

THE SUPERIOR COLLEGE LAHORE



Faculty of Computer Science & IT

Final Year Project PROJECT REPORT

[eBar]

Project ID: [FYP-MCSM-S20-004]

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Project Report

[eBar]

Change Record

Author(s)	Version	Date	Notes	Supervisor's Signature
Waqas,Gulraiz,Arsila	1.0		Template 1	
Waqas,Gulraiz,Arsila	1.1		Documentation	
Waqas,Gulraiz,Arsila	1.2		Review of layouts	
Waqas,Gulraiz,Arsila	1.3		Review of Coding	
Waqas,Gulraiz,Arsila	1.4		Review of database	

APPROVAL

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Comments: _____

Name: _____

Date: _____ Signature: _____

PROJECT MANAGER

Comments: _____

Date: _____ Signature: _____

HEAD OF THE DEPARTMENT

Comments: _____

Date: _____ Signature: _____

Dedication

This work is dedicated to my respected teachers, parents and my team members.

Acknowledgements

Above all, I owe much tribute to the Almighty God who gave us a life worth living and i thank Him for giving us the strength to accomplish this project. The success and accomplishment of this project stems from efforts and dedication offered by many individuals whose support was either direct or indirect. I thank all of them for their devotion. The author would like to express the sincere gratitude to their project advisor Mr.Abu huraira and later on Mr.Waqas ilyas for his vigilant supervision, intellectual guidance, constructive advice and very kind attitude throughout the course of project. Appreciate to the efforts of all our teachers whose teachings have brought us to this stage of academic zenith. In the last but not the least, special gratitude with the deepest sense of respects to our parents whose love and affections kept us steep fast and enabled us to attain targets and goals of academic life. The authors are extremely indebted to their brothers and sisters whose constant encouragement provides us with the impetus that was necessary for attaining academic initiatives.

Executive Summary

This is an application based project which connects two parties clients and the other one is lawyers so the clients discuss their issues with their desired lawyers by using modern day technologies. This system also provide an environment to the user through which he can find all the information of different courts of Pakistan such as(judges and lawyers) which are currently working on particular bar.

This system also fruitful for the lawyers not only in term of they are getting clients by using this system, It will provide them a complete history of Appointments and ongoing details and record(related to case) of clients to keep track of workload.

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Chapter 1

Introduction

Chapter 1: Introduction

We are going to introduce a project which consists on the following major functionalities.

This is an application based project which connects two parties clients and the other one is lawyers so the clients discuss their issues with their desired lawyers by using modern day technologies.

This system also provide an environment to the user through which he can find all the information of different courts of Pakistan such as(judges and lawyers) which are currently working on particular bar.

1.1. Background

Both the actors of this application register them into the system and performs the desired tasks such as a client can search a lawyer in any particular bar and share his problem and on the hand a can manage all the information about the particular client in this application which reduce the paper load of a lawyer and help him many ways.

1.2. Motivations and Challenges

The motivations to make this project is to boost up the judiciary system of Pakistan and provide all the information to the user on a single click because they are a lots of people who face many problem and injustice (such a clerk in any government institute demands money for do their right work, and a person looted by mafia in hospital by charging baseless bills) in their daily life but they don't have any quick method to cope up with that problem and they start ignoring that little things and try to compromise instead of getting rid of these things because they don't have time to visit the bar and discuss those little crimes, we just simply wants to provide a platform which provide information to every respected citizen of Pakistan about their rights,

And during this period we face to many challenges such as gathering data about the all basic law and rights of every citizen which we uploaded in our application in PDF form where every can search in very efficient way about any Law and its implementation in the society.

1.3. Goals and Objectives

The main goal of this project is to boost up our judiciary system by using modern day technologies more ever this application saves the time and money of clients which they spend on visiting the bar this application also reduce the work load of lawyers by keeping the records about all the clients in system,

The societal implications of this project consist of the fact that it will be a first step towards the generalization of the idea of dematerializing the work of the numerous lawyers in Pakistan and other countries around the world, which will have a positive impact on the society as it will allow lawyers to process clients' cases faster and thus resolve their problems in a more efficient way. As for its ethical implication, my application preserves the privacy of clients' data. Indeed,I made sure to strengthen the security features of the app so that clients' data is never compromised or divulged to any non-approved third party

1.4. Literature Review/Existing Solutions

There are lots of website which give information about judiciary like if we want some information about Lahore high court we can visit there site.

There is a lots of other website „LawyersOfPakistan,, which provide information about lawyers and establish a connection between client and lawyer but their method is not so efficient according to their method you must fill up a form every time before communicating to the lawyer and then wait for an undefined time period, there is no concept of live chat so in this term that was a completely different thing.

But these websites didn't provide all the concerned information.

So in other words we can say that this is completely a new system which we are going to introduced in term of Existing System / Competitive Analysis which provides all the information on a single platform to user

1.5. Gap Analysis

As we all know judiciary system is one of the major pillar of any state so it should be very fast and efficient.

But unfortunately in our system a common man face lots problems whenever he needs to hiring a lawyer first of all he most go to nearby court to discuss his issue with a lawyer so in this process he waste most of his time and money because there is no proper modern platform through which someone can find and communicate with a lawyers by using modern technologies such as (smart phones etc).

A lawyer also face many problems such he has not a computerized record keeping system regarding his clients which he can manage on his smartphone so whenever he needs some information about the case of any client he must go to his chamber to cheek particular information.

1.6. Proposed Solution

So according to the above problem we are going to establish a single platform where someone can search highly qualified and competent lawyers and all the other information which he needs to his nearby courts by using his smart phone.

This project will eliminate the gap between clients and lawyers by using modern technologies.

This system will also provide computerized record keeping and quick access to a lawyer for particular information about any client. This application must be boost up our judicial system.

1.7. Project Plan

Planning Phase:

- Customer Meeting
- Actual Planning

Requirements Gathering:

- Customer Requirements

Design and Analysis Phase:

Coding Phase:

Front end:

- XML

Back end:

- JAVA

Testing Phases:

Releasing Phase:

Maintenance Phase:

1.7.1. Work Breakdown Structure

Task Name	Start Date	End Date	Duration (Days)	Days Remaining	Present Complete
Requirements gathering	15/10/2019	20/10/2019	05	05	100%
Analysis	20/10/2019	30/10/2019	10	10	100%
Software Architecture	01/11/2019	11/11/2019	10	10	100%
Diagrams	20/11/2019	15/12/2019	25	15	95%
code in XML	16/12/2019	15/01/2020	30	15	10%
Database Development	16/01/2020	15/02/2020	30	30	0%
code in JAVA and Database	15/02/2020	16/03/2020	30	40	0%
System testing	17/03/2020	16/04/2020	30	10	0%
Final report	16/04/2020	01/05/2020	15	15	0%

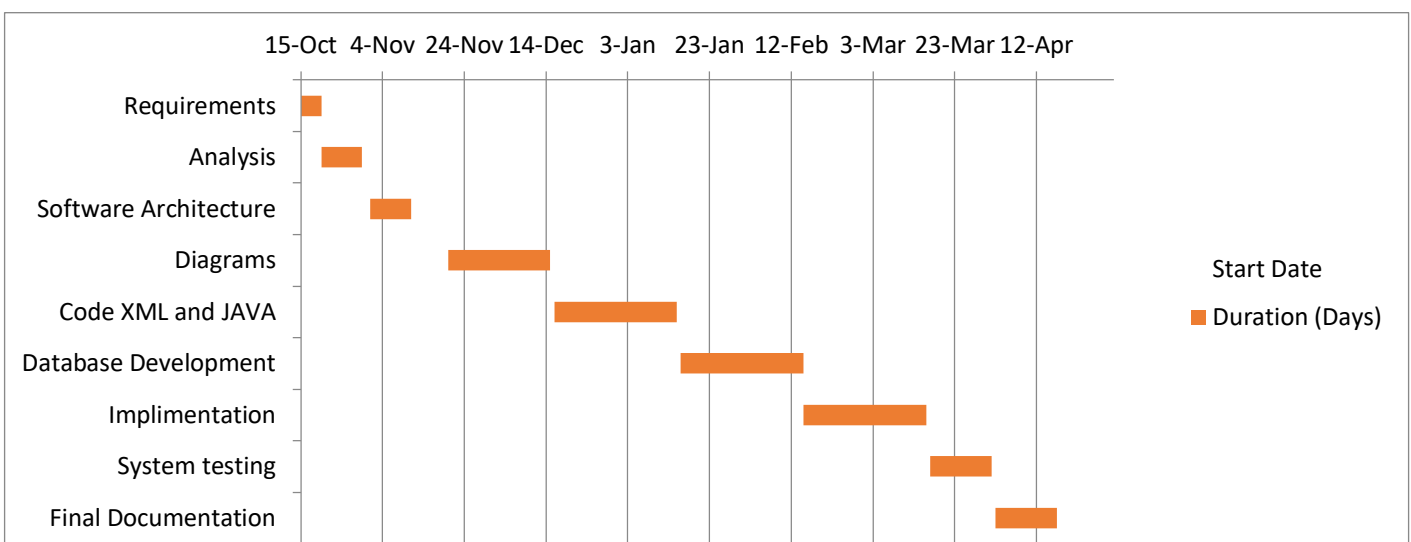
1.7.2. Roles & Responsibility Matrix

WBS #	WBS Deliverable	Activity #	Activity to Complete the Deliverable	Duration (# of Days)	Responsible Team Member(s) & Role(s)
1	Requirement gathering	All platform	Website, social media	25	M.waqas
2	Documentation	Diagram	Documentation Design	18	M.waqas
3	UI design (coding)	Select template	Friendly user inter face	15	Gulraiz,Waqas
4	Portal	Android studio Firebase	Framework API's Google Firebase	20	Arsila,Gulraiz
5	Implementation	Android studio Firebase	Framework API's Google Firebase	8	Gulraiz,Arsila Waqas
6	Report writing	Android studio	Framework API's Google Firebase	10	Gulraiz,Arsila Waqas

		Firestore			
7	Testing	Sale	Online play store	5	Gulraiz,Arsila Waqas

1.7.3. Gantt Chart

Task Name	Start Date	End Date	Duration (Days)
Requirements	15-Oct	20-Oct	5
Analysis	20-Oct	30-Oct	10
Software Architecture	1-Nov	11-Nov	10
Diagrams	20-Nov	15-Dec	25
Code XML and JAVA	16-Dec	15-Jan	30
Database Development	16-Jan	15-Feb	30
Implimentation	15-Feb	16-Mar	30
System testing	17-Mar	1-Apr	15
Final report	2-Apr	17-Apr	15



1.8. Report Outline

In this chapter we discuss our project problems and also describe their solutions or discuss the background of proposed system. We discuss different kinds of challenges about our project and also discuss how to work our project step by step or how that project perfectly used in system.

Chapter 2

Software Requirement Specifications

Chapter 2: Software Requirement Specifications

2.1. Introduction

2.1.1. Purpose

My Capstone project consists of a application which is designed for clients and lawyers. My application is named E-Bar and has as a main goal is to dematerialize the heavy work of lawyers who often gets lost while searching in the huge amount of paper they have for a specific client's case. The societal implications of this project consist of the fact that it will be a first step towards the generalization of the idea of dematerializing the work of the numerous lawyers in Pakistan and other countries around the world, which will have a positive impact on the society as it will allow lawyers to process clients' cases faster and thus resolve their problems in a more efficient way. As for its ethical implication, my application preserves the privacy of clients' data. Indeed, I made sure to strengthen the security features of the app so that clients' data is never compromised or divulged to any non-approved third party, *It also saves the time and money of clients which they spend on visiting the bars.*

2.1.2. Document Conventions

A document is primarily prepared for a project, software or any kind of android application. SRS document explain the nature of a project, software. It is a manual document of a project that provide you immediately search from application.

2.1.3. Intended Audience and Reading Suggestions

Intended audience of this software a project manager which use SRS to evaluate the site in all phases SDLC either project process going according to system requirement.

- This application is also used by the designer to make perfect design flow of the product according to SRS.SRS is used by the developers to check the implementation fulfill the functionalities and features of the application that defined in it.

2.1.4. Product Scope

We will be provide following services:

- 1) 2 different Logins(Lawyers, Clients)

Login as lawyer: if the actor select login as lawyer then a dialog box appear which include the basis information of lawyer (Name etc) and some necessary information which include the professional information of the lawyer in which bar he is currently working and its membership No. He can also update his profile.

Login as Client: He simply update his profile and search lawyers in the nearby bars and communicate with them by using this app.

- 2) Complete profile system of lawyers to put their credentials to ease client in finding out who suits best in their time of need.
- 3) Real time chat system with lawyers.
- 4) Real time notification of everything for clients and Lawyers.
- 5) Appointments history and ongoing details to keep track of workload.
- 6) Online case search.
- 7) Online judgments search.
- 8) Roster sitting.

News and updates about judiciary in the news feed.

2.1.5. References

<List any other documents or Web addresses to which this SRS refers. These may include user interface style guides, contracts, standards, system requirements specifications, use case documents, or a vision and scope document. Provide enough information so that the reader could access a copy of each reference, including title, author, version number, date, and source or location.>

2.2. Overall Description

2.2.1. Product Perspective

The application can easily be accessed by using every operating system.

2.2.2. Product Functions

The major function of the product are as follows:

1) 2 different Logins(Lawyers, Clients)

Login as lawyer: if the actor select login as lawyer then a dialog box appear which include the basis information of lawyer (Name etc) and some necessary information which include the professional information of the lawyer in which bar he is currently working and its membership No. He can also update his profile.

Login as Client: He simply update his profile and search lawyers in the nearby bars and communicate with them by using this app.

- 2) Complete profile system of lawyers to put their credentials to ease client in finding out who suits best in their time of need.
- 3) Real time chat system with lawyers.
- 4) Real time notification of everything for clients and Lawyers.
- 5) Appointments history and ongoing details to keep track of workload.
- 6) Online case search.
- 7) Online judgments search.
- 8) Roster sitting.
- 9) News and updates about judiciary in the news feed.

2.2.3. User Classes and Characteristics

2.3.1 Lawyer:

- Lawyer can login to the system.
- Update his profile
- Update complete history of his cases
- Communicate with clients
- Share his ideas

2.3.4 Customer:

- Customer can login to the system.
- Visit the application.
 - *Search lawyers.*
 - *Communicate with lawyers.*
 - *Update his profile.*
 - *View profile.*

2.2.4. Operating Environment

We are developing this system in android studio in API level 27 and it can run on approximately 99% android and IOS devices with minimum ram of 512 MB and at least 50 MB free space in the device.

2.2.5. Design and Implementation Constraints

- The application will use android studio, sqlite database , visio ,java. There is no standard but REST ful(JSON) is pretty common since lightweight and that's a good idea on mobile devices.
- Since E-bar is an application, internet connection must be established.
- The E-bar will be used on tablets as well and will function via internet.

2.2.6. User Documentation

There will be no user manuals, but online help will provide to the user in case of any problem.

2.2.7. Assumptions and Dependencies

There are assumptions and dependencies that should be fulfilled for use of this application:

- *User should have basic knowledge of English language and computer and smart phone usage.*
- *Admin monitoring the use of Website/application. User have basic understanding on how to operate computer and computer software.*

2.3. External Interface Requirements

2.3.1. User Interfaces

The E-bar system has a user-friendly and simple to understand interface in order to facilitate the interaction with users.

2.3.2. Hardware Interfaces

- All series of android
- 1 GB RAM of system
- tablet and mobile devices

2.3.3. Software Interfaces

- Android studio
- Firebase
- visio

2.3.4. Communications Interfaces

- Database SQL
- Emails

2.4. System Features

2.4.1. System Feature 1

Required information should be shown at same platform that can easily be vied by both admin and user.

2.4.1.1. Description and Priority

The user can get information from the features and show it to the Admin access in short time. The application cannot work without this priority feature.

2.4.1.2. Stimulus/Response Sequences

Every time the data is saved and retrieved from the database easily.

2.4.1.3. Functional Requirements

The functional requirements that my application needs to fulfill are described below in terms of purpose, input, output and exception,

Functional requirement 1: Login to the system.

Functional requirement	Both lawyer and clients register him/her self into the system through a Signup page
Input	Actors are bound to provide necessary information
Output	Well come to E-bar dashboard shown
Exceptions	If the user does not fill the any required field an error message is displayed

Functional requirement 2: Actors can search each other.

Functional requirement	The Actors shall be able to search information form
Input	The actors shall search each other ID, user name or phone number.
Output	The searched information will be displayed to the screen

Exceptions	N/A
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Functional requirement 3: Update profile.

Functional requirement	Update profile
Input	The user shall tap on the profile icon.
Output	The user information form will be displayed on the screen and the user shall be able to edit any needed information
Exceptions	An exception is raised if the user does not choose any id from the combo box.

After some general functional requirement Now we can discuss some following lawyer side function requirments

Lawyer side functional requirement 1:Delete client information

Functional requirement	The lawyer shall be able to delete client information.
Input	The lawyer shall select the id of the client of whom he wants to delete the information and click on the delete button
Output	The information form of the selected client shall be deleted
Exceptions	An exception is raised if the lawyer does not choose any client id from the combo box.

