Software Requirements and Design Document

for

Law Firm Management System>

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NUCES - FAST

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1. Introduction

1.1 Purpose

An advanced Management Information System (MIS) tailored for Session and Magistrate Court attorneys and law firms in Pakistan.

1.2 Product Scope

This project is tailored for Session and Magistrate Court attorneys and law firms in Pakistan. While the High/Supreme courts utilize an official website for case allocations, there are no prominent tools available for these lower courts.

1.3 Title

An advanced Management Information System (MIS) designed for streamlined collaboration and automation within a law firm.

1.4 Objectives

With a focus on Session and Magistrate Court attorneys and law firms in Pakistan, this project seeks to:

- Streamline case scheduling processes.
- Define clear roles and responsibilities within law firms.
- Standardize essential case documentation.
- Establish a comprehensive case database for performance analysis.
- Offer an intuitive user interface.

1.5 Problem Statement

This project is an excellent choice because our team's close connection with professionals in law firms will ensure seamless communication and resource accessibility through all phases of the project. This project addresses the inefficiencies in the existing judicial workflow by using technology to make optimal use of resources, time, and intellectual capacity. By overcoming the issue of manual effort and automating routine

office tasks, this project will enable lawyers to allocate more time to research and foster enhanced collaboration.

2. Overall Description

2.1 Product Perspective

An entirely original management system designed for ease of use while providing a plethora of functionalities with the sole purpose of optimizing the workflows of Pakistani law firms.

2.2 Product Functions

Module 1:

Multi-Interface for role management:

- Admin Interface
- Lawyer Interface

This module focuses on user profile, authorization and database structure.

Module 2:

Case Management:

- Identify Types of Cases
- Identify Attributes of Cases

This module will involve comprehensive study and efficient coding of all relevant Case types.

Module 3:

App Workflow:

- Daily Reminders
- Case status updation and access control

In this module, the basic structure and workflow of the entire product will be implemented.

Module 4:

Standardized Documentation:

• Template Creation

This module will focus on an efficient approach to generate some standard lawsuit templates.

Module 5:

Personalized Dashboard:

- Exclusive methods
- Monthly report

In this module, data visualization and analysis will be performed and tracked.

2.3 List of Use Cases

- 1. Assign Hearing Date
- 2. Register Case
- 3. Update Case
- 4. Manage Profile
- 5. Send Notification
- 6. Maintain Schedule
- 7. View Schedule
- 8. Create Template Instance
- 9. Generate Monthly Report
- 10. View Lawyer Stats
- 11. View Cases
- 12. Manage Documents

2.4 Extended Use Cases

UC1: Assign Hearing Date

UseCase Name	Assign Hearing Date
Scope	Law Firm Management System
Level	User-Level
Primary Actor	Admin
Stakeholders and interests	Admin: The hearing date is assigned to the selected lawyer and the relevant case status is updated.

	Lawyer: The date appears on the lawyer's dashboard and they "Receive notification"(sub-function)
Preconditions	The case hearing date being assigned does not clash with other hearing dates assigned to the same lawyer.
Postconditions	 The lawyer's dashboard gets a new hearing date entry. The case documents related to the assigned hearing date are available to the lawyer. The lawyer's calendar is updated The lawyer receives the notification
Main Success Scenario	 Admin views the hearing dates to be assigned for the next day. Admin assigns the hearing date to a lawyer of choice. The lawyer is granted access to the concerned case's documents The lawyer receives a system generated notification.
Extensions	 a) No hearing dates are scheduled for the next day. a) The lawyer has a clash and the system prevents the hearing date assignment. Sol: The admin selects another lawyer for the job. a) The access is denied. Sol: The lawyer requests admin for concerned documents. a) The lawyer doesn't get the notification and is unaware.

UC2: Register Case

UseCase Name	Register Case
Scope	Law Firm Management System
Level	User-Level

Primary Actor	Admin
Stakeholders and interests	Admin: The newly arrived case is successfully registered.
Preconditions	 The Client approaches the admin with the new case. Admin accepts to take on the case.
Postconditions	 The New case is successfully registered. The New Case entry appears on Admin's dashboard
Main Success Scenario	 Admin accepts a new case. Admin makes a new entry of the case by providing the initial information (case type/nature, client details etc) Admin adds any necessary documents (if provided) Admin provides the first hearing date after filing the case.
Extensions	 1. a) Negotiation fails. Sol: The admin is not required to make a new case entry. 2. a) Incorrect Information is entered. Sol: The admin edits the information b) Client goes back on the deal. Sol: The admin deletes the case entry. 3. a) No documents are provided. Sol: The admin asks for documents required to file the case. b) The documents are not relevant. Sol: Admin requests the client for relevant documents. 4. a) The case is not filed. Sol: The admin waits for the case to be filed to receive the first hearing date.

UC3: Update Case

UseCase Name	Update Case
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Scope	Law Firm Management System
Level	User-Level
Primary Actor	Lawyer
Stakeholders and interests	Lawyer: The case information is successfully updated and Admin is informed. Admin: The admin receives a system generated notification regarding the updated case.
Preconditions	 The case is filed The case is assigned to the lawyer The update is valid(i.e. Next hearing date, document addition)
Postconditions	The data is successfully updatedThe system alerts the admin regarding update
Main Success Scenario	 The lawyer receives the document/hearing date for the case. The lawyer makes the data entry for the update. The data regarding the case is successfully updated. Admin is made aware of the update by system notification. The lawyer's access to the case files is revoked.
Extensions	 a) Wrong data input. Sol: Lawyer edits the data. a) The system crashes. Sol: Lawyer has to re-enter the data. a) The data input is invalid format. Sol: System rejects the update and asks the lawyer for correction. a) Admin fails to receive the notification.

UC4: Manage Profile

UseCase Name	Manage Profile
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Scope	Law Firm Management System
Level	User-Level
Primary Actor	Admin, Lawyer
Stakeholders and interests	Admin: The profile is successfully updated.
	Lawyer: The profile is successfully updated and the changes are saved.
Preconditions	• The lawyer/admin is authorized
Postconditions	 The data is updated successfully The profile is refreshed and reflects the changes.
Main Success Scenario	 The lawyer has to change the profile information/The admin has to register new lawyer(s) or change their profile. The required edit operations are performed. The data is successfully saved/updated. The changes are reflected in the viewable profile.
Extensions	 a) Unauthorized user Sol: The system allows only an admin or lawyer to manage profiles. a) System crashes during operation Sol: The changes have to be made again. a) Invalid format Sol: The change is rejected by the system unless it is valid. a) Changes not visible. Sol: The user refreshes the app to observe the changes or has to make the updates again.

