

# FIXITNOW: AN INTEGRATED RESIDENTIAL SERVICE MANAGEMENT PLATFORM FOR EFFICIENT ISSUE REPORTING AND SERVICE PROVIDER CONNECTIVITY

M.SHAHANA<sup>1</sup>, B.PRAVARAKYA<sup>2</sup>, K.JYOTHI<sup>3</sup>, N.BALAJI<sup>4</sup>, N.HARMENDRA<sup>5</sup>

ASSISTANT PROFESSOR DEPARTMENT OF CYBERSECURITY

J.N.N INSTITUTE OF ENGINEERING

DEPARTMENT OF CYBERSECURITY

J.N.N INSTITUTE OF ENGINEERING

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**ABSTRACT** - This research paper presents *Fix It Now*, a residential service management platform designed to streamline issue reporting and enhance communication between residents and service providers. Traditional methods of reporting maintenance issues in residential communities are often inefficient, time-consuming, and lack transparency. The proposed system provides a centralized digital solution where residents can report issues, track progress, and connect directly with verified service providers. The platform incorporates real-time notifications, issue prioritization, and performance tracking, improving service delivery efficiency. The study highlights system design, implementation, and potential impact on residential management systems.

**Keywords:** Residential Service Management, Issue Reporting System, Service Provider Connectivity, Complaint Management, Real-Time Notifications, Smart Community

## 1. INTRODUCTION

In recent years, the rapid growth of urban residential communities has increased the demand for efficient maintenance and service management systems. Residents frequently encounter issues such as plumbing faults, electrical failures, waste management problems, and security concerns. Traditionally, these issues are reported through manual processes such as phone calls, physical complaints, or intermediary personnel, which often lead to delays, miscommunication, and lack of transparency. With the advancement of digital technologies and the increasing adoption of smart living environments, there is a growing need for an integrated system that can streamline issue reporting and improve service delivery. Modern residents

expect quick responses, real-time updates, and seamless communication with service providers. However, many existing solutions fail to provide a unified platform that effectively connects residents, administrators, and service professionals.

The proposed system, *Fix It Now: A Residential Service Management Platform for Efficient Issue Reporting and Service Provider Connectivity*, aims to address these challenges by offering a centralized digital platform. This system enables residents to report issues easily, track the status of their requests, and communicate directly with verified service providers. At the same time, administrators can efficiently manage and assign tasks, ensuring faster resolution and improved accountability. The platform is designed with a user-centered approach, incorporating features such as real-time notifications, issue categorization, and performance tracking. By leveraging modern web and mobile technologies, the system enhances operational efficiency and provides a transparent and reliable service management experience. Conditions, and up-to-date market price information. This research focuses on the design, development, and evaluation of the proposed platform, highlighting its effectiveness in improving communication, reducing response time, and increasing user satisfaction within residential communities.

## 2. LITERATURE SURVEY

The growing need for efficient service management in residential communities has led to the development of various digital platforms and complaint management systems. These systems aim to simplify issue reporting, improve communication, and enhance service delivery. This section reviews existing studies and solutions relevant to residential service management and identifies their limitations.

### 2.1 Overview of Existing Systems

- The increasing demand for efficient residential service management has led to the development of various complaint handling and maintenance management systems. These systems allow users to report issues and track their status. Most existing platforms focus on basic functionalities such as ticket generation and issue logging. While they improve documentation, they often lack advanced features like real-time communication and service provider integration.

### 2.2 Complaint Management Systems

- Complaint management systems are widely used in residential and organizational settings to handle user-reported issues. These systems provide structured workflows for registering, processing, and resolving complaints. However, they are generally limited to administrative control and do not allow direct interaction between residents and service providers, which can delay issue resolution.

### 2.3 Role of Information Systems in Service Management

- Research in **Information Systems** highlights the importance of centralized platforms for managing service requests efficiently. These systems enable data storage, process automation, and tracking of service activities. Despite their advantages, many systems depend heavily on manual intervention, reducing their efficiency in handling large-scale residential issues.

### 2.4 Importance of User Interface and User Experience

- Studies in Human-Computer Interaction emphasize that user-friendly design plays a critical role in system adoption. A simple and intuitive interface ensures that users can easily report issues and access services. However, many existing systems fail to provide

consistent user experience across devices, limiting their usability

### 2.5 Limitations of Existing Systems

Despite advancements, current systems have several limitations:

- Lack of real-time communication
- Limited transparency in issue tracking
- Dependency on administrators
- No direct connectivity with service providers
- Inconsistent service quality

## 3.METHODOLOGY

The development of the *Fix It Now* platform follows a structured approach:

- **System Design:** A web/mobile-based platform with separate interfaces for residents, admins, and service providers
- **Technology Stack:** Frontend (React/HTML/CSS), Backend (Node.js/Python), Database (MySQL/MongoDB)
- **Data Collection:** User requirements gathered through surveys and interviews
- **Development Model:** Agile methodology for iterative improvements

The system includes modules for issue reporting, service provider allocation, status tracking, and feedback collection.