Lawyer side functional requirement 2:Delete client information

Functional requirement	The lawyer shall be able to delete client information.
Input	The lawyer shall select the id of the client of whom he wants to delete the information and click on the delete button
Output	The information form of the selected client shall be deleted
Exceptions	An exception is raised if the lawyer does not choose any

	client id from the combo box.
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Lawyer side functional requirement 3: Add a case form

Functional requirement	The lawyer shall be able to add a case form
Input	The lawyer shall enter the id of the case which links a specific client to it, display the information that were entered previously. The lawyer can then add new information in order to create a new case form.
Output	A new case form is created and added to existing cases Exceptions An exception is raised if the lawyer does enter the obligatory fields
Exceptions	An exception is raised if the lawyer does not enter the obligatory fields

Lawyer side functional requirement 4: Search case form

Functional requirement	The lawyer shall be able to search for a case form
Input	The lawyer shall enter the id of the client to be able to search for the case form appropriate to that specific id
Output	The case form of that specific client is displayed on the screen
Exceptions	NA

Lawyer side functional requirement 5: Add court Session

Functional requirement	The lawyer shall be able to add a court session to the existing court sessions
Input	The lawyer shall enter information about the court session he wishes to add
Output	The court session is added to the list of existing court sessions
Exceptions	An exception is raised if the lawyer does not enter the obligatory fields

Lawyer side functional requirement 6: search court Session

Functional requirement	The lawyer shall be able to search a court session
------------------------	--

Input	The lawyer shall enter the id of the client of whom he wants to see the court session
Output	The court session is displayed to the lawyer with its date and other detailed information about it. The lawyer can click on the details button which would lead him to a page containing more details on the court session.
Exceptions	NA

Lawyer side functional requirement 7:edit court Session

Functional requirement	The lawyer shall be able to update a court session
Input	The lawyer shall click on the edit court session button and choose the client id of whom he wants to update the court session
Output	The court session is displayed to the lawyer and he can update any needed information
Exceptions	An exception is raised if the lawyer does not choose any case id

Lawyer side functional requirement 8:Delete court Session

Functional requirement	The lawyer shall be able to delete a court session
Input	The lawyer shall enter the id of the client of whom he wants to delete the court session
Output	The court session is deleted from the list of court sessions associated with the chosen client id
Exceptions	An exception is raised if no court session is selected or if the lawyer does not enter any client id

2.5. Other Nonfunctional Requirements

Non-functional requirements, as the name suggests, are requirements that are not directly concerned with the specific services delivered by the system to its users. They may relate to emergent system properties such as reliability, response time, and store occupancy.

Alternatively, they may define constraints on the system implementation such as the capabilities of I/O devices or the data representations used in interfaces with other systems.

Non-functional requirements, such as performance, security, or availability, usually specify or constrain characteristics of the system as a whole.

2.5.1. Performance Requirements

The response time of our application shall be quick as it does not exceed 8 seconds. The start time shall be quick as well.

Some of the other performance requirements are as follow,

Usability:

The system provides a help and support menu in all interfaces for the user to interact with the system. The user can use the system by reading help and support.

Security:

The system provides username and password to prevent the system from unauthorized access. The staffs' password must be greater than eight characters. The subsystem should provide a high level of security and integrity of the data held by the system, only authorized personnel of the company can gain access to the company's secured page on the system; and only users with valid password and username can login to view user's page.

Performance:

The system response time for every instruction conducted by the user must not exceed more than a minimum of 10 seconds. The system should have high performance rate when executing user's input and should be able to provide response within a short time span usually 50 second for highly complicated task and 20 to 25 seconds for less complicated task.

Availability:

The system should always be available for access at 24 hours, 7 days a week. Also in the occurrence of any major system malfunctioning, the system should be available in 1 to 2

working days, so that business process is not severely affected.

Error handling:

Error should be considerably minimized and an appropriate error message that guides the user to recover from an error should be provided. Validation of user's input is highly essential.

Also the standard time taken to recover from an error should be 15 to 20 seconds.

Ease of use:

Considered the level of knowledge possessed by the users of this system, a simple but quality user interface should be developed to make it easy to understand and required less training.

2.5.2. Safety Requirements

<Specify those requirements that are concerned with possible loss, damage, or harm that could result from the use of the product. Define any safeguards or actions that must be taken, as well as actions that must be prevented. Refer to any external policies or regulations that state safety issues that affect the product's design or use. Define any safety certifications that must be satisfied.>

2.5.3. Security Requirements

The E-bar application shall preserve the lawyer's client's confidentiality by strengthening the security features of the software so that clients' data is never compromised or divulged to any non-approved third party.

2.5.4. Software Quality Attributes

<Specify any additional quality characteristics for the product that will be important to either the customers or the developers. Some to consider are: adaptability, availability, correctness, flexibility, interoperability, maintainability, portability, reliability, reusability, robustness, testability, and usability. Write these to be specific, quantitative, and verifiable when possible. At the least, clarify the relative preferences for various attributes, such as ease of use over ease of learning.>

2.5.5. Business Rules

<List any operating principles about the product, such as which individuals or roles can perform which functions under specific circumstances. These are not functional requirements in themselves, but they may imply certain functional requirements to enforce the rules.>

2.6. Other Requirements

Space requirement:

The system shall not occupy more than 1200 Kb.

Portability requirement:

The developed system shall be compatible with Windows operating systems.

2.7. Organizational requirement

Delivery requirement

The E-bar application shall be displayed by the end of fyp2.

Development requirement

The application shall be developed using Java.

2.8. External requirement

Ethical requirement

The E-bar application shall respect ethical rules and regulations.

2.9. Legislative requirement

Privacy requirement

The E-bar application shall preserve the lawyer's client's confidentiality by strengthening the security features of the software so that clients' data is never compromised or divulged to any non-approved third party.

Chapter 3

Use Case Analysis

Chapter 3: System Analysis

In this chapter we are going to learn who the different actors of the system will react or participate in the system through different detailed description and diagrams about the object and the description between the objects enables to have a proper understanding of how actor interacts with the system through their use cases.

- **Actors**

Login as client

This use case describes the activities of the client to register online and become a member.

View profile:

Clients can view their profile by clicking profile icon.

Update profile:

After login in the system client can update his profile by clicking the profile icon in the application and also edit information about himself which he wants.

Search:

A client can search any lawyer in any particular bar by typing his user name in the search bar and visit his profile.

Send message:

A client can communicate with any particular lawyer by visiting his profile whenever he visits any lawyer profile he has a proper interface and option to communicate with him by clicking the message icon through live chat service.

Notification:

Clients will be informed through notification about the events.

Login As lawyer

This use case describes the activities of the client to register online and become a member.

View profile:

Lawyer can view their profile by clicking profile icon.

Update profile:

After login in the system lawyer can update his/her profile by clicking the profile icon in the application and also edit information about himself/herself which he wants. But he is bound to provide some necessary information about his judicial career to identify he is a lawyer registered from Pakistan bar association.

Send message:

After once a lawyer selected by the clients for their help he will be able to communicate with any particular client.

Search:

A lawyer can search any fellow lawyer in any particular bar by typing his user name in the search bar and visit his profile

Update career information:

A lawyer can update his career information with the passage of time which describe information about the cases he handle win or loss percentage area of interest.

Notification:

Lawyers will be informed through notification about the events.

3.1. Use Case Model

3.1.2 use case for client and lawyer



3.1.3

Use case for Admin:



3.2. Fully Dressed Use Cases

Use case Name	Registration
Scope	Clients and lawyer uses it to register himself into the site

Primary Actors	Clients and lawyers	
Stakeholders and Interests	Clients and lawyer: actors uses it to register on the site.	
Pre-Conditions	N/A	
Post-Conditions	After registration actors are able to use E-bar functionalities.	
Main Scenario	<ul style="list-style-type: none"> ➤ Customer opens application. ➤ Customer selects Signup option ➤ Customer enters all required information. ➤ Customer registers into the system. 	
Failure Case/ Alternative Case	<p style="text-align: center;">Failure</p> <p>If the functionality fails it would be due to network problem or adding already existing information for registration.</p>	<p style="text-align: center;">Alternative Case</p> <p>The alternative would be to add non existing information.</p>
Frequency of Occurrence	If discussed per day, Customer can use this functionality only once in a lifetime.	

Use Case Name	Login	
Scope	Users use it to log in to the site	
Primary Actors	Clients and lawyers	
Stakeholders and Interests	<p>Clients: Customer uses it to login to the site.</p> <p>Lawyers: Manager uses it to login to the site.</p> <p>Admin: Admin uses it to login to the site.</p>	
Pre-Conditions	The user should already have an account on the website.	
Post-Conditions	After logging in, all users can perform their specified operations	
Main Scenario	<ul style="list-style-type: none"> ➤ Users open application. ➤ Select Sign-in option. ➤ Clients logs into the app. ➤ Lawyers logs into the app. ➤ Manager logs into the app. 	
Failure Case/ Alternative Case	<p style="text-align: center;">Failure</p> <p>If the functionality fails it would be due to network problem or if a different link is set up instead of the login page.</p>	<p style="text-align: center;">Alternative Case</p> <p>Forget Password</p>

Frequency of Occurrence	If discussed per day user can use this functionality to login countless times.
-------------------------	--

Use case Name	View Profile	
Scope	Users use it to view their profile	
Primary Actors	Clients and lawyers	
Stakeholders and Interests	Clients and lawyers: Clients and lawyers <u>uses it to register on the system</u> and view profile.	
Pre-Conditions	<u>Users must be logged in</u> , to access their profile	
Post-Conditions	After viewing profile, users perform required tasks.	
Main Scenario	<ul style="list-style-type: none"> ➤ Users open Application. ➤ Select view profile option. ➤ View their profile. 	
Failure Case/ Alternative Case	<p>Failure</p> <p>If the functionality fails it would be due to network problem.</p>	Alternative Case
Frequency of Occurrence	If discussed per day, Users can use this functionality countless times.	

Use case Name	Update Profile	
Scope	All users use it to manage their profile	
Primary Actors	Clients and lawyers	
Stakeholders and Interests	All Users: All Users uses it to update their profile on the system.	
Pre-Conditions	<u>Users must be logged in</u> , <u>to access and update their profile</u>	
Post-Conditions	<u>After Updating Profile users are able add ,view products etc</u>	
Main Scenario	<ul style="list-style-type: none"> ➤ Users open application. ➤ <u>Users log into the app.</u> ➤ <u>Select view profile option.</u> ➤ Select Update profile option. ➤ Update profile. ➤ Select confirm option. 	
Failure Case/ Alternative Case	<p>Failure</p> <p>If the functionality fails it would be due to network problem or another link set up</p>	Alternative Case

	instead of Update Profile Page.	
Frequency of Occurrence	If discussed per day, Customer can use this functionality	

Use Case Name	Search	
Scope	Used to Search the different user in the different bars	
Primary Actors	Clients and lawyers	
Stakeholders and interests	Clients and lawyers: Clients and lawyers can view each other by selecting search option.	
Pre-Conditions	<u>user should be logged in to the site</u>	
Post-Conditions	<u>Clients and lawyers should be able to see the concern user profile</u>	
Main Scenario	<ul style="list-style-type: none"> ➤ Clients and lawyers opens application. ➤ <u>Clients and lawyers logs in to the site</u> ➤ <u>Selects search option.</u> ➤ Searches for a specific user. 	
Failure Case/ Alternative Case	<p style="text-align: center;">Failure</p> <p>If the functionality fails it would be due to network problem or if a different link is set up instead of the search catalogue option.</p>	<p style="text-align: center;">Alternative <u>View Catalogue</u></p>
Frequency of occurrence	If discussed per day, Clients and lawyers can use this functionality infinite time	

Use Case Name	Send message	
Scope	Used by Clients and lawyers to communicate.	
Primary Actors	Clients and lawyers	
Stakeholders and interests	Clients: used to communicate Lawyers. Lawyers: used to communicate Clients. .	
Pre-Conditions	actors <u>should be logged in to the app.</u>	
Post-Conditions	<u>After send message, communication accur.</u>	
Main Scenario	<ul style="list-style-type: none"> ➤ Clients and lawyers opens application. ➤ Clients and lawyers <u>logs in to the app</u> ➤ Clients and lawyers <u>logs in to the app</u> ➤ <u>send message.</u> 	

Failure Case/ Alternative Case	Failure If the functionality fails it would be due to network problem or if a different link is set up instead of the view cart option.	Alternative
Frequency of occurrence	If discussed per day, Clients and lawyer uses this functionality for communication.	

Use Case Name	Update career information	
Scope	Used to edit information in the system	
Primary Actors	Lawyers	
Stakeholders and interests	Lawyers: Lawyers uses it to update the schedule.	
Pre-Conditions	<u>Lawyers should be logged in to the app.</u> The record of product to be updated should be available.	
Post-Conditions	<u>After updating information Lawyers is able to view, or edit if required.</u>	
Main Scenario	<ul style="list-style-type: none"> ➤ Lawyers opens application. ➤ Lawyers <u>logs in to the site</u> ➤ Selects career option. ➤ Updates the career. ➤ Selects confirm option. 	
Failure Case/ Alternative Case	Failure If the functionality fails it would be due to network problem or if a different link is set up instead of the update product page.	Alternative
Frequency of occurrence	If discussed per day, Lawyers can use this functionality infinite time.	

Use Case Name	Notification alert	
Scope	Notification occurs when an event(whenever any related actor post something) is happened	
Primary Actors	Clients/lawyers	
Stakeholders and interests	Clients and lawyers: will see the notifications.	
Pre-Conditions	Clients and lawyers <u>should be logged in to the site</u>	
Post-Conditions	<u>After viewing notifications</u> Clients and lawyers <u>will know check in and check out status.</u>	
Main Scenario	<ul style="list-style-type: none"> ➤ Clients/lawyers opens application. ➤ Clients/lawyer <u>logs in to the application</u> ➤ Clients/lawyers can view. 	
Failure Case/ Alternative Case	<p style="text-align: center;">Failure</p> <p>If the functionality fails it would be due to network problem or if a different link is set up instead of the search catalogue option.</p>	<p style="text-align: center;">Alternative <u>View Catalogue</u></p>
Frequency of occurrence	If discussed per day, Multiple events should be happened.	

Chapter 4

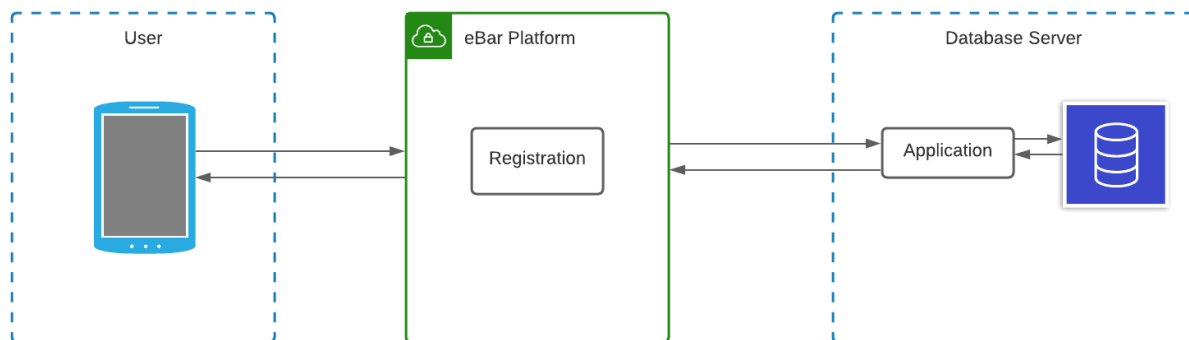
System Design

Chapter 4: System Design

The Chapter is all about how the software is going to work and how will the processes be executed as we see we have several diagrams that shows how really is the system performing and what will be the requirements to perform the operations required tasks as well as the diagrams and data clearly describes the process and shows a great help in understanding the system

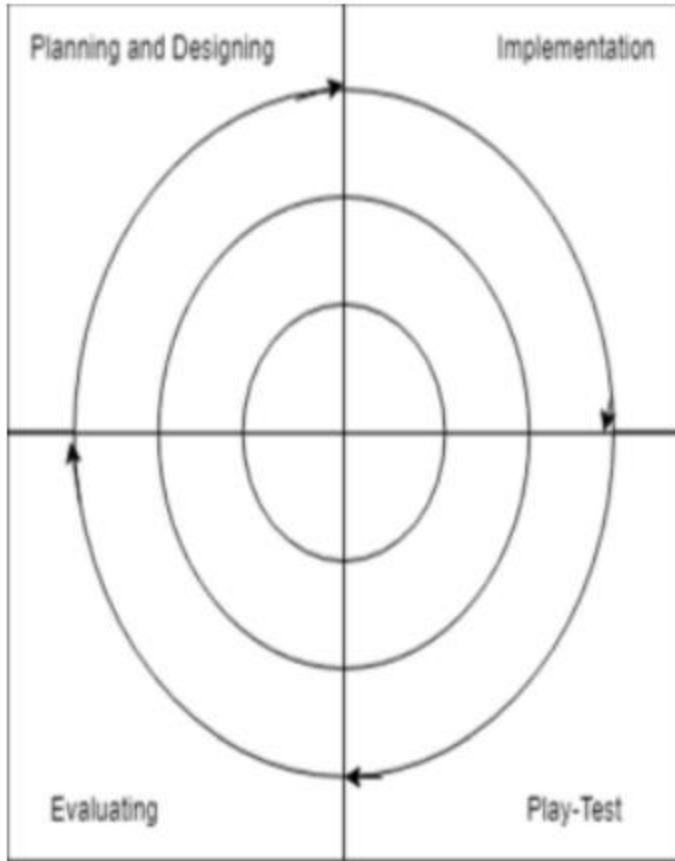
4.1. Architecture Diagram

Following Architecture Diagram of e donation is a graphical representation to understand, clarify, and communicate ideas about the game structure and the user requirements that the game must support.

