A PBL-II REPORT

ON

“FORTI PASS - SECURITY APP AND WEBSITE”

A PBL-II report submitted in partial fulfillment of the requirements for the degree of

BACHELOR OF TECHNOLOGY in COMPUTER SCIENCE & ENGINEERING

Submitted By-
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UNDER THE GUIDANCE OF

Guide- Prof. Jitendra Rajpurohit
Co- Guide- Dr. Deepali Vora

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Symbiosis Institute of Technology, Pune

Symbiosis International (Deemed University)

AY 2024-25

FORTI PASS- SECURITY APP AND WEBSITE

A PBL-II project report submitted in partial fulfillment of the requirements for the degree of Bachelor of Technology in Computer Science & Engineering

By

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Megha Beria	**22070122117**
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Symbiosis Institute of Technology, Pune
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CERTIFICATE

This is to certify that the PBL-II Project work entitled "**FortiPass- Security App and Website**" is carried out by **Maryam Bahlooli, Megha Beria, Shlok Manwatkar** in partial fulfillment for the award of the degree of **Bachelor of Technology** in **Computer Science & Engineering**, Symbiosis Institute of Technology Pune, Symbiosis International (Deemed University) Pune, India during the academic year 2024-2025.

Prof. Jitendra Rajpurohit
Co-Guide

Dr. Deepali Vora
Guide

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Problem statement of the project

Gated communities face a growing need for efficient and secure systems to manage visitor access, internal communication, and resident interactions. Traditional methods such as paper logs, manual approvals, and lack of centralized records result in inefficient workflows and increased vulnerability to unauthorized access. Security guards often struggle to track approvals in real time, leading to delays and inconsistencies in visitor handling. Additionally, residents lack visibility and control over visitor approvals and community notices. There is an evident gap in digital infrastructure that ensures seamless coordination among residents, guards, and administrators. Therefore, there is a pressing need for a robust, scalable, and user-friendly security management system that leverages real-time technologies and centralized data control. This project aims to address these challenges by developing a comprehensive web and mobile-based platform for secure visitor and resident management in gated communities.

Abstract of the Paper

This project presents the development and implementation of a Smart Security Management System tailored for gated communities. It is designed to replace traditional, inefficient manual methods with a secure, scalable, and real-time digital solution. The system comprises three main user roles: admin, resident, and guard. Admins can manage residents, broadcast notices, and oversee real-time visitor logs. Residents can approve or deny visitor requests and access notices, while guards can log visitor entries/exits and monitor approval statuses through a mobile interface. The system uses the MERN stack for full-stack development. MySQL stores structured data, while MongoDB handles real-time event logs. JSON Web Tokens (JWT) provide secure authentication and

authorization. Axios interceptors manage automatic token handling and session management. The platform enhances security, transparency, and operational efficiency in community management.

