**Legal Adviser**



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**Faculty of Computing**

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**Riphah International University, Islamabad**

Date: 11-01-2024

**Final Approval**

This is to certify that we have read the report submitted by ***Muhammad Ahmad khan (24311)***,***Huzaifa Rafaqat (26028),Haider Nawaz (22954)*** for the partial fulfillment of the requirements for the degree of the Bachelors of Science in Computer Science (BSCS). It is our judgment that this report is of sufficient standard to warrant its acceptance by Riphah \_International University, Islamabad for the degree of Bachelors of Science in Computer Science (BSCS).

**Committee:**

|  |
| --- |
| **1** |
| Syed Sharjeel Gillani (Supervisor) |
| **2** |
| Dr. Musharraf  (Head of Department/chairman) |

**Declaration**

We hereby declare that this document “**Legal Adviser**” neither as a whole nor as a part has been copied Out from any source. It is further declared that we have done this project with the accompanied report entirely on the basis of our personal efforts, under the proficient guidance of our teachers, especially our supervisor ***Sir Sherjeel Ahmad Gilani***. If any part of the system is proved to be copied out from any source or found to be reproduction of any project from anywhere else, we shall stand by the consequences.

**Muhammad Ahmad khan**

**24311**

**Huzaifa Rafaqat**

**26028**

**Muhammad Haider Nawaz**

**22954**

**Dedication**

To the kindest persons, Mother, Brothers, and especially the dearest person, Father who was always our support and. whose prayers brought us up to this level, and our supervisor; the kindest and most dedicated person that it would have been impossible for us to complete or accomplish our goals of the project if he wasn’t there for us.

**Acknowledgement**

First of all, we are obliged to Allah Almighty the Merciful, the Beneficent and the source of all Knowledge, for granting us the courage and knowledge to complete this Project. We want to explicit our sincere way to our assignment supervisor ***Sir Sharjeel Ahmad Gilani***. for his guidance. We additionally take this possibility to thank our mother and father for the unceasing encouragement, assist, attention and reassuring our self-assurance. We also region our feel of gratitude on report to one and all who immediately or in a roundabout way have lent their hand in this assignment. Lastly, we would really like to thank each other Project Team-***Ahmad Khan, Huzaifa Rafaqat, Haider Nawaz*** for caring guide below difficult situations.

**Muhammad Ahmad Khan**

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**Abstract**

Imagine you're facing a legal issue and need help from a lawyer. Finding the right lawyer can be confusing and time-consuming. Legal Adviser is like a helpful friend who connects you with qualified lawyers in Pakistan. It's like having a personal lawyer directory at your fingertips.

With Legal Adviser, you can get quick and easy legal advice from an expert. Just type your question into the platform, and a qualified lawyer will provide a tailored and helpful answer. It's like having a legal assistant right there with you.

Plus, Legal Adviser has a built-in knowledge hub that explains the laws of Pakistan in a way that's easy to understand. No more confusing legal jargon or endless research. You can learn about your rights and responsibilities in a simple and clear way.

So, if you're ever facing a legal issue, don't hesitate to use Legal Adviser. It's the user- friendly way to connect with qualified lawyers in Pakistan and get the legal help you need.

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**Chapter 1**

## Introduction

Legal advisor is a application platform designed to connect or interact layman and the lawyer easily with each other. This platform is allow the layman to send a query and completely understand our problem. As the current E-learning websites or system in Pakistan are insufficient in addressing the understand the difficulties and inquires of layman during online searching, which poses various challenges and constrains.

The **main problem,** people also have some travel and communication problems, and they are also concerned that their lawyers will mislead them. The **most important problem,** some lawyers are not honest with their work, which frustrates the people and causes them to confusion him.

On the other hand, Legal adviser also provides convenience for layman and lawyer. It provides security and efficiency making it easier for layman and lawyer to communicate with each other, layman completely know our problem and know what should I talk about?

### Opportunity and Stakeholders

#### Opportunity:

* + 1. Unawareness of Law: Unfortunately, in Pakistan, many people are unaware about law domain. Whenever they get involved in any legal case, they face many difficulties.
    2. Legal Expert: Some lawyers are not loyal with their profession they irritated the person and miss guide him e.g. money etc.
    3. Basic knowledge: They misguide them and irritate them just to extend their time and plunder some extra money from them.

#### Stakeholders:

In this system, there are three stakeholders.

* + - 1. Layman (Unaware of legal law)
      2. Lawyer (Legal Expert)
      3. Admin (control administrator)
      4. Guest

### Motivations and Challenges

* + 1. **Motivations**

Legal Adviser provides laymen with easy access to information about Pakistani laws, enabling them to understand their legal rights and make informed decisions.

Legal Adviser bridges the gap between laymen and lawyers, making it easier for individuals to seek legal advice and representation. This is particularly beneficial for those in remote areas or who lack the resources to pursue traditional legal channels.

Legal Adviser serves as a valuable resource for laymen seeking to improve their legal literacy. The platform's comprehensive knowledge hub provides easy-to- understand explanations of various legal topics, empowering individuals to navigate legal matters with greater confidence.

* + 1. **Challenges**
       - Building trust between laymen and lawyers
       - Ensuring lawyer expertise
       - Maintaining platform security

### Goals and Objectives

#### Goals:

* The system is beneficial for awaring people about the laws of Pakistan making it easier to understand constitution.
* Rather than scrolling on Google the person can get a quick access to his

/her questions.

* This system is also providing side business to lawyers.

#### Objectives:

* Since the legal system is perceived as complex and difficult to comprehend, laypeople often find themselves intimidated by lawyers and reluctant to seek their guidance.
* Pakistan's constitution is not well known among people.

### Solution Overview:

* Possible Steps to Complete the Project:
* Data Collection and Preprocessing: Please build a detailed collection of sources about Pakistan's constitution, law, and court decisions that could be used for research purposes.
* Natural Language Processing (NLP) Implementation: We need to create NLP models that comprehend user queries and pull out the relevant data for me to provide an answer.
* Machine Learning Model Development: Training models to understand legal context from input queries, then provide advice in a manner similar to humans would.
* Rule-Based System: The task is to come up with a set of rules that can assist us in answering specific legal questions by making use of the relevant legal provisions.
* User Interface Design: Make sure the interface is easy to use and understand so that users can easily input their queries and get the advice they need.
* Validation with Legal Experts: Work with lawyers to ensure that the information provided by the system is correct and legally sound.

### Report Outline

#### Goals:

Please offer detailed legal guidance on any problem that arises.

Can you give me a list of lawyers who are qualified to handle my type of case

#### System:

Data: Legal documents, precedents, expert commentaries. NLP: Comprehend questions, retrieve data, condense it.

