Information System Supporting Gym

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Abstract. Information System Supporting Gym is designed to streamline fitness center operations by automating member management, attendance tracking, and administrative tasks. The system provides distinct roles for users (members) and administrators, ensuring secure and efficient gym operations. Built with Laravel, MySQL, and Tailwind CSS, this web-based solution enhances user experience while reducing manual workload for gym staff. The system allows administrators to manage memberships, track attendance, schedule classes, and generate reports. Users (members) can view their workout schedules, check attendance history, and update personal details. By replacing traditional paper-based methods, this system minimizes errors, improves efficiency, and enhances member engagement.

Keywords: Member management, Attendance Tracking, Laravel, Web-based System, Efficiency

INTRODUCTION

In modern fitness facilities, managing member data, class schedules, and administrative tasks are critical processes. Traditionally, these tasks have been handled manually using paper-based sign-in sheets, physical membership cards, or disparate spreadsheets, which are often time-consuming, prone to human error, and inefficient. To improve data accuracy, simplify member management, and reduce the administrative workload on staff, we propose a web-based Gym Management System. This system will enable administrators to efficiently manage member accounts and class schedules, while providing users with a streamlined way to track their fitness journey. The purpose of this system is to modernize gym operations by automating and centralizing data access for both staff and members.

PROBLEM

Manual gym management methods lead to several significant problems. Staff members have to manually handle new member registrations, track attendance, and process payments, which increases the risk of data entry errors and billing inconsistencies. Generating reports on membership status or class occupancy takes a considerable amount of time, and managing multiple class types or gym locations becomes increasingly difficult. Inconsistencies and delays in data entry negatively impact member satisfaction and overall staff efficiency. Without a proper system, retrieving past member records or making corrections to schedules also becomes complex and time-consuming. This lack of automation undermines the overall efficiency and transparency of gym operations. Therefore, a reliable and easy-to-use system that can manage all gym data systematically is needed.

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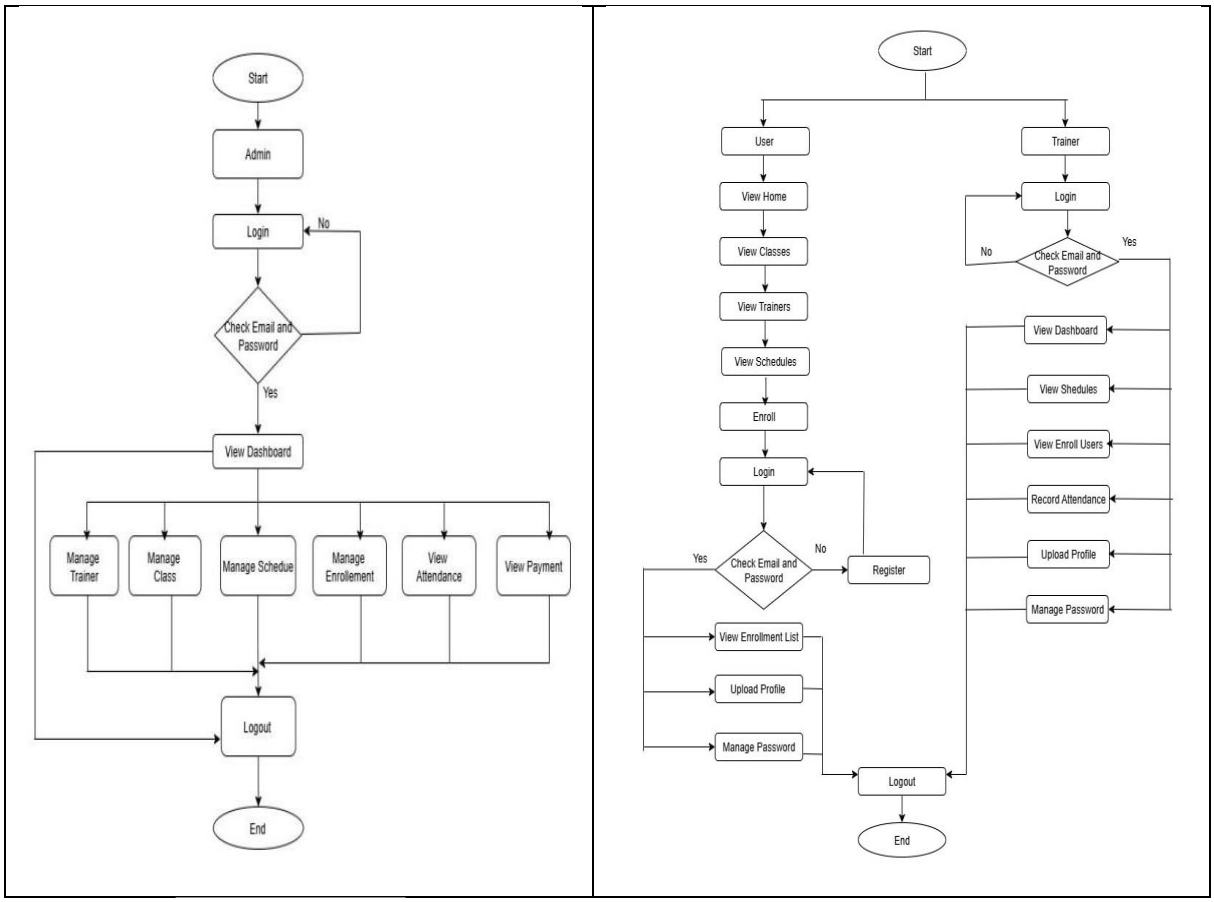
APPROACH