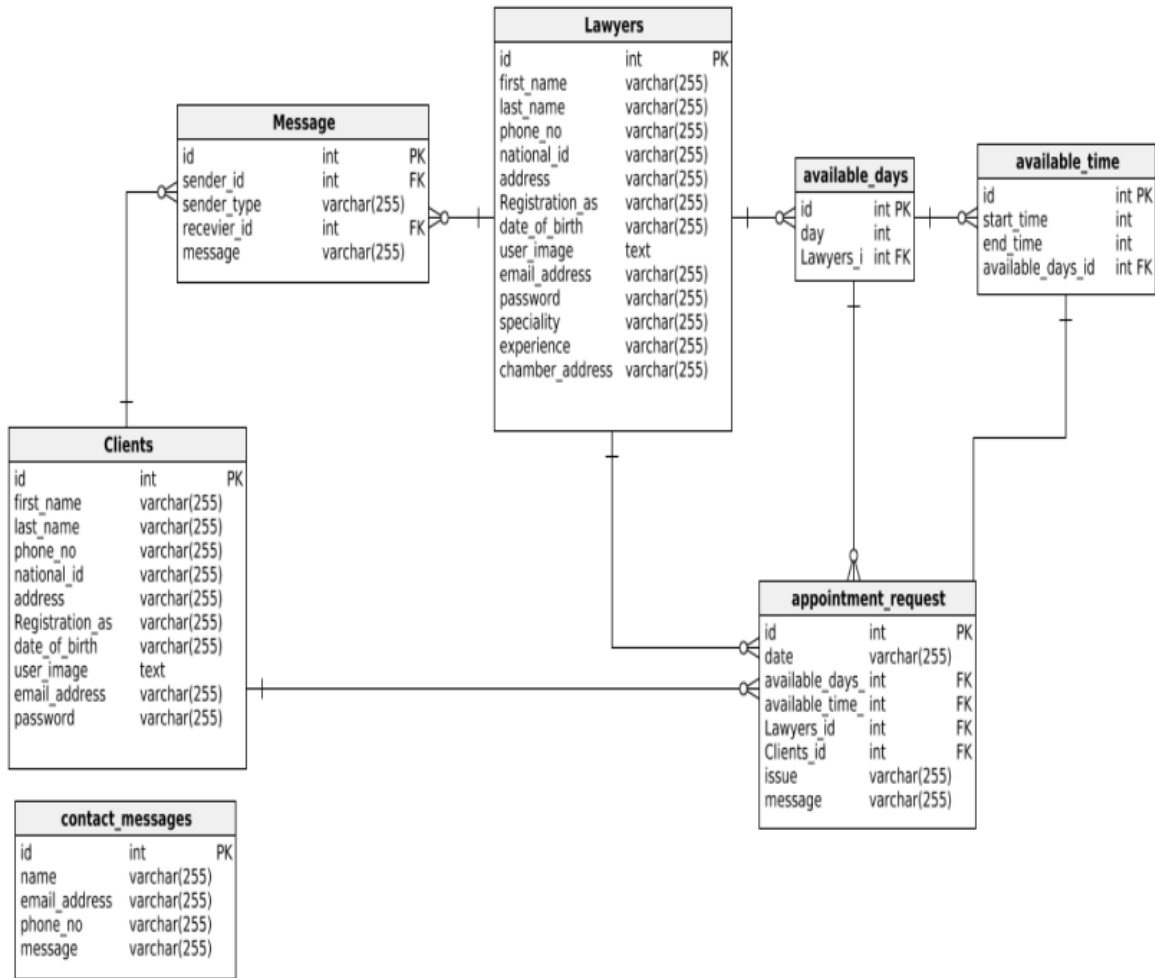


4.2. Domain Model

A domain model is a formal representation of a knowledge domain with concepts, roles, datatypes, individuals, and rules, typically grounded in a description logic in the following figure we use spiral model. Spiral model in software engineering is also a step by step procedure to develop new software. It is mainly used when there is a dependency between the models. Each phase in the spiral model begins with design and ends with the client reviewing the process. Planning and designing Implementation Play test evaluating

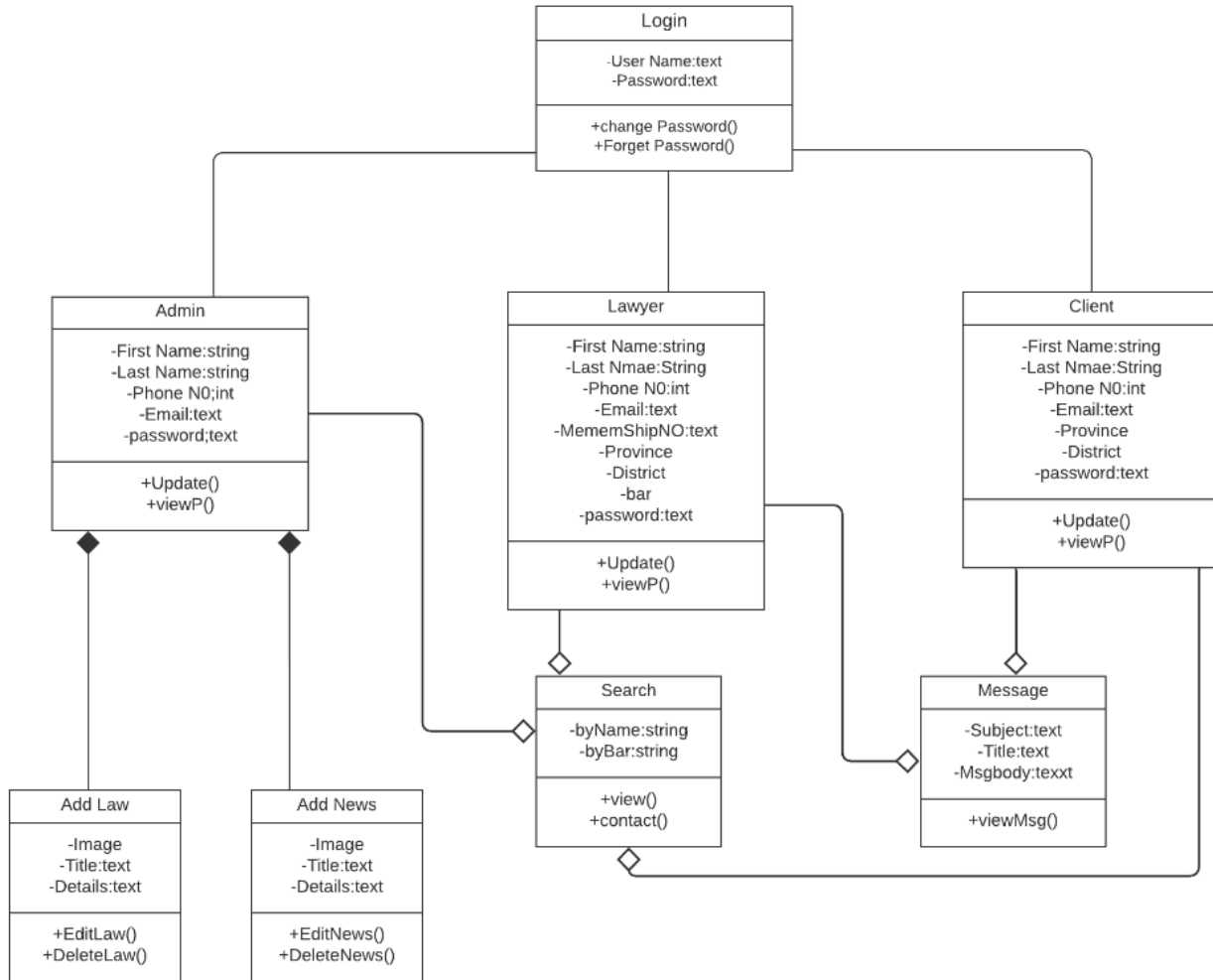


4.3. Entity Relationship Diagram with data dictionary

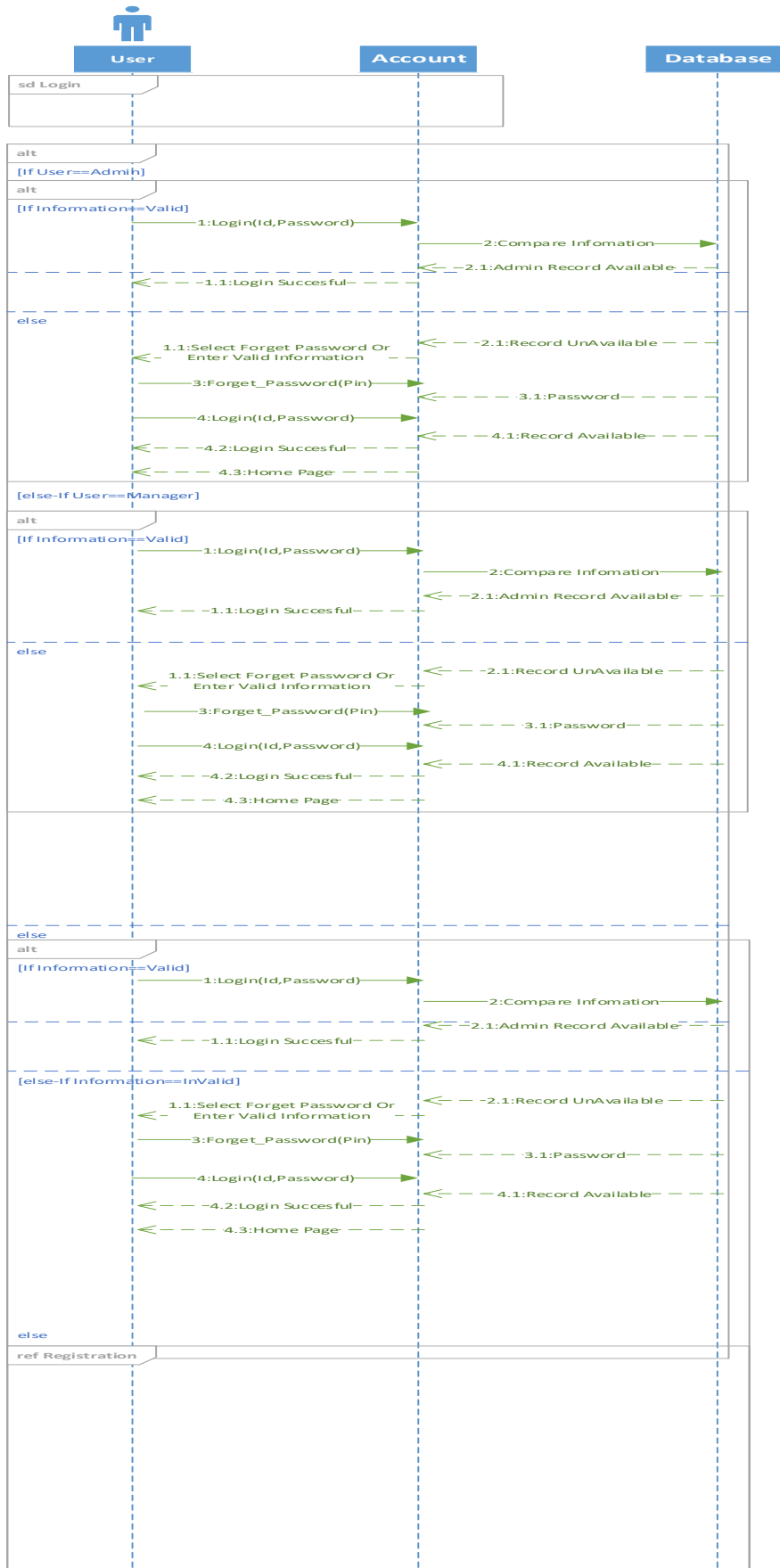


4.4. Class Diagram

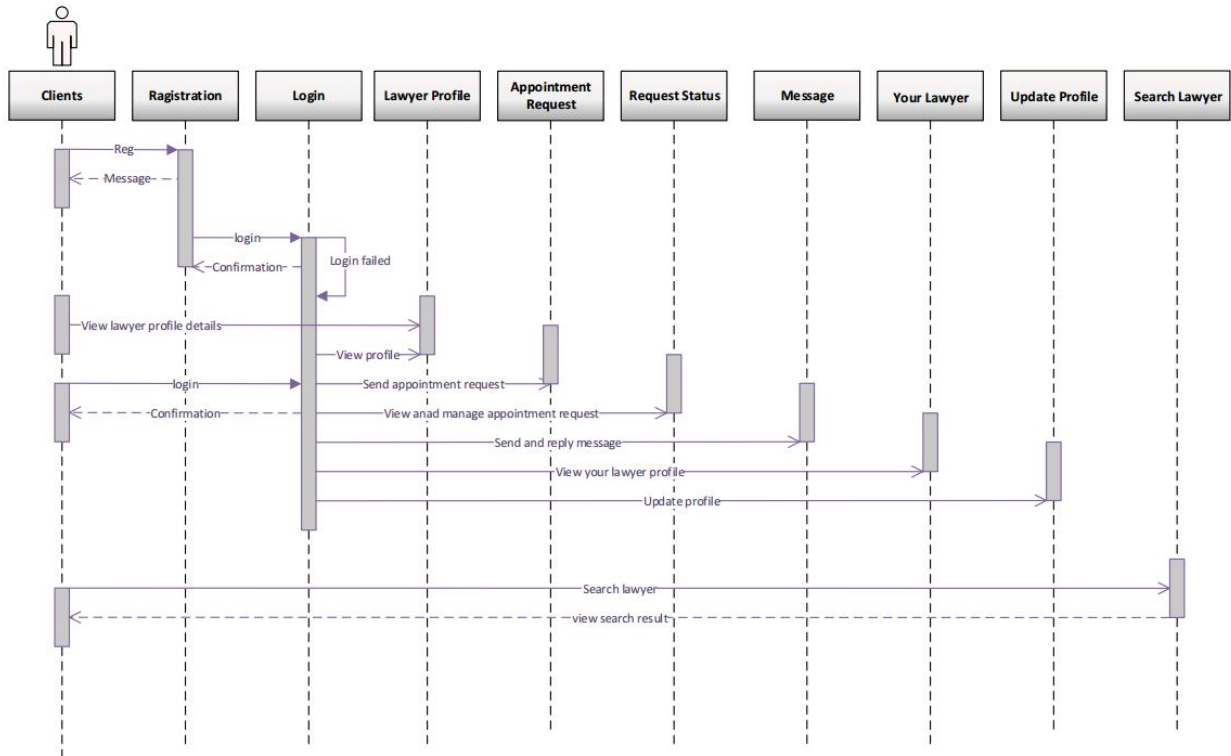
The following Class Diagram of our project gives an overview of eBar system by displaying its classes, attributes and operations:



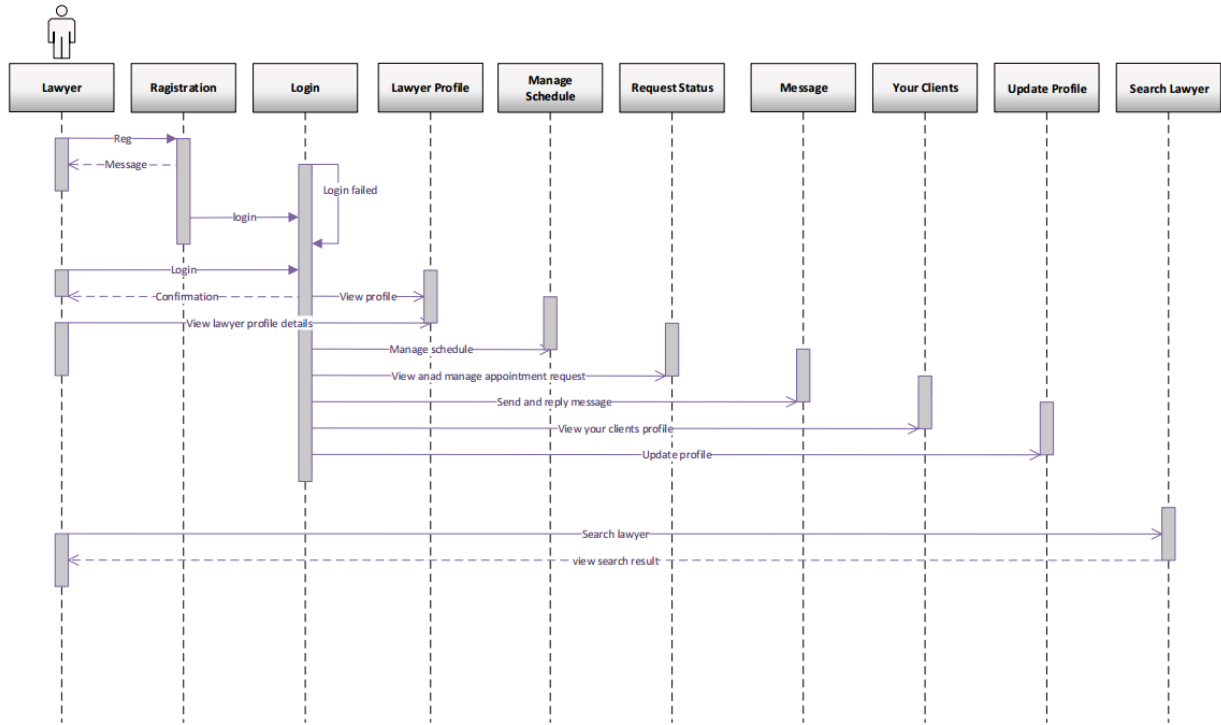
4.5. Sequence / Collaboration Diagram



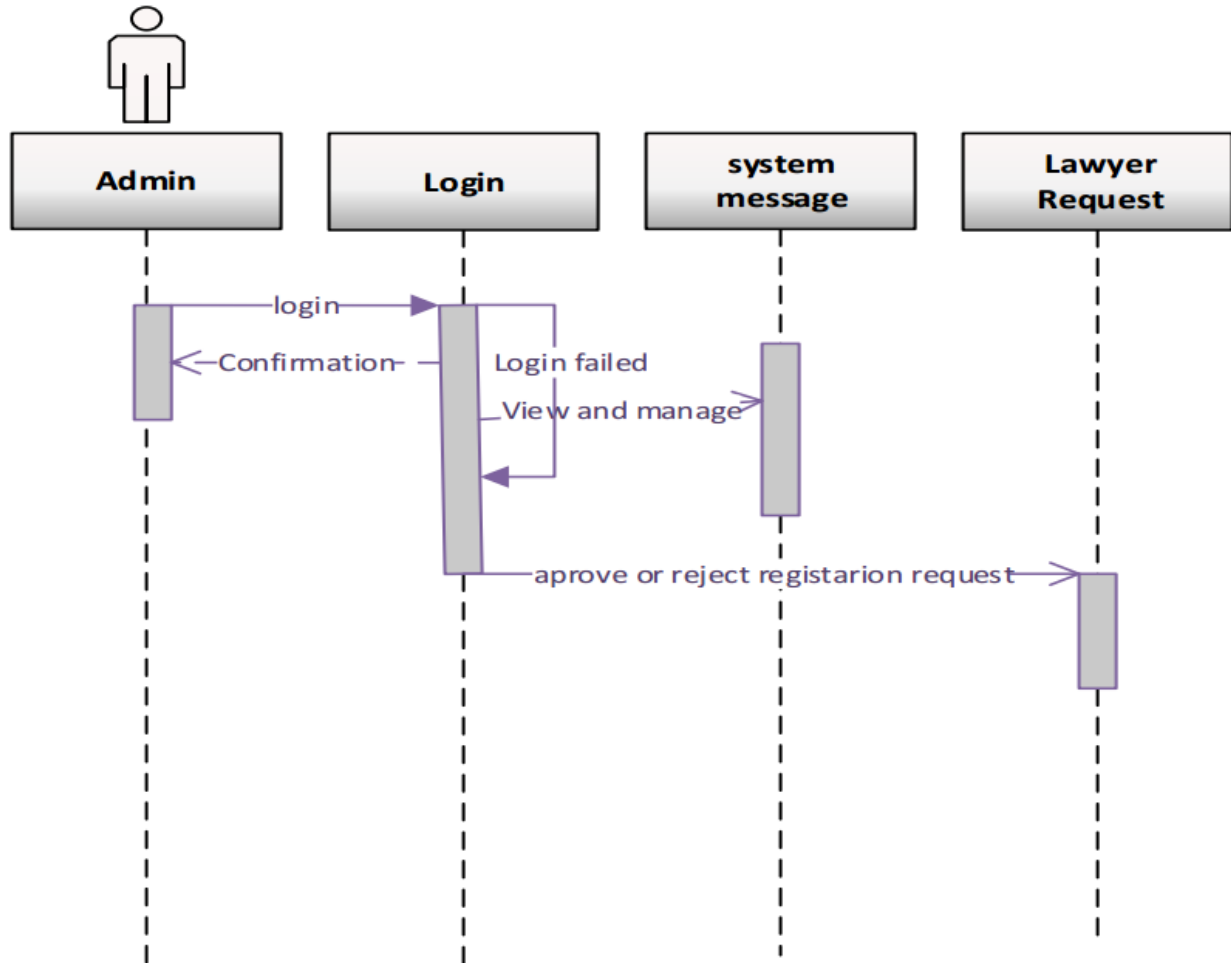
Sequence diagram for Client:



Sequence diagram for Lawyer:



Sequence diagram for Admin:



4.6. Operation contracts

O.C1.0Registration

<u>Headings</u>	<u>Sub-Headings</u>	
Operations		Register()
Cross-Reference	Use-Case	Registration, View Profile
	Scenario	Registration
Pre-Conditions		N/A
Post-	Instantiation	An instance "A" of Account was created.

