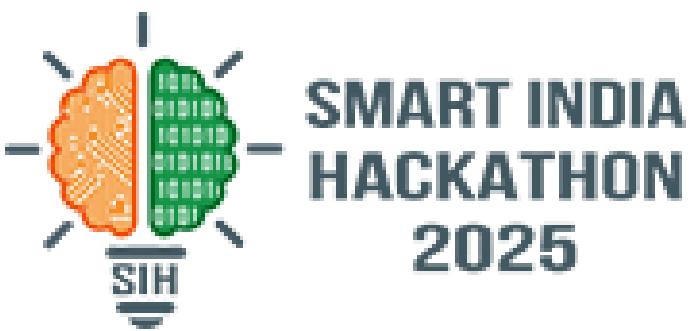
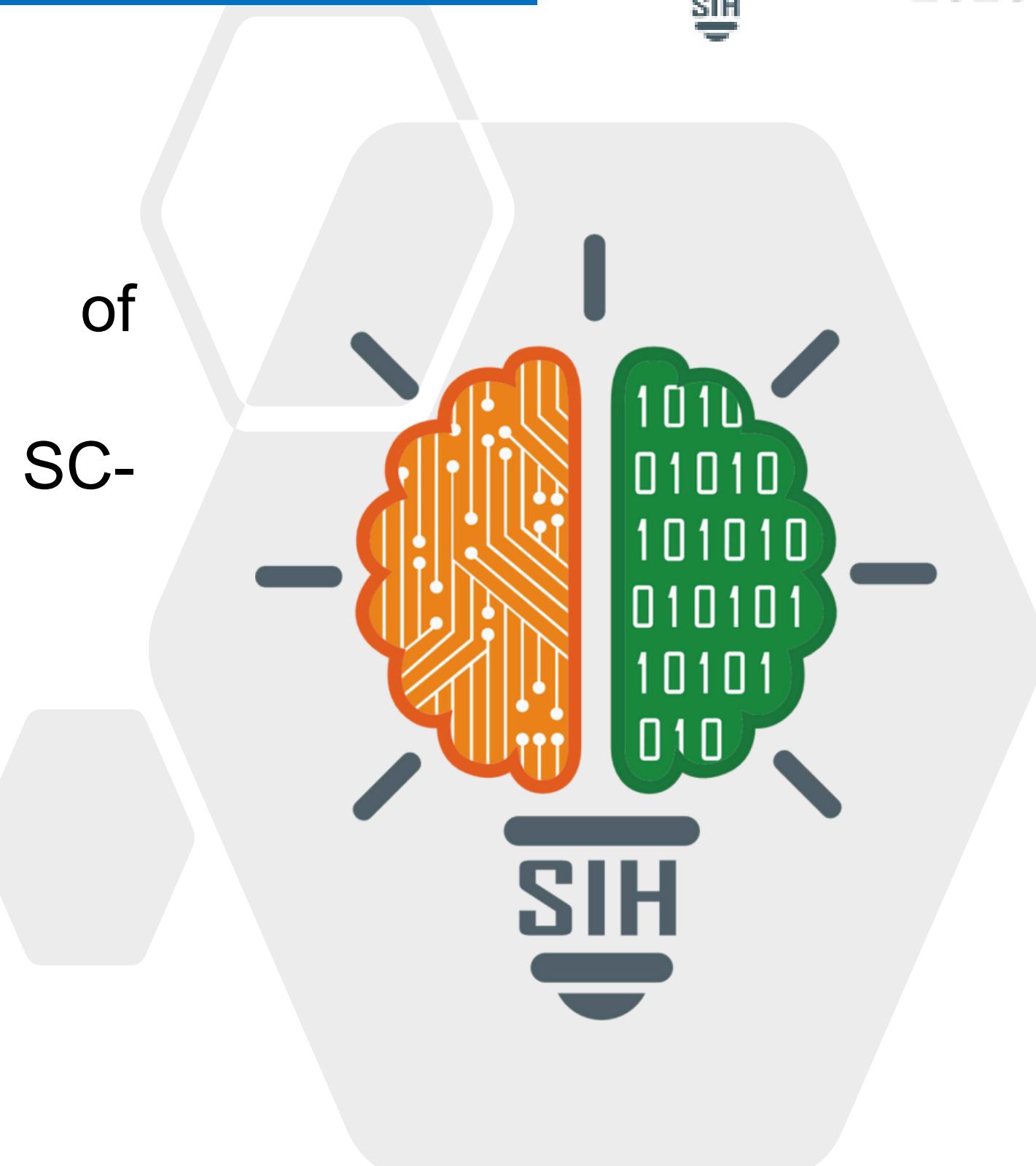


