

ONLINE TO-LET SYSTEM

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This Report Presented in Partial Fulfillment of the Requirements for the
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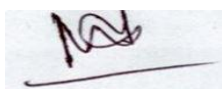
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APPROVAL

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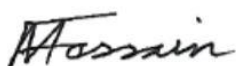


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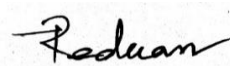


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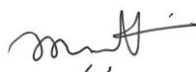


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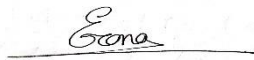
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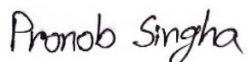
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ABSTRACT

Online To-let System is an Android Application that is build for helping people who are facing problem to find-out a house for rent in Dhaka city. In Bangladesh background Dhaka is the best study, job and business purpose people moved Dhaka from various small town and villages. So, they must need to rent a house where they can stay. Renting a house in Dhaka city is like getting a golden deer. This app will help people to find house in Dhaka city. Also, it will show area-based house near you. As far as I know, there are many Facebook page and group for to-let but there is no such app in Bangladesh for to-let. Our country is getting improved day by day. So, we have to improve our regular life. We passed a very busy life after that we don't get much time to find a house by searching one by one in specific area. In present life maximum of us depends on internet. I strongly believe that this App will help people who don't have enough time to find a house by searching area to area. This app will save our valuable time and will make our life easier. On this app the owner of the house will post all details about the house and give their contact number to contact them if anyone is interested to rent the house.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

In today's generation we always find a shortcut way of every problem. We want to save our time from our busy life. We try to create this kind of app because we want to relief people from dizzy situation as I have faced a bad experience when I went to find a house. This app will help us to save our time and free us from any kind of hassle. On this app the owner of the house will post all details about the house and give their contact number to contact them if anyone is interested to rent the house. Admin control everything of this app. New user can see all the details about the house they are searching which area they are looking for. This app will give benefit to the students who are very new in Dhaka city and also the people who get new job or for businesses purpose moved in Dhaka city. This app will give them more and more benefits.

1.2 Motivation

A few days ago, I also faced this problem and it bothers me a lot. As I'm a student I needed a house which is small, clean and full off light-air under my budget. I searched a lot of houses but couldn't find the type of house I was looking for. At one point I became depressed. On that day, I decided that I'll make an app which will help people to find house by one click. By using this app, we can find house by searching specific area. This app will help us to find house easily and also will save our time.

1.3 Objectives

1. To find any specific area's flat and room.
2. To search and see their favorite houses.
3. To find any house with your budget by searching
4. No need to physically searching and face any harassment.
5. To save valuable time by online process.
6. To increase interactions among people by this system.

1.4 Expected Outcome

The expected outcome of our project is straight and forward. It helps the people who are searching for home in Dhaka city. It will show all the houses in which area you are searching. For homeowners this app is also very helpful. They can post all details about their house without any cost. It also overcomes the waste of time and also save money from both. This app will free people from hassles.

1.5 Project Management and Finance

This project is planned to be made open source when we complete almost all the tasks. So, if any further feature is needed then admin will improve that. As our app is dependent on a backend server financial expense is needed to bear the cost. Although the cost will be pretty low as the app is designed in an efficient way so that remote dependency is at its minimum.

1.6 Report Layout

In this project, a full overview of our system and related work and terminologies are given gradually. We recently made a survey on this similar work and try to what is more scope to develop this existing project. In chapter 2 we described the challenges and problems we faced which made it difficult for us. Another chapter 3 we describe the three-stage of background. We also describe the requirement specification and try to disclose users' demands. In, chapter 4 and 5 we disclose how we solve the problem and what we use to implement the project. Finally, in chapter 6 we remark some concluding and suggestions for future works.

CHAPTER 2

BACKGROUND

2.1 Preliminaries

In Dhaka city searching a rent house is very pathetic. It's waste of time and also drop people in a very dizzy situation. Sometimes we have to move one place to another place. When it's so far from you it's quite impossible to searching house by going there. This app will help people to view all details about any house by searching in specific area. And also, can contact with the house owner and booking it. So, we will be planning toward solving all those problems and give everyone online to-let system facilities. And we make sure we can provide the best out of our project.

2.2 Related Works

According to Figure 2.2 there are a lot of To-let system apps like BD To-let, Baribodol, Bproperty, To-let Board, Sopnobar, 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.

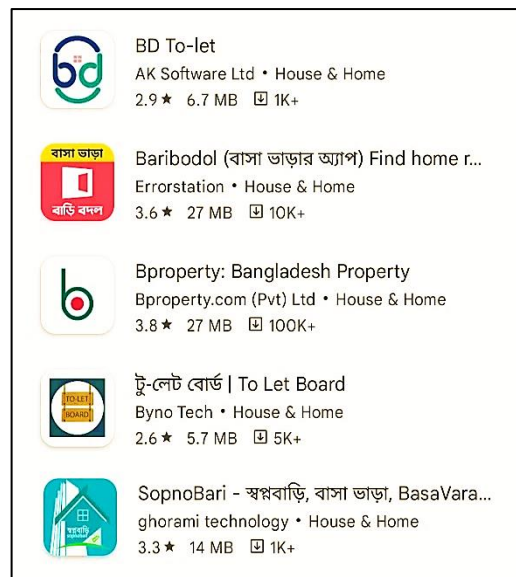


Figure 2.2 shows Bangladesh's To Let App

2.3 Comparative Studies

As far as I know our app is the only one to-let system app in Bangladesh. Another thing is available which is Facebook to-let group. But it doesn't give us proper facilities. In my real-life example Sometimes by showing Facebook to-let post we go for watch the house but maximum time the house has been booked already or the house is not as much as better as we think. This bother us a lot. But in our app homeowners will post every detail about their house and also provide their contacts so that user can easily reach them. This app will give a very user-friendly environment. From this app people will get a huge benefit.