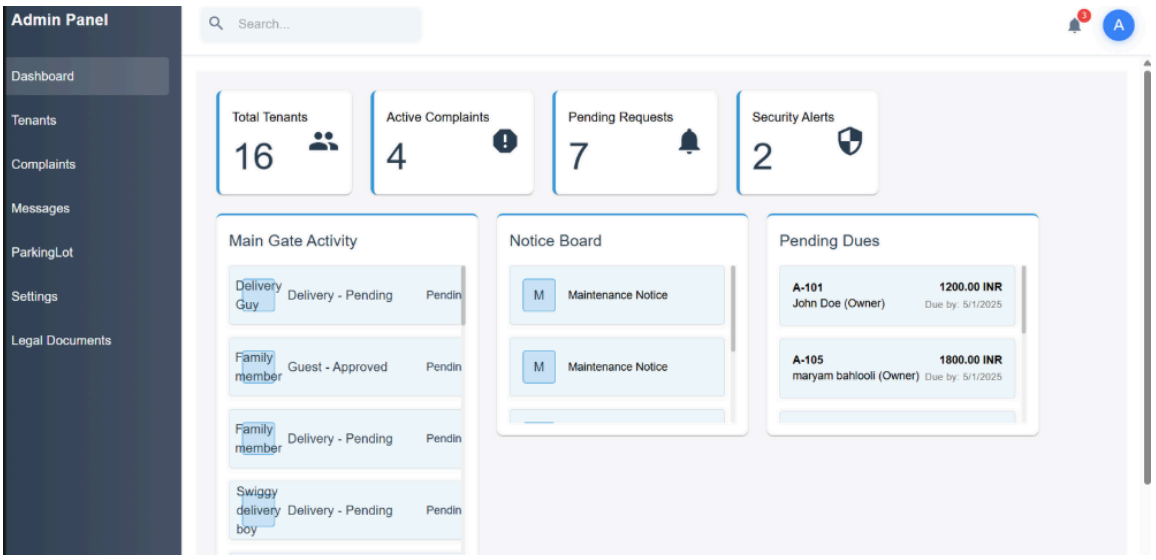
Summary of the Literature Review

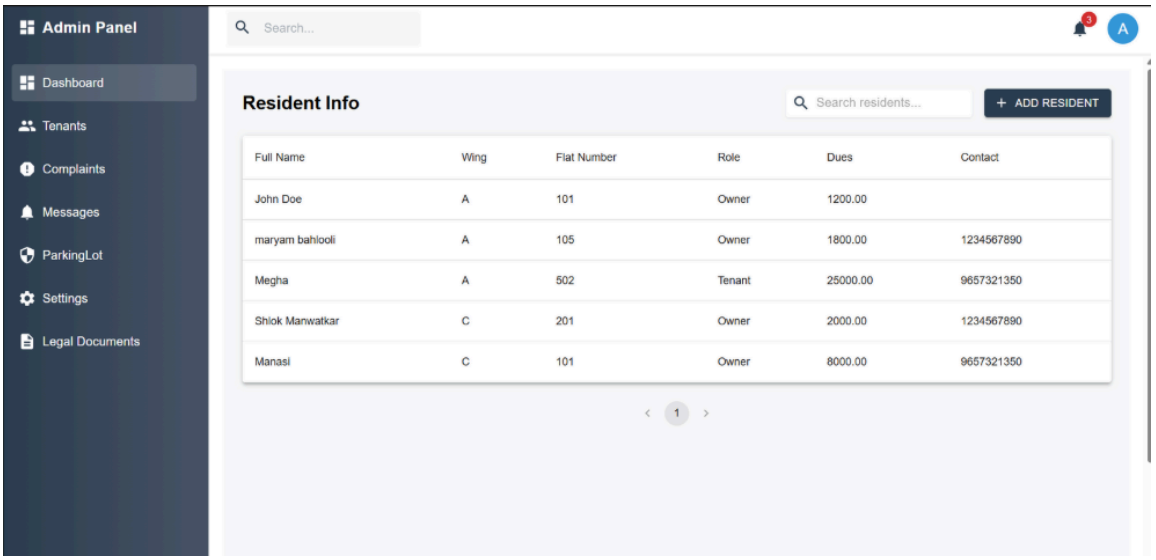
A total of 20 research articles and real-world case studies were reviewed to understand existing systems and technologies in security management for residential complexes. Sources included IEEE Xplore, SpringerLink, and Google Scholar. The review focused on parameters such as system architecture, real-time communication, user authentication, data storage strategies, and smart surveillance technologies. It was observed that most traditional systems lack integration between mobile and web platforms and do not support real-time updates across interfaces. Several papers highlighted the importance of cloud-based systems, real-time databases, and role-based access control for modern security applications. This literature informed the development of a hybrid database structure and token-based secure authentication for the proposed solution.