UC5: Send Notification

UseCase Name	Send Notification
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Scope	Law Firm Management System
Level	Subfunction
Primary Actor	System
Stakeholders and interests	Admin: The admin is informed whenever any action that requires admin approval is performed.
	Lawyer: The lawyer is informed whenever any concerned changes are made.
Preconditions	The System is active.The User is available.
Postconditions	The notification is received.The relevant actions are performed.
Main Success Scenario	 A trigger event occurs for notification. System generates a valid notification message. System sends the notification to the concerned user. User receives the notification and reacts accordingly.
Extensions	 a) System is down. Sol: The system goes back to a safe state and waits for the trigger. a) Unknown event. Sol: The system generates a general error notification. a) The User's device is off. Sol: The system waits for User to be available and resends the notification.

UC6: Maintain Schedule

UseCase Name	Maintain Schedule
Scope	Law Firm Management System
Level	Subfunction

Primary Actor	System
Stakeholders and interests	Admin: All the hearings of cases proceed according to the schedule.
	Lawyer: The hearings of cases assigned to lawyers do not clash.
Preconditions	 One or more hearings are assigned to one lawyer.
Postconditions	Hearings assigned to lawyers do not clash.The schedule is not tightly packed.
Main Success Scenario	 Admin assigns a hearing date to a particular lawyer. System checks whether there is a slot for the hearing date in the lawyer's schedule. The date is assigned to the lawyer. The lawyer's schedule view is updated and displays the newly assigned date.
Extensions	 a) Wrong date assigned. Sol: Admin edits the date. a) Slot is not available Sol: System asks admin to choose a different lawyer. a) Schedule view is not updated. Sol: Lawyer refreshes the app to view the schedule

UC7: View Schedule

UseCase Name	View Schedule
Scope	Law Firm Management System
Level	User-Level
Primary Actor	Admin, Lawyer
Stakeholders and interests	Admin: The schedule shows all the hearing dates. Lawyer: The schedule shows the hearing dates assigned to the particular lawyer.

Preconditions	User authenticationAt Least one case hearing assigned.
Postconditions	• Schedule is displayed.
Main Success Scenario	 The user opens the schedule. The schedule displays the concerned hearing dates.
Extensions	 a) System not working. Sol: Re-open the app and try again. a) No date displayed.

UC8: Create Template Instance

UseCase Name	Create Template Instance
Scope	Law Firm Management System
Level	User-Level
Primary Actor	Admin
Stakeholders and interests	Admin: Ease of creating documents for cases with the help of pre-existing templates.
	Lawyer: Automated document creation saves lawyer's time.
Preconditions	 Case types with predefined formats exist. Documentation requiring a predefined template needs to be made for a case.
Postconditions	 Document is successfully created. The document is available to be downloaded.
Main Success Scenario	 The user needs to create a document. User selects the required template. User fills in the input fields. User presses the generate document button. The system generates the document. The user can now download the document and upload it.

Extensions	 a) User not authenticated. Sol: User logs in with correct credentials a) Template not available. Sol: User has to make his own document. a) Invalid input. Sol: System asks the user to enter correct
	data. 4. a) Button not working Sol: Reload the system and try again. 5. a) User needs to make changes. Sol: The system asks the user to review the preview of the document. 6. a) Download fails.

UC9: Generate Monthly Report

UseCase Name	Generate Monthly Report
Scope	Law Firm Management System
Level	Subfunction
Primary Actor	System
Stakeholders and interests	Admin: Gets all the case/lawyers information Lawyer: Gets all the assigned cases report.
Preconditions	Case/Lawyer is registered.One month has passed since the last report.
Postconditions	 Report is successfully generated. All the information is accurately displayed.
Main Success Scenario	 System waits for the trigger(change of month). System generates report for all active cases and lawyers System sends the report to the admin and lawyers. System generates an alert.
Extensions	 a) Timer issue. Sol: System periodically matches its time

with real time.

2. a) Report generation issues.

Sol: System generates an error message and

provides admin with a manual override.

3. a) No cases registered.

4. a) User ignores the alert.

UC10: View Lawyer Stats

UseCase Name	View Lawyer Stats
Scope	Law Firm Management System
Level	User-Level
Primary Actor	Admin, Lawyer
Stakeholders and interests	Admin: All of the lawyers' activities can be viewed.
	Lawyer: Can keep a track of their stats and work hours.
Preconditions	 Lawyer is registered. Lawyer has reached at least one milestone for stats to show.
Postconditions	• Admin/Lawyer can view the stats.
Main Success Scenario	 Lawyer presses the view stats button. The system fetches the lawyer's stats The lawyer views the stats.
Extensions	1. a) System failure.Sol: Reload the app.2. a) No stats entry.Sol: System informs the user.

UC11: View Cases

UseCase Name

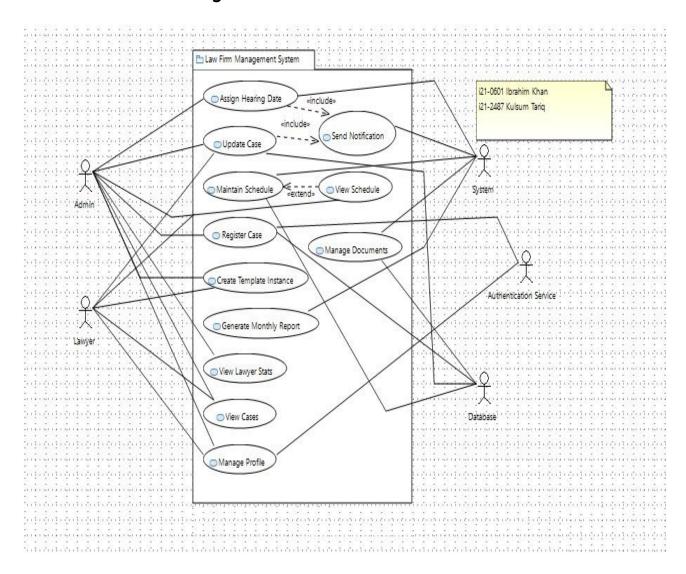
Scope	Law Firm Management System
Level	User-Level
Primary Actor	Admin
Stakeholders and interests	Admin: All the registered cases and relevant information is available.
Preconditions	Admin authentication.At Least one case is registered.
Postconditions	Admin can access cases.Lawyers can access assigned cases.
Main Success Scenario	 Admin logs in the system. Admin presses the view cases button. The System displays all the cases along with relevant information.
Extensions	 1. a) Authentication failed. Sol: Admin logs in again with correct credentials. 2. a) System not functional. Sol: Reload app. 3. a) No cases registered.

