INSPIRE DORMITEL: A Property Management System

An Application Research

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# Chapter 1: Introduction

## Background of the Study

Property management systems (PMS) have become an integral component of the real estate and hospitality industries, which helps simplify operations and increase property management efficiency. This study will look at the creation, implementation, and impact of property management systems, with a focus on their benefits, drawbacks, and technological advancements.

Historically, property management relied on manual tasks including tenant management, maintenance scheduling, and financial reporting, which were time-consuming and error prone. The development of computerized technology in the late twentieth century was a historic moment, allowing property managers to automate routine tasks, enhance accuracy, and boost the overall output (Smith, 2020).

Property management systems are designed to handle a wide range of tasks, including tenant applications, rent collection, maintenance requests, and financial reports. The integration of several processes into a single platform simplifies operations and provides property managers with real-time data, allowing for better informed decision-making (Johnson & White, 2019). Modern PMS solutions also offer online portals for tenants and owners, automated communication mechanisms, and complete reporting capabilities to improve efficiency and transparency (Brown, 2018). Rapid advances in technology have significantly influenced the development of property management systems. Cloud computing, for example, has transformed the PMS environment by providing scalable, flexible, and cost-effective solutions. Cloud-based property management systems provide remote access, allowing property managers to carry out their responsibilities from any location with an internet connection (Davis, 2021). Furthermore, the use of mobile technology has enabled property managers and tenants to quickly communicate via mobile applications, hence improving the user experience and increasing engagement (Taylor & Green, 2020).

The implementation of property management systems offers several benefits. It enhances operational efficiency, reduces administrative burden, and boosts tenant satisfaction by providing timely responses and services (Lee, 2021). Furthermore, PMS systems enhance financial management by assuring accurate and timely financial reporting, rent collection, and budgeting (Harris, 2020). Despite these advantages, PMS implementation is not without its challenges. For some property managers, adoption is impeded by high beginning costs, the requirement for ongoing maintenance, and the necessity for staff training. Furthermore, data security concerns and the complications of integrating PMS with other systems may create challenges.

## Statement of the Problem

In today's continuously changing real estate and property management industry, implementing Property Management Systems (PMS) is critical to preserving competitiveness, efficiency, and tenant happiness. Despite the obvious benefits, many property managers and corporations face considerable challenges in maximizing the use of these solutions.

The complexity of property management operations has significantly expanded, rendering old manual methods ineffective. Property managers are responsible for a wide range of activities, including tenant management, maintenance scheduling, and financial reporting. Without a strong PMS, these activities are prone to inefficiencies, mistakes, and delays, which lead to greater operating expenses and lower tenant satisfaction (Smith, 2020; Johnson & White, 2019). The digital change sweeping through sectors has raised tenant expectations for seamless, technology-enabled services. Tenants nowadays expect internet portals for rent payments, maintenance requests, and communication. Property managers without advanced PMS are unable to match these expectations, resulting in worse tenant retention and competition (Brown, 2018; Taylor & Green, 2020).

The high initial expenditures and resource requirements for installing a PMS create significant hurdles, especially for smaller property management organizations. This financial barrier restricts their capacity to compete with larger, more technologically sophisticated enterprises (Thompson, 2019; Patel, 2021).

Given these limitations, this research aims to solve the fundamental concerns impeding the proper deployment and use of Property Management Systems. It seeks to investigate the importance of PMS in modern property management, identify adoption barriers, and provide solutions to overcome these obstacles, allowing property managers to fully realize the benefits of PMS in today's dynamic and technology-driven economy.

## Objectives

### General

Our Property Management System's (PMS) general objective is to provide an adapted approach developed just for managing apartments. The system is designed to improve user experience and optimize operations with a dual-panel structure that includes an admin and tenant interface. In addition to managing bills for utilities like power, internet, water, and rent, the admin panel will make it easier to add, edit, and remove apartment and tenant data. The administrator will also be able to modify payment statuses and assign accounts to tenants.

