

Department of Computer Science

University of Gujrat

ADALAH: ADVOCACY, DEFENSE, AND LEGAL ASSISTANCE HUB

Submitted By:

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DECLARATION

I certify that project title **ADALAH: ADVOCACY, DEFENSE, AND LEGAL ASSISTANCE HUB** is under my supervision with students of Attiqa Batool 047, Laiba Mubeen 090, Faiqa Zulfiqar 005, Faculty of Computer & Information Technology, University of Gujrat, Pakistan, worked under my supervision

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Dated: _____

FINAL YEAR PROJECT PROPOSAL

Abstract

ADALAH is a **MERN**-based (MongoDB, Express.js, React.js, Node.js) smart **Advocacy, Defense, and Legal Assistance Hub** designed to make legal help affordable, transparent, and accessible for everyone in Pakistan. It connects users directly with verified lawyers, allows them to view ratings, learn about required documents, and get real-time **legal assistance** through chat and **AI-powered tools**. The platform supports **Urdu** and **English**, ensures secure communication, and provides lawyers with modern tools to manage and analyze cases efficiently. It also includes an **AI voice assistant** for users who prefer speaking instead of typing, and an emergency case alert system that notifies lawyers instantly about urgent cases.

Introduction

Access to legal services in Pakistan is often limited to those who can afford private consultations. Many citizens are unaware of their **legal rights or procedures**, which leads to poor decisions or inaction. The **ADALAH** platform addresses this issue by providing a **centralized online system** that connects users directly with lawyers, enabling quick access to information, ratings, required documents, and expert guidance, all without middlemen.

Functional Requirements:

1. User Module

This module allows users to create an account, update their profile, and search for lawyers according to their case type and city. Users can also communicate with lawyers through chat or voice assistant, view ratings, upload required legal documents, and submit emergency case requests. They receive real-time notifications

about lawyer responses, case status, and document updates.

2. Lawyer Module

Lawyers can register and create detailed professional profiles that include their expertise, qualifications, experience, and fee structure. They can manage ongoing cases, accept or decline client requests, and receive emergency alerts for urgent cases. Lawyers can also view client ratings, respond to chat or voice messages, and generate automated reports using analytics tools provided by the platform.

3. Chatbot & Interaction Module

This module provides an AI-powered chatbot that helps users with frequently asked legal questions, guides them through document requirements, and assists in case categorization. It also includes a voice assistant for users who prefer speaking instead of typing. The chatbot uses natural language processing to respond in Urdu or English, ensuring accessibility for all users.

4. Matching & Notification Module

This module automatically matches clients with the most suitable lawyers based on case category, lawyer expertise, availability, and user ratings. It sends real-time notifications to both parties about new messages, case updates, document uploads, or lawyer availability. Emergency case alerts are also handled here, ensuring that urgent cases reach lawyers immediately.

5. Admin & Moderation Module

The admin panel allows administrators to manage user accounts, verify lawyers, monitor system activity, and maintain overall security. Admins can remove fake profiles, handle complaints, update system data, and ensure compliance with ethical and privacy standards. They also have access to dashboards showing user growth,

lawyer performance, and platform analytics for decision-making.

Project title

ADALAH: Advocacy, Defense, and Legal Assistance Hub

Project Overview Statement

Adalah is a digital Advocacy, Defense, and Legal Assistance Hub designed to connect users and lawyers in Pakistan through an intuitive, secure, and intelligent system. It simplifies the legal help process by offering lawyer discovery, chatbot consultations, document checklists, and case type predictions. The platform aims to make legal services transparent, accessible and affordable, particularly for underprivileged communities.

Target Audience

Adalah is a digital Advocacy, Defense, and Legal Assistance Hub designed to connect users and lawyers in Pakistan through an intuitive, secure, and intelligent system:

1. General Public:

ADALAH helps people who need legal assistance but cannot afford costly consultations. It enables citizens to understand their rights, get initial advice through the chatbot, find verified lawyers, and access affordable or free legal guidance online.

2. Lawyers:

The platform allows lawyers to connect with clients, manage cases, receive notifications, and build credibility through ratings and reviews. They can showcase their expertise and use analytics tools to monitor performance and client satisfaction.

