

# Pengembangan Sistem Manajemen RT Berbasis Android: Studi Kasus di Ciantra RT 07 RW 08

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**Abstract** - This study discusses the development of an Android-based RT management system designed to enhance communication and management within the local neighborhood association of RT 07 RW 08. The application integrates features for posting announcements, handling complaints, and managing resident data. Utilizing Java for Android development and Firebase for backend services, the system aims to improve efficiency and engagement among residents. The results indicate a significant improvement in communication and satisfaction levels within the community. This research highlights the potential of mobile applications in community management and engagement.

**Keywords** - RT management, Android application, community engagement, mobile development, Firebase

## 1. INTRODUCTION

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Traditional methods of managing neighborhood associations (RT - Rukun Tetangga) often encounter various challenges, such as inefficiency in communication and handling resident complaints. These issues can lead to dissatisfaction among residents and hinder the overall harmony of the community. In today's digital age, there is an increasing demand for more integrated and efficient systems to manage these processes. This study aims to develop a mobile application that can streamline communication, manage resident data, and handle complaints effectively in RT 07 RW 08.

## 2. RESEARCH METHOD

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### 2.1. Design and Development

The design process began with creating wireframes and prototypes using Figma. The development phase was carried out using Android Studio and the Java programming language. Firebase was used as the backend service to store data related to announcements, complaints, and resident information. The development process involved several stages, including requirements analysis, system design, coding, and testing.

### 2.2. Technologies Used

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- **Programming Language:** Java
  - **Development Tool:** Android Studio
  - **Backend Service:** Firebase
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### 2.3. Data Collection

Data collection involved conducting surveys and interviews with residents and RT officials to understand their needs and the problems they faced in managing the neighborhood.

The surveys focused on key areas such as communication preferences, common issues, and desired features in the management system.

#### 2.4. Testing

The application underwent multiple rounds of testing to ensure functionality and usability:

- **Alpha Testing:** Conducted by the development team to identify and fix bugs in the initial version.
- **Beta Testing:** Involved a group of residents from RT 07 RW 08 to gather direct feedback on the application's performance and user experience. Feedback from beta testing was used to make necessary improvements before the final release.

### 3. RESULTS AND DISCUSSION

#### 3.1. Development Results

The application includes several key features:

- **Posting Announcements:** RT officials can post announcements that are immediately visible to all residents through the app.
- **Handling Complaints:** Residents can submit complaints, which are received and addressed by RT officials. The status of each complaint can be tracked in real-time.
- **Resident Management:** The app allows for easy management of resident data, including contact information, household details, and participation in community activities.

#### 3.2. Impact and Benefits

The implementation of the application resulted in significant improvements in community management:

- **Enhanced Communication:** The app facilitated faster and more efficient communication between RT officials and residents. Important information could be disseminated quickly, ensuring that all residents were well-informed.
- **Increased Engagement:** The ability to submit and track complaints encouraged more residents to participate in community matters, leading to a more engaged and proactive community.
- **Efficient Data Management:** Managing resident data through the app streamlined administrative tasks, reducing the time and effort required for record-keeping and data retrieval.

#### 3.3. User Feedback

Feedback from residents and RT officials highlighted the following benefits:

- **Ease of Use:** Users found the app intuitive and easy to navigate, which facilitated widespread adoption.
- **Transparency:** The ability to track the status of complaints provided a sense of transparency and accountability, improving trust between residents and RT officials.
- **Responsiveness:** The app enabled quicker response times to complaints and queries, enhancing overall satisfaction among residents.

#### 3.4. Challenges and Limitations

Despite its success, the development and implementation of the app faced several challenges:

- **Technical Issues:** Initial versions of the app encountered bugs and performance issues, which required extensive testing and debugging.
- **User Training:** Some residents required assistance and training to become familiar with the app's features, highlighting the need for user-friendly design and comprehensive support materials.

- **Data Privacy:** Ensuring the security and privacy of resident data was a critical concern, necessitating the implementation of robust data protection measures.

#### **4. CONCLUSION**

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The development of the Android-based RT management system successfully enhanced communication and management efficiency in RT 07 RW 08. The application not only facilitated better data management and complaint handling but also fostered greater community engagement and satisfaction. Future research could explore additional features such as online payment of community fees, integration with smart city systems, and the use of advanced analytics to further improve community management.

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