Conditions		An instance "C" of Customer was created.
	Attribute Modification	A.Id becomes ID. A.Name becomes Name. A.Address becomes Address. A.CNIC becomes CNIC.
	Association	A was associated with user/actor

O.C2.0Login

<u>Headings</u>	<u>Sub-Headings</u>	
Operations		Login()
Cross-Reference	Use-Case	Login, View Profile
	Scenario	Login
Pre-Conditions		N/A
Post-Conditions	Instantiation	An instance "A" of Account was created. An instance "U" of User was created. An instance "a" of Admin was created.
	Attribute Modification	A.Id becomes ID. A.PW becomes PW
	Association	A was associated with Admin. A was associated with User.

O.C3.0View Profile

<u>Headings</u>	<u>Sub-Headings</u>	
Operations		View_Profile()

Cross-Reference	Use-Case	View Profile
	Scenario	View Profile
Pre-Conditions		Users must be logged in, to access their profile
Post-Conditions	Instantiation	An instance "P" of Profile was created. An instance "U" of User was created. An instance "A" of Admin was created.
	Attribute Modification	N/A
	Association	P was associated with Admin. P was associated with User.

O.C4.0Update Profile

<u>Headings</u>	<u>Sub-Headings</u>	
Operations		Update_Profile()
Cross-Reference	Use-Case	Update Profile, View Profile
	Scenario	Update Profile
Pre-Conditions		Users must be logged in, to access and update their profile
Post-Conditions	Instantiation	An instance "P" of Profile was created. An instance "U" of User was created. An instance "A" of Admin was created.
	Attribute Modification	P.Id becomes ID. P.Name becomes Name.
	Association	P was associated with Admin. P was associated with User.

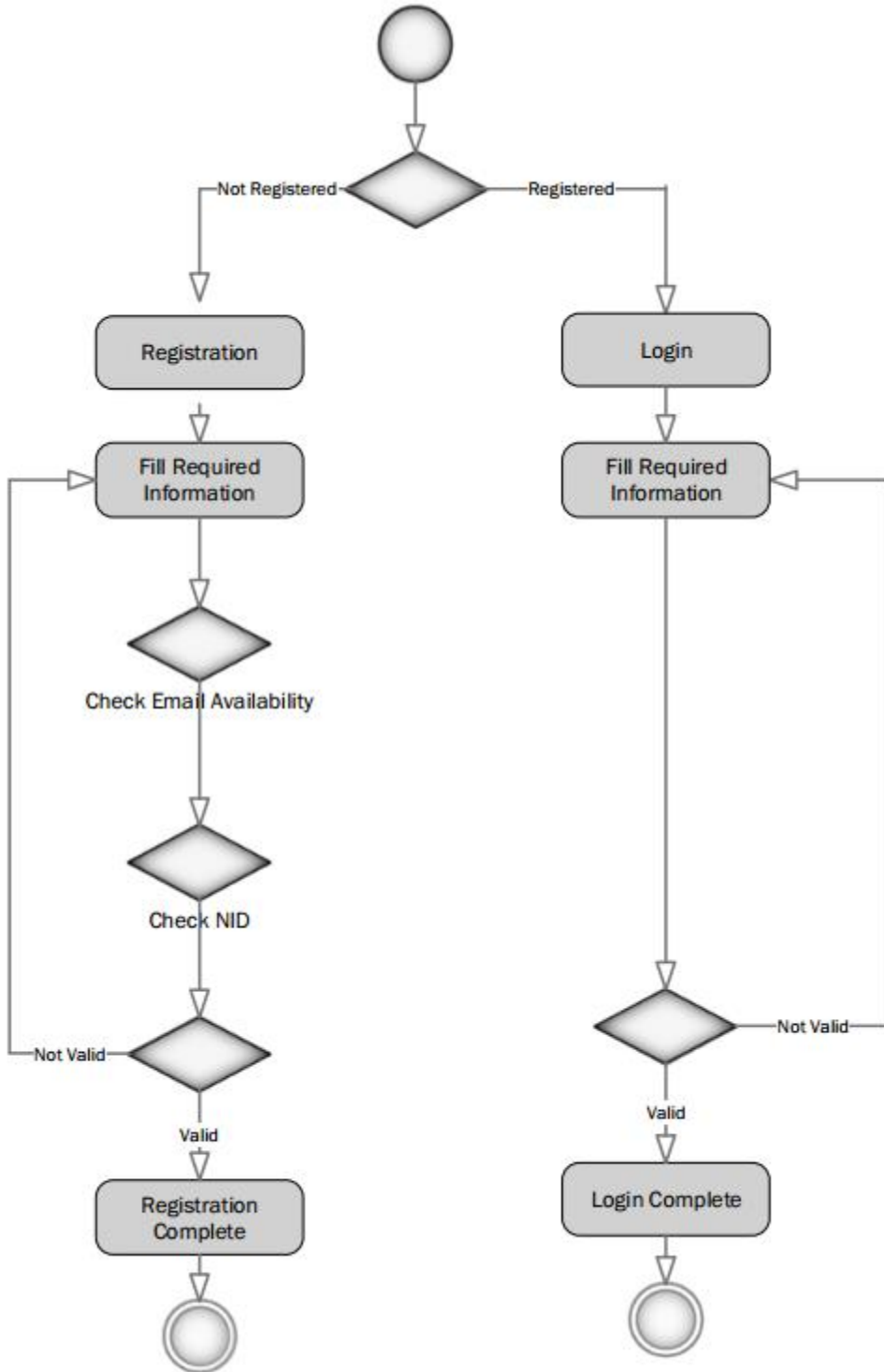
O.C5.0Search

<u>Headings</u>	<u>Sub-Headings</u>	
Operations		Search()

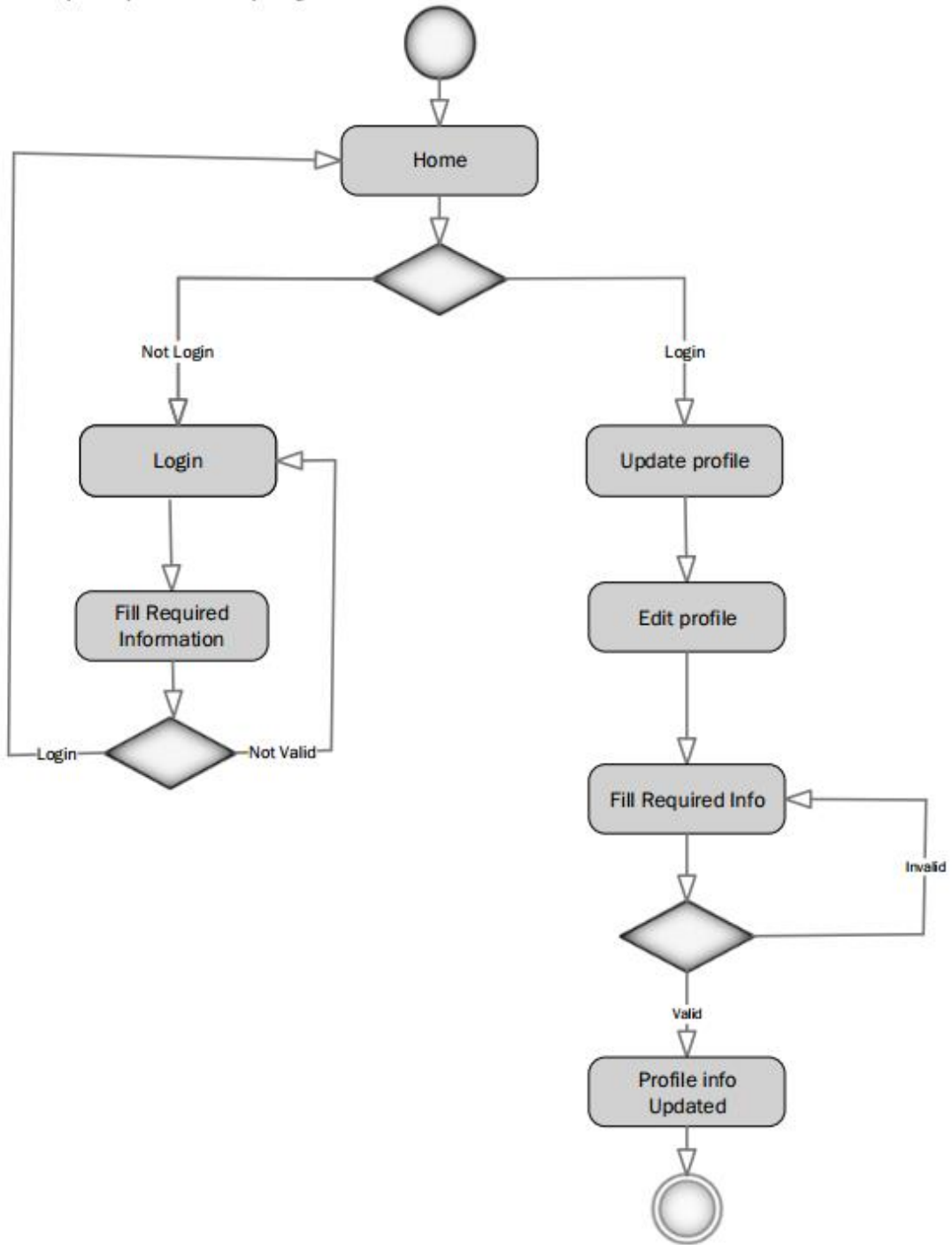
Cross-Reference	Use-Case	Search
	Scenario	Search
Pre-Conditions		User should be logged into the system.
Post-Conditions	Instantiation	An instance "U" of User was created.
	Attribute Modification	N/A
	Association	U was associated with User.

4.7. Activity Diagram

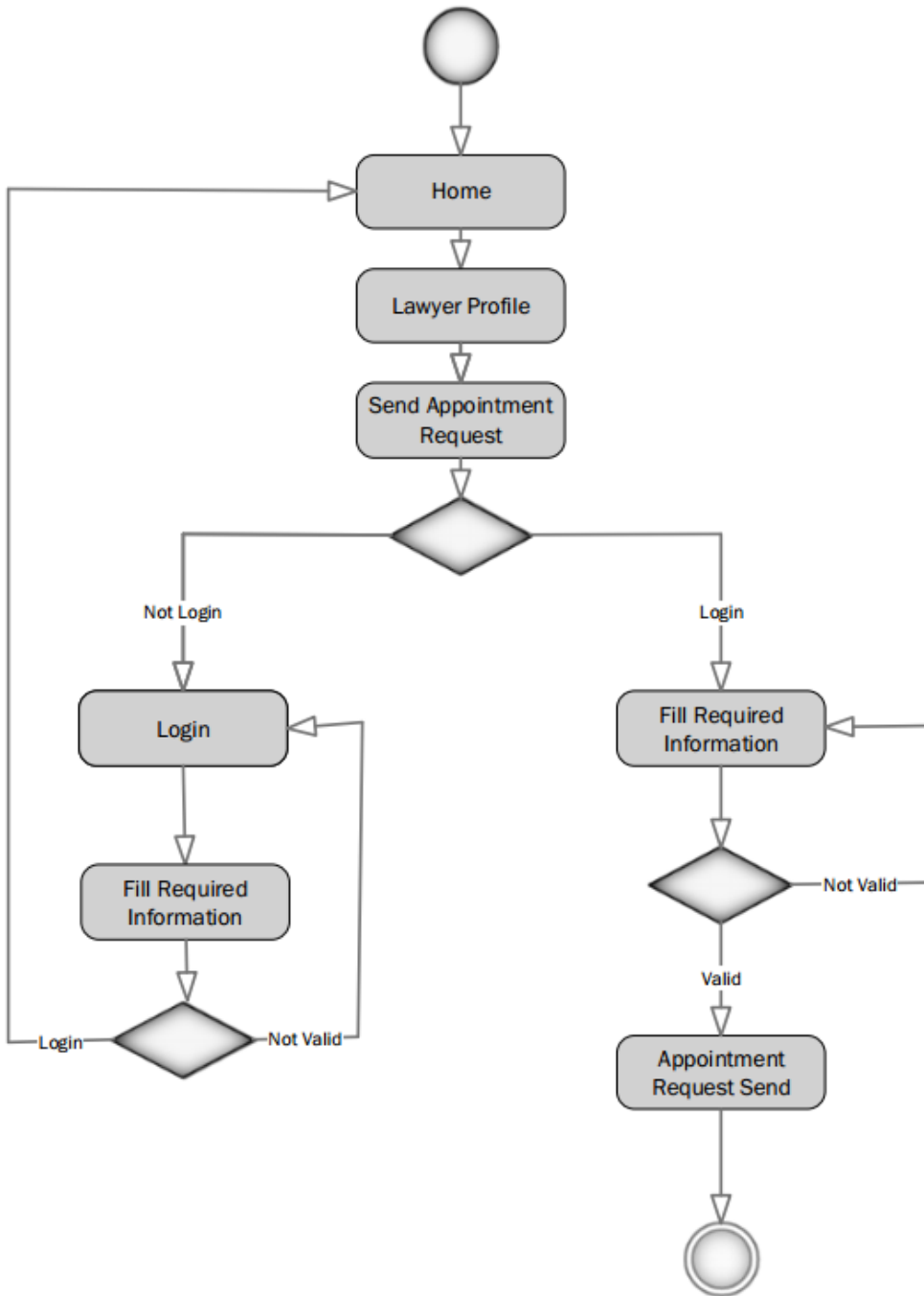
Login and Registration:



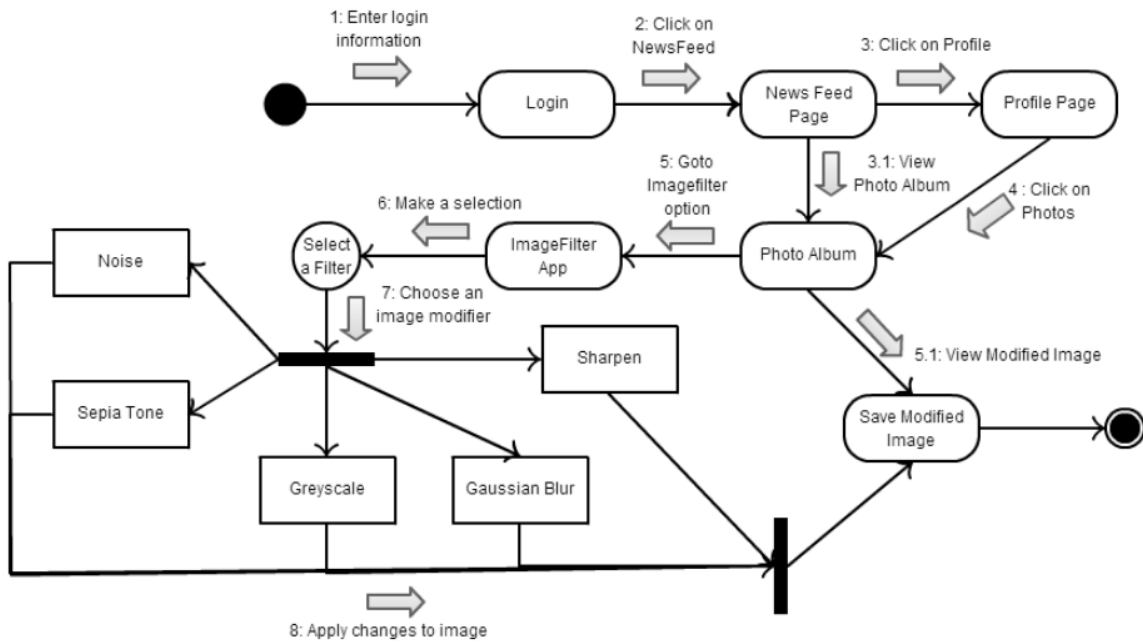
For update profile:



