# Project Title: Complete Legal Aid – Legal & Judicial Communication Platform

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**Course:** CSE 3422(D) – **Software Engineering Laboratory**
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## Abstract

Access to justice remains one of the most persistent challenges for citizens in Bangladesh. Complex legal language, lack of awareness, and limited communication between citizens and lawyers have created barriers that discourage people from seeking timely assistance. The **Complete Legal Aid – Legal & Judicial Communication Platform** addresses these challenges by offering a secure, intelligent, and user-friendly system that connects verified lawyers with citizens seeking help.

The platform integrates **AI-powered legal guidance**, a **secure evidence vault**, **real-time consultation booking**, and **case tracking** in both Bangla and English. It ensures that individuals can report incidents, find expert legal support, and manage their legal affairs confidently—all from a single digital platform. By blending social impact with modern technology, the system aims to promote transparency, inclusivity, and digital trust in Bangladesh's legal ecosystem.

# Acknowledgement

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We also thank the lawyers, students, and general citizens who participated in our surveys and discussions, sharing insights into the real-world challenges of accessing legal aid. Finally, we acknowledge our teamwork, dedication, and shared goal of building a technology-driven, citizen-centric legal communication platform.

# 1. Introduction

## 1.1 Purpose

The purpose of this SRS is to define the functional and non-functional requirements of the **Complete Legal Aid – Legal & Judicial Communication Platform**, designed to simplify access to legal services and ensure transparent communication between users and lawyers.
This document will serve as a technical foundation for developers, testers, and stakeholders to understand how the system functions, its design constraints, and quality expectations.

## 1.2 Scope

The platform enables users to:

- Find and consult verified lawyers.
- Report incidents and track ongoing cases.
- Upload and store sensitive documents in a secure evidence vault.
- Get AI-based legal explanations in Bangla and English.
- Communicate with lawyers and receive updates through notifications.
  Lawyers can:
- Manage their cases, appointments, and client communications.
- Update consultation availability and provide legal guidance.
  Maintain compliance reminders and review client feedback.

Admins can:

- Manage users, cases, and lawyer verification.
- Monitor system activities, access logs, and feature settings.

The system is web-based, mobile-responsive, and designed for national scalability.

## 1.3 Intended Audience

| Audience | Purpose |
|---|---|
| **Developers** | To understand the technical requirements and system flow. |
| **Test Engineers** | To validate and ensure the requirements meet expected quality. |
| **Project Managers** | To plan development milestones and oversee progress. |
| **Lawyers** | To manage cases, clients, and appointments. |
| **End Users (Citizens)** | To access justice digitally with trust and ease. |
| **Administrators** | To ensure data accuracy, security, and smooth operations. |

## 1.4 Problem Statement

In Bangladesh, legal services are often inaccessible due to:

- Lack of reliable information about qualified lawyers.
- Complex and non-transparent legal processes.
- Safety and privacy concerns when sharing evidence.
- No digital record of consultations or case tracking.

Existing solutions are fragmented and fail to offer an all-in-one secure experience.
The **Complete Legal Aid** platform aims to overcome these challenges with verified lawyer listings, case tracking, encrypted document storage, and AI-driven legal support—all in one place.

## 1.5 Goals and Objectives

1. Build a centralized digital platform for citizens and lawyers.
2. Provide AI-assisted legal information and guidance.
3. Enable secure, real-time lawyer booking and consultation.
4. Implement end-to-end encrypted evidence storage.
5. Allow users to track case progress and receive notifications.
6. Offer a bilingual experience (Bangla & English).

7. Ensure transparency and trust through verified lawyer profiles.

### 1.6 Out of Scope

- Automated decision-making or legal verdict prediction.
- Integration with government or court systems.
- Payment gateway for billing (reserved for future scope).
- Offline case management.

# 2. System Overview

## 2.1 Product Perspective

The platform functions as a **centralized digital hub** connecting lawyers, clients, and administrators. It bridges communication gaps while maintaining privacy and professionalism. It is not intended to replace traditional legal services but to **enhance accessibility and efficiency** through a hybrid digital model (web + mobile).

## 2.2 Product Functions

| Function | Description |
|---|---|
| **User Registration & Login** | Users and lawyers register with OTP/email verification. |
| **Lawyer Directory** | Search by specialization, experience, and location. |
| **Consultation Booking** | Real-time appointment booking and scheduling. |
| **Case Tracking** | View case status, progress, and communication history. |
| **AI Legal Assistant** | Provides bilingual explanations of legal terms and procedures. |
| **Evidence Vault** | Secure upload, encryption, and controlled document sharing. |
| **Notifications** | Real-time updates on appointments and case changes. |
| **Feedback & Rating** | Allows clients to rate lawyer services post-consultation. |
| **Admin Panel** | System monitoring, verification, and analytics management. |

### 2.3 User Classes and Characteristics

| User Type | Description | Skill Level |
|---|---|---|
| **User (Citizen)** | Reports incidents, books lawyers, uploads documents. | Basic |
| **Lawyer** | Provides consultation, manages clients and cases. | Intermediate |
| **Admin** | Verifies accounts, maintains security and analytics. | Advanced |

### 2.4 Operating Environment

- **Platform:** Web (React/Vite) and Mobile-Responsive Interface.
- **Frontend:** React, TypeScript, Tailwind CSS.
- **Backend:** Django, Django REST Framework (Python).
- **Database:** MySQL, Cloud SQL / Cloud MySQL Manager.
- **Cloud Infrastructure:** Cloud Compute, Cloud Run, Docker containerization.
- **Network:** HTTPS/HTTP, REST API, CORS security protocols.
- **Security:** JWT Authentication, End-to-End Encryption for vault..

### 2.5 Design and Implementation Constraints

- Must comply with **Bangladesh ICT Act & Data Privacy Rules**.
- Must support **bilingual UI (Bangla + English)**.
- Designed to scale up to **10,000 active users** in MVP.
- No reliance on third-party paid APIs in initial release.

### 2.6 Assumptions and Dependencies

- Users have smartphones and stable internet connections.
- Lawyers maintain up-to-date availability and information.
- Admins handle verification and security oversight.
- The AI module depends on curated, verified legal content.

### 2.7 SDLC Approach

The project follows an **Agile Iterative Model**:

1. **Planning:** Identify system goals and survey findings.
2. **Requirement Analysis:** Gather inputs from users and lawyers.
3. **Design:** Create UML diagrams, use cases, and data models.
4. **Development:** Build modules iteratively (AI assistant, booking, evidence vault).
5. **Testing:** Conduct unit, integration, and user acceptance tests.
6. **Deployment:** Launch MVP with secure cloud infrastructure.
7. **Maintenance:** Continuous updates and user feedback integration.

# 3. Requirements Elicitation & Analysis

## 3.1 Introduction

This chapter focuses on identifying and analyzing the real-world requirements of the *Complete Legal Aid – Legal & Judicial Communication Platform*. The purpose is to understand user needs, current system limitations, and design a solution that bridges the gap between citizens and legal professionals.

The analysis process included:

- Online surveys conducted with general users and lawyers.
- Observation of existing digital legal services.
- Benchmarking against local and international legal-tech platforms.
- Identifying gaps and finalizing a feature set for the Minimum Viable Product (MVP).

The gathered data helped refine requirements into precise functional and non-functional specifications, ensuring the system remains realistic, user-centric, and socially impactful.

## 3.2 Information Sources

### 3.2.1 Internal Sources

- **Survey Data:** Responses collected from 36 citizens and lawyers through Google Forms.
- **Team Brainstorming:** Iterative sessions to align system design with legal, social, and technical feasibility.

- **Feasibility Study:** Technical, operational, and economic evaluation conducted during the planning phase.

### 3.2.2 External Sources

- **Legal Portals:** Study of platforms like *LegalZoom*, *Justia*, *Avvo*, *LawAdvisor*, and *BDLawHelp*.
- **Online Research:** Review of literature on AI in legal decision support and document security.
- **User Interviews:** Conversations with legal interns, clients, and lawyers to understand practical workflow issues.

## 3.3 Benchmark Analysis

A benchmark analysis was performed to understand the strengths and shortcomings of existing solutions. Most online legal-aid systems in Bangladesh lack transparency, trust, and integrated communication between clients and lawyers.

| Platform | Lawyer Directory | Real-time Booking | AI Legal Assistant | Secure Evidence Vault | Case Tracking | Bilingual (BN/EN) |
|---|---|---|---|---|---|---|
| **LegalZoom (USA)** | ✅ | ✅ | ❌ | ✅ | ✅ | ❌ |
| **Avvo (USA)** | ✅ | ✅ | ❌ | ❌ | ❌ | ❌ |
| **LawAdvisor (Global)** | ✅ | ✅ | ❌ | ✅ | ✅ | ❌ |

| | | | | | | |
|---|---|---|---|---|---|---|
| **BDLawHelp (BD)** | ✅ | ❌ | ❌ | ❌ | ❌ | ❌ |
| **Ask Blast (BD)** | ❌ | ❌ | ❌ | ❌ | ❌ | ✅ |
| **Complete Legal Aid (CLA)** | ✅ | ✅ | ✅ **(GenAI)** | ✅ **(Encrypted)** | ✅ | ✅ |

**Findings:**

- International tools focus on consultation and contracts but ignore localization and affordability.
- Local apps lack trust, security, and user-friendly design.
- None offer **Bangla AI assistance**, **real-time tracking**, or a **secure encrypted vault**—key differentiators for our project.

## 3.4 Gap Analysis

The traditional and existing digital legal aid systems suffer from several operational and usability limitations. The proposed platform eliminates these barriers through a citizen-first design.

| Existing Problems | Gaps Identified | Solutions in Complete Legal Aid |
|---|---|---|
| **Limited accessibility** – urban-focused services only. | No centralized national legal platform. | Mobile-responsive system accessible from any device. |
| **Trust issues** – unverified lawyers and unreliable advice. | Lack of verification or feedback systems. | Verified profiles with ratings and transparent credentials. |
| **Privacy concerns** when sharing sensitive case data. | Weak or no encryption in existing tools. | Encrypted evidence vault with time-limited access links. |

| | | |
|---|---|---|
| **Lack of real-time updates.** | Manual tracking by phone calls or visits. | Case tracker and automatic notifications. |
| **Language barrier.** | Legal terms are difficult for average users. | AI assistant providing plain Bangla explanations. |
| **Complex consultation process.** | Offline booking delays and unavailability. | One-click consultation scheduling and live availability view. |

**Result:**
The proposed system closes the "digital justice gap" by combining accessibility, transparency, and AI-assisted learning into a unified platform.

## 3.5 Survey Findings & Analysis

### 3.5.1 Methodology

A structured online survey was distributed through Facebook and WhatsApp groups.

