

Website-Based Futsal Field Reservation Information System At The Cisaat Disen Gor

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Published: August, 2025

ABSTRACT

The study purpose was to develop a web-based futsal court reservation information system for GOR Disen Cisaat to address inefficiencies in the existing manual booking process, such as data loss, double bookings, and delays in generating reports. The aim was to improve customer satisfaction, streamline data management, and enhance operational efficiency for the facility's administrators. Materials and methods involved requirements analysis, system design (including UI, database schema, and navigation structure), implementation using PHP Laravel framework with MVC architecture, and MySQL as the database. The development process included building modules for user registration, booking management, payment tracking, and administrative reporting. The system was tested through functional testing scenarios to validate features and ensure reliability before deployment. Results showed that the implemented system successfully enabled customers to make online reservations anytime and anywhere, while administrators could manage court availability, bookings, and payments more efficiently. The system eliminated double bookings, accelerated report generation, and provided a structured, centralized database for reservation data. Conclusions indicate that the web-based reservation system significantly improves the management process at GOR Disen Cisaat, offering convenience for both users and administrators. Future enhancements are recommended, including stronger data security measures, mobile responsiveness, integration with online payment gateways, automated notifications, and periodic system evaluations to maintain service quality.

Keywords: *Futsal Court Booking, Web-based Reservation System, MVC Architecture*

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INTRODUCTION

An information system is a structured framework designed to collect, process, store, analyze, and disseminate information to achieve specific objectives (Anjeli et al., 2022). Such systems can be implemented across various domains, including the reservation business. A Reservation Information System is specifically designed to manage booking data and provide information about facilities at designated locations and times (Sugilar & Yulisa Geni, 2024).

The term *reservation* originates from the verb *to reserve*, referring to the process of making an arrangement to secure goods or services prior to the actual purchase (Diantara et al., 2022). It can also be defined as an act or method of booking a venue or product from another party (Zakaria & Sifaunajah, 2024). Reservations can be applied in numerous sectors, one of which is the service industry for futsal court bookings.

Futsal is a form of soccer typically played indoors, although it can also be played outdoors depending on situational conditions (Syahroni & Arnando, 2025). This sport involves two teams of five players each, with the objective of scoring goals against the opponent using the feet, head, or other body parts, excluding the hands (Hidayatullah & Saputra, 2025).

GOR Disen is a sports facility specializing in futsal. Currently, its futsal court reservation process is still managed manually, requiring customers to physically visit the venue to make a booking. This manual approach often leads to inefficiencies such as reservation data loss, delays in booking records, double bookings, and prolonged monthly report preparation (Deden, 2025).

To address these challenges, a web-based futsal court reservation information system was developed for GOR Disen. This innovation aims to streamline the booking process for customers while assisting facility staff in managing reservation data and generating reports in a faster, more organized, and efficient manner.

METHOD

The development of the system followed a structured software engineering process consisting of several stages. The requirements analysis phase involved gathering information on the existing manual reservation process and identifying the needs of both customers and administrators. In the system design phase, user interfaces, system workflows, and database structures were created, including Entity Relationship Diagrams (ERD) and Logical Record Structures (LRS).

The implementation

Phase employed the Laravel framework (version 10) with a Model-View-Controller (MVC) architecture, supported by a MySQL database for data management. The development included modules for user registration, court booking, payment processing, and administrative reporting.

System testing

Was conducted through functional testing scenarios to verify feature reliability and ensure the system met the specified requirements. Following testing, the deployment and evaluation phase was carried out at GOR Disen, enabling end-users to provide feedback for improvements.

The final stage

Involved documentation and reporting to record technical specifications and system usage guidelines.

FINDING AND DISCUSSION

The implementation of the web-based futsal court reservation information system at GOR Disen effectively resolved multiple inefficiencies associated with the previous manual process. Prior to system deployment, customers were required to visit the venue physically to make reservations, which often resulted in data loss, double bookings, and delayed monthly report preparation. After adopting the new system, customers were able to book courts online anytime and anywhere, significantly improving accessibility and convenience.

