Feasibility Study Report

Proposed Project Name: AI Legal Consultant
Project Owner: Department of Computer Science — Final Year Project Committee
Process Owner: Group Leader: Munawar Shereen (22K-4809) with members M. Ehtesham ul Hassan Malik (22K-4828), M. Ahmedzaib Qamar (22K-4820)

1.0 GENERAL INFORMATION

1.1 Purpose

The purpose of this Feasibility Study is to evaluate the viability of developing an **AI Legal Consultant** that assists individuals in understanding and navigating legal matters within Pakistan. The system will provide multi-lingual, voice-enabled, and reference-backed legal support covering criminal law, taxation, family law, and business contracts.

1.2 Scope

1.2.1 In Scope

- AI-based legal consultation with verified references.
- Multi-lingual support (English, Urdu, regional languages).
- Voice query handling for accessibility.
- Secure login and client confidentiality.
- Coverage of criminal, taxation, family, and business law domains.

1.2.2 Out of Scope

- Providing formal legal representation in courts.
- Handling of highly specialized areas such as constitutional or international law.
- Replacing licensed lawyers; the system is advisory only.

1.3 Project Overview

Proposed Project Name: AI Legal Consultant
Abbreviation: AILC
Process Owner: Final Year Project Committee
Project Type: In-house (student-led, supervised by faculty)

The project will leverage AI and NLP technologies to provide reference-backed legal advice, supported by a structured knowledge base and retrieval-augmented generation.

1.4 Project References

- Pakistan Penal Code and Constitution of Pakistan.
- Federal Board of Revenue (FBR) Tax Codes.
- Family Law Ordinances and precedents.
- Related AI legal platforms: NAZ Assist, LawGPT, YourMunshi, PakLawAssist.
- LangChain documentation, Pinecone/Qdrant technical references.

2.0 MANAGEMENT SUMMARY

2.1 Environment

2.1.1 Organizations Involved

- **Project Sponsor:** Department of Computer Science
- **Project Director:** Assigned Faculty Supervisor
- **Functional Team:** Student group members (3)
- **Technical Team:** Same as functional team with faculty support

2.1.2 Input/Output

- **Inputs:** User queries (text or voice) in English/Urdu/regional languages.
- **Outputs:** Verified legal information with citations (laws, judgments, case references).

2.1.3 Processing

- Retrieval-Augmented Generation (RAG) pipeline with vector database.
- AI orchestration with LangChain, backend via FastAPI.
- Frontend interaction via React-based web portal.

2.1.4 Security

- Encrypted user data storage.
- Secure login/logout with session management.
- Data anonymization for sensitive cases.

2.1.5 System Interaction

- Integration with legal document databases.
- Potential API integration with legal NGO repositories.

2.1.6 Physical Environment

- Cloud-hosted system with web accessibility.
- Estimated Users: 1,000+ in first year.
- Internet-based usage, mobile-friendly.
- Database: Qdrant/Pinecone, relational DB: MySQL.

- Application Server: FastAPI backend with AI orchestration.

2.2 Current Functional Procedures

Currently, individuals rely on manual consultations with lawyers. Digital tools exist but are generic, English-only, and lack verified references. Costs and accessibility remain barriers.

2.3 Functional Objectives

- Provide affordable, accessible legal consultation.
- Support multi-lingual and voice queries.
- Ensure verified and reference-backed responses.
- Enhance inclusivity for low-literacy users.

2.4 Assumptions and Constraints

Assumptions: - Availability of digital legal datasets. - Acceptance of AI as an advisory tool by stakeholders.

Constraints: - Budget limitations as a student project. - Legal disclaimers required to prevent liability.

2.5 Risk

Key Risks: - Data privacy breaches. - AI hallucinations leading to inaccurate advice. - Regulatory challenges on AI legal consultation.

Risk Mitigation: - Use of RAG with citations. - Encryption and anonymization. - Clear disclaimers that the tool is advisory.

2.6 Methodology

- Benchmarking existing legal AI tools in Pakistan.
- User surveys for accessibility requirements.
- Prototype testing and iterative refinement.
- Risk and cost-benefit analysis.

2.7 Statement of Needs (Business Case)

- **Strategic Alignment:** Supports university's innovation and digital transformation goals.
- **Benefits:** Enhances access to justice, supports research, and enables community service.
- **Value Added:** Provides ROI via potential SaaS model; strengthens university's legal-tech innovation reputation.

3.0 AUTOMATION INITIATIVES

3.1 Time and Resource Costs Required

3.1.1 Project Timeline

- Initiation: Oct 2025
- FSR Meeting: Nov 2025
- Kick-off: Dec 2025
- MVP: Jun 2026
- Pilot Testing: Aug 2026
- Full Release: Dec 2026

3.1.2 Project Cost

- Development: £10,000
- Hosting & Infrastructure: £5,000
- Licensing & Compliance: £4,000
- Marketing & Outreach: £4,000
- **Total:** £23,000 over 3 years

3.2 Existence of Similar Initiatives or System

Similar systems (NAZ Assist, YourMunshi) exist but lack specialization, verified references, and multi-lingual/ voice support.

3.3 Impacts

- **Equipment Impacts:** Cloud infrastructure and hosting costs.
- **Software Impacts:** New system; minor modifications to datasets.
- **Organizational Impacts:** Students and faculty collaboration.
- **Operational Impacts:** Digital platform requires ongoing maintenance.
- **Developmental Impacts:** Database preparation and secure AI training pipeline.
- **Site Impacts:** No additional facility needed.
- **Security & Privacy:** Strong encryption and anonymization; compliance with data protection policies.

3.4 Rationale for Recommendations

The AI Legal Consultant is recommended due to its strong alignment with identified legal gaps, its innovative features (voice, multi-lingual support, verified references), and its ability to provide measurable benefits at manageable cost and risk.

Prepared By:
Munawar Shereen (22K-4809)
M. Ehtesham ul Hassan Malik (22K-4828)
M. Ahmedzaib Qamar (22K-4820)
Date: 30 September 2025