- **Total Respondents:** 36
- **Demographics:** 83% general users, 17% lawyers
- **Average Age Group:** 18–24
- **Survey Duration:** 2 days

### 3.5.2 Key Observations

| Question | Major Responses | Design Decision |
|---|---|---|
| Do you use any legal aid app? | 73% said *No* | Need strong onboarding and simple "Start Here" flow. |
| Main challenge in getting legal help? | 48%: "Don't know where to go." | Add AI triage + verified lawyer directory. |
| Preferred consultation method? | 84%: "Face-to-face." | Support hybrid options: in-person, phone, video. |

| | | |
|---|---|---|
| What ensures trust in a digital system? | 55%: “Strong security & encryption.” | Implement E2E encryption & privacy compliance. |
| How important is AI assistance? | 52%: “Extremely important.” | Integrate bilingual AI legal assistant. |
| Value of lawyer ratings? | 87%: “Very important.” | Prominent rating system on profiles. |
| Preferred communication channel? | 50%: “Email,” 33%: “In-app.” | Multi-channel notification module. |
| Most requested features | Secure upload vault, Case tracking, AI support | Marked as **MVP priorities**. |

### 3.5.3 Summary of Insights

- **Trust and Privacy** are top concerns.
- **AI-powered explainers** are viewed as revolutionary in Bangladesh’s legal context.
- **Real-time lawyer availability** and **ratings** improve credibility.
- **Bangla support** increases inclusivity.
- **Emergency help button** ensures fast reporting during critical situations.

## 3.6 Feature List Fixation

After analyzing survey results, benchmark data, and feasibility feedback, the final feature list for the MVP version was finalized as follows:

### MVP Features (Phase 1)

- User registration & authentication
- Verified lawyer directory
- Real-time lawyer availability
- Booking for in-person/online consultations
- AI-powered legal guidance (Bangla + English)
- Secure evidence vault with encrypted uploads
- Case tracking dashboard
- Feedback and lawyer ratings
- Emergency reporting with anonymity

- Admin panel with role-based control

**Backlog (Future Versions)**

- Payment gateway integration
- Lawyer income analytics
- Client-lawyer video recording archive
- Expanded AI chatbot for contract drafting
- Multi-role access for NGO support teams
- Mobile app (Android + iOS)

| Strengths | Weaknesses |
|---|---|
| ✅ Quick access to verified legal help. | 🚫 High initial development cost. |
| ✅ AI-based guidance and multilingual interface. | 🚫 Requires stable internet for optimal performance. |
| ✅ End-to-end encryption and trust transparency. | 🚫 Limited lawyer database at launch. |
| ✅ Anonymous reporting and emergency help. | 🚫 Continuous maintenance required for AI accuracy. |

| Opportunities | Threats |
|---|---|
| 🌍 Rising digital adoption in Bangladesh. | ⚠️ Cybersecurity and privacy threats. |
| 🤝 Collaboration with law students, NGOs, and firms. | ⚠️ Competition from future legal-tech startups. |
| 📱 Growing mobile penetration rate. | ⚠️ User hesitation toward AI reliability. |
| 🧩 Expansion into mobile app and cross-regional platforms. | ⚠️ Misuse of uploaded data if unregulated. |

**Strategic Summary:**
To mitigate threats, the system will rely on strong privacy controls, transparent disclaimers, and routine security audits. Continuous improvement of the AI assistant and lawyer verification will maintain trust and adoption.

| Priority | Requirement | Category |
|---|---|---|
| High | User authentication, Booking, AI legal help, Vault encryption | Functional |
| High | Responsiveness, Multilingual UI | Non-functional |
| Medium | Feedback system, Lawyer profile verification | Functional |
| Medium | Case history exports, Notification control | Functional |
| Low | Payment system, Mobile version | Future feature |

# 4. Functional Requirements

## 4.1 User Management

**Feature Name:** Registration, Authentication & Role Management
**Actors:** User, Lawyer, Admin

### Description

The system provides secure registration, login, and role-based access control (RBAC) for all platform members. Every user (citizen or lawyer) must authenticate before accessing personalized features.

### Preconditions

- The system and database are online.
- Email/SMS gateway operational.

| ID | Requirement | Description |
|---|---|---|
| FR-UM-01 | Account Registration | Allow signup via email or phone with OTP verification. |

| | | |
|---|---|---|
| FR-UM-02 | Authentication | Validate credentials and issue JWT-based session tokens. |
| FR-UM-03 | Password Recovery | Send a secure password reset link/token valid for 15 minutes. |
| FR-UM-04 | Profile Management | Enable users to update profile fields (name, phone, location, specialization). |
| FR-UM-05 | Role-Based Access | Enforce RBAC for User, Lawyer, and Admin on all restricted routes. |
| FR-UM-06 | Account Verification | Admin approves lawyer profiles before public listing. |

### Acceptance Criteria

- Successful login returns valid token; unauthorized requests return 401.
- Users cannot access modules outside their assigned role.
- Password reset flow completes end-to-end within expiry period.

## 4.2 Case Intake & Management

**Feature Name:** Case Creation, Assignment & Tracking
**Actors**: User, Lawyer, Admin

### Description

Users can create cases, upload related documents, and track progress. Lawyers manage assigned cases and update their status.

| ID | Requirement | Description |
|---|---|---|
| FR-CM-01 | Case Creation | Users submit a new case with title, description, category, urgency, and attachments. |

| | | |
|---|---|---|
| FR-CM-02 | Unique Case ID | The system auto-generates a unique identifier and sets initial status “Submitted.” |
| FR-CM-03 | Lawyer Assignment | Admin manually assigns or auto-matches based on specialization and load. |
| FR-CM-04 | Case Status Workflow | Statuses: *Submitted* → *In Review* → *Scheduled* → *Resolved* → *Closed.* |
| FR-CM-05 | Activity Log | Maintain immutable log (actor, action, timestamp). |
| FR-CM-06 | Case Comments | Enable secure chat/comments between User and Lawyer inside each case thread. |
| FR-CM-07 | Case Search | Filter cases by ID, category, status, or date range. |

### Acceptance Criteria

- Every case transition is logged and authorized.
- Users view real-time case status and history.
- Only assigned Lawyer/Admin may edit status or add official notes.

## 4.3 Consultation Scheduling

**Feature Name:** Appointment Booking & Calendar Management
**Actors:** User, Lawyer

### Description

The platform allows real-time consultation booking through calendar integration. Lawyers manage their availability; users book sessions linked to cases.

**Functional Requirements**

| ID | Requirement | Description |
|---|---|---|

| | | |
|---|---|---|
| FR-CS-01 | Availability Setup | Lawyers define working hours and meeting types (in-person, call, video). |
| FR-CS-02 | Slot Booking | Users request consultation slots referencing case ID. |
| FR-CS-03 | Confirmation & Reschedule | Lawyers confirm, decline, or reschedule with reason. |
| FR-CS-04 | Conflict Prevention | The system prevents double-booking and ensures timezone consistency. |
| FR-CS-05 | Reminders | Auto-send reminders 24 h and 1 h before meeting via email/in-app. |
| FR-CS-06 | Session Summary | Lawyers record session outcome notes attached to case records. |

### Acceptance Criteria

- Booking only possible in free slots.
- Confirmations and reminders are timely.
- Meeting notes persist and remain editable by the Lawyer only.

## 4.4 Document Management (Evidence Vault)

**Feature Name:** Secure File Vault
**Actors:** User, Lawyer, Admin

### Description

A tamper-proof vault stores case-related files securely. All uploads are encrypted and access-controlled.

### Functional Requirements

| ID | Requirement | Description |
|---|---|---|

| | | |
|---|---|---|
| FR-DM-01 | Upload Restrictions | Accept only PDF/DOCX/JPG/PNG ≤ 10 MB. |
| FR-DM-02 | Server Validation | Perform virus scan and MIME verification. |
| FR-DM-03 | Metadata Storage | Record file name, hash, uploader, and timestamp. |
| FR-DM-04 | Time-Limited Access | Generate expiring download URLs with role authorization. |
| FR-DM-05 | Template Repository | Provide legal templates (affidavit, complaint, agreement). |
| FR-DM-06 | Lawyer Requests | Lawyers can request missing files from clients with deadlines. |

### Acceptance Criteria

- Unauthorized users denied access (403).
- Expired links are automatically invalidated.
- Files retrievable and traceable through metadata logs.

## 4.5 Legal AI Assistant

**Feature Name:** AI-Powered Legal Guidance
**Actors**: User, Lawyer

### Description

An AI chatbot assists users with basic legal knowledge, form explanations, and document summaries in Bangla and English.

## Functional Requirements

| ID | Requirement | Description |
|---|---|---|
| FR-AI-1 | Conversational Interface | Interactive Q&A for general legal information (with disclaimer). |

| | | |
|---|---|---|
| FR-AI-2 | Document Summary | Extract entities (names, dates, case types) from uploaded docs. |
| FR-AI-3 | Draft Generation | Auto-create basic legal drafts (complaint outline, affidavit). |
| FR-AI-4 | Confidence Display | Show confidence level and source references. |
| FR-AI-5 | Activity Logging | Record AI queries and responses for transparency. |
| FR-AI-6 | Safety Filters | Block prohibited content or personal data exposure. |

### Acceptance Criteria

- Disclaimers shown before each chat.
- Outputs tagged "AI Generated – To Be Reviewed by Lawyer."
- Inappropriate prompts filtered automatically.

## 4.6 Communication & Notifications

**Feature Name:** Secure Messaging & Alerts
**Actors**: User, Lawyer, Admin

### Description

Facilitates in-app, role-based communication and notification updates.

| ID | Requirement | Description |
|---|---|---|
| FR-CN-1 | In-Case Messaging | Text + file chat between Lawyer and User within assigned case. |
| FR-CN-2 | System Notifications | Trigger on new assignment, document upload, or status change. |
| FR-CN-3 | Preference Settings | Users customize channels (email, SMS, in-app). |

| | | |
|---|---|---|
| FR-CN-4 | Read Receipts | Track delivery/read status. |

**Acceptance Criteria**

- Notifications delivered within 5 seconds of the event trigger.
- Messages encrypted end-to-end and stored chronologically.

## 4.7 Admin Console

**Feature Name**: Administration, Monitoring & Analytics
**Actors**: Admin

### Description

Admins oversee user accounts, feature configurations, and generate performance analytics.

| ID | Requirement | Description |
|---|---|---|
| FR-AD-01 | Dashboard Metrics | Display active users, open cases, SLA violations. |
| FR-AD-02 | CRUD Operations | Manage users, case categories, and templates. |
| FR-AD-03 | Audit Trail | Log all privileged actions (actor, timestamp, resource). |
| FR-AD-04 | Data Export | Export CSV reports with filters (date, user type). |

**Acceptance Criteria**

- Only Admins can access this panel.
- All critical actions logged and exportable.

