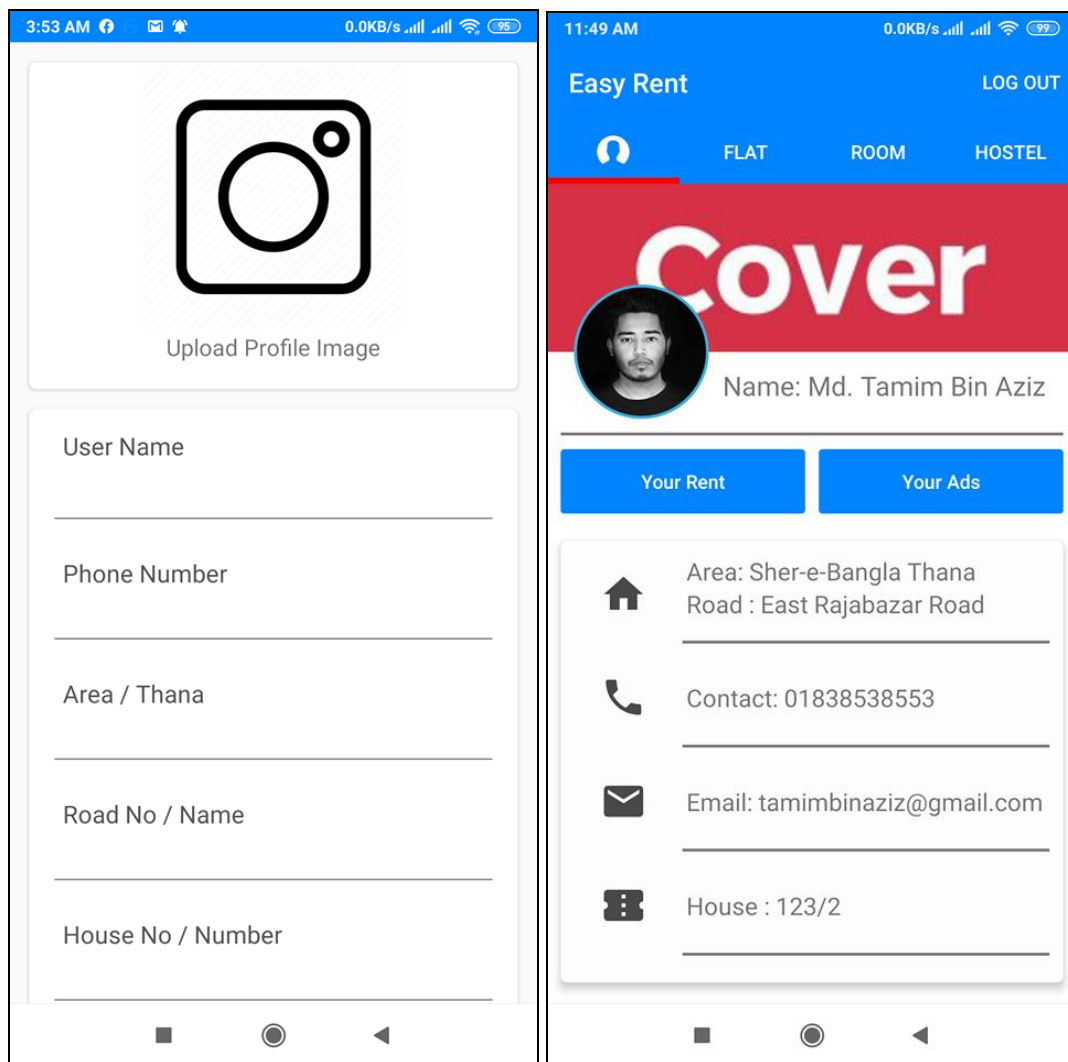


Figure 4.3: Owner Info Form and Profile

After create your profile you can post your ads. There are total three categories of rental system which are flat, room, and hostel. When you post your ads then the Google maps auto take your present location and you can see the location in the map automatically.