3. Legal Aid Organizations:

NGOs and legal bodies offering free or subsidized services can use ADALAH to reach more clients, assign lawyers, and track ongoing cases efficiently through the admin dashboard.

4. Administrators:

Admins and moderators maintain system security, verify users, manage disputes, and ensure smooth platform operations while upholding ethical and legal standards.

Goals and Objectives

Goals:

1. Make legal help accessible to everyone.
2. Provide modern digital tools for lawyers.
3. Offer secure, fast, and AI-supported services.
4. Bridge the gap between citizens and legal professionals.

Objectives

1. Develop a MERN-based responsive platform.
2. Implement AI chatbot for legal FAQs and document generation.
3. Integrate real-time lawyer recommendations and notifications.
4. Enable Urdu/English language support and abuse detection.
5. Provide analytics to lawyers and admins for better decision-making.

Application Architecture:

ADALAH follows a **3-Tier Architecture** based on the **MERN Stack (MongoDB, Express.js, React.js, Node.js)**. This model separates the system into three layers: **Presentation Tier**, **Logic Tier**, and **Data Tier**, ensuring better scalability, maintainability, and performance.

1. Presentation Tier (Client)

This is the **front-end layer** that interacts directly with users. It allows users and lawyers to register, communicate, and access information in **Urdu and English** through a responsive interface. **Technologies Used:** React.js, HTML, and Tailwind CSS for creating a modern and interactive user interface.

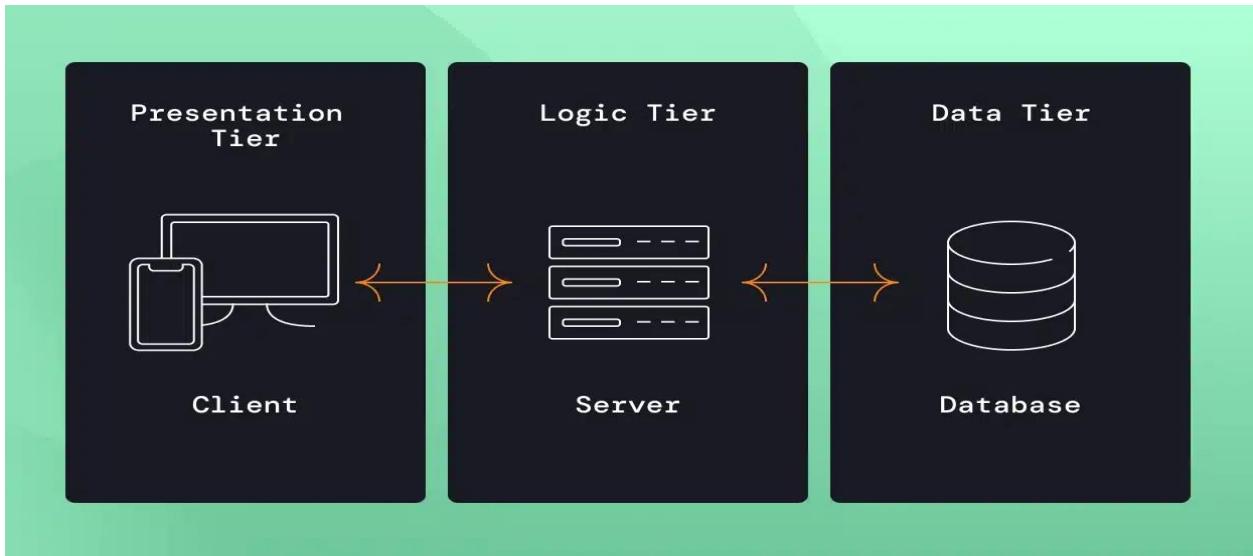
2. Logic Tier (Server)

This is the **backend layer** that manages all system logic and communication between the client and the database. It handles **authentication, chatbot interaction, lawyer matching, and notifications** while ensuring security and smooth performance. **Technologies Used:** Node.js and Express.js for building APIs, routing, and managing requests and responses.

3. Data Tier (Database)

This layer stores and manages all application data, including **user profiles, lawyer details, chats, and case records**. It ensures data security, scalability, and quick access when needed. **Technologies Used:** MongoDB for efficient and flexible data storage.