UC12: Manage Documents

UseCase Name	Manage Documents
Scope	Law Firm Management System
Level	Subfunction
Primary Actor	System, Database
Stakeholders and interests	Admin: All the cases are properly documented. Lawyer: All the documents are available and relevant.
Preconditions	Case is registered.Initial Documentation is done.

	 The Case is filed.
Postconditions	 Documents are available in valid formats. Documents are accessible when needed.
Main Success Scenario	 Lawyer/Admin has a document or template to upload regarding a case. The system provides the facility for document upload. The system saves the documents in the database.
Extensions	 1. a) Invalid format Sol: System notifies the user to use a value format(.pdf) 2. a) Upload Issues. Sol: Reload the system. 3. a) Document not saved. Sol: System asks the user to upload the document again.

2.5 Use Case Diagram



3. Other Nonfunctional Requirements

3.1 Performance Requirements

The MIS must support concurrent usage by up to 100 users without performance degradation, ensuring response times under 2 seconds for all primary functions under normal conditions. For data-intensive operations like report generation, response times should not exceed 5 seconds. The system should be capable of handling a data growth rate of 10% per annum without a drop in performance. These requirements are critical to ensure that the system remains responsive and efficient as usage scales up.

3.2 Safety Requirements

The system must incorporate safeguards against data loss, including regular backups and data recovery measures. In case of a system failure, it should be able to restore the latest backup within 30 minutes. The system should not allow actions that could lead to data corruption or loss. Compliance with the latest data protection regulations (e.g., GDPR or relevant local laws) is mandatory. Safety certifications like ISO/IEC 27001 (Information Security Management) must be satisfied.

3.3 Security Requirements

The MIS requires robust user authentication, including multi-factor authentication for accessing sensitive data. User activities should be logged for audit purposes. The system must comply with Pakistan's data protection laws and any relevant international standards for data security. The software should be regularly assessed for vulnerabilities, with mandatory updates for critical security patches. Compliance with security certifications such as ISO/IEC 27001 is required.

3.4 Software Quality Attributes

- Adaptability:
 - The system must easily integrate with existing legal databases and software.
- Availability:
 - The system should be operational 99.9% of the time.
- Maintainability:
 - Any bugs or issues should be resolvable within 48 hours.
- Reliability:
 - The system should have a failure rate of less than 0.1%.
- Usability:
 - The interface should be intuitive, requiring minimal training for new users.

3.5 Business Rules

- Only authorized personnel (e.g., lawyers, legal assistants) can access sensitive case data.
- Modifications to case records must be tracked with a change log including user ID and timestamp.
- Clients can only access their own case information and no other data.

3.6 Operating Environment

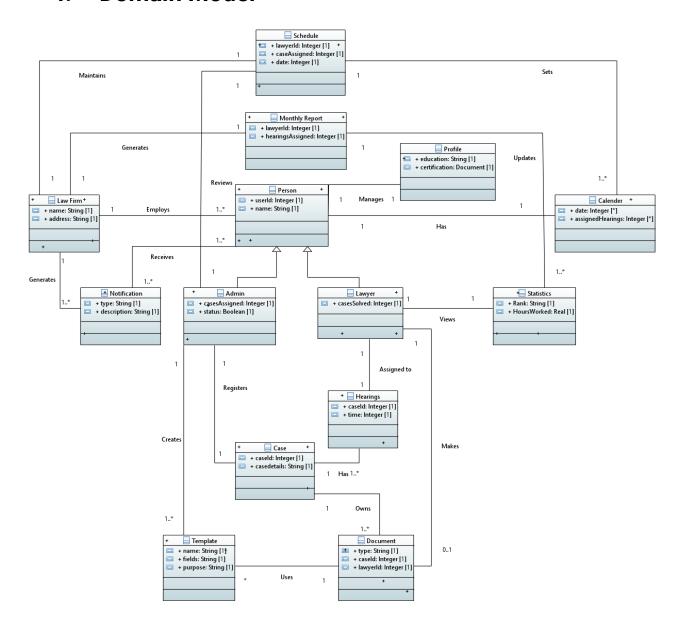
The MIS is designed as a desktop application, primarily targeting Windows 10 and later versions, ensuring compatibility with their respective native functionalities. It should also be compatible with macOS, providing a seamless experience across different operating systems. The application must coexist with common legal and office software like Microsoft Office, Adobe Acrobat, and legal

research tools without conflicts. Hardware requirements include support for standard office computers with at least 8GB RAM and a modern multi-core processor. The system should be designed to efficiently utilize resources, ensuring smooth operation even on moderately equipped hardware common in legal offices. Regular updates should be easily deployable to ensure compatibility with the latest operating system updates and security patches.

3.7 User Interfaces

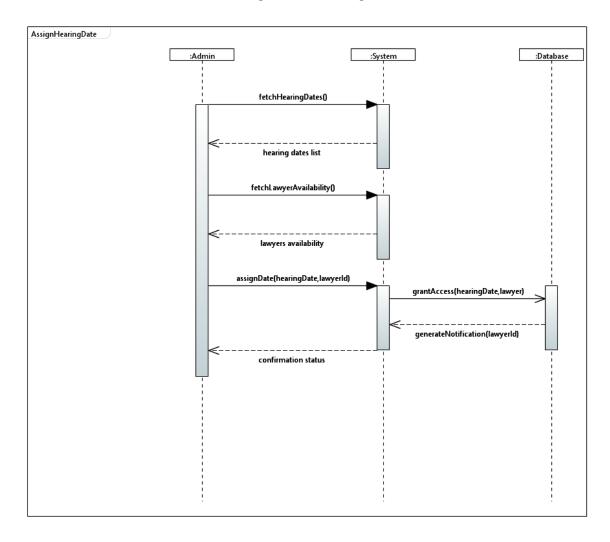
The user interface should be clean and minimalistic, with a focus on ease of navigation. It should adhere to the principles of accessibility, including support for screen readers and keyboard-only navigation. A consistent color scheme and layout should be maintained across all screens. Error messages need to be clear and informative, guiding users towards resolution of issues. A dedicated help section with FAQs and user guides is essential. The design should be documented in a separate, detailed UI specification.

