

Web-Based Housing Society Management System

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Abstract — The Web-Based Society Management System is a web application developed to simplify and automate the daily operations of residential societies and apartment complexes. In many housing societies, records related to members, maintenance payments, complaints, staff information, and expenses are maintained manually. This traditional method requires a large amount of paperwork, consumes time, and increases the chances of errors. To overcome these problems, a web-based system has been developed that allows society administrators to manage all activities through a centralized platform. The proposed system provides various modules such as member management, flat details management, maintenance tracking, complaint handling, staff management, attendance monitoring, expense management, and report generation. Through these modules, administrators can easily store, update, and retrieve information whenever required. Members can also submit complaints and access important society-related information through the system. This helps improve communication between society members and management while ensuring transparency in operations. The system is developed using HTML, CSS, and JavaScript for the frontend interface, while Java, JSP, and Servlets are used for backend processing. MySQL is used as the database for storing and managing records securely, and Apache Tomcat is used as the web server for deploying the application. The user-friendly interface makes the system easy to use for both administrators and society members. The application ensures efficient data handling, improved accuracy, and secure information management. The implementation of the Web-Based Society Management System significantly reduces manual work and improves the overall efficiency of society administration. The system provides quick access to records, minimizes data redundancy, and supports effective decision-making through generated reports. By digitizing society management processes, the proposed system offers a reliable, cost-effective, and scalable solution for modern residential societies, contributing to better organization and smooth functioning of daily operations.

Keywords: Housing Society Management System; Web-Based Management System; Residential Society Automation; Maintenance Management; Complaint Management System; MySQL Database Management

I. INTRODUCTION

In today's modern world, technology has become an essential part of everyday life. Residential societies and apartment complexes require proper management of member information, maintenance payments, complaints, staff records, and other administrative activities. Many societies still use manual methods such as registers and paper files to maintain records. These traditional methods are time-

consuming, difficult to manage, and may lead to errors or loss of important information.

The Web-Based Society Management System is developed to provide an efficient and digital solution for managing society operations. The system helps administrators maintain records of society members, flat details, maintenance fees, complaints, staff attendance, and expenses through a single web application. By using this system, society management becomes faster, easier, and more organized compared to manual methods.

The proposed system provides various modules that simplify daily society activities. Members can register complaints, administrators can track maintenance payments, and staff information can be managed effectively. The system also generates reports that help management monitor society operations and make better decisions. This improves communication between residents and administrators while ensuring transparency in society management.

The application is developed using HTML, CSS, and JavaScript for the frontend interface, while Java, JSP, and Servlets are used for backend processing. MySQL is used as the database for storing records securely, and Apache Tomcat is used as the web server. The Web-Based Society Management System reduces paperwork, improves efficiency, saves time, and provides a reliable platform for managing residential societies in a modern and systematic manner.

A. Problem Statement

Traditional housing societies often manage records manually, which leads to errors, data duplication, and time-consuming processes. Managing member details, maintenance payments, complaints, staff records, and expenses becomes difficult without a centralized system. Therefore, a web-based solution is required to automate and simplify society management activities.

B. Objective

To develop a web-based system for efficient management of housing society operation. The system aims to maintain member and tenant records, manage maintenance payments, track complaints, monitor staff activities, and store data securely. It also helps reduce paperwork, improve accuracy, and save time.

II. LITERATURE SURVEY

A. Existing System

In traditional housing society management, various tools and methods are used to manage society operations. However, most of these systems are either partially digital or not specifically designed for housing society management. Commonly used systems include manual register-based

record keeping, spreadsheet tools, and generic management software.

Some societies use basic tools like Excel sheets or Google Forms for data collection, while others use ERP systems for broader administrative tasks. However, these systems often lack proper integration for society-specific activities such as flat management, maintenance tracking, complaint handling, and staff attendance management.

Some existing society management applications provide digital solutions for handling member records, maintenance tracking, complaint management, and report generation. While these systems help reduce paperwork and improve efficiency, many of them are expensive, complex, and difficult to maintain for small and medium-sized residential societies. In some cases, users also require technical knowledge to operate the system effectively.