ML: What are the applicable legal clauses, And who are some lawyers I should consider

UI: An easy-to-use interface for asking questions and getting suggestions.

#### Validation:

Legal experts confirm accuracy and legality. User testing for usability and effectiveness.

#### Ethics and Privacy:

Secure user data, address potential biases, explain system reasoning.

#### Deployment and Sustainability:

Make system accessible, update it with new legal information, secure funding.

#### Impact:

Increase access to legal information, improve decision-making.

#### Scope:

Ongoing research and development to enhance capabilities and reach.

**Chapter 2** **Literature / Market Survey**

### Chapter 2:

### Literature / Market Survey

### Introduction

In this chapter, we have discussed our background and problem elaboration in detail. In this chapter we had discussed how previous studies showed that a

variety of researchers on Legal Adviser system. Legal adviser system are intelligent algorithms that manages to help the user in finding best lawyer and user completely understand our problem. Because we face big problem that people afraid that some fake lawyers may take his/her advantage ultimately, the insights gained from this study will aid in the development of more effective and personalized Legal adviser system, benefiting side business to lawyers.

### Literature Review/Technologies Overview

Artificial intelligence (AI) is gaining traction in the legal field, helping to simplify procedures, improve efficiency and ease mundane labor. Among other innovations, a recent Australian Supreme Court decision calls for Technology- Assisted Review (TAR) to help resolve delays in court cases. This literature review examines the role of AI in law, with special emphasis on TAR and its applications across different jurisdictions. The review also looks into the difference between what can be appropriately handled by AI and that which needs human judgment, feeling sophisticated reasoning.

Here we enter the Chinese sphere, where AI has actively been introduced into legal procedures. The following case describes the use of Xiao Zhi 3.0 in a Hangzhou court to speed up a trial involving defaulted bank loans. This article highlights the development of software from routine tasks to real-time analysis of case materials. In addition, many different applications in Suzhou are examined. For example, in the area of traffic management, there is an application to resolve traffic accidents. Moreover, there is an application in criminal law called Xiao Baogong Intelligent Sentencing Prediction System to predict sentences for offenders.

The following is discussing about the benefits of introducing AI in the legal system such as time saving and more work done in less time. But experts have raised ethical concerns, and these are acknowledged. One danger in having AI assist with judgment is that those decisions may be perceived as more credible than human judgments. There's also a warning against the fact that just because we have machines does not mean they cannot suffer from various kinds of cognitive biases, and so affect decision-making.

### Summary

Technology-Assisted Review (TAR) This review considers how artificial intelligence is affecting the legal world. It examines how AI can be used in tasks such as sorting documents and legal research, but it says the human factor is needed to decide on more complex issues. A review provided examples from China, where AI has accelerated a case involving defaulted bank loans. It also raises ethical questions about too great a reliance on decisions by AI, and not human judgment. To sum up: while AI is useful in some respects for legal tasks, it cannot substitute entirely human skills; we need to be aware of ethical considerations.

**Chapter 3: Requirement Analysis**

**Chapter 3: Requirement Analysis**

### Introduction

This chapter we have developed our functional requirements for our actors i.e. (Layman, Admin and Lawyer).

The requirements are designed especially for the Legal Adviser system.

**Legal Adviser** is basically a cross (Application) platform designed to connect or interact with Layman and Lawyer easily with each other.

The legal adviser system's user interface will facilitate intuitive interaction. Users can input their queries in natural language, receiving concise, actionable advice in response.

We created our system **use cases** against each functional and created use case diagrams, fully dressed use cases for our actors i.e. (Layman, Admin and Lawyer)

* 1. **Problem Scenarios:**

#### Problem

Laymen and Lawyers Establish a Bond of Trust.

Transparency and Communication: For this reason, it needs to clearly explain legal processes, fees and possible results for users. Understandable language is needed. There's no need for legalese.

Demonstrating Competence: Put up successful past cases, client endorsements and lawyer credentials. Let users independently verify the credentials of lawyers in some other manner.

Addressing Common Concerns: Thus, think before you act to avoid potential issues of affordability and bias or questions about conflict of interest. When possible, offer alternative forms of dispute settlement. User Reviews and Ratings: Establish a mechanism of certified user reviews and ratings on advocates in order to establish trust and responsibility. Promoting Ethical Practices: Emphasize the platform's dedication to a moral code and ethical rules for lawyers.

#### Goals

* The system is beneficial for awaring people about the laws of Pakistan making it easier to understand constitution.
* Rather than scrolling on Google the person can get quick access to his /her questions.
* This system is also providing side business to lawyers.

### Functional Requirement

**FE.3.3.1 Registration**

FR.1 Ensure registration validity by validating first and last names for alphabetical characters, phone number format, and displaying error messages for invalid inputs, proceeding upon successful validation

**FE.3.3.2 Login**

FR.1 Enable phone number-based login with OTP verification for user authentication.

**FE.3.3.3 Access Book**

FR.1 Facilitate book selection and reading functionality within the user interface.

**FE.3.3.4 Access News**

FR.1 Offer a user-friendly news feed interface with accessible read functionality for selected articles

**FE.3.3.5 Manage Chats**

FR.1 Offer users a comprehensive chat management system with features including chat overview, archive, mark as read/unread, delete with confirmation dialogue.

**FE.3.3.6 Update Profile**

FR.1 Enable users to input/update personal information, validating data accuracy and completeness, and confirming successful updates.

**FE.3.3.7 Progress Section**

FR.1 Guide users through a step-by-step profile update process with dynamic checklist completion and confirmation upon successful update.

**FE.3.3.8 Ask Query**

FR.1 Facilitate user-submitted legal queries with lawyer notifications, clear responses, timely user notifications, and query history recording.

**FE.3.3.9 Select Recommendations**

FR.1 Enable users to submit legal queries, generate recommended lawyer lists based on query analysis, allow selection of lawyers, and prompt guest users to register with benefits explanation.

**FE.3.3.10 Provide guidance.**

FR.1 Enhance user query clarity by offering guidance prompts and recommended questions for additional context integration.

**FE.3.3.11 Manage User**

FR.1 Offer admin a user listing page with essential user details and direct management actions like suspend, activate, or delete accounts.