3-Tier Architecture Diagram



Web System Architecture Layers

ADALAH: Advocacy, Defense, and Legal Assistance Hub

Hardware and Software Specification:

<i>Requirement</i>	<i>Specification</i>
<i>Hardware</i>	<i>Core i5+, 8GB RAM, 256GB SSD</i>
<i>OS</i>	<i>Windows 10 / Ubuntu</i>
<i>Frontend</i>	<i>React.js, Tailwind CSS</i>
<i>Backend</i>	<i>Node.js, Express.js</i>
<i>Database</i>	<i>MongoDB (Atlas)</i>

<i>Others</i>	<i>Git, Firebase/Socket.IO, Dialogflow</i>
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Estimated Cost

A detailed cost breakdown for the project will be developed during the project planning phase. It will include expenses related to software development, cloud hosting, and any additional hardware requirements.

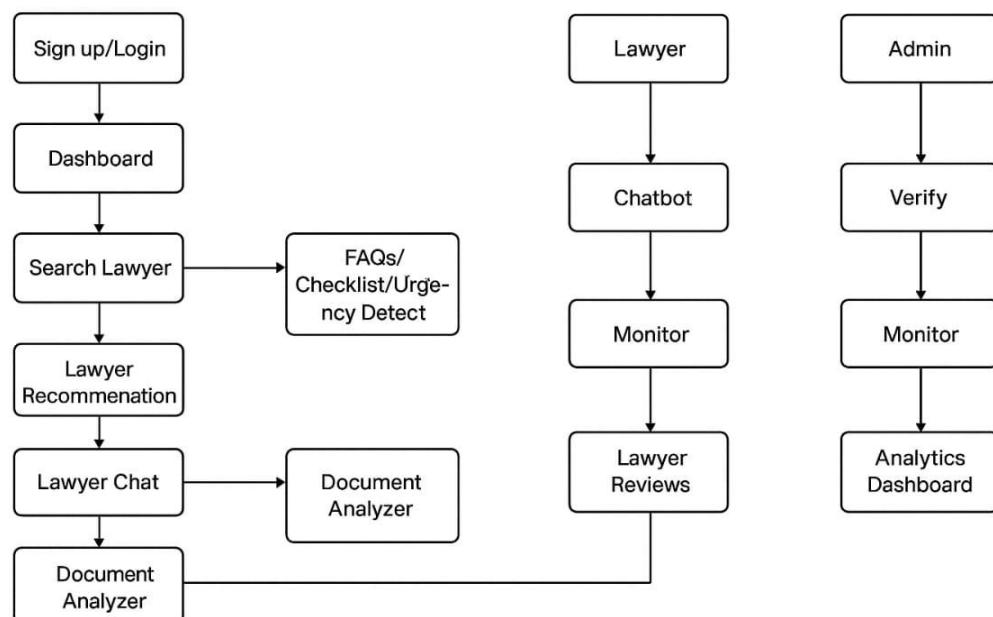
Tools and Technologies:

<i>Category</i>	<i>Technology</i>	<i>Reason</i>
<i>Frontend</i>	<i>React Js</i>	<i>Dynamic, responsive UI</i>
<i>Backend</i>	<i>Node.js + Express.js</i>	<i>Scalable server-side logic</i>
<i>Database</i>	<i>MongoDB</i>	<i>NoSQL flexibility for dynamic legal data</i>
<i>Real-Time Chat</i>	<i>Socket.IO / Firebase</i>	<i>Instant messaging between users</i>

<i>Chatbot</i>	<i>Dialogflow / ChatGPT API</i>	<i>Legal question answering</i>
<i>Version Control</i>	<i>Git + GitHub</i>	<i>Collaboration and source tracking</i>

Work Flow

ADALAH – System Workflow



System Architecture Design:

Milestone: Completion of the system architecture design, including the overall system

structure, data flow, and integration points

Phase 1: System Design (1 Month)

Key Deliverables:

- Design of the **User Management Module** and role structure for clients, lawyers, and admins.
- Creation of **wireframes and mockups** for the user interface.
- Planning the **workflow** for case submission and approval.

Milestone: Completion of all system design documents and UI mockups.