From an administrative standpoint, the system streamlined data management by centralizing booking records, payment transactions, and court availability into a MySQL database. The integration of a user-friendly interface and structured navigation enhanced the ease of operation for both administrators and customers. Functional testing confirmed that all features operated as intended, including login authentication, booking validation, payment confirmation, and report generation. Importantly, the system's design prevented duplicate reservations and ensured timely updates of court schedules.

The adoption of the Laravel framework with an MVC architecture facilitated clear separation between business logic, user interface, and data handling, making the application easier to maintain and extend in the future. This approach aligns with previous studies on web-based reservation systems (Sugilar & Yulisa Geni, 2024; Diantara et al., 2022), which highlight similar improvements in efficiency, accuracy, and user satisfaction.

However, the findings also indicate areas for further enhancement. Security measures, particularly in protecting user data, should be strengthened through encryption and advanced input

validation. The system would also benefit from integrating automated notification features via email or messaging services to provide users with real-time updates on booking and payment status. Additionally, optimizing the interface for mobile devices and incorporating online payment gateways could further improve user experience and operational efficiency.

System Requirements Analysis

In developing a system, an analysis of the system to be created is essential. The following is an analysis of the system to be created:

1. Admin

- a. Administrators can log in
- b. Administrators can manage booking data
- c. Administrators can view customer data
- d. Administrators can manage payment data
- e. Administrators can view reservation and transaction reports
- f. Administrators can manage field availability

2. Users

- a. Users can register an account
- b. Users can log in
- c. Users can view field availability schedules
- d. Users can make reservations
- e. Users can view reservation history