This system is designed with a clear division between three roles: the Admin, User and the User. As depicted in Figure 1 (a), this flowchart illustrates the workflow of the Admin module in the Information System Supporting Gym. The process begins with the admin starting the system and proceeding to the **login** page. The system verifies the admin's email and password credentials. If the credentials are invalid, access is denied; if valid, the admin is directed to the dashboard. From the dashboard, the admin can perform several key management tasks, including managing trainers**,** managing **classes,** managing schedules**,** managing enrollments**,** viewing attendance, and viewing payments. These functions help maintain smooth gym operations and accurate recordkeeping. After completing the necessary activities, the admin can log out, which terminates the session and leads to the end of the process.



(a) Admin **(b) User and Trainer**

Figure 1: System Flow Diagram

This Figure (b) illustrates the user and trainer workflow in the Information System Supporting Gym. The process begins with either a user or a trainer accessing the system. For the user, the process starts by viewing the home page, followed by exploring classes, trainers**,** and schedules. Users can then enroll in classes and proceed to log in. The system checks the user's email and password — if incorrect, the user is prompted to register; if correct, the user gains access to features such as viewing the enrollment list**,** uploading a profile, and managing passwords. For the trainer, the process begins with login verification. If the email and password

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are valid, the trainer can access the dashboard, where they can view schedules, view enrolled users, record attendance, upload profiles, and manage passwords**.** Both users and trainers can log out at the end of their session, marking the end of the process. This flow ensures efficient management of gym activities for both members and trainers while maintaining secure access control.

