



To-Let Dhaka

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A project submitted in partial fulfillment of the requirement for the
degree of Bachelor of Science in
Software Engineering.

Department of Software Engineering
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APPROVAL

This project mentioned on "To-Let Dhaka" submitted by **Mehedi Hasan** bearing ID152-35-1172 to the Department of Software Engineering of Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science in Software Engineering and approval as to its style and contents.


Declaration

We hereby declare that we have taken this project under the supervision of **Asif Khan Shakir**, Lecturer, Department of Software Engineering, Daffodil International University. We also declare that neither this report nor any part of this has been presented elsewhere for award of any degree.

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I am thankful to and fortunate enough to get constant encouragement, support and guidance from all Teaching staffs of [Department of Software Engineering] which helped me in successfully completing project work

Executive Summery

To-Let Dhaka is basically an android application. Anyone can use this by android phone. The system builds for users who want to search to-let home and want to to-let post. For those people who are very busy in their daily life and sometimes it is very hard to search rent home and make to-let poster. It is a system, eligible for user to search rent home easily. Any user can search easily rent home with nearby and location based option and create to-let post from their home or any other place. This application is made for Dhaka city. With this app any person can easily find out their acceptable home.

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Chapter 1

Introduction

1.1. Project Overview

This project is focused on establishing a system to easily create post for rent home, search nearby home and also search location based home. This is an android application. If user want to to-let his home from his home, he will easily create post and he will also search for to-let with nearby option and location based option

1.2. Project Purpose

To-Let Dhaka is a system of organizing the to-let procedures easily. It provides the scope for user such as create to-let post, search nearby home and also search location based home where user want to live. Every month people in Dhaka city, move one place to another place then they search home very hardly and face various kinds of problem. This is totally time wasted process. If any user use this app then he will easily find out his to-let home and he will also create post for his own home for to-let

1.3 Beneficiaries and Benefits

This project is mainly beneficiaries for users. The following benefits will be provided by this system-

□ User can □

- Search nearby to-let
- Search location based to-let
- Create post for to-let

1.3.1 Project Goals

The basic functionality of this system is making the process user friendly for users. It helps users to control easily the to -let process.

- Create to-let post from home
- Search very quickly and easily from home
- This app will easily show nearby to-let
- This app will also show location based to-let
- This app will reduce time for searching to-let

The main purpose of this project is to reduce time and make a reliable system. By using this system, user will search to-let very easily.

1.4. Stakeholders

There are □ two types of stakeholders in this system:

□

□

- User
- Admin

1.5. Architecture Pattern

I used MVC architecture pattern. The MVC pattern was their solution [6].

- **Model** — the data layer, responsible for managing the business logic and handling network or database API.□
-
-
- **View** — the UI layer — a visualization of the data from the Model.□
- **Controller** — the logic layer, gets notified of the user’s behavior and updates the Model as needed.□

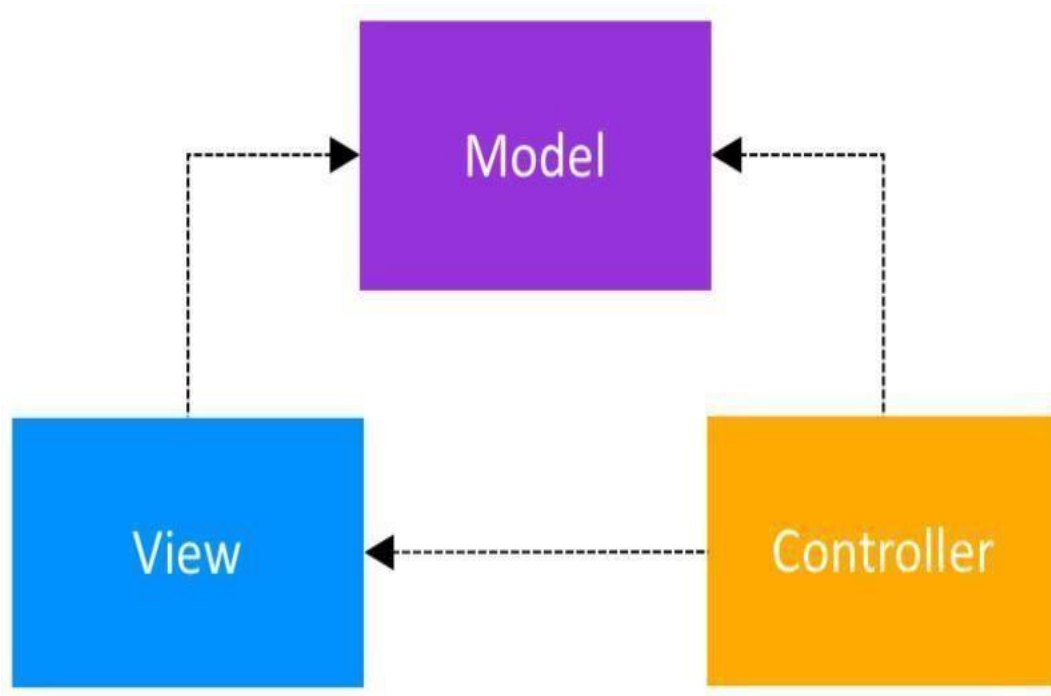


Fig: 1.0: MVC Pattern

1.6. Project Schedule

A schedule indicates project’s related activities, deliverable

In project management, a schedule is a listing of project’s milestones, activities, and deliverables, usually with intended start and finish dates. A schedule is commonly used in the project planning and project portfolio management parts of project management.

1.6.1. WBS Planning for Development Phase

1. Project plan [01Dec 2018 to 14 Dec 2018]

2. Analysis [01Dec 2018 to 14 Aug 2018]
3. Requirement gathering [06 Dec 2018 to 15 Dec2018]
 - Deeply thinking
 - Requirement collection ● Annotation
 - Implementation Analysis
4. Design [15 Dec 2018 to 10 Jan 2019]
 - Scheme design
 - Firebase Database design and shaping
 - Android User Interface (UI)
5. Development [20 Jan 2019 to 15April 2019]
 - User Module
 - Others
6. Testing [16 April 2019 to 20 April 2019 (including two phase)]
 - Test plan
 - Test Case
 - Test Execution

Chapter 2

Software Requirements Specification

2.1. Requirement Specification

A software requirements specification (SRS) is a extensive description of the desired motive and conditions for software under development. The SRS fully narrate what the software will do and how it will be anticipated to accomplish.

Table 2.1: Functional Requirements

FR_ID	FR_Name	Description	Priority

01	Registration	User can registration by using this module.	High
02	Registration	Admin can registration by using this module.	High
03	Download	First user have to download this app from google play store	High
04	Nearby Search	If user want to search nearby to-let then he will see it using this option	Medium
05	Location Based	If user want to search location based to-let then he will see it using this option	Medium
06	Create post	If user want to create to-let then he will see it using this option	Medium

2.2. Data Requirements

Table 2.2: Data Requirements

DR_No	Description	Priority
01	User name, area name, seat or flat, phone number, address.	High
02	Admin name, designation, specialty, address.	High

2.3. Performance Requirements

2.3.1. Speed and Latency Requirements

Table 2.3.1: Speed and Latency Requirements

SLR_No	Description	Priority
--------	-------------	----------

01	After registration it show message and send data to firebase real time database.	High
02	When user create post then it goes to firebase database for store. Then it retrieve to application and show as a to-let post.	High
03	When user want to search to-let then user will search with nearby and location based option	High

2.3.2. Precision and Accuracy Requirements

Table 2.3.2: Precision and Accuracy Requirements

SLR_No	Description	Priority
01	The input data should be accurate when user give data to the system.	High

