

**CEBU INSTITUTE OF TECHNOLOGY
UNIVERSITY**

COLLEGE OF COMPUTER STUDIES

Software Requirements Specifications

for

ALLY: Leveraging Digital Platforms to Enhance Access to Legal Aid

Change History

Authors	Date	Description of Version	Version
Agramon, Vicci Louise Enriquez, Piolo Frances L. Largoza, Darwin Darryl Jean Malagapo, Nathan Rener S. Pangalay, Jerjen Res T.	March 22, 2025	Initial Draft	1.0
Enriquez, Piolo Frances L.	May 12, 2025	Revisions	2.0

Table of Contents

Change History	2
Table of Contents.....	3
1. Introduction.....	4
1.1. Purpose.....	4
1.2. Scope.....	4
1.3. Definitions, Acronyms and Abbreviations	7
1.4. References.....	7
2. Overall Description.....	9
2.1. Product perspective.....	9
2.2. User characteristics.....	11
2.4. Constraints.....	12
2.5. Assumptions and dependencies	13
3. Specific Requirements.....	15
3.1. External interface requirements.....	15
3.1.1. <i>Hardware interfaces</i>	15
3.1.2. <i>Software interfaces</i>	15
3.1.3. <i>Communications interfaces</i>	15
3.2. Functional requirements.....	16
Module 1	16
Module 2	25
3.4. Non-functional requirements	49
Performance	49
Security.....	49
Reliability.....	49

1. Introduction

1.1. Purpose

ALLY is a digital legal platform designed to facilitate engagement, case-matching, and preliminary consultations between clients and legal professionals. This document provides a detailed explanation of the system's functionality, purpose, and its role in mediating interactions between lawyers and clients. It is intended to serve as a comprehensive guide for the following stakeholders:

- Stakeholders: Partners and investors involved in the development and deployment of the software.
- Law Firms and Legal Practitioners: Primary users of the system who will leverage its features to connect with clients and manage cases.
- Engineering Team: Developers responsible for implementing the system's functionalities based on this document.
- Users: Your everyday people that want to know about certain legal processes and laws.
- QA Test Teams: Testers who will validate each function outlined in this document to ensure system reliability and performance.

1.2. Scope

The proposed system, ALLY, is designed to bridge the gap between potential clients and legal professionals by providing a digital platform that simplifies the process of finding, consulting, and collaborating with lawyers. The system aims to make legal services more accessible, efficient, and secure. Below are the key capabilities of the software:

Client-Lawyer Matching

- An AI-powered matching system connects clients with the most suitable legal professionals based on their legal needs, location, and case type.
- Lawyers can manage their profiles, expertise, and availability through a dedicated dashboard, ensuring accurate and up-to-date information for matching.

Virtual Organization of Legal Processes

- Clients can securely upload and manage legal documents, enabling lawyers to access case files remotely.
- A centralized document repository ensures all relevant information is stored in one location, reducing the need for physical paperwork and improving efficiency.

Preliminary AI consultation

- The AI-powered preliminary legal consultation analyzes case details by comparing them to past cases, assessing the likelihood of legal action, and estimating potential success rates based on similar case outcomes.
- It provides users with insights on whether pursuing legal action is advisable and suggests possible legal strategies. By leveraging data patterns and legal trends, the system offers an informed starting point before formal legal consultation.

On-the-Spot Online Consultations

- A temporary messaging system allows clients to seek immediate legal advice without lengthy appointment scheduling.
- Conversations are designed to be temporary, ensuring privacy and security by not retaining long-term communication history.

Case Tracking and Updates

- Clients receive automated email updates about the progress of their legal matters, notifying them of important developments or required actions.
- A unique case tracking ID is assigned to each case, enabling clients to independently check their case status through the platform.

Educational Resources

- A comprehensive **library** of legal resources, including FAQs, templates, and self-help guides, is available to educate users about their rights and legal processes.
- Resources are accessible offline, ensuring availability even without an internet connection.

Security and Privacy

- End-to-end encryption ensures the confidentiality of all user data and communications.
- Multi-factor authentication (MFA) and secure login mechanisms protect user accounts from unauthorized access.

Constraints and Exclusions

Functional Limitations

- The system does not replace in-depth legal representation or formal court proceedings. It serves as a tool to facilitate initial legal consultations and case management.
- The temporary messaging system does not store long-term communication history for anonymity and privacy. Users must document key details externally if needed.

Dependency on User Input

- The effectiveness of the lawyer-client matching system depends on the accuracy of client-provided information (e.g., legal issue, location, urgency).
- Lawyer availability may affect response times, and the system cannot guarantee immediate assistance in all cases.

Technical Constraints

- The platform relies on internet connectivity for most functionalities. Offline access is limited to specific features like educational resources.
- The system's performance may be affected by high user traffic or server load, requiring scalable infrastructure to handle peak demand.

Budget and Timeline

- Development and maintenance costs may limit the scope of advanced features, such as integrating additional AI capabilities or expanding the legal resource database.
- The project timeline may restrict the ability to implement all desired features in the initial release, requiring phased development.

Legal and Regulatory Constraints

- The platform must comply with data privacy regulations (e.g., GDPR, CCPA), which may limit data storage and retention practices.
- Adherence to legal practice regulations and ethics codes is mandatory to ensure the system operates within the bounds of the law.

1.3. Definitions, Acronyms and Abbreviations

1. Ally - Anonymous Legal Liaison for You
2. Ally - A software system that facilitates engagement, case-matching, and preliminary legal consultation to clients.
3. A.I - Artificial Intelligence
4. A.I (Artificial Intelligence) - Technology that allows computers to do tasks that usually needs human intervention/
5. Database – A structured collection of data stored electronically.
6. Spring boot – A framework that is highly suited for backend development and uses Java as its native language
7. SQL (Structured Query Language) - A language used to manipulate and control data.
8. SQLite - lightweight, serverless, self-contained relational database management system (RDBMS).
9. Backend – server-side of a software that handles system functionality.
10. Frontend – Visual aspect of a software that provides the UI/UX design of the system. What the users see and interact with.

1.4. References

Microsoft. (2021). *Best Practices for User Authentication and Authorization*. Retrieved from <https://docs.microsoft.com>

Okta. (2021). *Identity and Access Management (IAM) Solutions*. Retrieved from <https://www.okta.com>

Harvard Law School. (2021). *Legal Information Institute (LII)*. Retrieved from <https://www.law.cornell.edu>

World Legal Information Institute (WorldLII). (2021). *Global Legal Resources*. Retrieved from <https://www.worldlii.org>

Clio. (2021). *Legal Case Management Software Best Practices*. Retrieved from <https://www.clio.com>

American Bar Association (ABA). (2020). *Guide to Legal Practice Management Software*. Retrieved from <https://www.americanbar.org>

Signal. (2021). *End-to-End Encryption for Secure Messaging*. Retrieved from <https://signal.org>

Slack. (2021). *Secure File Sharing and Collaboration*. Retrieved from <https://slack.com>

IBM. (2021). *AI-Powered Matching Algorithms*. Retrieved from <https://www.ibm.com>

UpCounsel. (2021). *Legal Marketplace Platforms*. Retrieved from <https://www.upcounsel.com>

Google Analytics. (2021). *User Activity Monitoring and Reporting*. Retrieved from <https://analytics.google.com>

Tableau. (2021). *Data Visualization and Reporting Tools*. Retrieved from <https://www.tableau.com>

2. Overall Description

2.1. Product perspective

ALLY is an innovative digital platform designed to bridge the gap in accessible legal services. As a standalone product, it operates within the broader legal ecosystem, providing a secure and user-friendly environment for accessing legal resources, connecting with professionals, and managing legal matters efficiently. While independent, ALLY integrates with external systems like secure authentication services and cloud databases to enhance access to justice. It complements traditional legal aid organizations and court systems, addressing barriers such as cost, complexity, and privacy concerns that often prevent individuals from seeking legal assistance.

Technologically, ALLY is a mobile application supported by a robust backend, leveraging encryption for confidentiality, AI for client-lawyer matching, and user-centered design for accessibility. Designed for scalability, it accommodates future expansion without compromising performance. Unlike general legal websites or traditional aid offices, ALLY prioritizes anonymity, security, and user experience, offering a hybrid model that combines digital convenience with personalized assistance. By integrating advanced technology with a focus on user needs, ALLY represents a significant step toward equitable and accessible legal aid.

Modular Decomposition of Components:

Module 1: User Management System

Transaction 1.1: Register Client

Transaction 1.2: Register Lawyer

Transaction 1.3: Verify Lawyer

Transaction 1.4: Login

Transaction 1.5: Update Profile

Module 2: Anonymous – ALLY Consultation

Transaction 2.1: Submit Legal Query

Transaction 2.2: Receive AI Response

Transaction 2.3: Log Interaction

Module 3: Lawyer Matching and Selection

Transaction 3.1: Search Lawyers

Transaction 3.2: View Lawyer Profile

Transaction 3.3: Match Via AI

Module 4: Document Submission (Registered Clients)

Transaction 4.1: Upload Document

Transaction 4.2: View Document List

Module 5: Appointment Scheduling

Transaction 5.1: Book Appointment

Transaction 5.2: View/Edit Appointment

Transaction 5.3: Calendar Sync

Module 6: Messaging System

Transaction 6.1: Send and Receive Message

Transaction 6.2: Load History Message

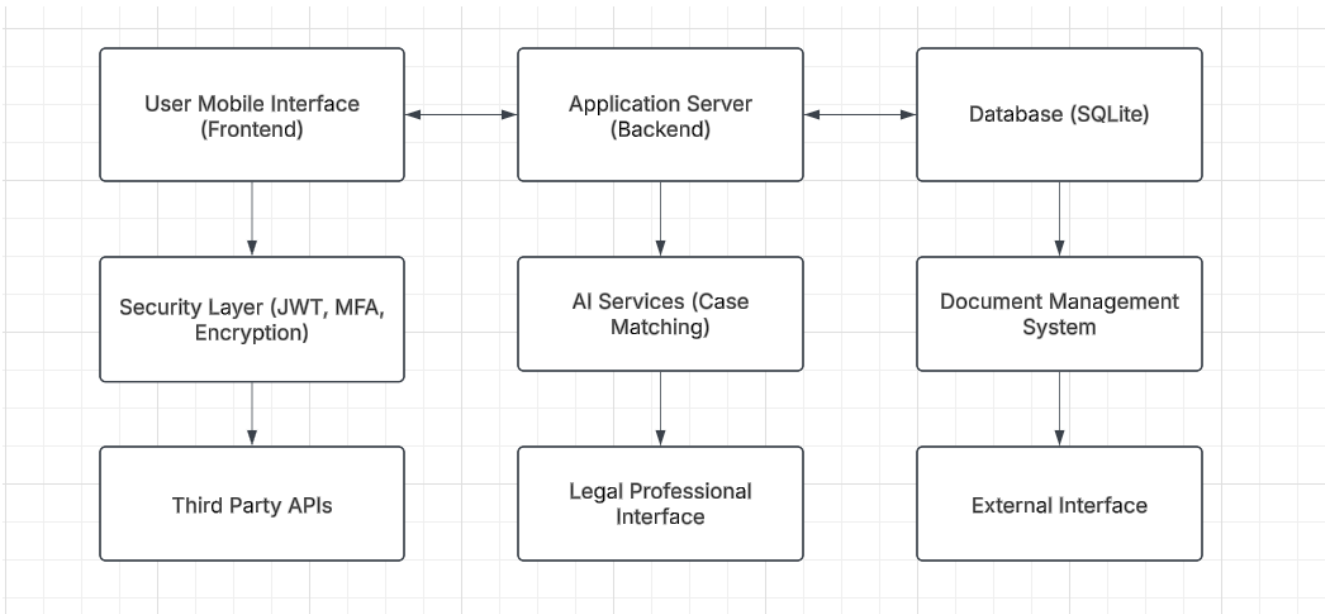
Module 7: Reports and Analytics

Transaction 7.1: Generate Report

Transaction 7.2: Apply Report Filters

Transaction 7.3: Forecast Trends

Block Diagram showing the components of the system:



2.2. User characteristics

Clients

- Role: Individuals seeking legal assistance
- Privileges: Can create accounts, access educational resources, submit legal inquiries, upload documents, communicate with matched lawyers, and track case progress
- Characteristics: May have limited legal knowledge, varying technical proficiency, and potential privacy concerns

Legal Professionals

- Role: Lawyers and legal advisors providing legal services
- Privileges: Can create professional profiles, manage availability, review and accept case matches, communicate with clients, access case documents, and provide legal advice
- Characteristics: Have legal expertise but varying levels of technological proficiency

System Administrators

- Role: Technical staff managing the platform
- Privileges: Can manage user accounts, monitor system performance, generate reports, update educational resources, and maintain security protocols
- Characteristics: Technical expertise with understanding of legal processes

Content Managers

- Role: Staff responsible for educational content
- Privileges: Can create, update, and manage legal resources, FAQs, and templates
- Characteristics: Combined legal and content creation expertise

Anonymized Users

- Role: Users requiring heightened privacy
- Privileges: Can access all client features with enhanced anonymity protections
- Characteristics: Particularly concerned with privacy and confidentiality

2.4. Constraints

Regulatory Policies

- Compliance with data privacy laws (e.g., Data Privacy Act)
- Adherence to legal practice regulations and ethics codes
- Compliance with digital security standards for sensitive information

Hardware Limitations

- Mobile application must function on devices with limited processing power
- System must accommodate varying internet connectivity speeds and reliability
- Backend servers must handle peak load periods without performance degradation

Interface Requirements

- Integration with existing document management systems
- Compatibility with common file formats for legal documents
- API compatibility for potential future integrations

Security Considerations

- End-to-end encryption for all communications
- Multi-factor authentication for user accounts
- Secure data storage with encryption at rest
- Regular security audits and vulnerability assessments

Reliability Requirements

- System uptime of at least 99%
- Data backup procedures with regular testing
- Fault tolerance for critical functions

Audit Functions

- Complete audit trails for all system transactions
- User activity logging for security monitoring
- Compliance reporting capabilities

Control Functions

- Content moderation for user-generated content
- Access control based on user roles and permissions
- Version control for document management

Accessibility Requirements

- Compliance with WCAG 2.1 accessibility guidelines
- Support for multiple languages to serve diverse user populations
- Interface design accommodating users with varying technical proficiency

2.5. Assumptions and dependencies

Technical Assumptions

- Users have access to mobile devices with Android operating system
- Adequate internet connectivity is available for most users, with offline capabilities for essential functions
- Spring Boot and SQLite will be suitable for backend development needs
- JWT Token will adequately handle authentication requirements

Legal Environment Assumptions

- The current legal framework allows for digital legal consultations

- Legal professionals are willing to participate in an online platform
- Digital signatures and documents are legally recognized in relevant jurisdictions

User Behavior Assumptions

- Users will be comfortable sharing legal information through a digital platform if privacy is assured
- Legal professionals will adapt to the digital workflow
- There is sufficient demand for anonymous legal aid services

Dependencies

- Availability of legal professionals across different specializations
- Reliability of third-party services (cloud hosting)
- Access to accurate and current legal information for the resource library
- Stability of the regulatory environment regarding digital legal services

3. Specific Requirements

3.1. External interface requirements

3.1.1. Hardware interfaces

The system will be accessible across multiple hardware platforms, ensuring seamless access for users seeking legal aid. Users can access the platform via smartphones, leveraging Android-based devices for mobile functionality. The backend will be hosted on cloud-based servers, enabling scalable deployments through containerized environments such as Docker and Kubernetes. The system will be accessible across multiple hardware platforms, ensuring seamless access for users seeking legal aid. Users can access the platform via smartphones, leveraging Android-based devices for mobile functionality. The backend will be hosted on cloud-based servers, enabling scalable deployments through containerized environments such as Docker and Kubernetes. Additionally, the system will support biometric authentication, including fingerprint and facial recognition, for enhanced security on compatible devices.

