

# COMMUNITY CONNECT

Manoj YP

*Department of Computer Application  
PES University  
Bengaluru, India  
manojyp891@gmail.com*

Shambavi BN

*Department of Computer Application  
PES University  
Bengaluru, India  
shambavibn@pes.edu*

**Abstract**—The applications offered under Android are for enhancing reporting of problems or incidents affecting a particular community or organization and for ensuring that issues raised or reported are dealt with expeditiously. Users can report incidents by attaching photos, videos, or written descriptions. With these three elements, the reporting parties are able to be specific and provide clear evidence of the problem, which accelerates the response process. Reports are submitted and automatically sent to the appropriate authorities or to teams responsible for handling such issues. That way, there will not be any bottlenecks or delays in reaching the correct people who need to see the report. Users can also monitor and track the progress of their reports for action taken concerning resolving the issues. Reports from users are updated in real-time, thus giving users an idea of what is happening to their reports and building trust and transparency. Reporting issues via this app ensures that both communities and organizations can resolve issues, be it safety hazards, infrastructure repairs, or other complaints, much faster. There is a degree of accountability because everyone involved can see the actual handling of the problem. When a broken streetlight gets reported, the user can track when repair teams are assigned, when they get to work, and when the job is finally completed. The above process saves time and inspires more people to report problems since they can trust their concerns would be taken seriously and expedited. All in all, the app is facilitating a new and better system for responding to incidents, thus bolstering the communication between users and authorities and making communities safer and well organized.

**Index Terms**—Community Connect, Incident Reporting, Transparency, Geolocation, Citizen Engagement

## I. INTRODUCTION

Across the globe, communities face significant challenges in reporting local civic issues such as potholes, illegal dumping, waterlogging, and pollution. A core concern is the absence of a centralized, user-friendly reporting system. Citizens often struggle to identify the correct authority to approach, resulting in widespread confusion and underreporting. Even when reports are made, the process is frequently marred by delays and a lack of coherence in the information provided, which hampers swift action. Common civic concerns like broken streetlights or clogged drains often go unresolved for extended periods, posing safety risks and inconveniences.

A major drawback in current systems is the lack of accountability and transparency. Once a complaint is lodged, citizens rarely receive updates about the actions being taken or the expected timeline for resolution. This opacity erodes

public trust and engagement, further widening the gap between citizens and local governance.

To address these issues, this research proposes the development of a centralized issue-reporting platform that leverages modern mobile technology to bridge the communication gap between citizens and authorities. The proposed Android application allows users to report local problems with detailed descriptions, geotags, images, and videos, enabling authorities to gain a clear understanding of each issue. Reports undergo a verification process and are automatically assigned to the appropriate local body and designated nodal officer based on the location.

The platform ensures real-time tracking and updates, fostering transparency and citizen engagement. Community members can support and comment on issues, encouraging collective action. Furthermore, an integrated analytics module enables authorities to assess key performance indicators, such as average resolution time and issue frequency, aiding in prioritization and resource management.

Despite its potential, the implementation of such a system must address several challenges, including data privacy concerns, the need for public awareness and digital literacy, the potential for fraudulent reports, and the limited resources of local authorities. Technical issues such as app crashes, language barriers, accessibility limitations, and maintenance overheads must also be considered.

Ultimately, the success of the platform depends on adoption by local government bodies and their commitment to act on the reports generated. By empowering citizens and promoting transparency, the proposed solution aims to enhance local governance and improve the overall quality of life in communities.