2.3.3. Capacity Requirements

Table 2.3.3: Capacity Requirements

CR_No	Description	Priority
01	The Firebase database should be able to store the all the important data	High
02	Database system should support 100k user at the starting version.	Medium
03	Database system should support 1000 request per second.	High

2.4. Dependability Requirements

2.4.1. Reliability Requirements

Table 2.4.1: Reliability Requirements

No	Description	Priority
RR01	Data should be encrypted	High
RR02	sensitive data should collect from users by their permission	Low

2.4.2. Availability Requirements

Table 2.4.2: Availability Requirements

AR_No	Description	Priority
01	The system should work nonstop a day	Medium
02	The system should give the wanted information to the user in time.	Low

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2.4.3. Robustness or Fault-Tolerance Requirement

Table 2.4.3: Robustness or Fault Tolerance Requirements

FTR_No	Description	Priority
01	If the system has been dismissed, it should not be more than few minutes.	Low

2.5. Maintainability and Supportability Requirements

2.5.1. Maintenance Requirements

Table 2.5.1: Maintenance Requirements

MR_No	Description	Priority
01	The system protection should be very first.	Low

2.5.2. Supportability Requirements

Table 2.5.2: Supportability Requirements

SR_No	Description	Priority
01	The system should support latest Android smart phone Version and Firebase database system.	Low

2.5.3. Adaptability Requirements

Table 2.5.3: Adaptability Requirements

AR_No	Description	Priority
01	The system should accommodate all upgrading version and time.	Low
02	If system is new then it will support firebase database system	Low

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2.6. Security Requirements

2.6.1. Access Requirements

Table 2.6.1: Access Requirements

AR_No	Description	Priority
01	User's access have to be narrow access	Low
02	All users have to be authorized	Medium
03	Only Admin can access database for upgrading and deleting purpose	Low

2.6.1. Integrity Requirements

Table 2.6.1: Integrity Requirements

IR_No	Description	Priority
01	Only authorized user can create and show post	Medium
02	Only Admin can access database for upgrading and deleting purpose	Medium

2.6.2. Privacy Requirements

Table 2.6.2: Privacy Requirements

PR_No	Description	Priority
01	The user data should not run in any personal issues.	Medium
02	Sensitive data should be encrypted.	Low

2.7. Usability and Human-Interaction Requirements

Table 2.7: Usability Requirements

UR_No	Description	Priority
01	Users create to-let post and then another user can see the post.	Medium
02	Admin can delete but not update user post	Medium

2.8 . Look and field Requirements

2.8.1. Appearance Requirements

Table 2.8.1: Appearance Requirements

AR_No	Description	Priority
01	The user interface must be pleasant.	High
02	User friendly user interface must be acceptable all time	Medium

2.8.2. Style Requirements

Table 2.8.2: Style Requirements

SR_No	Description	Priority
01	User interface must be material design	High

Chapter 3 System Analysis

3.1. Use Case

A use case is a process used in system analysis to destine, scrape, and embody system requirements. The word "system" refers to something being developed. Use case diagrams are appointed in UML (Unified Modeling Language).

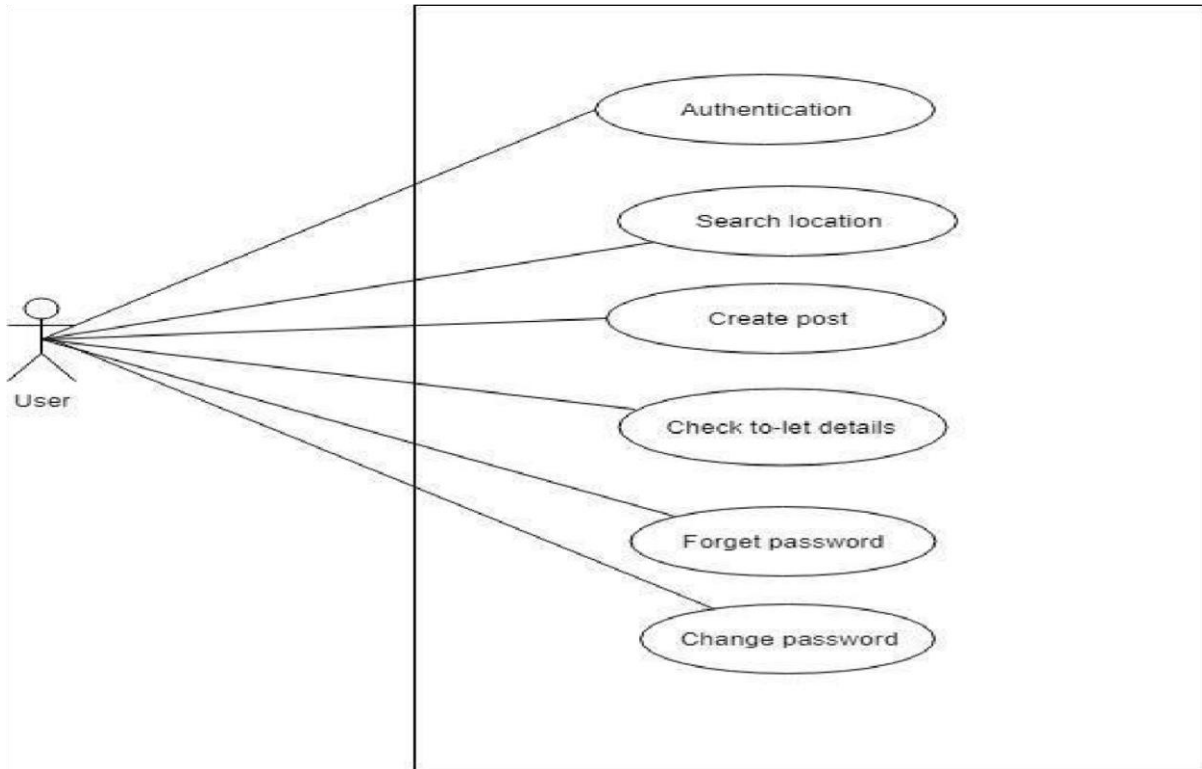


Fig:2.0: User Use case Diagram

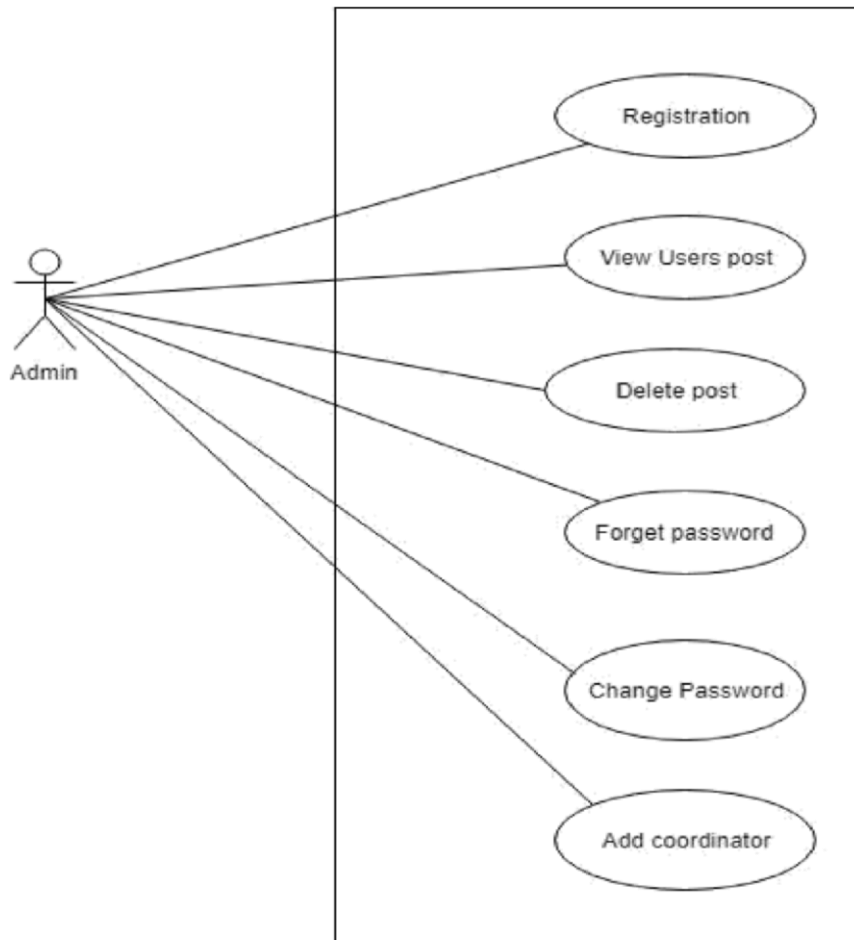


Figure 2.1: Use Case Diagram

3.2. Use Case Description

3.2.1. Authenticate User

User authentication is a process that verify the identity of user who connects to the system.