2.4 Scope of the problem

Our main aim is to create a better system and eliminate the routine and booking related problem of our university. Initially, the project is meant for Computer Science and Engineering department. But the database will be designed in such a way that it can be modified easily and make it available for other departments. Moreover, if any other institution wants it can be easily converted to their need.

2.5 Challenges

Our challenge for making the Class Schedule application is to provide a secure and user-friendly environment to the users. Creating an interactive user interface is also a challenge. Moreover, as we are making this application platform independent, we must provide a consistent backend so our application can work fluently on every platform. As this project will be dynamic, we must provide a feature-rich admin panel so that admin does not need to interact with the backend server.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

In our system their entities are, the user and the system itself. After releasing, the mobile app will be accessible to everyone from the app stores. After installing the app user have to signup first to use the application by giving some basic information such as First name, Last name, Email, Password etc. Then after login the system avails all the functionalities of the app for the user. Besides accessing all the features, user can change his/her user password and edit profile from menu option. User can logout from the application and different user can use different account in the application in the same device. While logging in the user data and other information will be automatically synchronized. The system keeps most of the important data online so the risk of losing important data is minimized.

To provide all the services the application uses several components of the device such as, internet connection, camera, storage system, display and requires user permission for those while installation.

- **Application Flow Diagram:**

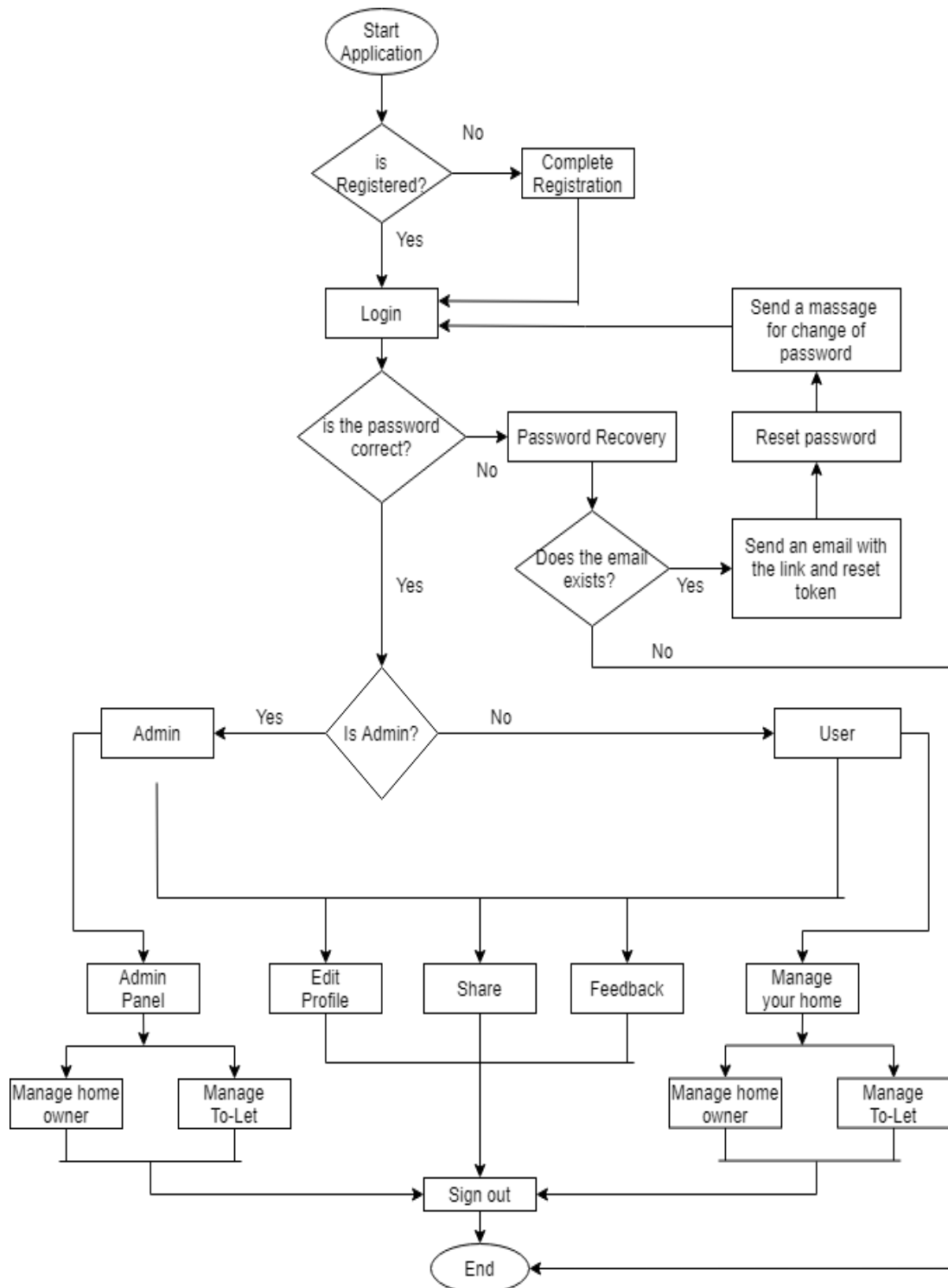


Figure 3.1: shows Application Flow Diagram

3.2 Requirement Collection and Analysis

When it involves any kind of project, requirement collection plays a key role. Requirement's collection is not only important for the project, but it's also important for the project management function. Requirement collection is the most vital step of a project. If the project team fails to capture all the required requirements for an answer, the project is running with a risk. This could result in many disputes and disagreements in the future. Therefore, take requirement collection as a key responsibility of the task team. So that we're accumulated our project requirement as quickly as possible. Then we started our work.

The basic functionalities of the application "Online To-Let System" are given bellow.

3.2.1 Manage User Profile

- The application shall allow user to view user profile.
- The application shall allow user to edit his/her profile and update it.