3.1.2. Software interfaces

The system will integrate with various software components to provide seamless functionality and security:

Authentication & Authorization: Spring boot Authentication will be used for secure login, multi-factor authentication (MFA), and user identity verification.

Database Management: SQLite will be used for structured data storage, including case records, user profiles, and legal documents.

Legal Document Management: The platform will allow integration with cloud storage providers such as Google Drive for document uploads and retrieval.

API Integration: RESTful APIs will be exposed for external services requiring access to legal aid data.

Monitoring & Analytics: Google Analytics will be used to track user engagement and system performance.

3.1.3. Communications interfaces

The system will support multiple communication protocols and security measures to ensure privacy and confidentiality:

- **Data Encryption:** All data exchanges between clients and servers will be encrypted using Java Cryptography Extension (JCE) with AES-256 encryption.
- **Real-Time Messaging:** Secure WebSocket (WSS) will be used for encrypted, real-time communication between users and legal professionals.
- **Notifications:** The system will send email notifications using SMTP services and push notifications via Firebase Cloud Messaging (FCM).

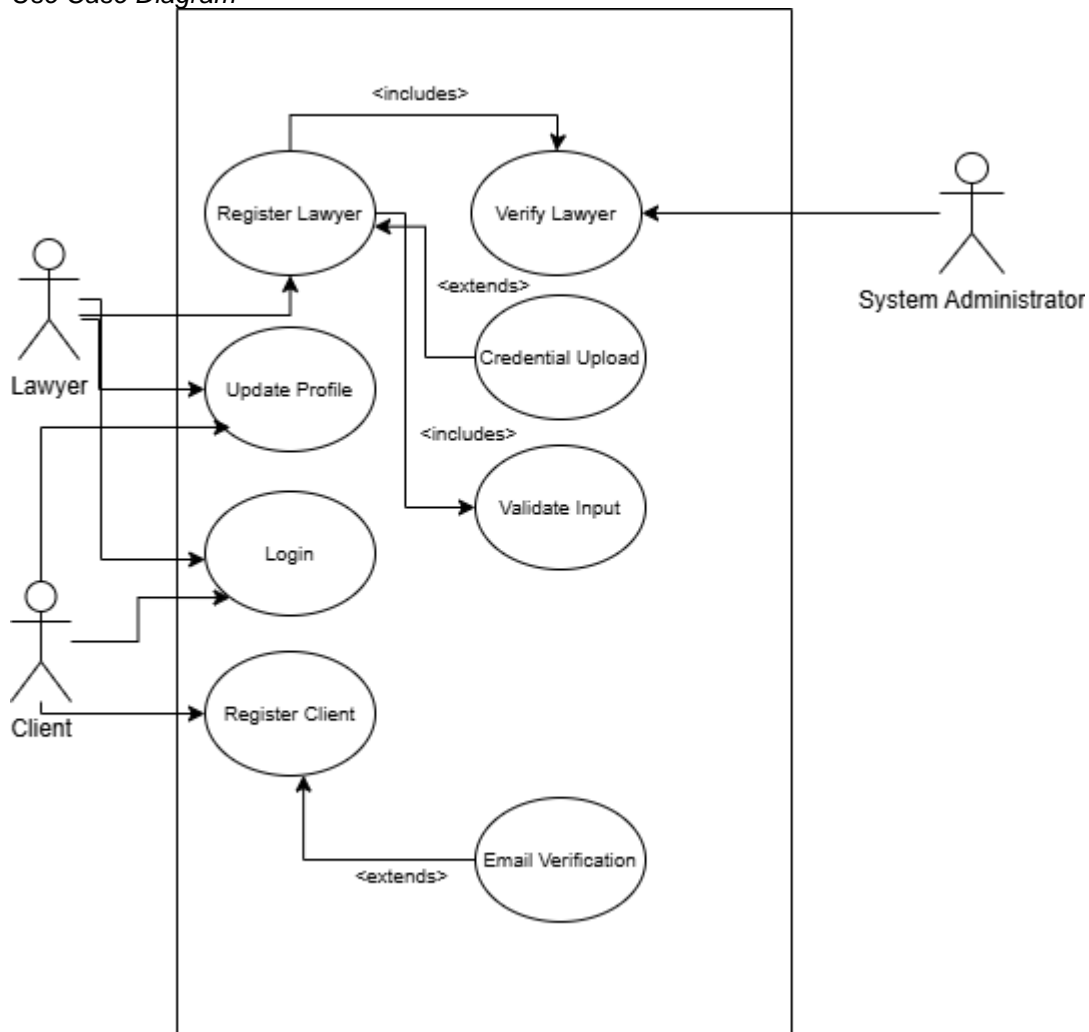
- **End-to-end encryption (E2EE):** Private chats between users and legal professionals will be encrypted using AES-256 with secure key management.
- **Security:** The system will enforce compliance with OAuth 2.0 and JWT authentication for all external API calls, ensuring secure access control and data integrity.

3.2. Functional requirements

Module 1

1. User Management System

- Use Case Diagram



- Use Case Description
 - Use Case: Register Client

Actor: Client

Description: A client creates a new account in the system by providing required registration details.

➤ Use Case: Register Lawyer

Actor: Lawyer

Description: A lawyer creates a new account in the system by providing necessary registration information.

➤ Use Case: Login

Actor: Client, Lawyer

Description: Both clients and lawyers authenticate themselves to access the system using their credentials.

➤ Use Case: Verify Lawyer

Actor: System Administrator

Description: The system administrator verifies the credentials and authenticity of lawyers who have registered in the system.

➤ Use Case: Update Profile

Actor: Client, Lawyer

Description: Both clients and lawyers modifies their profile information, such as personal details.

➤ Use Case: Credential Upload

Actor: Lawyer

Description: A lawyer uploads their professional credentials, licenses, or other required documents to the system.

➤ Use Case: Validate Input

Actor: Lawyer (primary), Client (extends from Register Client)

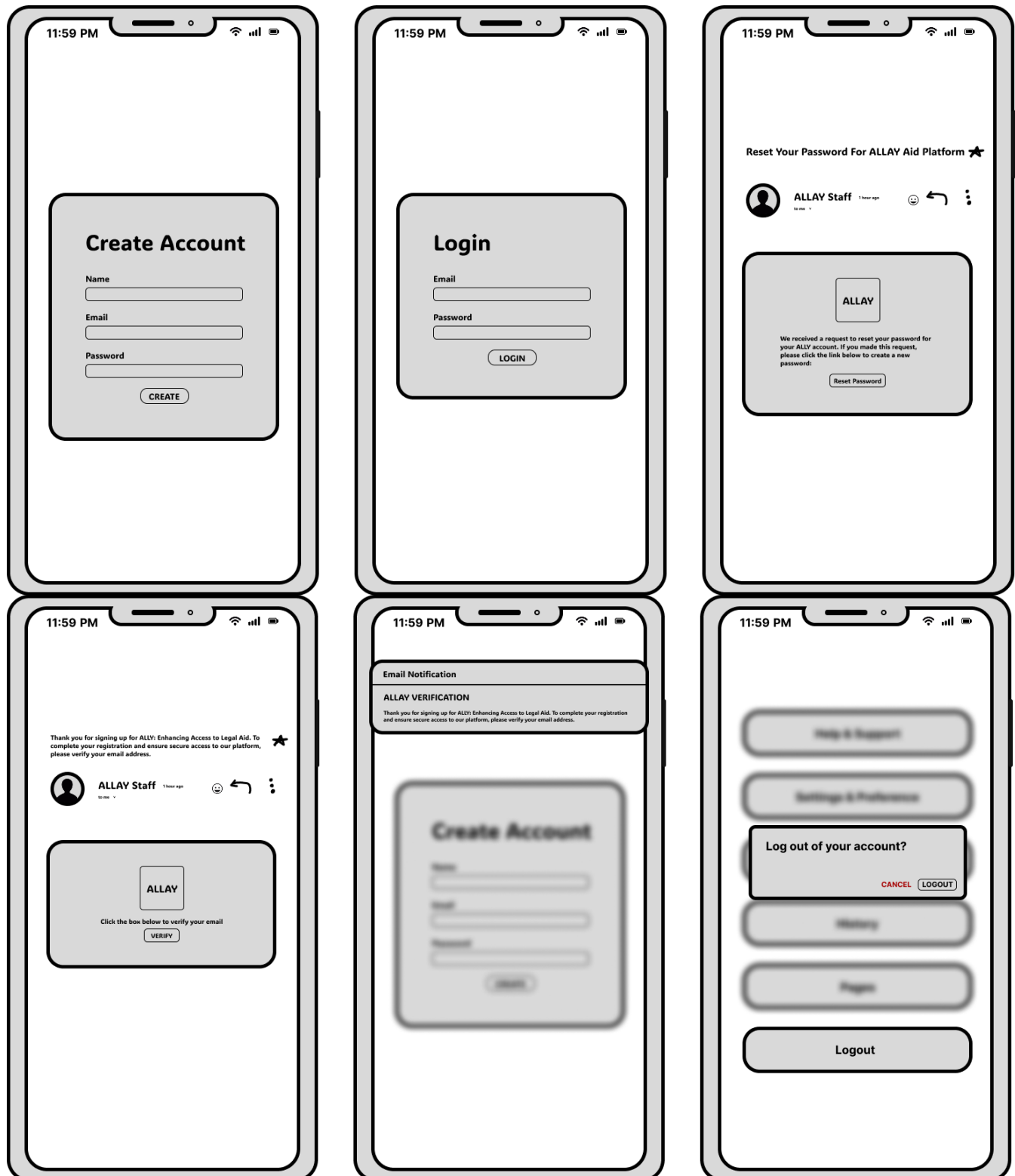
Description: The system validates the input data provided during registration or other processes to ensure it meets required criteria.

➤ Use Case: Email Verification

Actor: Client

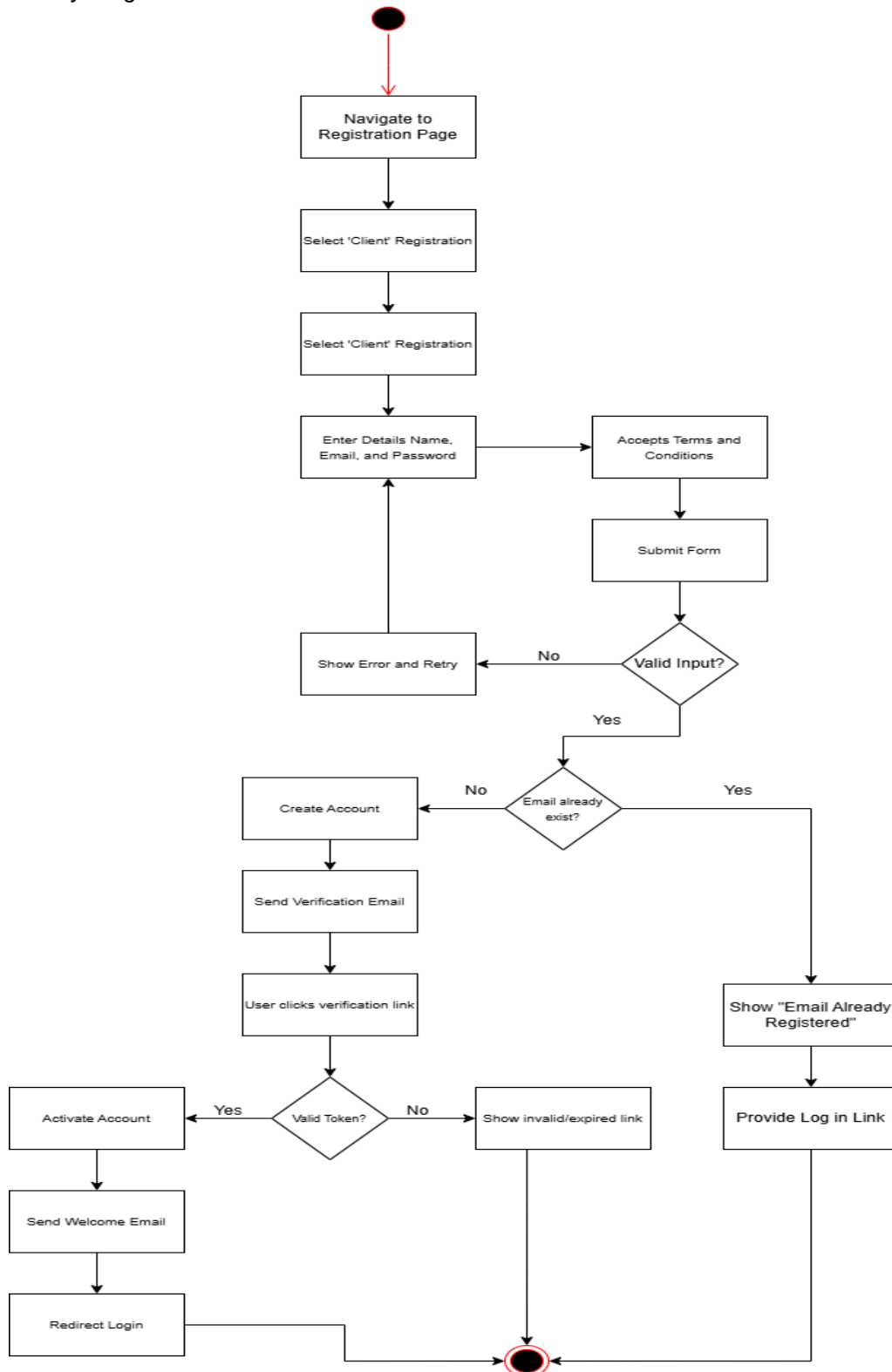
Description: The system sends a verification email to confirm the client's email address as part of the registration process.

