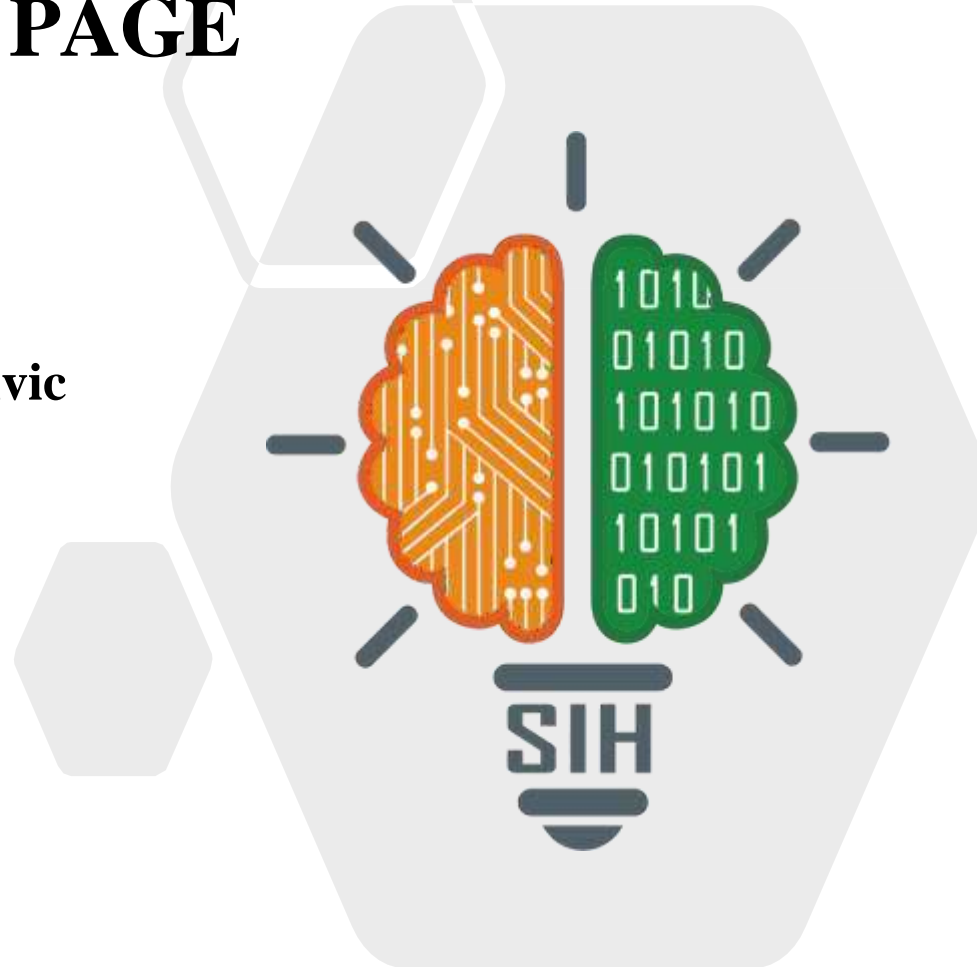


SMART INDIA HACKATHON 2025



TITLE PAGE

- **Problem Statement ID - 25031**
- **Problem Statement Title- Crowdsourced Civic Issue Reporting and Resolution System**
- **Theme- Clean & Green Technology**
- **PS Category- Software**
- **Team ID-**
- **Team Name- Technirvana**