Feature	Manual System	Google Forms	ERP Modules	Proposed System (Housing Society Management System)
Member Management	Not efficient	Limited	Available	Fully integrated
Rental Management	Not available	Not available	Partial	Fully supported
Flat Management	Manual records	Not available	Available	Automated & linked
Staff & Attendance	Manual tracking	Not available	Available	Digital & automated
Complaint Handling	Paper-based	Basic forms	Available	Structured module
Maintenance & Expenses	Not organized	Not available	Available	Centralized system
System Integration & Security	Low	Medium	High	High (MySQL + Web-based)

Table I: Comparison of Existing Tools with Proposed System

B. Research Gap

Although many society management systems are available, several limitations still exist. Some systems are complex to use, expensive to maintain, and do not provide all society management features in a single platform. Many applications focus only on maintenance tracking or member management and lack proper complaint handling, staff management, attendance monitoring, and report generation. Therefore, there is a need for a simple, secure, and user-friendly Web-Based Society Management System that integrates all society activities into one application. The proposed system aims to fill this gap by providing efficient management of members, maintenance payments, complaints, staff records, expenses, and reports through a centralized platform.

III. SYSTEM DESIGN AND ARCHITECTURE

A. System Architecture

The Web-Based Society Management System follows a three-tier architecture consisting of the Presentation Layer, Business Logic Layer, and Database Layer.

1) Presentation Layer:

This layer contains the user interface developed using HTML, CSS, and JavaScript. Users interact with the system through web pages.

2) Business Logic Layer:

This layer contains Java, JSP, and Servlets. It processes user requests, performs validations, and manages application functionality.

3) Database Layer:

This layer contains the MySQL database. It stores all records related to society members, maintenance payments, complaints, staff details, attendance, and reports.

B. User Roles

The Society Secretary or Administrator is the primary user of the Web-Based Society Management System. The administrator is responsible for managing all society-related activities through a centralized platform. After logging into the system, the administrator can access different modules such as Society Members, Flat Details, Rental Members, Staff Management,

Attendance, Maintenance, Complaints, Expenses, and Reports. This helps in maintaining accurate records and improving the efficiency of society management. The administrator has full control over the system and can perform operations such as adding, updating, deleting, and viewing records. The system enables the administrator to track maintenance payments, manage staff information, monitor attendance, handle complaints, and generate reports whenever required. By automating these activities, the system reduces manual paperwork, saves time, improves data accuracy, and ensures smooth management of society operations.

C. Use Case Diagram

The system's use case diagram is presented in Fig. 1. The system requires the Society Secretary (Administrator) to log in, who has access to all system functions. After login, the administrator can manage society members, rental flats, staff records, attendance, maintenance collection, expenses, and complaints through the system. The owner can access limited functions such as maintenance-related services and complaint registration. Different users have different access rights based on their roles.

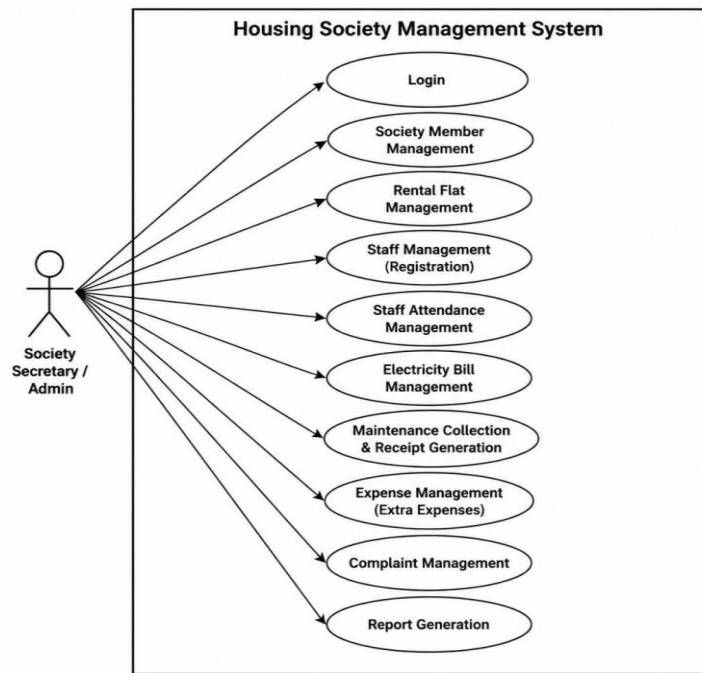


Fig. 1: use case diagram showing interaction

D. ER Diagram and Database Design:

The ER diagram shows that the database contains primary tables. The Society_Members table stores member information, while the Rental_Flat table maintains rented flat details. The Electricity_Bill table stores electricity bill records, and the Maintenance_Balance table keeps track of maintenance payments and balances. The Complaints table

records complaints raised by members. The Staff table stores staff information, and the Staff_Attendance table maintains attendance records linked to staff through a foreign key. The Expenses table stores society expenditure details. These tables are connected through primary and foreign key relationships to ensure efficient management of housing society data.