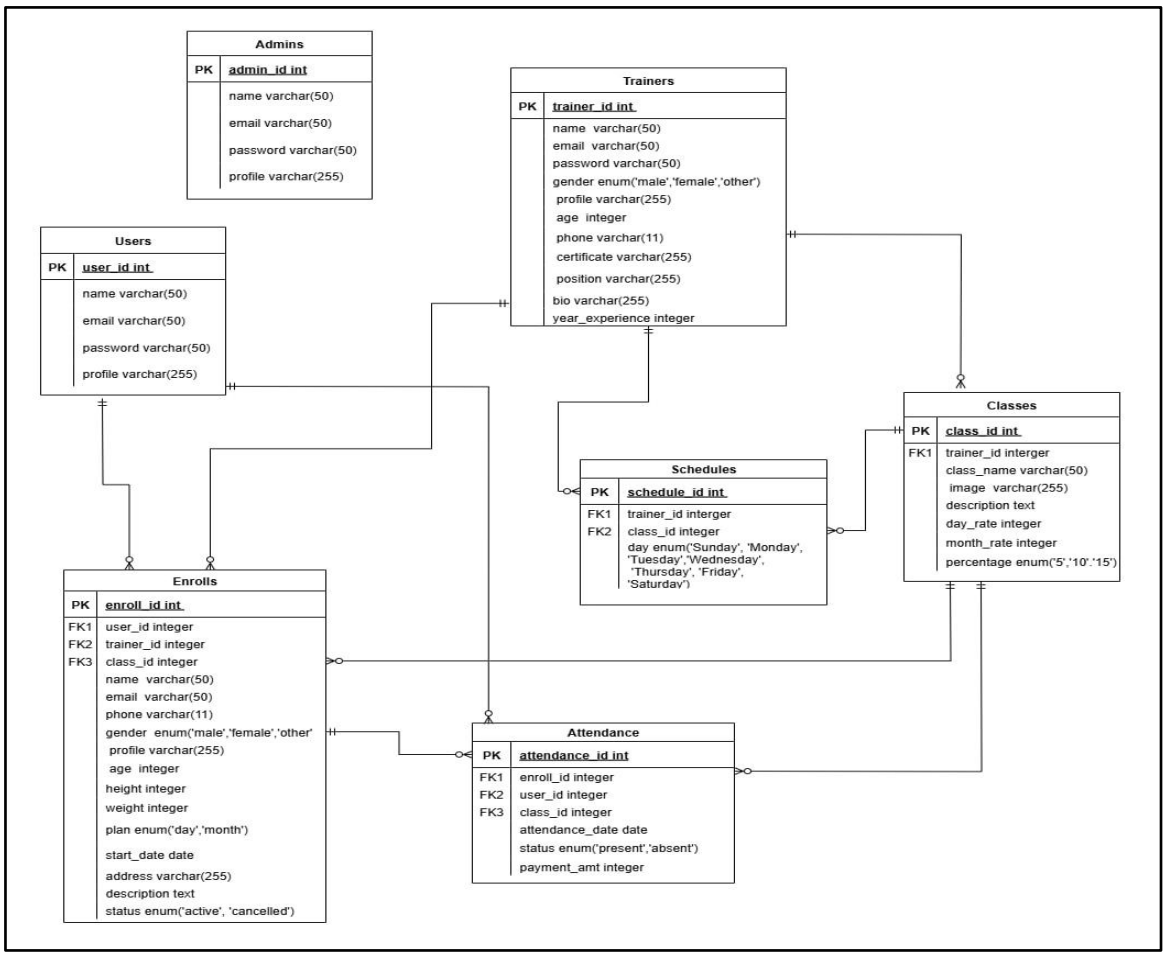

Figure 2: Database Design

The system's database structure is meticulously defined by the Entity Relationship Diagram (ERD) presented in Figure 2. It illustrates the relationships among the main entities: Admins, Users, Trainers, Classes, Schedules, Enrolls, and Attendance. The Admins entity stores administrative information such as name, email, password, and profile details. The **Users** entity maintains member data including name, email, password, and profile, while the Trainer**s** entity contains details like name, email, gender, phone, certificate, position, biography, and years of experience. The Classes entity is linked to trainers and holds class-related data such as class name, image, description, day rate, month rate, and discount percentage. The Schedules entity associates classes with trainers and defines the scheduled days. The Enrolls entity connects users, trainers, and classes—storing details about member enrollment, personal information, plan type, and status. Lastly, the Attendance entity records user attendance for each enrollment, along with the attendance date, payment amount, and attendance status. This ERD shows how all components of the gym management system are interconnected, ensuring efficient data organization, accurate record keeping, and smooth operational flow.

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RESULTS

This system centralizes membership management and fitness tracking. Only authorized Admins can access the dashboard to perform administrative tasks, while members can securely view their personal information, class schedules, and booking history after logging into their accounts. The system allows for the export of specific data, such as voucher exports and log exports, in a well-structured CSV (.csv) format. Security features include automatic session expiration and forced logout from all other devices when an Admin changes their password, providing better protection against unauthorized access. Built with Laravel, MySQL, and Tailwind CSS, the platform offers a maintainable and efficient solution. Overall, the system improves data accuracy, reduces manual workload for staff, and provides members with a streamlined way to engage with the gym's services.