SMART INDIA HACKATHON 2025



- **Problem Statement ID – SIH25151**
- **Problem Statement Title - Identification of Infrastructure, Amenities, and Service Gaps in SC-Majority Villages for Adarsh Gram Declaration**
- **Theme- Smart Automation**
- **PS Category- Software**
- **Team ID- 53281**
- **Team Name - Code-Catalysts**



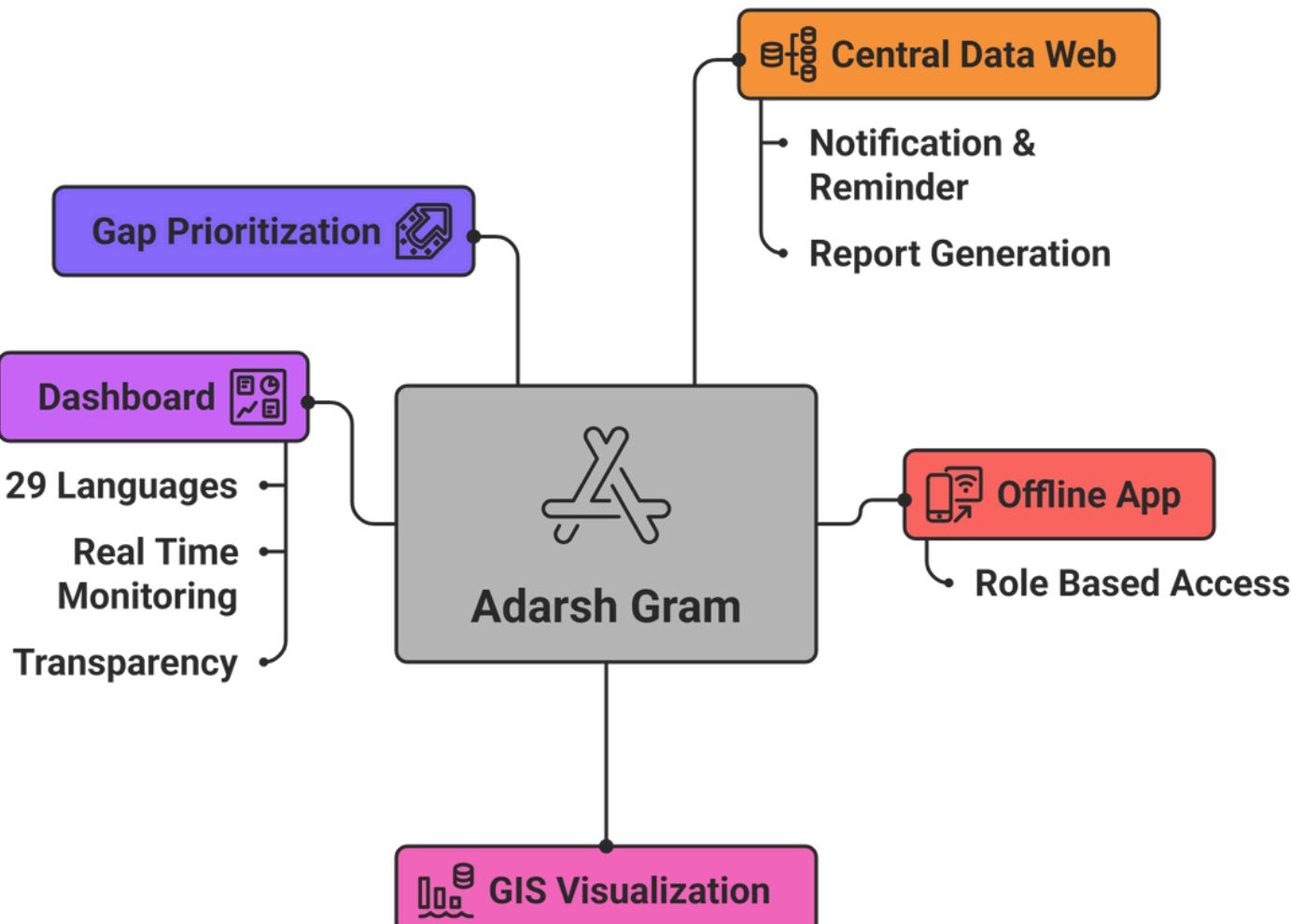
- *This app helps villages find what's missing—like schools, clinics, or roads—so improvements can be planned and tracked easily.*