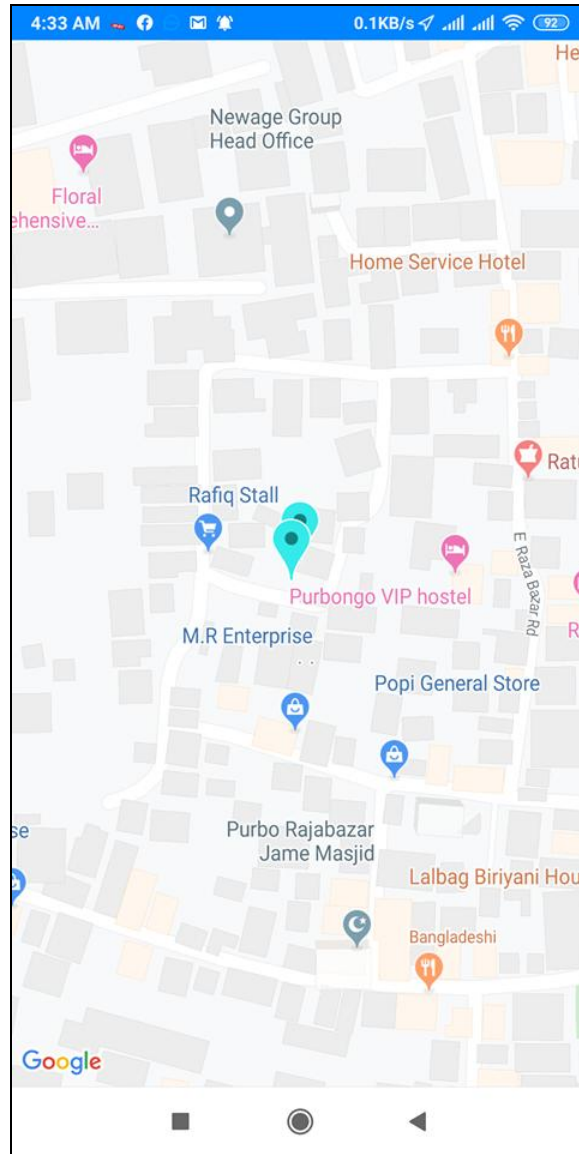


Figure 4.4: Google Map of House location

You can see the location by Google map. This is the main part of our To-let application. Owner can see the ads details and the renter also can see the ads location. The Google map is most appropriate and useful for the renter. Because if anyone does not know about the location that where it is. The Google will help him to find the location by the Map. By this Google map you can find the location very easily.

Figure 4.5 show us the owner ads post. The owner can see own all the ads post but he/she can see the other owner post. But the renters can all the post which are for flat, room and hostel.