The proposed application emphasizes ease of use as a core design principle, ensuring that users from diverse backgrounds can interact with the platform seamlessly. Its intuitive interface enables users to navigate the application effortlessly, with clearly labeled options, step-by-step guidance, and user-friendly workflows that simplify the process of lodging and tracking civic complaints. Whether reporting issues like potholes or pollution, users can easily upload descriptions, images, and geolocation data without any technical expertise. The design prioritizes accessibility by minimizing the number of actions required to perform key functions, thus making it suitable for both tech-savvy individuals and those less familiar with digital tools, including the elderly. Further-

more, consistent visual elements, responsive layouts, and clear feedback mechanisms improve usability, while ensuring that users remain informed throughout the reporting and resolution lifecycle. This high level of user-friendliness enhances citizen engagement, encourages broader participation, and ultimately contributes to the effectiveness of the entire system.

## II. RELATED WORKS

The study developed a cloud-based mobile app to improve the PNP's manual incident reporting system. Built using RAD methodology, it utilized MySQL and various web technologies. Quality was assessed using the ISO/IEC 9126-1 standard, focusing on usability, reliability, and user satisfaction.[1]

The study aimed to improve urban incident reporting for issues like potholes, noise, and waste through a user-friendly mobile app. As an M-Government tool, it enables citizens to report problems easily, enhancing response times and city maintenance, ultimately improving urban living conditions.[2]

This study addresses crime underreporting in the Philippines due to fear and distrust. A mobile app was proposed to make reporting easier, promote citizen cooperation, and improve crime detection and response. Unlike hotlines, the app offers instant location tracking, helping reduce case backlogs and enhancing public safety.[3]

This study developed a mobile app with SMS notifications for reporting various incidents, including crimes, public disturbances, and ordinance violations. It emphasizes the importance of timely reporting to authorities like police, barangay officials, or emergency responders. The system supports both PNP crime logs and incident report forms, helping streamline response and documentation.[4]

This study defines cyber incidents as threats to an organization's digital assets, such as data breaches or ransomware. Incident response involves planned steps—identification, containment, recovery, and analysis—while incident reporting documents the event in detail. Effective response requires team collaboration and forensic data collection to understand causes and prevent future threats.[5]

This study focuses on a mobile app for incident reporting, covering events like law violations and public disturbances. It collects key details (time, place, persons) and uses an Incident Record Form (IRF) for consistent data. Reports are submitted by victims or witnesses and directed to appropriate authorities based on jurisdiction. The system also supports data aggregation for analysis and improved decision-making.[6]

This study presents an Android app that uses accelerometer and GPS sensors to detect collisions and send real-time alerts with location and images to emergency contacts. Designed for ease of use during stress, the system emphasizes reliability, accurate detection, and minimal false alarms to ensure timely response and user trust.[7]

This study explores bug reporting in Android apps, emphasizing the importance of detailed, reproducible reports. A good bug report includes steps to reproduce (S2Rs), observed vs. expected behavior, and environment details like app version,

OS, and device type—helping developers identify and fix issues effectively.[8]

This study promotes Android-based crime reporting to replace slow manual methods. It highlights centralized data, community participation, mobile accessibility, and strong data security. A built-in bug tracking system manages issues by severity and priority, with fixes verified through regression testing.[9]

## III. METHODOLOGY

The development of the centralized civic issue-reporting platform followed a systematic approach combining both user-centered design principles and agile software development practices.

### A. Requirement Gathering

Initial research involved conducting surveys and informal interviews with citizens, municipal staff, and local authorities to understand the common issues faced in civic problem reporting. This helped identify pain points such as lack of transparency, poor communication, and the need for real-time tracking.

### B. System Design

Based on the insights gathered, a modular architecture was designed consisting of user, admin (authority), and verification components. The system includes functionalities such as issue reporting, image/video uploads, geo-tagging, verification, status tracking, and analytics dashboards. Wireframes and user interface mockups were created using design tools to visualize the user experience.

### C. Development and Implementation

The application was built using Android technologies (Java/Kotlin) with Firebase or a custom backend for real-time data management, storage, and user authentication. Key features include issue submission with media, verification, assignment to regional authorities, and update notifications.