It is a unique process to identify registered users.

Table 3.2.1: Authenticate User

Use Case Name	Authenticate User
Continuity	User can Register
Actor	1. User 2. Admin
Precondition	User has to provide required email and contact number.

3.2.2 Create Post

If user want to create to-let post then he has to be authenticate user, then user can create post for to-let from his home. This is an easy process to create to-let post without any cost.

Table 3.2.2: Create Post

Use Case Name	Create Post
Scenario	User can create post
Actor	<ul style="list-style-type: none">• Uer

3.2.3 Search nearby to-let

If user want to search nearby to-let then he hast to go to nearby option and click that option then the google map will open and show the nearby to-let.

Table 3.2.3: Approve Appointments

Use Case Name	Nearby Search
Scenario	User can search nearby to-let
Brief Description	User can show details of to-let owner.
Actor	<ul style="list-style-type: none">• User

3.2.4 Search location based to-let

If user want to search location based to-let then he hast to go to nearby option and click that option then the google map will open and show the nearby to-let.

Table 3.2.4: Search location based to-let

Use Case Name	Search location based to-let
Scenario	User can search location based to-let.

Brief Description	User can show details of to-let owner.
Actor	<ul style="list-style-type: none"> • User

3.2.5 Upgrading to-let post

This work is done by admin. Every month admin will update database because every month user create new to-let post.

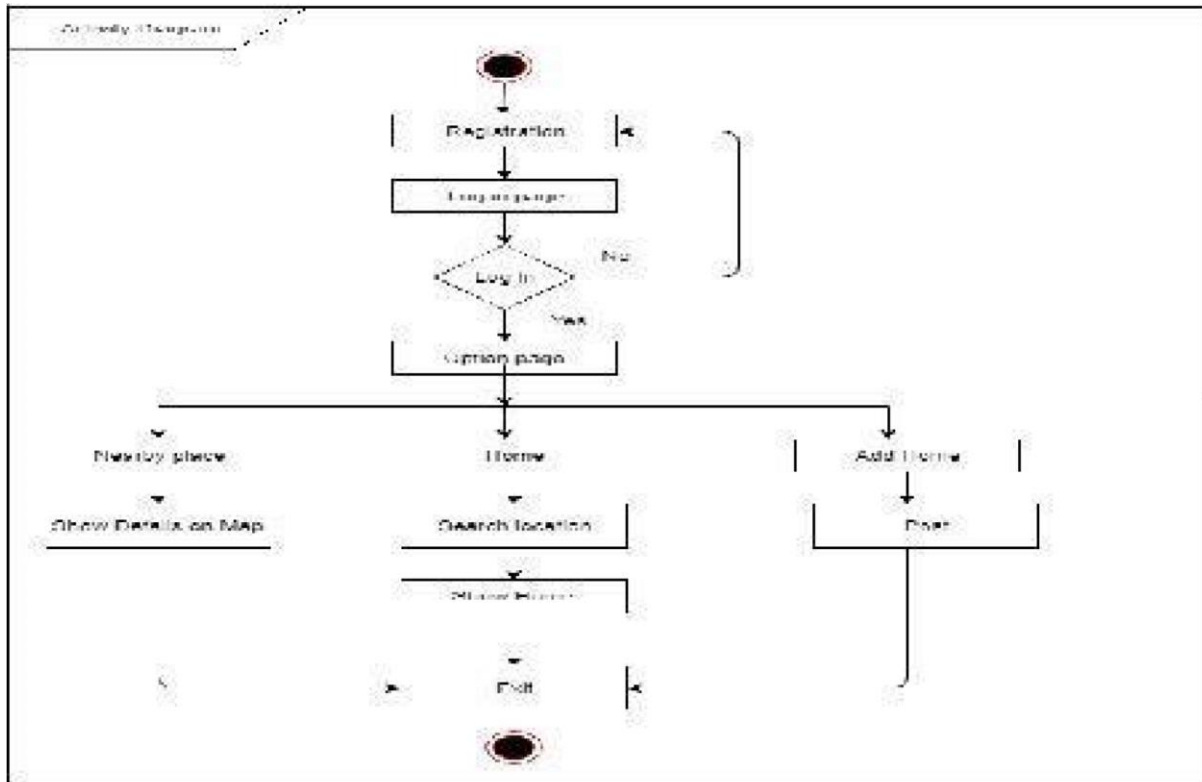
Table 3.2.5: Update database

Use Case Name	Update database
Scenario	Admin can update database
Brief Description	Admin can show details of to-let information.
Actor	<ul style="list-style-type: none"> • Admin

3.3. Activity Diagram

3.3.1. Activity Diagram for User

Activity diagram is a very important thing to elaborate potential destiny of the system. Activity diagram is basically a developed version of flow chart that indicate the flow from one activity to another activity.



Activity Diagram: User
Fig:2.2: User Use case Diagram

Chapter 4 System Design Specification

4.1. Sequence Diagram

UML Sequence Diagrams are define how activities are paddled. They receiving the interaction between objects in the behalf of a boost

4.1.1. System Sequence Diagram: Authentication: User

Patient can registration by requesting to the system.

