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HostelSecureX: A Mobile Application for Hostel Security Management

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Abstract—

Hostel security is an important aspect for ensuring student safety. Traditional hostel management systems rely on manual record keeping, which is time-consuming and inefficient. This paper presents a mobile-based Hostel Security Management System that automates entry and exit tracking, attendance management, and emergency communication. The proposed system provides secure authentication, real-time monitoring, and Centralized data storage using cloud technology. This improves operational efficiency and enhances overall hostel security.

Keywords—

Hostel Security, Mobile Application, Cloud Technology, Attendance Management, Real-Time Monitoring

I. Introduction

Hostel management plays a crucial role in maintaining discipline and ensuring the safety of students. Most hostels still depend on manual processes for recording entry and exit details and attendance. These methods are slow, error-prone, and inefficient. During emergencies, delayed communication can cause serious problems.

With the advancement of mobile technology, security systems can be automated. The proposed Hostel Security Management Application provides a digital platform to manage hostel operations efficiently. It ensures secure authentication, real-time data access, and faster communication between students, wardens, and parents.

II. Literature Review

Various researchers have proposed digital hostel management systems. Some systems use RFID cards for student identification, while others implement biometric authentication methods. Cloud-based systems are used for secure data storage. Studies show that automation reduces human effort and improves accuracy. However, many existing systems are costly and complex. This project focuses on developing a simple, low-cost, and secure mobile-based solution.

III. Existing System

In the current hostel environment, all operational records are maintained manually. Student entry and exit timings, gate pass details, and attendance are recorded in physical registers. This manual process consumes a lot of time and requires continuous human effort.

For entry verification, security guards manually check student ID cards. This increases processing time, especially during peak hours. In emergencies, hostel authorities rely on phone calls to communicate, which causes delays. Attendance is also taken manually, increasing the chances of errors.

Due to the absence of automation, real-time monitoring is not possible. The system is inefficient and not suitable for handling large-scale hostel operations.

IV. Architecture Diagram

Fig. 1. Hostel Security Management System Architecture

V. Result

The developed system successfully automates hostel operations. Entry-exit tracking is faster and more accurate. Emergency notifications are delivered instantly. Manual workload is reduced. Data security is improved using cloud storage. The system enhances overall hostel safety and management efficiency.

VI. Conclusion

This paper presents a mobile-based Hostel Security Management System that improves safety and efficiency. Automation reduces human errors and saves time. Real-time monitoring ensures quick response during emergencies. The system provides a secure and user-friendly solution for hostel management.

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