## 4.8 Search & Reports

**Feature Name**: Global Search & Case Reports
**Actors**: User, Lawyer, Admin

| ID | Requirement | Description |
|---|---|---|
| FR-SR-1 | Global Search | Keyword search across cases, lawyers, and documents. |
| FR-SR-2 | Case Report Export | Generate printable PDF summaries including timeline and evidence list. |
| FR-SR-3 | Saved Filters | Allow users to save frequent search filters. |

**Acceptance Criteria**

- Typical queries return results < 2 s.
- Reports properly formatted and downloadable.

## 4.9 Localization & Accessibility

**Feature Name**: Bilingual & Accessible Interface
**Actors**: All

| ID | Requirement | Description |
|---|---|---|
| FR-LA-1 | Language Support | Provide full UI in English and Bangla, switchable in real-time. |
| FR-LA-2 | Accessibility | Follow WCAG 2.1 AA standards (screen-reader labels, keyboard nav). |
| FR-LA-3 | Localization | Format time/date/currency per locale. |

**Acceptance Criteria**

- Language toggle works without reload.
- Forms accessible via keyboard and labeled for assistive tech.

### 4.10 Data Retention & Consent

**Feature Name**: Data Export, Retention, and Consent Logging
**Actors**: User, Admin

| ID | Requirement | Description |
|---|---|---|
| FR-DC-01 | User Data Export | Allow users to download their complete data (JSON/ZIP). |
| FR-DC-02 | Retention Policy | Admin defines archival periods per data type. |
| FR-DC-03 | Consent Recording | Capture explicit consent with versioned policy record. |

**Acceptance Criteria**

- Exports complete within reasonable time (< 30 s typical).
- Consent records retrievable by Admin on demand.

# 5. External & Non-Functional Requirements

## 5.1 User Interfaces

### Description

The platform provides an intuitive, responsive, and consistent user interface across devices. It prioritizes readability, accessibility, and minimal cognitive load.

| Aspect | Specification |
|---|---|
| Design Standard | Material Design + Flat UI Principles |
| Primary Users | User (Citizen), Lawyer, Admin |
| UI Style | Clean, minimal layout with high contrast for readability |
| Color Palette | Blue (trust), gray (neutral), and soft white backgrounds |
| Typography | Sans-serif (Roboto / Inter) for clarity and accessibility |

| | |
|---|---|
| Navigation | Sidebar with persistent icons for Home, Cases, Vault, AI, Settings |
| Responsiveness | Adaptive grid layout for mobile, tablet, and desktop views |
| Accessibility | ARIA-labeled buttons, alt text for icons, high-contrast themes |

**Acceptance Criteria**

- All primary features accessible within 3 clicks.
- UI loads within 2 seconds on standard broadband.
- Color contrast ratio ≥ 4.5:1 per WCAG 2.1 AA.

## 5.2 Software Interfaces

| Interface | Purpose | Integration Type |
|---|---|---|
| **Database** | **MySQL / Cloud SQL** | Django ORM |
| **AI Engine** | **Gemini / OpenAI API** | Python Services via REST API |
| **File Storage** | **Secure Vault** | Encrypted Cloud Storage (Cloud Storage/S3) |
| **Email Gateway** | OTP, reminders, notifications | SMTP / Third-party API |
| **Web Frontend** | **React, Vite, TypeScript** | RESTful API calls |
| **Backend** | **Django REST Framework** | Modular Monolith / Microservices |

**Compatibility:**
All APIs follow JSON schema and support HTTPS/TLS for secure data transport.

## 5.3 Performance Requirements

The system must maintain high responsiveness and stability under expected loads.

| Metric | Target |
|---|---|
| System Uptime | ≥ 99.9% annually |
| Average Response Time | ≤ 2 seconds for 95% of user actions |
| Concurrent Users (MVP) | 10 000 active users |
| Max Upload Size | 10 MB per file |
| Background Job Latency | < 30 seconds (notifications, reminders) |
| Database Query Time | ≤ 300 ms average |

**Scalability:**
Microservice deployment allows horizontal scaling using container orchestration (Docker/Kubernetes).
Load Testing: Performed using JMeter to simulate peak traffic scenarios.

## 5.4 Security & Privacy Requirements

Security is the core trust foundation of the platform.

| Area | Requirement |
|---|---|
| Authentication | JWT-based sessions; Two-Factor Authentication (2FA) for Lawyers & Admins |
| Authorization | Role-Based Access Control (RBAC) across endpoints |
| Encryption | AES-256 for data at rest; TLS 1.3 for data in transit |
| Password Policy | Minimum 8 chars, mixed-case, numeric + symbol |

| | |
|---|---|
| Session Management | Auto-logout after 20 minutes of inactivity |
| Data Privacy | User consent before data sharing/export; GDPR-like compliance |
| Audit Logging | All admin and case-critical events logged with timestamp |
| Backup Security | Daily encrypted backups stored on isolated server |
| Vulnerability Scanning | Monthly penetration tests and patch updates |

**Acceptance Criteria**

- All sensitive data is encrypted end-to-end.
- Unauthorized data access attempts logged and blocked.
- Users informed of privacy policy before first login.

## 5.5 Usability & User Experience Requirements

| Criteria | Target |
|---|---|
| Learnability | First-time user completes basic task < 3 min |
| Accessibility | WCAG 2.1 AA compliant |
| Consistency | Uniform iconography, labels, and color usage |
| Error Prevention | Inline validation and clear error messages |
| Feedback Time | < 1 s visual response for any user action |
| Mobile Friendliness | Optimized for ≤ 6-inch screens |

User testing sessions will ensure that navigation is intuitive even for non-technical citizens. A continuous feedback widget will collect suggestions post-launch.

## 5.6 Reliability, Backup & Recovery

| Category | Requirement |
|---|---|
| Data Backup | Full database daily; incremental hourly backups |
| Disaster Recovery | Recovery Point Objective (RPO): 30 minutes; Recovery Time Objective (RTO): 1 hour |
| Failover | Cloud replication ensures automatic failover on outage |
| Error Handling | Graceful fallback pages with human-readable messages |
| Redundancy | Multi-region cloud storage replication |

### 5.7 Maintainability & Extensibility

| Requirement | Description |
|---|---|
| Code Modularity | Each module (AI, Booking, Vault) is isolated for updates without downtime. |
| Version Control | Git-based repository with branching and rollback capability. |
| Documentation | Inline code docs + API Swagger docs auto-generated. |
| Test Coverage | ≥ 80% for unit and integration tests. |
| CI/CD Pipeline | Automated builds, linting, and deployment. |
| Extensibility | Support for plug-and-play future modules (payment, analytics). |

# 6. Feasibility & Project Management Analysis

## 6.1 Introduction

The feasibility analysis evaluates the practicality of implementing the Complete Legal Aid – Legal & Judicial Communication Platform from multiple dimensions: technical, operational, economic, human, and schedule feasibility. The objective is to ensure that the system is not only technically sound but also financially viable, easy to operate, and sustainable over time. The

following subsections describe the outcome of the feasibility study conducted after requirement analysis and prototype planning.

## 6.2 Technical Feasibility

### Overview

The proposed system is technically feasible using currently available tools and technologies. The architecture emphasizes modularity, scalability, and security.

| Component | Technology Stack | Reason for Selection |
|---|---|---|
| **Frontend** | **React, Vite, TypeScript** | High performance, type safety, and fast build times. |
| **Backend** | **Django, DRF** | Robust security, rapid development, and built-in admin panel. |
| **Database** | **MySQL, Cloud SQL** | Reliable relational data management and cloud scalability. |

| | | |
|---|---|---|
| **AI Module** | **Python, Gemini API** | Advanced NLP capabilities for legal text summarization. |
| **Cloud/Dev Ops** | **Cloud Run, Docker** | Containerized deployment ensures consistency across environments. |
| **Security** | **JWT, AES-256** | Industry-standard authentication and data encryption. |

**Key Strengths:**

- Modular microservice architecture for easy updates.
- Cloud deployment ensures horizontal scalability.
- Open-source stack minimizes development cost.
- High security standards with encrypted communication and storage.

## Conclusion:

All components are technically achievable with the team's expertise. The infrastructure can scale as user demand grows, ensuring future readiness.

## 6.3 Operational Feasibility

### Goal

To evaluate whether the system can be operated, maintained, and used effectively by all stakeholders (Users, Lawyers, and Admins).

| Factor | Assessment |
|---|---|
| User Training | Minimal; simple UI and bilingual labels reduce learning curve. |
| Lawyer Onboarding | Verification handled by Admin; guided setup wizard for first login. |

| | |
|---|---|
| Admin Operations | Dashboard-based control and real-time analytics simplify management. |
| Maintenance | Modular code allows isolated bug fixes without downtime. |
| Support Plan | 24/7 in-app chatbot and email support for issues. |

### Conclusion:

The system is highly operable. Both lawyers and citizens can use the platform with minimal training, and the admin tools simplify oversight.

## 6.4 Economic (Financial) Feasibility

### Objective

To ensure that the development and maintenance costs are justified by the system's social and functional value.

| Cost Component | Estimated Cost (BDT) | Frequency | Description |
|---|---|---|---|
| Development Hardware | 150,000 | One-time | Developer laptops and testing devices |
| Software Tools / Licenses | 40,000 | One-time | Cloud hosting, APIs, SSL, domain |
| Cloud Hosting (AWS / Firebase) | 5,000 / month | Recurring | Storage, uptime, backup |
| Maintenance & Updates | 3,000 / month | Recurring | Security patches, updates |
| Marketing & Awareness | 10,000 | Initial | Online campaigns, social outreach |

Total Initial Investment: ≈ BDT 200,000
Monthly Maintenance: ≈ BDT 8,000

### Benefit Analysis

- Eliminates travel and paperwork costs for users and lawyers.
- Offers freemium and subscription models for sustainability.
- Reduces physical infrastructure costs by digitizing legal workflows.

Cost-Benefit Ratio: Favorable within 6–8 months post-launch.
Conclusion: Economically viable as an MVP and scalable for future monetization.

## 6.5 Human Resource Feasibility

## Project Team Roles & Responsibilities

- **Md. Tanzamul Azad — Lead Frontend Architect**
  Designed and implemented the complete frontend interface using React, Vite, TypeScript, and Tailwind CSS. Developed core user modules including dashboards, booking flow, evidence vault, AI assistant UI, and emergency features, ensuring responsive design and smooth user experience.

- **Md Ahbab Hamid Khan — Backend & Cloud Architect**
  Built the backend system using Django and Django REST Framework. Implemented authentication, case workflows, scheduling logic, and secure evidence handling. Designed and deployed the cloud infrastructure with Cloud Run and Docker for scalable API performance.

- **Md Jamiul Hasan — API Integration Architect**
  Developed RESTful API endpoints enabling seamless communication between frontend, backend, and database. Managed request validation, response structuring, and system-level integrations across all major platform features.