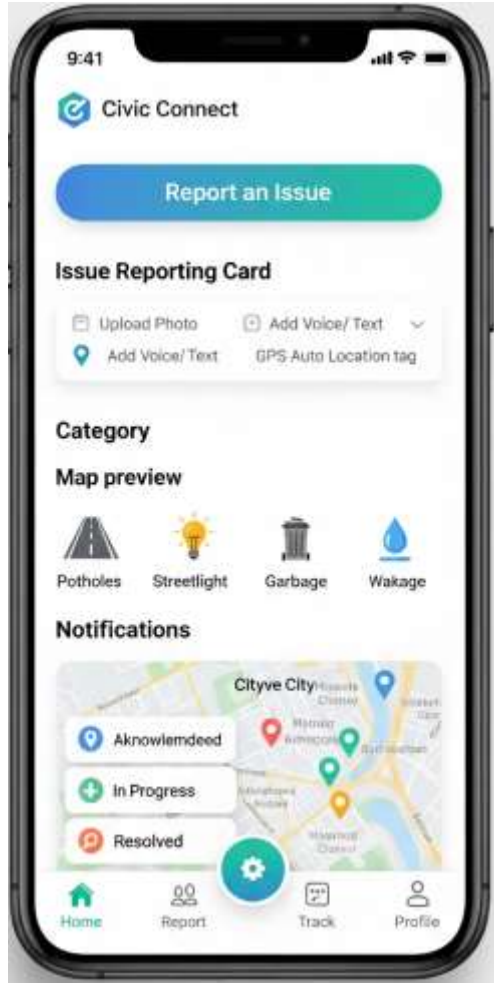
❖ Proposed Solution:

- **Mobile-First Reporting** – Citizens capture issues with photo, GPS, and voice/text.
- **Smart Dashboard** – Real-time map view of civic issues by category and priority.
- **Quick Department Routing** – Issues instantly sent to the right municipal team..
- **Live Notifications** – Citizens track every stage from submission to resolution
- **End-to-End Transparency** :Seamless flow: report → assign → fix → feedback.

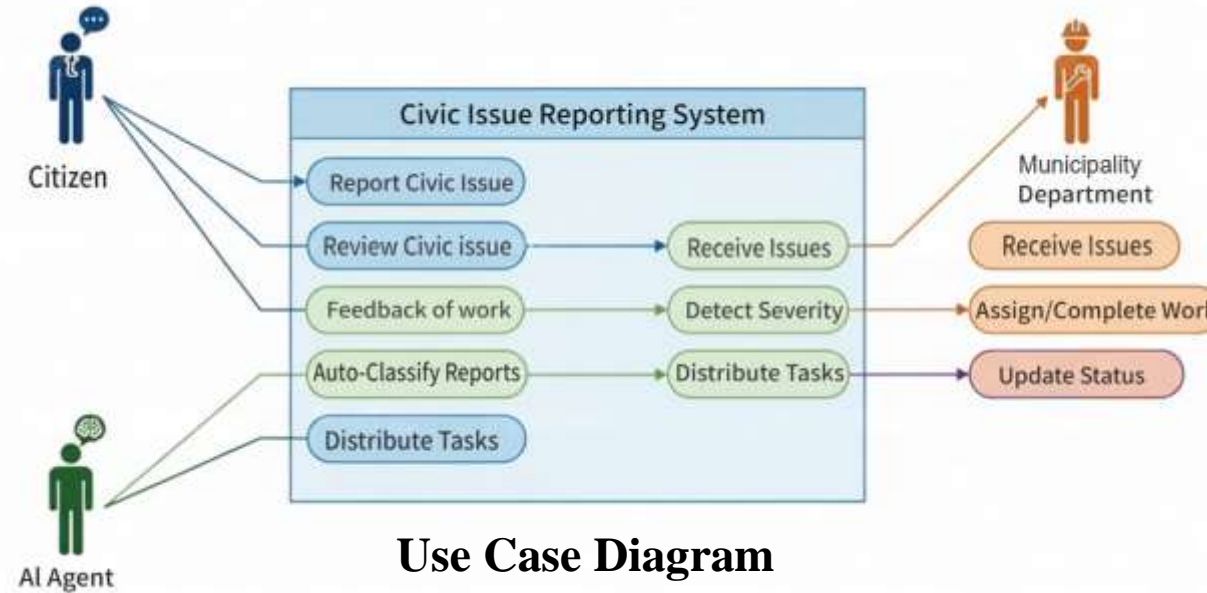
❖ Uniqueness:

- **Citizen-Centric Engagement** : Our platform empowers citizens with crowdsourced reporting, multilingual support and live progress tracking.
- **AI-Powered Efficiency** : Intelligent auto-categorization and prioritization ensure issues are routed in real time with complete end-to-end tracking.
- **Smart Governance & Planning** : Interactive maps and analytics enable transparent monitoring and data-driven urban policy decisions.