4. Domain Model

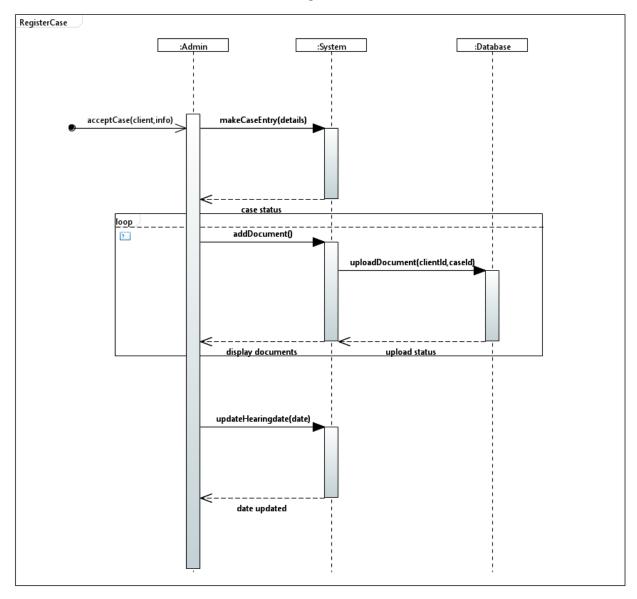


5. System Sequence Diagram

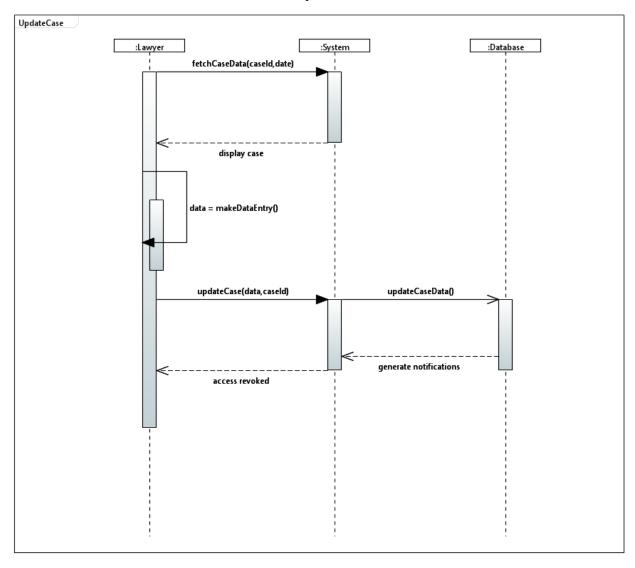
UC1: Assign Hearing Date



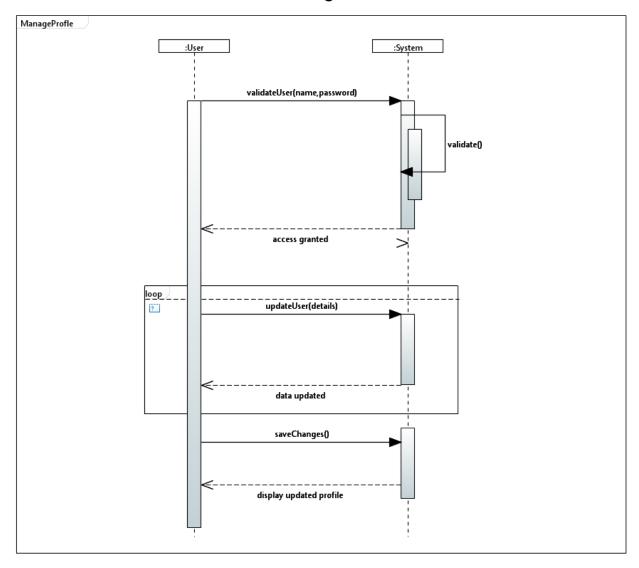
UC2: Register Case



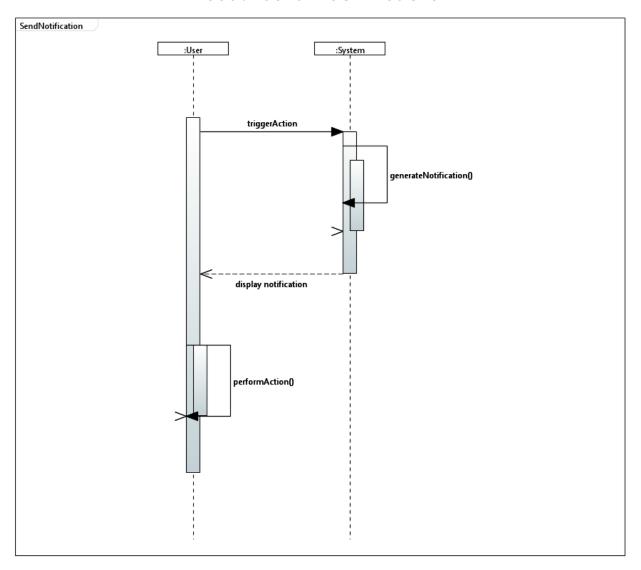
UC3: Update Case



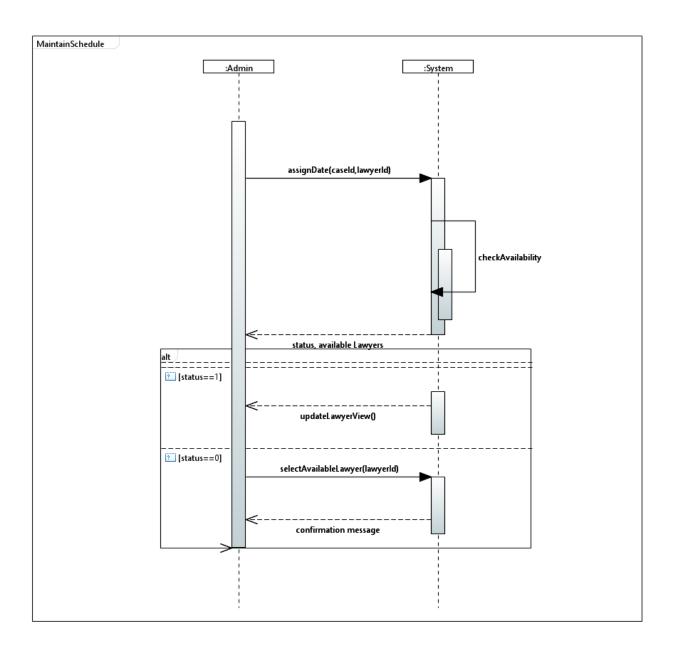
UC4: Manage Profile