**FE.3.3.12 Track User**

FR.1 Provide admin access to an activity log with detailed user actions and search/filter options for efficient tracking and analysis

**3.4. Non-Functional Requirement**

|  |  |
| --- | --- |
| **ID** | **Requirements** |
| NFR-1.1 | **Scalability:** The system should be scalable to handle large amount of data and traffic. |
| NFR-1.2 | **User privacy:** The system should ensure the privacy of users and their data. |
| NFR-1.4 | **Security:** The system should follow relevant information protection and privateness  policies. |

**Chapter 4: System Design**

**Chapter 4**

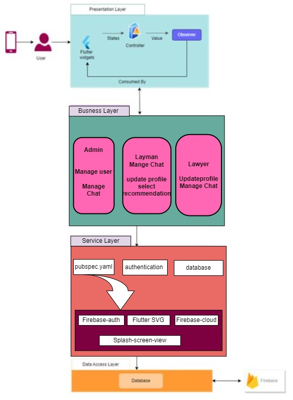
## System Design

### Introduction:

Designing a system for a legal adviser introduction involves creating a platform that connects clients with legal professionals. Clients: Individuals seeking legal advice.

Legal Advisers: Professionals providing legal services. User Registration and Authentication, Clients and legal advisers should be able to register and authenticate themselves securely. **Technology Stack** Frontend Flutter, Backend Server-side logic using a language like Python, Database Firebase. Continuous Improvement, Gather user feedback and iteratively improve the platform and Stay updated with technological advancements

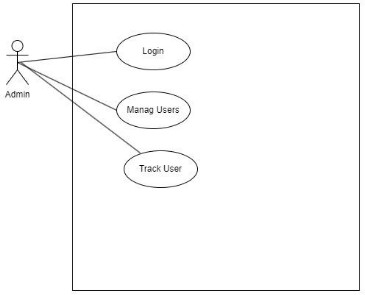
* 1. **Architecture Diagram**

****

**Figure 4 1 Architecture Diagram**

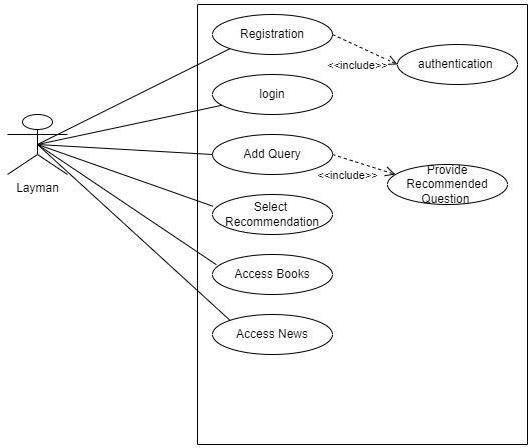
* 1. **Detailed Design**

#### Admin Use Case Diagram



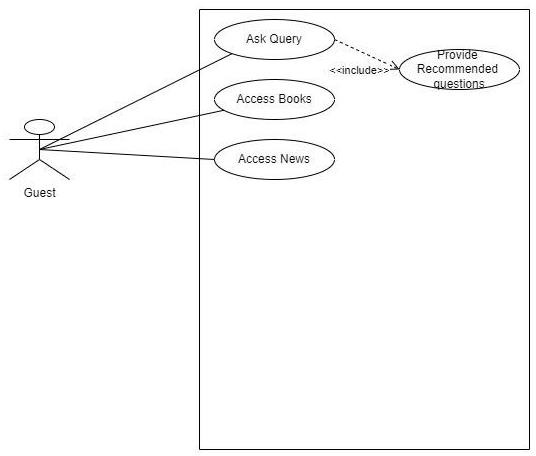
**Figure 4 2 Admin Use case**

* + 1. **Laymen Use Case Diagram**



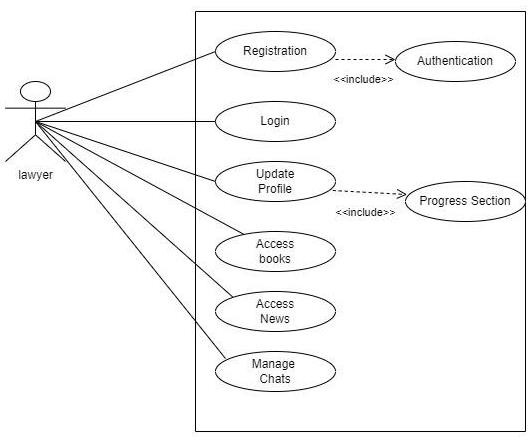
**Figure 4 3 Laymen Use Case**

* + 1. **Guest Use Case Diagram**



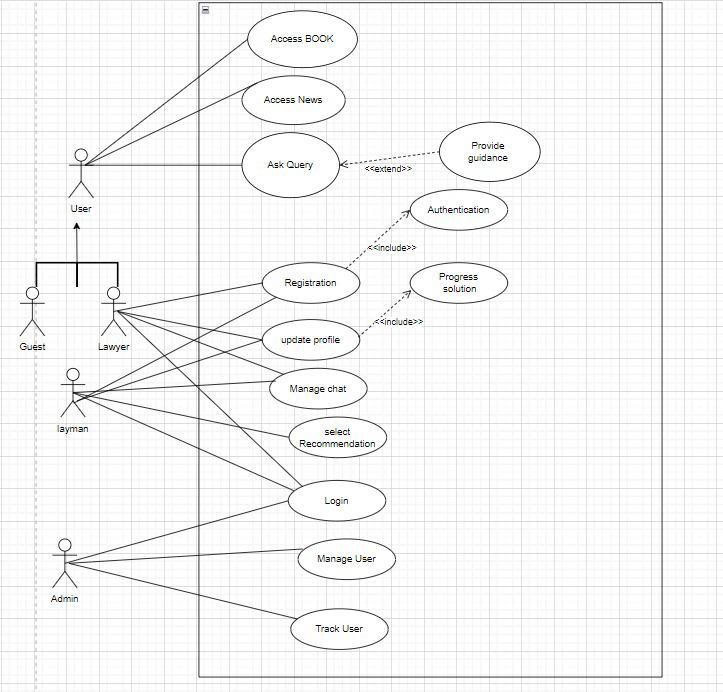
**Figure 4 4 Guest Use Case**

* + 1. **Lawyer Use Case Diagram**



**Figure 4 5 Lawyer Use Case**

* + 1. **Full System Use Case Diagram**



**Figure 4 6 Full system Use Case**

### Fully Dressed Use Cases

* + 1. **UC.01. Registration**

|  |  |
| --- | --- |
| **Section** | **Content / Explanation** |
| Designation | UC\_01 |
| Name | Registration |
| Authors | Chaudhry Huzaifa |
| Priority | High |
| Criticality | High |
| Source | Sherjeet Ahmad Gillani |
| Person responsible | Chaudhry Huzaifa |
| Description | User can create an account on the system by providing the necessary information such as first name, last name and phone number. |
| Actors | Layman, lawyer, admin |
| Pre-conditions | 1. The lawyer, layman, and admin has access to the system. 2. The lawyer, layman, and admin have a stable internet connection. |
| Post-conditions | The account has been successfully created. |
| Result | Registration information is accurately stored in the system. |

|  |  |
| --- | --- |
| Main scenario | 1. User starts the registration process. 2. User enters their first name, last name and phone number. 3. The system sends a code to the provided number for completing the signup process. |
| Alternative scenarios | a. User tries to register with empty fields  1. The system shows an error message and ask user to enter requiredcredentials.  b. If the phone number is invalid  1. The system displays an error message, guiding the user to enter a validnumber.  c. If the password is not within the specified length (i.e. less than eightletters)   1. The system displays an error message. 2. System asks user to enter minimum eight-letter password.   d. First name and last name does not include special characters and numbers. |