### D. Testing and Deployment

The system underwent comprehensive testing, including functionality checks, bug fixing, and performance testing on different Android devices. After successful internal validation, the app was deployed in a test region to evaluate user interaction, system responsiveness, and effectiveness of authority follow-ups.

## IV. RESULT AND OUTCOME

The implementation of the centralized issue-reporting application demonstrated significant improvements in civic engagement, issue resolution efficiency, and administrative transparency. Users were able to report problems more easily using location tagging, images, and descriptions, resulting in a higher volume and clarity of complaints. Real-time tracking and updates enhanced citizen trust, while the verification and automatic assignment features ensured that reports reached the appropriate authorities promptly. The analytics module

provided insights into resolution times, frequently reported issues, and departmental performance, helping authorities prioritize actions and allocate resources effectively. Overall, the platform fostered a collaborative environment between citizens and local bodies, leading to quicker responses and a more informed, empowered community.

## V. DESIGN AND MODELING

The goal of this project is to design and implement a centralized issue-reporting application that streamlines the way citizens report and track local civic problems. The methodology began with understanding the core challenges—lack of a unified platform, delayed responses, and absence of transparency. The system was then designed using a layered architecture comprising the presentation, business, service, and data layers. Each layer was structured to ensure smooth user interaction, logical processing, and reliable data management through Firebase. Special emphasis was placed on features like real-time updates, geolocation, post-verification, and automated routing to concerned officers, ensuring quick and accountable problem resolution. The project follows an iterative development model with regular testing and feedback to ensure usability, performance, and impact.

### A. High Level Diagram

To efficiently handle functions and data, the system separates the system into discrete levels, each with discrete tasks. Layered architecture is used to accomplish this. This diagram's layers are:

#### Presentation Layer:

This layer represents the User Interface that allows users to interact with the application. It includes screens for reporting issues, viewing updates, and engaging with community posts. It is designed to be intuitive and user-friendly for all types of users.

#### Business Layer:

The Business Layer handles the interaction between users and the system's core functionality. It includes roles such as the User (who reports issues) and the Administration Officer (who verifies, acts on, and updates the status of issues). It ensures the correct logic and flow of data across the system.

#### Service Layer:

This is the core functional layer where all services are processed. It includes modules for authentication, user reporting, post verification, geolocation tagging, routing to the local administration, status updates, resolution marking, and analytics. It acts as a bridge between the business logic and the backend services.

#### Data Service Layer:

This layer consists of Firebase, which serves as the backend database and service provider. It stores all user data, complaints, statuses, images/videos, and provides real-time

syncing, authentication, and data analytics capabilities essential for the app's performance.

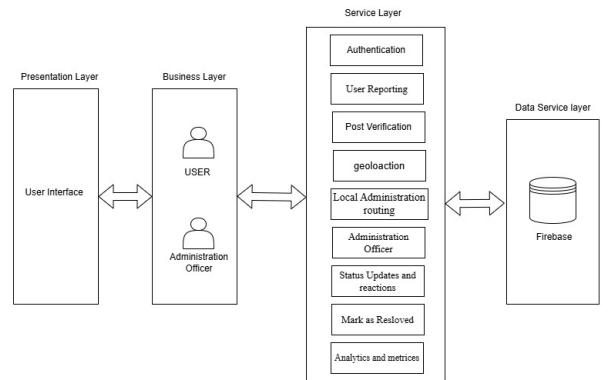


Fig. 1. Architecture Diagram

## VI. IMPLEMENTATION

It Shows the user login screen, where the user uses their email and password to log in.

19:56 ☺ LTE ▲ 9%

19:56 ☺

LTE ▲ 9%

Admin Mode



19:56 ☺

LTE ▲ 9%

Admin Mode



## Welcome Back

Sign in to continue

Email

Password

Sign In

Don't have an account? [Sign Up](#)

## Admin Login

Sign in with admin credentials

Admin Email

Admin Password



Admin Sign In

Fig. 3. Project Manager Dashboard



Fig. 2. Enter Caption

The figure shows the Admin login screen, where the admin uses their email and password to log in..