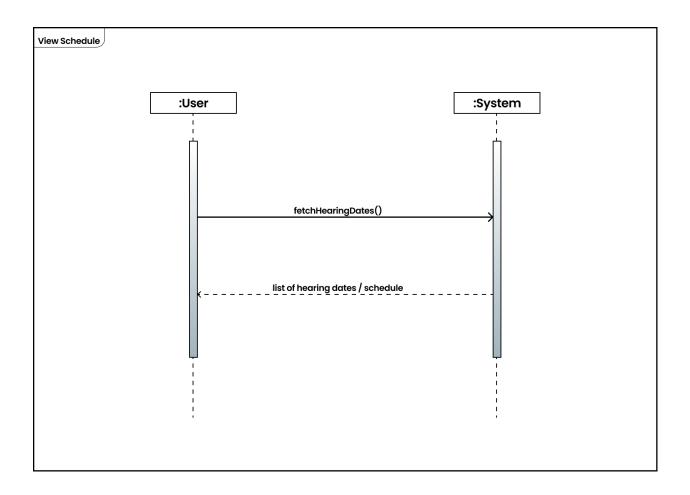
UC5: Send Notification



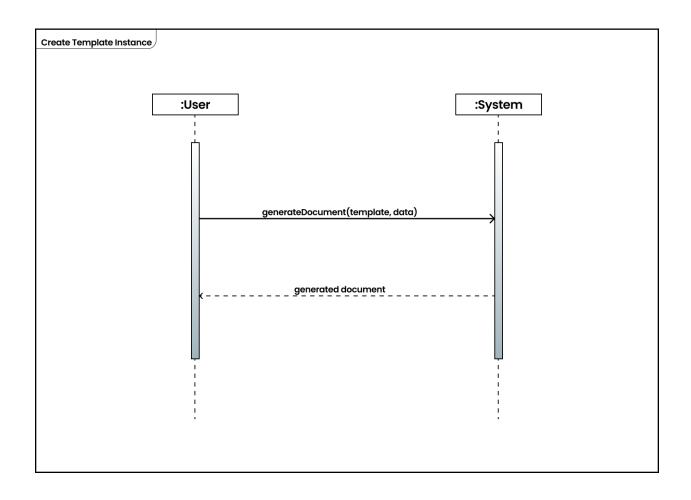
UC6: Maintain Schedule



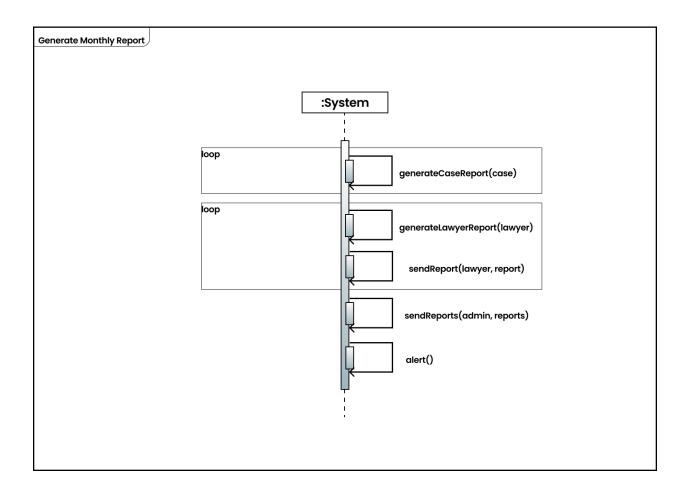
UC7: View Schedule



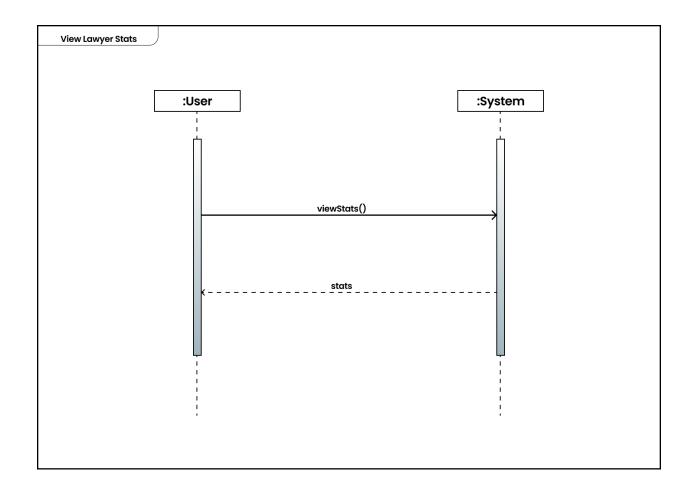
UC8: Create Template Instance



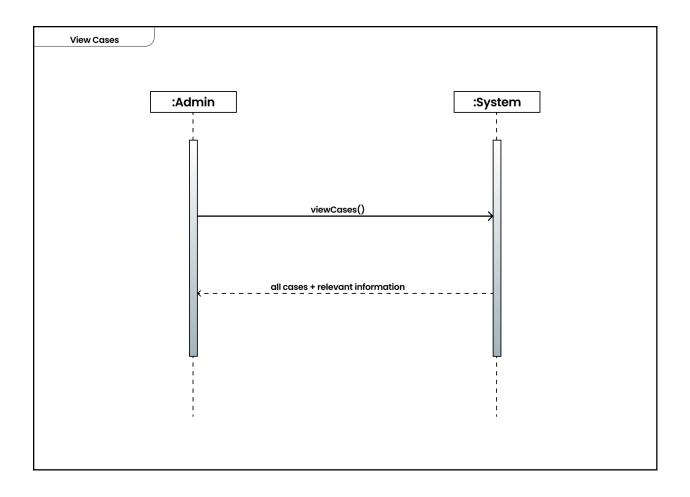
UC9: Generate Monthly Report