- Wireframe



Transaction 1.1: Register Client

- Activity Diagram



Wireframe

The wireframes represent four mobile application screens:

- Update Profile:** Features input fields for First Name (Piolo), Middle Initial (D), Last Name (Enriquez), Email (piolo.enriquez@gmail.com), and Phone Number (+63 964 4346 942). It includes a 'Criminal Law' expertise tag and an 'Update Profile' button.
- Legal Expertise:** Displays 'Current' expertise tags (Criminal Law, Civil Law, Corporate and Business Law) and an 'Add New Expertise' section with a search bar and a 'Type your expertise' input. It also has a 'Supporting Documents' section with an upload icon and an 'Update Expertise' button.
- Personal Information:** Shows a profile picture of a lawyer and input fields for First Name (Nathan), Last Name (Malagapo), and Email (NathanMLawyer@gmail.com). It includes buttons for 'Update Expertise', 'Change Password', and 'Update Profile'.
- Scheduling:** Contains two scheduling blocks. Each block has a 'Date & Time' section with 'Day', 'From', and 'To' inputs, and an 'Available' toggle switch. The first block is for Sunday (9:30 AM to 5:00 PM) and the second for Monday (8:00 AM to 12:00 PM). A 'Set Working Hours' button is at the bottom.

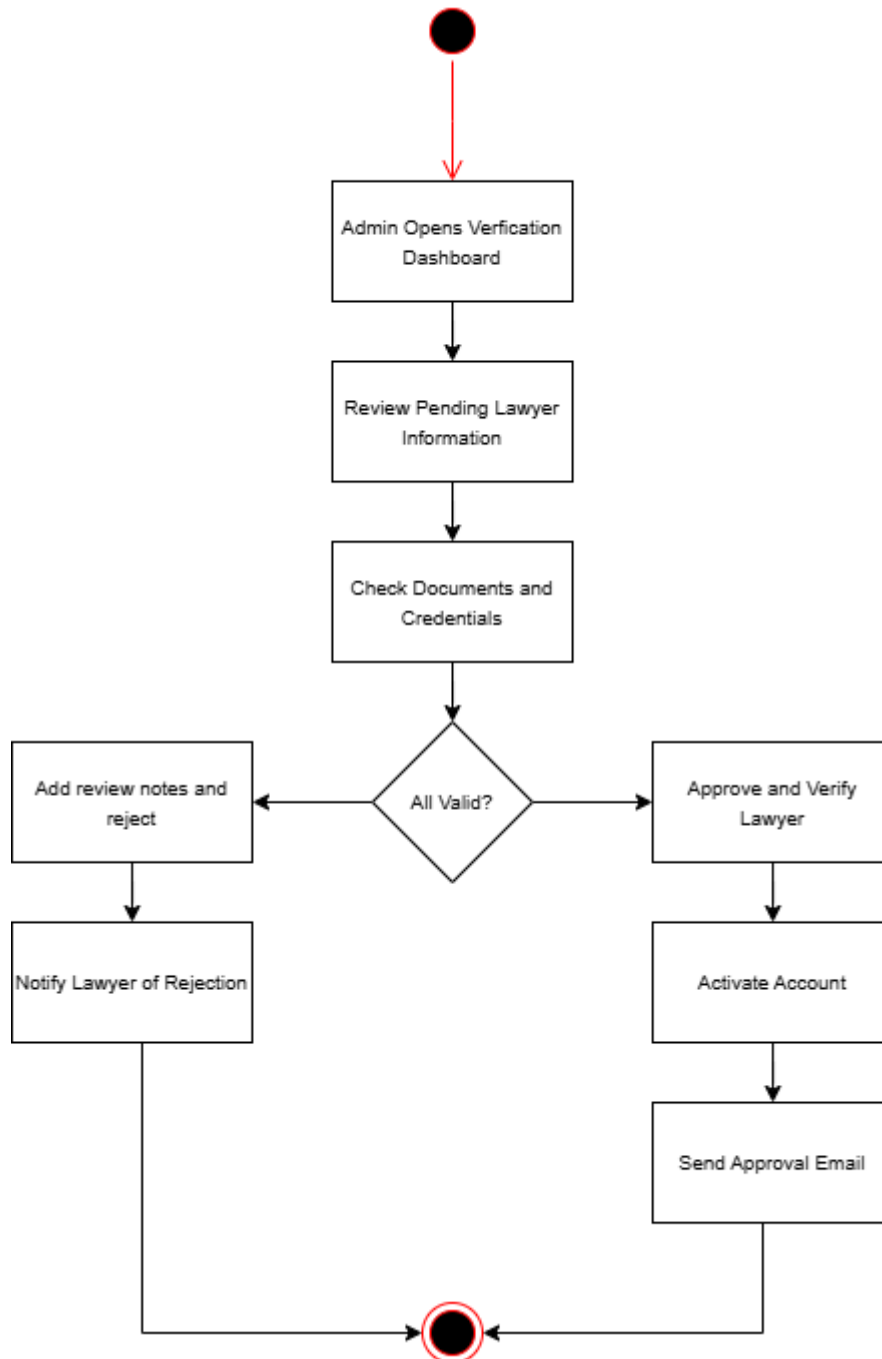
Transaction 1.2: Register Lawyer

Activity Diagram:



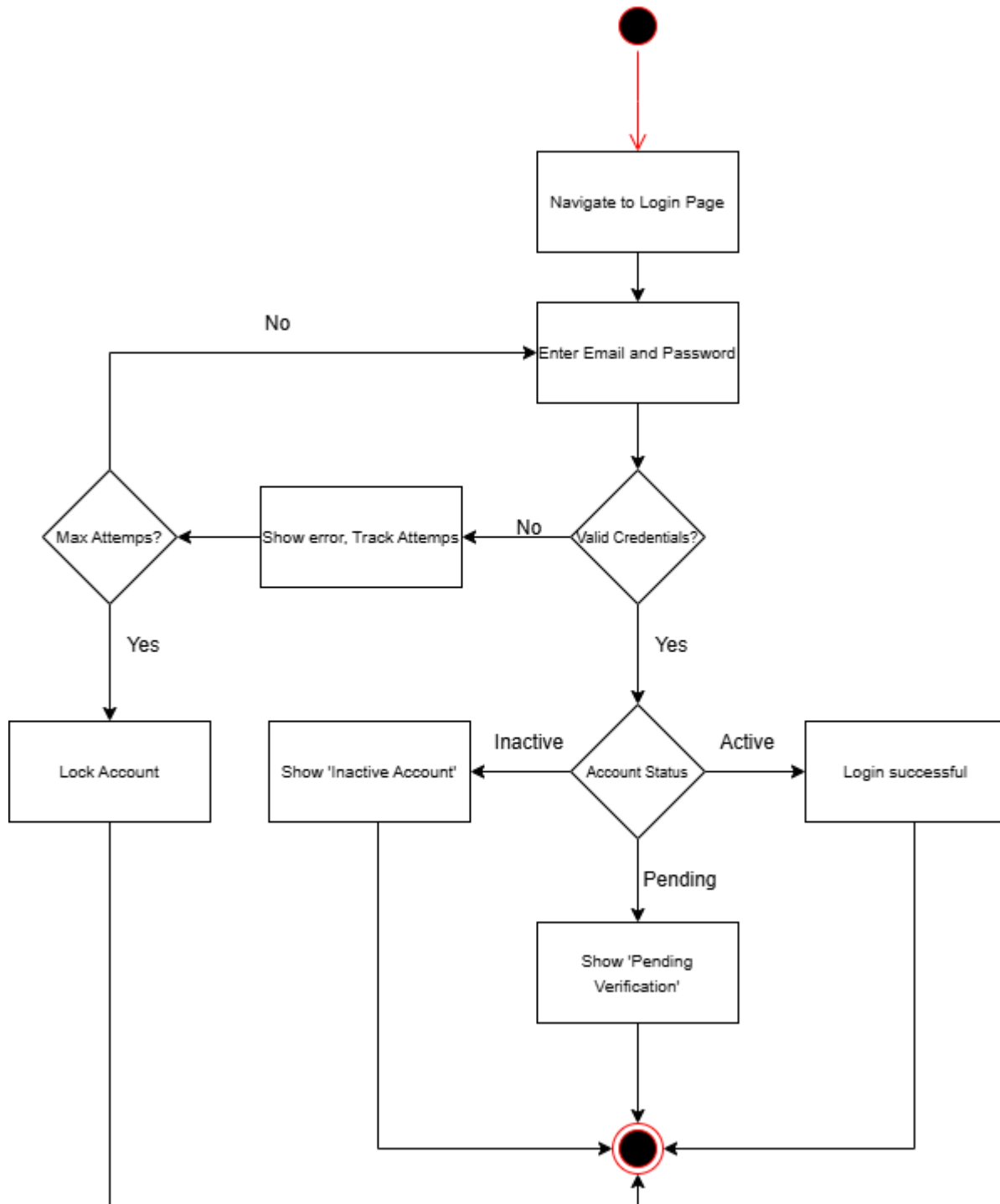
Transaction 1.3: Verify Lawyer

Activity Diagram:

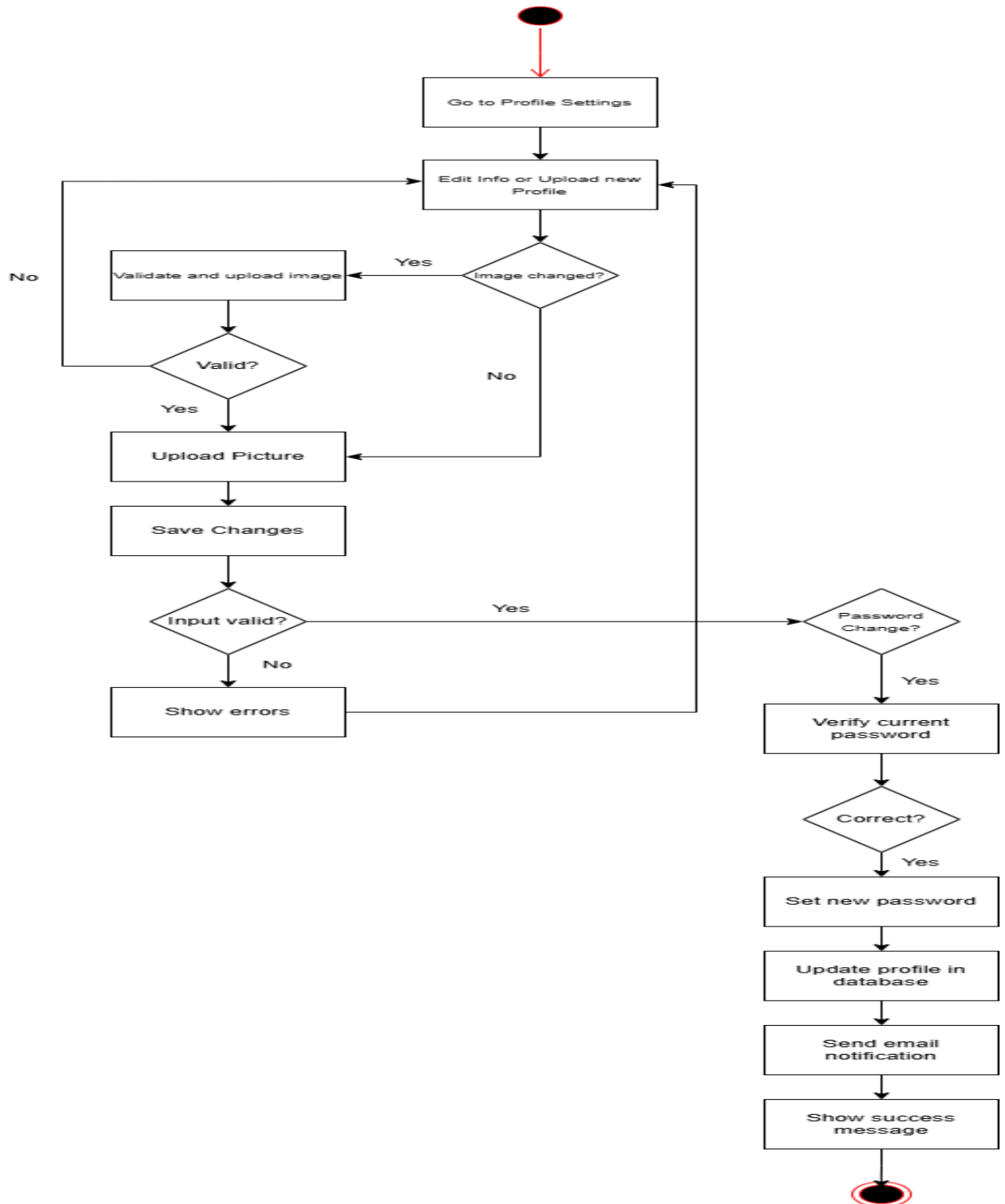


Transaction 1.4: Login

Activity Diagram:



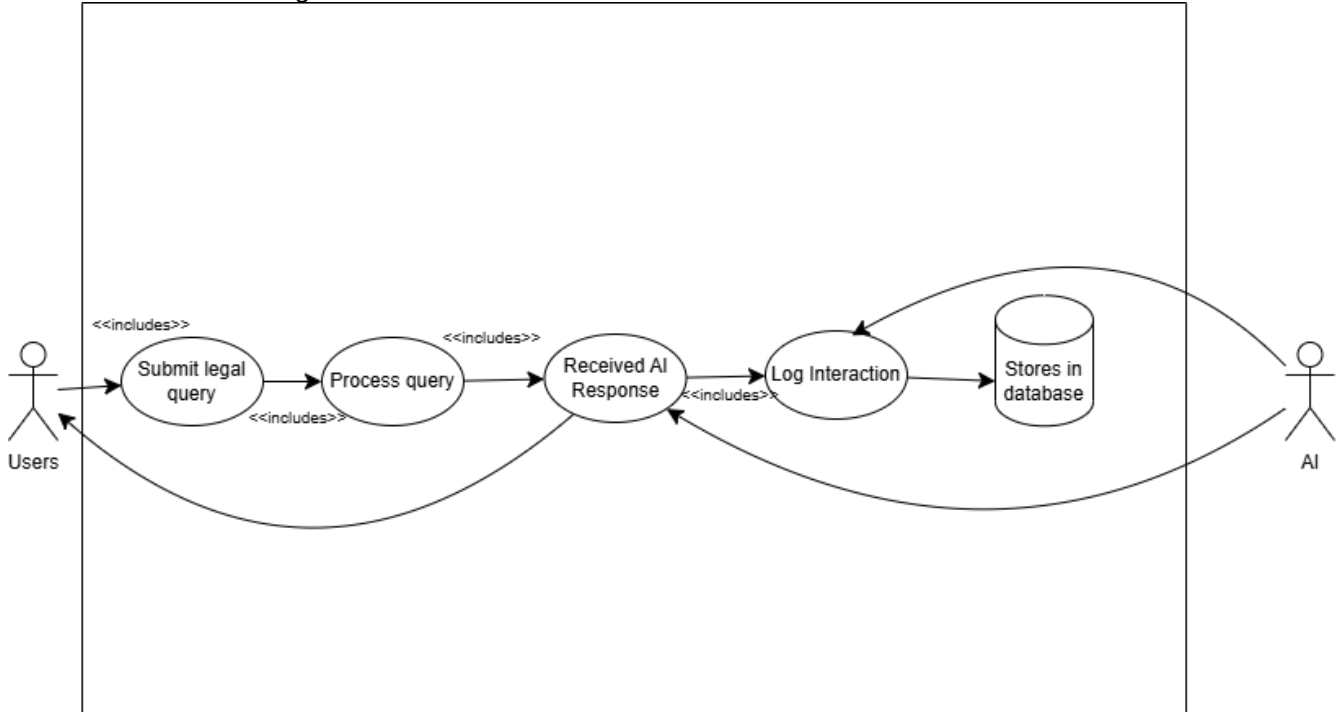
Transaction 1.5: Update Profile
Activity Diagram:



Module 2

Anonymous ALLY Consultation

- Use Case Diagram



- Use Case Description

- Use Case: Submit Legal Query

Actor: Client

Description: Client submits anonymous legal query including case details, type of legal issue, urgency level, and relevant information for AI analysis.