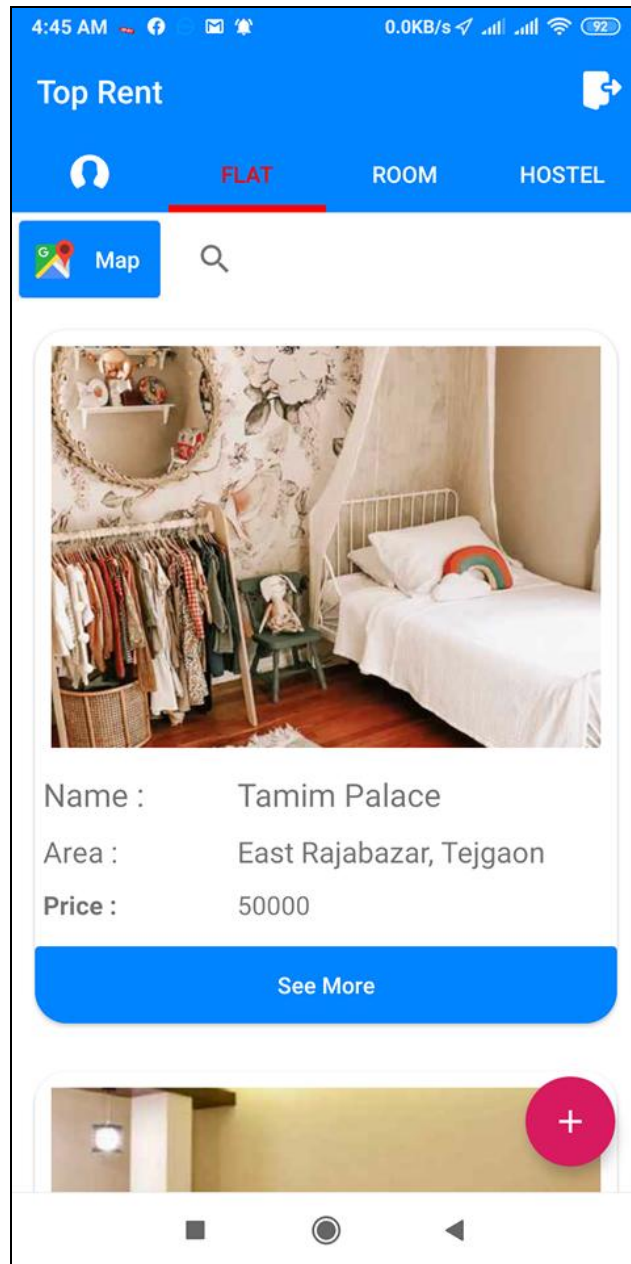


Figure 4.5: Owner Ads Post

There are all the post which are the owner post his/her ads of flat, room and hostel/seat. One by one all the post is show in this page. This is a flat post that's why the flat option is activate. There is also the Google maps, you can enter into the maps by clicking there and see the location map. This post has total 4 images of flat/room. By clicking see more you can see.

Figure 4.6 show us all the post which is the renter can see only. The ads post can the flat/room/hostel. The renter also can access the Google maps. The maps give you the exact location as you can see.

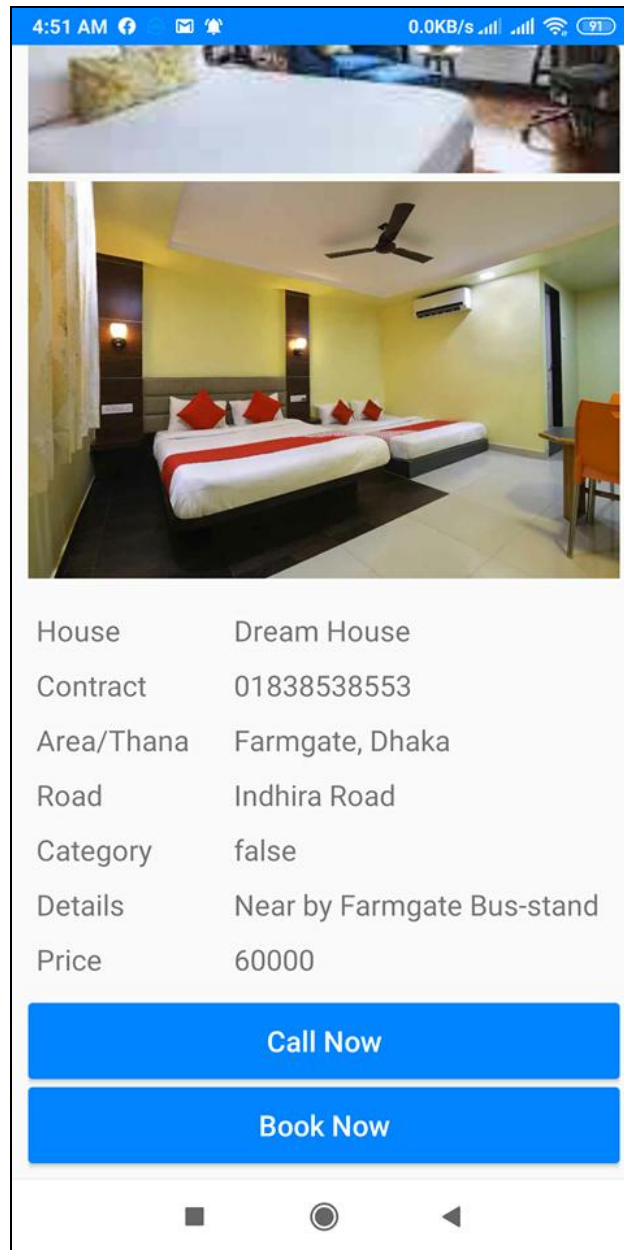


Figure 4.6: The Renter See the Ads

Figure 4.6 show us the “Call Now” and “Book Now”. The renter can call to the owner and after with owner discussion the renter can book the flat/room/hostel by clicking Book Now. The renter can cancel the order and the owners can also the order too. After the booking the “Book Now” status will be Booked.