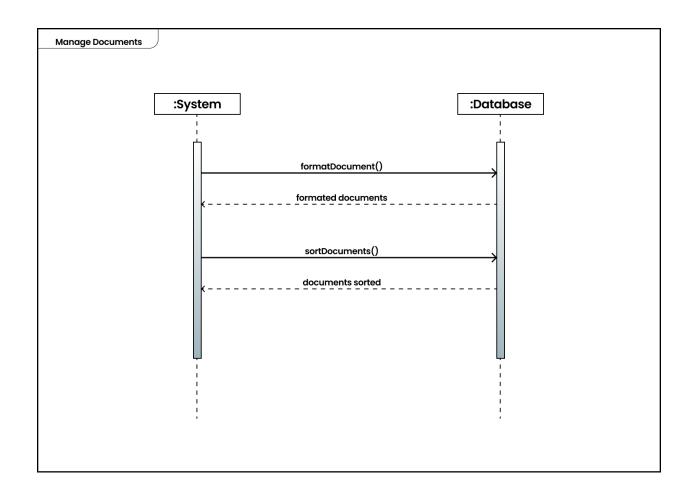
UC10: View Lawyer Stats



UC11: View Cases

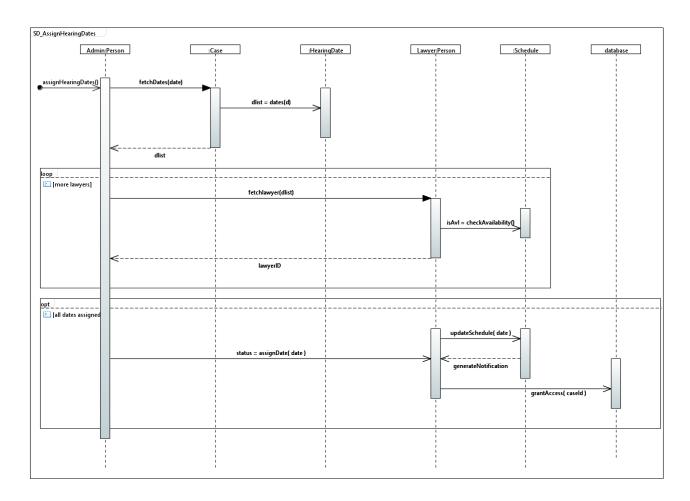


UC12: Manage Documents

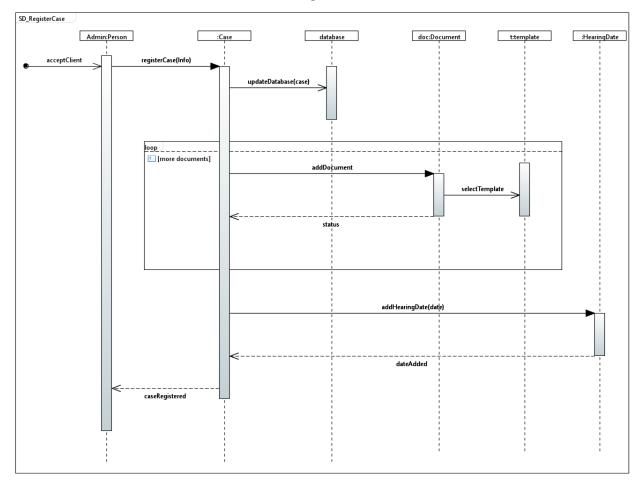


6. Sequence Diagram

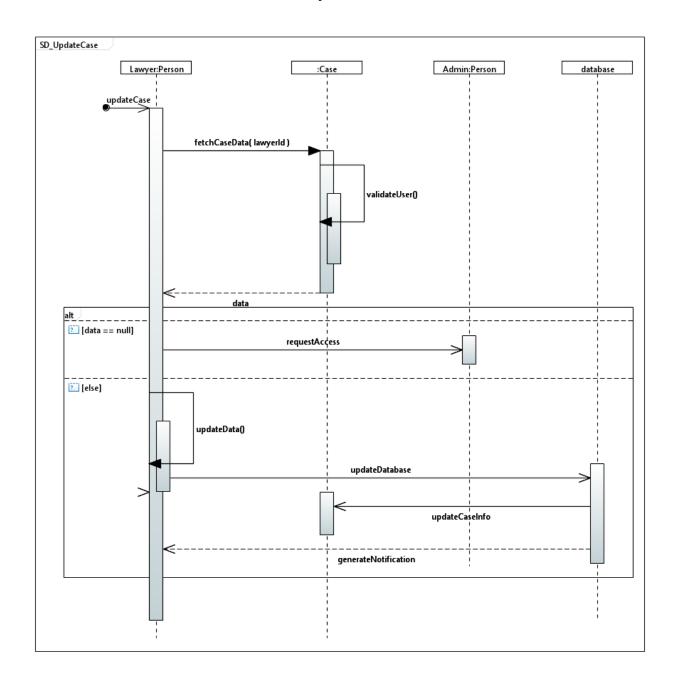
UC1: Assign Hearing Date



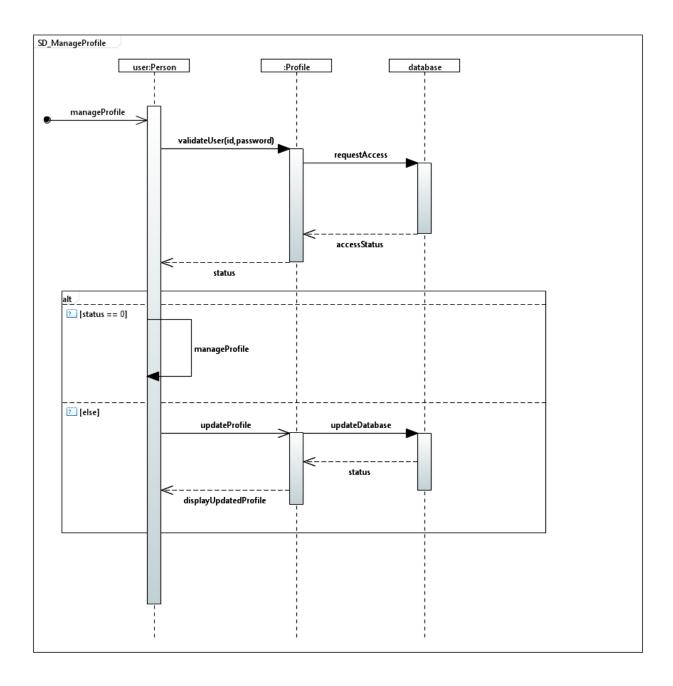
UC2: Register Case



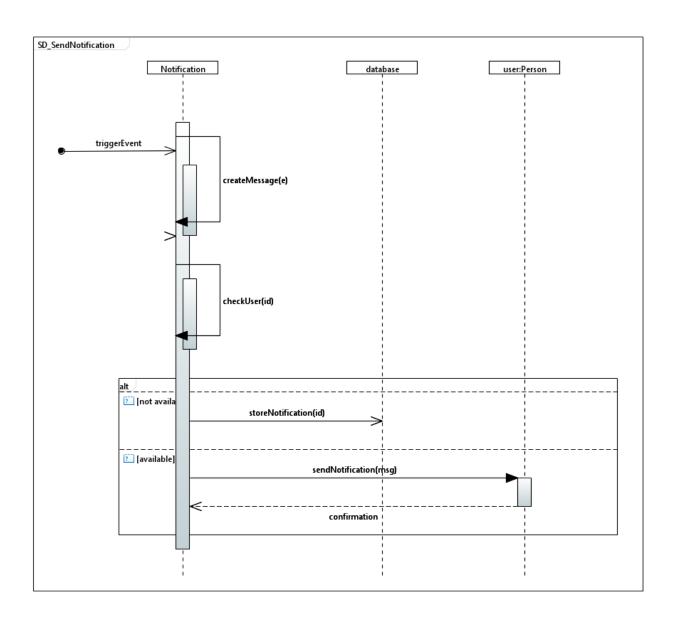