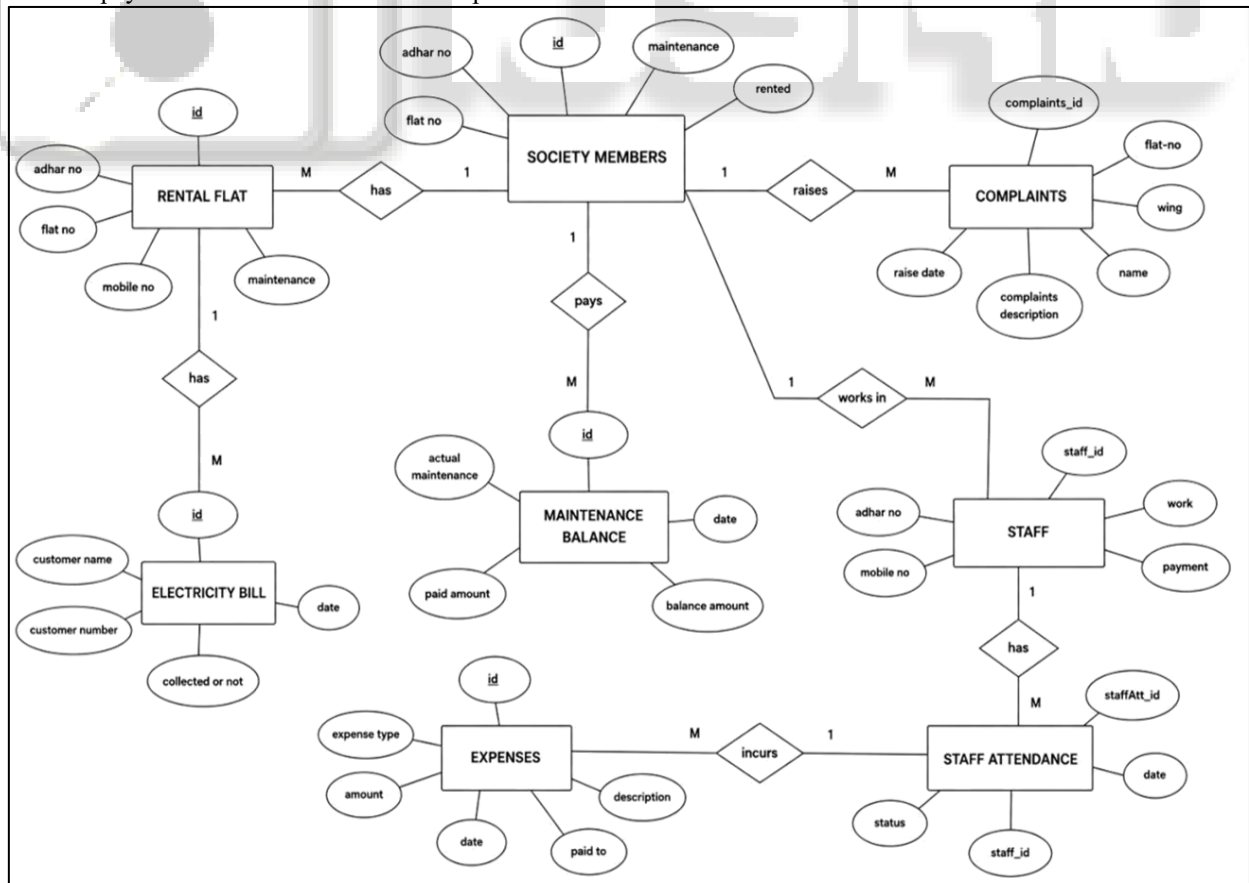


Fig. 3: ER Diagram and Database Design

Table Name	Primary Key	Key Fields
Society_Members	Member-id	Member_id, owner_name, flat_no, wing, ahar_no, maintenance, rented
Rental_Flat	Rental_id	Rental_id, member_id, name, mobile_no, adhar_no, flat_no, maintenance
Electricity_Bill	bill_id	bill_id, rental_id (FK), customer_name, customer_number, bill_date, collected_status
Maintenance_Balance	maintenance_id	maintenance_id, member_id (FK), actual_maintenance, paid_amount, balance_amount, date
Complaints	complaint_id	complaint_id, member_id (FK), flat_no, wing, name, raise_date, complaint_description
Staff	staff_id	staff_id, name, mobile_no, adhar_no, work, payment
Staff_Attendance	attendance_id	attendance_id, staff_id (FK), status, attendance_date
Expenses	expense_id	expense_id, expense_type, amount, description, paid_to, expense_date