Usecase Diagram

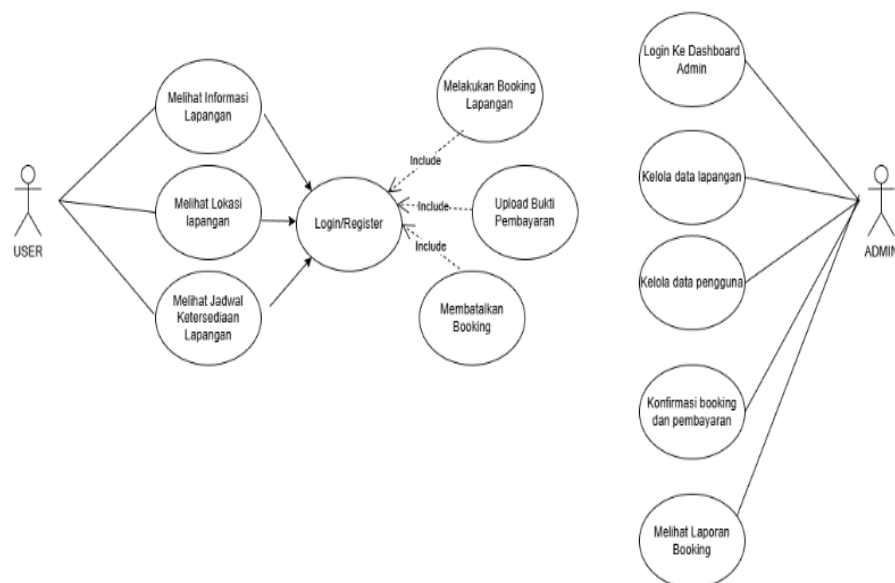


Figure 1.
Usecase Diagram

Entity Relationship Diagram

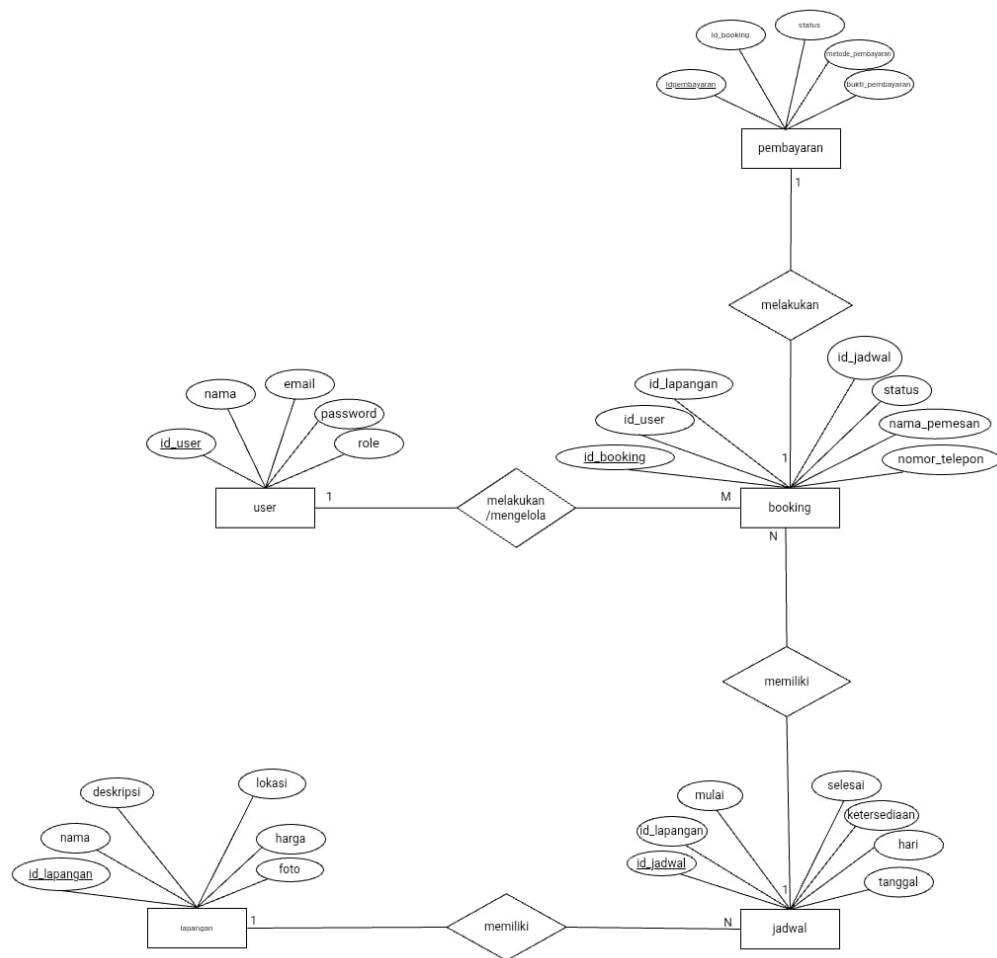


Figure 2.
Entity Relationship Diagram

User Interface

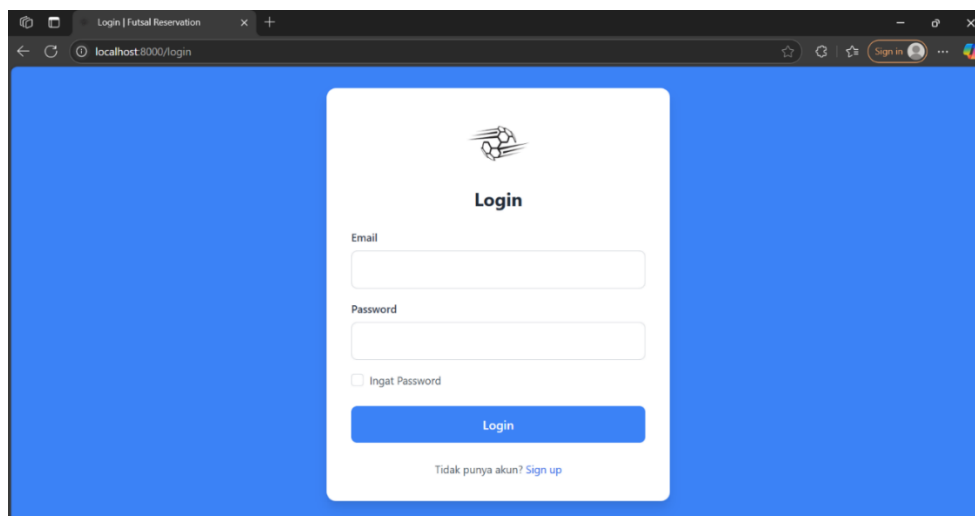


Figure 3.
Admin Login Page

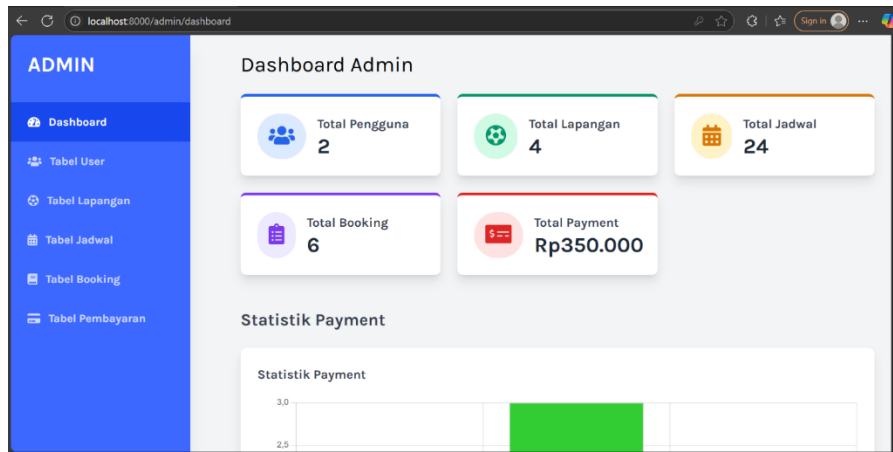


Figure 4.
Admin Dashboard Page

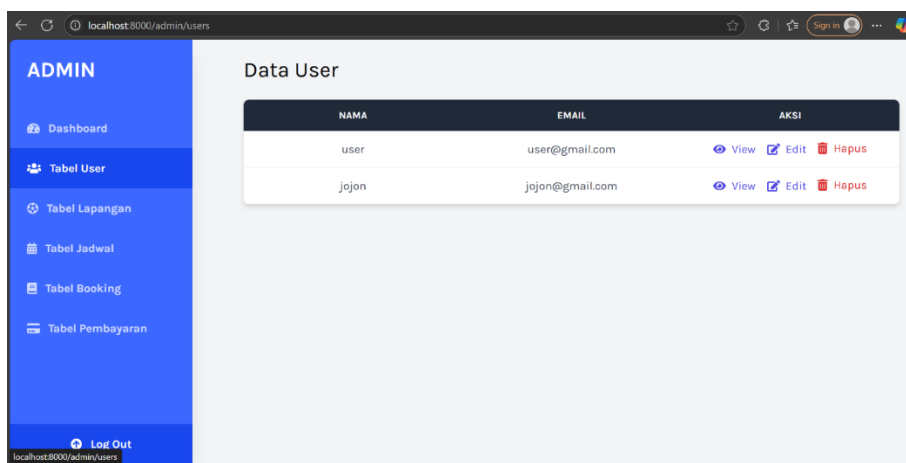


Figure 5.
User Data Menu Display

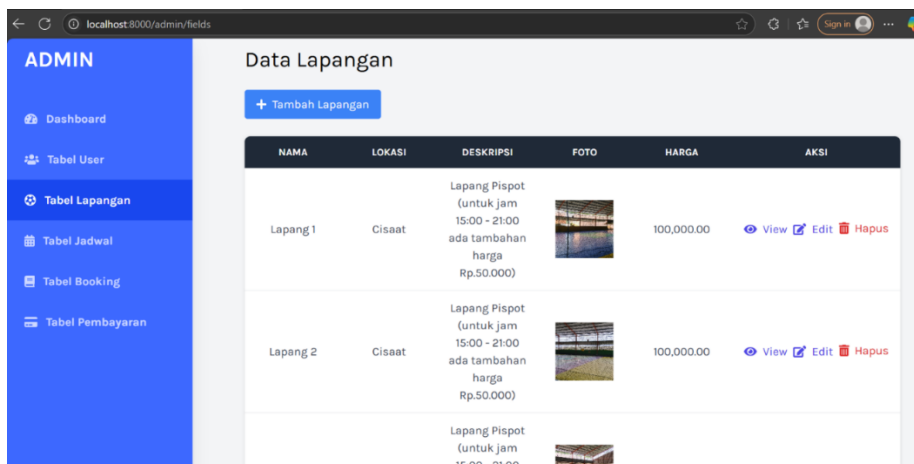


Figure 6.
Field Data Menu Display

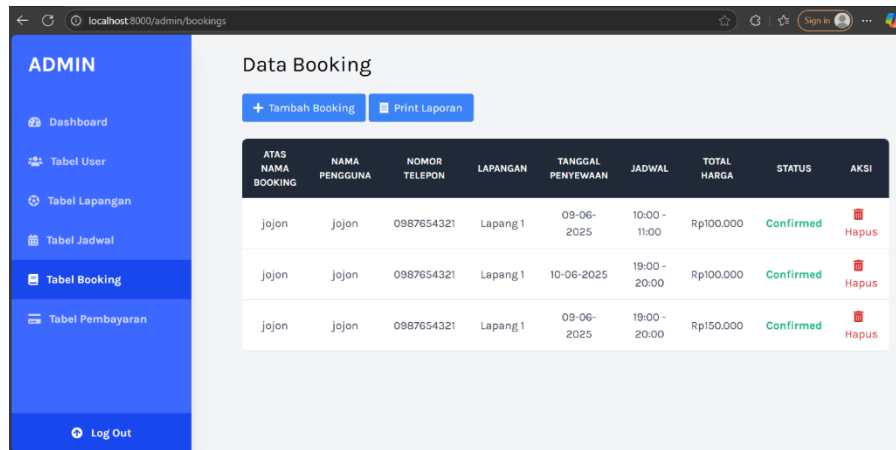