* + 1. **UC.02. Login**

|  |  |
| --- | --- |
| **Section** | **Content / Explanation** |
| Designation | UC\_01 |
| Name | Login |
| Authors | Chaudhry Huzaifa |
| Priority | High |
| Criticality | High |

|  |  |
| --- | --- |
| Source | Sherjeet ahmad Gillani |
| Person responsible | Chaudhry Huzaifa |
| Description | User can login an account by providing the necessary information such as user name and password. |
| Actors | Layman, lawyer, admin |
| Pre-conditions | 1. The lawyer, layman, and admin has access to the system. 2. The lawyer, layman, and admin have a stable internet connection. |
| Post-conditions | The account has been successfully login. |
| Result | Login information is accurately stored in the system. |
| Main scenario | 1. User starts the login process. 2. User enters their name and password. 3. user successfully login to the system |
| Alternativ escenarios | a. If the name and password is incorrect   1. The system displays a message that number or password is incorrect 2. System asks user to enter correct details |

* + 1. **UC.03. Access Book**

|  |  |
| --- | --- |
| **Section** | **Content / Explanation** |
| Designation | UC\_01 |
| Name | Registration |
| Authors | Chaudhry Huzaifa |

|  |  |
| --- | --- |
| Priority | low |
| Criticality | low |
| Source | Sherjeet ahmad Gillani |
| Person responsible | Chaudhry Huzaifa |
| Description | User can access the book and view that book. |
| Actors | Layman, lawyer |
| Pre-conditions | 1. The lawyer, layman, and admin has access to the book. 2. The lawyer, layman, and admin read book. |
| Post-conditions | Layman, a lawyer can read the book successfully. |
| Result | Layman, a lawyer can view the book successfully. |
| Main scenario | 1. Layman, a lawyer has access to the book. 2. all information will appear on the top of the page. 3. All users can read and view the book. |
| Alternative scenarios | If the internet connection is not stable.   1. System did not shows any information. 2. System show message to users for poor internet connection. |

* + 1. **UC.04. Access News**

|  |  |
| --- | --- |
| **Section** | **Content / Explanation** |
| Designation | UC\_04 |
| Name | Access News |

|  |  |
| --- | --- |
| Authors | Huzaifa Chaudhary |
| Priority | Medium |
| Criticality | Medium |
| Source | Sherjeet Ahmed Gillani |
| Person responsible | Huzaifa Chaudhary |
| Description | Guest lawyer and registered layman users all can read and view the news. |
| Actors | Layman, Lawyer |
| Pre-conditions | 1. User has access to the system. 2. User has a stable internet connection. |
| Post-conditions | All users has been successfully access the news. |
| Result | User successfully read the new news. |
| Main scenario | 1. All users have access to the System. 2. All users guests,lawyer,and registered users can access the web page . 3. Latest news will appear on the top of the page. 4. All users can read and view the latest news. |
| Alternativ e scenarios | 2a. If the internet connection is not stable.   1. The system did not shows any new news on their feed. 2. System show message to users for poor internet connection. |

* + 1. **UC.05. Add Query**

|  |  |
| --- | --- |
| **Section** | **Content / Explanation** |
| Designation | UC-05 |
| Name | Add Query |

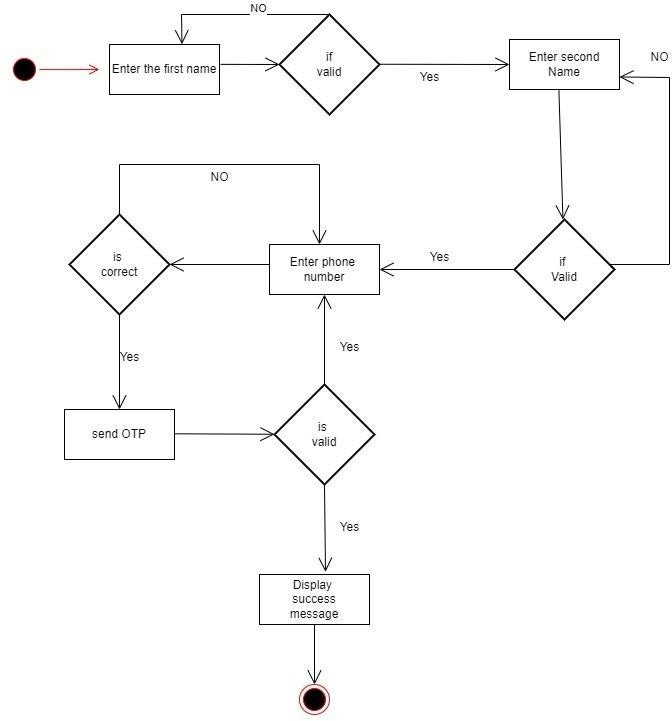
|  |  |
| --- | --- |
| Authors | Huzaifa Chaudhary |
| Priority | High |
| Criticality | High |
| Source | Sherjeet Ahmed Gillani |
| Person responsible | Huzaifa Chaudhary |
| Description | Users can add queries about their concerns in chat box  and system shows solution to their queries. |
| Actors | Layman, Lawyer |
| Pre-conditions | 1. Registered users has a stable internet connection 2. User account is already created |
| Post-conditions | Registered users can get their queries solution successfully. |
| Result | Registered users can get their queries solution successfully. |
| Main scenario | 1. Users can registered themselves on a system . 2. Registered users have access to the system. 3. Registered users can add query in a chat box. 4. System will show answers about their query. |
| Alternativ escenarios | 3a. Invalid query   1. System did not get the user query. 2. System ask users to reenter query. 3. System ask user to explain it more. |

* + 1. **UC.06 Provide recommendation questions**

|  |  |
| --- | --- |
| **Section** | **Content / Explanation** |
| Designation | UC-06 |
| Name | Provide recommendation questions |