3.2.2 Manage Admin Panel

- The application shall allow admin to Manage Home Owner.
- The application shall allow admin to approve and remove Home Owner requests of users.
- The application shall allow admin to Manage To-Let.
- The application shall allow admin to approve and remove home requests of users.

3.2.3 Manage Home

- The application shall allow user to edit his/her Home and update it.
- The application shall allow user to remove his/her Home.

3.2.4 Add Home

- The application shall allow user to add homes for To-Let.
- The application shall allow user to add photos or take pictures of homes.
- The application shall allow user to add number and email of users.
- The application shall allow user to add description of homes.

3.2.5 Manage Search Bar

- The application shall allow user to search nearby areas for home.
- The application shall provide user to detailed information for the searched homes.

3.2.6 Password Recovery

- The application shall allow user/admin to recover his/her password.

3.2.7 Manage Communication

- The application shall allow user to share this app.
- The application shall allow user to give feedback for this app.

3.3 Use Case Modeling

To use the application, user must be registered to the system by signing up with some required user information.

- After signing up user has to log in to enter the application.
- While signing up and logging in, the web client validates the data and stores them to the firebase datastore for further use.
- From the home screen user can access all other components of the application such as, Nearby Homes, Recently Added Homes, Search bar, Navigation Drawer etc.
- In each individual component user is allowed to perform certain task such as Admin Panel, Manage Home, Add Home etc.

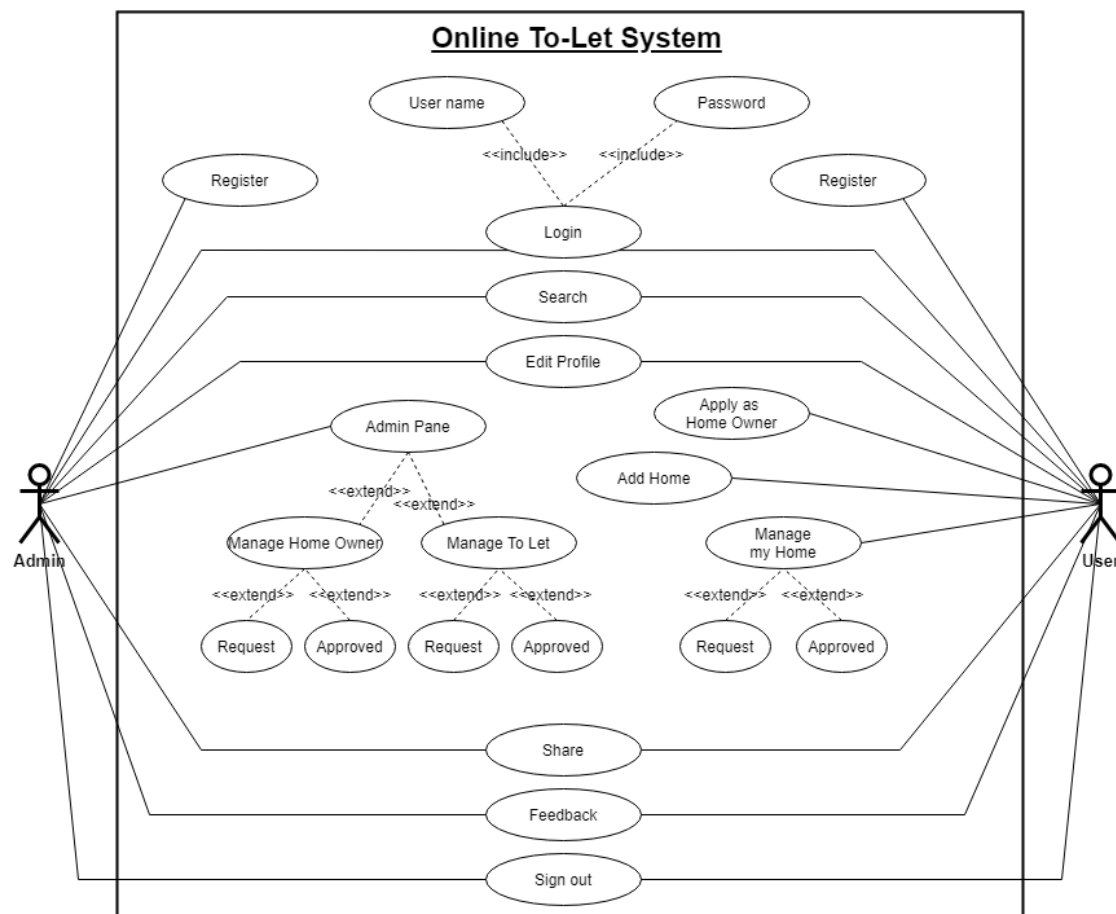


Figure 3.3: shows Use Case Model

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end Design

All of our application includes user, admin panel, search activity, homes etc. are explained below:

4.1.1 Sign-up Screen: For registration users need to add a profile picture and fill up First name, Last name, Email, Phone number and password. So, they have to fill up this information and then they will be redirected to get in the home page of our application or if someone has already completed the registration and login, he will be able to enter the home page directly.

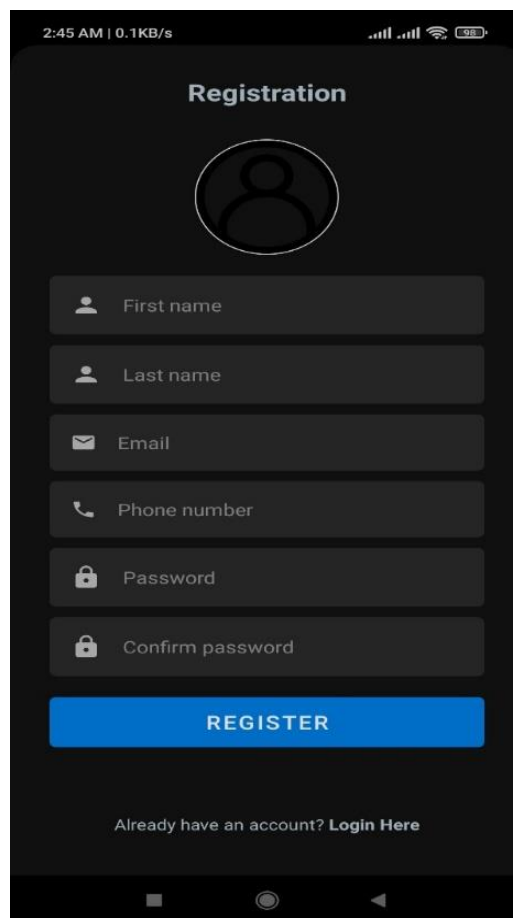


Figure 4.1 shows Sign-up Screen

4.1.2 Login Screen: This is the first screen that appears when a user opens their app. In this page user need to Sign in with email and password. If the mail is registered then users will be able to login if not than a dialogue box will open and shows “This email is not registered”. If the password is incorrect than a dialogue box will open and shows “wrong password”.