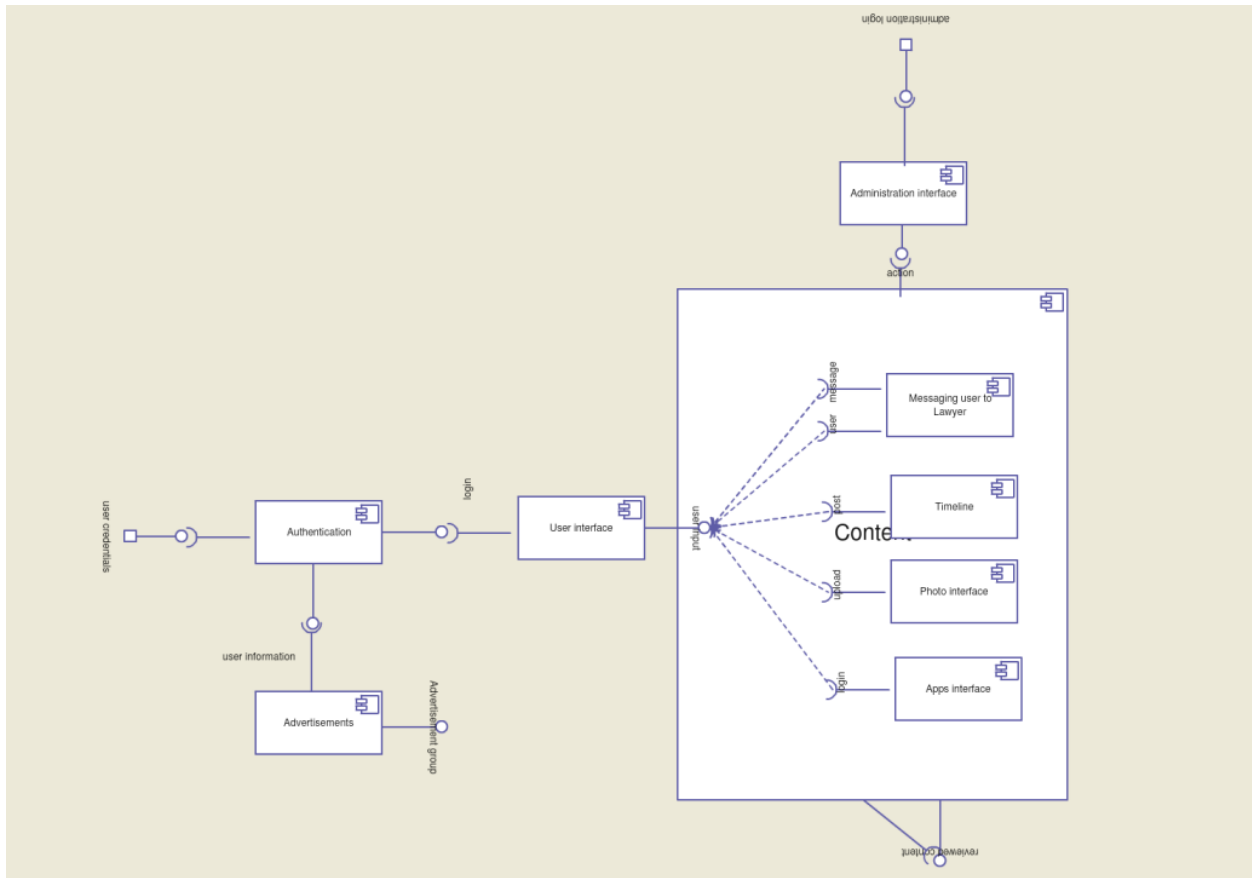
For appointment:



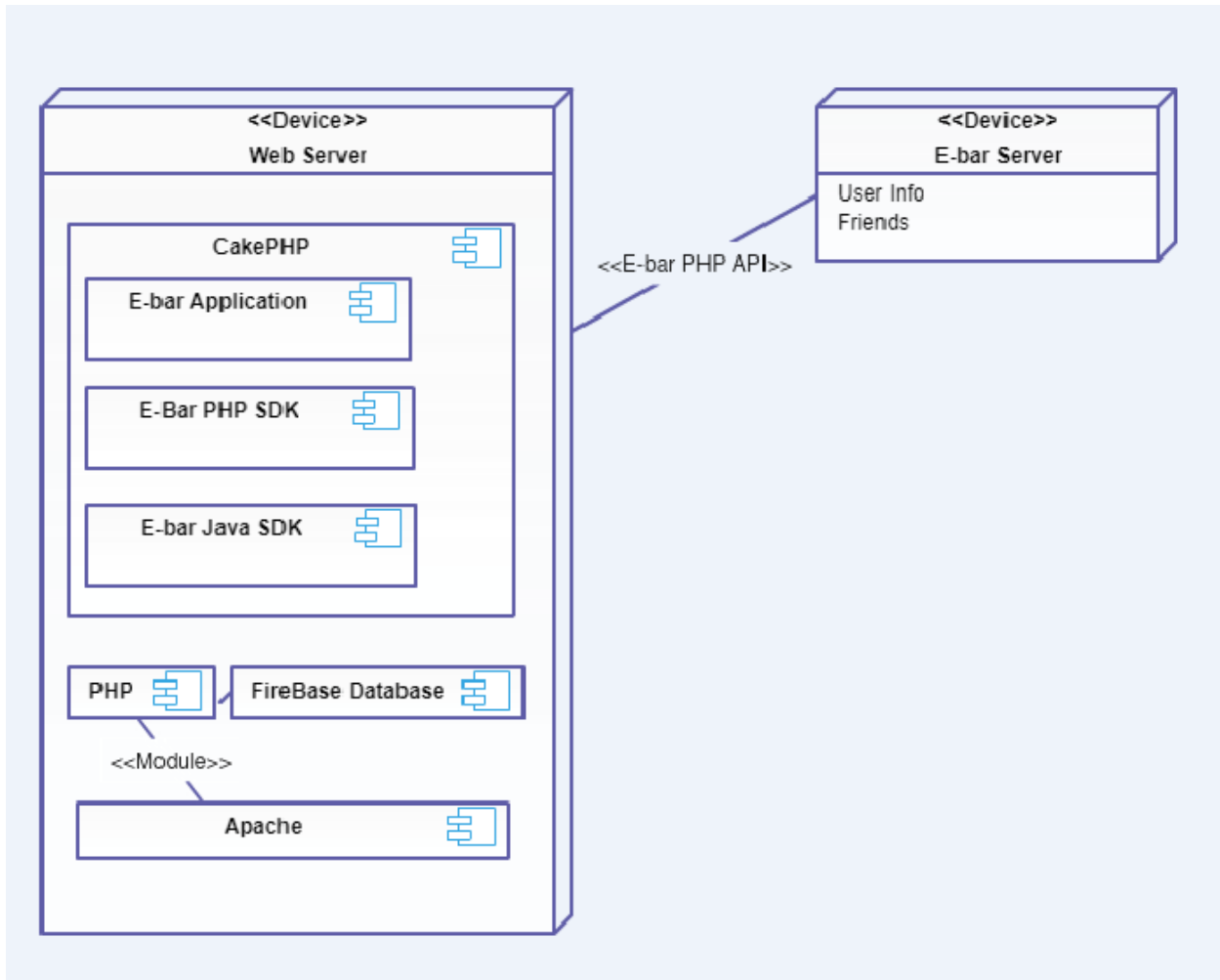
4.8. State Transition Diagram



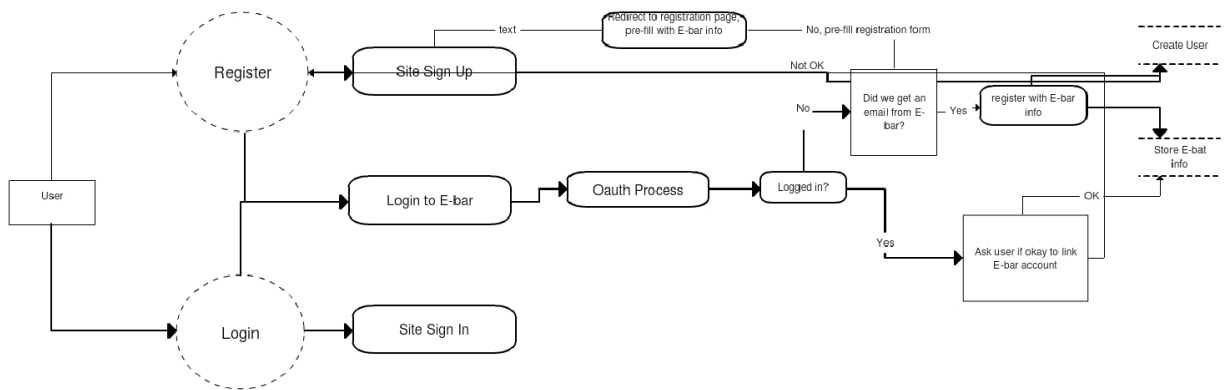
4.9. Component Diagram



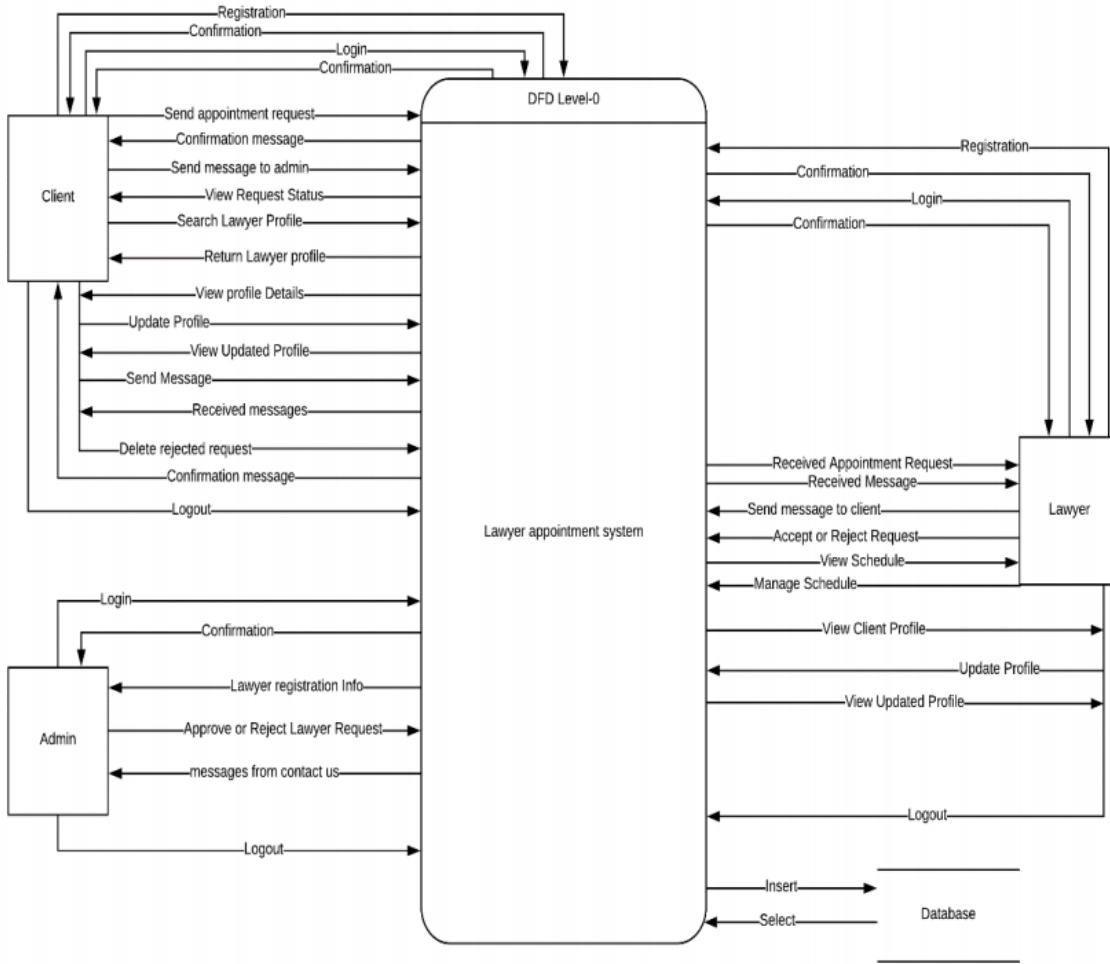
4.10. Deployment Diagram



4.11. Data Flow diagram [only if structured approach is used - Level 0 and 1]



DFD2:



Chapter 5

Implementation

Chapter 5: Implementation

5.1. Important Flow Control/Pseudo codes

- Services that this application will provide are the following:
- There are two types of users
- 1.Lawyers
- They will be able to create a profile with the necessary information.
- 2. Clients
- They will be able to access profiles based on the criteria they specify
- Add/check reviews.

5.2. Components, Libraries, Web Services and stubs

- Gson. Gson is a Java library used for serializing and deserializing Java objects from and into JSON. ...
- Retrofit. From their site: "Retrofit turns your REST API into a Java interface." ...
- Event Bus. ...
- Active Android. ...
- Universal Image Loader

5.3. Deployment Environment

In Deployment environment we work on android studio for build our android based application.

5.4. Tools and Techniques

Tools	Android Studio 3.6 or higher
Languages	XML, JAVA
Database	Mongo DB

5.5. Best Practices / Coding Standards

- Testing on android studio
- Use java language
- Use xml language

5.6. Version Control

Now we just working on version 1 after the passage of time we changed the version.

Chapter 6

Testing and Evaluation

Chapter 6: Testing and Evaluation

Use Case Testing is a functional black box testing technique that helps testers to identify test scenarios that exercise the whole system on each transaction basis from start to finish.

6.1. Use Case Testing

6.1.1

Test Suite ID	TS001
Test Case ID	TC001
Test Case Summary	Lawyer Sign up: To verify that by clicking Signup button first name, last name, phone#, province spinner, district spinner, Bar spinner, Member ship number, date of birth, gender button, password and confirm password store in users detail in database.
Related Requirement	RSoo1: User should able to Sign up.
Prerequisites	No
Test Procedure	<ol style="list-style-type: none"> 1. Select fields in Signup form by clicking sign up as lawyer button 2. Enter user data in fields. 3. Click Signup button.
Test Data	Valid first name: Waqas Invalid first name:Waqas12/,waqas@1 Valid last name: Bhatti Invalid last name: Bhatti12/,bhatti!2 Valid phone number:03344539297 Invalid phone number:0033453929 Valid member ship number: CYK2016 Invalid member ship number:2016_we Valid date of birth:03-06-1992 Invalid date of birth:01/06-1992

	Valid password:kasur@123 Invalid password:1_@kasur
Excepted Result	1. If given inputs are valid then store user data by clicking signup button. 2. If given inputs are invalid then display error message. 3. If fields are empty then show warning message.
Actual Result	1. If name is valid, the result is as expected. 2. If name is not valid then invalid message displayed. 3. If fields are empty then warning message displayed.
Status	Pass
Remarks	Test is simple and easy
Created by	Arsila Ijaz
Date of Creation	11-11-2020
Executed by	Arsila Ijaz
Date of execution	11-11-2020
Test Environment	OS: Android studio 4.1

6.1.2

Test Suite ID	TS002
Test Case ID	TC002
Test Case Summary	Lawyer Client: To verify that by clicking Signup button first name, last name, phone#, province spinner, district spinner,date of birth, gender button, password and confirm password store in users detail in database.
Related Requirement	RSoo2: User should able to Sign up.
Prerequisites	No
Test Procedure	1. Select fields in Signup form by clicking sign up as lawyer button 2. Enter user data in fields. 3. Click Signup button.

Test Data	Valid first name: Gulraiz Invalid first name:Gulraiz12/, Gulraiz@1 Valid last name: Khan Invalid last name: Khan12/, Khan!2 Valid phone number:03004539297 Invalid phone number:0#!0453929 Valid date of birth:13-09-1998 Invalid date of birth:01/06-1992 Valid password:bwp@123 Invalid password:1_@bwp
Excepted Result	1. If given inputs are valid then store user data by clicking signup button. 2. If given inputs are invalid then display error message. 3. If fields are empty then show warning message.
Actual Result	1. If name is valid, the result is as expected. 2. If name is not valid then invalid message displayed. 3. If fields are empty then warning message displayed.
Status	Pass
Remarks	Test is simple and easy
Created by	Arsila Ijaz
Date of Creation	11-11-2020
Executed by	Arsila Ijaz
Date of execution	11-11-2020
Test Environment	OS: Android studio 4.1

6.1.3

Test Suite ID	TS003
Test Case ID	TC003
Test Case Summary	To verify Authentication or Login.

Related Requirement	RS002: User should able to Login.
Prerequisites	User should Signup first.
Test Procedure	<ol style="list-style-type: none"> 1. Select Username field and enter username. 2. Select Password field and enter password. 3. Click Login button.
Test Data	Valid username: umar Invalid username: uma!2 Valid password: umar@123 Invalid password: !^umar12
Excepted Result	<ol style="list-style-type: none"> 1. If username and password are valid then clicking the Login button user successfully login. 2. If username and password are invalid then clicking the Login button invalid message display. 3. If fields are empty then display warning message
Actual Result	<ol style="list-style-type: none"> 1. If fields are valid, the result is as expected. 2. If fields are not valid then invalid message displayed. 3. If fields are empty then warning message displayed.
Status	Pass
Remarks	Test is simple and easy
Created by	Arsila Ijaz
Date of Creation	11-11-2020
Executed by	Arsila Ijaz
Date of execution	11-11-2020
Test Environment	OS: Android studio 4.1

6.1.4

Test Suite ID	TS004
Test Case ID	TC004
Test Case Summary	To verify client can search lawyers by clicking search button.
Related Requirement	RS004: Client should be able to search lawyers.