- **Akib Bari — AI Integration Engineer**
  Integrated the AI Legal Assistant using Python and the Gemini API. Implemented bilingual legal explanation features, document summarization workflows, and safe-response filtering. Ensured secure and optimized interaction between the AI engine and backend services.

**Conclusion:**
The current team possesses all required technical skills to complete the MVP. Additional expertise (security audit, UI polish) may be added during scaling.

## 6.6 Schedule Feasibility

### Development Timeline (6-Month Plan)

| Phase | Duration | Key Deliverables |
|---|---|---|
| 1. Requirement Analysis | 2 weeks | Finalized SRS, Feasibility Report |
| 2. System Design | 3 weeks | UML diagrams, ERD, wireframes |
| 3. Development (Frontend & Backend) | 8 weeks | Core modules (User, Lawyer, Admin) |
| 4. AI & Security Integration | 4 weeks | Legal Assistant, Encryption layer |
| 5. Testing & Debugging | 3 weeks | Functional + Non-functional testing |
| 6. Deployment (MVP) | 2 weeks | Beta version hosted online |
| 7. Maintenance & User Feedback | Continuous | Update patches, improve AI quality |

Project Duration: ~22 weeks (≈ 5.5 months)
Methodology: Agile Scrum (bi-weekly sprint reviews)
Tracking Tools: Jira / Trello for sprint planning

**Conclusion:**
The timeline is achievable given the modular design and clear team responsibilities.

---

## 6.7 Market / Social Feasibility

| Factor | Evaluation |
|---|---|
| **Market Demand** | High — citizens increasingly prefer online assistance. |

| | |
|---|---|
| **User Acceptance** | Strong, based on a survey where 67% wanted 24/7 legal support. |
| **Differentiation** | Only platform offering AI + Vault + Consultation combo. |
| **Scalability** | National rollout possible with server scaling and Bangla interface. |
| **Social Impact** | Promotes equal access to justice, legal literacy, and trust. |

**Conclusion:**
High market potential due to unmet need for accessible legal help and growing digital literacy among citizens.

## 6.8 SWOT Summary

| Strengths | Weaknesses |
|---|---|
| ✅ AI-driven bilingual legal support | 🚫 Initial limited lawyer pool |
| ✅ Strong encryption & data protection | 🚫 Dependence on stable internet |
| ✅ Intuitive interface & inclusive UX | 🚫 Maintenance of AI accuracy |

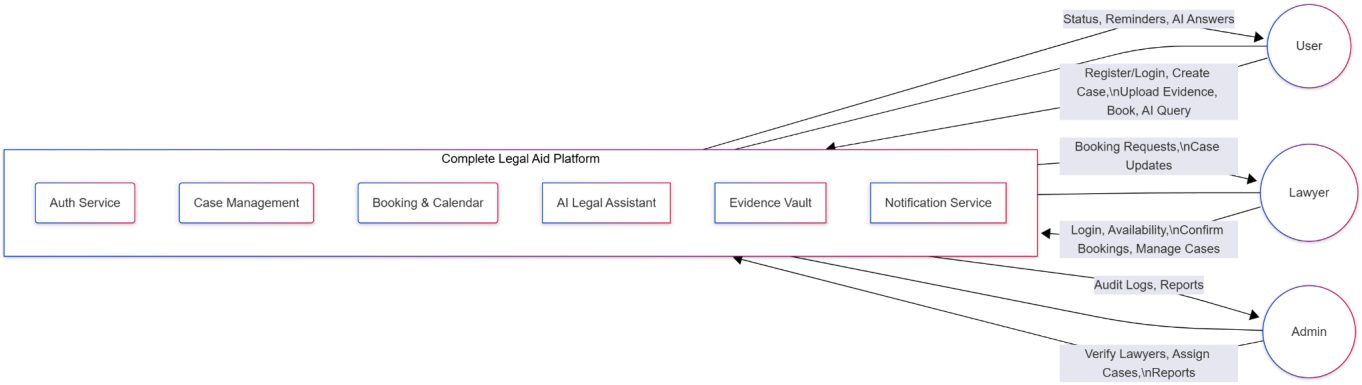
| Opportunities | Threats |
|---|---|
| 🌍 Expansion to NGOs, law firms, and academia | ⚠️ Data privacy breaches |
| 📱 Mobile app growth in rural Bangladesh | ⚠️ Competitive duplication by startups |
| 💬 Community-based legal education | ⚠️ AI misuse or misinformation risks |

**Strategic Response:**
Proactive monitoring, frequent AI retraining, transparency in policy, and continuous security upgrades will sustain user trust and long-term adoption.

# 6.9 Feasibility Conclusion

The overall feasibility assessment confirms that the Complete Legal Aid Platform is technically achievable, financially viable, operationally efficient, and socially valuable.
With a clear roadmap, skilled team, and strong user interest, this system can evolve from a university project into a real-world legal-tech product that bridges the justice gap in Bangladesh.

# 7.0 Context Diagram




The Context Diagram of the *Complete Legal Aid Platform* represents the overall structure of the system and its interaction with external entities — User, Lawyer, and Admin.

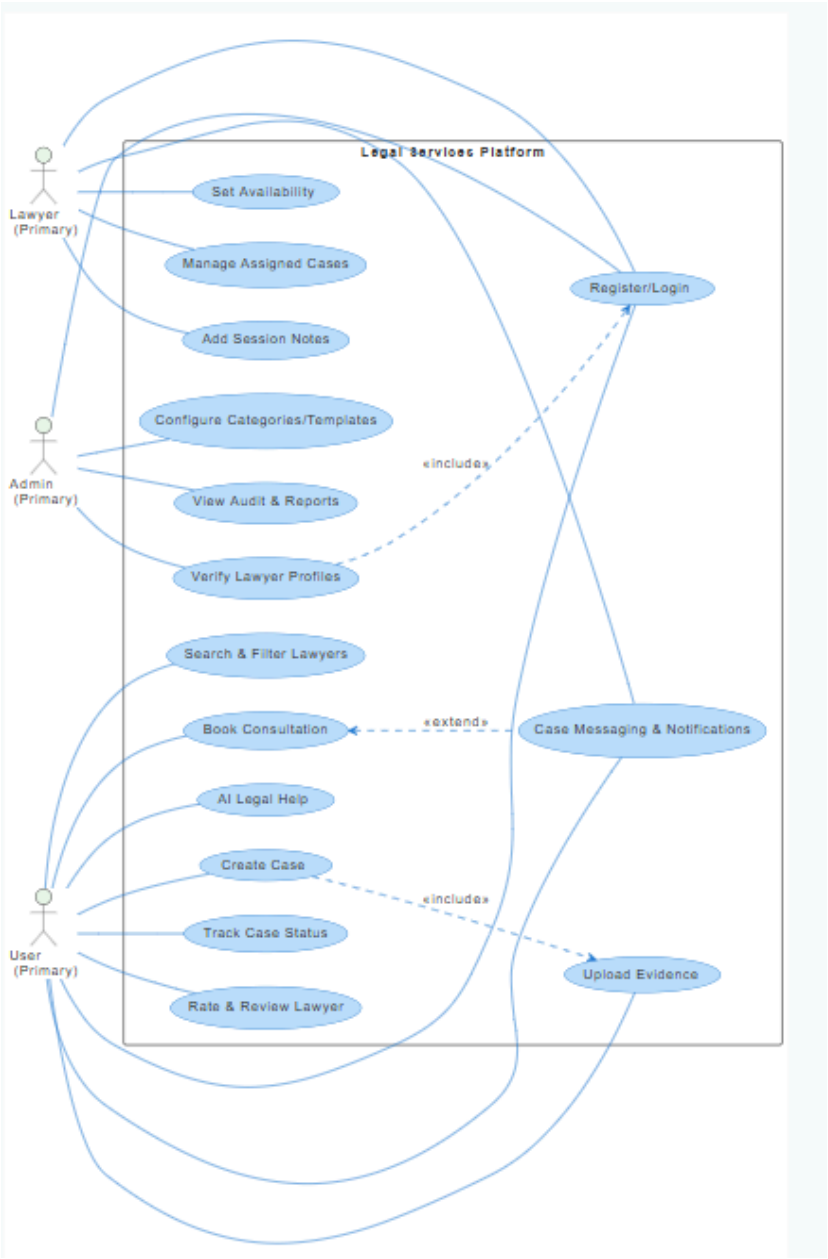
At the center, the Complete Legal Aid Platform is divided into six major functional modules:

1. Auth Service – Handles user registration, login, authentication, and access control.
2. Case Management – Allows users to create, manage, and track their legal cases.
3. Booking & Calendar – Enables scheduling of lawyer appointments and managing availability.
4. AI Legal Assistant – Provides instant legal answers, AI guidance, and recommendations.
5. Evidence Vault – Offers secure upload and storage for documents and case evidence.
6. Notification Service – Sends status updates, reminders, and booking confirmations.

Users interact with the platform to register, create cases, upload evidence, and consult lawyers or AI assistants.
Lawyers manage bookings, confirm availability, update case progress, and communicate with clients.
Admins verify lawyers, assign cases, maintain audit logs, and generate reports for system monitoring.

This diagram clearly outlines how data and actions flow between external actors and the core system, establishing a clear boundary and interaction pattern for the *Complete Legal Aid* application.

## 7.1Use Case Diagram




## Use Case Diagram Description

The Use Case Diagram of the *Complete Legal Aid Platform* illustrates how different types of users — User (Citizen), Lawyer, and Admin — interact with the system to perform various legal and administrative activities.