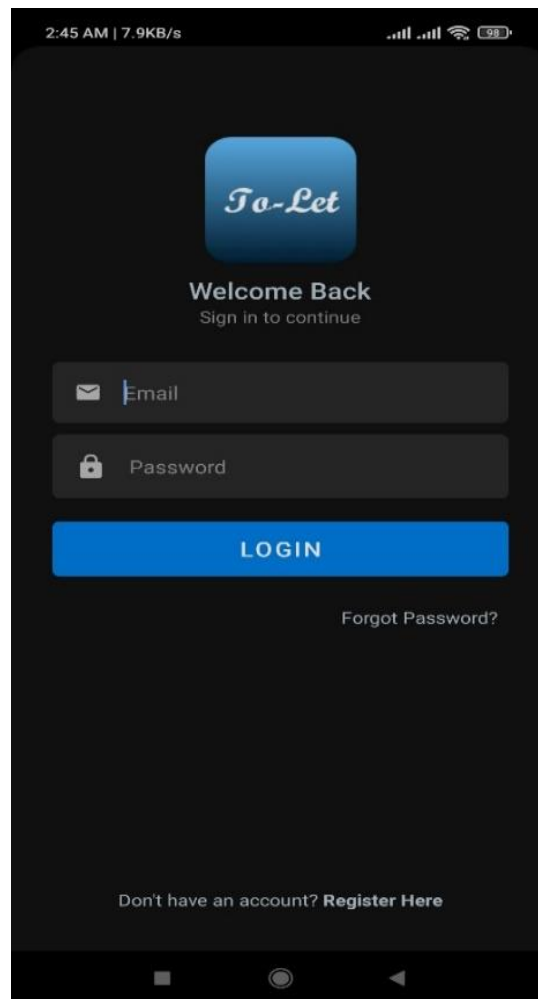


Figure 4.2 shows Login page.

4.1.3 Password Recovery: If user forgot their password than they can recover password by mail. Figure 4.1.3 shows Forgot password screen.

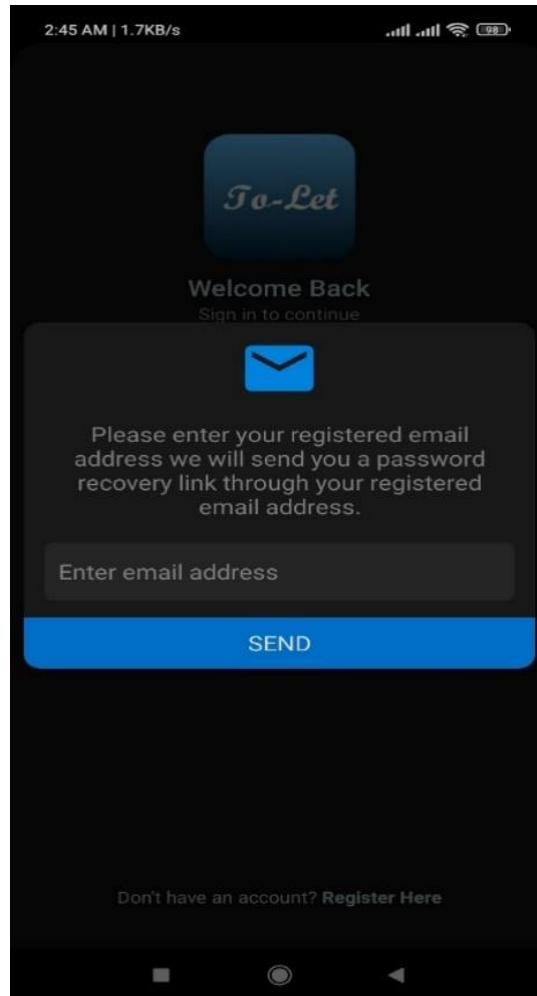


Figure 4.3 shows Password Recovery screen.

4.1.4 Homepage: In Home page, Users will be able to see the name of our application, a search bar, a menu button Nearby Homes and Recently Added Homes. For App name used AppBarLayout. In search bar we used AutoCompleteTextView for giving suggestion of places. If user search for an area it will show all the Homes in this area with a picture. In the Nearby Homes user will see if there is a house near it. And in Recently Added user will be able to see the recently added Home. Here Nearby Homes can be seen in Horizontal RecyclerView in Vertical. If a user clicks on a home can see all the details of this home with Name, Rent, Place, Number, Email and rooms.