Proposed Solution

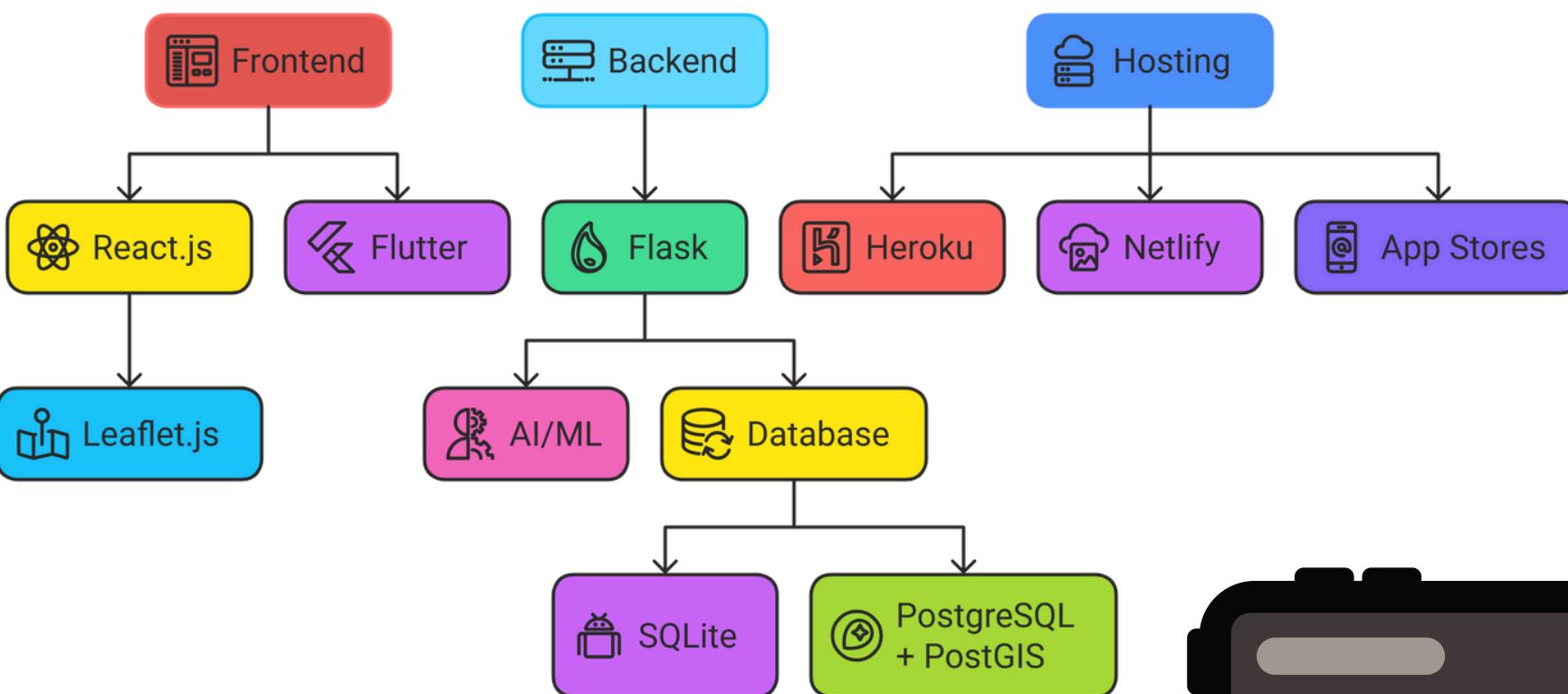
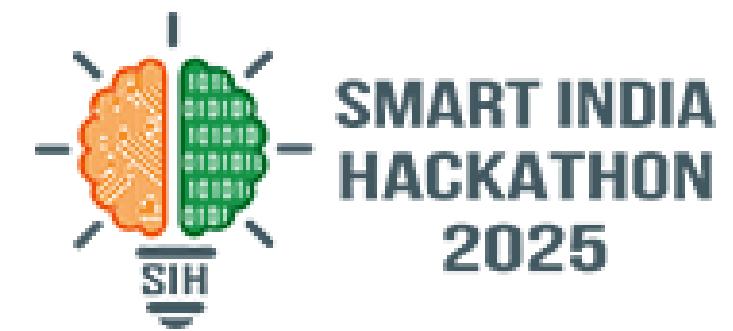
Solution Overview: Smart Infra & Service Gap System