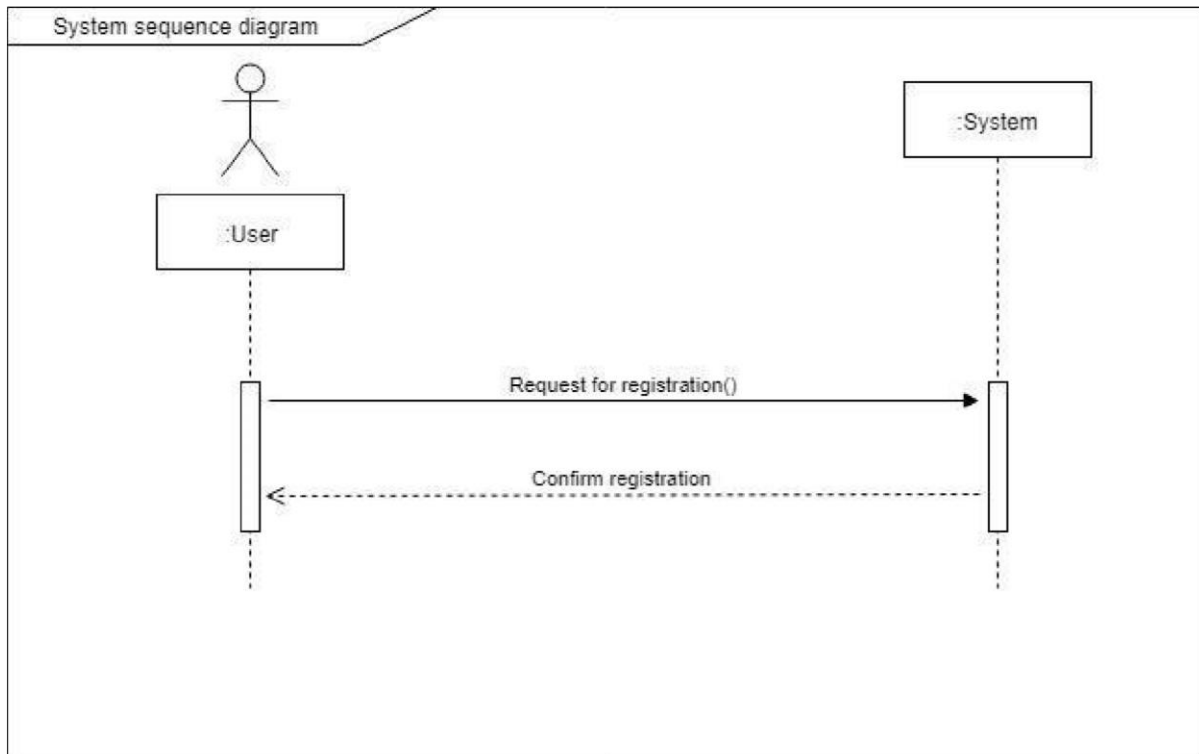


Fig:3.0: System Sequence Diagram: Authenticate User

4.1.2. System Sequence Diagram: Create post

User can create post for to-let.