- Use Case: Received AI Response

Actor: Users(primary), AI (secondary)

Description: AI analyzes submitted query and provides preliminary legal advice including likelihood of success, recommended actions, and relevant legal information.

- Use Case: Log Interaction

Actor: AI

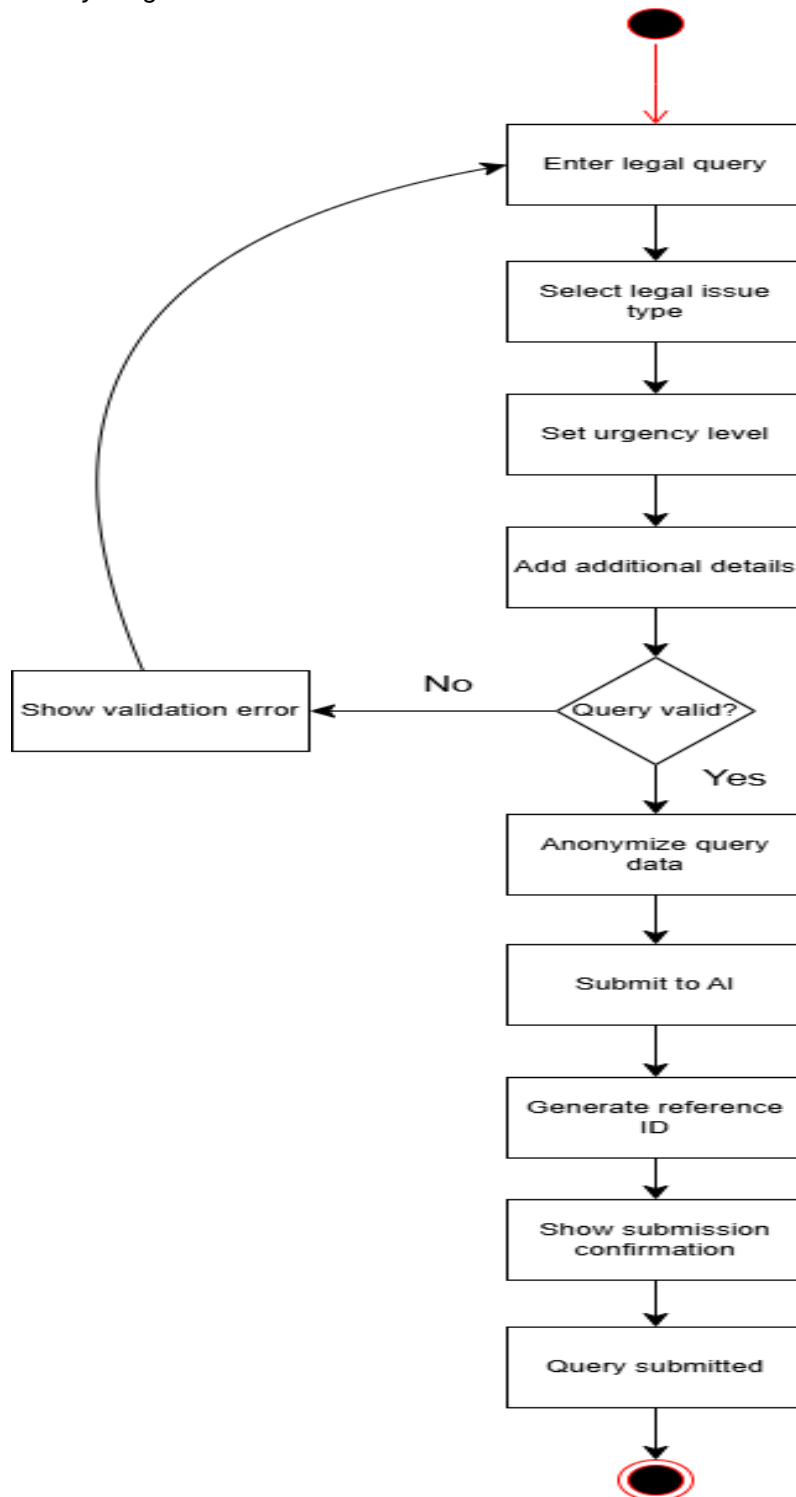
Description: System logs the anonymous consultation interaction for analytics and improvement while maintaining user privacy and anonymity.

- Use Case: Update Schedule

Actor: Lawyer

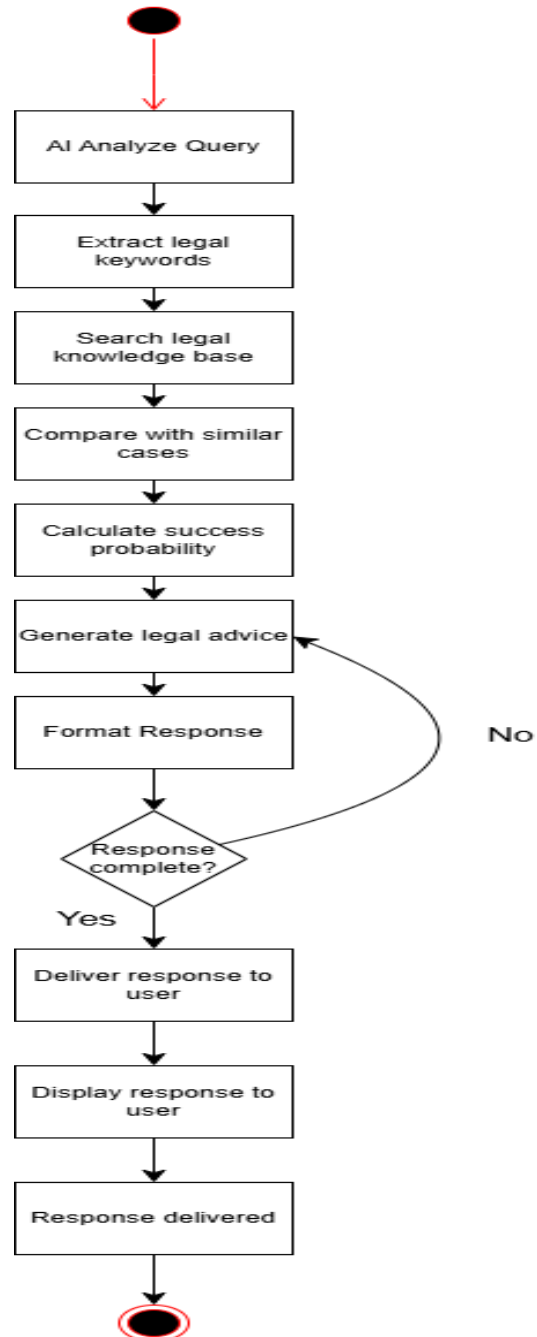
Description: The lawyer updates their schedule to indicate availability for consultations.

Transaction 2.1: Submit Legal Query
Activity Diagram



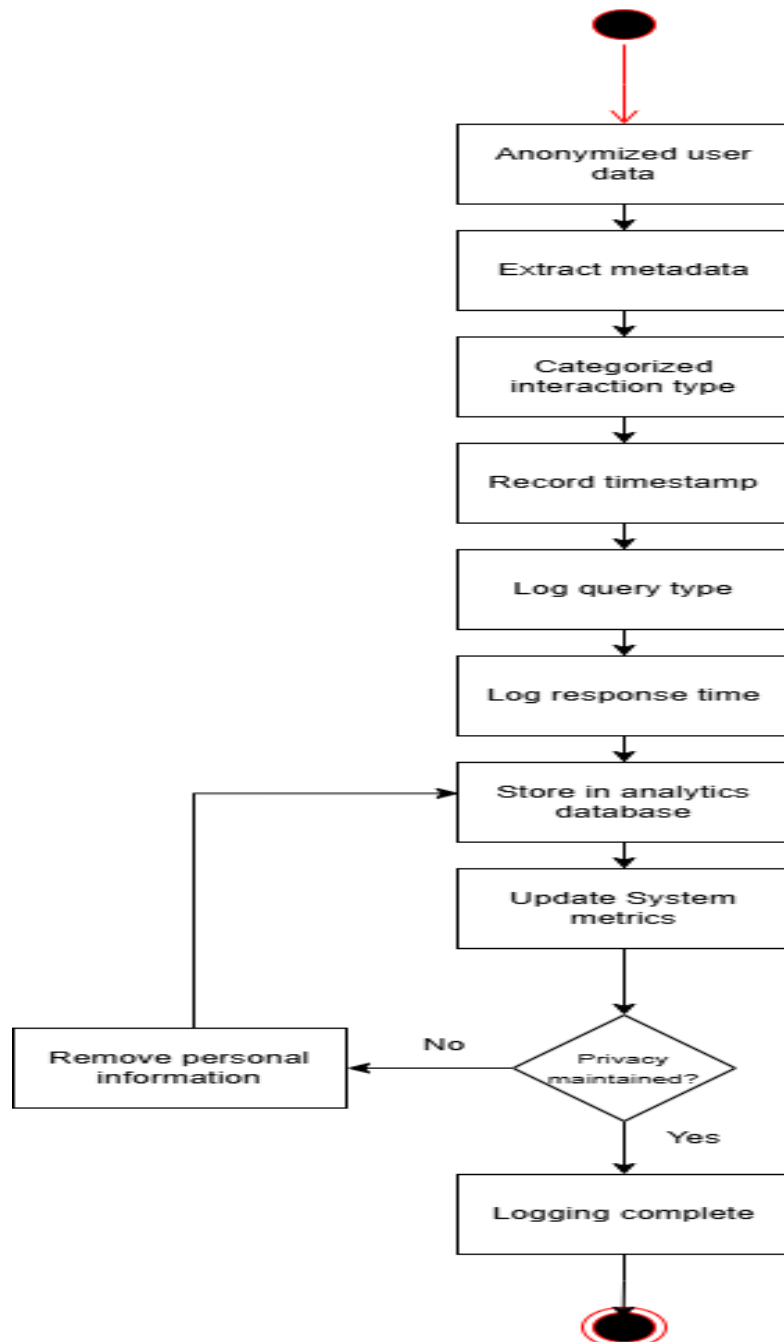
Transaction 2.2 Receive AI Response

Activity Diagram



Transaction 2.3: Log Interaction

Activity Diagram



Wireframe

11:59 PM

Submit Legal Issue

Select Legal Category:

Family Law

Case Description:

Location:

Cebu, City

Urgency Level:

Low

Medium

High

Supporting Documents:

PDF

Submit

11:59 PM

Processing Your Case

Category: Family Law

Case Description: Lorem ipsum sof..

Location: Cebu, City

Urgency Level: Low

Supporting Documents: PDF

MATCHING WITH A LAWYER

11:59 PM

Pending Case Request

Client Name: Anonymous123

Case Type & Urgency Level: Family Law, Low

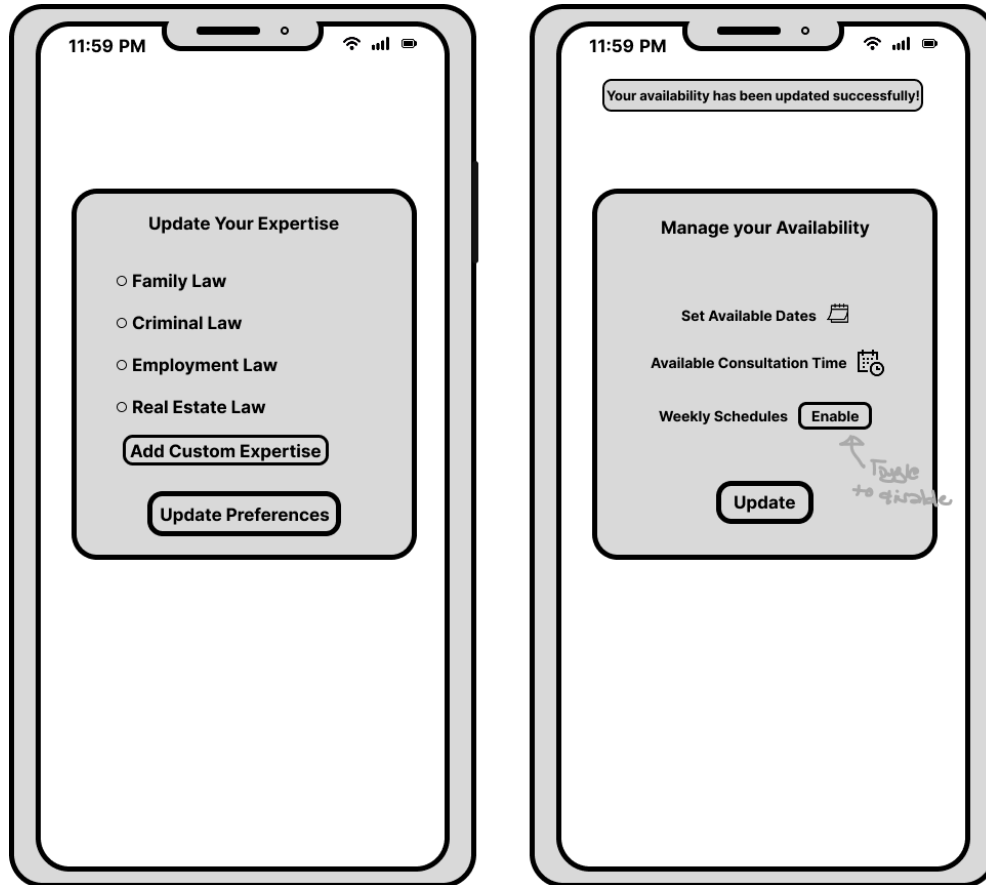
Location: Cebu, City

Brief Case Summary:

View More

ACCEPT

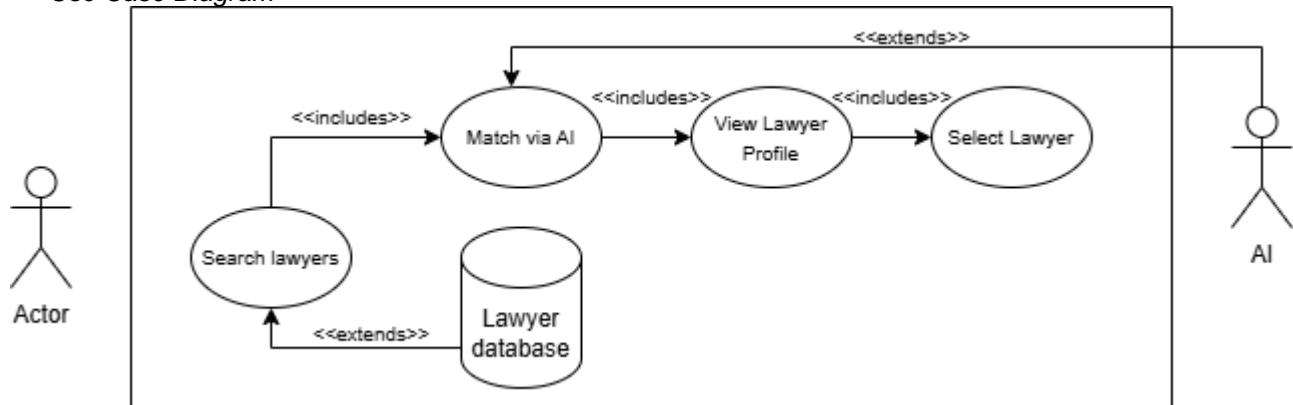
DECLINE



Module 3

Lawyer Matching and Selection

- Use Case Diagram



- Use Case Description

- Use Case: Search Lawyers

Actor: Client

Description: Client searches for lawyers based on specialty, location, availability, rating, and other criteria to find suitable legal representation.

- Use Case: View Lawyer Profile

Actor: Client

Description: Client views detailed lawyer profile including experience, specialties, education, ratings, reviews, and availability.

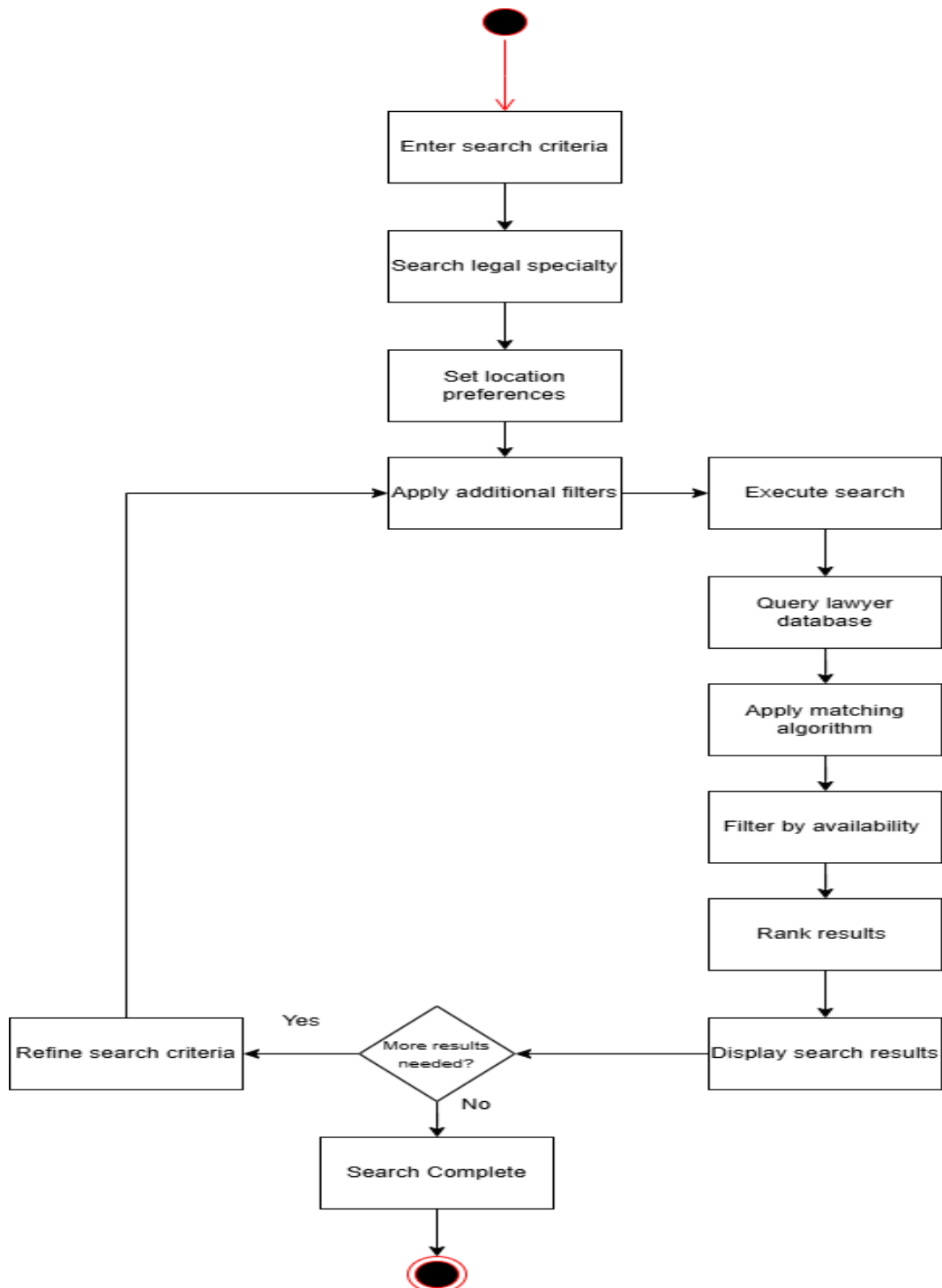
- Use Case: Match via AI

Actor: AI

Description: AI automatically matches clients with suitable lawyers based on case type, complexity, location, success rates, and compatibility factors.

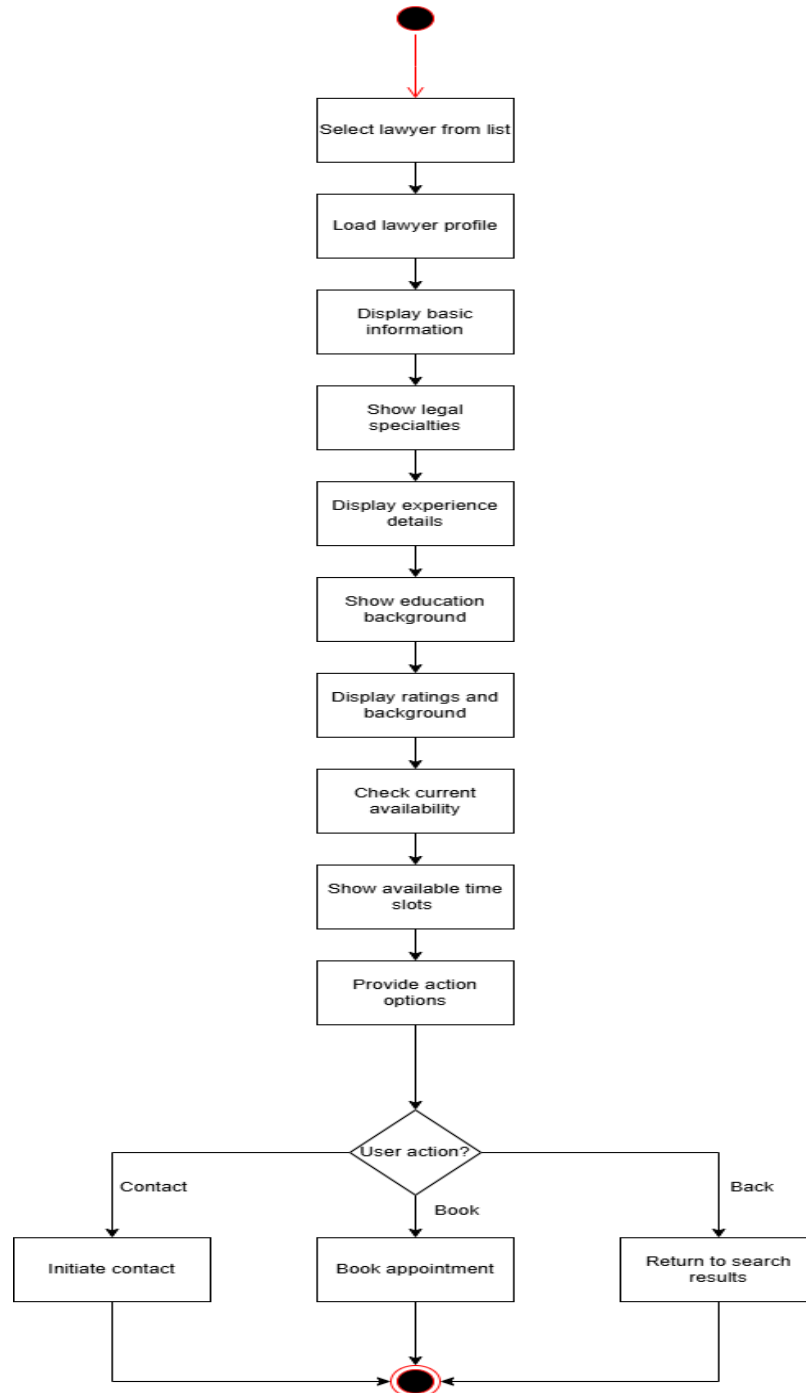
Transaction 3.1 Search Lawyers

Activity Diagram



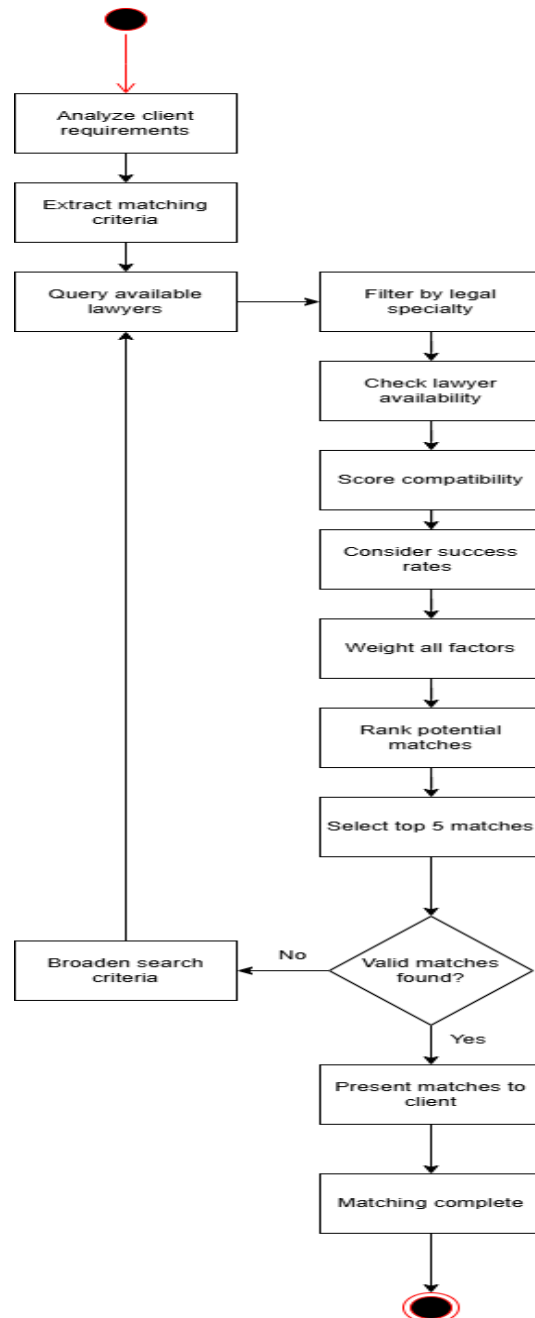
Transaction 3.2: View Lawyer Profile

Activity Diagram



Transaction 3.3: Match via AI

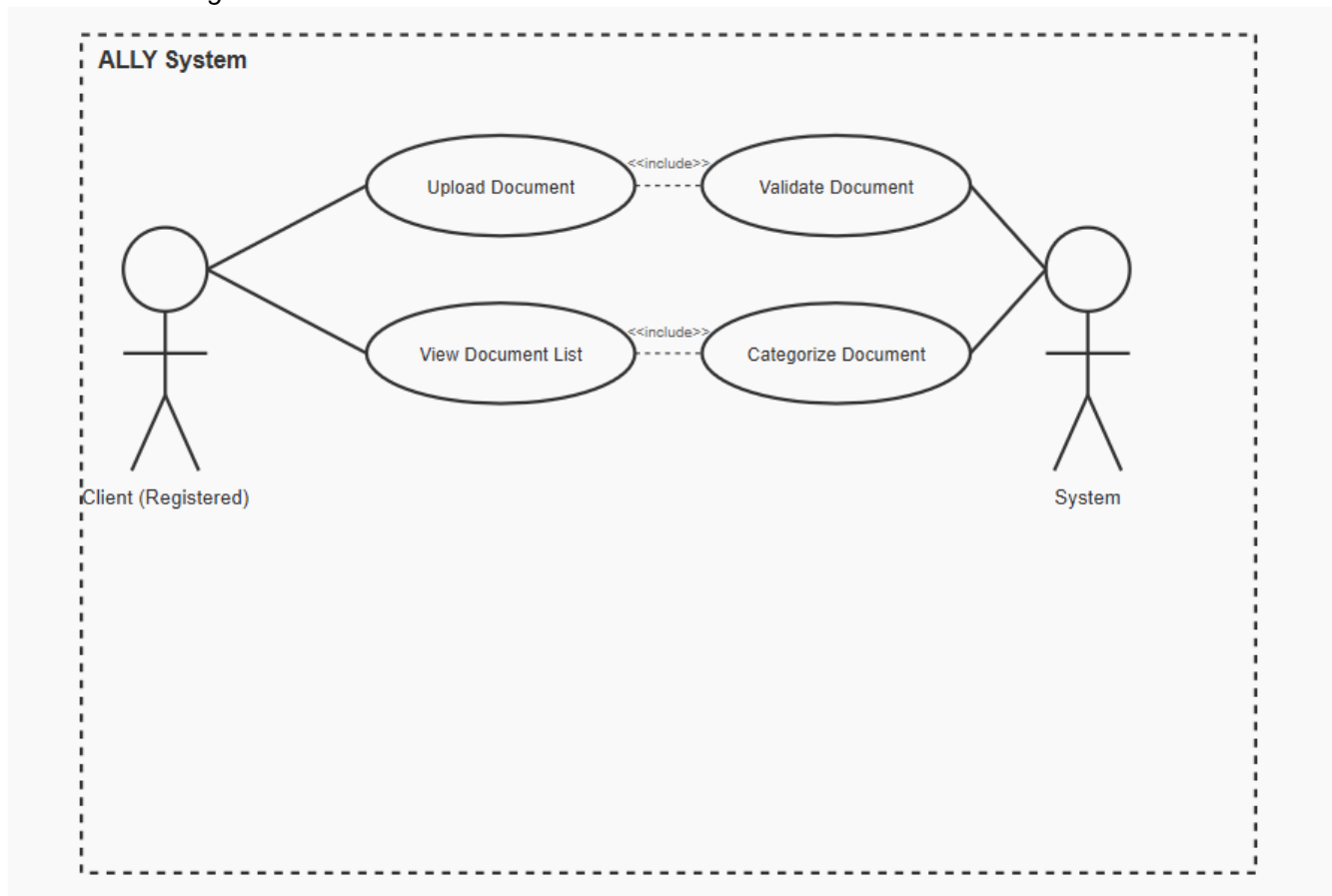
Activity Diagram



Module 4

Document Submission (Registered Clients)

- Use Case Diagram



- Use Case Description

- Use Case: Upload document

Actor: Client

Description: The client uploads legal documents related to their case for the lawyer to review and reference.