Prerequisites	User should login.
Test Procedure	1. Select search field. 2. Enter name in fields. 3. Click search button.
Excepted Result	1. If name is valid then show detail. 2. If name is invalid then display no record found.
Actual Result	1. If name is valid, the result is as expected. 2. If name is not valid then no record found displayed.
Status	Pass
Remarks	Test is simple and easy
Created by	Arsila Ijaz
Date of Creation	11-11-2020
Executed by	Arsila Ijaz
Date of execution	11-11-2020
Test Environment	OS: Android studio 4.1

6.1.5

Test Suite ID	TS005
Test Case ID	TC005
Test Case Summary	To verify record is displayed.
Related Requirement	RS004: User should be able to view data.
Prerequisites	User should login.
Test Procedure	1. Enter name in fields. 2. Click search button.
Excepted Result	1. If name is valid then show detail. 2. If name is invalid then display no record found.
Actual Result	1. If name is valid, the result is as expected. 2. If name is not valid then no record found displayed.
Status	Pass

Remarks	Test is simple and easy
Created by	Arsila Ijaz
Date of Creation	11-11-2020
Executed by	Arsila Ijaz
Date of execution	11-11-2020
Test Environment	OS: Android studio 4.1

6.2. Equivalence partitioning

1	User name is alphabetic	Valid
2	User name is not alphabetic	Invalid
3	Password equal to 5-15 letters	valid
4	Password equal to 4 or more then 15 letters	invalid
5	Date of birth in proper format	valid
6	Date of birth in not proper format	invalid
7	Empty field	invalid

6.3. Boundary value analysis

Sr#	Input field	Partition 1	Partition 2	Partition 3
1.	Password	Less than 4 words	1-8 words	9-15
2.	Phone no	<=0	1-11	9-12

6.4. Data flow testing

The relationship between one entity and another while performing a specific task in during data flow. Such as between the login and registration process etc

6.5. Unit testing

In unit testing we have testified our different panel codes individually by performing different tests and by executing them individually, separately on different computers and they were successfully executed and they performed well.

6.6. Performance testing

In performance testing a particular certain situation is given to the app let's just say a 100 users try to register at the same time so how the system recovers back gracefully with complete results. So according to our extracted results, around 100+ people were able to register in our app.

Chapter 7

Summary, Conclusion and Future Enhancements

Chapter 7: Summary, Conclusion & Future Enhancements

7.1. Project Summary

This is an application based project which connects two parties clients and the other one is lawyers so the clients can search different lawyers and discuss their issues with their desired lawyers on a single click by using this application

This system also fruitful for the lawyers not only in term of they are getting clients by using this system, It will also provide them latest news about their field this app will also help young lawyers by providing them law dictionary so they can read about any particular section of law.

7.2. Achievements and Improvements

The biggest achievements here are that we were able to enhance our skills to the professional extend that we learned in two years of studying and apply it to this project. We learned software architecture design techniques, UML modeling, project management, testing and much more, and were able to apply it all in this project.

The next big achievement is the things we learnt during this project. New languages, frameworks, libraries, different software's for diagrams Database. All that will be useful for us in our futures.

7.3. Critical Review

The critical element of our system is: Is our system is fast moving, give user friendly interface, not very costly, fulfill the specific requirements of the users at a runtime, has all the features which any organizations can require. To manage all these aspects it took lot of time and hard work.

7.4. Lessons Learnt

We absorb very much from this project. This project sharpens our skills in xml and andriod studio many other tools and many management concepts as well as how to deal with a problem and how to stick for finding the solution of any problem until you fond. As well as technical skills this project also enhances our personal development skills such as team working, dedication.

7.5. Future Enhancements/Recommendations

As it has been already said that first version of eBar is going to be launch in specific bars of district kasur only, so in coming versions after gettings feedback from the users we will launch this app all over the country and also we will add more useful features in this app as well IN SHA ALLAH.

Appendices

Appendix A: User Manual

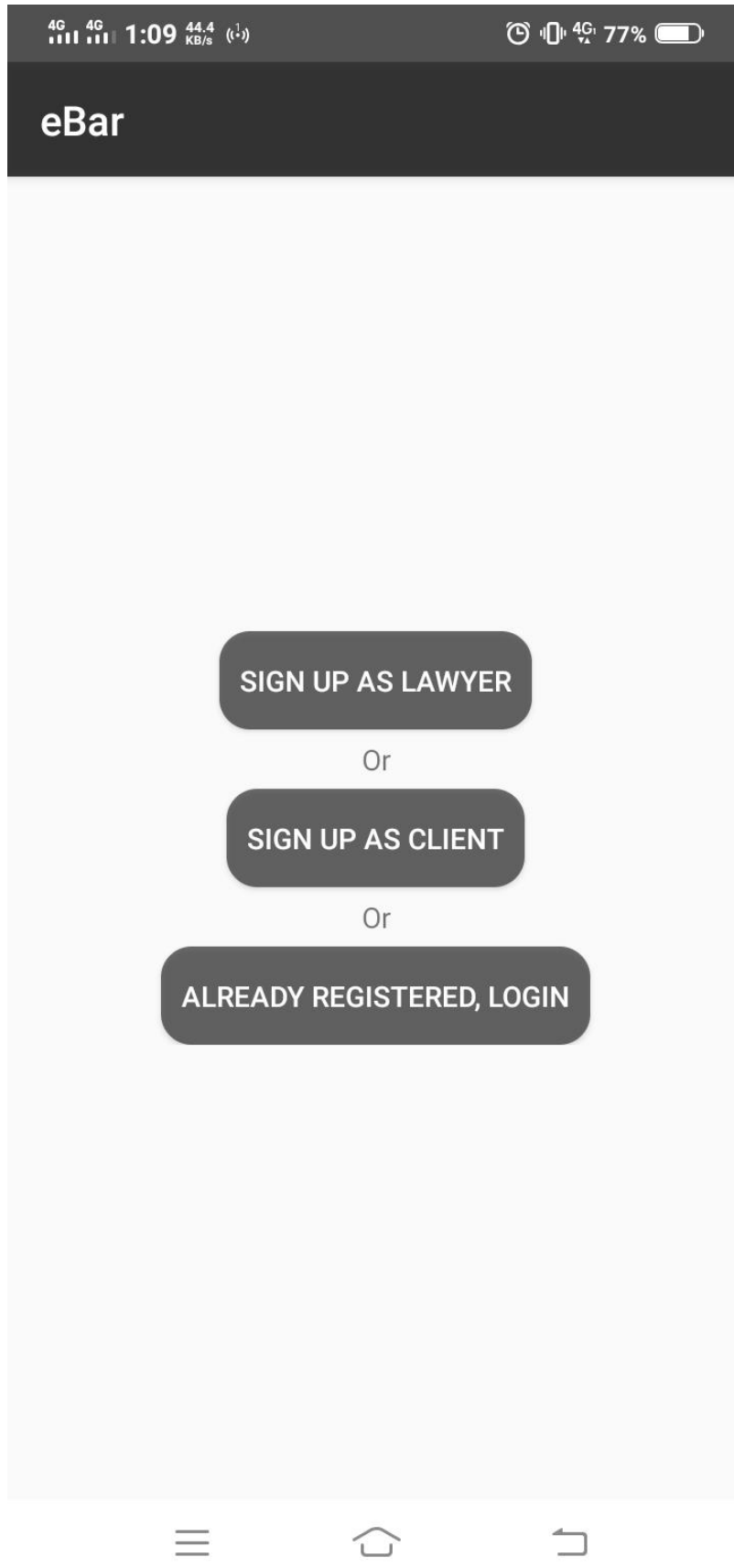
In this appendix section we describe the different phases of user interface and also describe how user can use our project.

Appendix A: eBar eBar Logo



A.1.0

Home page screen direct user to register him/her as client/lawyer.



A.1. Sign up as lawyer:

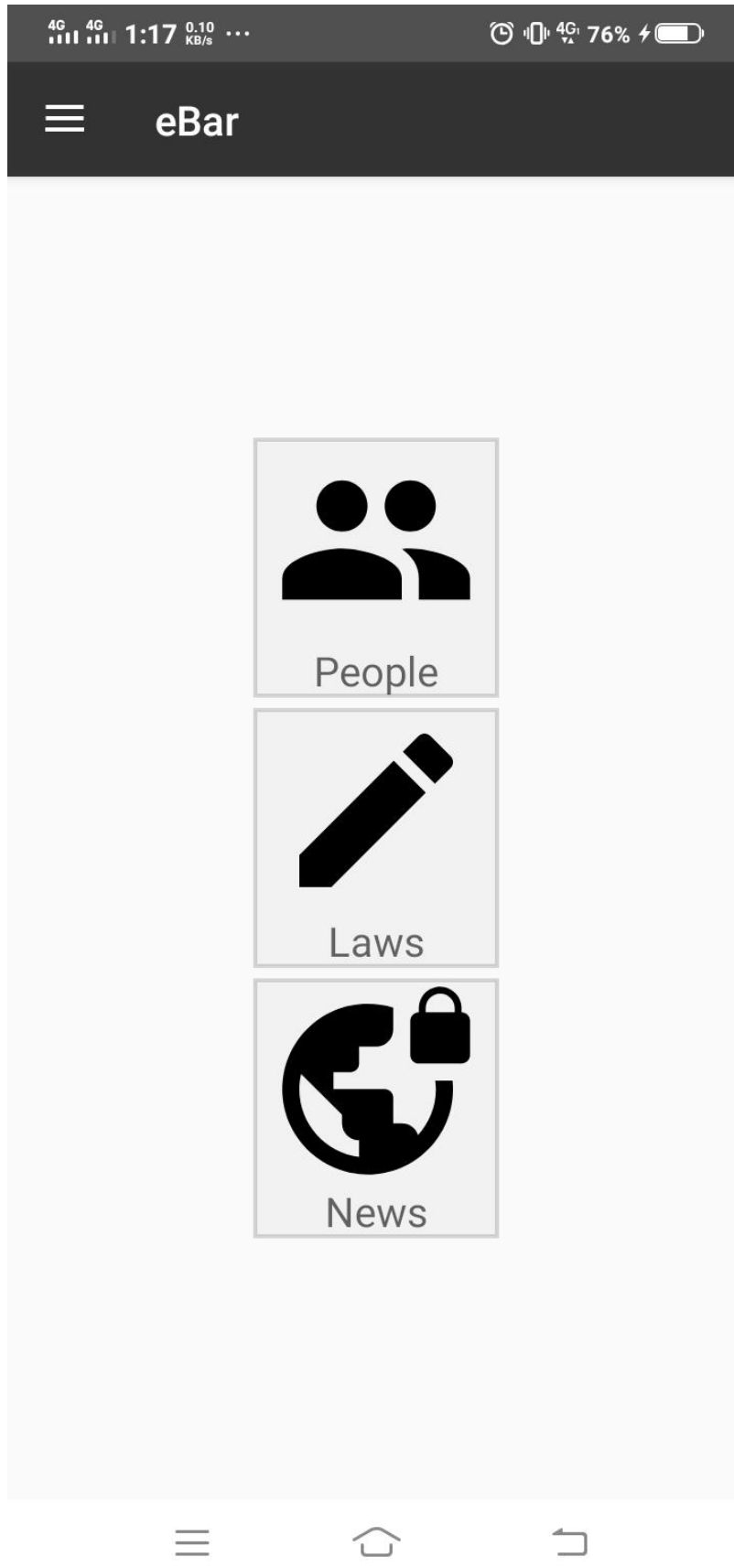
Lawyer must fill registration form according to the credentials, particularly he/she must fill Member ship number field to unique identify him/her as a lawyer.

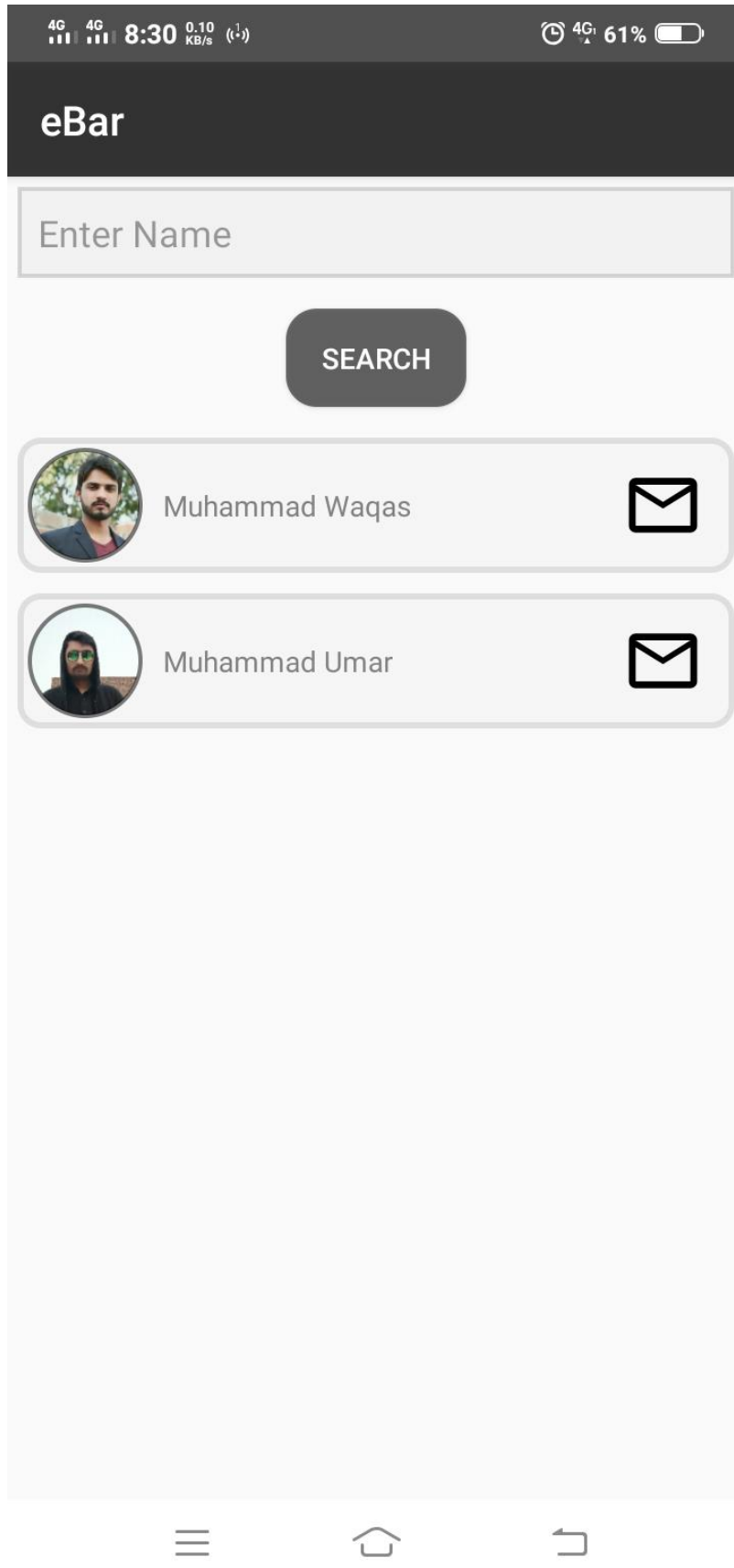
The screenshot shows a mobile application interface for 'eBar'. At the top, there is a status bar with network icons, signal strength, time (1:09), data speed (80.5 KB/s), and battery level (77%). Below the status bar is a dark header with the 'eBar' logo. The main content area is titled 'Please Fill This Form' and contains several input fields and dropdown menus. The fields are: 'Enter Frist Name', 'Enter Last Name', 'Enter Your Phone Number', 'Enter Your Email', 'Select Your Province' (with 'Punjab' selected), 'Select Your Distric' (with 'Lahore' selected), 'Select The bar' (with 'Lahore' selected), 'Enter MemberShip Number', and 'Enter Date Of Birth'. At the bottom, there are three navigation icons: a hamburger menu, a home icon, and a back arrow.

The screenshot shows the registration interface of the eBar mobile application. At the top, the status bar displays network speed (4G), time (1:09), and battery level (77%). The app title 'eBar' is centered at the top. The form consists of several input fields and dropdown menus: a phone number field, an email field, a province dropdown menu (currently set to 'Punjab'), a district dropdown menu (currently set to 'Lahore'), a date of birth field, a gender selection with radio buttons for 'male' (selected) and 'female', a password field, and a confirm password field. A prominent 'SIGN UP' button is located at the bottom of the form. The bottom of the screen shows standard Android navigation icons: a hamburger menu, a home icon, and a back arrow.