Figure 7.
Reservation Data Menu Display



Figure 8.
Customer Dashboard Page

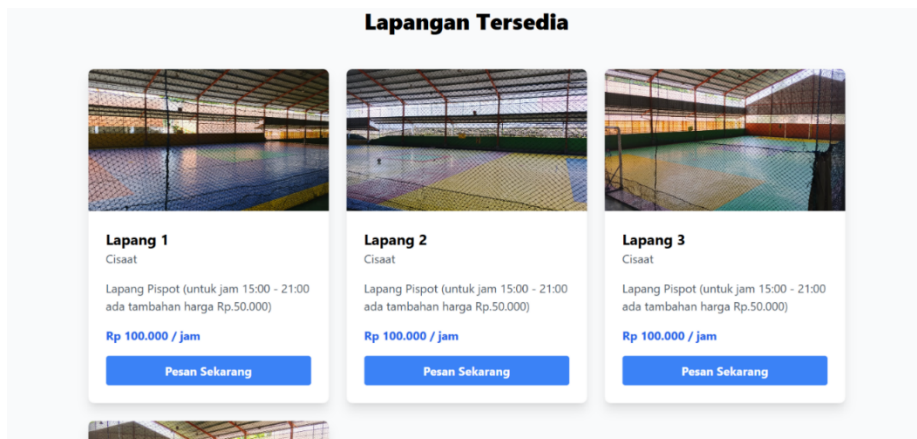


Figure 9.
Customer Field Availability Page

CONCLUSIONS

Based on the design and implementation of a web-based futsal field reservation information system at the Disen Cisaat Sports Hall, it can be concluded that this system is able to overcome various obstacles that previously arose in the manual reservation process, such as inefficient data recording, the potential for double bookings, and difficulties in preparing monthly reports. The system created makes it easy for users to make online reservations anytime and anywhere, and makes it easier for admins to manage field data, schedules, and payment transactions more quickly and in an organized

manner. The use of the Laravel framework and the Model-View-Controller (MVC) approach also supports the development of a system that is efficient, easy to manage, and has the potential for continued development in the future.

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