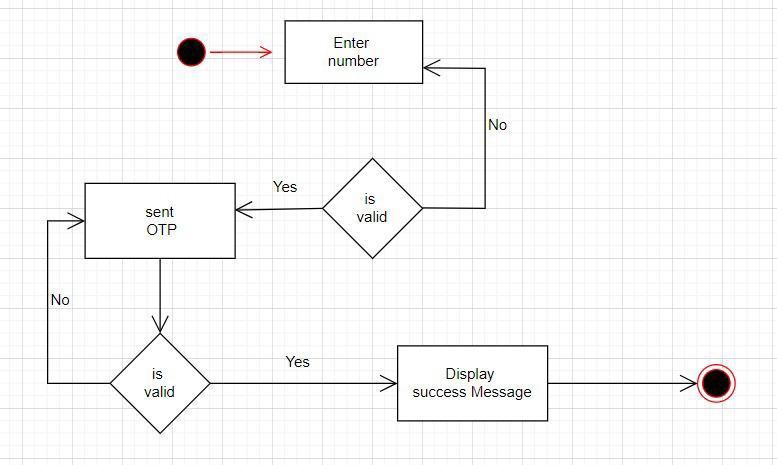
|  |  |
| --- | --- |
| Authors | Huzaifa Chaudhary |
| Priority | High |
| Criticality | High |
| Source | Sherjeet Ahmed Gillani |
| Person responsible | Huzaifa Chaudhary |
| Description | Users can add queries about their concerns in chat box  and system shows recommendation questions to the users. |
| Actors | Layman,Lawyer |
| Pre-conditions | 1. Registered users has a stable internet connection 2. User account is already created |
| Post-conditions | Registered users can get their queries related recommendation  questions successfully. |
| Result | Registered users can get recommendation questions successfully. |
| Main scenario | 1. Users can registered themselves on a system . 2. Registered users have access to the system. 3. Registered users can add query in a chat box. 4. System will show recommendation questions on a chat box. 5. User can add question if its related to their query. |
| Alternativ escenarios | 1. System did not show to the users recommended questions. |

* 1. **Activity Diagram:**
     1. **Laymen and Lawyer Registration Activity Diagram**



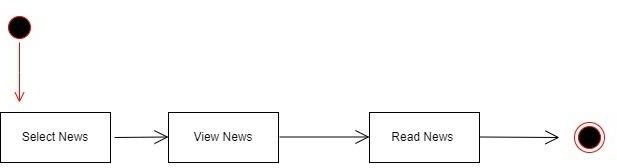
**Figure 4 7 Laymen and Lawyer Registration**

* + 1. **Laymen and Lawyer Login Activity Diagram**



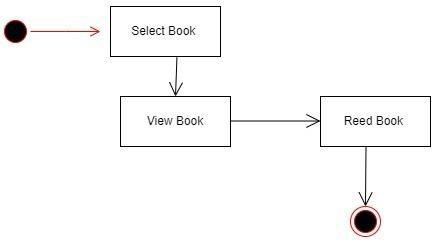
**Figure 4 8 Laymen and Lawyer Login**

* + 1. **Laymen, Guest and Lawyer Access News Activity Diagram**



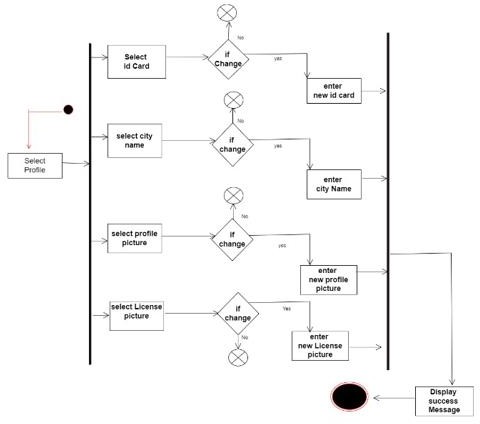
**Figure 4 9 Laymen and Lawyer Access News**

* + 1. **Laymen, Guest and Lawyer Access Book Activity Diagram**



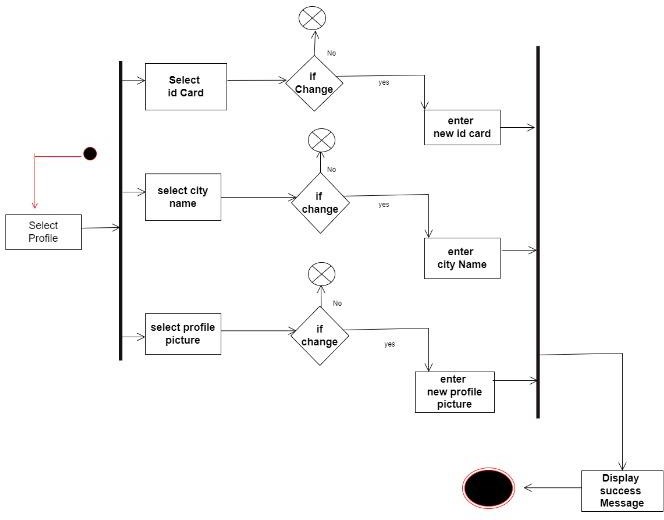
**Figure 4 10 Laymen and Lawyer Access Book**

* + 1. **Lawyer Update Profile Activity Diagram**



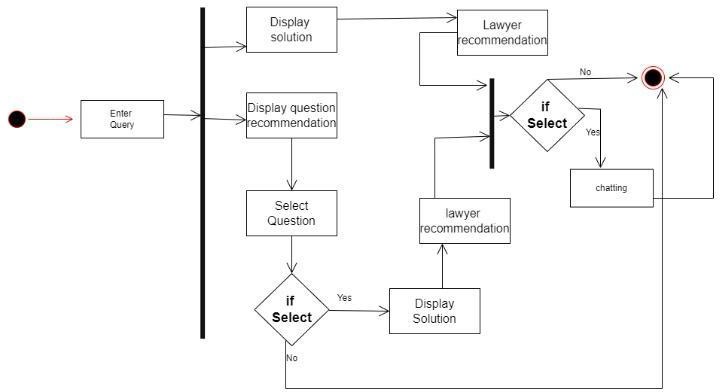
**Figure 4 11 Lawyer Update Profile**

* + 1. **Laymen Update Profile Activity Diagram**



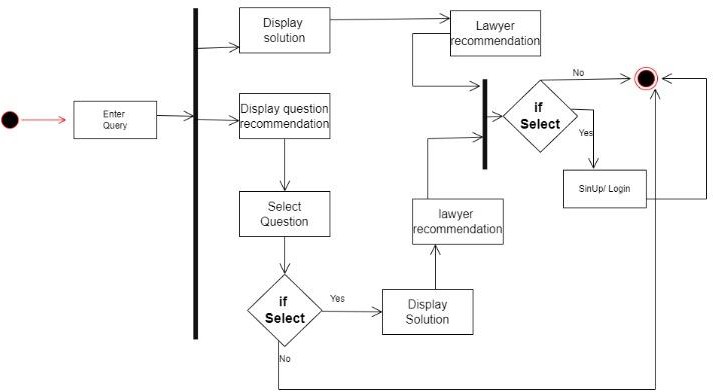
**Figure 4** Error! No text of specified style in document.**-6 Laymen Update Profile**