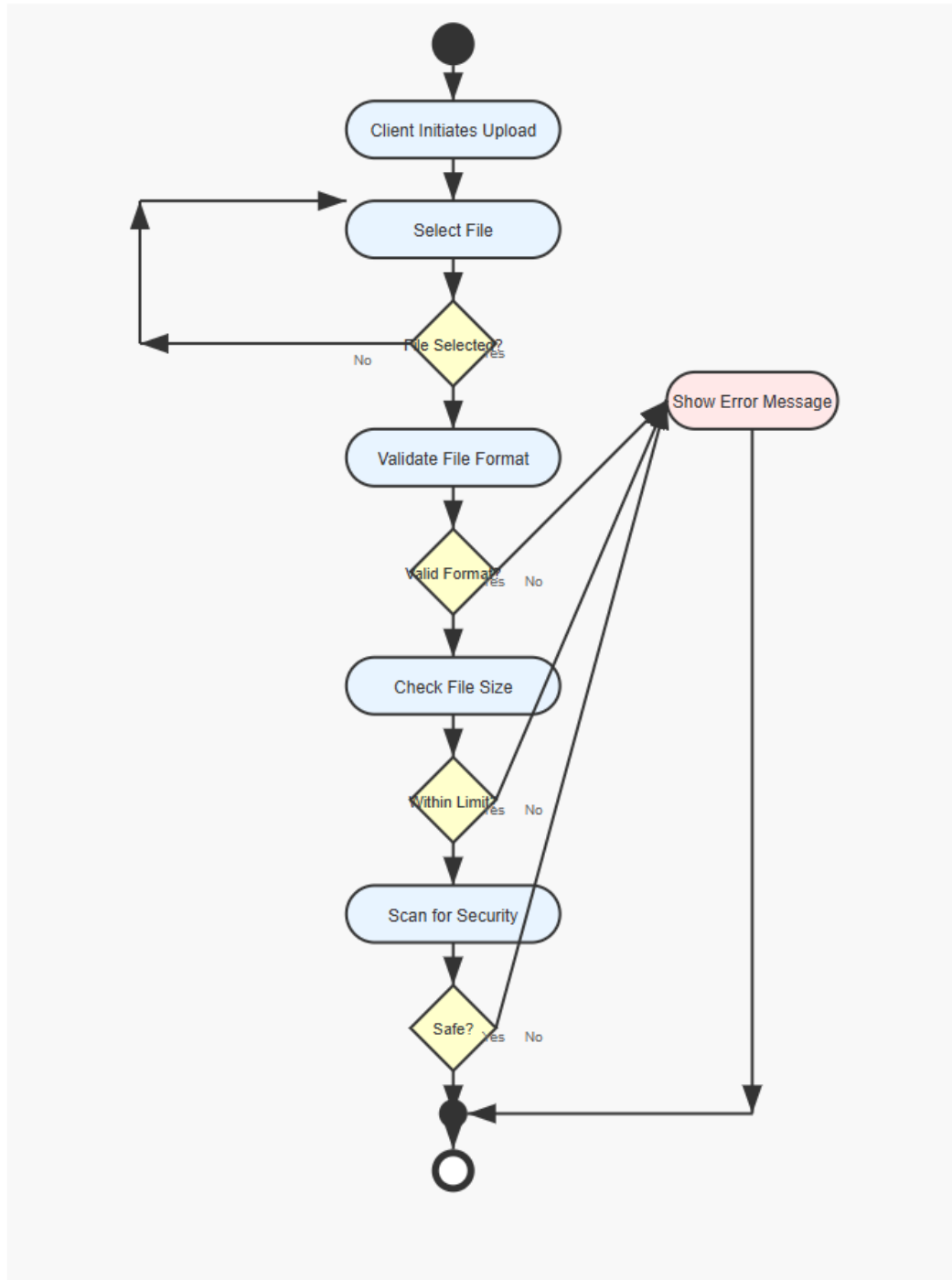
- Use Case: View Document List

Actor: Client

Description: The client views a list of their previously uploaded documents, including filenames, upload dates, and document types.

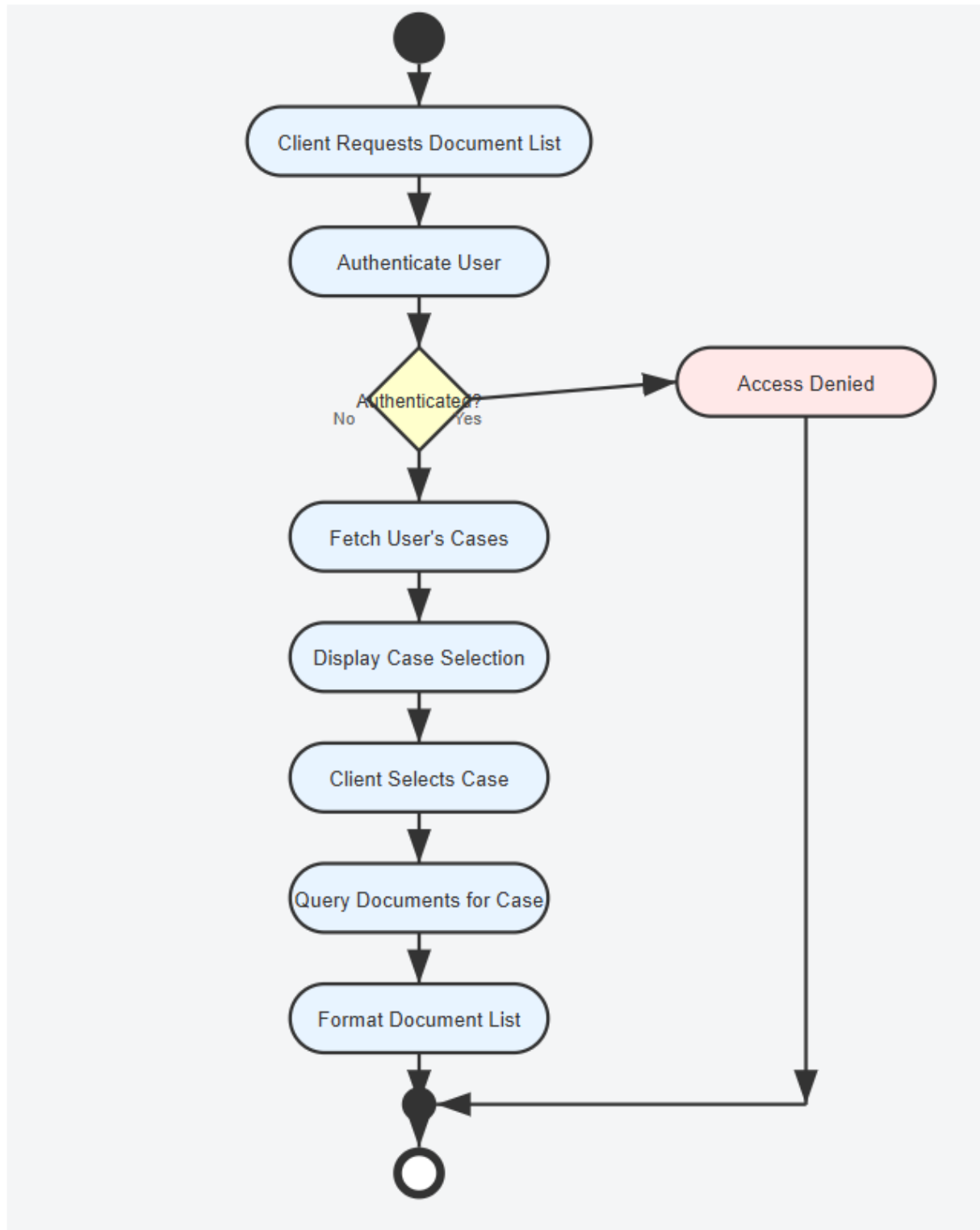
Transaction 4.1 Upload Document

Activity Diagram



Transaction 4.2: View Documented List

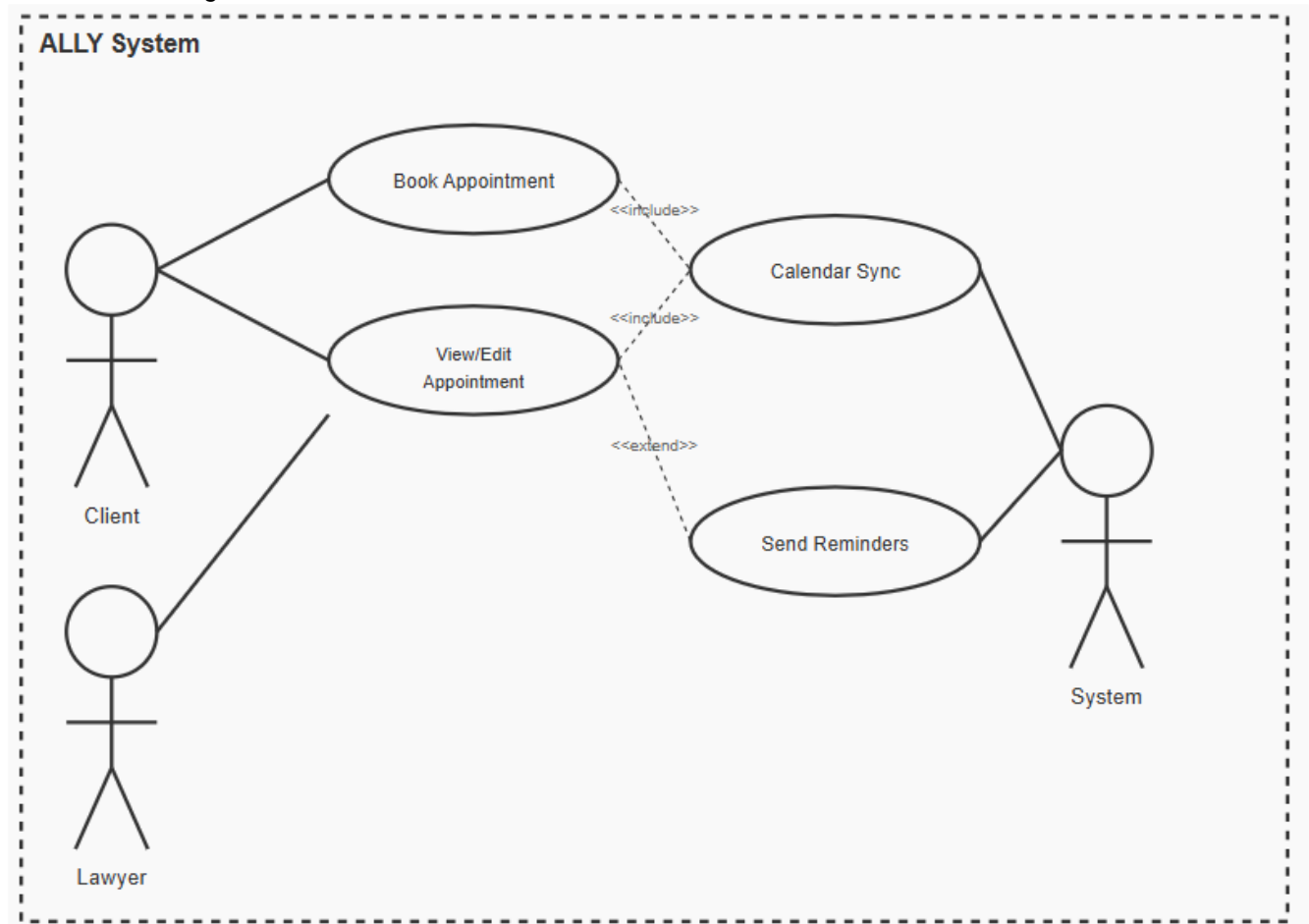
Activity Diagram



Module 5

Appointment Scheduling

- Use Case Diagram



- Use Case Description

- Use Case: Book Appointment

Actor: Client

Description: The client selects an available time slot with a matched lawyer and books a consultation appointment.

- Use Case: View/Edit Appointment

Actor: Client

Description: The client reviews upcoming or past appointments and can reschedule or modify appointment details.