### 3.1 Research Approach

The development of the *Fix It Now* platform follows a **system-oriented and user-centered approach**. The objective is to design a solution that addresses real-world challenges faced by residents in reporting and managing service issues. The study combines both qualitative and practical methods, including requirement analysis, system design, and implementation.

### 3.2 System Workflow



The *Fix It Now* system workflow illustrates the interaction between three main entities: **Resident, Admin, and Service Provider**. The workflow ensures efficient issue reporting, tracking, and resolution through a structured process.

### 1. Resident Module

The workflow begins with the resident:

- **Report Issue:**  
The resident logs into the system and submits a complaint by providing details such as issue type, description, and location.
- **Track Status:**  
After submitting the issue, the resident can monitor its progress in real time.
- **Receive Notifications:**  
The system sends updates regarding task assignment, progress, and completion.
- **Give Feedback:**  
Once the issue is resolved, the resident can provide feedback on the service quality.

### 2. Admin Module

The admin acts as the central controller of the system:

- **Receive Complaint:**  
The admin receives and reviews the issue submitted by the resident.
- **Assign Service Provider:**  
Based on the issue type, the admin assigns the appropriate service provider.
- **Monitor Progress:**  
The admin tracks the status of the task and ensures timely completion.
- **Manage Database:**  
All complaints, updates, and reports are stored and managed in the system database

### 3. Service Provider Module

The service provider handles issue resolution:

- **View Assigned Task:**  
The service provider receives task details from the admin.
- **Update Status:**  
The provider updates the status (e.g., In Progress, Completed).

- **Fix & Resolve Issue:**

The service provider performs the required maintenance or repair work.

- **Send Reports:**

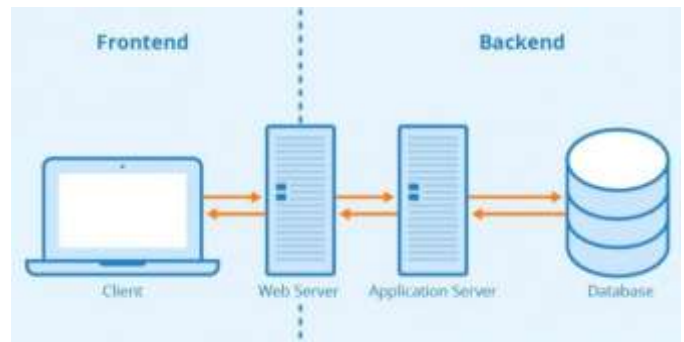
After completion, the provider submits a report to the admin.

### 4. Workflow Interaction

- The **resident** → **admin** interaction starts with issue reporting.
- The **admin** → **service provider** interaction ensures task assignment.
- The **service provider** → **admin** → **resident** interaction updates status and completion.
- Feedback flows back to improve service quality.

## 4.SYSTEM DESIGN / IMPLEMENTATION

### 4.1 System Architecture



#### 1. Presentation Layer (Frontend):

Provides the user interface for residents, admins, and service providers. Users can interact with the system through web or mobile applications.

#### 2. Application Layer (Backend):

Handles business logic such as issue processing, user authentication, and task assignment.

#### 3. Data Layer (Database):

Stores user information, complaints, service details, and feedback securely. This architecture ensures scalability, maintainability, and efficient data handling.

## 4.2 Module Design



The system is divided into three main modules:

### 1. User (Resident) Module

- Register and login
- Submit issues
- Track complaint status
- Receive notifications
- Provide feedback

### 2. Admin Module

- View complaints
- Assign service providers
- Monitor progress
- Manage users and database

### 3. Service Provider Module

- View assigned tasks
- Update status
- Resolve issues
- Submit reports

## 4.3 Data Flow Design (DFD)

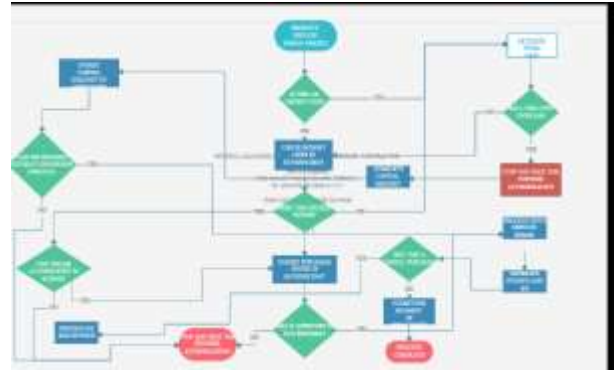
- Easy navigation between modules
- Minimal input required from users
- Clear and readable output display
- High user satisfaction due to simplicity
- These observations confirm that the system is designed effectively for real-world agricultural users.