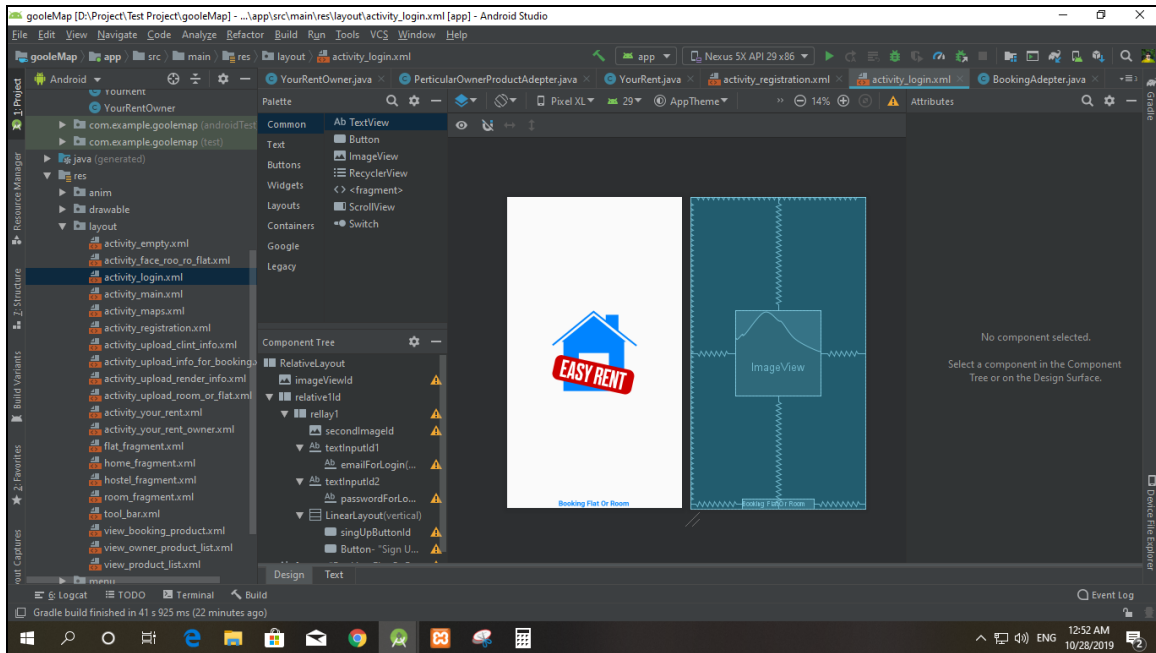


Figure 4.7: The XML Code of Front-end Design of Logo

Figure 4.7 show us the XML code of front-end design. Actually the screen shot code is about the first page which is app logo. We show you just a one screenshot. You can quickly create templates in the Layout Editor by dragging UI elements into a visual design editor rather than handwriting the XML layout.

