



CODESLAYER2k25

Code Collab Conquer



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Project Title : Grievance Redressal System for Villages

Team Name : PillarCoders

Team Members :

- Vansh Saini : Blockchain Development & Web Research
- Roshni Dodani : Frontend Development & User Interface Design
- Piyush Dhakad : Research & Team Managment.
- Deepak Patel : Backend Development & System Architecture

Tracks Chosen : Web3 Development , Open Innovation



PROBLEM STATEMENT & TARGET AUDIENCE



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Problem We're Solving

1. **Digital divide and accessibility issues-**

- Low literacy rates: 38-52% illiteracy in rural areas limits digital platform access.
- Lack of internet and smartphones limits rural citizens' use of online grievance platforms

2. **Accountability-**

- Low redressal rates: Only 6.3% resolution rate in some state portals.
- Officers close complaints without ground visits, resulting in false closure based only on the officer's word

3. **System Design Flaws-**

- Poor user interface: Lack of sitemaps, FAQ sections, user-friendly design
- Limited grievance tracking: Insufficient status tracking and transparency
- No community involvement: Systems don't integrate local community leaders

Impacted audience : rural citizens, volunteers, and officials facing poor grievance access.

Target Users

- a. Rural citizens
- b. Panchayat officials
- c. Civil society volunteers
- d. Government departments (The system will be used by both B2B and B2C consumers, but revenue will only be generated from the B2B sector.)



OUR UNIQUE SOLUTION



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Key Features

Blockchain Transparency:

- Immutable records prevent tampering of grievance status
- Smart contracts enable automatic escalation when resolution time exceeds limits

Community Verification:

- Crowd verification allows community members to validate resolution status
- Photo/video evidence capability for citizens to prove unresolved issues

Multi-Channel Accessibility:

- IVR System, WhatsApp Integration, WhatsApp Integration.

AI-Powered Intelligence:

- NLP Processing: Automatic categorization by type and urgency

Why It's Different

Multi-Modal Accessibility Revolution

- Problem: Web-only, English/Hindi, smartphone required - Excludes 400M+ rural users
- Our Solution: Voice IVR + WhatsApp + Physical kiosks + Offline-first design - Includes everyone

Community-Verified Blockchain

- Problem: Officials close complaints falsely (main reason for 6.3% failure)
- Our Solution: Community validates + Photo evidence + Smart contracts auto-escalate

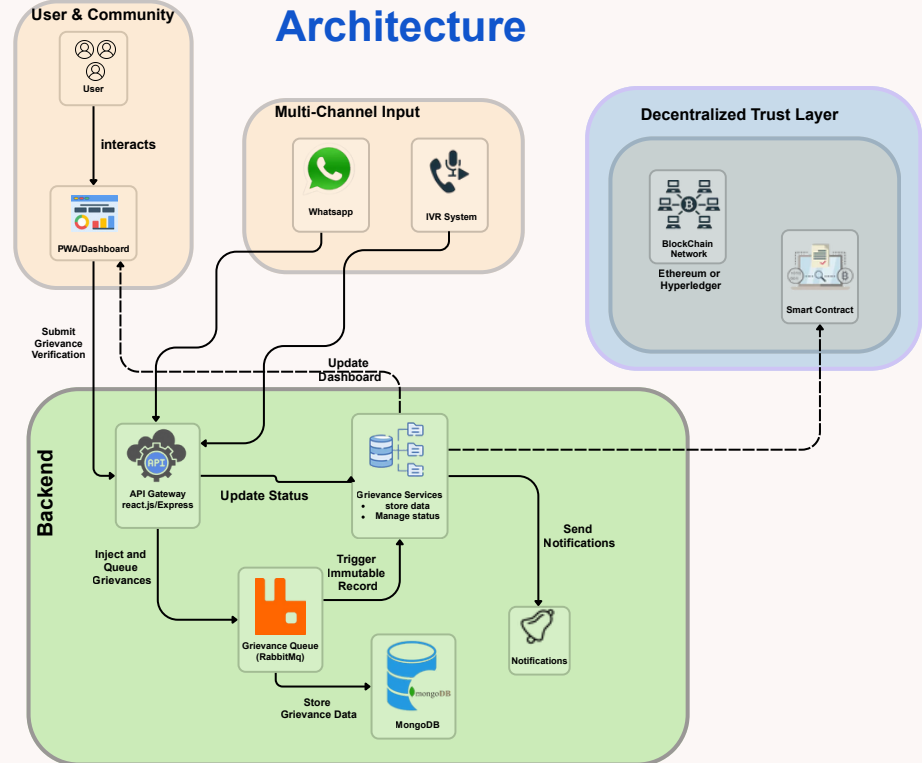
What's Unique : No existing system has community verification with blockchain

TECH STACK + ARCHITECTURE

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Tech Stack

- **Frontend :**
HTML, CSS, JavaScript, Bootstrap (CSS-Framework) , pwa (progressive web apps).
- **Backend :**
Node.js/Express.js , MySQL , RabbitMQ
Python Flask
SQLite Database , MongoDB
- **Communication :**
 - Email Notifications (Using Gmail SMTP)
 - SMS Integration - TextLocal or MSG91 (API)
 - WhatsApp Business API
 - Blockchain Network : Ethereum/Hyperledger for transparency





FEASIBILITY AND SHOWSTOPPERS & BUSINESS MODEL



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Feasibility

- Modular development with pre-existing APIs
- Prior research done: no time wasted on problem validation.
- Team skill alignment: parallel development (AI, Web, Backend)

Showstoppers

- Government API integration complexity : Use mock APIs for demo; perform real integration post-hackathon
- Blockchain time limits : simulate using mock API.
- Multi-language complexity :use Google Translate API fallback.
- Connectivity issues : Offline-first + SMS fallback.

BUSINESS MODEL

- Government Licensing: Per-village deployment fees for government bodies
- SaaS Model: Subscription-based pricing for multi-village implementations
- Training & Consultation: Community volunteer training and system setup services
- Analytics Services: Governance insights and reporting for policy makers

USP(UNIQUE SELLING PRICE) & FLOW CHART



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UNIQUE SELLING PRICE

- 1st Offline Capable Grievance Redressal System
- Community-Verified Closures (No False Claims)
- Voice + Local Language Support
- Blockchain ensures complete transparency and accountability