The figure shows the problem page screen, where the users can post problem here.

19:56 LTE 9% 



Fig. 4. Project Manager Dashboard

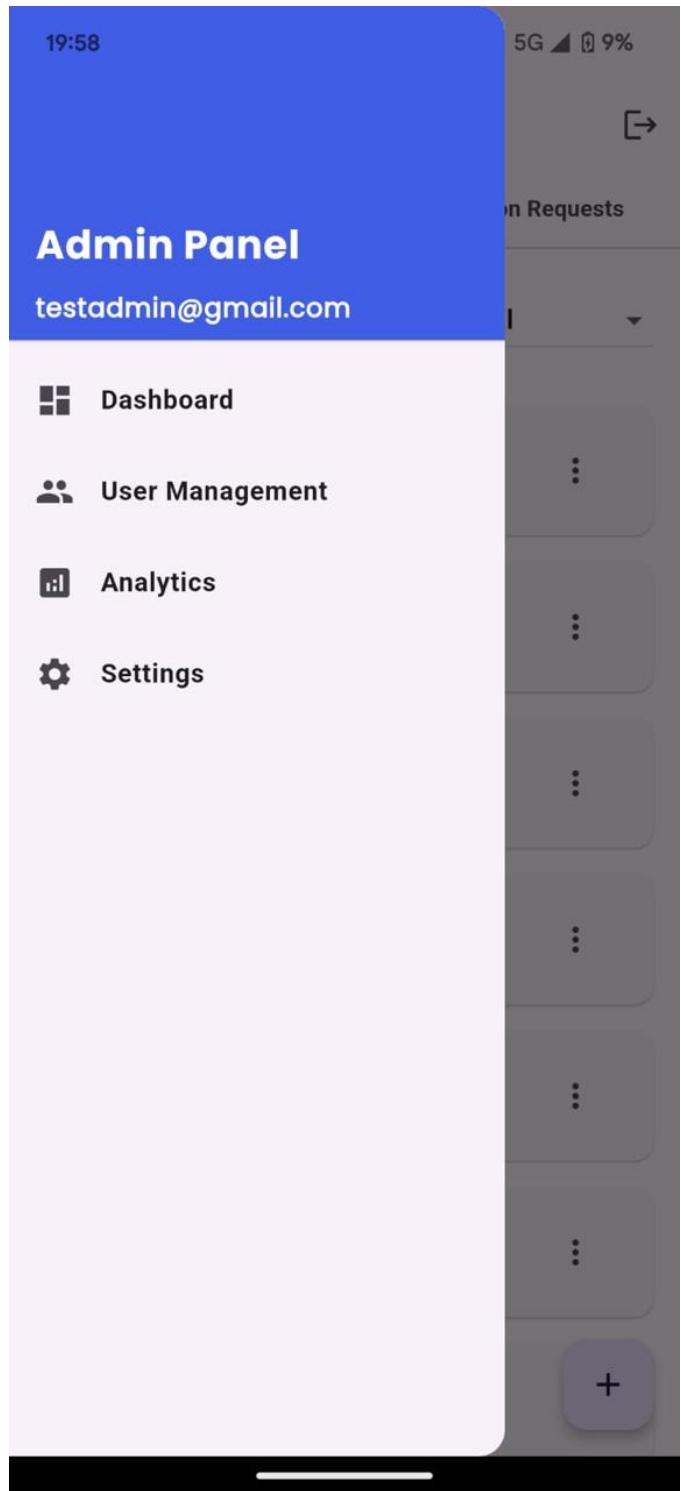


Fig. 5. Project Manager Dashboard

The figure 7.1 shows the admin panel screen, where there admin can access the functionality (like - dashboard, user management, analytics and settings).

The figure shows the admin dashboard screen, where there user can request.