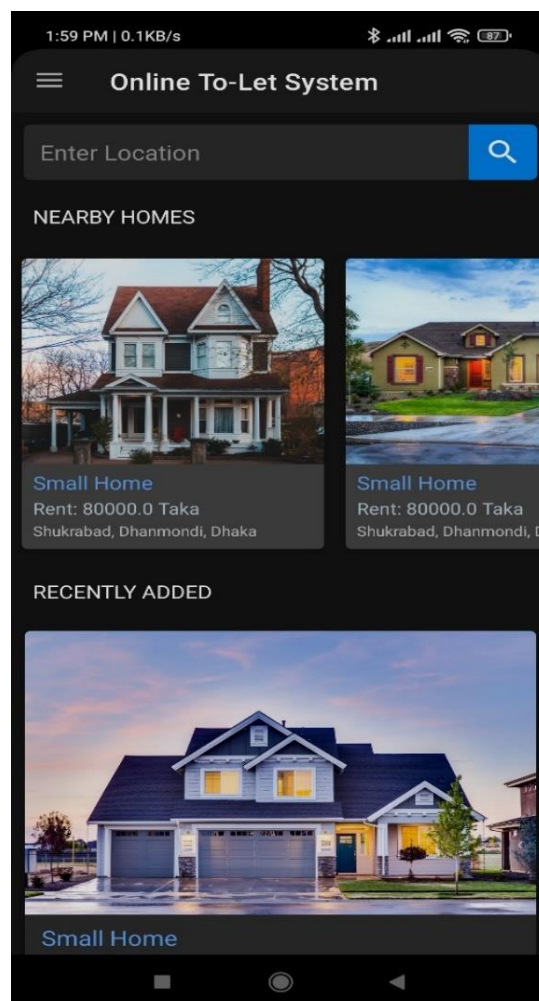


Figure 4.4 shows Homepage

4.1.5 Navigation Drawer: In Sidebar Navigation Menu there have the name of users and in primary field there have Edit Profile, Admin Panel and Sign out for Admin other side for Users there have Edit Profile, Apply as Home owner and Sign out.

For Communicate User can share this application and can give Feedback in mail.

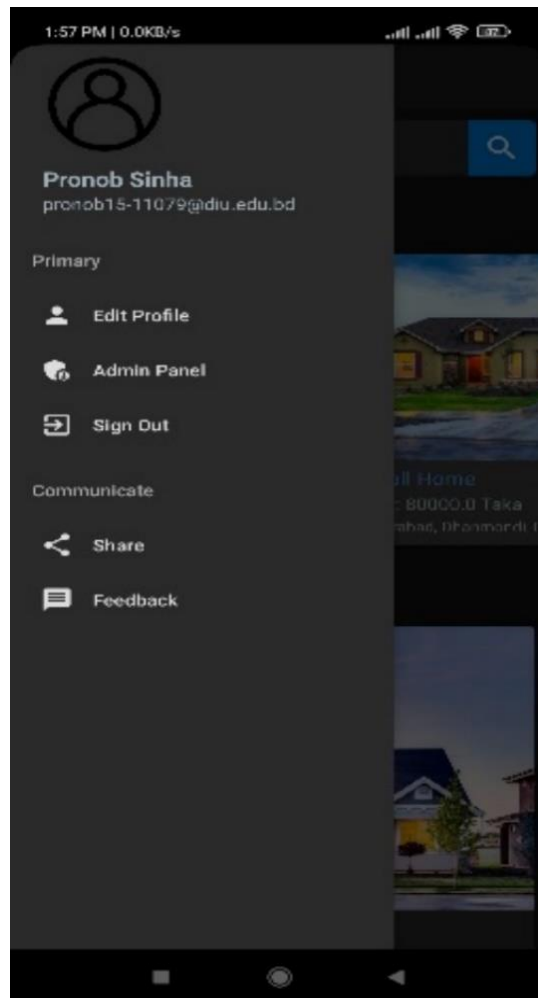


Figure 4.5 shows Navigation Drawer

4.1.6 Admin Panel (admin only): In Admin Panel admin can Manage Home Owners and Manage To-Let System.

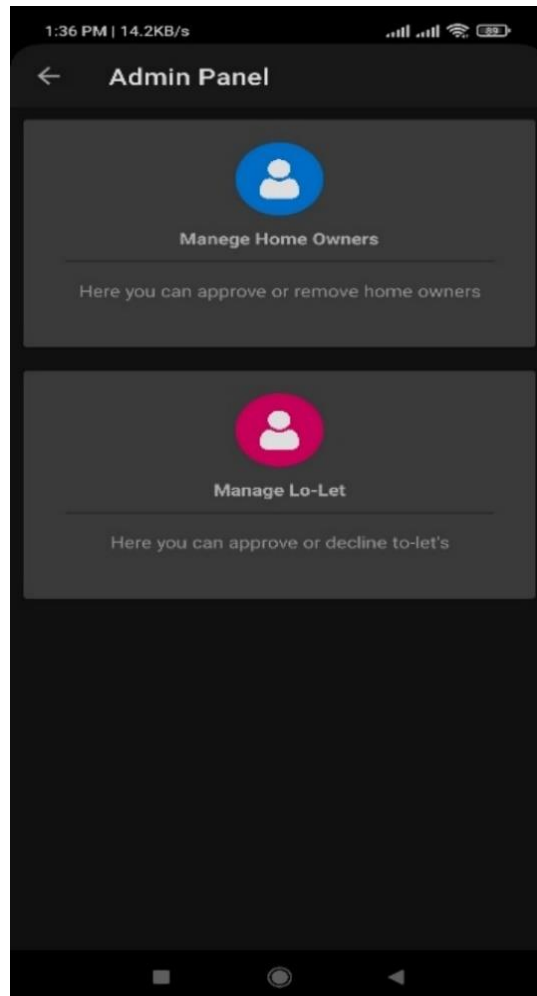


Figure 4.6 shows Admin Panel

If a user applies for home owner admin will be notified. Admin can approve and remove requests of the users in Manage Home Owners. Shows in Figure 4.1.7 If there nothing than it will show a message “Nothing to show”.