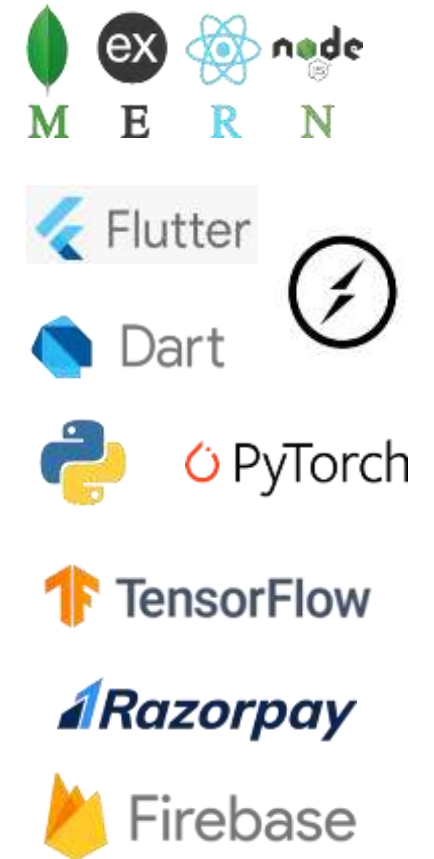
Working Prototype



TECHNICAL APPROACH



Technology Stack





Feasibility Analysis : **Infrastructure Readiness** – Smartphones, GPS, and internet already in place.
Administrative Fit – Seamless ERP/Smart City integration.



Viability : **Citizen Adoption** – Mobile-first, multilingual, inclusive design.
Sustainability – Cost savings via govt. funding & CSR support.



Possible Challenges

- **Low Citizen Engagement:** Limited awareness and digital hesitation reduce platform adoption.
- **Report Authenticity Risks:** Duplicate, false, or irrelevant reports affect system credibility.
- **Slow Departmental Response:** Delayed resolutions lower trust and satisfaction among citizens.



How to Overcome the Challenges

- **Inclusive Design & Outreach:** Multilingual, intuitive app with awareness campaigns to boost adoption.
- **AI-Driven Validation:** Automated checks with community flagging to ensure data accuracy.
- **Smart Governance Tools:** Automated routing, SLA tracking, and live status updates for accountability.

IMPACT AND BENEFITS



IMPACTS

- **Real-Time Redressal:** Instant issue reporting shortens response time drastically.
- **Citizen–Government Trust:** Transparency transforms governance into a collaborative process.
- **Urban Safety & Livability:** Safer mobility, cleaner surroundings, and better public spaces.



BUSINESS POTENTIAL

- **Government Partnerships:** Smart City & municipal system integration.
- **CSR Tie-ups:** Corporate funding for civic-tech initiatives.
- **Analytics-as-a-Service:** Insights on waste, sanitation & infrastructure.



BENEFITS

- **Social :**
Empowers citizens with inclusive participation and ensures transparency in issue resolution.
- **Environmental :**
Supports cleaner surroundings and lowers carbon footprint through optimized operations.
- **Economic :**
Reduces maintenance costs with early detection and creates new job opportunities.

❖ Research:

- **Existing Platforms :** Swachhta app (Limited scope & slow response) (Identified their strength and weaknesses)
- **Sustainability & Environmental Impact :** Studied smart waste management and AI-driven sanitation for cleaner, low-carbon cities.
- **Computer Vision for Civic Issue Detection :** Explored AI/ML models (YOLO, CNNs, Scene Graphs) for real-time detection of potholes, garbage, and streetlights.

❖ References:

1. C. Vrabie, “**Improving municipal responsiveness through AI-powered image analysis in e-government,**” *arXiv preprint* arXiv:2504.08972, Apr. 2025. Available: <https://arxiv.org/abs/2504.08972>*
2. A. Anthopoulos, I. Fitsilis, and E. Geropanta, “**Smart city applications to promote citizen participation in city management and governance: A systematic review,**” *Informatics*, vol. 9, no. 4, p. 89, Dec. 2022. Available: <https://www.mdpi.com/2227-9709/9/4/89>
3. K. Panayappan, P. S. Prasad, and R. V. Kulkarni, “**Computer vision assisted approaches to detect street garbage, road defects, and urban issues from citizen imagery,**” in *Proc. SmartCity360° 2020*, pp. 482-493. Available: https://link.springer.com/chapter/10.1007/978-3-030-76063-2_35