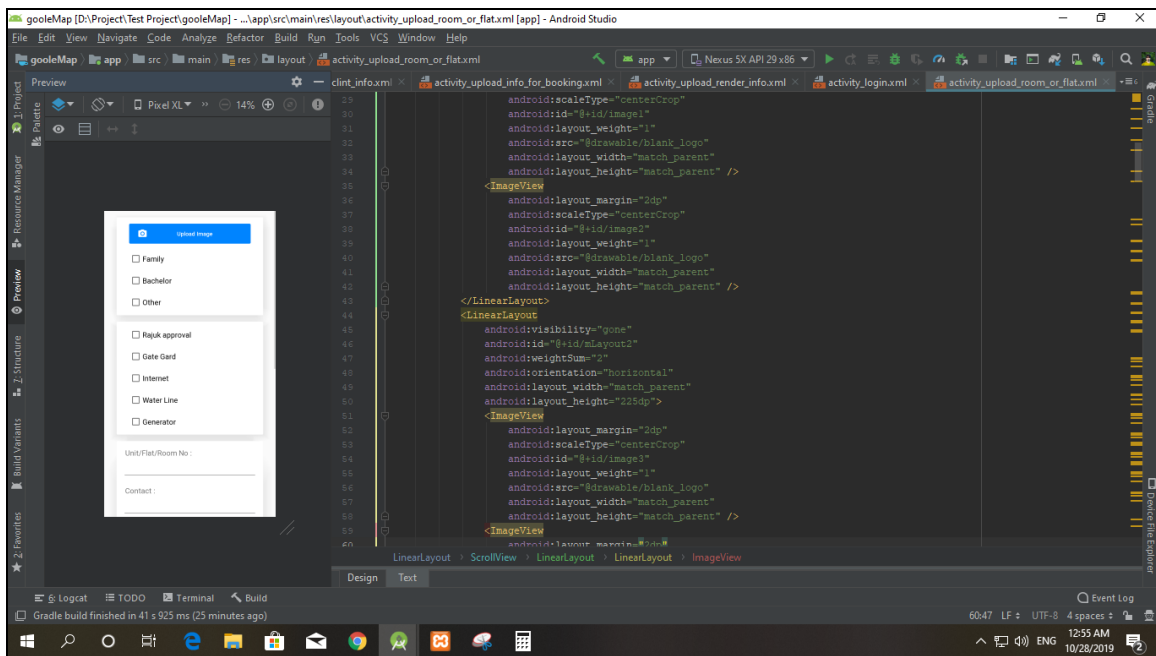


Figure 4.8: XML Code of Categories and Home Appliances

4.2 Back-end Design

Firebase is a back-end as a service. The main work of this app is occurred by back-end design .It is the most important part of this app. All logic of this app is here. Saving or displaying logic of back-end part data is given part to part. The server side design is also called the back-end. It controls the site's behavior when an action is taken.

We use Java to make the back-end design. Java is, and for good reason, the most popular programming language in the world. Java is not only extremely versatile developers have also been using it for over 20 years. Compiling many development languages creates a code that can run differently if the computers on which it runs are different. For Java, this is not a problem because of the JVM. The Java Virtual Machine serves as a middle layer that can run code on any machine, irrespective of where the code has been compiled. [6]

The back-end is the core part of a website or software from which everything is managed, while the front-end is the back-end's visual representation. The most important part is the back-end.

So it's very critical to have security, structure, and content management. Essentially, the back-end has three sections like the server, database, and software. Here we don't use any aspect of the site. It's concise component software because of this feature. So in our software, we don't bind server. We can use the API for the online compiler, but we don't use its paid version here. If we use the API here, then anyone in the application can compile code, but it has to be online otherwise it won't be possible.

Our software does not have any element of authentication, which is why there is no part of the login panel or registration. We're going to improve our request every day. Since the software can contain sophisticated user information, it is not possible to write specifics here. Using encryption technology, the database is secured.

Therefore, we use Java for back-end design and our database is firebase database. We build up our application in Android Studio.

4.3 Interaction Design and UX

Interface development focuses on the user-technology interface process. To use an app that is friendly and easy to use and to understand the app's interface needs to be so clean and user-friendly.

And UX means user experience, and as an interaction design, this variable is also significant. Interaction Design is an important component of User Experiences (UX) design's giant umbrella. Specifically, interaction design is a discipline which explores the communication between a device and its user through an interface, and user experience (UX) development is the process of creating products that provide useful and personally important experiences. Taking these factors into consideration, we have tried to make our application easy and user-friendly so that users can easily use this software for their purpose. We keep our application too simple and easy for the user to use our application to have better experience, feelings and results. We Hope our user information about our systems is secure and helpful and very easy to handle.

4.4 Implementation Requirement

We use various types of implementing software, attributes and components to construct our application. With the aid of these tools it has become possible to make this software easily accessible and useful to people. We address all the resources, attributes and components we used to build this entire project in this Implementation Requirement field. In our android project we implement the core code that's means the Java and XML code. The special thing is in our application it is Google maps which is totally unique implementation in to-let system application.

4.5 Mobile Application Version

The mobile APK version is V1.1 for android. Our software is designed for mobile use, mostly for people on the road. That's why we made a version of it for the mobile application. We will address in this section the tools we used to build the version of the mobile application. This depends on a lot of stuff like studio app, simulator, server SQL,

etc. It depends entirely on how the designer is willing to do it. Since different users are using different tools.