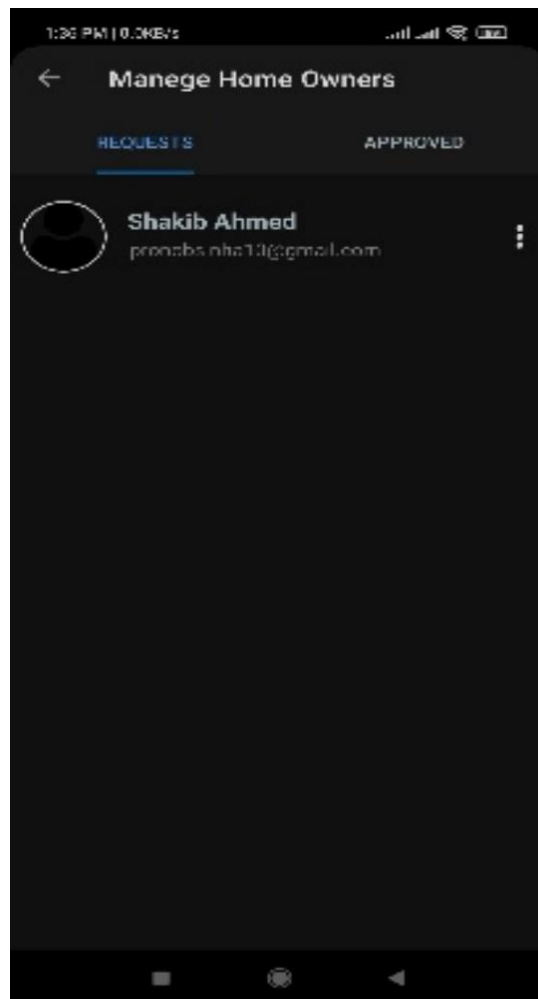


Figure 4.7 shows Manage Home Owners

If user requests for Home View, admin will be notified and can approve, remove and view details of the House in Manage To-Let. Shows in Figure 4.1.8. If there nothing than it will show a message “Nothing to show”.

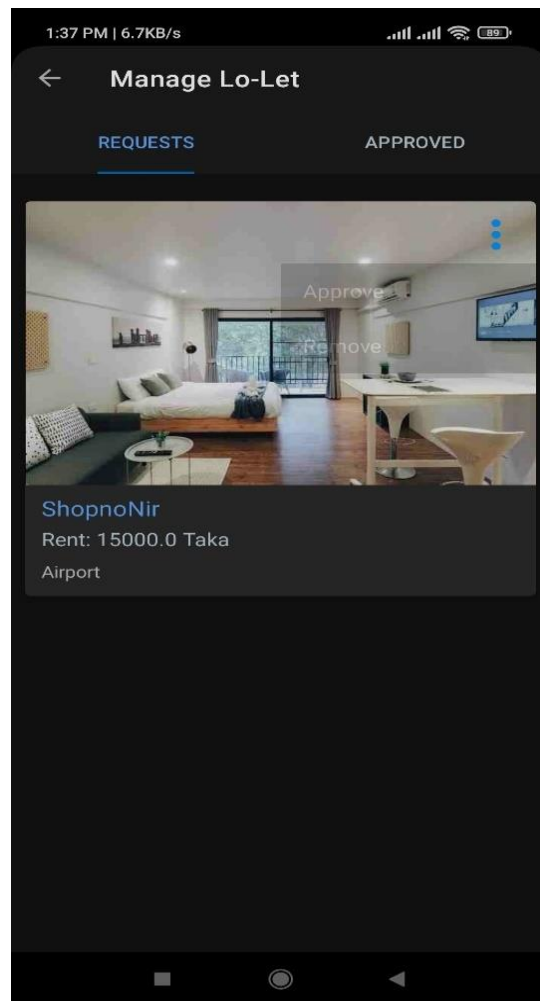


Figure 4.8 shows Manage To-Let

4.1.7 Manage Home (users only): If admin approve user as a Home owner than user will able to Manage Their Homes which will show in top of the header in the app. Figure 4.1.9 shows Manage your Homes. Then user can edit their home by clicking Manage my Home. Figure 4.1.10 shows Manage my Homes. If request approved by Admin than the My House will show in Approved. If there nothing than it will show a message “Nothing to show”.