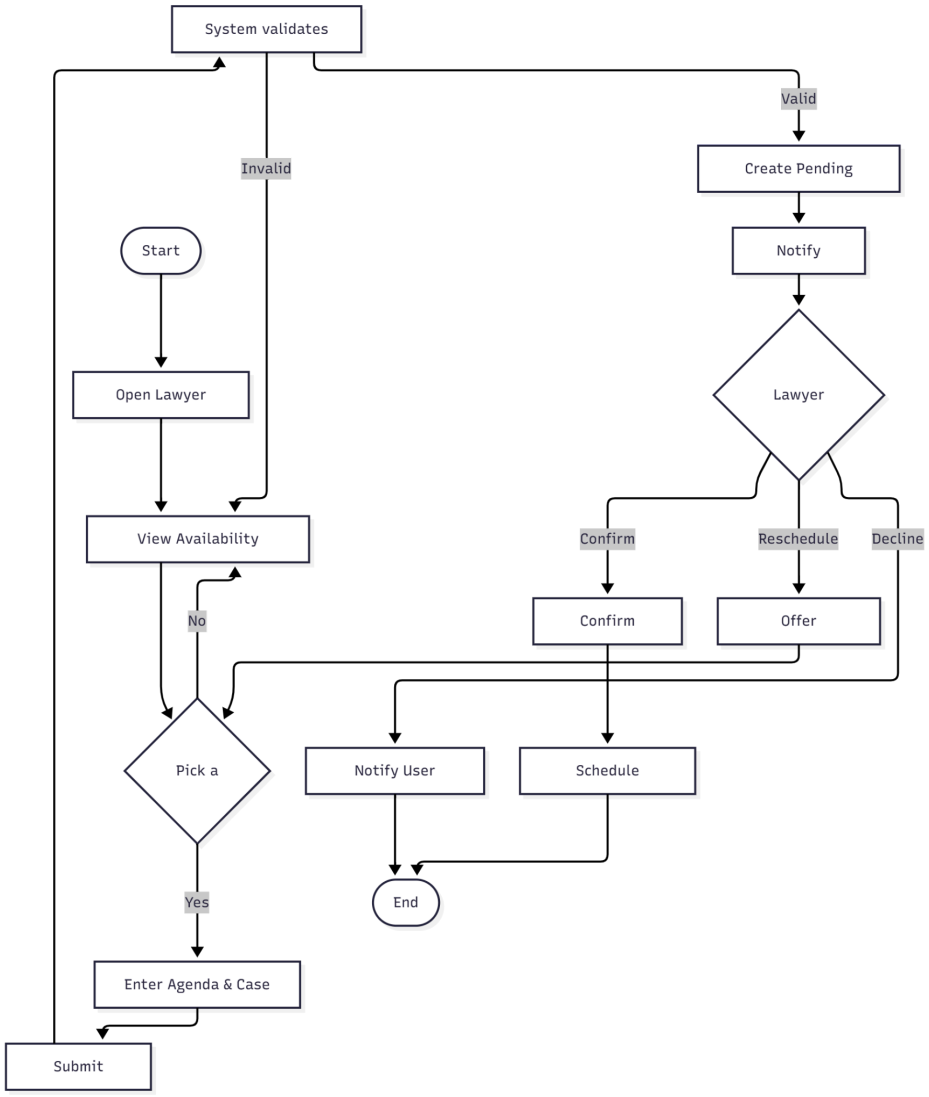
1. User (Citizen):
    - Can Register/Login to access the platform.

- Create Case by submitting details and uploading documents via the Upload Evidence use case.
- Search & Filter Lawyers based on specialization and availability.
- Book Consultation, which extends to Case Messaging & Notifications for communication and reminders.
- Access AI Legal Help for quick legal guidance.
- Track Case Status to view progress updates.
- Rate & Review Lawyers after consultation for transparency.

2. Lawyer:
    - Can Set Availability and Manage Assigned Cases.
    - Add Session Notes after meetings or consultations.
    - Receives Case Messaging & Notifications for updates.
3. Admin:
    - Handles Register/Login verification for lawyers.
    - Verify Lawyer Profiles and Filter Lawyers for quality control.
    - Configure Categories/Templates for different case types.
    - View Audit & Reports to monitor activity.

The diagram clearly defines role-based functionality and relationships between actions. The *includes* and *extends* relationships (e.g., Book Consultation → extends Case Messaging & Notifications) demonstrate modular interactions among system processes, ensuring flexibility and scalability of the legal aid platform.

## Activity Diagram




The **Activity Diagram** of the *Complete Legal Aid* system illustrates how different users—**citizens, lawyers, and administrators**—interact within the platform.

The process starts when a user logs in or registers. After authentication, the system identifies the user's role.

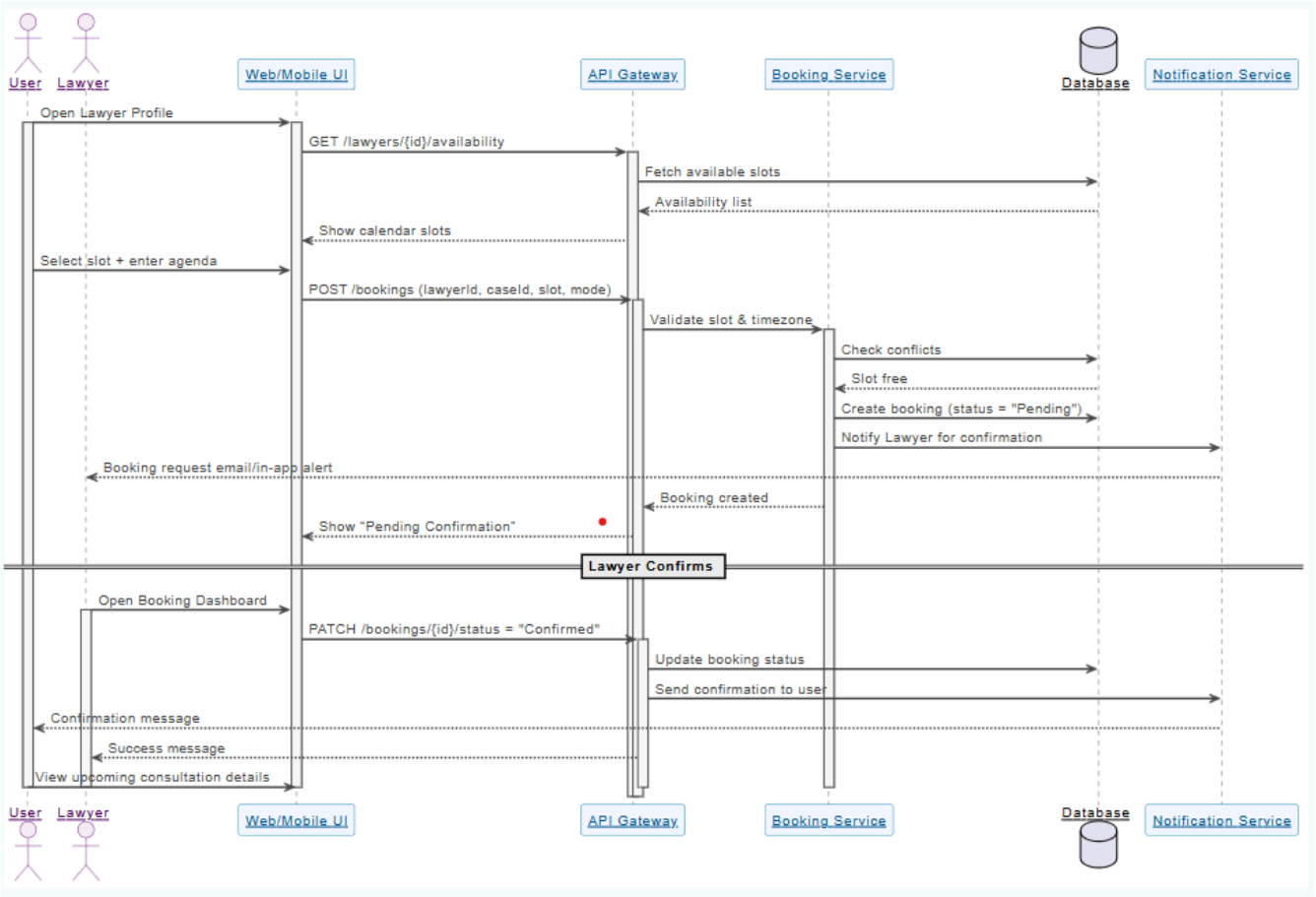
- **Citizens** can report incidents, upload evidence, book verified lawyers, and track case progress. They can also use the **AI Legal Assistant** for instant legal guidance or emergency support.

- **Lawyers** can view assigned cases, update statuses, communicate with clients, and manage consultation schedules.

- **Admins** oversee the platform, verify lawyers, manage user data, and ensure system security.

The workflow continues until users complete their tasks and **log out**, ensuring a secure, transparent, and efficient legal service process.

### 7.1.1 Sequence Diagram




The Sequence Diagram illustrates the step-by-step interaction for the Lawyer Booking Process within the *Complete Legal Aid Platform*. It shows how communication occurs between the User, Lawyer, Web/Mobile UI, API Gateway, Booking Service, Database, and Notification Service.

1. The User opens a lawyer's profile and selects an available slot with an agenda.

2. The Web/Mobile UI requests the lawyer's availability from the API Gateway, which fetches data from the Booking Service and Database.

3. Once the user selects a slot, the booking request is validated and temporarily saved as Pending.

4. The Booking Service notifies the Lawyer through the Notification Service for confirmation.

5. The Lawyer reviews the request in the booking dashboard and confirms the appointment.

6. The Booking Service updates the status to Confirmed in the Database and sends a confirmation message back to the user.

This diagram clearly demonstrates the real-time flow of booking and confirmation between the user and lawyer, ensuring transparency and synchronization within the system.

### 7.1.2 Sequence Diagram

The Sequence Diagram illustrates the process of booking a lawyer consultation within the Complete Legal Aid Platform. It shows how data and actions flow among different system components — User, Lawyer, Web/Mobile UI, API Gateway, Booking Service, Database, and Notification Service.

1. The User opens a lawyer's profile through the Web/Mobile UI and selects a slot with an agenda.

2. The API Gateway requests the lawyer's availability from the Booking Service, which retrieves the list from the Database.

3. The user confirms a slot, triggering a booking request. The system validates the slot and creates a record with status "Pending" if it's available.

4. The Booking Service then notifies the Lawyer through the Notification Service to review the request.

5. The Lawyer opens their booking dashboard and confirms the appointment.

6. The Booking Service updates the booking status to "Confirmed" in the Database and sends a confirmation notification to the user.

