

Project Proposal

AI-Powered Legal Awareness & Rights Assistance Platform for Pakistani Women

1. Executive Summary

This project proposes the development of an AI-powered legal awareness and assistance application designed specifically for **women in Pakistan**. The primary objective of the platform is to **educate, empower, and guide women** regarding their legal rights under Pakistani law, especially in situations involving harassment, domestic abuse, workplace discrimination, family disputes, and other gender-specific legal challenges.

The application combines **artificial intelligence (chatbot technology)** with **verified legal knowledge, step-by-step procedural guidance, and document generation tools**. It enables women to describe their problems in natural language and receive **context-aware, lawful, and actionable guidance**, while clearly stating that the platform is for awareness and not a substitute for a licensed lawyer.

The backend of the system has already been fully implemented. This proposal outlines the **vision, functionality, workflow, target audience, and impact** of the complete project.

2. Problem Statement

A significant portion of women in Pakistan:

- Are **unaware of their legal rights**
- Do not know **which laws protect them**
- Lack clarity on **how to take the first legal step**
- Are afraid, confused, or misinformed about **legal procedures**
- Cannot afford or easily access legal professionals

Even when laws exist to protect women, the **gap between law and awareness** prevents timely action. Legal language is complex, procedures are unclear, and official documentation feels intimidating.

This project directly addresses that gap by converting **complex Pakistani laws into simple, guided, and practical explanations** through an AI-driven platform.

3. Target Audience

Primary Audience

- Women in Pakistan (18+)
- Working women
- Students
- Homemakers
- Women in urban and semi-urban areas

Secondary Audience

- NGOs and women support organizations
- Legal awareness initiatives
- Social welfare programs

The platform supports **English and Urdu**, ensuring accessibility for a broader audience.

4. Project Objectives

The key objectives of the project are:

1. To raise legal awareness among Pakistani women
2. To provide scenario-based legal guidance
3. To simplify Pakistani laws into understandable steps
4. To guide users on **what actions they can legally take and when**
5. To assist users in generating **legal applications and documents**

6. To create a safe, private, and judgment-free environment
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5. Core Features & Functional Overview

5.1 AI Legal Awareness Chatbot

The chatbot is the core component of the platform.

Functionality

- Users describe their issue in their own words
- The chatbot analyzes the scenario
- Matches it with relevant Pakistani laws and sections
- Explains:
 - What rights the user has
 - Which laws apply
 - What legal consequences apply to the offender
 - What options the user can consider

Example Scenario

A user states:

“My boss harasses me daily at the office and I don’t know what to do.”

The chatbot responds by:

- Identifying workplace harassment
 - Explaining relevant Pakistani laws
 - Informing the user of available legal protections
 - Advising on possible actions
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5.2 Scenario-Based Step-by-Step Guidance

For every legal situation, the system provides:

- Clear next steps (Step 1, Step 2, Step 3...)
- Explanation of **when** to take each step
- Practical advice rather than legal jargon

Example:

- Where to report first
 - What evidence to collect
 - Who to contact
 - What documents are required
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5.3 Legal Sections & Case Awareness

The chatbot informs users about:

- Relevant legal sections
- Applicable laws
- Possible penalties or actions under Pakistani law

This builds confidence and awareness before the user proceeds further.

5.4 Document & Application Generation

If the user asks:

“How do I file a complaint?”
or
“Please write an application for me.”

The chatbot will:

1. Ask for required details:

- First name
- Last name
- Father's name
- CNIC
- Office name
- Office location
- Incident details

2. Generate a **professionally written legal application**

3. Save the document in the user's account
4. Allow the user to **edit, update, or reuse** the document later

This removes one of the biggest barriers women face: **writing formal legal documents**.

5.5 Templates & Draft Management

- Pre-built legal templates
 - User-generated drafts
 - Editable and reusable documents
 - Organized document history
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5.6 Secure User Accounts

- Secure authentication
- Private chat history
- Data protection and confidentiality

- Session management
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5.7 Knowledge-Based Legal Accuracy

- The chatbot responses are grounded in:
 - Verified legal documents
 - Uploaded legal sources
 - Controlled knowledge ingestion
 - Out-of-scope or irrelevant questions are filtered
 - Clear disclaimers are always shown
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6. System Workflow (High-Level)

1. User registers and logs in
 2. User enters a legal concern in the chatbot
 3. AI analyzes the query
 4. Relevant legal knowledge is retrieved
 5. Context-aware response is generated
 6. Step-by-step guidance is provided
 7. If requested, documents are generated
 8. User saves, edits, or exports documents
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7. Technology Overview (High-Level)

- Backend: Secure API-based architecture

- AI: Retrieval-Augmented Generation (RAG)
- Database: Structured user, chat, and document storage
- Task Queues: Background processing for ingestion and notifications
- Security: Token-based authentication, access control, rate limiting

(Frontend can be web or mobile and integrated seamlessly.)