Table II: Database Tables and Their Key Fields

IV. SYSTEM MODULES

The system was divided into eight modules, each being apart of the code dealing with a specific job. What does each module perform and who is it aimed at, the Table may help to explain.

Module	What It Does
Society Member Module	Manages member information such as owner name, flat number, wing, Aadhaar number, and maintenance details.
Rental Flat Module	Maintains records of rented flats, tenant information, and related maintenance details.
Electricity Bill Module	Stores and manages electricity bill information, customer details, bill dates, and collection status.
Maintenance Module	Tracks maintenance charges, paid amounts, balance amounts, and payment history of society members.
Complaint Module	Allows recording and monitoring of complaints submitted by society members.

Staff Module	Records and manages daily attendance of staff members.
Expense Module	Stores and tracks society expenses such as maintenance costs, repairs, electricity charges, and other expenditures.

Table III: Modules Of the System and Their Functions

V. METHODOLOGY

A. Development Approach

The Housing Society Management System was developed using a structured and modular approach. The system requirements were first analyzed to identify the needs of society administration. After requirement analysis, the database and system design were created using ER diagrams and table structures. The application was then developed using web technologies and integrated with a database for storing and managing records. Individual modules such as Society Members, Rental Flats, Maintenance, Complaints, Staff, Attendance, Electricity Bills, and Expenses were implemented and tested separately before integrating them into the complete system. Finally, the system was tested to ensure accurate data management and smooth operation

Phase	Stage	What I Did	Output
1	Requirement Analysis	Identified the requirements and functionalities needed for the Housing Society Management System.	Requirement Specification
2	System Design	Designed the database, created UML and ER diagrams, and planned the overall structure of the system.	System Design
3	Development	Coded the frontend using HTML, CSS, and JavaScript, developed the backend using Java, and set up the MySQL database while connecting all system components.	Working Application
4	Testing	Tested the system to ensure all modules functioned correctly and data was stored and retrieved accurately.	Tested System
5	Deployment	Deployed the application and made it ready for use by the society administrator.	Final Deployed System

Table IV: Development Phases

B. Why I Chose These Technologies

HTML was chosen to create the structure of web pages. CSS was used to design and improve the appearance of the user interface. JavaScript was selected to add interactivity and improve the user experience. Java was used as the backend

technology because it provides reliability, security, and efficient data processing.

MySQL was chosen as the database management system because it is easy to use, supports structured data storage, and integrates well with Java-based applications. Together, these technologies provide a simple, efficient, and

cost-effective solution for developing the Housing Society Management System.

VI. IMPLEMENTATION

A. Technology Stack

Component	Technology	Purpose
Frontend	HTML, CSS, JavaScript	Used to create and design the user interface and provide interactivity.
Backend	Java (JSP/Servlets)	Handles business logic, request processing, and communication with the database.
Database	MySQL	Stores and manages society member, maintenance, complaint, staff, and expense records.
Web Server	Apache Tomcat	Hosts and executes the Java web application.

Table V: Technology Stack Used in System

B. How Login and Security Works

The Housing Society Management System uses an authentication mechanism to provide secure access to authorized users. The administrator enters a valid username and password on the login page, which are verified against the database. If the credentials are correct, the user is granted access to the system; otherwise, access is denied. Session management is used to maintain the user's login status during system usage and prevent unauthorized access. The logout feature securely ends the session and protects system data from unauthorized users.

C. Admin Home Page

The Admin Home Page serves as the central dashboard of the Housing Society Management System. It provides the administrator with quick access to all system modules, including Society Members, Rental Flats, Maintenance Balance, Complaints, Staff, Staff Attendance, Electricity Bills, and Expenses. Through this page, the administrator can efficiently manage records, monitor society activities, and perform various administrative operations.