* + 1. **Laymen Add Query Activity Diagram**



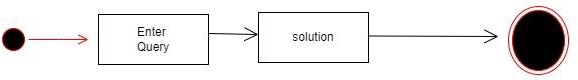
**Figure 4 13 Laymen Add Query**

* + 1. **Guest Add Query Activity Diagram**



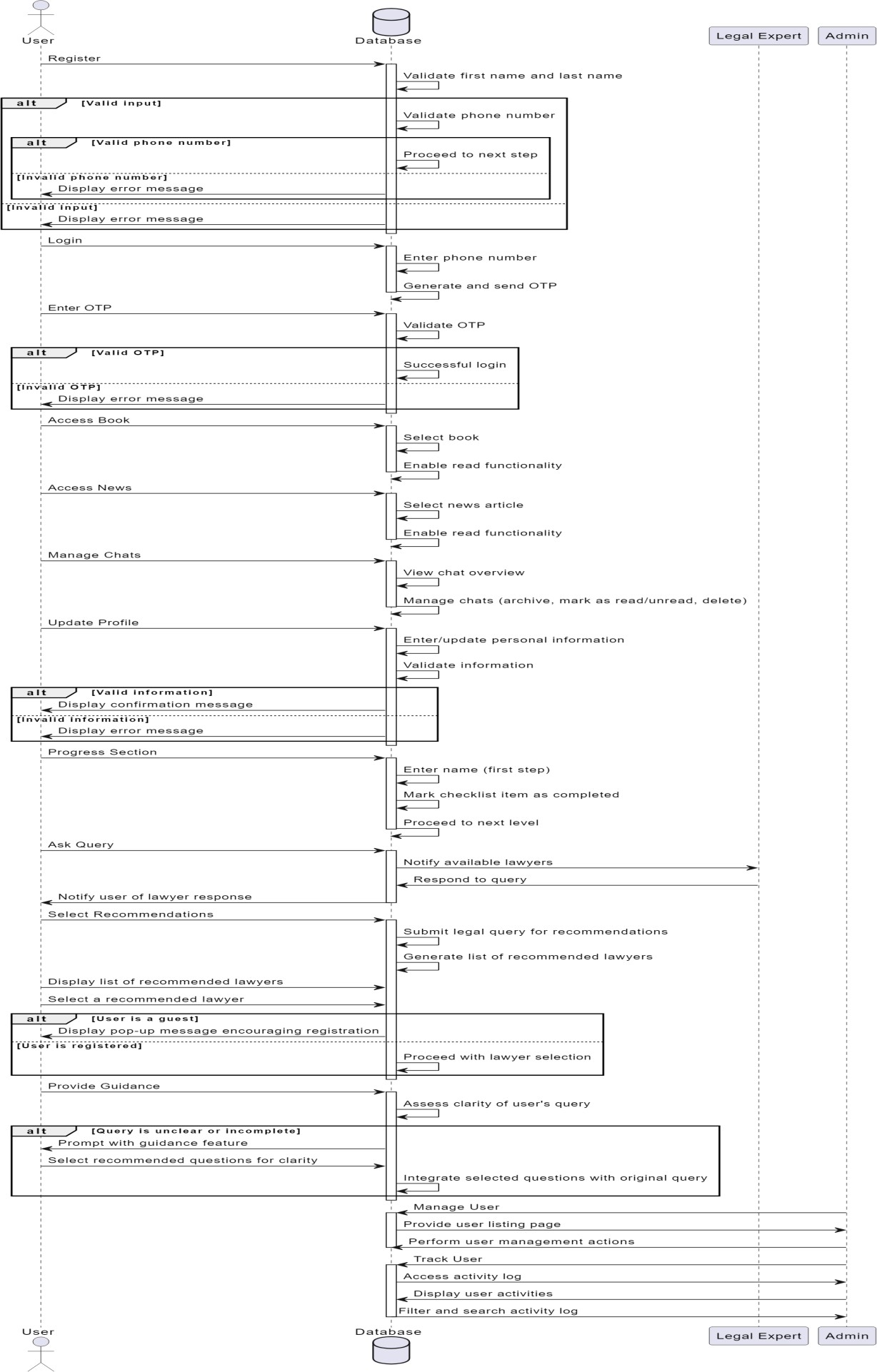
**Figure 4 14 Guest Add Query**

* + 1. **Layer Add Query Activity Diagram**



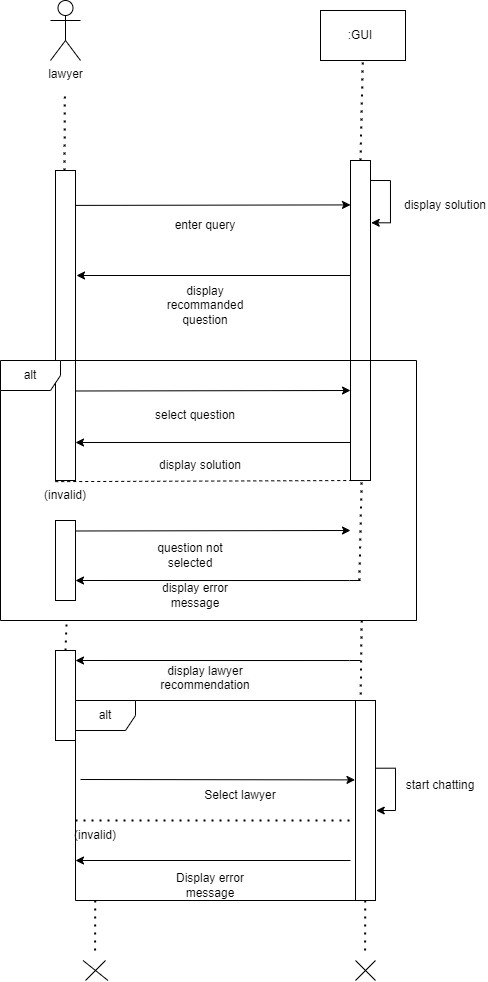
**Figure 4 15 Layer Add Query**

* 1. **Sequence Diagram:**
     1. **Full System Sequence Diagram**



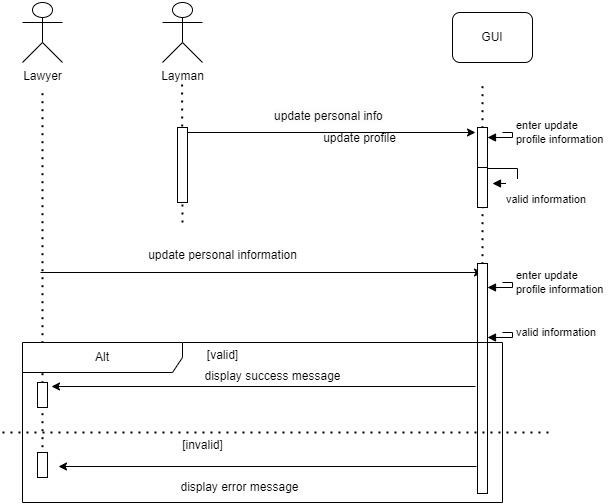
**Figure 4 16 Full System Sequence Diagram**

#### Add Query



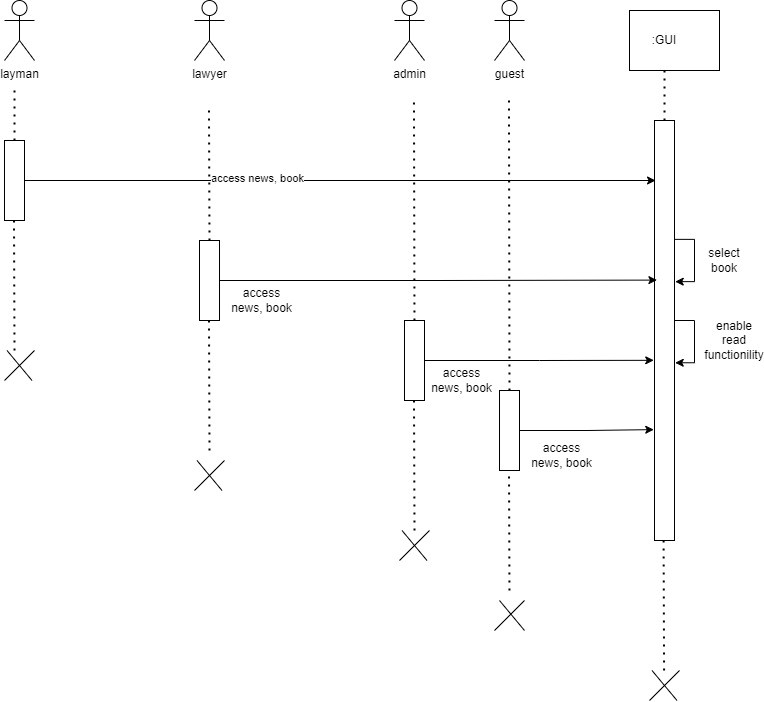
**Figure 4 17 Add Query**

1. **Update Profile:**



**Figure 4 18 Update Profile**

1. **Access news and Book**



**Figure 4 19 Access news and books**

# Chapter 5:

# Implementation

**Chapter 5**

* 1. **Endeavor**
     1. **Team**
        + Huzaifa Rafaqat
        + Muhammad Ahmad khan
        + Muhammad Haider Nawaz

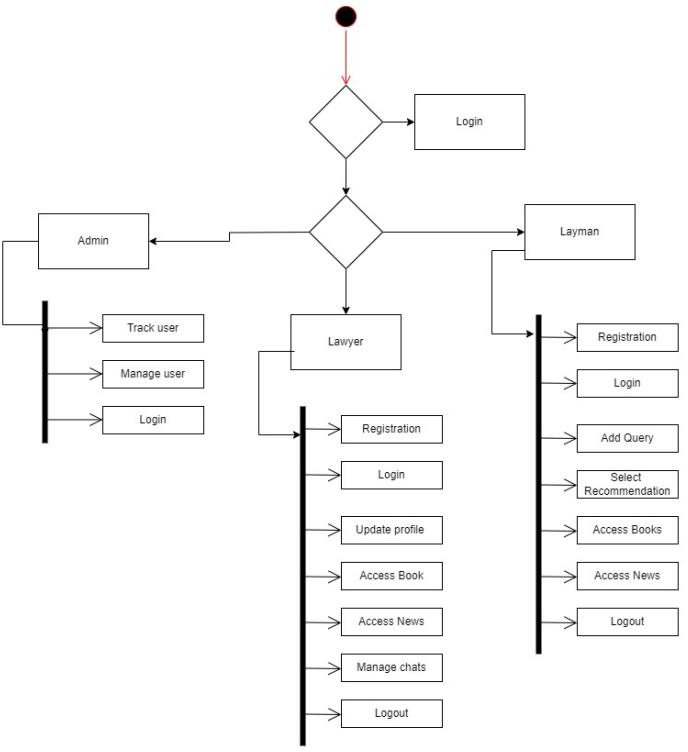
**Work Breakdown Structure**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **WBS #** | **WBS Deliverable** | **Supervisor approved** | **Activity to Complete the Deliverable** | **Number Of days** | **Team Member** |
| **#1** | Feasibility Study | yes | Research Work Performance Study | 2 Weeks | Haider, Ahmad and Huzaifa |
| **#2** | Front End Development  +  Lawyer Meetup  +  Work on template 4 | No(move react to  flutter). | Choosing Front End Technology Working on Framework and Lawyer meetup. | 2 Weeks | Haider, Ahmad and Huzaifa |