8. Legal & Ethical Considerations

- The platform **does not replace lawyers**
- Clear disclaimers are shown with every response
- The system provides **awareness and guidance only**
- Encourages contacting legal professionals when required
- User privacy is treated as a top priority

9. Expected Impact

- Increased legal awareness among women
- Reduced hesitation in taking legal action
- Improved confidence and decision-making
- Better access to justice-related information
- Support for women who cannot immediately access lawyers

10. Conclusion

This project is not just a technical solution; it is a **social empowerment platform**. By combining artificial intelligence with Pakistani legal knowledge, the application bridges the gap between **law and understanding**.

It empowers women with:

- Knowledge
- Clarity
- Guidance
- Confidence

A) Authentication & Security (Must-match backend)

User account behavior

- **Signup** creates user and returns tokens.
- **Login** only succeeds if email is verified.
- **JWT Access Token** required for protected endpoints: `Authorization: Bearer <token>`.
- **Refresh token** exists to renew access.
- **Token versioning** forces logout after password reset/change.

Frontend rules

- Store both tokens securely.
- Auto-refresh on 401 using refresh endpoint.
- If login returns “Email not verified” → show “Verify your email”.

B) Knowledge (RAG) — Legal Accuracy Guardrails

Admin Knowledge Upload

Admin panel must allow:

- Upload law documents (PDF/DOCX/TXT/etc.)
- Prevent duplicates (hash-based)
- Show ingestion status: queued → processing → done/failed
- Retry failed uploads (within retry limit)

Chat behavior (RAG)

Chat must:

- Only answer when knowledge exists in KB
 - If no context found → ask user to rephrase / ask a legal question
 - If out-of-domain → respond “I can only help with Pakistan law awareness”
 - Always append disclaimer
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C) Conversation Memory (Chat Threads)

Conversation behavior (exactly how backend works)

- If `conversationId` is NOT provided → backend creates **new conversation**
- If `conversationId` is provided → backend continues that thread
- Only last **10 messages** are used as memory
- Chat history saved per user

Frontend UX

- “New Chat” button should send request **without** conversationId
- “Continue Chat” should send request **with** conversationId
- Add a “Chats” screen (list of conversations) and a “Messages” screen

D) Safe Mode (Privacy Mode)

Backend behavior

If header: `X-Safe-Mode : 1`

- Chat still works
- But **no DB writes** (no conversation memory/history)
- Some actions (like editing drafts, etc.) are blocked by backend safe-mode checks

Frontend UX

- Add a toggle: **Private Mode**
 - Show label: “No history will be saved”
 - When enabled, include header in every request
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Each Feature + How It Must Behave

1) Chatbot (Legal Guidance)

What it does

- Understands user’s situation (natural language)
- Retrieves legal context using RAG
- Responds with:
 - rights summary
 - relevant legal direction
 - recommended next steps

- optional escalation guidance (lawyer/helpline)

UI behavior

- Chat answer must include:
 1. **What this issue is**
 2. **What rights apply**
 3. **What actions can be taken**
 4. **What documents/evidence to collect**
 5. **Next best step**
 6. Disclaimer shown every time

Backend sync

- Use `POST /chat/ask`
 - Use language field (`en/ur`)
 - Pass `conversationId` when continuing
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2) “Browse by Situation” (Structured Rights/Guides)

What it does

A non-chat section for:

- Rights (short learning cards)
- Pathways (step-by-step “what to do”)
- Checklists (what documents/evidence you need)

UI behavior

- Categories like:
 - Workplace Harassment
 - Domestic Violence
 - Cyber Harassment
 - Marriage/Divorce/Khula
 - Maintenance
 - Inheritance/Property
- Each category shows:
 - Rights summary
 - Step-by-step pathway
 - Checklist
 - Templates available

Backend sync (recommended approach)

- Pull structured content from API endpoints (rights, pathways, checklists)
 - Cache content using `/content/manifest` (for low internet reliability)
 - Refresh only when manifest version changes
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3) Templates (Legal Document Templates)

What it does

Admin defines templates like:

- Complaint application
- FIR request application

- Workplace complaint letter
- Notice letter, etc.

