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Crowed Sourced City Issue Tracker

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Abstract

Rapid urbanization has led to an increase in civic issues such as potholes, garbage overflow, water leakage, streetlight failures, and drainage problems. Traditional methods of reporting these issues are often inefficient, time-consuming, and lack transparency.

This paper presents a **Crowdsourced City Issue Tracker**, a web-based platform that enables citizens to report civic problems directly to municipal authorities. The system allows users to upload issue details along with images and location, while authorities can track, manage, and resolve complaints efficiently.

The platform improves communication between citizens and government bodies, ensures transparency, and helps in faster resolution of urban problems.

Keywords: Crowdsourcing, Smart City, Issue Tracking, Web Application, Civic Management, Public Services

INTRODUCTION

Modern cities face numerous civic problems due to increasing population and infrastructure stress. Issues like potholes, waste management, broken streetlights, and water leakage affect the daily lives of citizens. Traditional complaint systems involve visiting municipal offices or making phone calls, which often results in delays and lack of accountability.

With the growth of internet technologies, **crowdsourcing** has emerged as an effective approach where citizens actively participate in reporting problems.

This project focuses on developing a **Crowdsourced City Issue Tracker**, which enables users to report issues online and allows authorities to manage them efficiently. The system enhances transparency, accountability, and citizen participation in governance.

LITERATURE REVIEW

Several studies have explored the use of technology for smart city management and civic issue reporting.

- Many systems use **mobile applications** for reporting city problems with GPS tracking.
- Some platforms integrate **GIS (Geographic Information Systems)** for better location-based issue tracking.
- Research shows that **crowdsourcing platforms** improve response time and citizen engagement.

Related Works:

“Smart City Complaint Management System”

Authors: R. Sharma et al.

This system allowed users to report complaints through a mobile app and track their status. It improved response efficiency but lacked real-time updates.

"Civic Issue Reporting Using GIS"

Authors: P. Kumar, S. Mehta

This research focused on integrating GIS for accurate location tracking of issues, improving resolution speed.

However, challenges like user participation, data validation, and system scalability still exist.

PROPOSED SYSTEM

The proposed system is a **web-based application** that allows citizens and authorities to interact effectively.

System Modules:

1. User Registration & Login
2. Issue Reporting (with image & location)
3. Issue Tracking
4. Admin Dashboard
5. Status Updates & Notifications

Workflow:

- Users submit complaints with details
- Issues are stored in the database
- Authorities review and assign tasks
- Status is updated (Pending / In Progress / Resolved)

DATASET DESCRIPTION

The dataset used in this study is generated from a crowdsourced civic issue reporting system. It contains records of issues reported by citizens, including attributes such as user ID, issue title, description, category (e.g., pothole, garbage, streetlight), location details, uploaded images, date of submission, and current status of the issue.

Additional attributes include priority level, assigned authority, and resolution time, which help in analyzing the efficiency of issue handling.

The target variable indicates the status of the issue, such as pending, in progress, or resolved. Data preprocessing techniques are applied to handle missing values, remove duplicate entries, and standardize location and category data for efficient processing and analysis.

METHODOLOGY

Initially, the dataset of reported civic issues is collected and analyzed using data processing techniques. Missing or incomplete entries are handled, and categorical data such as issue type and status are standardized for consistency. The dataset is then organized and stored in the database for efficient access. The system allows users to submit new issues, which are processed and recorded in real time. Administrative users review the reported issues and update their status based on progress. The system tracks each issue using different stages such as pending, in progress, and resolved. Performance of the system is evaluated based on response time, resolution rate, and user satisfaction.

LEARNING ALGORITHMS USED

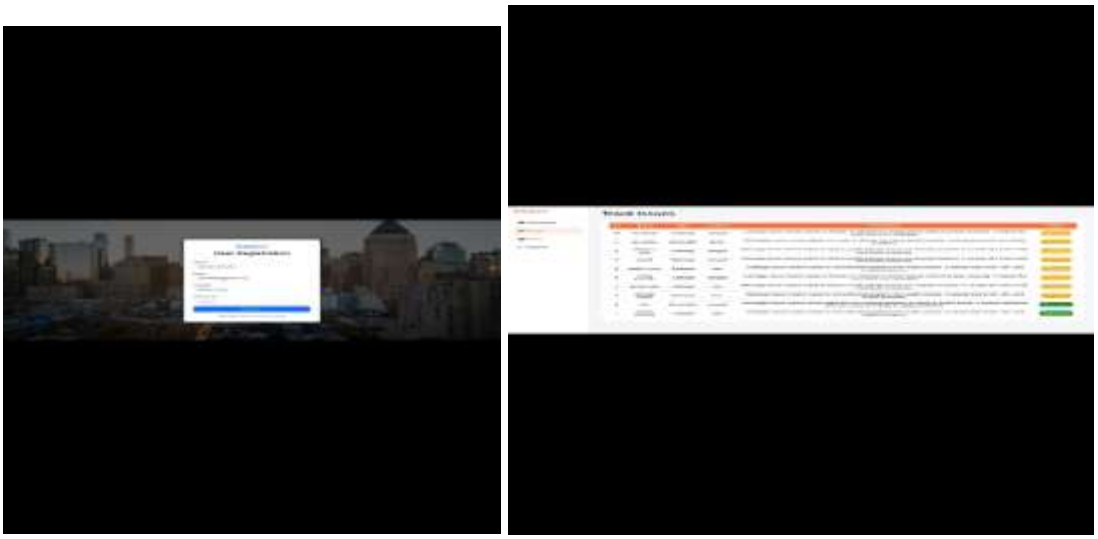
The following technologies and components are used in this system:

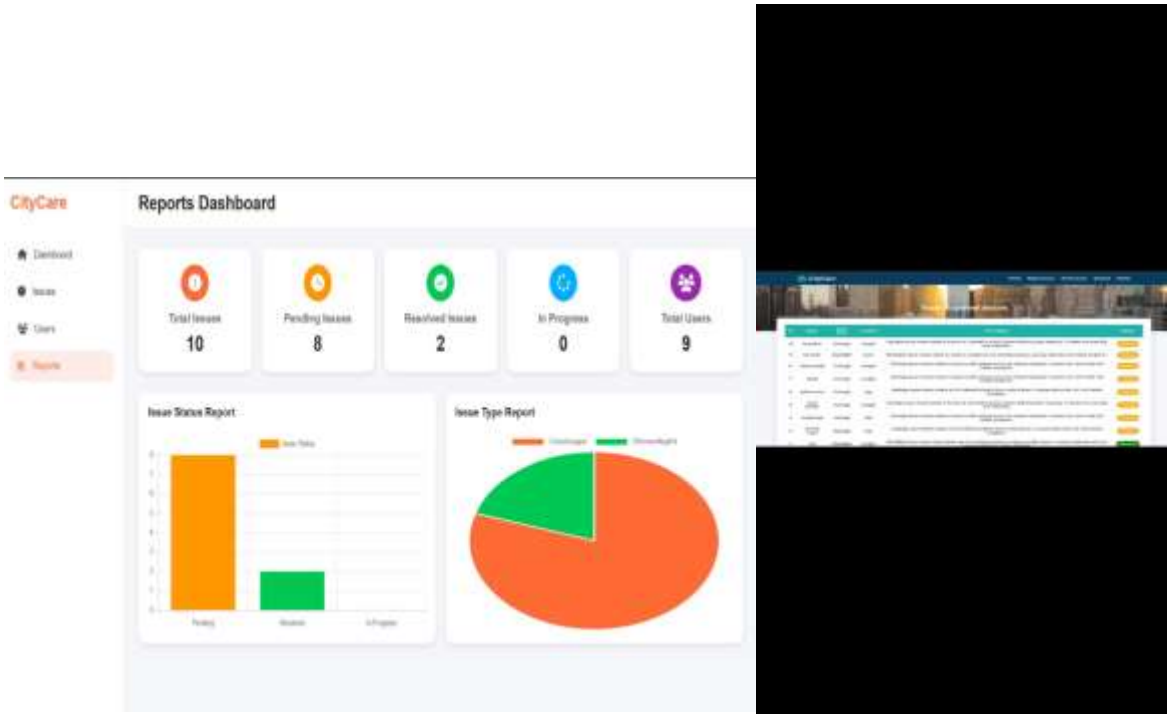
- **Frontend (HTML, CSS, JavaScript):** Used to design an interactive and user-friendly interface for citizens to report issues and track their status.
- **React:** Helps in building dynamic and responsive user interfaces for better user experience.
- **Backend (Node.js / Python):** Handles server-side logic, processes user requests, and manages communication between frontend and database.
- **Database (MySQL / MongoDB):** Stores user data, issue reports, status updates, and other system information efficiently.
- **Image Upload & Location Services:** Enables users to upload images of issues and provide location details for accurate identification.

These technologies are integrated to develop a scalable and efficient web-based civic issue tracking system.

RESULTS AND DISCUSSION

The performance of each machine learning model is evaluated using standard evaluation metrics. Experimental results indicate that the Random Forest classifier achieves the highest accuracy among all models. Logistic Regression also performs well with lower computational complexity. The results demonstrate that machine learning techniques can effectively predict liver disease using medical data. The system can serve as a supportive tool for healthcare professionals





CONCLUSION

The **Crowdsourced City Issue Tracker** is an effective solution for managing urban civic problems. It empowers citizens to actively participate in city management and helps authorities respond quickly.

The system improves transparency, efficiency, and communication, making it suitable for smart city applications.

FUTURE SCOPE

The **Crowdsourced City Issue Tracker** is an effective solution for managing urban civic problems. It enables citizens to actively participate in reporting issues and contributes to better city governance. By providing a direct communication channel between citizens and authorities, the system ensures quicker response and resolution of complaints.

The platform enhances transparency, improves operational efficiency, and strengthens communication between the public and municipal authorities. Therefore, it serves as a reliable and scalable solution for smart city applications.

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