On the other hand, the tenant panel will offer an improved user interface in which renters may log in, investigate only the amounts that are due, and be informed about their financial responsibilities. To make sure a reliable and sustainable solution, our team decided to create the PMS using the Laravel framework. The PMS aims to maximize efficiency, enhance transparency, and guarantee easy communication between property managers and tenants by focusing on these essential features.

### Specific objectives

Our system is built on the Laravel framework and utilizes a MySQL database for efficient data management. With a responsive web design, the system ensures seamless accessibility across various devices, enhancing user experience for both administrators and tenants. The admin panel simplifies key transactions such as adding and removing apartments, which involves entering or updating details like apartment number, size, and availability to ensure accurate record-keeping. Additionally, administrators can easily input tenant information, including names, contact details, and lease terms, to maintain comprehensive and up-to-date records. The system also facilitates the addition of monthly utility and rent bills, assigning charges to the appropriate tenants, and ensuring timely and accurate billing.

This efficient process reduces administrative workload and minimizes errors. For tenants, the PMS provides a user-friendly interface where they can log in to view their financial liabilities. The system automatically computes total bills by summing individual charges for utilities and rent, presenting a clear and comprehensive overview of what is owed. This transparency helps tenants stay informed about their financial responsibilities and promotes prompt payments. Overall, the PMS aims to enhance operational efficiency, ensure accurate and transparent financial management, and foster effective communication between property managers and tenants.

## Scope and Limitations

This study focuses on the creation and implementation of a Property Management System (PMS) aimed at improving the efficiency of property management activities. The system will have two unique panels: the User Panel and the Admin Panel. Each panel has functions targeted to the demands of property managers and renters.

**SCOPE**

**Admin Panel:**

1. **Account Management:**
   * **Creation of Tenant Accounts:** The admin can create new accounts for tenants.
   * **Modification of Tenant Accounts:** The admin can add, edit, delete tenant accounts as needed.
2. **Billing Management**

* **Setting and Updating Bills:** The admin can add, edit, delete the prices of tenants’ bills, ensuring accurate and up-to-date billing information.
* **Payment Tracking:** The admin has a page where they can review the payment status of each tenant. Payments can be marked as paid, overdue, or on notice of disconnection, allowing for efficient tracking and follow-up.

**User Panel:**

1. **Account Access:**

* **Login Capability:** Tenants can securely log in to their accounts on the website.

1. **Billing Information:** 
   * **View and Print Bills:** Tenants can view their current bills and print them if necessary, providing convenience and easy access to their financial obligations.
2. **Profile Management:**
   * **View Profile:** Tenants can view their profile details, ensuring they have access to their personal information and account status.
3. **Transaction History:**
   * **View Past Transactions:** Tenants can view their past transactions, enabling them to keep track of their payment history and manage their finances effectively.

**LIMITATIONS**

While the system tries to provide extensive functionality for property management, it has the following limitations:

1. **Limited User Roles**: Admin and tenants. There are no provisions for new positions, such as maintenance workers or property owners.
2. **Manual Billing Updates**: The system needs the administrator to manually enter and update billing information. This excludes automated invoicing based on lease agreements or utility use.
3. **Basic Payment Tracking**: The system allows administrators to record payments as paid, late, or on notice of disconnection. However, it does not allow for automatic payment processing or interaction with internet payment gateways.
4. **No Advanced Reporting**: Although the system includes basic invoicing and account administration, it lacks sophisticated reporting functionality. Detailed financial analysis and performance reports are not given.
5. **Limited Customization**: The system provides typical functionality without many modification choices. Specific demands of various property management organizations may necessitate further development.
6. **Scalability Concerns**: The system is intended for small to medium-sized property management enterprises. Large-scale operations with complicated requirements may face scaling challenges.
7. **Security Measures:** The system has basic security measures in place, but no sophisticated cybersecurity features. Providing effective security against data breaches and cyberattacks may necessitate additional resources and upgrades.
8. **User Interface:**  It is supposed to be simple and functional. However, it may not appeal to people who want extremely complex or visually appealing designs.