UC3: Update Case



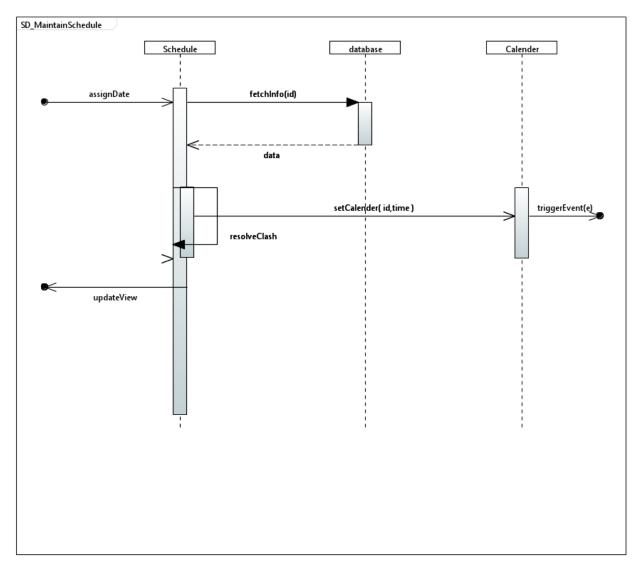
UC4: Manage Profile



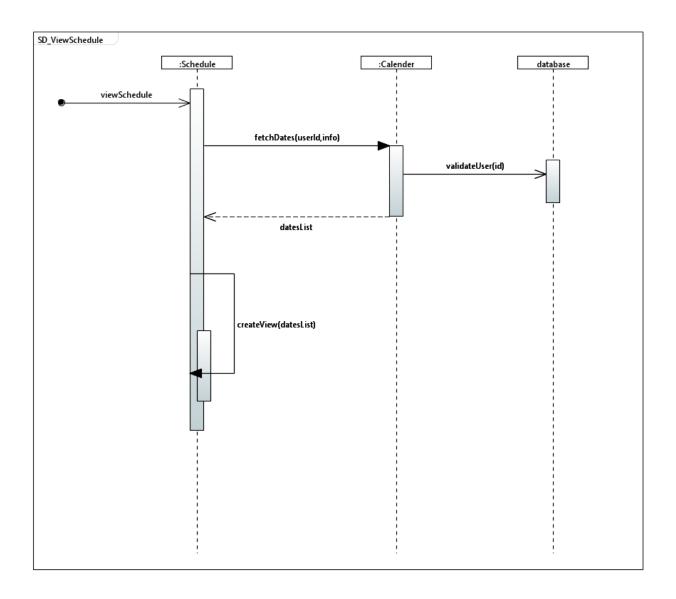
UC5: Send Notification



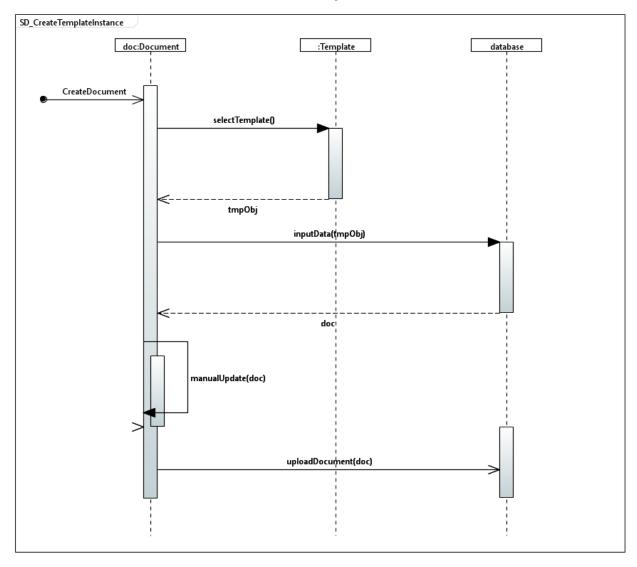
UC6: Maintain Schedule



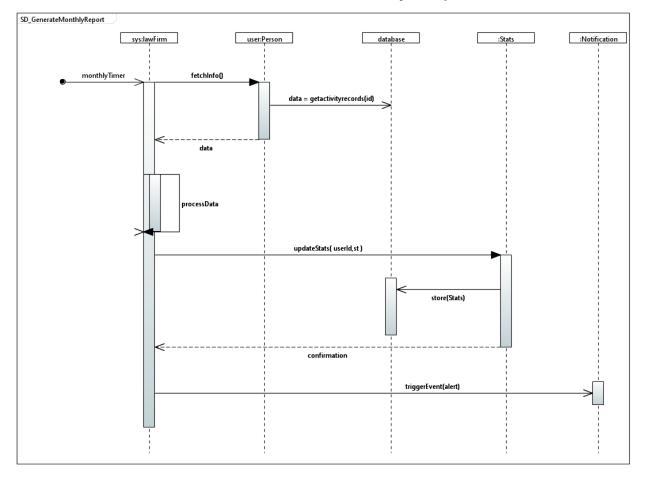
UC7: View Schedule



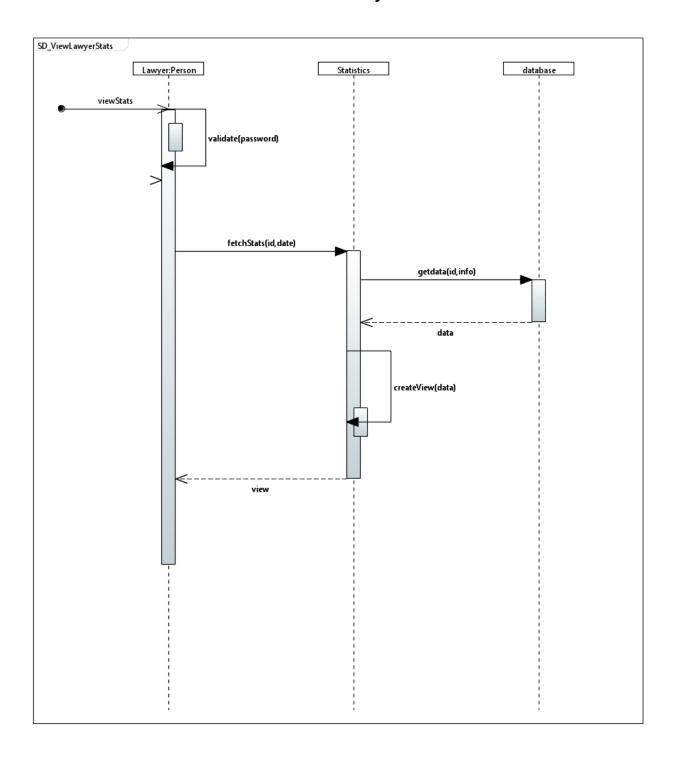