Phase 2: Development (3 Months)

Key Deliverables:

- Development of all core modules including **User**, **Lawyer**, **Admin**, and **Chatbot**.
- Implementation of **authentication**, **case management**, and **notification systems**.
- Building a **responsive front-end** using React.js integrated with the Node.js backend.

Milestone: Completion of core functionality and successful integration of all modules.

Phase 3: Testing (1 Month)

Key Deliverables:

- Conduct **unit, integration, and system testing** for all modules.
- Verify functionality, security, and performance across devices.

Milestone: Resolution of all identified bugs and stable system performance.

Phase 4: Deployment (1 Month)

Key Deliverables:

- Final deployment of **ADALAH** on the production server.
- Configure **database security** and **server setup** for real-time access.
- Conduct **user acceptance testing (UAT)** to gather feedback.

Milestone: Successful deployment of the live system.

Phase 5: Documentation (1 Month)

Key Deliverables:

- Preparation of **final project report** and **technical documentation**.
- Creation of a **user manual** with step-by-step usage guidelines.

Milestone: Completion and submission of all project documentation.

Project Management (Ongoing)

Key Deliverables:

- Continuous **risk assessment, progress tracking, and team coordination**.
- Regular updates to handle changes in requirements or project scope.

Milestone: Timely and successful completion of the project within scope and budget.

Work Division Among Group Member

Task	Member Name	Start Date	Duration	Dependencies
Project Initiation		2025/10/02	10	

Define Project Scope	All	2025/10/02	3	Define Project Scope
Develop Project Plan	All	2025/10/05	5	Develop Project Plan
Team Formation and Roles	All	2025/10/11	2	Team Formation and Roles
Requirement Analysis and Planning		2025/10/12	19	
Gather Functional Requirements	Atiqa Batool	2025/10/12	4	
Define Non-functional Requirements	Laiba Mubeen	2025/10/16	3	
Lawyer Profile Management	Faiqa Zulfiqar	2025/10/19	7	
Project Management Document	Laiba Mubeen	2025/10/26	5	
Design Phase		2025/11/01	12	
User Interface Design	Atiqa Batool	2025/11/01	4	
Database Design	Faiqa Zulfiqar	2025/11/05	5	
System Architecture	Laiba Mubeen	2025/11/11	3	System Architecture
Development		2025/11/12	54	

User Module Development	Attiqa Batool	2025/11/12	27	User Module Development
Lawyer Profile Integration	Faiqa Zulfiqar	2025/11/14	5	Lawyer Profile
Announcement and Notifications	Attiqa Batool	2025/11/19	5	Notifications
Admin Module Development		2025/11/30	17	
Admin Home Page	Attiqa Batool	2025/11/30	5	Admin Module Front-end Development
Chatbot	Attiqa Batool	2025/12/05	7	Chatbot
Login/signup	Attiqa Batool	2025/12/11	5	Authentication
Testing		2025/12/17	14	
Unit Testing	Laiba Mubeen	2025/12/17	4	Unit Testing
Integration Testing	Faiqa Zulfiqar	2025/12/21	4	Integration Testing
System Testing	Attiqa Batol	2025/12/25	4	System Testing
UAT (User Acceptance Testing)	Laiba Mubeen	2025/12/28	2	UAT
Optimization and Refinement		2025/12/29	21	
Performance Optimization	Attiqa Batool	2026/12/29	7	Performance Optimization

Security Audits and Enhancements	Faiqa Zulfiqat	2026/01/05	7	Security Audits and Enhancements
Iterative Improvements	Laiba Mubeen	2026/01/12	7	Iterative Improvements
Deployment		2026/01/18	21	
Internal Deployment for Testing	Attiqua Batool	2026/01/18	7	Iterative Improvements
Full System Deployment	Attiqua Batool	2026/01/25	14	Internal Deployment for Testing
Launch and Marketing		2026/02/08	14	
Marketing Campaign Launch	Laiba Mubeen	2026/02/08	7	Full System Deployment
User Communication Plan	Faiqa Zulfiqar	2026/02/15	7	Marketing Campaign Launch
Documentation		2026/02/22	14	
Project Documentation Compilation	Laiba Mubeen	2026/02/22	7	User Communication Plan
Final Project Report	Faiqa Zulfiqar	2026/02/29	7	Project Documentation Compilation