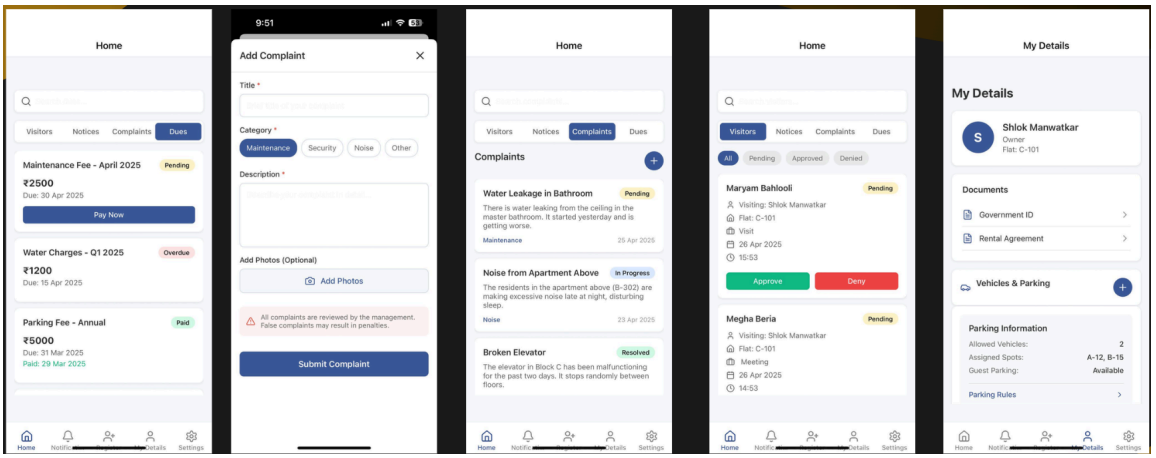
Summary of results

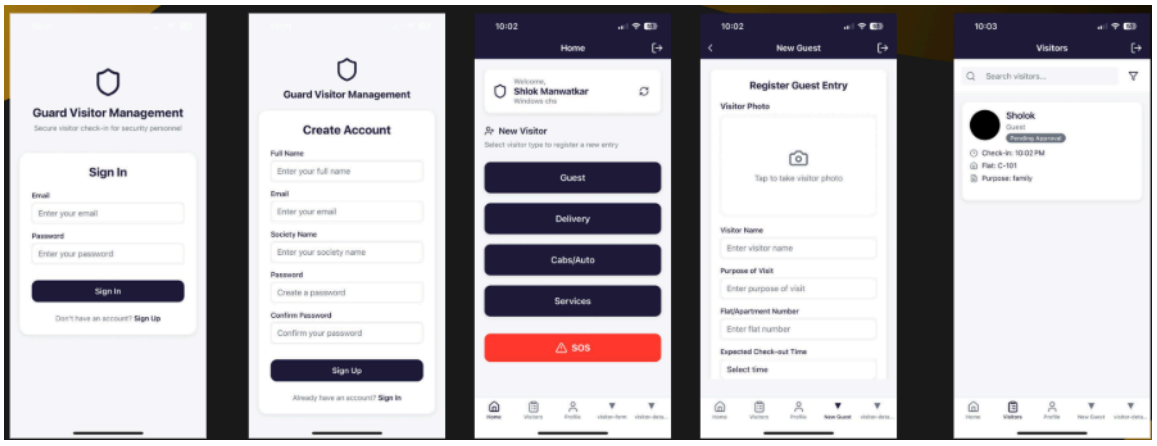
The system was successfully tested with simulated user roles and data. Admins could manage resident information, broadcast notices, and monitor visitor logs in real-time. Residents could view dues, approve or deny visitor requests, and access notices instantly. Guards could efficiently log visitor entry/exit and verify approvals from residents. The integration of token-based authentication and Axios interceptors prevented unauthorized access and session leaks. The backend responded efficiently to RESTful API calls, and the dual-database architecture allowed seamless switching between structured and real-time data.

System Demonstration (Mobile App + Admin Dashboard)








Guard Visitor Management
Secure visitor check-in for security personnel
Sign In
Email
Enter your email
Password
Enter your password
Sign In
Don't have an account? Sign Up
Guard Visitor Management
Create Account
Full Name
Enter your full name
Email
Enter your email
Society Name
Enter your society name
Password
Create a password
Confirm Password
Confirm your password
Sign Up
Already have an account? Sign In
10:02
Home
Welcome,
Shlok Manwatkar
Windows chs
New Visitor
Select visitor type to register a new entry
Guest
Delivery
Cabs/Auto
Services
SOS
10:02
New Guest
Register Guest Entry
Visitor Photo
Tap to take visitor photo
Visitor Name
Enter visitor name
Purpose of Visit
Enter purpose of visit
Flat/Apartment Number
Enter flat number
Expected Check-out Time
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Visitors
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Guest
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