Journal of Artificial Intelligence and Digital Economy
Homepage : https://journal.antispublisher.id/index.php/JAIDE
Email : admin@antispublisher.com

e-ISSN : 3032-1077
JAIDE, Vol. 2, No. 7, July 2025
Page 468-475

Web Based Reservation System Design at Café Gartenhutte

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DOI : https://doi.org/10.61796/jaide.v2i7.1537

Sections Info

Article history:
Submitted: April 25, 2025
Final Revised: May 11, 2025
Accepted: June 20, 2025
Published: July 31, 2025

Keywords:
System Development
Online Reservation
User-Centered Design (UCD)
Method
User Interface

ABSTRACT

Objective: *This study aims to design and develop a* ***web-based reservation system*** *for Café Gartenhütte using the* ***User-Centered Design (UCD)*** *method to enhance customer efficiency, convenience, and overall user experience in the reservation process.* ***Method:*** *The research adopts a user-focused approach through several stages, including collecting user requirements via interviews and surveys, designing an intuitive and responsive interface, and conducting usability testing to evaluate system performance and user satisfaction.* ***Results:*** *The developed web application successfully enables customers to make online reservations, manage booking schedules, and receive automated reservation confirmations. The implementation of this system has improved service speed, reduced manual errors, and enhanced both customer satisfaction and operational productivity at the café.* ***Novelty:*** *The distinct contribution of this research lies in the integration of the UCD approach into the reservation system design for small-scale businesses, ensuring that every development stage is based on real user needs, thereby producing a more efficient, user-friendly, and adaptable digital service platform.*

INTRODUCTION

The development of Information Technology (IT) is currently taking place very rapidly, driven by the increasing human need to obtain information quickly, precisely, and accurately. One of the most relevant forms of IT progress in everyday life is the website. In the culinary world, websites have become an effective promotional medium for presenting detailed information about the products offered online. Culinary business owners can introduce their menus, facilities, and various special offers to customers more easily and efficiently [1]. In addition, websites also facilitate the online ordering process, which allows customers to make reservations or order food without having to be present in person at the restaurant.

As public interest in culinary arts increases, this business has experienced significant growth. This is evident in the increasing number of cafes, food stalls, and restaurants popping up in various cities, both large and small, like Mojokerto. The growing public interest in a variety of foods and beverages encourages entrepreneurs to continue innovating, offering increasingly diverse menus, and providing excellent service to attract consumer attention and loyalty. Customer comfort is a top priority, with good facilities and friendly and fast service [2].

The use of information technology, particularly through web-based information systems, is a much-needed solution for increasing the efficiency and effectiveness of

culinary businesses. These information systems not only make it easier for business owners to promote their products to the wider public but also streamline the reservation and ordering process. This allows customers to easily access information about the menu, prices, location, and amenities provided by the culinary business.

RESEARCH METHOD

The method used in this program uses the User-Centered Design (UCD) method, commonly known as an approach that focuses on the needs, desires, and behavior of users in every stage of product development, including in the scientific work "Design and Construction of a Web-Based Reservation System at Café Gartenhutte." By applying the UCD method, this study aims to create an intuitive and easy-to-use reservation system, thereby improving the customer experience when making reservations. This process begins with an analysis of user needs through surveys and interviews, which allows the development team to understand the expectations and challenges faced by customers in making reservations [3]. Next, the designed system prototype is tested directly by users to obtain feedback, which is then used to iterate and improve the interface and functionality of the system. By actively involving users in the design and testing process, the UCD method ensures that the developed reservation system not only meets business objectives but also provides convenience and comfort for customers, thus contributing to the success of Café Gartenhutte in competing in the culinary industry [4].

The analysis used includes several approaches to ensure the developed system can meet user needs and business objectives [5]. First, user needs analysis is conducted using the User-Centered Design (UCD) method, which involves gathering information from potential users regarding their expectations and needs regarding the reservation system. This includes interviews, surveys, and direct observation to understand the current user experience and how they interact with the reservation system [6]. Next, a functional analysis is conducted to define the features and functions that must be included in the system, such as the ability to view menus, make reservations, and manage existing reservations.