D. Society Member Management

The Society Member Management module is used to maintain and manage information about society members. It

allows the administrator to add, update, delete, and view member records, including owner name, flat number, wing, Aadhar number, maintenance details, and rental status.

This module helps in organizing member information efficiently and ensures easy access to society records

E. Admin Features

The administrator has complete control over the system and is responsible for managing all society-related activities. The admin can add, update, view, and delete records as required. The system enables the administrator to monitor maintenance payments, track pending balances, resolve complaints, manage staff information and attendance records, and maintain expense details. This centralized management approach improves operational efficiency, ensures data accuracy, and helps in effective decision-making for the smooth functioning of the housing society.

VII. SYSTEM WORKFLOW

The Housing Society Management System follows a structured workflow to manage society operations efficiently. The process begins when the administrator logs into the system using valid credentials. After successful authentication, the administrator accesses the dashboard, which provides links to all modules. The administrator can manage society members, rental flats, maintenance records, electricity bills, complaints, staff details, staff attendance, and expenses. Information entered or updated through these modules is stored in the MySQL database. The system allows the administrator to view, modify, and maintain records whenever required. After completing the necessary operations, the administrator logs out of the system, ensuring secure access and proper management of society data.

The system enables the administrator to add new records, update existing information, delete unnecessary data, and view detailed reports whenever required. It helps maintain accurate records of society activities and improves the efficiency of administrative tasks. The centralized database ensures that all information is organized and easily accessible. By automating routine operations, the system reduces paperwork, minimizes errors, and saves time. After completing the necessary operations, the administrator logs out of the system, ensuring secure access and proper management of society data.