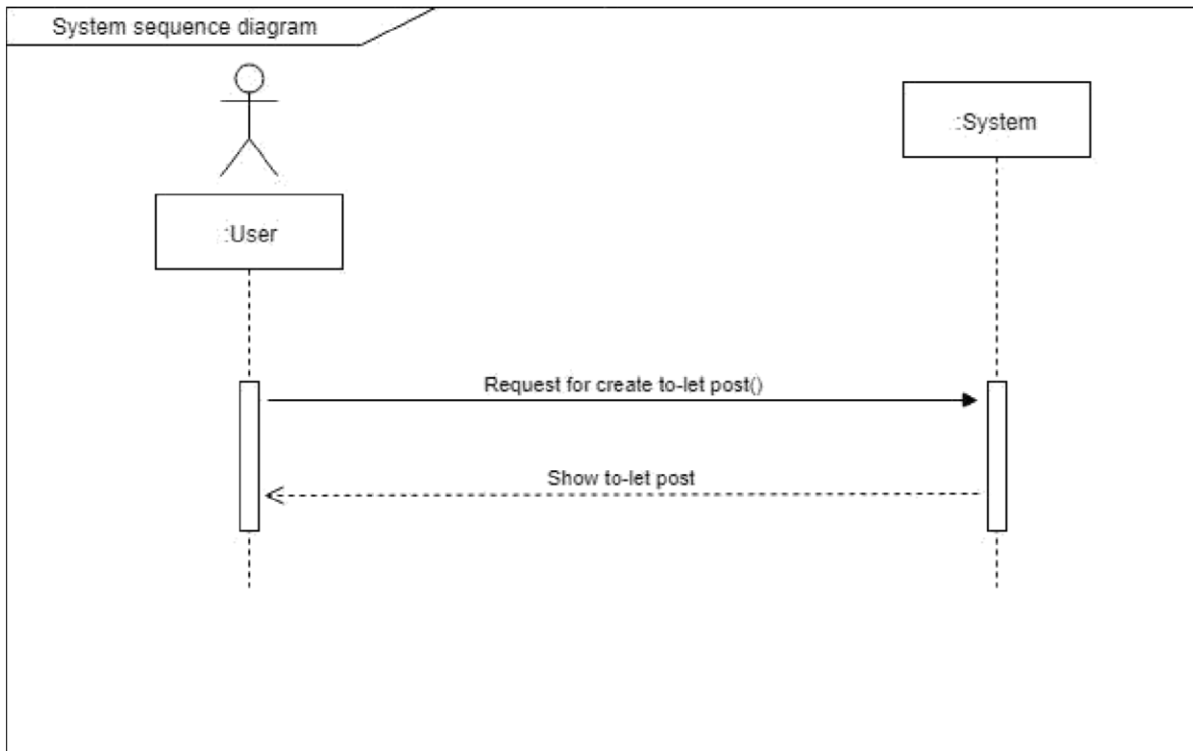


Fig:3.1: System Sequence Diagram: Create post

4.1.3. System Sequence Diagram: Search nearby to-let post

User can see nearby to-let post from their home or any place

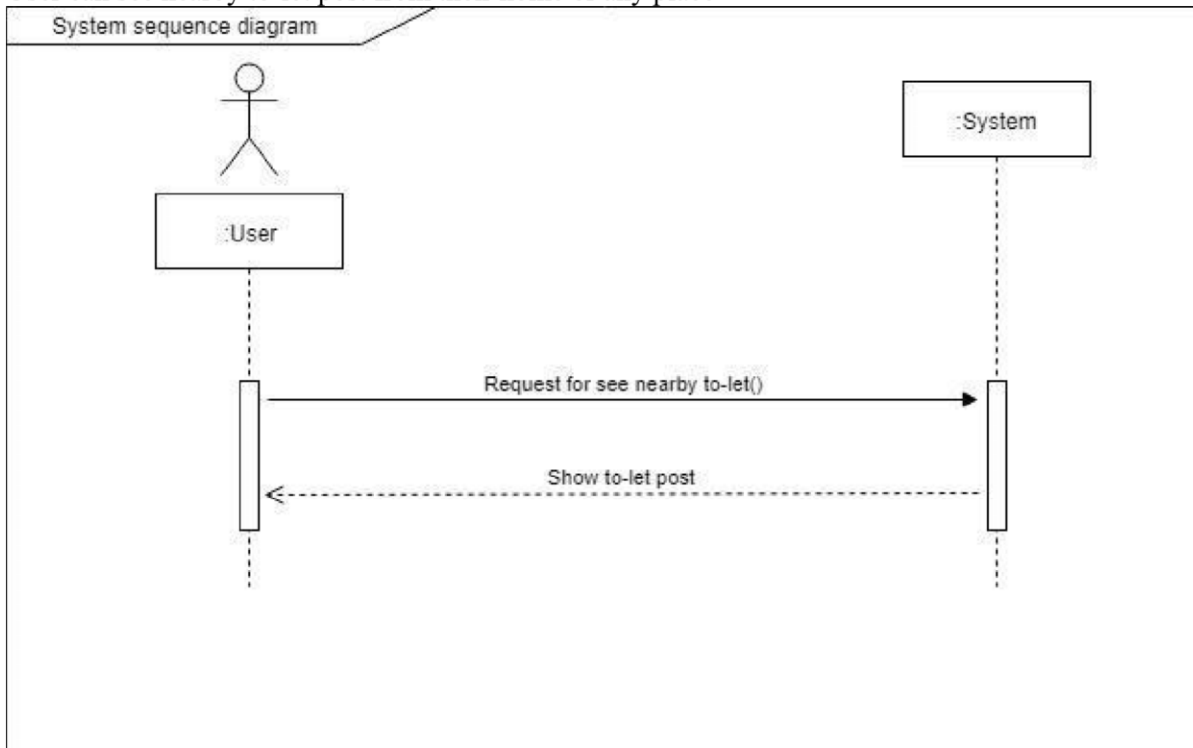


Fig:3.2: System Sequence Diagram: Search nearby to-let

4.1.4. System Sequence Diagram: location based to-let

User can see location based to-let post from their home or any place

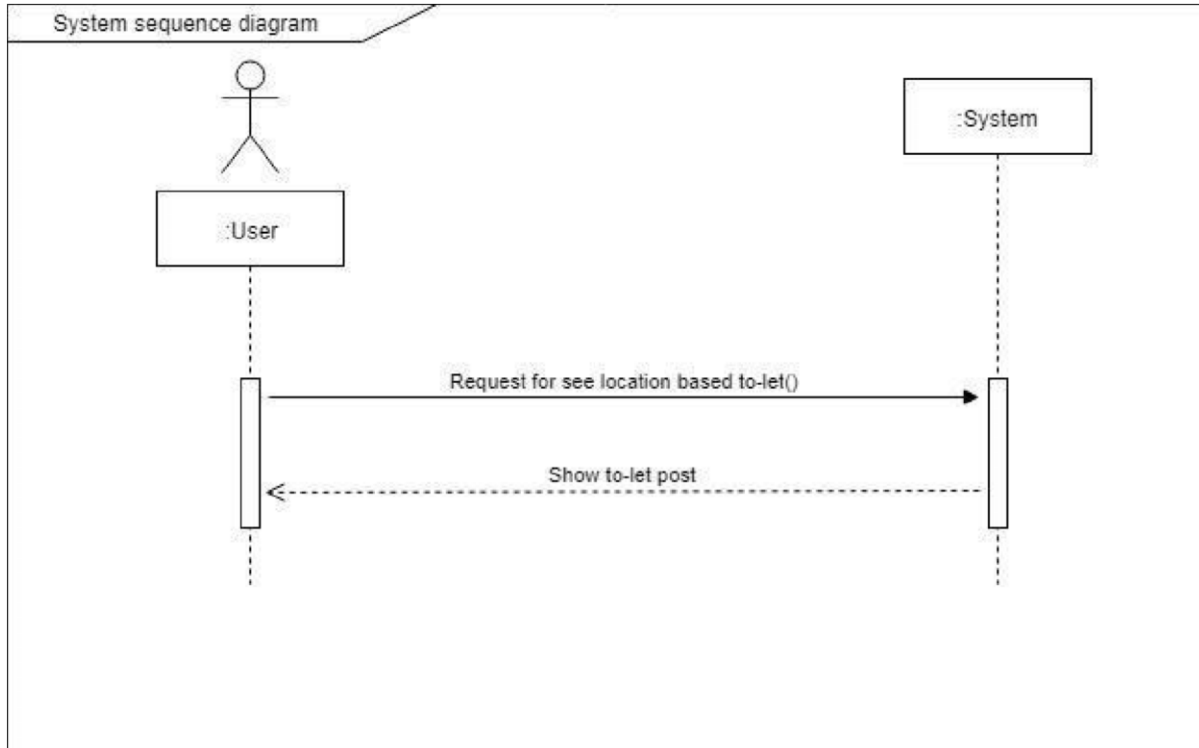


Fig:3.3: System Sequence Diagram: User see location based to-let

4.1.5. System Sequence Diagram: Upgrade System

Admin upgrade database system every month.

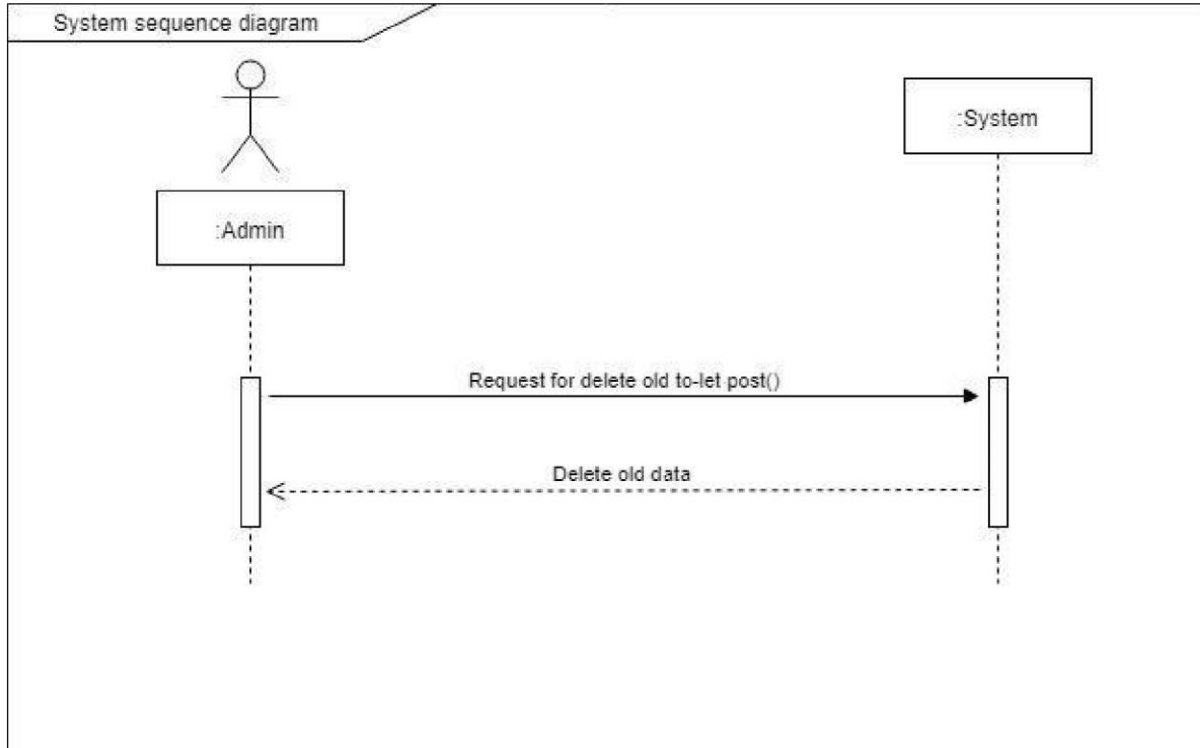


Figure 3.4: System Sequence Diagram: Delete old post

4.2. Data Flow Diagram

4.2.1. DFD Level 0

A data flow diagram (DFD) defines how data is processed by a system in words of inputs and outputs.