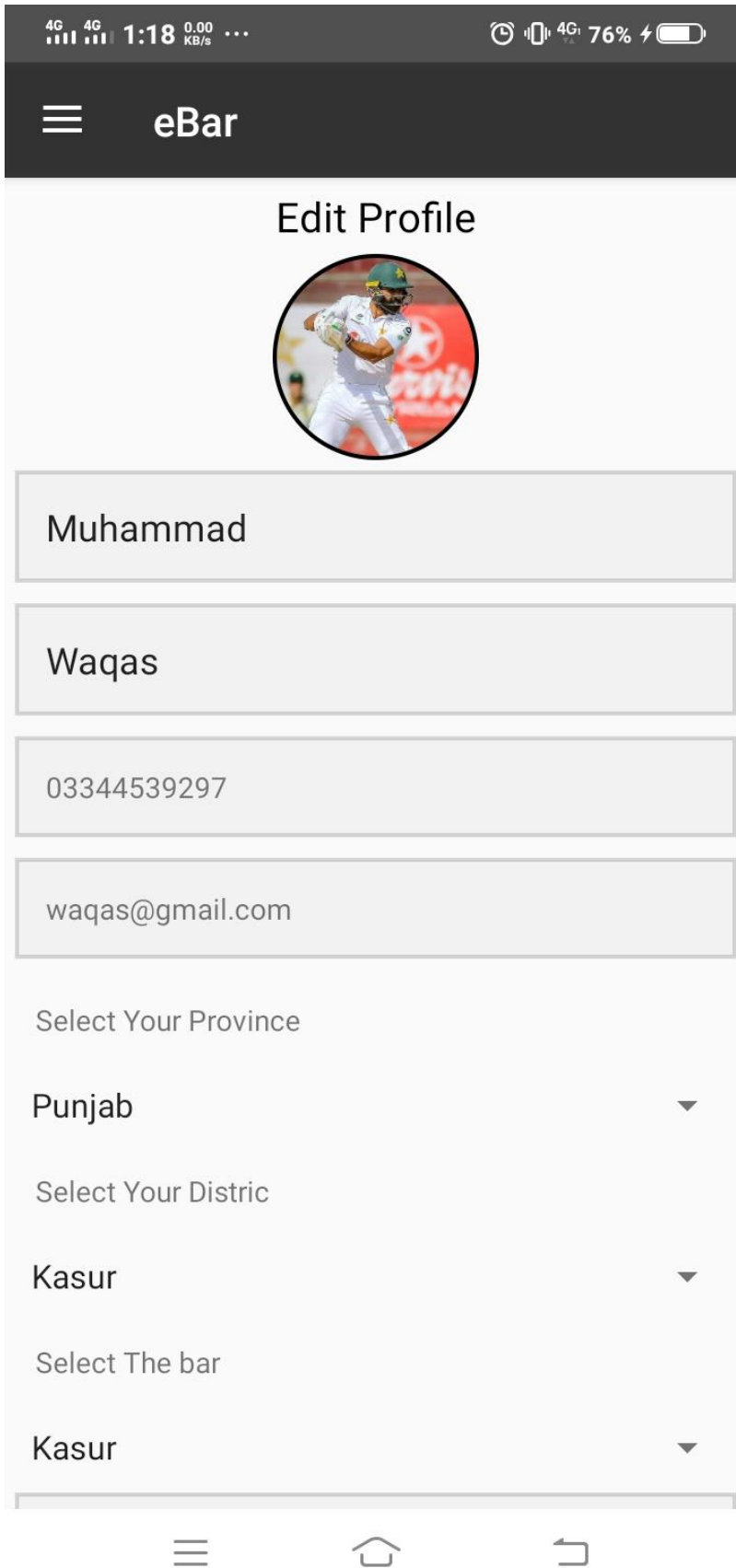
A.1.1. Dash board

After successfully login user will see a dash board containing People, Laws and News icon where he can search different user and communicate with them, also he can see different laws and latest news.

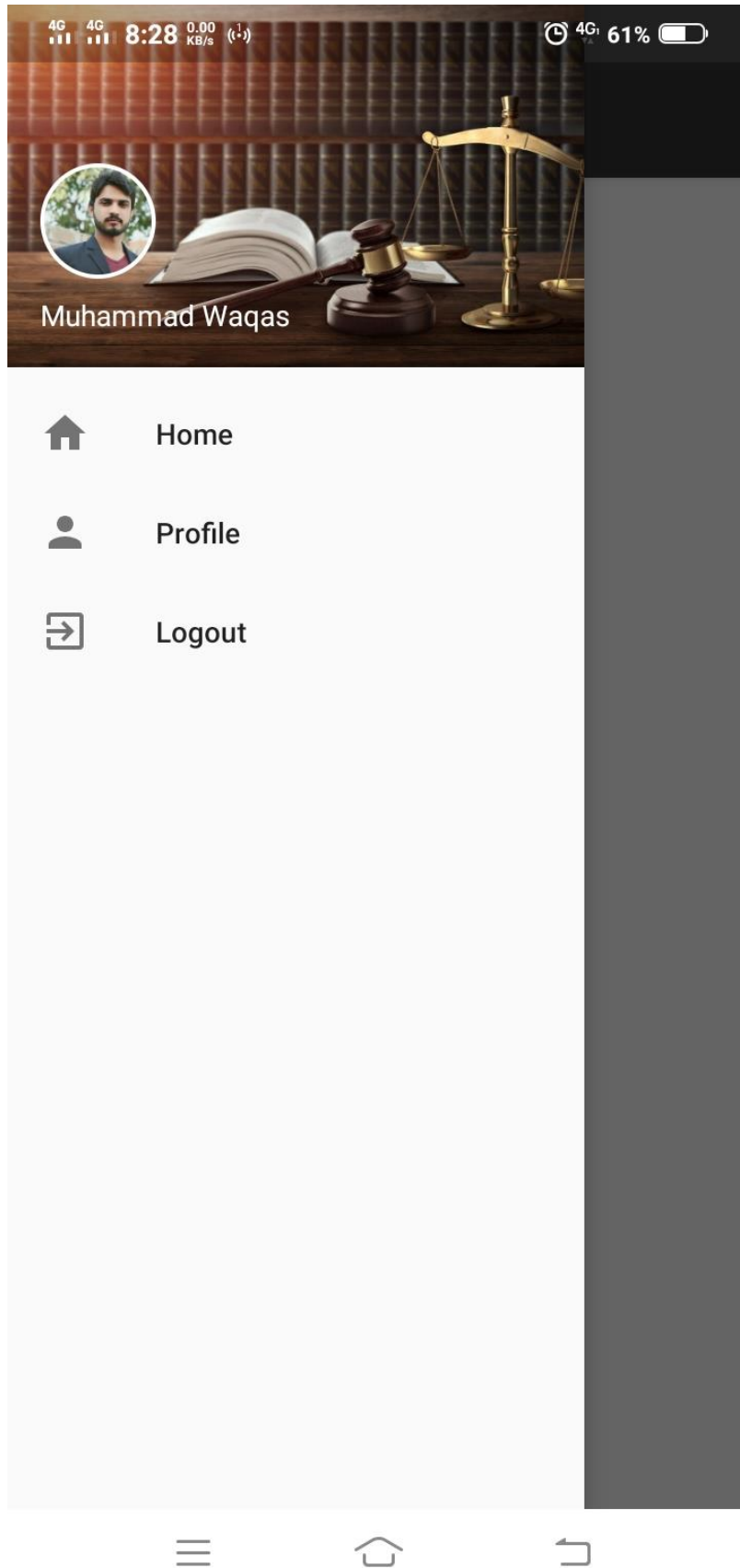




Update profile



Navigation Bar

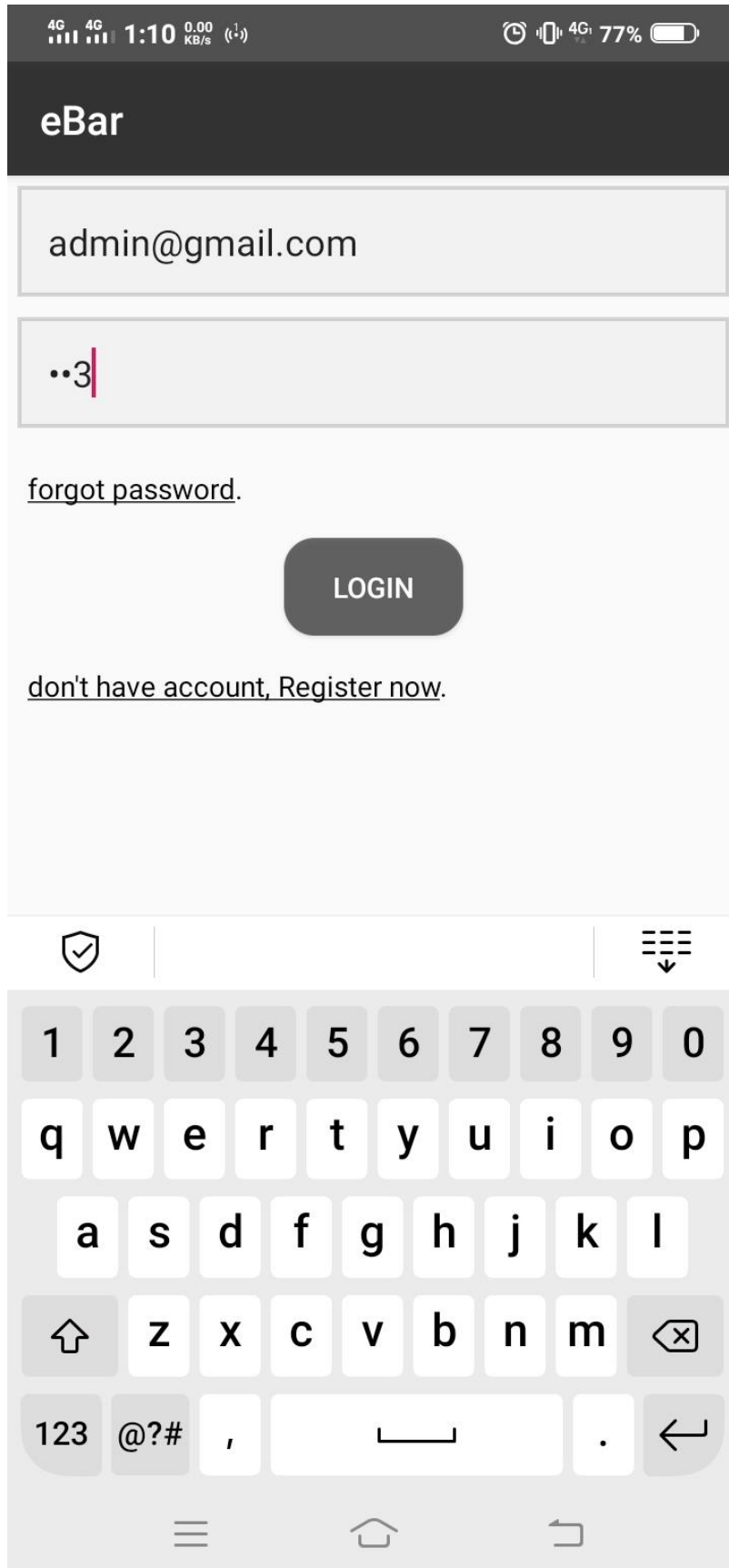


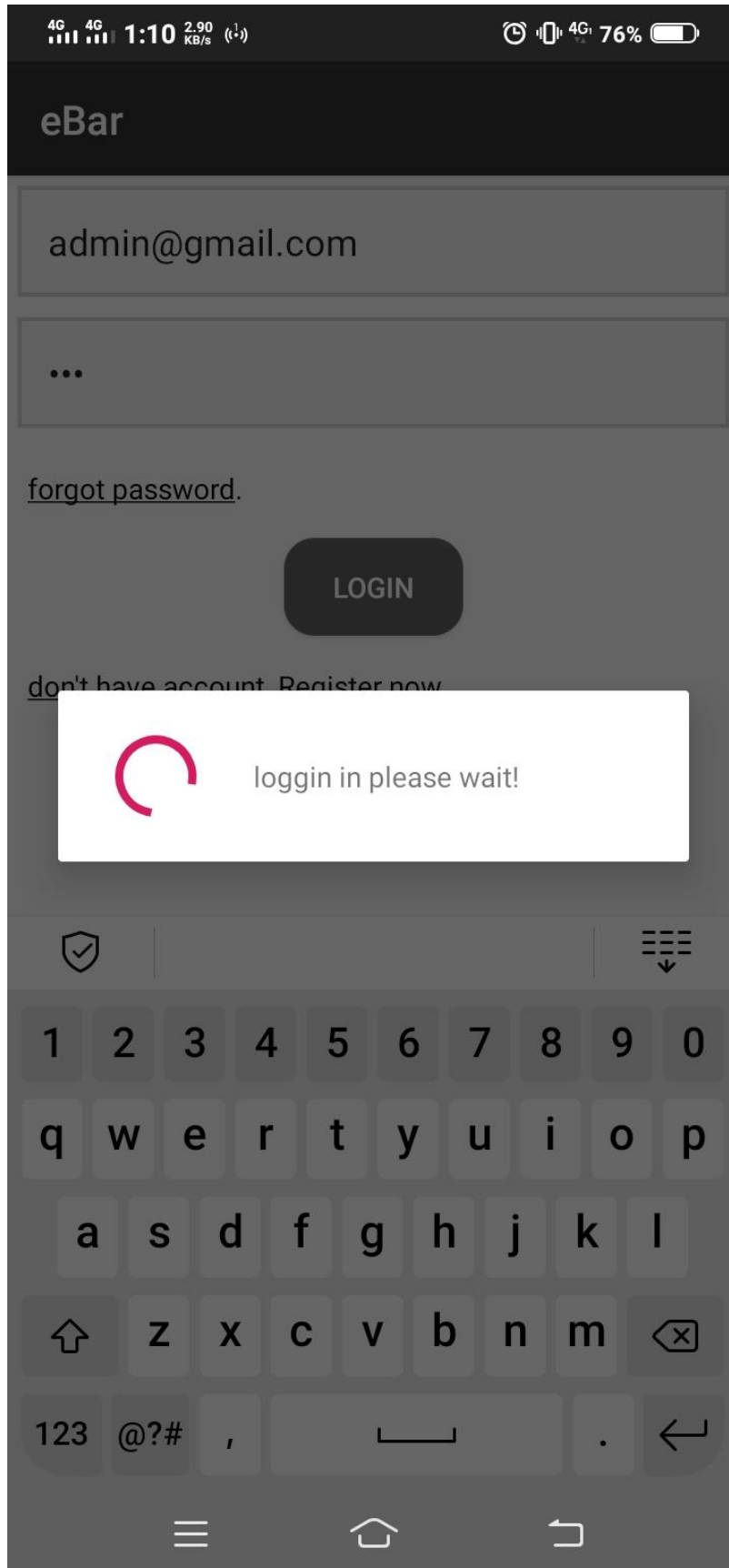
Appendix B: Administrator Manual

In this appendix section we describe the different phases of admin interface and also describe how admin can manage the system.

B.1. Admin Login

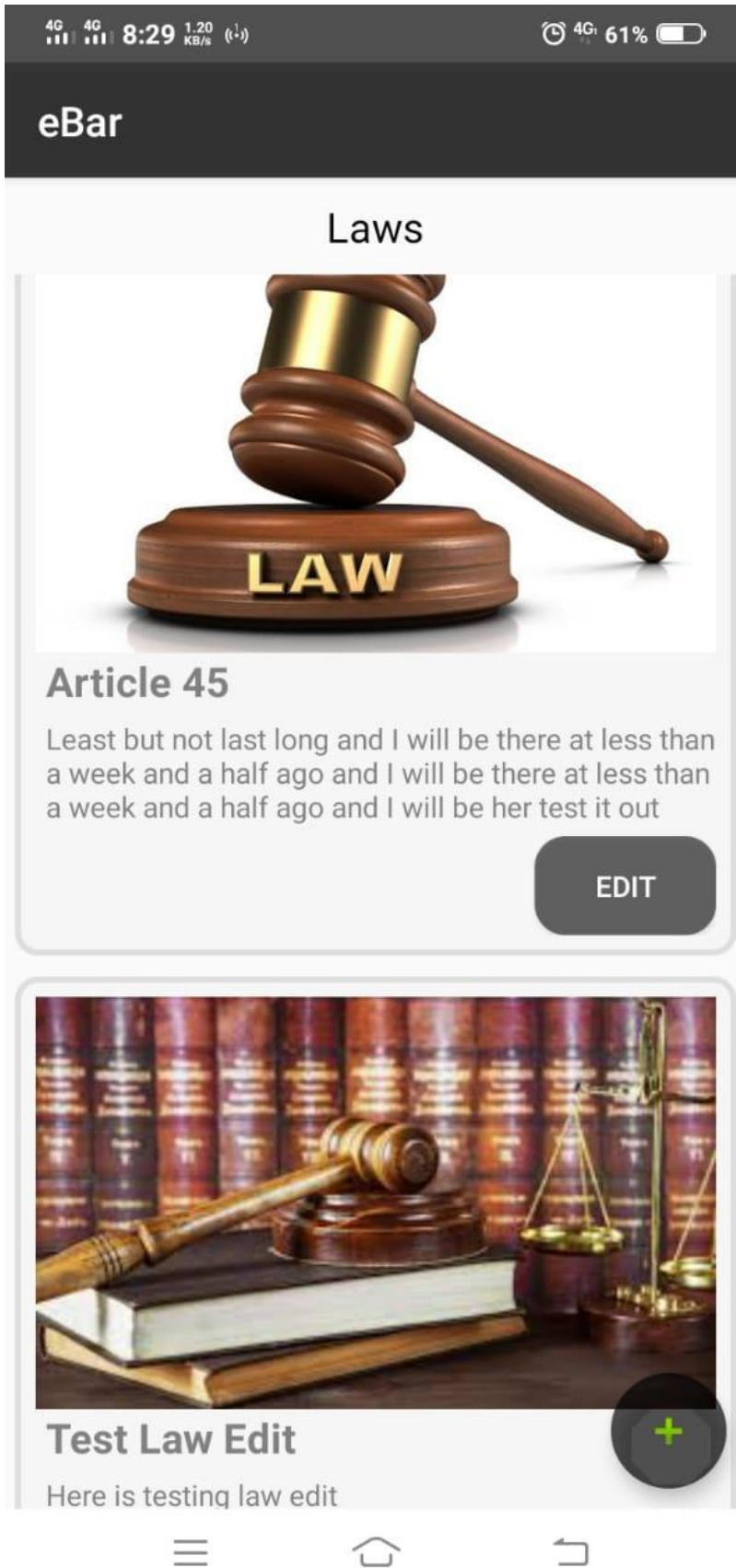
User can login by entering the password and username.