7. Finally, the User receives a success message and can view upcoming consultation details in their dashboard.

## 7.2 Swimlame Diagram

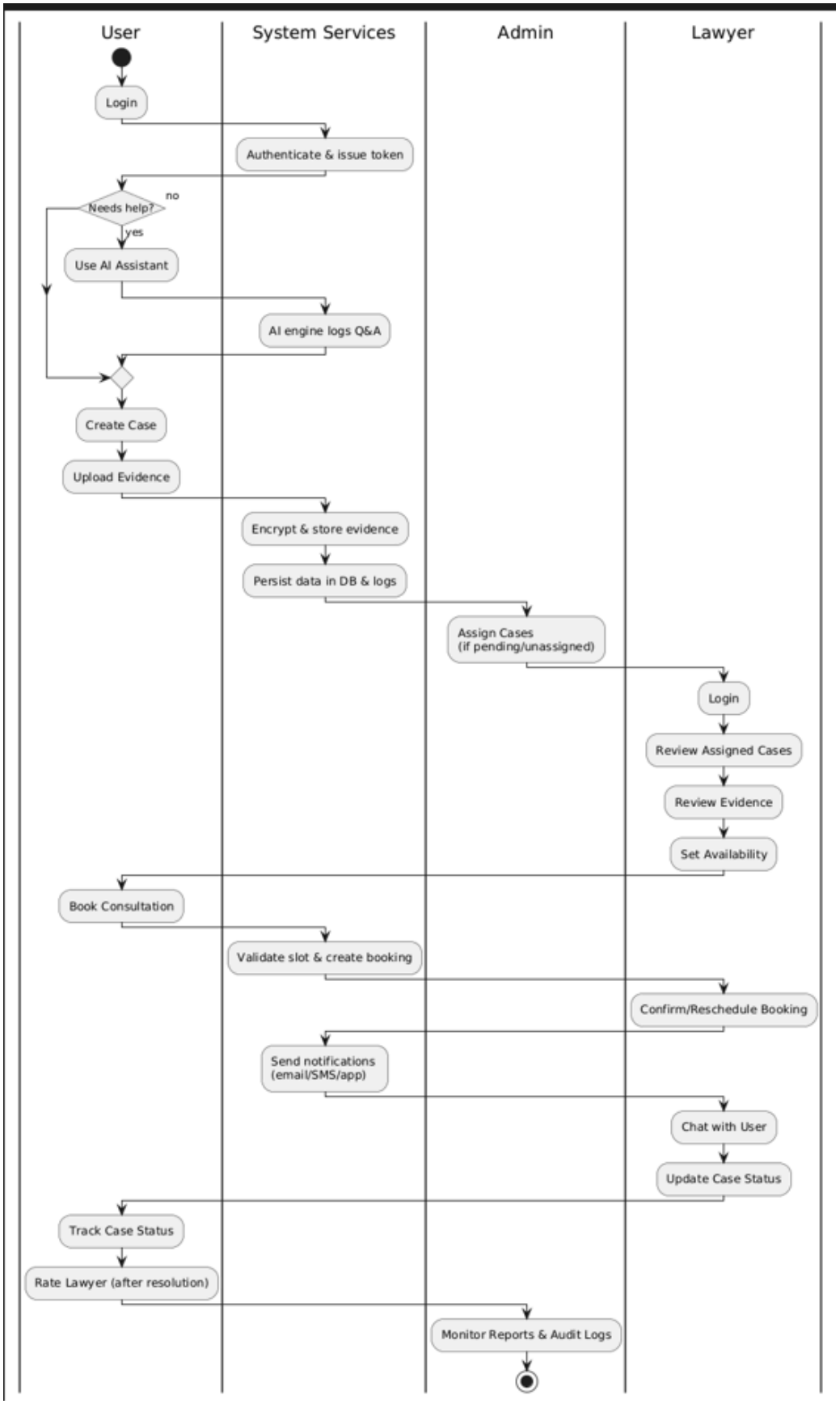
The **Swimlane Diagram** of the *Complete Legal Aid Platform* shows the complete end-to-end workflow divided among four main actors — **User**, **Lawyer**, **Admin**, and **System Services**. Each swimlane represents the responsibilities and activities performed by that role throughout the legal aid process.

1. **User:**
   The user logs in, optionally uses the **AI Assistant**, creates a case, uploads evidence, books a consultation, and tracks the case status. After resolution, they can rate the lawyer based on performance.

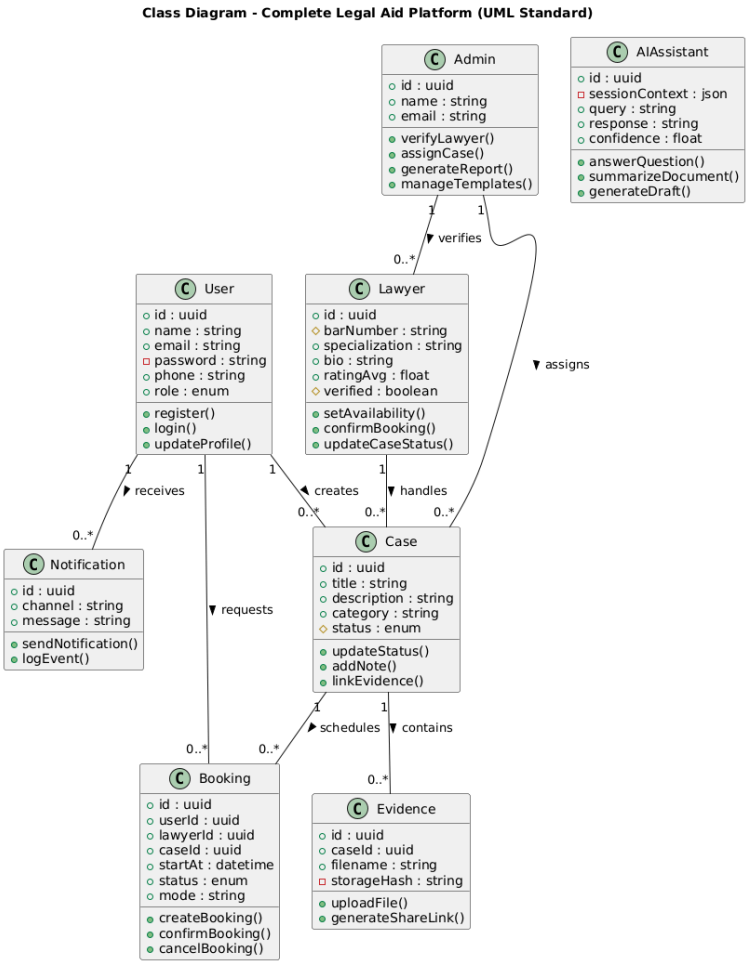
2. **Lawyer:**
   The lawyer logs in, sets availability, reviews assigned cases and uploaded evidence, confirms or reschedules bookings, updates case progress, and communicates with the user through chat or messages.

3. **Admin:**
   The admin verifies lawyer profiles, assigns unallocated cases, and monitors system operations through reports and audit logs to ensure transparency and compliance.

4. **System Services:**
   This lane handles automated backend operations—authentication, token generation, evidence encryption, booking validation, notification dispatch, database updates, and AI logging for Q&A interactions.


User
System Services
Admin
Lawyer
Login
Authenticate & issue token
Needs help?
no
yes
Use AI Assistant
AI engine logs Q&A
Create Case
Upload Evidence
Encrypt & store evidence
Persist data in DB & logs
Assign Cases
(if pending/unassigned)
Login
Review Assigned Cases
Review Evidence
Set Availability
Book Consultation
Validate slot & create booking
Confirm/Reschedule Booking
Send notifications
(email/SMS/app)
Chat with User
Update Case Status
Track Case Status
Rate Lawyer (after resolution)
Monitor Reports & Audit Logs

# 7.3 Class Diagram




This diagram effectively visualizes the **parallel and collaborative flow** among users, lawyers, admins, and the system backend, ensuring a seamless, secure, and well-managed digital legal assistance process.

The **Class Diagram** of the *Complete Legal Aid Platform* represents the system's object-oriented structure, showing the key classes, their attributes, methods, and relationships. It provides a clear blueprint for how data and functionalities are organized in the application.

1. **User Class:**
   Contains user details such as ID, name, email, password, phone, and role. It includes methods for registration, login, and profile updates.

2. **Lawyer Class:**
   Holds lawyer-specific data like bar number, specialization, bio, rating, and verification status. Functions include setting availability, confirming bookings, and updating case

statuses.

3. **Admin Class:**
   Manages system-level operations such as verifying lawyers, assigning cases, generating reports, and maintaining templates.

4. **Case Class:**
   Represents the main entity for case details—title, description, category, and status. It includes methods to update case status, add notes, and link evidence.

5. **Booking Class:**
   Handles consultation scheduling, containing booking ID, user-lawyer mapping, time slots, and booking mode. It supports creating, confirming, and canceling bookings.

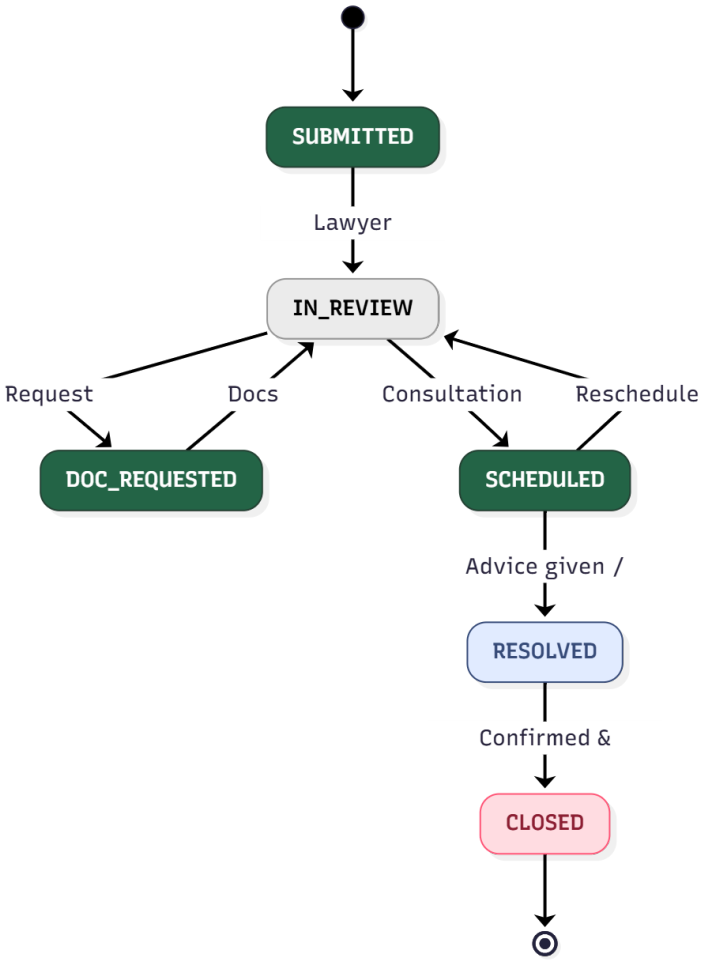
6. **Evidence Class:**
   Stores uploaded files linked to cases, including filename, case ID, and storage hash. Methods handle secure upload and share link generation.

7. **Notification Class:**
   Manages in-app and external alerts through channels like email or SMS. It logs messages and sends notifications based on system events.

8. **AIAssistant Class:**
   Supports automated legal help with methods for answering questions, summarizing documents, and generating draft responses using stored query context.

Overall, this diagram defines the **core data model and logical relationships**—such as one-to-many connections between users, cases, and bookings—ensuring a modular, maintainable, and scalable system design.

## 7.4 State Diagram




The **State Diagram** of the *Complete Legal Aid Platform* demonstrates the different states a case goes through from submission to closure. It shows how a case transitions between various stages based on lawyer actions, document uploads, and consultation outcomes.

1. **Submitted:**
   The process begins when a user creates and submits a new case with initial details and evidence.

2. **In Review:**
   The lawyer reviews the submitted information to understand the case and determine if additional documents or clarifications are needed.

3. **Doc Requested:**
   If further evidence or paperwork is required, the system moves the case into this state

and prompts the user to upload the requested documents.