4.6 Android Studio

Android Studio is a modern, fully integrated development platform recently launched for the Android operating system by Google. It was developed to provide new application development tools and provide an alternative to Eclipse, which is currently the most commonly used IDE [7]. Android Studio [8] is the official Integrated Development Environment (IDE) for Google's Android operating system, built on Jet Brains IntelliJ IDEA software and Android SDK to both develop our Android application and test our Android application when it's necessary to run for output viewing. By default, in the view of the Android project, Android Studio displays your profile files. This view shows a flattened version of the structure of your project that provides quick access to Android projects ' key source files and helps you work with the new Grable-based construction system.

4.7 Android Overview

Android is a magnificent system, meaning that a mobile device is a complete application stack. It provides the entire tools framework for the simple, fast and easy development of mobile applications. We design our application with Extensible Markup Language (XML), which is connected to the Java Language database server in Android Studio. Android is also an open source platform that allows developers to create any kind of user interface that the developer wants to build their software. In android studio, the developer can write any programming language for its application. Therefore, by using it for user interaction, developers can easily develop different types of mobile application. Using the Android Software Development Kit, Android applications are usually developed in Java language.

4.8 Android SDK

Android SDK Tools is an Android SDK module that includes the full collection of android development and debugging tools. It's part of Android Studio. Android development starts with the SDK (Software Development Kit) of Android [5]. Android SDK is a series of development tools used for android platform design and creation of any kind of android application. This means that Android SDK is essential tools for the design and creation of any android application. For your Firebase applications, we use encryption for file uploads and downloads, irrespective of network quality.

4.9 The Emulator

The Android Emulator simulates Android devices on your desktop so you can test the software on a variety of devices and levels of the Android API without needing any physical device. An emulator is an Android Virtual Device (AVD) [10] that represents a specific android device to emulate any type of project or application. The developer can use an android emulator as a target platform on his / her Personal Computer (PC) to run and test his / her Android applications. Bu Using Android emulators are optional. The simulator runs the same code base as the machine itself. For replicate android ventures, the emulator is so pretty. During the installation of RAD Studio, an Android emulator is installed by default.

The emulator contains nearly all of a real Android device's capabilities. You can simulate incoming phone calls and text messages, determine the device's location, simulate different network speeds, simulate rotation and other hardware sensors, access the Google Play Store, etc.

The emulator comes with predefined settings for different Android devices including mobile, laptop, Wear OS, and Android TV.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation

When define its software components, each platform technology uses different terminology. Context, Activity, and Intent are the three most important classes on the Android platform. While other, more advanced components can be implemented by developers, these three components form the building blocks for each and every Android app. Firebase allows developers to focus on building great user experiences [7]. Using firebase users can change the data store and donate is bothered to write APIs. I used it to handle the app's back-end.

The database of my app mainly consists of two parts, one for the owner and the other for the renter. Such two sections provide enormous information for the entire program.

5.2 Implementation of Front-End Design

The software was downloaded after the integration of all functions and features and was running on an Android cell phone. It's working perfectly. The specifics are listed below: at first, there is a welcome operation; here are some text fields and two buttons. One is a login and the other is a registration. Developing a beautiful front-end design that will be drawn to the client is really a good challenge for us. Because of it is very important to balance the design with the size of the android display to develop a design for android devices. For many reasons, it can't fix with the display at times. A developer must therefore test his / her android application many times by building or running in the app. We also try to think in the user interface design for mobile apps as an easy and simpler way to create user attraction for our android application. We also try to design certain materials and resources to build and attract the user. On the other side, a very easy and simpler interface can be used by the user. There are many and many forms of android supporting smartphones. Yet not all of these are the same guarantee of performance. Some of them have really weak hardware components, the device being hanging and

behavior like weird in a bit of pressure. With various version types, these explanations occur. We discussed how each operation has its own user interface, described in a separate resource design folder.

5.3 Implementation of Interactions

The software has to be more social in order to make a device more used. For create a device, the user-friendly system requires some material layout. The layout should include good icon and beautiful text font with some well-designed button for a convenient device.

We tried to make our application more user-friendly. So, we've made the system responsive and very simple user friendly for a better user experience by using good icons with good text font and better color combination.

5.4 Testing Implementation

First of all, after open the application you need to sign up as an owner or renter. If you have already an account then you need to just sign in by your valid email address.