Templates include placeholders:

- {{name}}, {{cnic}}, {{officeName}}, etc.

UI behavior

- Template detail screen shows:
 - Purpose
 - Required fields (dynamic form)
 - Preview of template
 - Button: “Generate Document”

Backend sync

- Admin CRUD: templates routes (admin-only)
 - User reads templates list and details
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4) Drafts (Generated Documents)

What it does

Users generate filled documents from templates and save them as drafts.

UI behavior

- When user taps “Generate Document”:
 - Show form to collect required fields
 - Auto-fill from profile where possible (name, CNIC)

- Generate draft
- Open draft editor screen
- Draft editor:
 - Allow editing the generated text
 - Save updates
 - Export PDF/DOCX/TXT

Backend sync

- Generate: `POST /drafts/generate` (templateId + answers + userSnapshot)
 - Edit: update draft endpoint (exists in drafts routes)
 - Export: `/drafts/<id>/export?format=pdf|docx|txt`
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5) Export (PDF/DOCX)

UI behavior

- “Download PDF”
- “Download Word (DOCX)”
- “Copy Text”

Backend sync

- Use the export endpoint; show file download dialog
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6) Admin Panel (Operations)

Must-have screens

- Users management:
 - list/create/update/soft-delete users
- Knowledge ingestion:
 - upload file
 - ingest from URL
 - list sources + status
 - retry failed
- Templates management:
 - create/update templates
- Logs/monitoring (optional):
 - ingestion errors
 - chat routing stats

Backend sync

- Admin routes are protected by admin JWT flag.

End-to-End Examples (User Journeys)

Scenario 1: Workplace Harassment (Boss harassment)

User chat: "My boss harasses me daily at office. What should I do?"

Expected chatbot response structure:

1. Identify category: workplace harassment
2. Explain rights under relevant Pakistan protections (based on uploaded KB)
3. Evidence checklist:

- messages/screenshots
- witnesses
- dates/times
- HR complaints (if applicable)

4. Step-by-step actions:

- internal complaint (if safe)
- complaint authority direction
- legal complaint route (as per KB)

5. Offer: “Do you want me to generate a complaint application?”

If user says: “Write an application”

- App opens template picker: “Workplace Harassment Complaint”
 - Form asks:
 - name, CNIC (auto)
 - office name, office location
 - incident summary
 - dates/times
 - Generate Draft → open editor → export PDF
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Scenario 2: Domestic Violence

User chat: “My husband beats me. I’m scared.”

Expected behavior:

- Safety-first tone + urgent help line suggestion (in disclaimer/extraline)
- Rights explanation from KB

- Immediate “safe steps” checklist:
 - secure location
 - trusted contact
 - medical report if injured
 - evidence (photos, reports)
- Option:
 - “Generate application for protection / complaint / report” (based on available templates)

Important UX rule

- Provide “Safe Mode” suggestion: “Enable Private Mode if you don’t want chat saved.”
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Scenario 3: Cyber Harassment / Blackmail

User chat: “Someone is blackmailing me with photos on WhatsApp.”

Expected behavior:

- Explain rights + what actions are available (from KB)
- Evidence checklist:
 - chat screenshots
 - phone numbers / IDs
 - URLs
- Step-by-step guide:
 - how to preserve evidence
 - where to report (as per KB sources)
- Offer template:

- “Complaint application” + “Evidence statement template”
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Scenario 4: Inheritance / Property Rights

User chat: “My brothers won’t give me my inheritance share.”

Expected behavior:

- Explain legal entitlement (from KB)
 - Guide:
 - collect proof: death certificate, family registry, property docs
 - steps: notices, legal channels
 - Offer templates:
 - “Legal notice request”
 - “Application for record / mutation / claim” (depending on your template library)
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Scenario 5: Divorce / Khula & Maintenance

User chat: “I want khula but my husband refuses. What can I do?”

Expected behavior:

- Explain options under family law (from KB)
- Step-by-step:
 - documents required (nikahnama, CNIC, etc.)
 - where to file
 - what to expect in process (high-level)
- Offer templates:

- “Khula application draft”
 - “Maintenance request application”
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Implementation Notes (So Frontend Never Conflicts With Backend)

1. Always pass **JWT access token** for protected routes.
2. **conversationId** logic:
 - New chat → don't send it
 - Continue chat → send it
3. Add a global toggle for **Safe Mode** → send **X-Safe-Mode: 1** header
4. For document generation:
 - Use Template → Generate Draft → Edit → Export
5. For offline/low internet:
 - Use **/content/manifest** and cache content files on device