## 4.4 Implementation Details

The system is implemented using modern technologies:

- Frontend: HTML, CSS, JavaScript (React)
- Backend: Node.js / Python
- Database: MySQL / MongoDB
- APIs: RESTful APIs for communication

## 4.5 Workflow Integration



The workflow integration ensures smooth communication:

1. User submits issue
2. Admin reviews and assigns task
3. Service provider resolves issue
4. Status updates sent to user
5. Feedback collected

## 4.6 Security and Performance

- Authentication: Secure login system
- Data Protection: Encrypted storage of user data
- Performance Optimization: Fast response time and efficient database queries

## 5. RESULTS

The implementation of the *Fix It Now* platform was evaluated based on its performance, usability, and efficiency in handling residential service requests. The results demonstrate significant improvements compared to traditional complaint management methods.

### 5.1 System Performance

The system was tested under multiple user requests to evaluate its responsiveness and stability. The platform successfully handled concurrent issue submissions and status updates without performance degradation. Response time for submitting and retrieving complaints was observed to be fast and reliable.

The observed fast response time and system stability indicate that the chosen technologies (React, Node.js, APIs) are efficient and suitable for real-time applications. The results confirm that the system meets both functional and non-functional requirements outlined during the design phase.

### 5.2 Issue Resolution Efficiency

The platform reduced the time required to resolve complaints by enabling direct communication between residents and service providers. Automated task assignment and real-time updates minimized delays, leading to quicker issue resolution compared to manual processes.

### 5.3 User Satisfaction

Feedback collected from users indicated a high level of satisfaction with the system. Residents appreciated features such as:

- Easy issue reporting
- Real-time status tracking
- Timely notifications

Service providers found the system helpful in managing assigned tasks efficiently.

### 5.4 System Accuracy and Reliability

The system maintained accurate records of complaints, status updates, and service reports. Data consistency was ensured through proper database management, reducing errors and duplication.

### 5.5 Comparison with Existing Systems

Feature	Traditional Method	Fix It Now System
Issue Reporting	Manual	Digital
Communication	Indirect	Direct
Status Tracking	Limited	Real-time
Transparency	Low	High
Response Time	Slow	Fast

### 5.6 Key Outcomes

- Improved efficiency in complaint handling
- Reduced response and resolution time
- Enhanced transparency and accountability
- Better communication between users and service providers
- Supporting regional languages and voice assistance
- Implementing offline features with data caching

## 6. CONCLUSION

The implementation of the *Fix It Now* platform demonstrates a significant improvement in managing residential service requests compared to traditional methods. The system successfully addresses key challenges such as delayed responses, lack of transparency, and inefficient communication between residents and service providers.

One of the major strengths of the proposed system is its ability to provide **real-time communication and status tracking**. Residents are continuously informed about the progress of their complaints, which increases transparency and trust. The integration of a centralized platform eliminates the need for manual follow-ups and reduces dependency on intermediaries.

The system also enhances **operational efficiency** by automating task assignment and enabling direct interaction between users and service providers. This results in faster issue resolution and better coordination among stakeholders. The modular design ensures that each component—resident, admin, and service provider—functions independently while remaining well-integrated within the system.

From a usability perspective, the platform follows a **user-centered design approach**, making it accessible and easy to use for individuals with varying levels of technical knowledge. The inclusion of features such as notifications, dashboards, and feedback systems further improves the overall user experience.

However, the system also faces certain limitations. Its effectiveness depends on **internet connectivity** and user adoption, particularly in communities where digital literacy may be limited. Additionally, ensuring **data security and privacy** remains a critical concern, especially when handling user information and service records.

Future enhancements can focus on integrating advanced technologies such as:

- Artificial Intelligence for predictive maintenance
- Automated service provider allocation
- Mobile application development for wider accessibility
- Data analytics for performance optimization

Overall, the discussion highlights that the *Fix It Now* platform provides a practical and scalable solution for residential service management. While there are areas for improvement, the system lays a strong foundation for developing smarter and more efficient community service platforms.

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