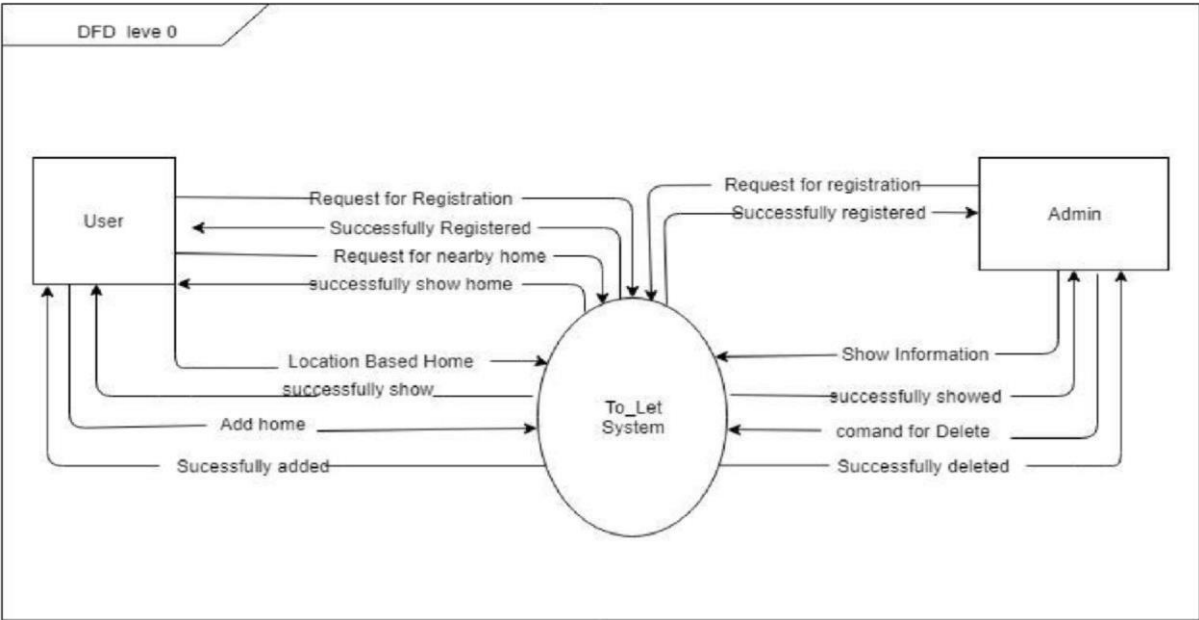


Fig:3.5:Data Flow Diagram: Level 0

4.2.2. DFD Level 1

The 1 level DFD indicate that it is a sub system of main system

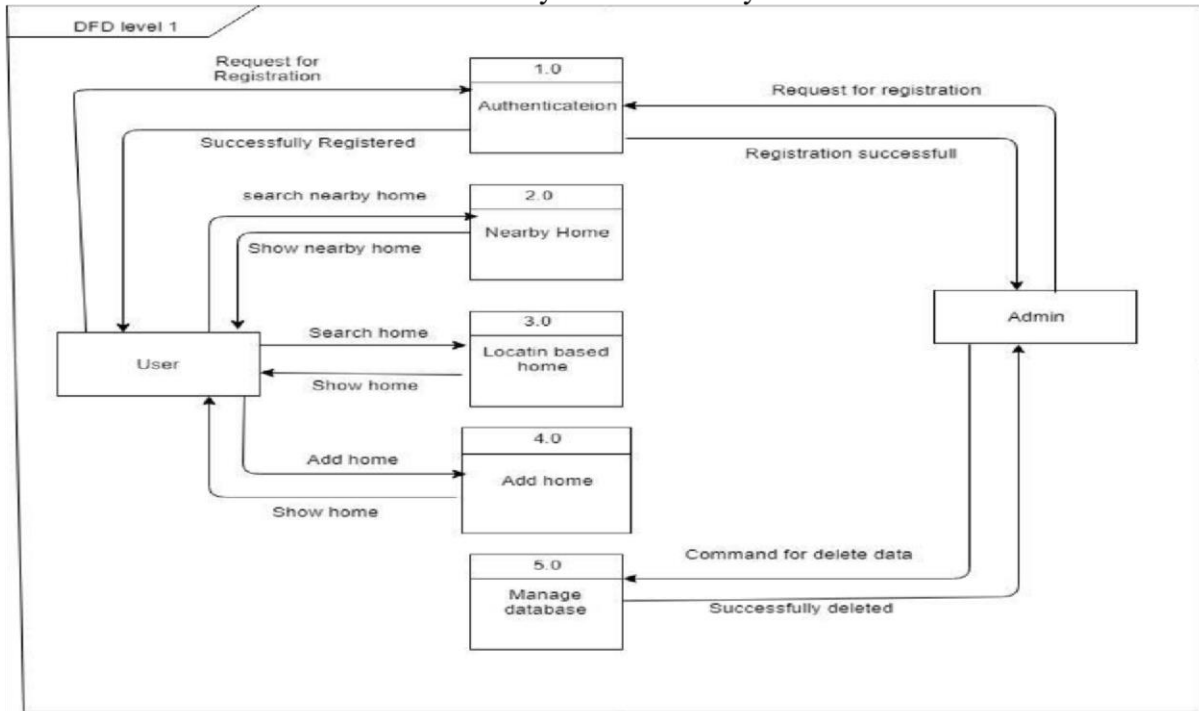


Fig:3.6:Data Flow Diagram: Level 1

4.2.3 . Entity Relationship Diagram

An entity relationship diagram (ERD), is an entire graphical representation of proper system. It is also called entity relationship model.