- Use Case: Calendar Sync

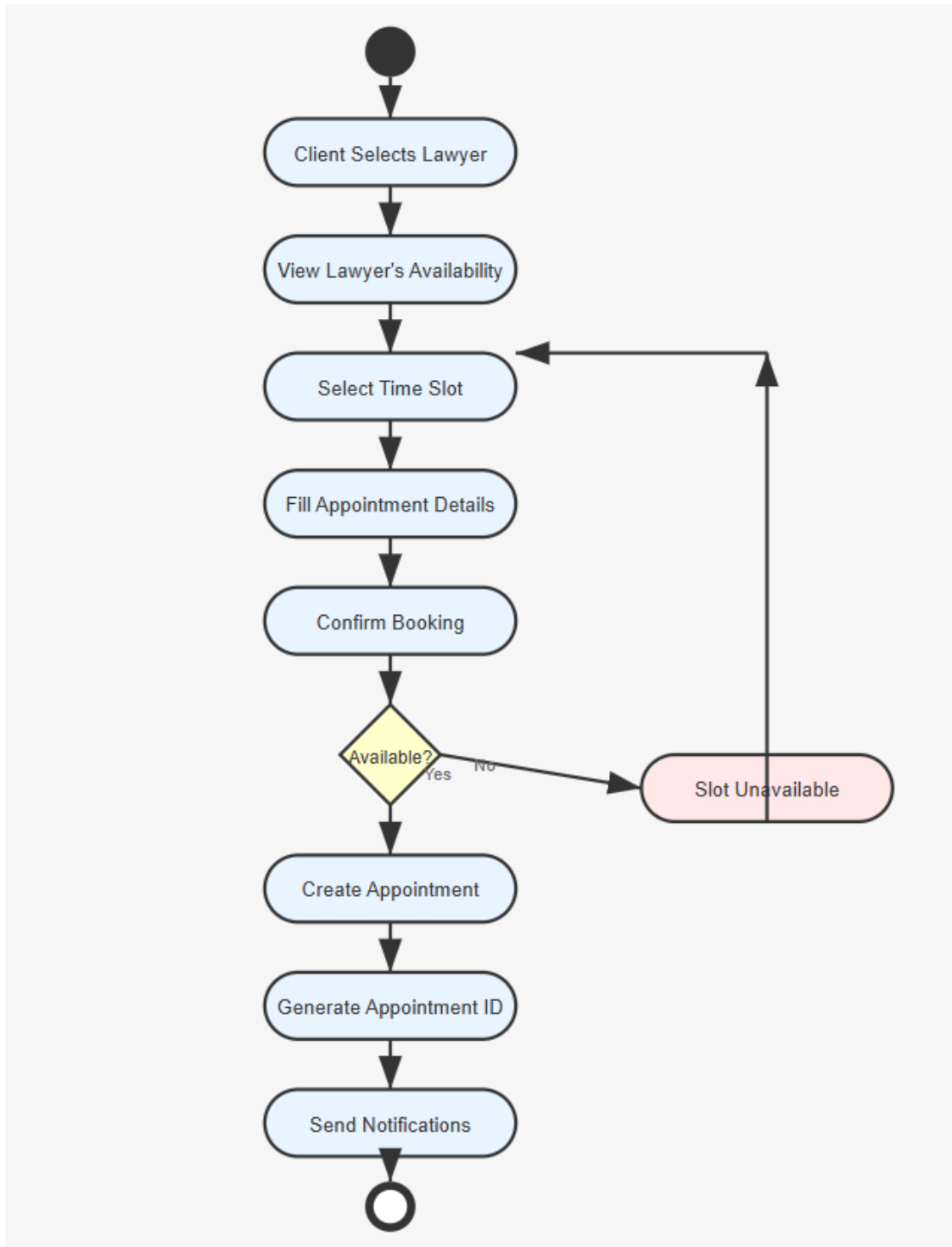
Actor: Client

Description: The client integrates their appointment schedule with an external calendar (e.g., Google Calendar) to receive reminders and manage consultations more efficiently.



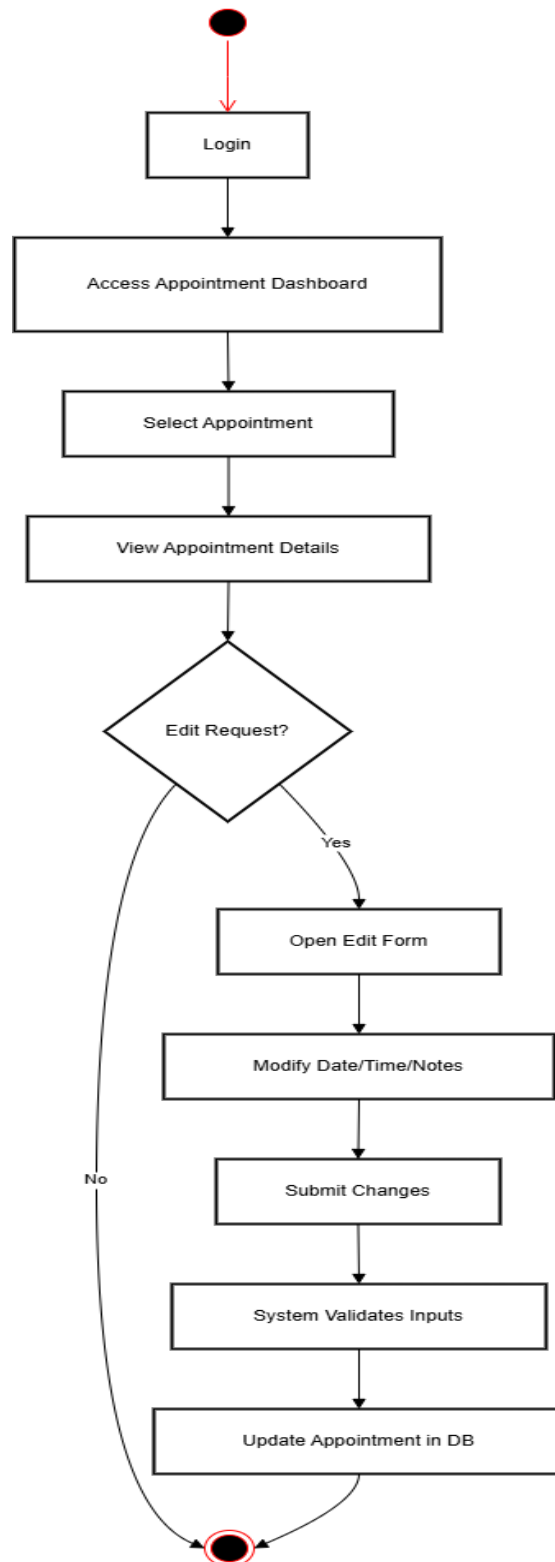
Transaction 5.1: Book Appointment

Activity Diagram



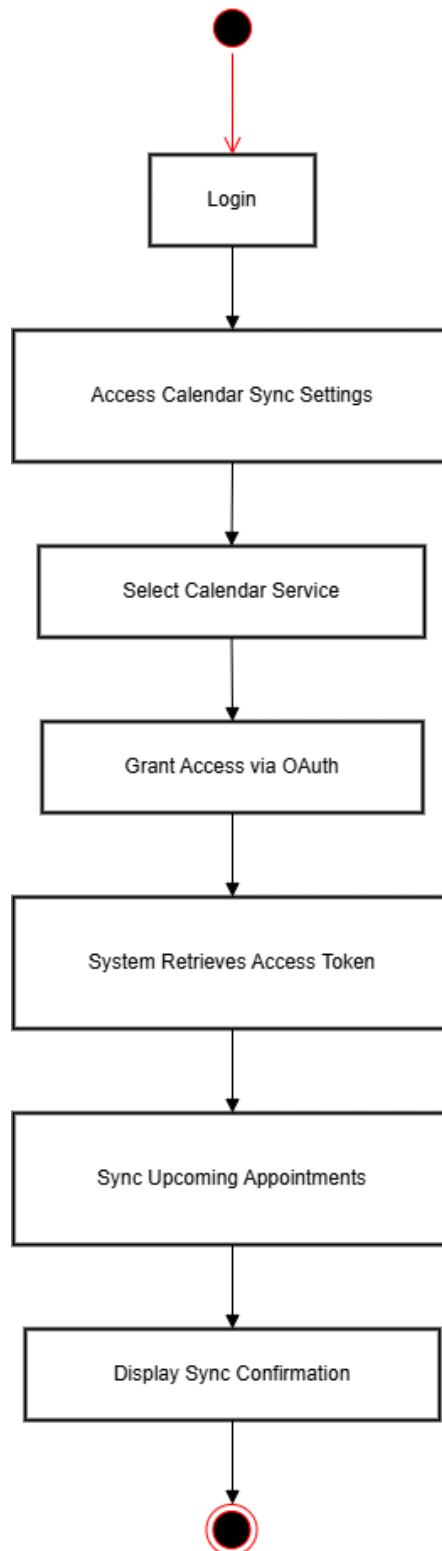
Transaction 5.2: View/Edit Appointment

Activity Diagram



Transaction 5.3: Calendar Sync

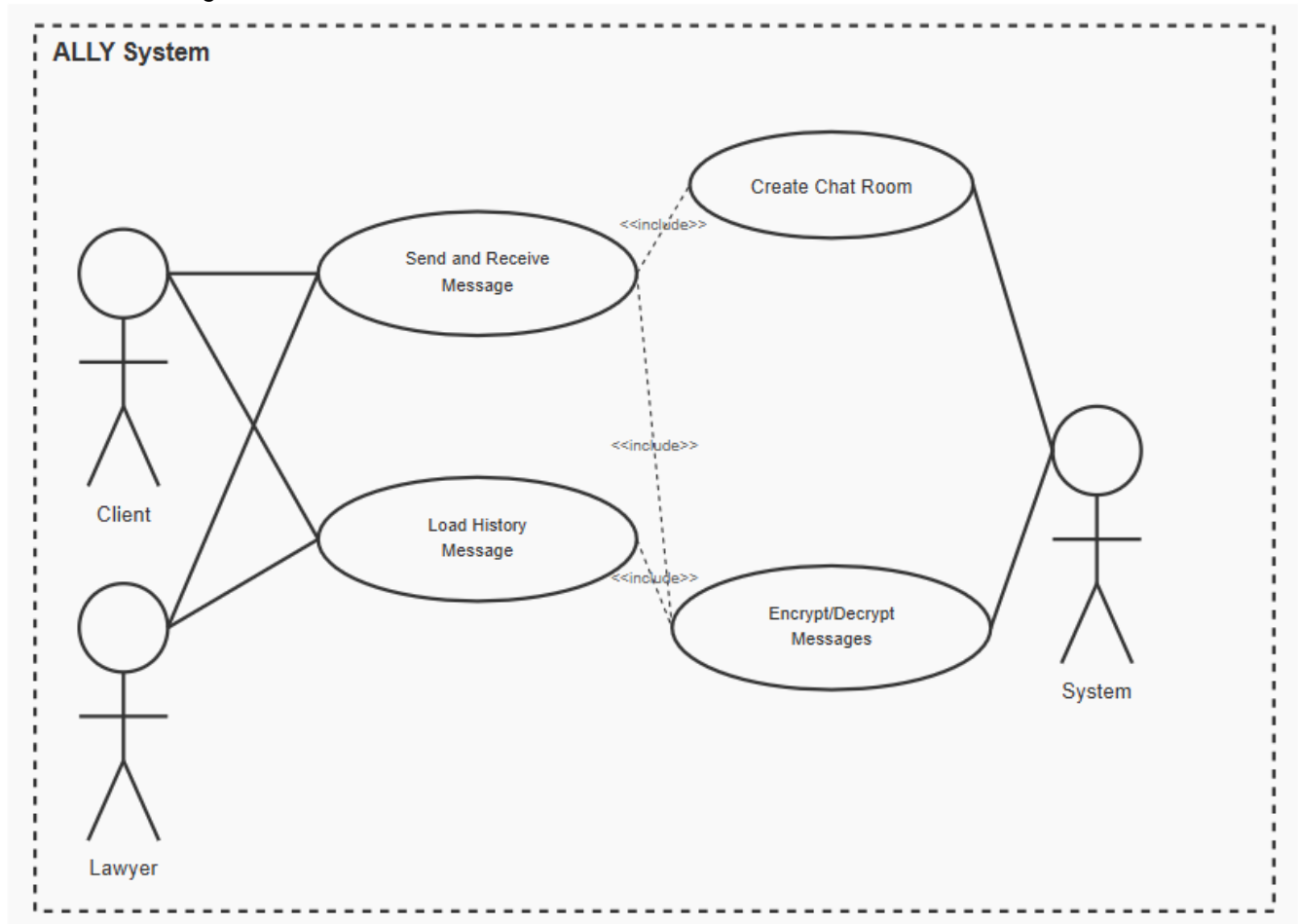
Activity Diagram



Module 6

Messaging System

- Use Case Diagram



- Use Case Description

- Use Case: Send and Receive Message

Actor: Client, Lawyer

Description: Either the client or the lawyer can send and receive instant messages through a secure, temporary chat interface during an active case engagement.

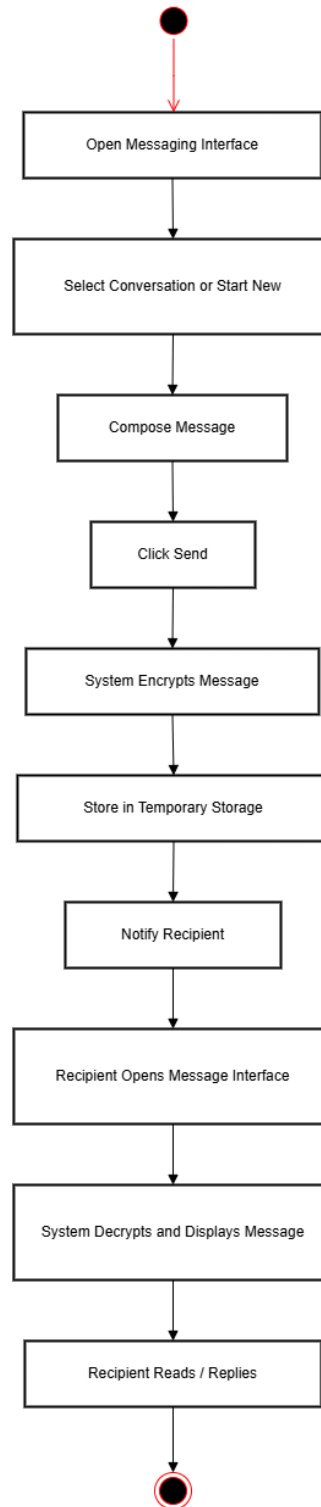
- Use Case: Load History Message

Actor: Client, Lawyer

Description: The system retrieves recent, temporary chat history between a client and lawyer for the duration of their current session.