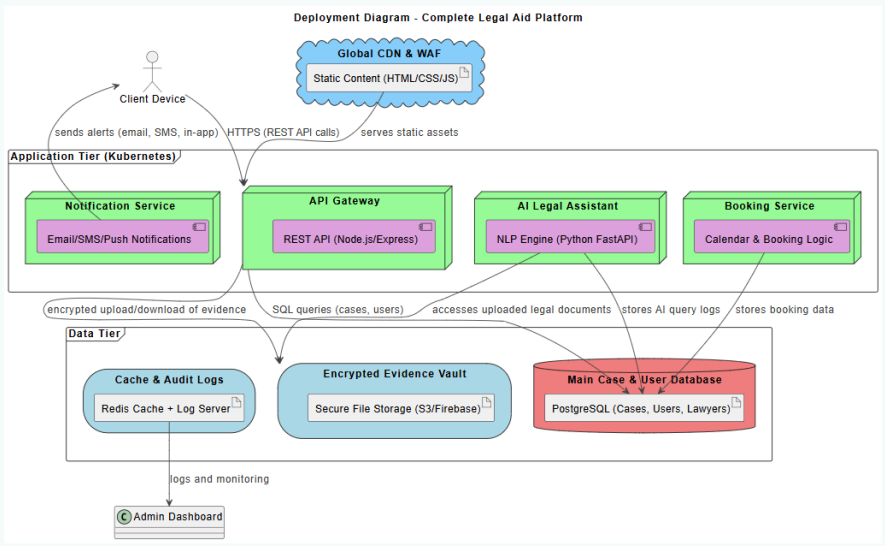
4. **Scheduled:**
   Once the case is reviewed and necessary documents are complete, the lawyer schedules a consultation or meeting with the client.

5. **Resolved:**
   After the consultation, legal advice is given or the issue is resolved through mutual discussion or documentation.

6. **Closed:**
   The final state of the case after confirmation that all actions are completed, advice has been provided, and the matter is officially closed in the system.

This diagram clearly visualizes the **case lifecycle**, ensuring proper tracking and management of every legal request from submission to resolution and closure.

## 7.4 Deployment Diagram




The **Deployment Diagram** of the *Complete Legal Aid Platform* represents the physical architecture and how various software and hardware components interact to deliver system functionalities. It shows three main tiers: **Client Layer**, **Application Tier**, and **Data Tier**.

1. **Client Layer:**
   Users access the system through **Client Devices** (web or mobile), communicating securely via **HTTPS REST API calls**. Static assets (HTML, CSS, JS) are delivered through a **Global CDN and Web Application Firewall (WAF)** for optimized speed and

security.

**2. Application Tier (Containerized):**

- **Backend API:** Built with **Django & Django REST Framework**, managing business logic, authentication, and case workflows.
- **AI Legal Assistant:** Integrated Python service using the **Gemini API** for natural language processing and legal summarization.
- **Booking Service:** Django-based module handling consultation scheduling and availability logic.
- **Notification Service:** Manages real-time alerts via email/SMTP and in-app push notifications.

**3. Data Tier:**

- **Main Database: MySQL** (hosted on Cloud SQL) stores relational data for users, lawyers, and cases.
- **Encrypted Evidence Vault:** Uses secure object storage (e.g., S3 or Google Cloud Storage) for encrypted document files.
- **Cache & Logs:** Redis/Memcached for caching frequently accessed data and logging system events.

2. **Admin Dashboard:**
   The admin monitors logs, system performance, and security metrics through this interface, ensuring stability and compliance.

This architecture ensures a **scalable, secure, and efficient deployment**—balancing performance with strong data protection and modular service orchestration.

# 8. Prototype Design and User Interface

## 8.1 Introduction

The prototype of the Complete Legal Aid – Legal & Judicial Communication Platform serves as a visual and functional demonstration of the system's core workflows. It bridges the gap between

conceptual requirements and real implementation, allowing early usability testing and feedback collection.
The design focuses on clarity, accessibility, and trust—critical for a system that deals with sensitive legal data.

## 8.2 Design Objectives

User-Centricity: Ensure citizens and lawyers can navigate the interface without technical training.

Consistency: Maintain a uniform color scheme, typography, and layout across web and mobile views.

Transparency: Highlight lawyer verification, case progress, and secure evidence indicators.

Accessibility: Provide bilingual (Bangla and English) content with clear icons and tooltips.

Scalability: Support future features like video consultations and payment gateways without redesign.

## 8.3 Prototype Tools

The user interface was designed using Figma
It supports:

Interactive navigation and screen transitions.

Component reuse for headers, sidebars, and forms.

Auto-layout features for responsiveness across screen sizes.

(You will upload these figures later — placeholders below are added for report clarity.)

## 8.4 UI Layout and Pages

### 8.4.1 Dashboard Page

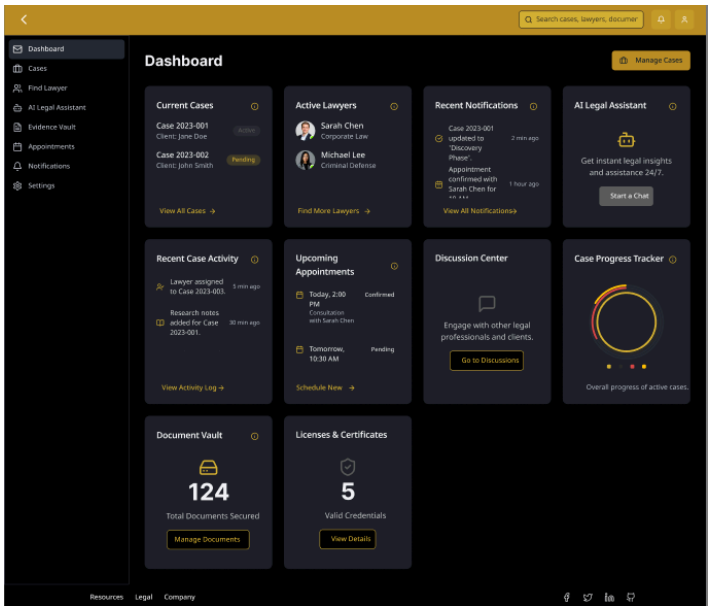
**Purpose**: Central control hub showing case status, notifications, and shortcuts to AI assistant or lawyer booking.
Features:

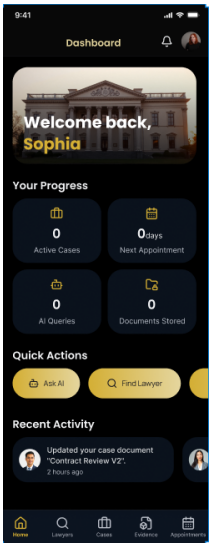
**Sidebar with persistent menu:** Home, Cases, AI Assistant, Evidence Vault, Notifications, Settings

Header showing user role, search bar, and profile dropdown.

Main body with “Recent Cases” and “Upcoming Bookings.”

**Color scheme:** CLA Gold (#F59E0B) for actions/highlights and Dark Slate (#020617) for the interface base, ensuring a professional and high-contrast look.



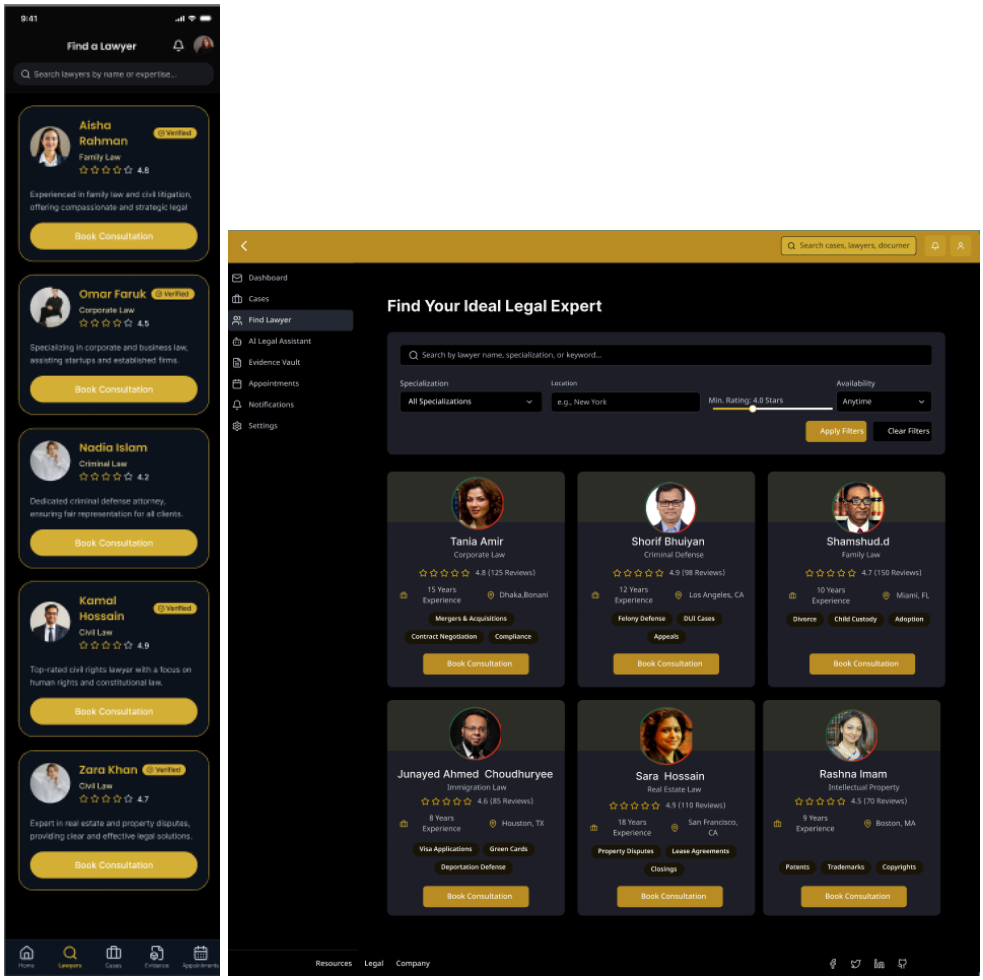




## 8.4.2 Lawyer Directory and Booking Page

**Purpose:** Allow users to search, filter, and book verified lawyers.
Key Components:

- Search filters (specialization, language, location, rating).
- Lawyer card with name, profile, rating, and “Book Consultation” button.
- Real-time calendar pop-up for slot selection.