| **#3** | Front End  Development | yes | Work on the  Flutter | 3 Weeks | Haider,  Ahmad and |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | +  Lawyer Meetup  +  Data Collection |  | framework and clear the idea and meetup with different lawyer |  | Huzaifa |
| #4 | Enhancement in Architecture  +  Decided the Domain  +  Work on NLP | yes | Decide the domain  And Complete the Architecture | 2 weeks | Haider, Ahmad and Huzaifa |
| #5 | Complex Computational problem  +  Flowchart + Architecture  +  Specific domain data | yes | 50% complete the complex problem and  complete the flowchart and Screen. | 3 weeks | Haider, Ahmad and Huzaifa |
| #6 | Figma  +  documentation  +  Model study | yes | Complete the screen and data collection.  Not decision which model is best. | 1 weeks | Haider, Ahmad and Huzaifa |
| #7 | Front-end development  +  Working on model  +  documentation | yes | Complete 4 screens, Documentation and decide the model gpt-2 for NLP | 1 week | Haider, Ahmad and Huzaifa |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| #8 | Complete frond-end  +  Working on template 7 | yes | Complete the 70 % front-end Screen | 1 week | Haider and Huzaifa |
| #9 | 1 module complete  +  Complete the template 7 | yes | Complete the front-end and complete 1 module.  Complete template 7 | 1 week | Haider, Ahmad and Huzaifa |

* 1. **Flow control**



**Figure 4 20 Flow Diagram**

* 1. **List Libraries / Components / Web Services Flutter**

Flutter is developed by google. It is an open-source UI software. It creates a single codebase cross- platform app for google, window, Linux, macOS and web.