- Eclipse: Uses to attribute □
- Diamond: Uses to define action □

□ Double circle: Uses to multivalued data

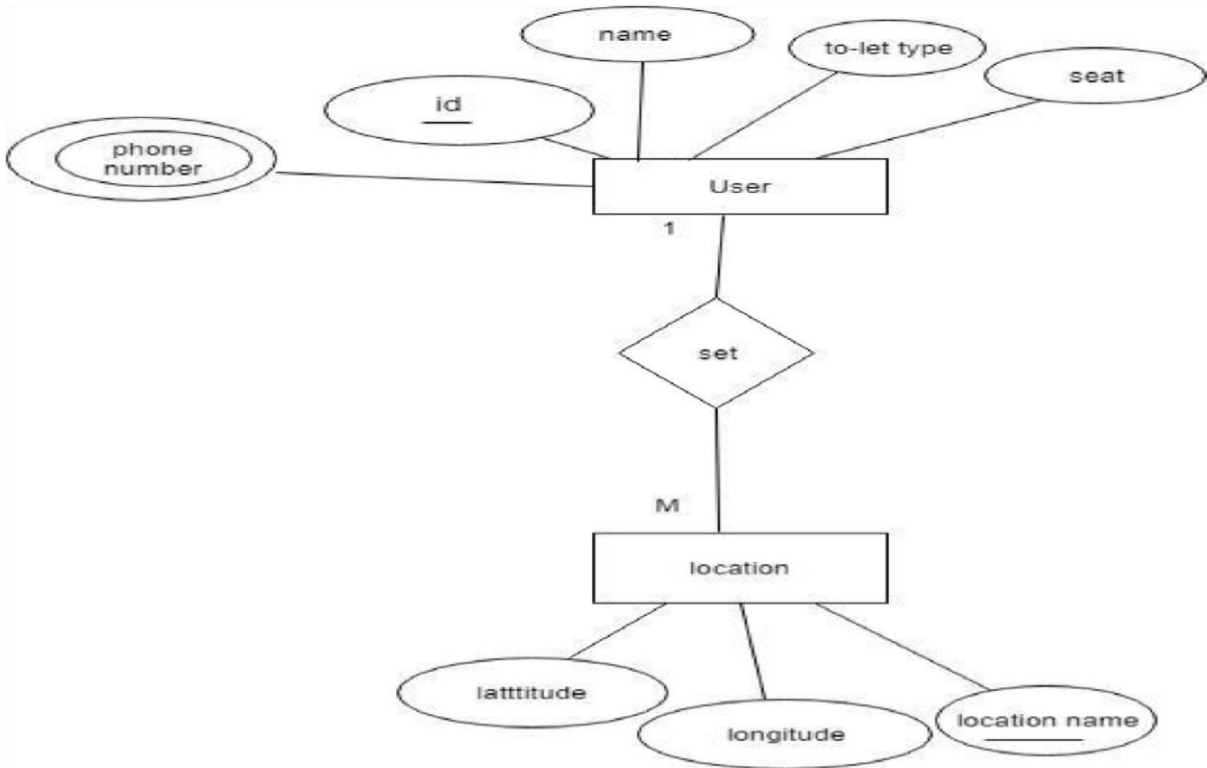


Fig.3.7:: Entity Relationship Diagram

Chapter 5

User Interface

5.1. User Interface

5.1.1 Registration page

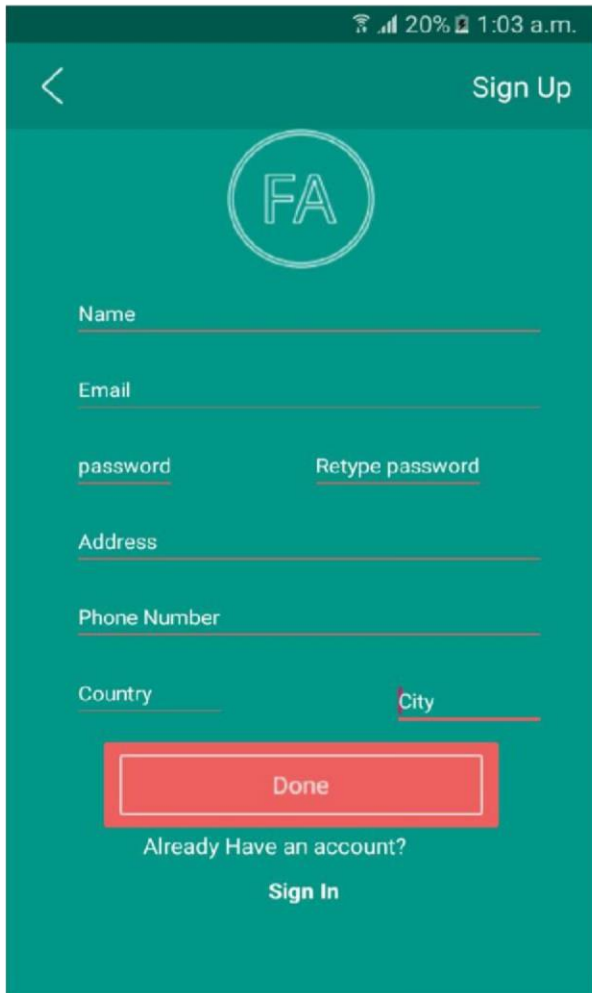


Fig:4.1: Sign Up

5.1.2 Sign in page

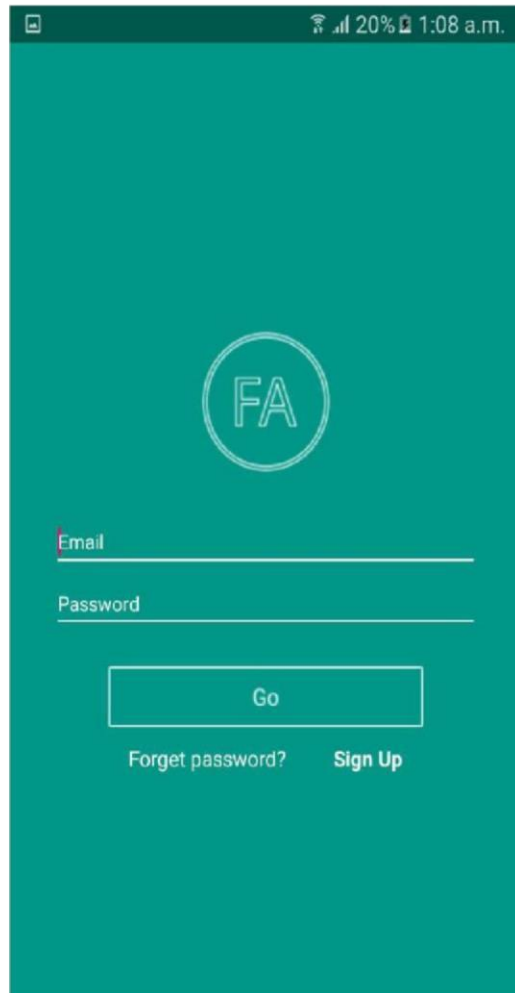


Fig:4.2:LogIn

5.1.3 Forget Password

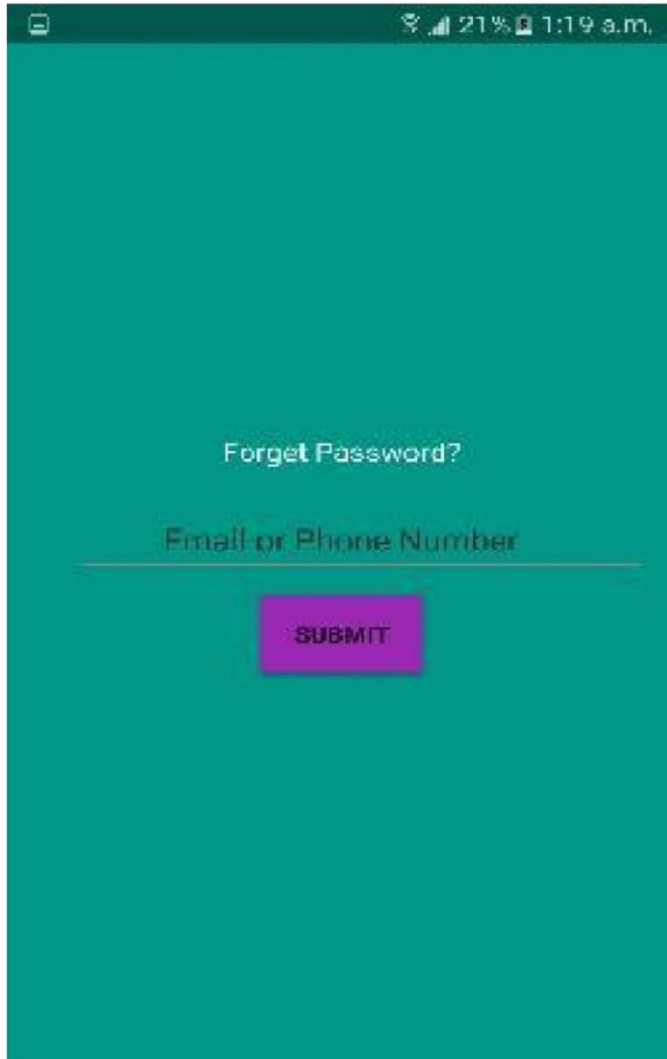


Fig:4.3:Forget Password

5.1.1. Option page

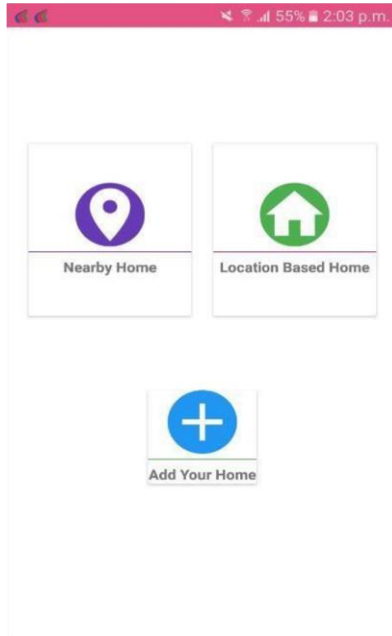


Fig:4.4: Create post for to-let

A screenshot of a mobile application form titled 'This Form Very Carefully...Fill Up This F'. The form has several input fields with the following text: 'Name' with 'jalal', 'Phon Number' with '01773592560', 'Address' with 'subhanbag', 'slot' with '2', 'Enter your Area name' with 'dhanmondi 27', and a field with '23.7461844'. Below these fields is another field with '90.3690601'. At the bottom of the form is a pink rounded rectangular button labeled 'Save'. The status bar at the top shows 54% battery and the time 2:06 p.m.