**Status tags:** Available / Busy / Verified.

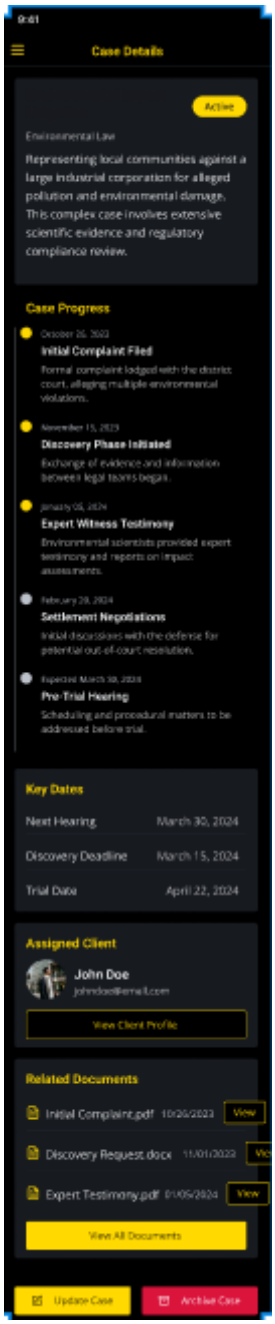


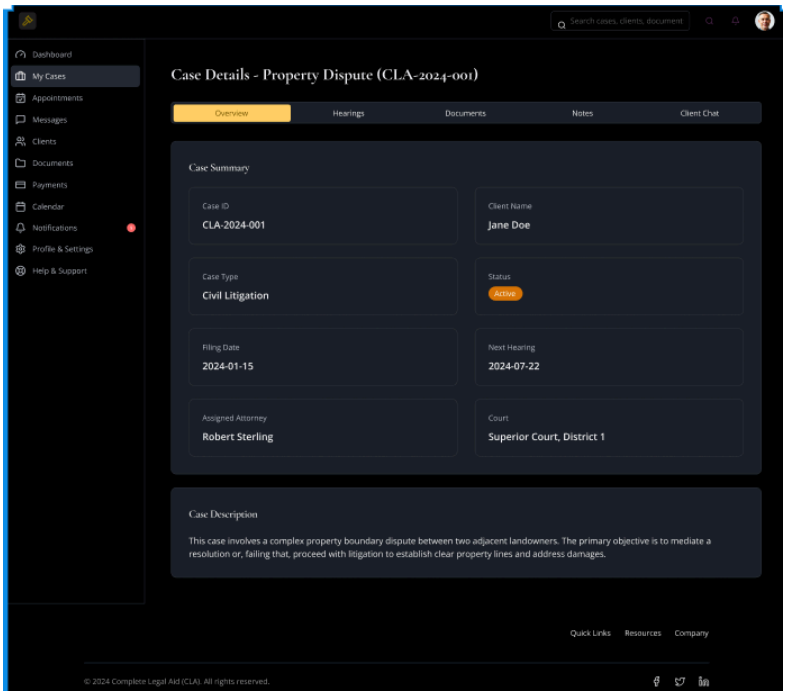

📎 [Figure 8.2: Lawyer Directory and Booking Page]

### 8.4.3 Case Management Page

Purpose: Enable users to track their submitted cases and view updates.
Features:

- Timeline-based case tracker with status icons.
- Tabs: Overview, Messages, Evidence, Activity Log.
- File upload module linked to Evidence Vault.




## 8.4.4 Evidence Vault

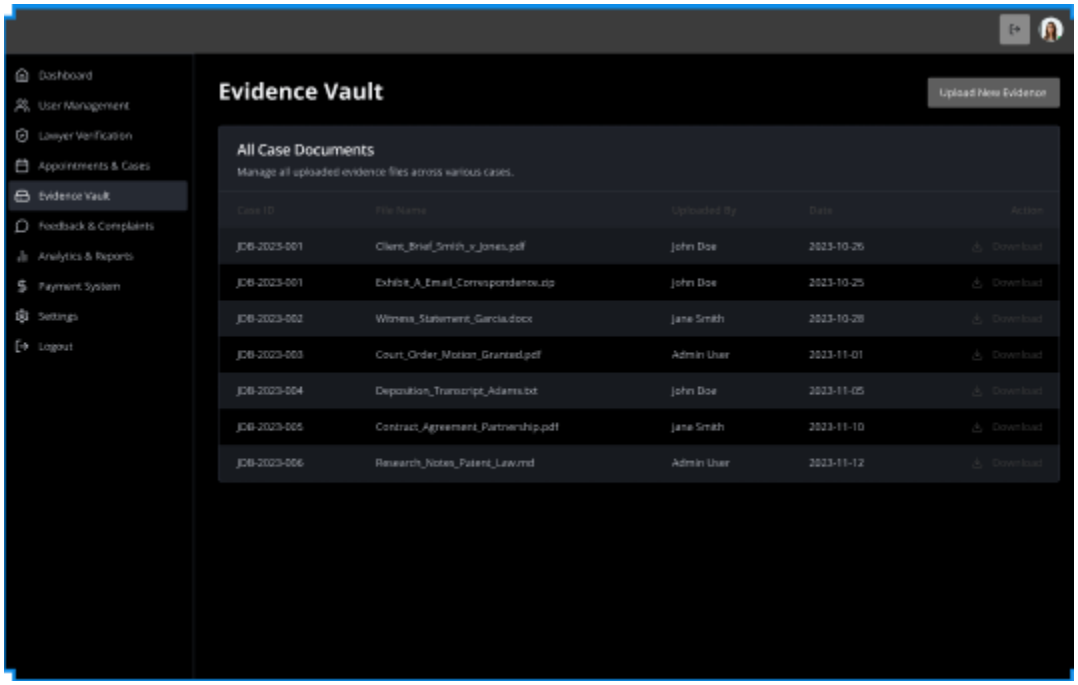
Purpose: Secure repository for uploading and managing encrypted documents.
Features:

Drag-and-drop file upload with progress meter.

Document list view: filename, type, upload date, access level.

“Share with Lawyer” toggle and time-limited link generation.

Visual cue for encryption (padlock icon and hash ID).




## 8.4.5 AI Legal Assistant

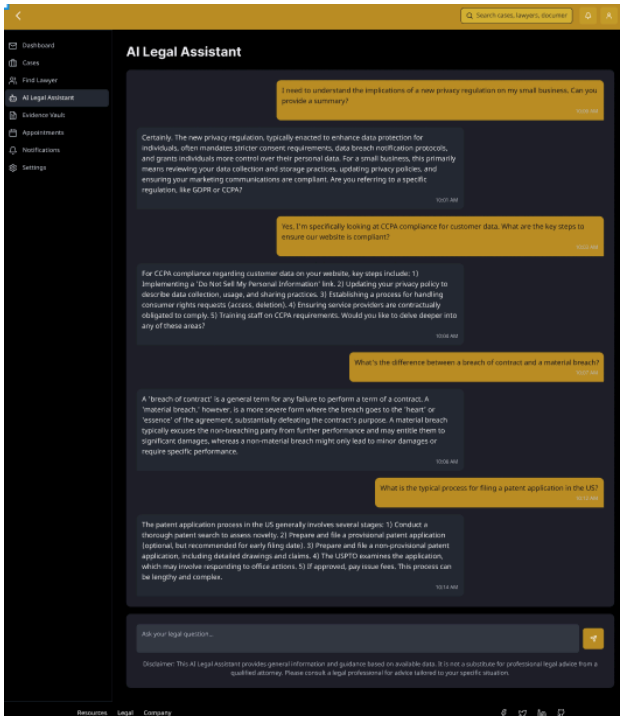
Purpose: Provide conversational legal help in Bangla and English.
Interface:

Chat-style layout with user input field and AI responses.

Disclaimers automatically displayed for each answer.

Optional file upload for document analysis.

Right-side panel showing related laws or sections.




## 8.4.6 Admin Panel

Purpose: Allow administrators to manage users, lawyers, and reports.
Modules:

Verification Tab: Pending lawyer approvals.

System Logs: View login attempts, errors, and audit trails.

Analytics: Display charts of active cases, AI usage, and user growth.

Templates: Manage legal document formats.

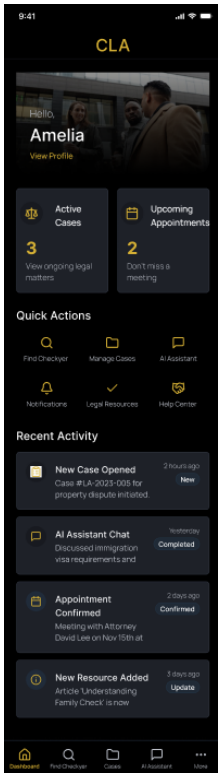
## 8.4.7 Responsive Mobile View

Purpose: Provide a seamless experience on mobile devices.
Features:

Collapsible sidebar.

Floating action button for quick booking or evidence upload.

Adaptive font sizes and contrast adjustments.



## 8.5 Color and Typography System

| Element | Color Code | Purpose |
|---|---|---|
| **Primary Brand** | **#F59E0B (CLA Gold)** | **Highlights, primary buttons, active states** |
| **Background (Dark)** | **#020617 (Deep Navy/Black)** | **Main background in dark mode, footers** |
| **Background (Light)** | **#FFFFFF (White)** | **Main background in light mode, cards** |
| **Secondary Text** | **#6B7280 (Cool Gray)** | **Subtitles, secondary information** |
| **Success** | **#10B981 (Emerald)** | **Verified badges, success messages** |
| **Alert / Error** | **#EF4444 (Red)** | **Emergency buttons, error states** |
| **Font Family** | **Inter / Playfair Display** | **Modern sans-serif for UI; Serif for headings** |

## 8.7 Prototype Conclusion

The prototype demonstrates how technology and design come together to simplify legal access while maintaining privacy and trust.
It establishes the visual identity and interaction model that the final implementation will follow.

# Chapter 9: Conclusion

The Complete Legal Aid – Legal & Judicial Communication Platform bridges the long-standing gap between citizens and legal professionals in Bangladesh.
By leveraging secure cloud infrastructure, AI assistance, and bilingual accessibility, it turns complex legal procedures into a transparent, digital experience.

The SRS, diagrams, and prototypes collectively define a system that is:

- Technically feasible (built with scalable, open-source technologies).
- Socially impactful (promotes justice and inclusivity).
- Economically sustainable (minimal maintenance, freemium scalability).

Future versions can expand features like mobile apps, NGO collaboration, and payment integrations, further enhancing legal accessibility nationwide.
This project sets a new benchmark for ethical, secure, and citizen-friendly legal technology.

# Chapter 10: References

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# Chapter 11: Appendices

Appendix A – Survey Questionnaire

Includes user and lawyer feedback forms on accessibility, trust, and feature importance.

Appendix B – Glossary of Terms

| Term | Definition |
|---|---|
| AI Assistant | Chat-based system for automated legal help. |
| Evidence Vault | Encrypted digital repository for storing case files. |
| Booking System | Calendar-based module for lawyer appointments. |
| RBAC | Role-Based Access Control for managing user privileges. |
| JWT | JSON Web Token – secure authentication token. |