The screenshot shows the Admin Dashboard interface. At the top, there's a header with the time (19:58), signal strength (5G), battery level (9%), and a menu icon. Below the header, the title "Admin Dashboard" is displayed next to a back arrow icon. The main area is divided into two tabs: "Users" (which is selected) and "Verification Requests". A search bar with the placeholder "Search users..." and a dropdown menu set to "All" are located above the user list. The user list consists of six entries, each with a profile picture, name, email, and status. The users are: D (dhanyamadapura@gmail.com, Status: active), Babu (rajubabu@hotmail.com, Status: active), suraj (manojyp25@gmail.com, Status: active), testing (tester121@gmail.com, Status: active), jolly\_rancher (govinda2000a@gmail.com, Status: active), and User (testadmin@gmail.com, Status: active). Each user entry has a three-dot menu icon on the right. At the bottom right of the user list area, there's a purple button with a white plus sign. The footer of the dashboard is black.

Fig. 6. Project Manager Dashboard

## VII. DISCUSSION

The implementation of a centralized civic issue-reporting platform marks a significant advancement in public participation and local governance. By integrating technology with community needs, the application not only addresses infrastructural challenges but also redefines the relationship

between citizens and administrative bodies. The ability to report issues with images, geolocation, and descriptions ensures that authorities receive accurate and actionable information. Additionally, the verification and update mechanisms promote accountability, while analytics provide insight into problem patterns and administrative efficiency. However, successful adoption depends heavily on addressing challenges such as digital literacy, data privacy, and resource limitations within local bodies. Encouragingly, the application also offers a space for community interaction, where citizens can support and engage with local issues, creating a collaborative environment for problem-solving. Thus, the platform offers a holistic approach to civic engagement, provided it is backed by active support from governing bodies and continuous user education.

## VIII. CONCLUSION

The development of a centralized issue-reporting platform significantly strengthens the bridge between citizens and local authorities, fostering a more responsive and accountable governance system. Through features like real-time updates, community support, and transparent workflows, the application empowers citizens to voice their concerns and actively participate in the improvement of their surroundings. Community Connect is not just a technical solution but a catalyst for civic engagement, promoting collective responsibility and collaboration. By enabling users to report, track, and support issues in their neighborhoods, the platform cultivates a sense of shared ownership and unity. It transforms passive observation into proactive involvement, ensuring that civic problems are addressed more efficiently and inclusively. In doing so, it not only improves the quality of life but also builds stronger, more connected, and more resilient communities.

## REFERENCES

- [1] Mobile Applications for Incident Reporting Systems in Urban Contexts: Lessons Learned from an Empirical
- [2] MINCIDENT RESPONSE AND REPORTING
- [3] Development of Mobile Application for Incident Reporting
- [4] Accident reporting system android Application using accelerometer and GPS
- [5] An Empirical Investigation into the Reproduction of Bug Reports for Android Apps
- [6] Bustillo, J. C. M., Mateo, J. T. I. (2020). Automated Incident Reporting Management System Using Mobile Technology. International Journal of Innovation, Management and Technology, 11(1), 18-26.
- [7] Bach, C., Bernhardt, R., d'Agostini, C. S., Winckler, M. (2013, August). Mobile applications for incident reporting systems in urban contexts: lessons learned from an empirical study. In Proceedings of the 31st European Conference on Cognitive Ergonomics (pp. 1-10).
- [8] Gallera, J. M. (2023). Development of crime and incident reporting mobile application with SMS notification. International Research Journal of Advanced Engineering and Science, 8(2), 63-66.
- [9] Mahajan, R. P. (2010). Critical incident reporting and learning. British journal of anaesthesia, 105(1), 69-75.
- [10] Ignacio, M. A. E. (2019, September). Development of mobile application for incident reporting. In Proceedings of the 20th Annual SIG Conference on Information Technology Education (pp. 162-162).