Now seems you are an owner then you need to create a profile. After complete your profile you can create a post with your house's all the information.

If you are a renter then you see the all owner's post. If you want to rent any house then you can do it by call now / clicking by booking option.

Most important part is Google map. The owner and the renter both are can the Google maps. By Google map you can reach to your renting house. Hope it will help all the renter and the owner.

TABLE 5.1: INSTALL TESTING OF EASY RENT APPS IN DIFF ANDROID VERSION DEVICE

Test Case	Test Input	Expected Result	Actual Result	Result	Tested On
1.Install application	Tested on various— 1.Kitkat (4.4-4.4.4)	Successfully install all those various	Install successful	Passed	17/10/2019
	2.Lollipop (5.5-5.0.2)		Install successful	Passed	17/10/2019
	3.Marshmellow (6.0)		Install successful	Passed	19/10/2019
	4.Nougat (7.0-7.1)		Install successful	Passed	19/10/2019
	5.Oreo (8.1.0)		Install successful	Passed	15/10/2019
	6.Pie (9.0)		Install successful	Passed	15/10/2019

Our project name Easy Rent. It is android based House Rental Management system. A complete development software need to different types of testing. At first we are testing android apps install in different android version device. If we look at the Table 5.1 first install in android Kitkat 4.4.4 and we are successfully install this device. But we do not find android Jelly Bean version device. Similarly we are installed in android Lollipop 5.5, Marshmellow 6.0, Nougat 7.1, Oreo 8.1.0, Pie 9.0 and successfully installed. Passed the all devices.

5.5 Test Results and Reports

We updated our application to see if it works as expected or not. The test results will therefore allow us to understand our system's weaknesses and help us improve it. In order to make the app effective, we tried to test every function we used in this project. For various android devices, we have checked out To-let app several times to check whether

it works successfully or not. And finally, as we expected on every unit, it worked perfectly.

TABLE 5.2: TEST CASE TEMPLATE OF HOUSE RENTAL SYSTEM

Project Name: House Rental System	
Test Case Template	
Test Case ID: H002	
Test Priority (Low/Medium/High): Med	
Module Name: Android Application signup and login	Test Executed by: Mohammad Didarul Alam
Test Title: Verify signup login with valid username and password	Test Execution date: 27-10-2019
Description: Test the Android Apps Signup Login page	
Pre-conditions: First sign up then user has valid username and password	
Dependencies:	

If we look at the Table 5.2 test case of house rental system, it is test case template. We mentioned our project name and other information in this template. Anyone can run the application very easily. Any version of android is eligible for this application.

TABLE 5.3: APPLICATION REAL LIFE TESTING

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1	Press Sign Up Button	Email: didar3@gmail.com Password:	Should be signup exactly	Successfully 1 st step signup	Pass	Password Sequen

		Didar1 Confirm Password: Didar1				ce
2	Press submit second step of signup	Image: Select User Name: Mohammad Didarul Alam, Phone Number:019147 95874, Area: Kolabagan, RoadName Lake Circus, House No: 95	New user should be able to complete sign up	Successfully 2 nd step of sign up	Pass	Image size maxim um 100kb
3	Press login button Provide valid email	Email= didar3@gmail.c om	User should be able to login	User is navigated to	Pass	
4	Provide valid password	Password: Didar1		dashboard with successful	Pass	
5	Click on Login button			Successfully Logout	Pass	

Then Table 5.3 we apply real life testing, test name verify signup login with valid username and password. In this test part sign up and log in test. We provide all sign up information and submit. We are successfully signup. Then we test login part. We fill up the registered email and password and then click login option. We are successfully login our application.

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

The application becomes a very useful application to the all sector of peoples, like it can be useful for the office peoples, students and many more. Because it is going to save us our very valuable time by online mobile virtually work. This app is a useful tool for users with insufficient time to go to locations, locate and book flat or space. For both the owner and the renter, this app also functions. Using this app would help both of them. The renter can call the owner directly to book flat or rooms in this app. The Google map is most important feature of this location based to-let system mobile application.