- **Digital platform** integrates web, mobile app, and dashboard for seamless management.
- **Gap Identification:** Collect and visualize village-level data on education, healthcare, sanitation, water, electricity, connectivity, and skills.
- **Geo-Mapping:** GIS layers pinpoint existing infrastructure and highlight missing facilities in each village.
- **Real-Time Monitoring:** Field officers and volunteers collect geo-tagged, photo-based data even offline (syncs later).
- **Mobile App:** Enables role-based, multilingual, and secure data entry—offline and online.
- **Transparency Dashboard:** Public dashboard displays project progress, infrastructure gaps, and “Adarsh Gram” readiness.
- **Central Data Hub:** Merges Census, scheme, and district datasets for holistic analysis.

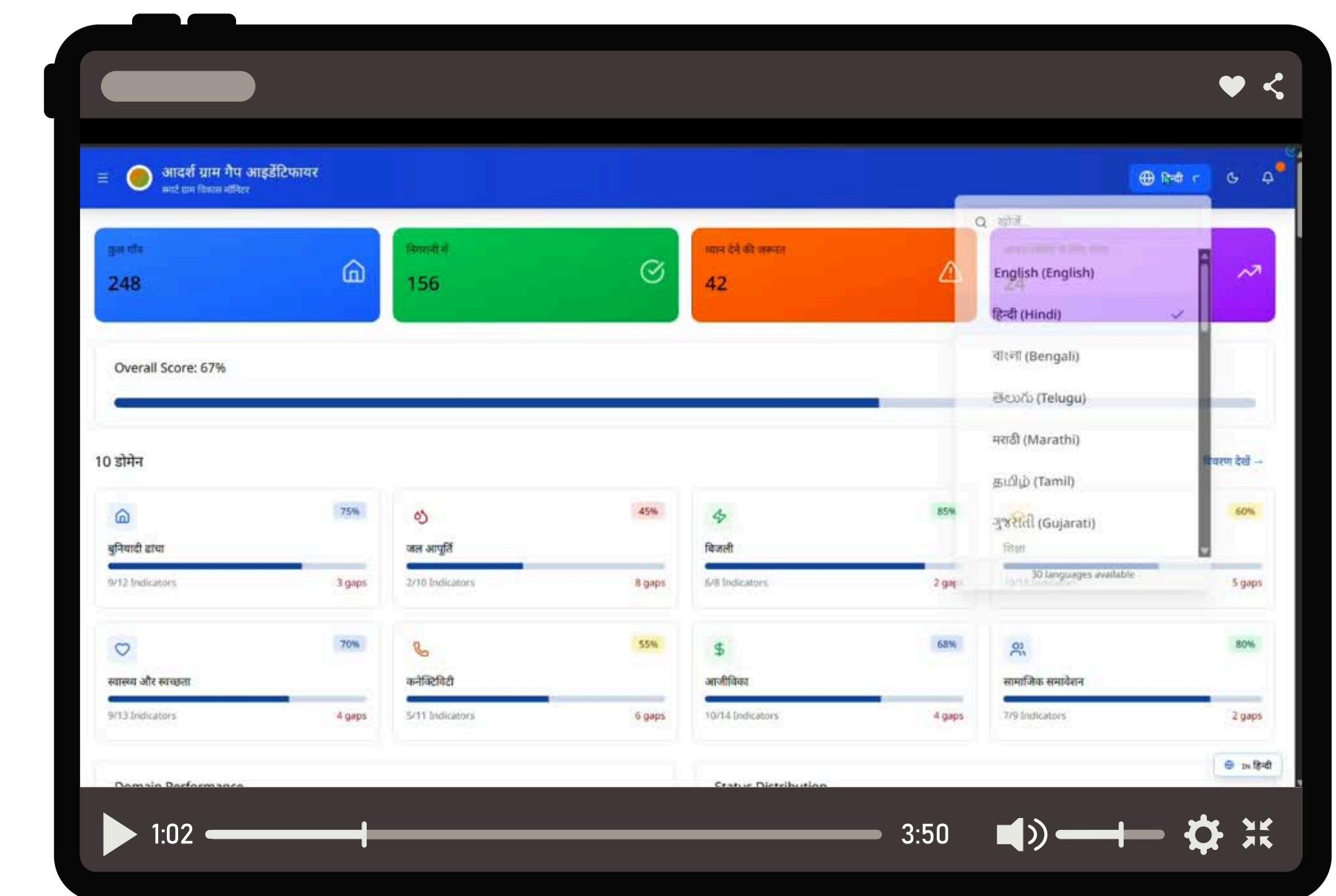
Adarsh Gram Initiative: Components and Functionalities