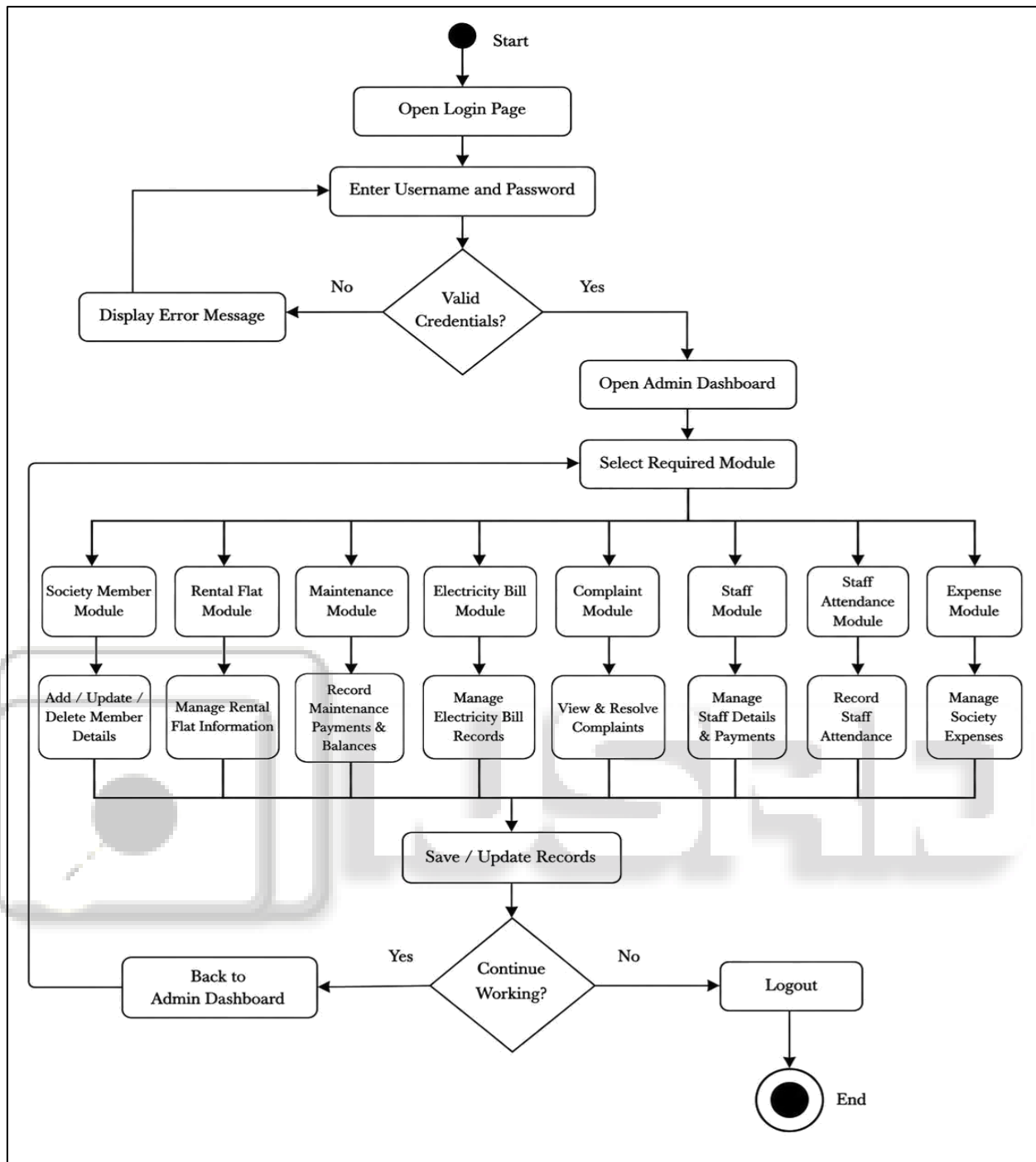


Fig. 4: System Workflow

VIII. TESTING AND RESULTS

A. Testing Approach

The Housing Society Management System was tested using a functional testing approach to ensure that all modules worked correctly. Each module, including Login, Society Members, Rental Flats, Maintenance, Electricity Bills, Complaints, Staff, Staff Attendance, and Expenses, was tested individually to verify its functionality. The system was checked for accurate data entry, retrieval, updating, and deletion operations.

Testing was also performed to verify database connectivity, data storage, and user authentication. Different

test cases were executed to ensure that the system responded correctly to valid and invalid inputs. The testing process helped identify and resolve errors, ensuring that the application operated reliably and met the required objectives.

B. Test Results

Module Tested	Expected Outcome	Actual Outcome	Result
Login Module	Successful authentication of valid users	Login completed successfully	Pass
Society Member Module	Add, update, and view member records	Records managed successfully	Pass

Rental Flat Module	Store and retrieve rental flat details	Functioned correctly	Pass
Maintenance Module	Manage maintenance payments and balances	Data stored and retrieved correctly	Pass
Electricity Bill Module	Maintain electricity bill records	Functioned correctly	Pass
Complaint Module	Record and view complaints	Complaints managed successfully	Pass
Staff Module	Manage staff information	Functioned correctly	Pass
Staff Attendance Module	Record attendance details	Attendance saved successfully	Pass
Expense Module	Store and manage expense records	Functioned correctly	Pass
Logout Module	Securely end user session	Logout completed successfully	Pass

Table VI: Performance Test Results

C. What the Results Show

The test results show that the Housing Society Management System successfully meets its intended objectives. All modules, including Login, Society Members, Rental Flats, Maintenance, Electricity Bills, Complaints, Staff, Staff Attendance, and Expenses, functioned correctly during testing. The system was able to store, retrieve, update, and manage records accurately.

The results also demonstrate that the system provides reliable performance, secure access, and efficient record management. No major errors were found during testing, and all test cases passed successfully. Therefore, the system is suitable for managing the day-to-day administrative activities of a housing society.

IX. FUTURE SCOPE

The Housing Society Management System can be enhanced in the future by adding online payment facilities for maintenance charges and electricity bills. A dedicated member portal can also be introduced to allow society members to view their details, check maintenance status, and submit complaints online.

The system can further be improved by integrating email and SMS notifications for bill reminders, complaint updates, and important announcements. Mobile application support, report generation features, and cloud-based data storage can also be implemented to make the system more accessible, secure, and efficient for society management.

X. CONCLUSION

The Web-Based Housing Society Management System was successfully designed and developed to automate and simplify the daily operations of a housing society. The system replaces traditional manual record-keeping methods with a

centralized digital platform, ensuring better accuracy, efficiency, and transparency.

The application manages key society activities such as member registration, rental member tracking, staff management, attendance recording, maintenance collection, complaint handling, and expense management. All data is securely stored in a MySQL database and can be accessed easily through a user-friendly web interface developed using JSP and Java technologies.

This system reduces manual workload, minimizes human errors, and improves communication between society members and administrators. It also provides historical records for members, staff, and tenants, which helps in better decision-making and record management.

Overall, the system proves to be an efficient and reliable solution for managing housing society operations in a structured and automated manner.

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