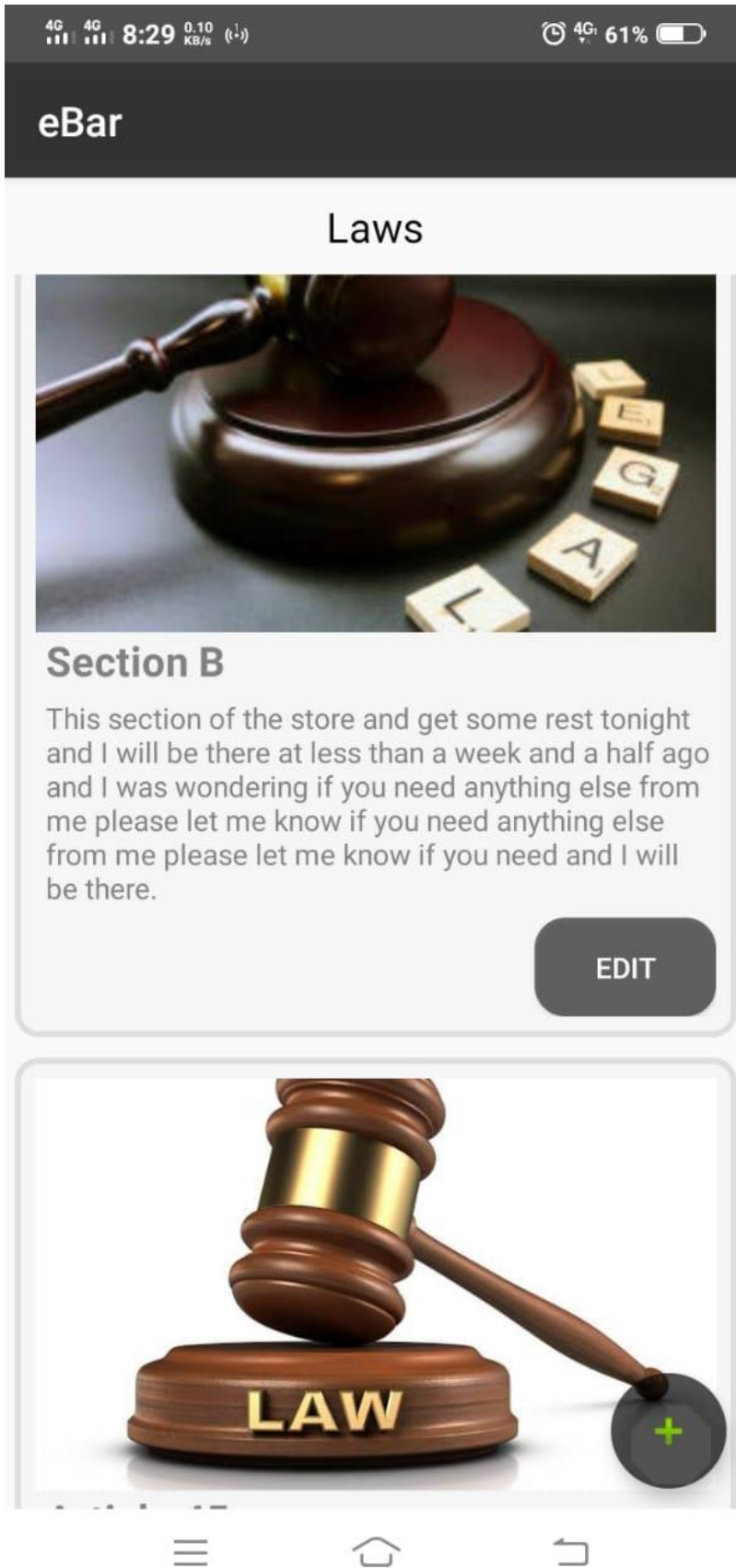


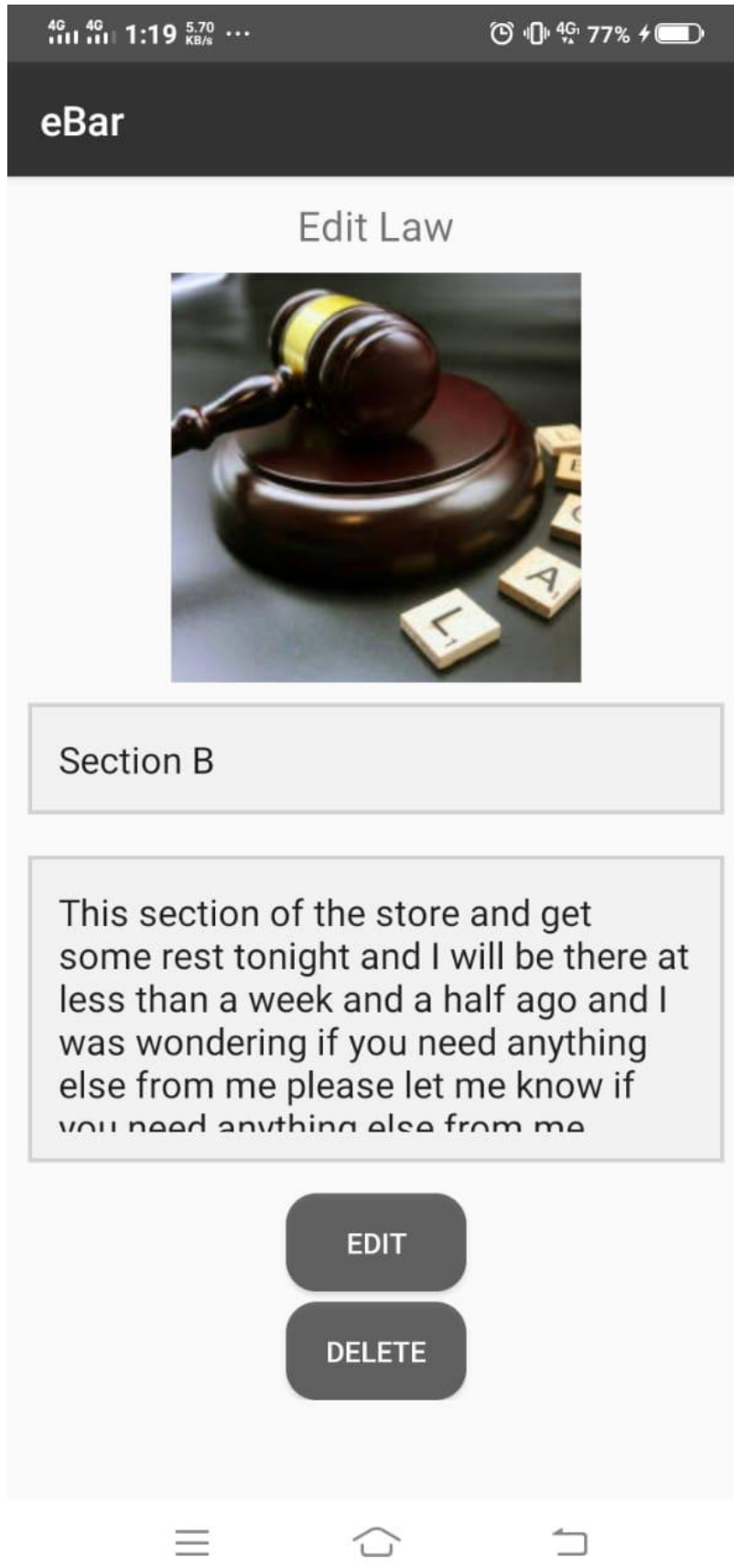


B.1.1. Add laws and news into application

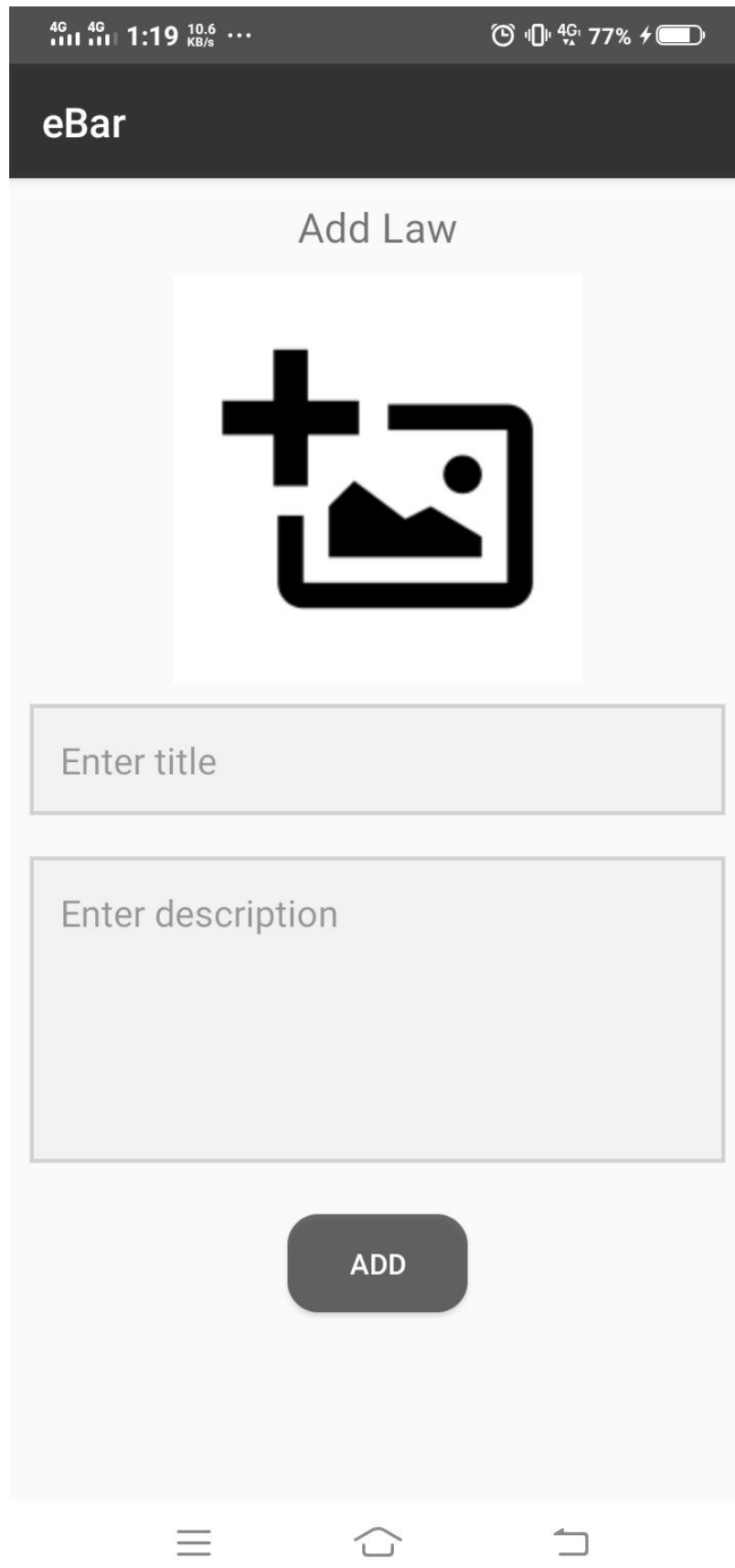
After successfully logging in the system admin can add, update and delete any particular law and news.







Add law screen have three field first one for adding photo, second for title of law and third and last one for adding description or details about particular law.



Same process for adding news.

4G 4G 8:29 0.20 KB/s (1)
4G 61%

eBar

News



Statement About Missing Person

This news is about the same as the one I have is a key to the house and I will get back to you on that one and the other is a key to the house.

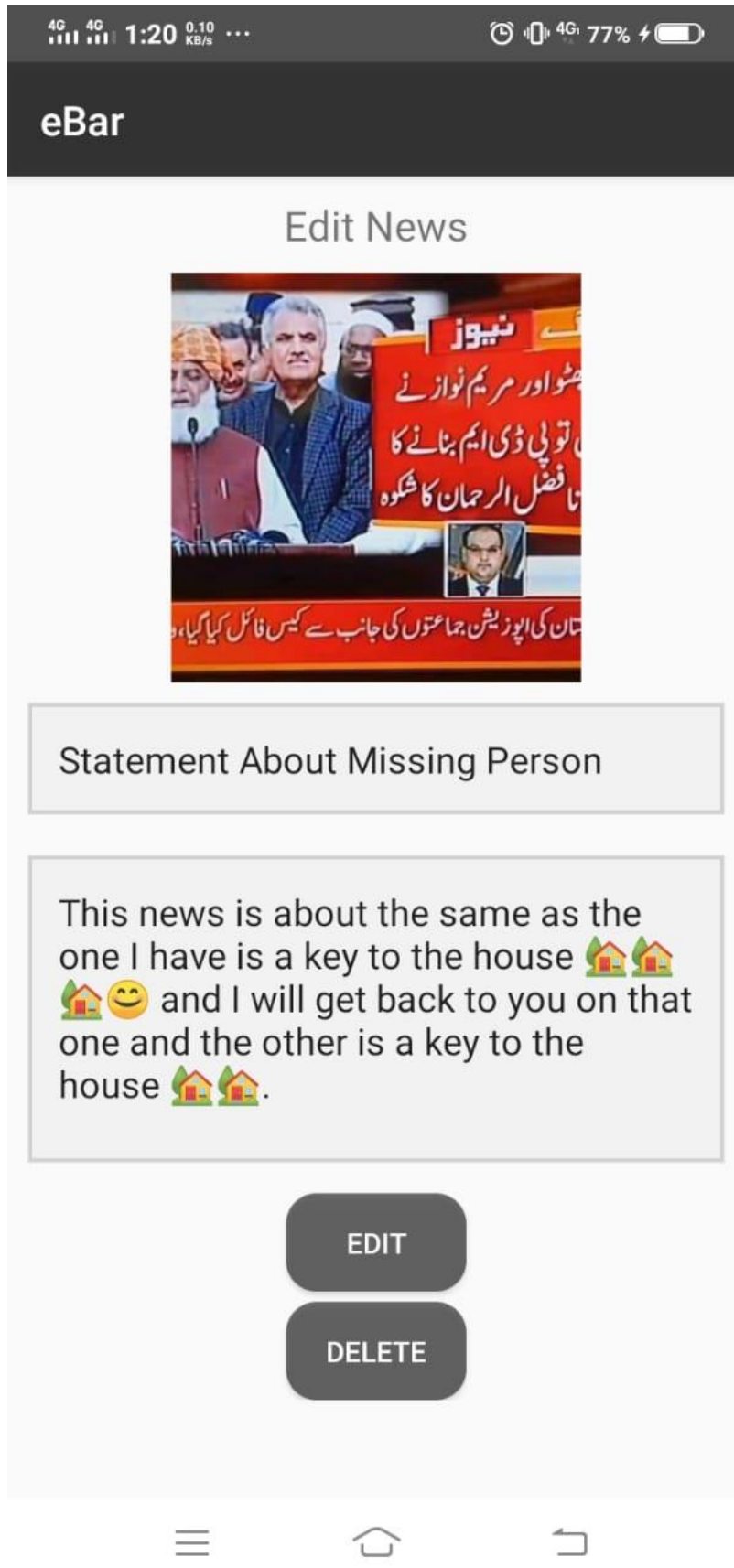
EDIT

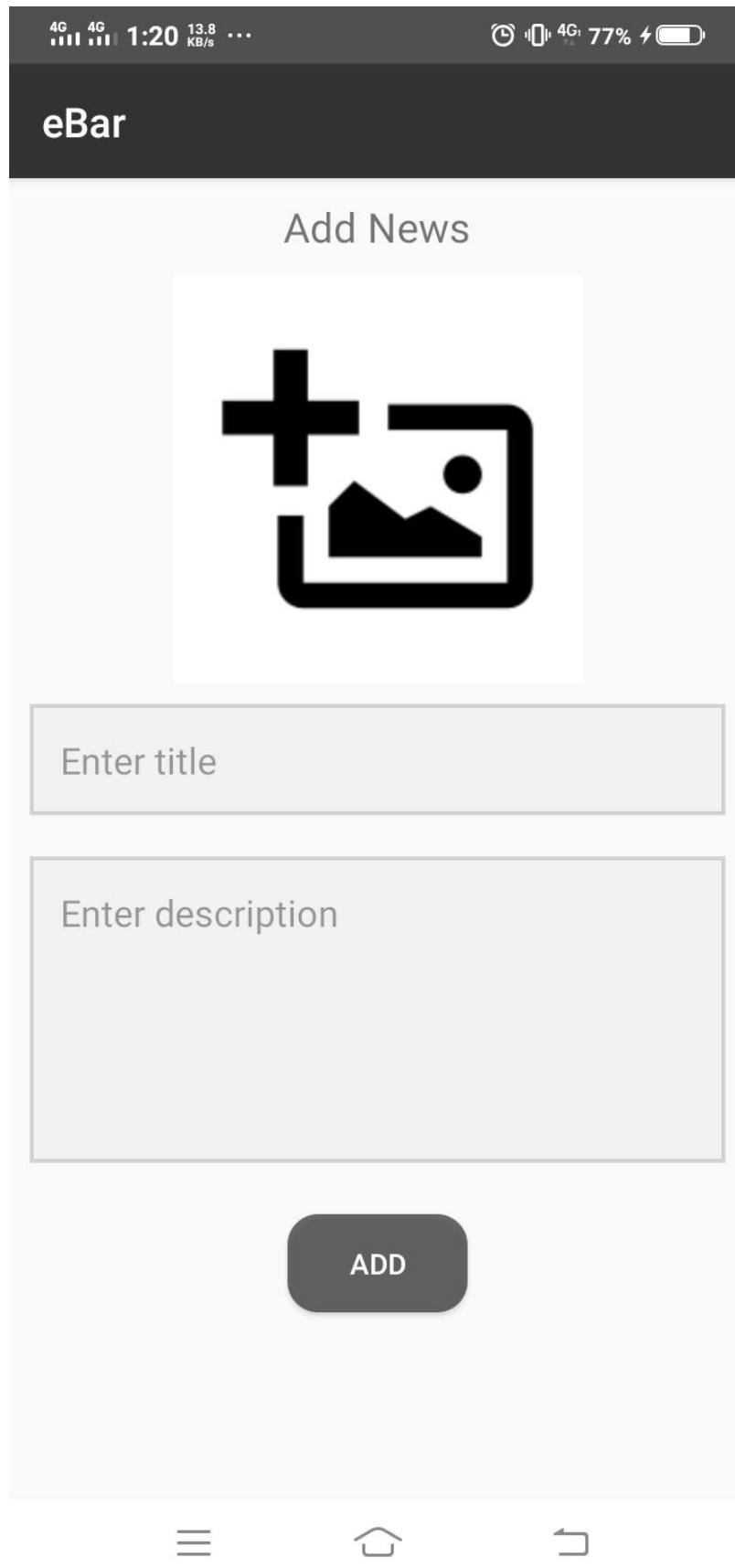


School Will Resume

According to education minister , we have to go to the point where I can get a ride to the airport on Friday and I will be there at less than a week and half ago and I will be there at less than a week and a have a scrum master bedroom and the other is a

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Reference and Bibliography

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