6.2 Limitations of Our Application

As like all application in the market place, our application has also some limitation. We work on it and update all things day by day. We will overcome those limitations in future. Here, we want to mention that some of the main limitations of our application are given below:

- 1) There is no such a good payment method.
- 2) Right now, this application only for Dhaka city because we capture only Dhaka's flat, room and hostel/seat.
- 3) We do not use any Bangla language in the app

In future we will overcome these limitations and we promote this application all over the world. Very soon we will add very easy online payment methods.

We are improving our problem by developing day by day. We are trying to input more features in our application.

6.3 Difference Between Our and Other Apps

There are many applications on to-let system in Google play store like To-let Bd, Basa khujun, To-let Board, Bproperty, Sopnobari, etc but they all have some restriction and problems. They do not give the proper solution and most of them are not user friendly. In this case we research on their problem and we try to solve all of them problems.

TABLE 6.1: DIFFERENCE BETWEEN OUR APP AND OTHER APPS

	Our App	Other Apps
Google Map	Yes	Yes but not work properly
Location based filtering	Yes	No
Amount filtering	Yes	No
User authentications	Most	Less
Direct calling system	Yes	No

6.4 Scope for Further Developments

We have already a lot of features which are very useful for the to-let system. We are currently trying our best to improve our application. When we see some room for future development, we want something of our application to be improved and modified. The scope of our future developments is set out below:

- 1) We want to reach the application hand to hand all over the Bangladesh
- 2) We want to add many very easy payment methods, like Bkash, DBBL etc.
- 3) We want to use the premium Google map like Pathao, Uber.
- 4) We will use the Bangla version of this app
- 5) We want add a lot of category like Garage, Office etc.

Therefore the location based to-let system one of the best app in present market place. Because, we use the Google map and the application more user friendly better than any other application in the present market place.

APPENDIX 1

Java Code

```
package com.example.goolemap.GoogleApi;
import android.Manifest;
import android.content.Context;
import android.content.pm.PackageManager;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.os.Bundle;
import android.widget.Toast;
import androidx.core.content.ContextCompat;
public class GPSTracker implements LocationListener {

    private Context context;
    public GPSTracker(Context context) {
        this.context = context;
    }
    public Location getLocation()
    {
        if (ContextCompat.checkSelfPermission(context,
Manifest.permission.ACCESS_FINE_LOCATION) != PackageManager.PERMISSION_GRANTED)
        {
            Toast.makeText(context, "Location permission is not granted",
Toast.LENGTH_SHORT).show();
            return null;
        }
        else {
            Toast.makeText(context, "Enable GPS", Toast.LENGTH_SHORT).show();
        }
        return null;
    }
    @Override
    public void onLocationChanged(Location location) {
    }
    @Override
    public void onStatusChanged(String s, int i, Bundle bundle) {
```

```

    }
    @Override
    public void onProviderEnabled(String s) {
    }
    @Override
    public void onProviderDisabled(String s) {

    }
}

```

Figure 6.1: A Screenshot of Java Code

APPENDIX 2

XML Code

```

<com.google.android.material.textfield.TextInputLayout
    style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"
    android:id="@+id/textInputId1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/secondImageId"
    android:layout_marginTop="20dp"
    android:layout_marginBottom="10dp"
    app:errorEnabled="true">
    <EditText
        android:id="@+id/emailForRegistration"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginBottom="20dp"
        android:hint="Email"
        android:inputType="textEmailAddress" />
</com.google.android.material.textfield.TextInputLayout>
<com.google.android.material.textfield.TextInputLayout
    style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"
    android:id="@+id/textInputId2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/textInputId1"

```

```

    android:layout_marginBottom="10dp"
    app:errorEnabled="true"
    app:passwordToggleEnabled="true">
    <EditText
        android:id="@+id/passwordForRegistration"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginBottom="20dp"
        android:hint="Password"
        android:inputType="textPassword" />
</com.google.android.material.textfield.TextInputLayout>
<com.google.android.material.textfield.TextInputLayout
    style="@style/Widget.MaterialComponents.TextInputLayout.OutlinedBox"
    android:id="@+id/textInputId3"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@id/textInputId2"
    android:layout_marginBottom="10dp"
    app:errorEnabled="true"
    app:passwordToggleEnabled="true">

```

Figure 6.2: A Screenshot of XML Code

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AN ANDROID PROJECT OF A LOCATION BASED TO-LET SYSTEM

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Figure 6.3: A Screenshot of Plagiarism