## Significance of the Study

The relevance of this study stems from its potential to improve operational efficiency, tenant happiness, and overall management capabilities in the property management business by developing and implementing a specialized Property Management System (PMS). The research focuses on essential features that might revolutionize traditional property management techniques, providing significant benefits to both property managers and renters.

The flexibility of the admin panel to handle tenant accounts, generate and update bills, and track payments helps to provide more accurate and timely financial reporting. Property managers can effectively monitor past-due payments and take necessary steps, such as labeling accounts as paid, overdue, or on notice of disconnection. This capability provides improved financial monitoring and control, lowering the chance of financial inconsistencies and enhancing the property management firm's overall financial health.

The results and solutions provided in this study have the potential to spur more research and development in the field of property management systems. By emphasizing the advantages and limits of the present PMS, the research sets the path for future improvements that might improve property management methods and technology. In conclusion, this study is significant because it presents a realistic, technology-driven approach for improving property management operations. It improves efficiency, tenant happiness, and financial management while tackling critical issues and contributing to the larger area of property management and technology.

# Chapter 2: Solution Specification

## Technology Stack

Our Property Management System (PMS) will be built on a sturdy and current technological stack to ensure scalability, efficiency, and ease of maintenance. Our technical stack includes HTML, CSS, SQL, and the Laravel framework. Each component is explained in depth below, along with its role in the development process.

**HTML**  
HTML will be the primary markup language for developing the structure and content of our online website. It will be used to specify the layout, components, and functionality of the user and administrative panels. HTML's versatility and extensive support across web browsers make it an excellent choice for assuring our application's accessibility and usability.

**CSS**  
CSS will be used to style the HTML components, hence improving the visual appeal and user experience of our PMS. We will use CSS to incorporate responsive design principles, ensuring that our application is accessible and usable across a variety of devices and screen sizes. CSS will help us keep a consistent and professional appearance and feel throughout the application.

**SQL**  
SQL will be utilized to maintain the relational database containing all of our PMS's key data, such as tenant information, billing details, and transaction histories. SQL's extensive querying capabilities will enable us to efficiently obtain, update, and alter data as needed. We will utilize a MySQL or PostgreSQL database since they are compatible with PHP and can handle big amounts of data reliably.

**Laravel Framework**

Laravel, a PHP-based web application framework, will be used to speed up the development process and maintain the stability of our PMS. Laravel's clear syntax, extensive documentation, and pre-built tools for typical web development tasks make it a perfect fit for our project.

By using these technologies, we hope to create a comprehensive, secure, and scalable Property Management System that fulfills the demands of both property managers and renters. HTML, CSS, SQL, and the Laravel framework will form a solid basis for creating a feature-rich application that is easy to maintain and scale in the future.

## Application Architecture

Admin Panel

User Panel

Amazon Route 53

Amazon Database

(MySQL)

Amazon S3

(Storage)

EC2 Instance

(Laravel PMS Application)

Elastic Load Balancer

## 

## Data Architecture

## 

Laravel Controllers

(Admin Panel & User Panel)

Amazon EC2 Instances

(Laravel PMS Application)

Load Balancer

User Devices

Admin Devices

Load Balancer

Amazon EC2 Instances

(Laravel PMS Application)

Laravel Controllers

(Admin Panel & User Panel)

Laravel Models

Laravel Models

Amazon RDS (MySQL)

# Chapter 3: Application Description

Introductory paragraph.

Take a screenshot and put some descriptions. Make this section a help/guide on what to see and how to use your application.

# Chapter 4: Deployment Procedure

Describe in a step-by-step manner how to deploy your application in a cloud environment. Make sure that when someone with little or no background in cloud will be able to follow the steps.

# Chapter 5: Conclusion and Recommendation

# Appendix A: Testimonials

Each member should provide a one-page testimonial.

# Appendix B: References

Write at least 10 references in APA format.