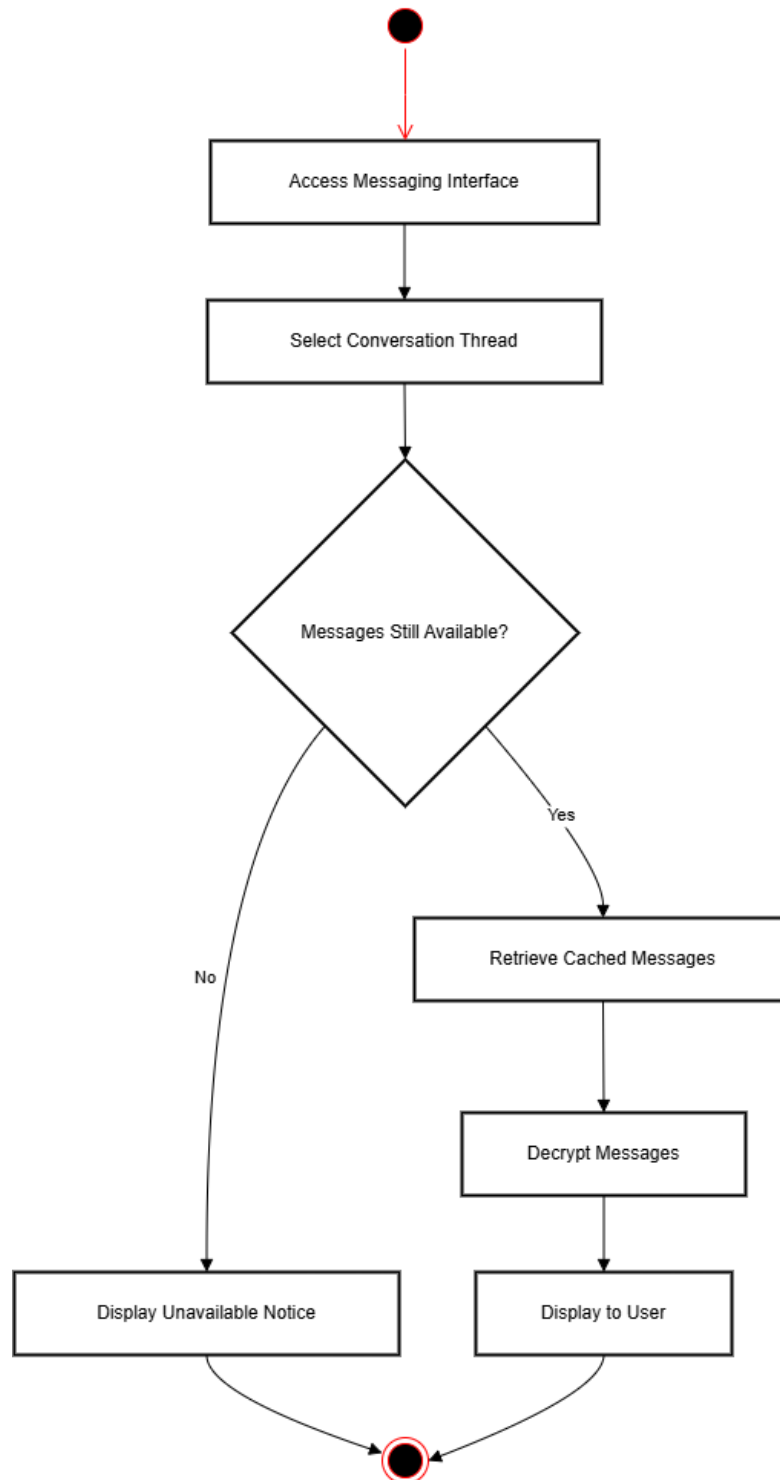
Transaction 6.1: Send and Receive Message

Activity Diagram



Transaction 6.2: Load History Message

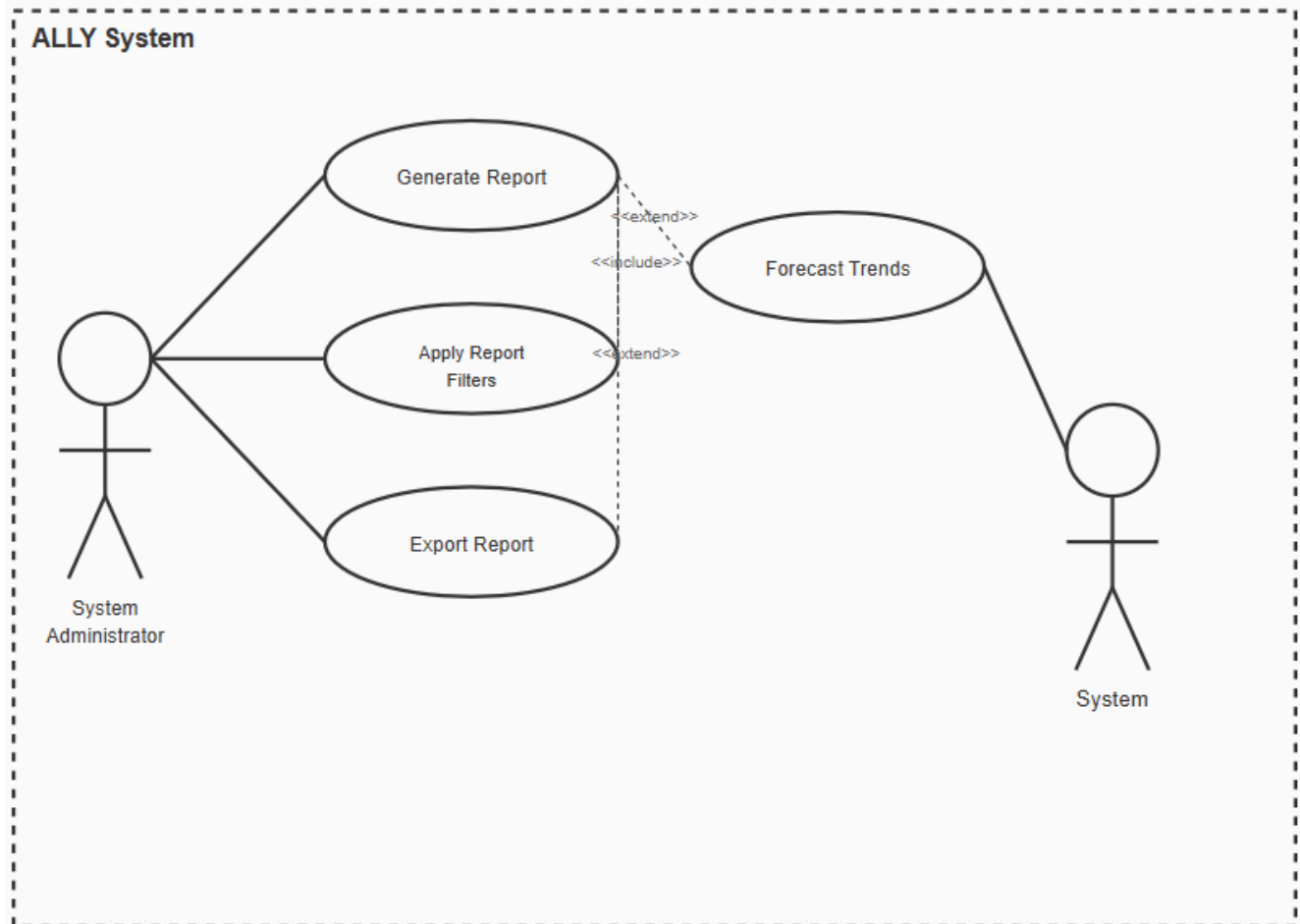
Activity Diagram



Module 7

Reports and Analytics

- Use Case Diagram



- Use Case Description

- Use Case: Generate Report

Actor: System Administrator, Content Manager

Description: The user generates a report containing metrics such as user engagement, legal issue categories, lawyer performance, or system usage.

- Use Case: Apply Report Filters

Actor: System Administrator, Content Manager

Description: The user applies dynamic filters to generated reports to customize the view based on roles, locations, or timeframes.

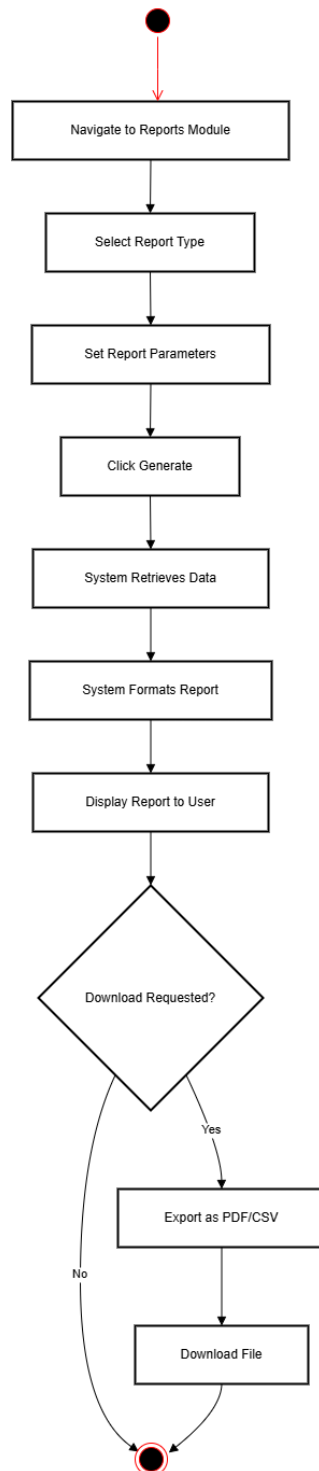
- Use Case: Forecast Trends

Actor: System Administrator

Description: The user initiates a predictive analysis using historical data to visualize legal aid demand and system performance trends over time.

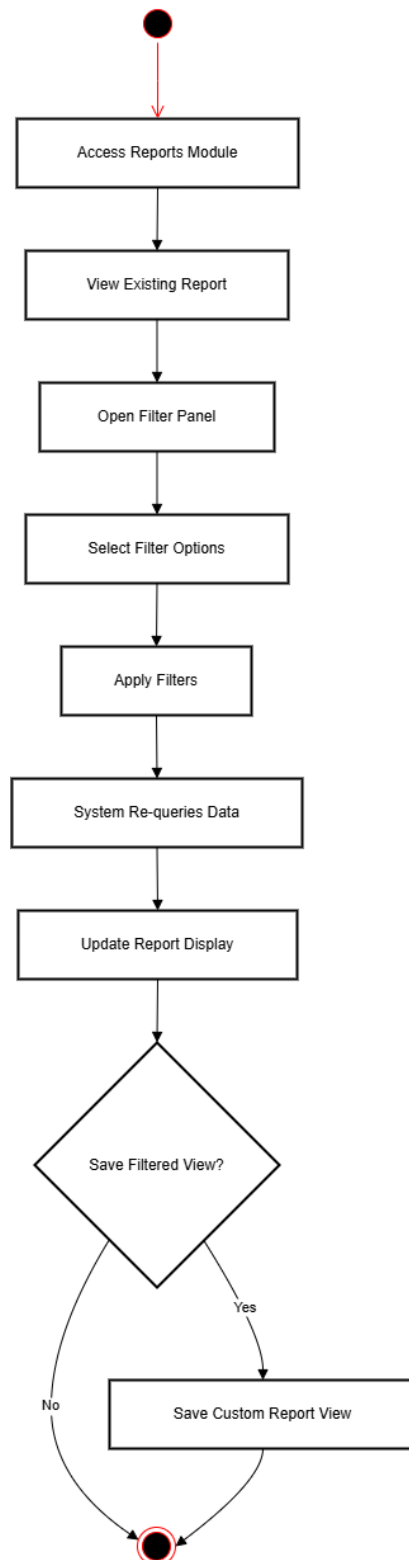
Transaction 7.1: Generate Report

Activity Diagram



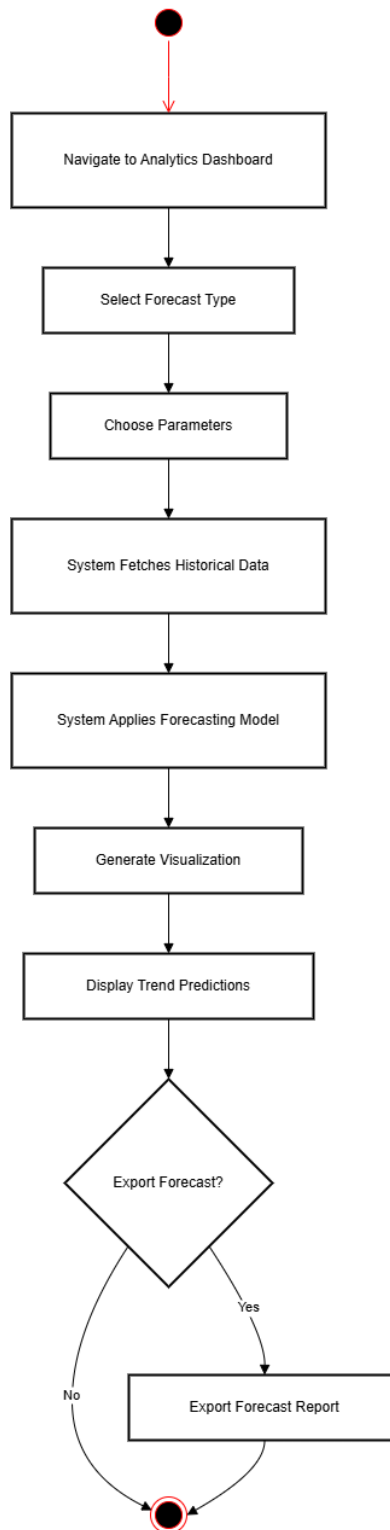
Transaction 7.2: Apply Report Filters

Activity Diagram



Transaction 7.3: Forecast Trends

Activity Diagram



3.4 Non-functional requirements

Performance

- The system should respond within 5 seconds for most user interactions.
- The lawyer-matching system should process requests within 15-20 seconds.
- The system should support at least 200 concurrent users during peak hours.
- The system must respond within 10 seconds for 90% of user interactions under normal load conditions.
- The AI lawyer-matching algorithm must process requests within 15 seconds on average.
- The platform should support at least 10,000 concurrent users without performance degradation.
- Case search and retrieval of the case should return results within 15 seconds for 95% of queries.

Security

- End-to-end encryption (AES-256) must be applied to user data and communications.
- Multi-Factor Authentication (MFA) should be implemented for lawyers and admins.
- User sessions should automatically log out after 15 minutes of inactivity.
- The system must comply with basic data privacy regulations (e.g., GDPR guidelines for user consent and data protection).
- All user data, including messages and legal documents, must be end-to-end encrypted using AES-256 encryption.
- The platform must comply with Data Privacy Act regulations for user data protection.
- The system should have role-based access control (RBAC) to ensure only authorized users can access sensitive data.

The platform should have automatic session expiration after 15 minutes of inactivity.

Reliability & Availability

- The system should have at least 99% uptime, meaning minimal unexpected downtimes.
- User data should be backed up daily to prevent loss.
- If a server failure occurs, the system should recover within 2 hours.

Scalability

- It should use a cloud-based database to handle increased storage needs.

Usability & Accessibility

- The UI should be **mobile-friendly**.

- The platform should be **easy to navigate**, with clear instructions for first-time users.