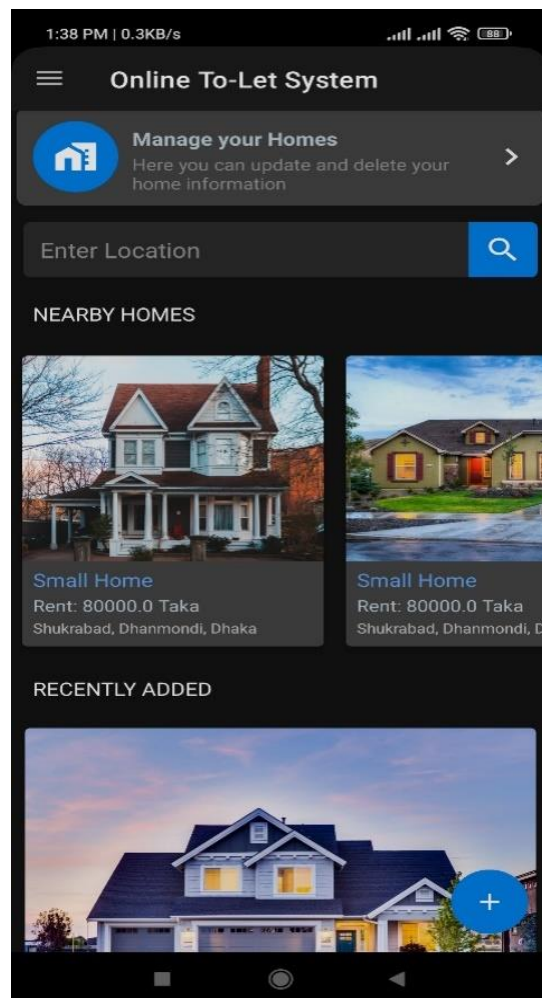


Figure 4.9 shows Manage your Homes

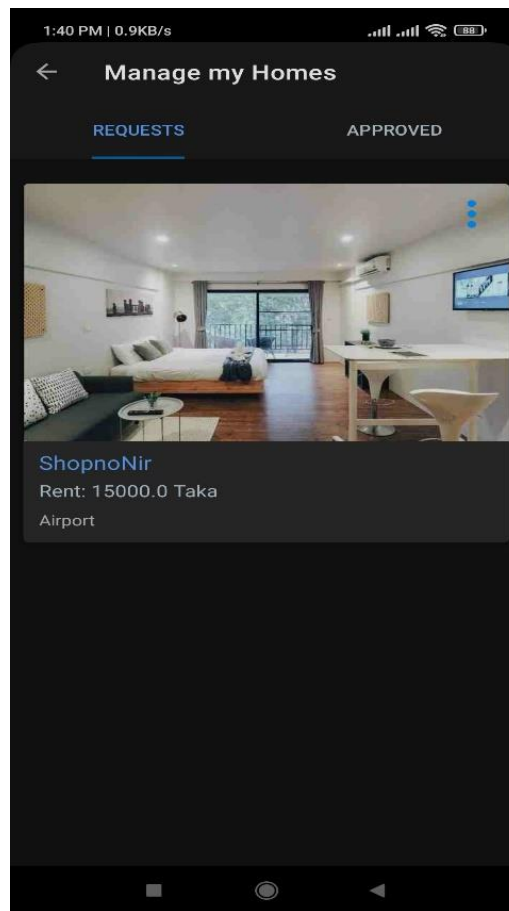


Figure 4.10 shows Manage my Homes

4.1.8 Add Home: Where user can add Title, Description, Area, Location, Rent, Phone number, Email and also can add a Picture of House by clicking Add Home button shows in Figure 4.1.11

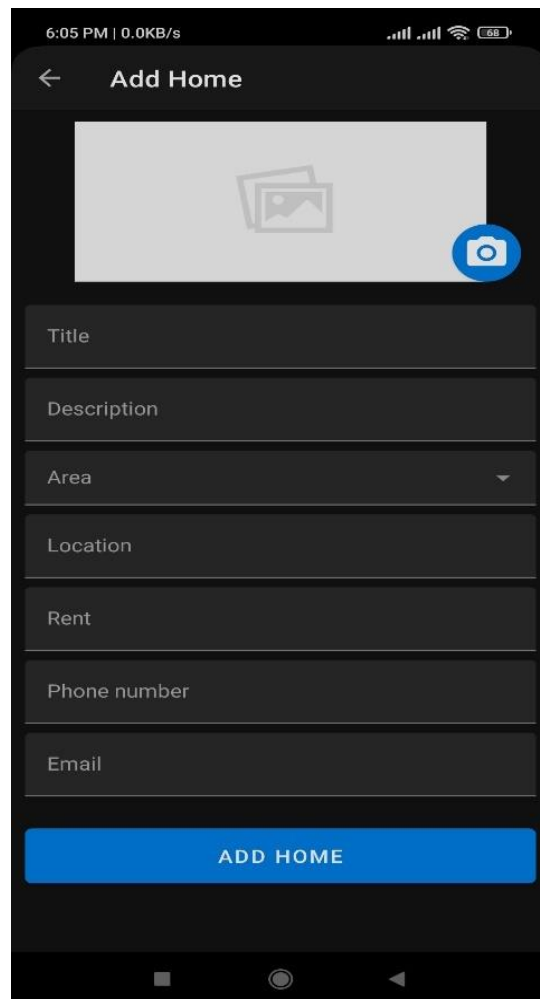
The image is a screenshot of a mobile application interface titled "Add Home". At the top, there is a status bar showing the time as 6:05 PM, a data transfer rate of 0.0KB/s, and battery level at 58%. Below the status bar is a navigation bar with a back arrow and the title "Add Home". The main content area features a large rectangular placeholder for a house image, which contains a faint icon of two overlapping photos. To the right of this placeholder is a blue circular button with a white camera icon. Below the image placeholder are seven text input fields stacked vertically, labeled "Title", "Description", "Area" (with a dropdown arrow), "Location", "Rent", "Phone number", and "Email". At the bottom of the form is a prominent blue button with the text "ADD HOME" in white capital letters. The entire interface is set against a dark background.

Figure 4.11 shows Add Home

4.2 Back-end Design

The front-end interface of users has been designed with XML as the default designing language for android application development. We also used Java as well. The back-end development has been done with Java. We used Android Studio as the IDE for developing the project. We also used Adobe Photoshop in some design cases. For database support we used Firebase Realtime Database which is the general-purpose database dedicated for android development. Figure 4.2 shows the Implementation Back-End Design

