

Civic Complaint Tracker: An Android-Based Solution for Smart Governance

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Abstract- Rapid urbanization has significantly increased the demand for efficient and transparent civic service management systems. Conventional methods of registering civic complaints, such as visiting municipal offices or making phone calls, are often inefficient, time-consuming, and lack proper tracking mechanisms. To overcome these limitations, this paper presents a Civic Complaint Tracker, an Android-based mobile application designed to streamline the process of reporting, monitoring, and resolving civic issues. The application is developed using Kotlin and Java, ensuring reliability, scalability, and compatibility with modern Android platforms. The proposed system consists of two primary modules: a Citizen module and an Administrator module. Citizens can report civic issues such as potholes, waste accumulation, water leakage, or streetlight failures by submitting structured details including a complaint title, detailed description, address, and photographic evidence. This structured input improves accuracy and helps authorities understand the issue clearly. The Administrator module allows authorized personnel to securely log in, review complaints, and update their status as Pending, In Progress, or Resolved, enabling effective monitoring and accountability. The system enhances transparency by allowing citizens to track the real-time status of their complaints, thereby reducing uncertainty and repeated follow-ups. Digitization of the complaint lifecycle minimizes paperwork, improves response time, and supports data-driven decision-making for municipal authorities. The Civic Complaint Tracker promotes citizen participation, strengthens communication between the public and local governance bodies, and aligns with smart city initiatives. Overall, the proposed solution demonstrates how mobile technology can significantly improve civic grievance redressal mechanisms and public service delivery.

Keywords: Civic complaints, Android application, E-governance, Smart cities, Complaint management system.

I. INTRODUCTION

Rapid growth of urban populations has placed immense pressure on municipal authorities to provide efficient and timely civic services. Issues such as potholes, garbage accumulation, water leakage, drainage problems, and malfunctioning streetlights are common in urban and semi-urban areas. Traditionally, citizens

report these issues through manual processes such as visiting municipal offices, making phone calls, or submitting written complaints. These approaches are often inefficient, time-consuming, and lack proper tracking mechanisms, leading to delays in resolution and dissatisfaction among citizens.

With the widespread use of smartphones and advancements in mobile technologies, digital

platforms have emerged as powerful tools for improving public service delivery. Android, being the most widely used mobile operating system, offers an ideal platform for developing citizen-centric applications.

The Civic Complaint Tracker is designed to leverage mobile technology to create a transparent, efficient, and user-friendly system that connects citizens directly with municipal administrators.

This application enables citizens to report civic issues anytime and from anywhere by submitting structured information such as complaint title, detailed description, location address, and photographic evidence. On the administrative side, authorized personnel can efficiently manage complaints, prioritize issues, and update their status. By digitizing the complaint lifecycle, the proposed system enhances accountability, reduces response

time, and promotes participatory governance, thereby contributing to smart city initiatives.

Problem Statement

Municipal corporations often face challenges in managing large volumes of civic complaints due to the absence of a centralized digital platform. Manual complaint handling results in data redundancy, poor record maintenance, lack of transparency, and delayed resolutions. Citizens are frequently unaware of the progress or outcome of their complaints, leading to frustration and repeated follow-ups. Additionally, administrators struggle to prioritize issues effectively without proper categorization and real-time data.

There is a strong need for an integrated, mobile-based complaint management system that allows citizens to easily report issues and track their status, while enabling administrators to manage, monitor, and resolve complaints efficiently. The Civic Complaint Tracker addresses these challenges by providing a structured, secure, and scalable solution.

II. SYSTEM OVERVIEW

The Civic Complaint Tracker is an Android-based mobile application designed with a dual-module architecture to support both citizens and administrators. The system ensures seamless interaction between users and municipal authorities through a centralized backend database.

Citizen Module: Citizens can log into the application and register complaints by entering relevant details such as the complaint title, detailed description of the issue, exact address or location, and an optional photograph captured using the mobile camera. Once submitted, the complaint is stored securely and assigned a unique identifier. Citizens can view the status of their complaints and receive updates when the status changes.

Admin Module: Administrators log in using secure credentials to access the admin dashboard. They can view all registered complaints, filter them based on category or status, and update the complaint status as Pending, In Progress, or Resolved. This module

helps authorities track workload, monitor response time, and ensure timely resolution.

III. SYSTEM ARCHITECTURE

Figure 1: System Architecture of Civic Complaint Tracker

The system follows a client-server architecture. The Android application acts as the client interface for both citizens and administrators. User requests are processed through secure authentication mechanisms and transmitted to a centralized server or cloud-based backend. The backend handles data storage, retrieval, and status updates using a structured database.

Authentication and authorization ensure that only registered users can submit complaints and only authorized administrators can update complaint statuses. The architecture supports scalability, allowing the system to handle a growing number of users and complaints efficiently.

IV. IMPLEMENTATION DETAILS

The application is developed using Kotlin and Java within Android Studio. Kotlin is utilized for user interface components, activity lifecycle management, and modern Android features due to its concise syntax and null-safety. Java is employed for backend logic and integration with existing Android libraries, ensuring stability and wide compatibility.

The user interface is designed to be simple and intuitive, allowing users to submit complaints with minimal effort. Image upload functionality enables citizens to attach photographs as visual evidence, improving complaint authenticity. Secure authentication mechanisms are implemented to protect user data and restrict administrative access. A structured backend database stores complaint details, user information, and status updates, enabling efficient retrieval and tracking.

System Flow / Algorithm

Step 1: The user launches the application and selects the Citizen or Admin login option.

Step 2: A citizen logs in and submits a complaint by entering the title, description, address, and uploading a photo.

Step 3: The complaint is stored in the centralized database with an initial status set to Pending.

Step 4: The administrator logs in securely and views all submitted complaints.

Step 5: Based on verification and action taken, the administrator updates the complaint status to In Progress or Resolved.

Step 6: The updated status is reflected in the citizen's application, enabling real-time tracking.

V. ADVANTAGES OF THE PROPOSED SYSTEM

- Provides a transparent and centralized platform for complaint management
- Reduces manual paperwork and administrative overhead
- Enables faster identification and resolution of civic issues
- Allows real-time tracking of complaint status by citizens
- Enhances communication between citizens and municipal authorities
- Supports data-driven decision-making through organized records

VI. CONCLUSION

The Civic Complaint Tracker is an efficient Android-based solution for addressing common challenges in civic issue management. By providing a digital platform for complaint registration and monitoring, the system enhances transparency, accountability, and responsiveness in municipal services.

The dual-module architecture ensures ease of use for citizens and effective complaint handling for administrators.

The application reduces manual effort, improves response time, and encourages citizen participation in governance. With its scalable design and structured workflow, the proposed system can be adopted by municipal bodies to improve urban service delivery and support smart city initiatives.

The Civic Complaint Tracker can be enhanced further by integrating advanced features such as GPS-based location tagging, push notifications for status updates, and analytics dashboards for administrators. Integration with Geographic Information Systems (GIS) can help authorities identify issue-prone areas and allocate resources efficiently. Machine learning techniques may be applied in the future to automatically categorize complaints and predict resolution timelines. Additionally, the system can be extended to include multilingual support and web-based access, making it more inclusive and scalable across different regions.

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