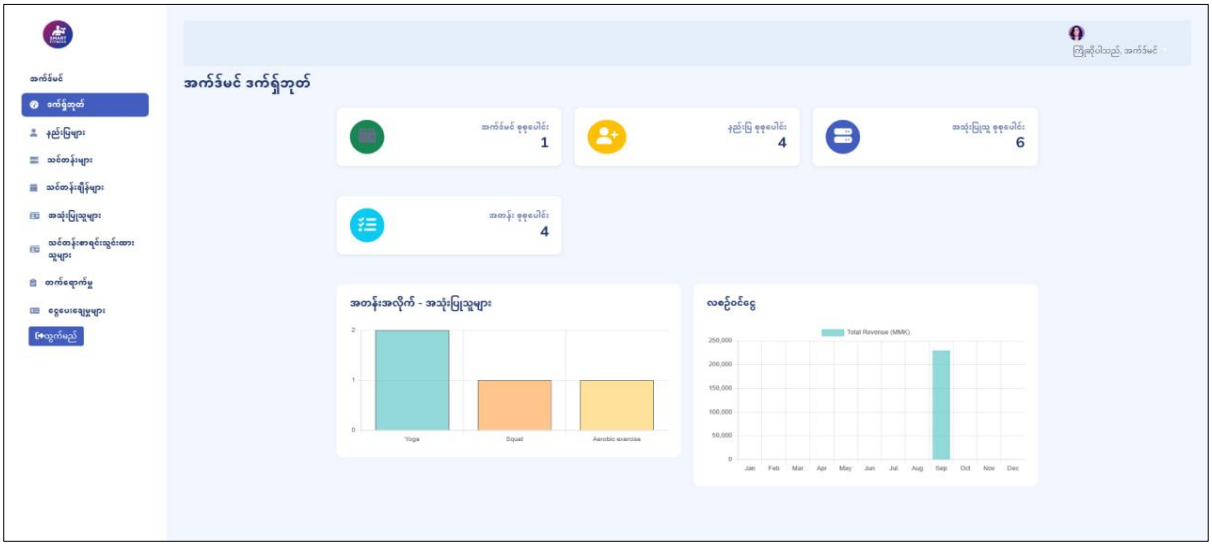

Figure 3: Admin Dashboard

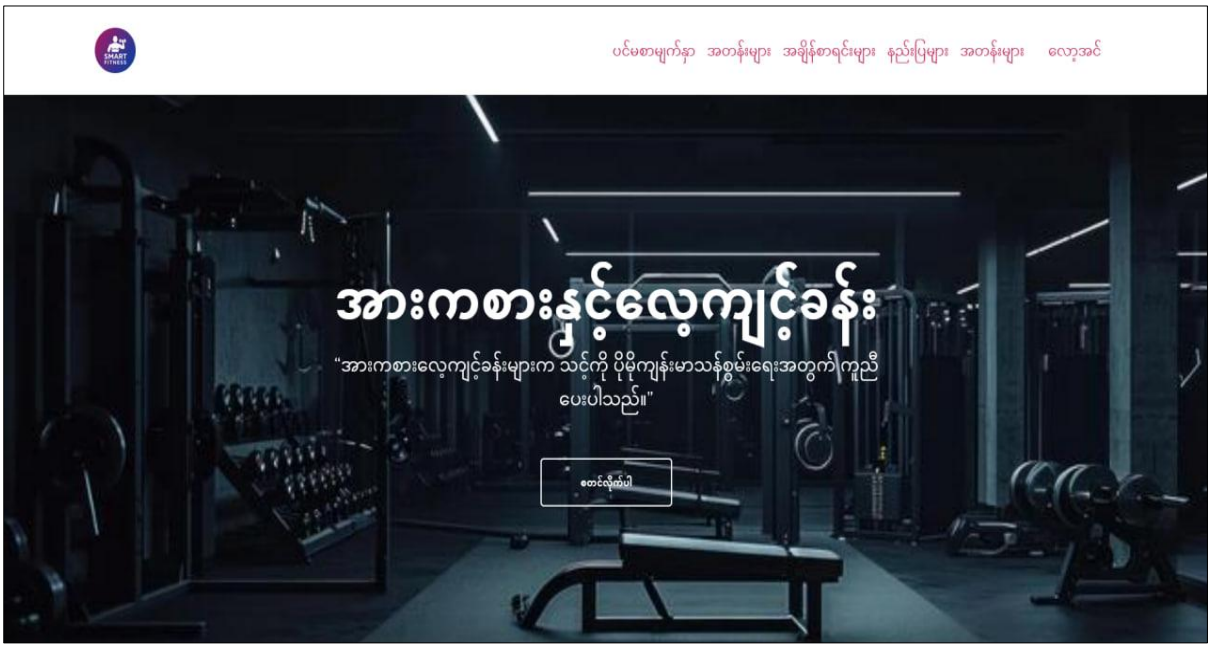

Figure 4: Home Page

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CONCLUSION

Information System Supporting Gym was developed to improve the management of gym operations and member data. It addresses the inefficiencies of manual processes by offering a centralized platform where administrators can manage memberships, classes, and payments with ease. This project not only enhances the digitalization efforts of the gym but also reduces human error and time spent on administrative tasks. By applying real-world tools and technologies such as Laravel, MySQL, and Tailwind CSS, the system is built to be scalable, secure, and maintainable. In conclusion, the system serves as a valuable asset for gym administration, providing accurate data, streamlined access, and efficient member tracking all essential for improving the overall quality of service and administrative processes.

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