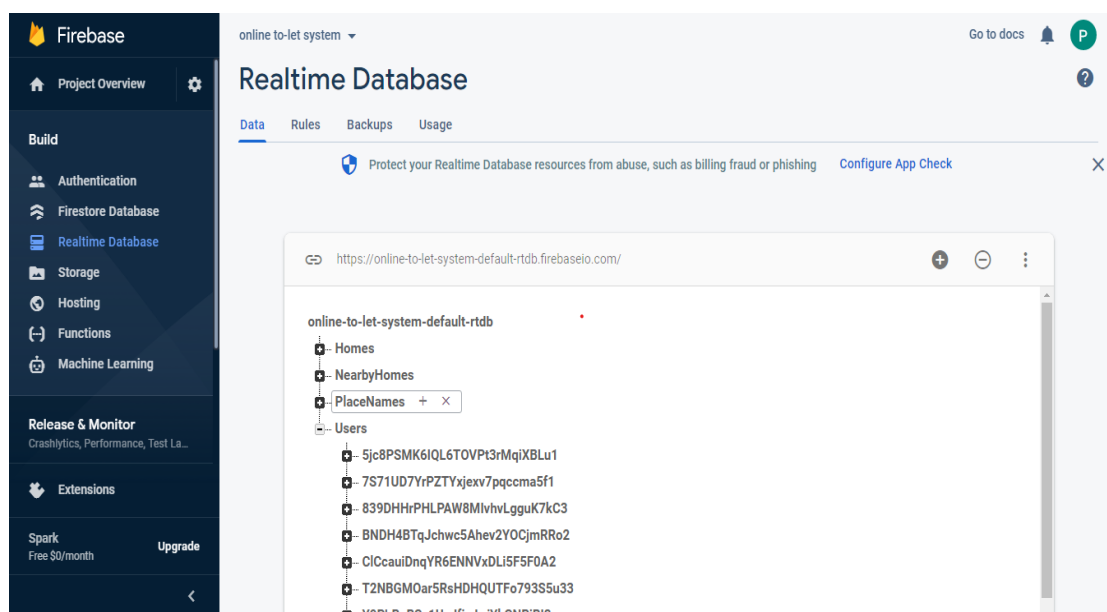


Figure 4.2 shows Implementation of Back-End Design

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

The front end of the application is actually comprised of several screens or activities in terms of android application development. These activities are completely different in design and functionality. We have designed the user interfaces in Android Studio IDE (Integrated Development Environment) using XML as the designing language. XML stands for Extensible Markup Language and it is the default and official designing language for android apps development. We also had to use Adobe Photoshop and Illustrator in some cases to design the apps logo, app icons and app background. Also, we used the Android Studio IDE in some of these types of cases.

5.2 Testing Implementation

Testing is a method to test whether the product matches expected requirements and to confirm that product is Defect free. Several types of tests were added to check if everything is working as expected. Different test cases and their outcome is given in Table 5.2.

Table 5.2: Different tests

Test Case	Test Input	Expected Outcome	Actual Outcome	Result	Action
1. Run App	Click on app icon	App will open with welcome screen and then open 1. If not logged in: Login screen 2. If logged in: Home screen.	Same as expected.	Pass	Tested on 26.10.2021
2. Registration	First name, Last name, Email, Phone number, Password and A Photo	System will validate the data, store them on the firestore and show success note.	Same as expected.	Pass	Tested on 26.10.2021
3. Log in	Enter Email and password and click on “Login”	System will validate the data and then, 1. Correct input: Enter the home	Same as expected.	Pass	Tested on 26.10.2021

		screen. 2. Wrong input: Show wrong input note.			
4. Password Recovery	Enter Email Address and click on “send”	Users will receive an Email verification for recover password	Same as expected.	Pass	Tested on 27.10.2021
5. Search Bar	Searching for an area	Find Homes Successfully in this area	Same as expected.	Pass	Tested on 02.11.2021
6. Home Details	Click on any Home	Home details will appear of this home with Name, Rent, Place, Number, Email and rooms.	Same as expected.	Pass	Tested on 09.11.2021
7. Navigation Drawer (Admin)	Click on “Navigation Drawer Menu”	Able to see Edit Profile, Admin Panel and Sign out, Share and Feedback	Same as expected.	Pass	Tested on 14.11.2021
8. Navigation Drawer (Users)	Click on “Navigation Drawer Menu”	Able to see Edit Profile, Apply as Home Owner and Sign out, Share and Feedback	Same as expected.	Pass	Tested on 19.11.2021
9. Manage Home	User requests as a Home owner by clicking on “Apply as Home Owner”	Successfully Received	Same as expected.	Pass	Tested on 27.11.2021
10. Add Home	Click on “Add Home (+)”	In Add Home details will appear with Title, Description, Area, Location, Rent, Phone no., Email and also can add a Picture of House	Same as expected.	Pass	Tested on 2.12.2021
11. Sign out	Click on “Sign out”	Sign out Successfully	Same as expected.	Pass	Tested on 25.11.2021

CHAPTER 6

IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY

6.1 Impact On Society

Starting our university life, we have seen that searching a house was manual. Students had to face a lot of problem but our science and technology have improved so much that has we made this app. So almost everyone has access to this app easily. The app can be accessed from any android devices, so people will not have to find house in outside. Our society is more backward using technology compared to the people of the west. The Internet can be a way to reduce this problem. As our app requires the internet to log in and to update the system students will have to use the internet sometimes. In other words, people will at ease solving the basic problems that they face sometimes.

6.2 Impact On Environment

Our application is totally environment friendly. Although it can have some impact on the environment as well. As an example, to use our application a smart device (Smart Phones/Laptops) is necessary and a mobile phone can cause environmental pollution if the e-garbage from the phone is not recycled correctly. So, if someone brought a mobile phone to use our app and does not recycle it that this can cause an impact on the environment. Moreover, we are also helping the environment through our application. This is because when there was no application for to let & home booking management people must go outside & find their house one by one. As a result, they waste their time & create traffic jam. So, our application will help to save time & reduce traffic jam.

6.3 Ethical Aspects

If we consider the ethical aspect there is nothing to worry about. Because we are only using it for personal work also there will not be any unethical work regarding our application. Moreover, the application is also built open source so there is less chance of doing unethical or something that could hurt someone in any way.

6.4 Sustainability Plan

Android technologies update regularly and brings new features and security measures. The framework and technology we used in our project gets major updates after certain periods. We have build our application using the latest available technology at this time. Again, if any major update comes which may conflicts against our existing code, then we will have to update our application and make required changes. These applications will be open source after a certain time and other web technology enthusiasts will able to make changes and add new features to our application.

CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 Discussion and Conclusion

There was no application for online to let in our society once. Students and normal people must do these works manually. This work was consuming a lot of time for both students and others. This application is developed to make it easier for students and others to view their home easily and to book a flat at their desired time. Before the app was developed people had to find out their flat by going outside. It was also hard to find information to find flat on the internet. So, we have also taken in our consideration and added features for getting any information. We believe our app will save the time and unimportant effort for people in these scenarios. Moreover, we decided to keep it free without any cost, and also, we did not use any types of Ads so that people can get a good user experience using our application. It is also made open source so if anyone wants, they can update or improve this app in the future. Which will help to many feature improvements and various bug fixes.

7.2 Scope for Further Developments

For simplicity, the system is originally developed for viewing house, updating information, and booking flat. Gradually we have added more and more options to the app like viewing information. Although we already have a lot of features there is always room for more improvements. Any android user uses this app any time.

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