UC8: Create Template Instance



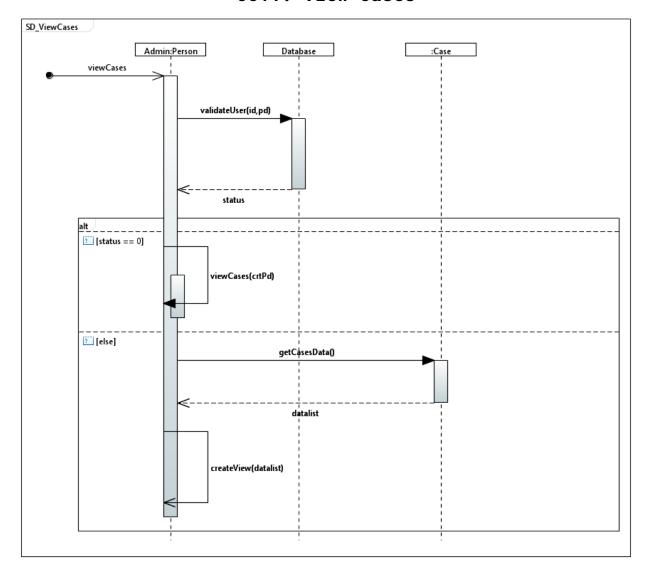
UC9: Generate Monthly Report



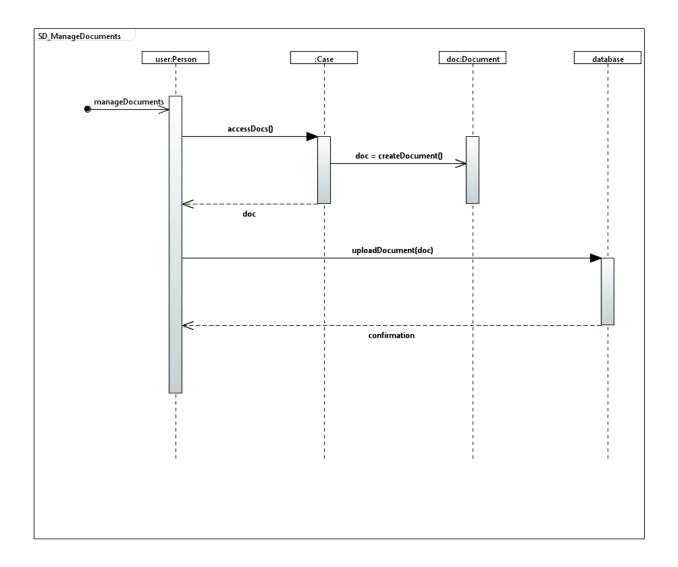
UC10: View Lawyer Stats



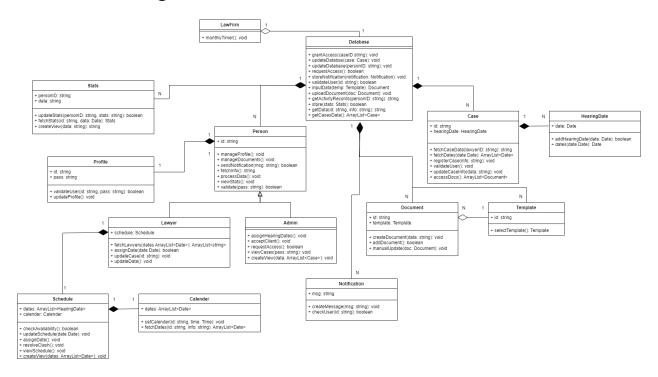
UC11: View Cases



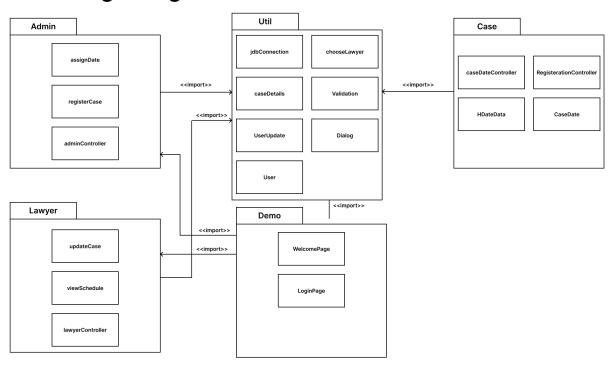
UC12: Manage Documents



7. Class Diagram



8. Package Diagram



9. Deployment Diagram