Fig:4.5:Create P0st

5.1.3. Nearby to-let details with distance

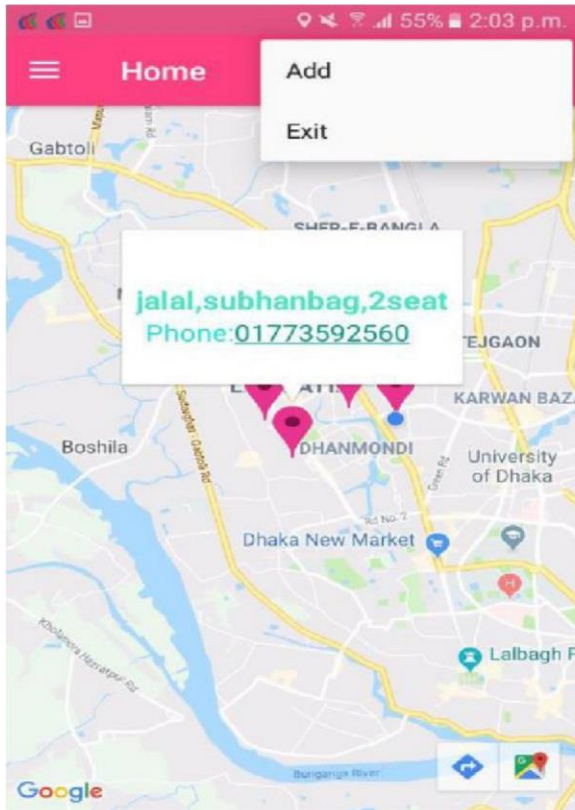


Fig:4.6:Nearby place

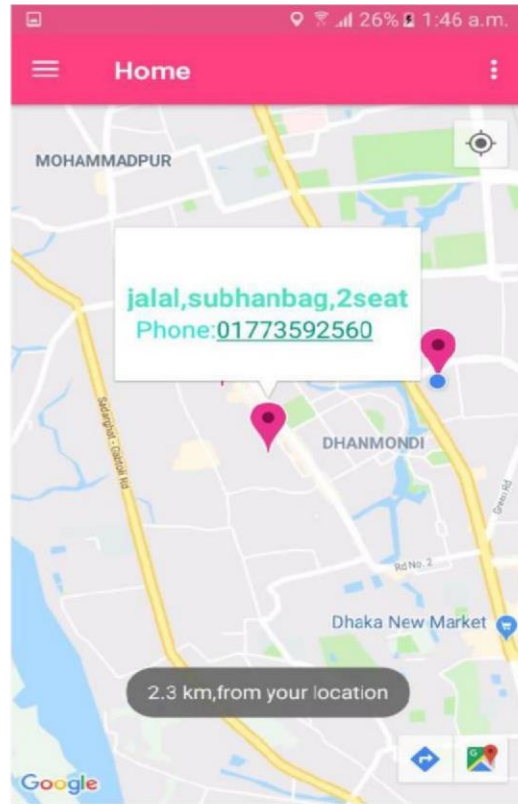


Fig:4.7:Showing distance from current place

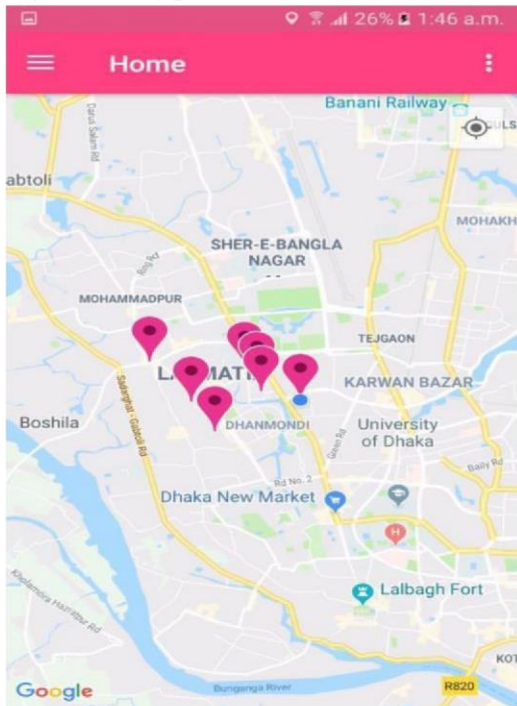


Fig:4.8:show all nearby place on google map

5.1.4. Location Based to-let post show serially

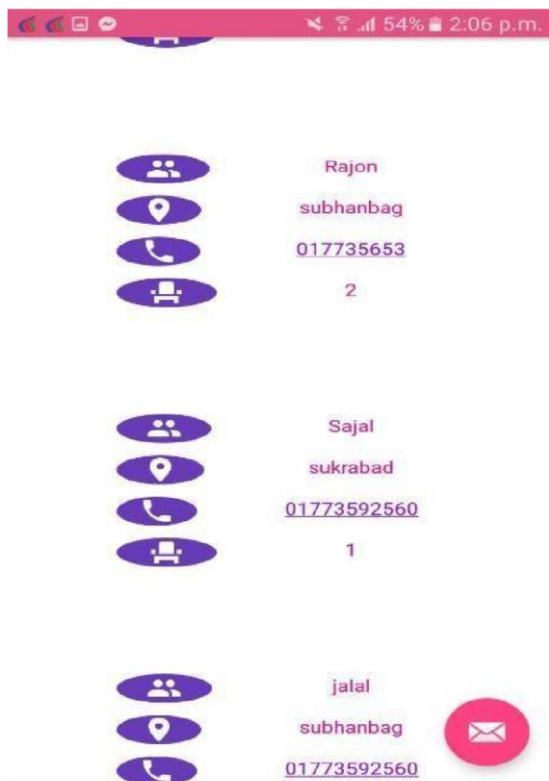


Fig:4.9:Location based to-let

Chapter 6

Development Tools and Technologies

6.1. User Interface Technologies • Android

XML SDK version 27.1.1

- Material Font design
- Material icon design

6.2. Implementation Technologies

6.2.1. Firebase

Firebase is a real time database .I stored all users information and Location coordinator in here. Firebase also provides backend services.

6.2.2 . Google Map API

Cloud Vision API provides a comprehensive set of capabilities including object detection, ocr, explicit content, face, logo, and landmark detection

6.2.3 Distance Matrix API.

I have used this API for show and calculate Distance from current position to destination.

6.3 . Platform and Environment

6.3.1. Hardware

RAM: 8GB.

Hard drive: 1TB.

Processor: Core i5.

6.3.2. Tools

- IDE: Android Studio 3.3.2
- Server: Firebase Cloud Server

6.3.3. Version Control

- Github
- <https://github.com/wwwMehedi/Myuserlogin>

Chapter 7 System Testing

7.1 . System Testing

Software testing is a process, to describe the process of a software application with an intent to find whether the created software met the marked requirements or not.

7.2. System module need to be tested

□Registration □

- Create Post□
-

7.3 . Test Case

A test case is a set of conditions or variables under which a tester will determine whether a system under test satisfies requirements or works correctly.

Table: Test Case of Registration

Steps	Action	Input	Actual Result	Expected System Response	Pass/Fail
01	Enter all information in required field and a valid phone number and email.	Name, phone, email , city, address,	Registered.	Registration successful.	Pass
02	Valid information and invalid phone number or invalid email.	Contact number Email	Not Registered	Not registered and an error message will show	Fail
03	Without any data and click on confirm button	Click confirm	Show a Toast message	Showed "Input field required" toast message.	Pass

Table: Test case of create to-let post

Steps	Action	Input	Action Result	Expected System Response	Pass/Fail
01	Enter all information in required field and	Name, phone,	Post	Post successfully	Pass

	must input Area name	address, seat details Area name			
02	Input all information without area name	Show error Toast	Post not created.	Not create post and show an error message.	Fail

Chapter 8 Project Summary

8.1. GitHub Link <https://github.com/wwwMehedi/Myuserlogin>

8.2. Restriction

- This application is for Dhaka city
- Sometimes it cannot show all data when internet is slow

8.3. Barrier & Achievements Obstacle:

- Limited time and

budget Achievements:

- Achieving new technology

8.4. Conclusion

Every day we see many to-let hang on wall but we can't find out to-let easily for specific place that where we want. And we also face problem when we want to rent our home (flat or

mess). Those reasons, I am trying to develop an android application where we can easily find out our home in specific place and we also create post for rent for home.

8.5. Future Work

- Communication system like chat
- IOS Platform

References

[1] <https://developer.android.com/>

[2] <https://console.developers.google.com/apis/credentials?project=utility-subset-223408>

[3] <https://abhiandroid-8fb4.kxcdn.com/>

[4] <https://codinginflow.com/tutorials/android>

[5] <https://codingwithmitch.com/>

[6] <https://medium.com/upday-devs/android-architecture-patterns-part-1-model-view-controller-3baecef5f2b6>