TECHNICAL APPROACH



- **Frontend:**
 - **React.js (Web)** – Interactive, reusable UI
 - **Flutter (Mobile)** – Android & iOS with one codebase
- **Backend:**
 - **Flask (Python)** – Lightweight API & server logic
- **Database:**
 - **SQLite (Prototyping)**
 - **PostgreSQL + PostGIS (Production, spatial data)**
- **GIS/Maps:**
 - **Leaflet.js** – Interactive maps & geo-tagging
- **AI/ML:**
 - **scikit-learn** – Simple models to analyze and prioritize gaps
- **Hosting:**
 - **Heroku (Backend)**
 - **Netlify (Frontend)**





FEASIBILITY OF THE IDEA

- **Existing Data Tools:** Mobile surveys ,GIS,MIS enable efficient gap analysis.
- **Government Support :** Backed by PMAY,SBM & related schemes.
- **Partnership Scope:** NGOs ,PRI institutions can co-implement.
- **Tech Integration :** Dashboard & apps ensures transparency.
- **Policy Alignment :** Matches national development & social justice goals.



POTENTIAL CHALLENGES AND RISKS

- Data Unavailability or Inaccuracy.
- Resistance from Local Stakeholders.
- Funding Constraints.
- Implementation Delays.
- Lack of Awareness.
- Language & Literacy Barriers.

STRATEGIES FOR OVERCOMING CHALLENGES

- **Use Technology for Data Collection:** Deploy digital surveys, Geo-tagged photos and real-time dashboards.
- **Community Mobilization:** Conduct awareness camps ,Gram Sabha consultations ,and participatory rural appraisals.
- **Multisectoral Convergence:** Coordinate across rural development ,health ,education ,PWD ,and social welfare departments.
- **Leverage CSR and NGO Support:** For funding and implementation of soft infrastructure like skilling.

IMPACTS AND BENEFITS

TARGET AUDIENCE: Villagers, Panchayat & Block-level Authorities, District Administrators, Policy Makers, and Development Organizations working to transform SC-majority villages into Adarsh Grams.

IMPACTS



BENEFITS

- **Faster Development:** Timely completion of village projects
- **Transparent Governance:** Real-time tracking builds trust
- **Inclusive Participation:** Villagers actively engage in planning & feedback
- **Data-Driven Decisions:** AI & analytics guide priority actions
- **Equitable Growth:** Focused improvements in SC-majority villages

- **Social:** Empowers villagers & improves transparency in governance
- **Economic:** Efficient fund use, reduced corruption, faster project completion
- **Accessibility:** Works offline, supports local languages, SMS/IVR, and kiosks
- **Environmental:** Optimizes resources & prevents redundant projects
- **Inclusive Development:** Ensures equitable growth for SC-majority villages

RESEARCH AND REFERENCES

◆ Case Study:

- Government schemes and official documents related to rural development.
Ex: **PM-AJAY**, Satnavari Smart Village Pilot, Sansad Adarsh Gram Yojana.

◆ Technical Architecture:

- Mobile Survey Apps (with GPS tagging) collect citizen feedback, scheme data integration and Gap prioritization through AI/ML models.
- Report Generation data identification for impact scoring, Rural infrastructure monitoring.

◆ Reference:

- **Census 2011** village Directory/MOSPI village level Facilities Report.
- **NABARD** Rural Infrastructure Index through smart village Automation.
- Evaluation of Special Central Assistance to SCSP, Planning Comission.

