Slum Community-centric App and Government Portal for Grievance Management and Land Ownership Transparency

-Integrating Technology for Sustainable Urban Transformation





Project Statement



Slums, characterized by inadequate sanitation, water supply, housing, and living space, pose significant developmental challenges. Governments have attempted solutions like slum upgrading, involving improving infrastructure and legalizing land rights. Despite these efforts, poverty, lack of affordable urban land, and insufficient data contribute to the rise of slums. To create a healthy, inclusive, and prosperous country, technology can address data gaps, monitor and control epidemics, and regularize slum settlements. We propose an innovative technical solution to redevelop slum areas, curbing future growth and ensuring sustainable development.



Sustainable Development Goals

- **SDG 3:** Good Health and Well-being by facilitating infrastructure upgrades that lead to improved sanitation and public health outcomes in slum communities.
- **SDG 10:** Reduced Inequalities by empowering residents and fostering more equitable access to basic services.
- **SDG 11:** Sustainable Cities and Communities by promoting inclusive, safe, resilient, and sustainable urban development.
- **SDG 16:** Peace, Justice and Strong Institutions by promoting community participation and accountable governance



Motivation

- Create a Tangible Impact: Software development offers a powerful tool to tackle real-world problems. We see the potential for our project to directly improve the lives of millions by empowering residents and facilitating data-driven slum redevelopment.
- Embrace Technological Innovation: Leveraging advancements in AI technology and data analysis, we can create a solution that is not only effective but also scalable and replicable across different regions in India.
- **Promote Social Justice:** We believe residents should have a voice in shaping their communities. This project seeks to empower them through technology and data, fostering a more inclusive development process.
- Contribute to a Brighter Future for India: A nation's success hinges on the well-being of all its citizens. By tackling the challenges faced by slum communities, we contribute to building a stronger and healthier India for everyone.



Abstract



Slums face significant development challenges due to inadequate infrastructure and services. This project introduces a digital solution for slum redevelopment, featuring a community app that provides a live map, government policies, grievance reporting with geotagging, and a reward system to boost resident engagement. A government web portal supports grievance management with Al-driven departmental routing, automated email drafting, and predictive models for slum growth. Additionally, a blockchain system secures land ownership and resident data, reducing disputes and enhancing transparency. This integrated approach aims to improve slum conditions, streamline government processes, and foster community involvement. The project strives to improve living conditions. Ultimately, it aims to create healthier, more inclusive communities across the nation.



Objectives

- Resident Participation and Empowerment: We want to create a platform where residents can actively participate in improving their communities. The mobile app will enable them to report issues, access information about government initiatives, and voice their concerns. This empowers residents to take ownership of their communities and have a say in the redevelopment process.
- 2 Currently, there is a lack of accurate and up-to-date data on slum conditions. Our project will address this by not only identifying critical infrastructure needs of slum residents but also to show the transparency of government policies. This data will lead to more informed decision-making for redevelopment efforts.
- By integrating data collection, resident participation, and potentially blockchain technology, we aim to increase transparency and efficiency in slum redevelopment projects. This can help reduce land disputes, improve communication between residents and authorities, and ensure resources are allocated effectively.



Challenges



Community Engagement: Building trust with residents and encouraging their participation in the project is crucial. We need to develop effective communication strategies to ensure the project is perceived as beneficial to the community.

Data Security and Privacy: It's essential to implement robust security measures to protect resident data and ensure its privacy. We need to be transparent about data collection and usage practices.

Sustainability: The project's long-term sustainability requires collaboration with government agencies and NGOs to ensure continued support and integration with existing programs.



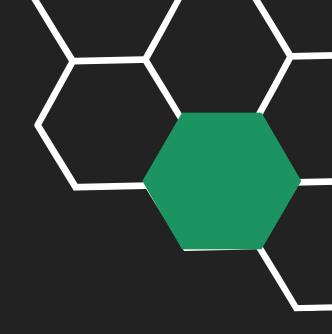
Literary Survey

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Tech Stack

- 1. Mobile Application
 - React Native
- 2. MongoDB
- 3. Web Application
 - Frontend
 - React.js
 - Backend
 - Node.js
 - ExpressJS
- 4. ML Model:
 - o Python: The primary language for data science and machine learning.
 - o Pandas, NumPy: For data manipulation and numerical computations.
 - Scikit-learn: For machine learning algorithms (classification, regression, clustering).
 - NLTK or spaCy: For natural language processing tasks (sentiment analysis, text preprocessing).
 - TensorFlow or PyTorch: Deep learning frameworks for complex models.
 - Grievance Categorization: A classification model (e.g., Naive Bayes, Random Forest, Support Vector Machine) can be used to assign grievances to appropriate departments based on text content.
 - Predictive Modeling: Time series analysis, regression models(e.g., Random Forest, Gradient Boosting) to forecast slum growth.
- 5. Blockchain based Smart Contracts:
 - Ethereum
 - Solidity
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