**GPT-2**

* **Pre-train model**
* **Rule Based Data Set**
  1. **Implementation**

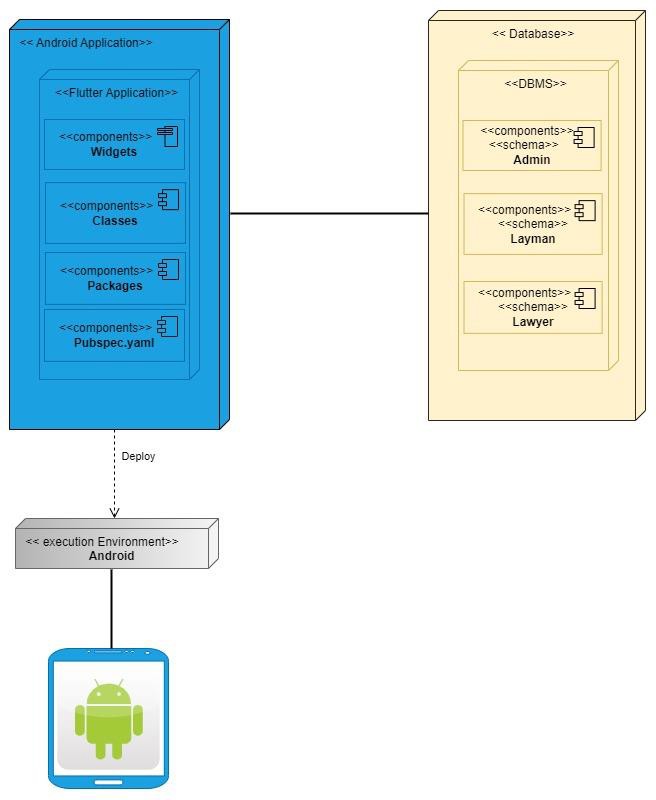
List Development Tools & Technologies

* Flutter
* Python
* VS code
* Collab
* Git Hub
* MS Word
  1. **List Best Practices / Coding Standards**
* Naming Convention
* Avoiding Coded Literals
* Avoid repetition of code
* Multiple widgets in one dart file
* Avoiding Deep Nesting

**5.5 Software development process**

We chose the Agile model for our project because it's like a building with blocks. It is great for projects that might change or grow as we go along. With Agile, we get feedback, and quickly make things better. It helps us talk and work well together as a team, making our project more likely to succeed.

**5.6 Deployment Diagram**



**Figure 4 21 Deployment Diagram**

* 1. **Testing and Evaluation**
     1. **Introduction**
* **Black Box Test**
  + 1. **List of Test Scenarios Test case Username**

**T.C.01. Registration**

**Test Case#: TC\_1**

**System: Legal Assistance**

**Test Case Name: Check Registration Validation**

**Subsystem: Registration**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Test Case Id** | **Test Case**  **Description** | **Test Steps** | **Test data** | **Expected**  **Result** | **Actual**  **Result** | **Pass/Fail** |
| TC-01 | Check valid | 1. Open the | First Name: | First Name |  |  |
|  | User Name | registration | “Huzaifa” | and Last |
|  | (i.e. First | form and | Last Name: | Name are |
|  | Name and | start process. | “Rafaqat” | valid and |
|  | Last Name) | 2. Enter |  | meets the |
|  |  | Valid user |  | required |
|  |  | first name |  | criteria |
|  |  | and last name |  |  |
|  |  | 3. Submit |  |  |
|  |  | registration |  |  |
|  |  | form |  |  |
|  |  | 4. Verify |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | successful  registration. |  |  |  |  |
| TC-02 | Check | 1. Open the | First Name: | Error |  |  |
|  | invalid First | registration | 123 | message is |
|  | Name | form and |  | displayed |
|  |  | start process. |  | “First Name |
|  |  | 2. Enter |  | should be |
|  |  | invalid First |  | consists of |
|  |  | Name |  | alphabets” |
|  |  | 3. Submit |  |  |
|  |  | registration |  |  |
|  |  | form |  |  |
|  |  | 4. Verify |  |  |
|  |  | error |  |  |
|  |  | message. |  |  |
| TC-03 | Check | 1. Open the | First Name: | Error |  |  |
|  | invalid Last | registration | Huzaifa | message is |
|  | Name | form and | Last Name: | displayed |
|  |  | start process. | ## | “Last Name |
|  |  | 2. Enter |  | should be |
|  |  | invalid Last |  | consists of |
|  |  | Name |  | alphabets” |
|  |  | 3. Submit |  |  |
|  |  | registration |  |  |
|  |  | form |  |  |
|  |  | 4. Verify |  |  |
|  |  | error |  |  |
|  |  | message. |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| TC-04 | Check valid Number | 1. Open the registration form and start process. 2. Enter valid email. 3. Submit registration form 4. Verify   error | Number: 023123123123 | Error Message is displayed “number must be 11 digits” |  |  |
| TC-05 | Check Valid number | 1. Open the registration form and start process. 2. Enter valid number. 3. Submit registration form 4. Verify   successfully login | Number: 03027157350 | Number are valid |  |  |
| TC-07 | Check invalid length | 1. Open the registration form and start process. 2. Enter invalid password   (i.e. invalid length)   1. Submit | Password: Ara@12 | Error message displayed: “Invalid Password. Password length should be between 8  to 15  characters. |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | registration form  4. Verify  error message |  |  |  |  |
| TC-08 | Check special characters missing | 1. Open the registration form and start process. 2. Enter invalid password   (i.e. missing characters)   1. Submit registration form 2. Verify error   message. | Password: Ara12345 | Error message displayed: “Invalid password format.  Password should be  consists of special  characters.” |  |  |
| TC-09 | Check alphabets are missing | 1. Open the registration form and start process. 2. Enter invalid password (i.e. missing alphabets) 3. Submit registration form 4. Verify | Password: @1234567 | Error message displayed: “Invalid password format.  Password should be  consists of alphabets.” |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | error  message |  |  |  |  |