System design is the process of designing and developing a system that aims to meet specific needs, both functionally and non-functionally. This process includes identifying user needs, determining technical specifications, designing interfaces, and developing data structures and system workflows [7]. System design typically begins with analyzing existing problems or needs, then formulating optimal solutions through appropriate system modeling and design.

RESULTS AND DISCUSSION

This chapter on the results and discussion presents the main findings of the research on "Design and Construction of a Web-Based Reservation System at Café Gartenhutte." This research aims to develop a system that makes it easier for customers to make reservations online and improves the efficiency of reservation management by

the cafe administration. The results of this system development include an intuitive user interface, a structured workflow, and the integration of various important features such as reservation date and time selection, automatic confirmation, and customer data management. In addition, the results of system testing indicate that users can easily make reservations without experiencing difficulties, which has a positive impact on customer experience. This section also discusses the evaluation of the system's effectiveness, challenges encountered during the development process, and recommendations for further development to improve the quality of service at Café Gartenhutte.

Figure 1. Home Page

On this page, users are greeted with brief information about Café Gartenhutte, including a description of the services, location, and main menu options. There is clear navigation for viewing the full menu, checking table availability, and making reservations.

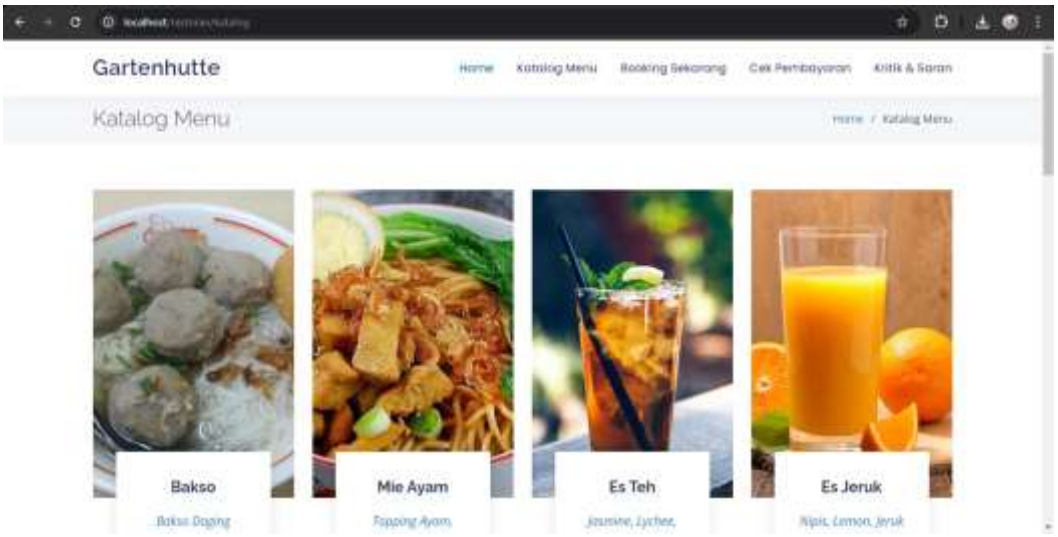

Figure 2. Menu Page

On this page, users can view complete information about each item, including the name, description, price, and product image.

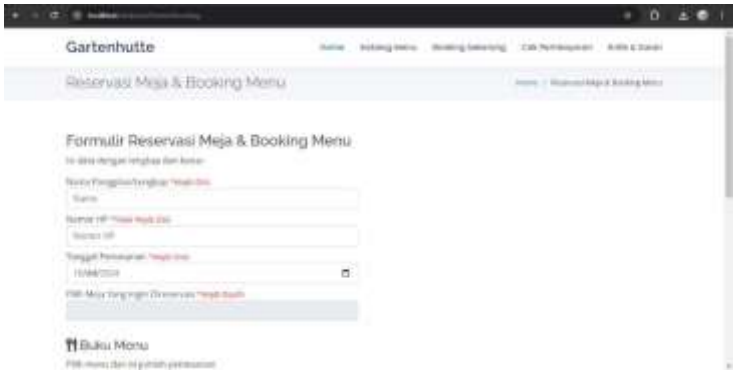

Figure 3. Booking Page

On this page, users can select the reservation date and time, number of guests, and their desired table (if available).

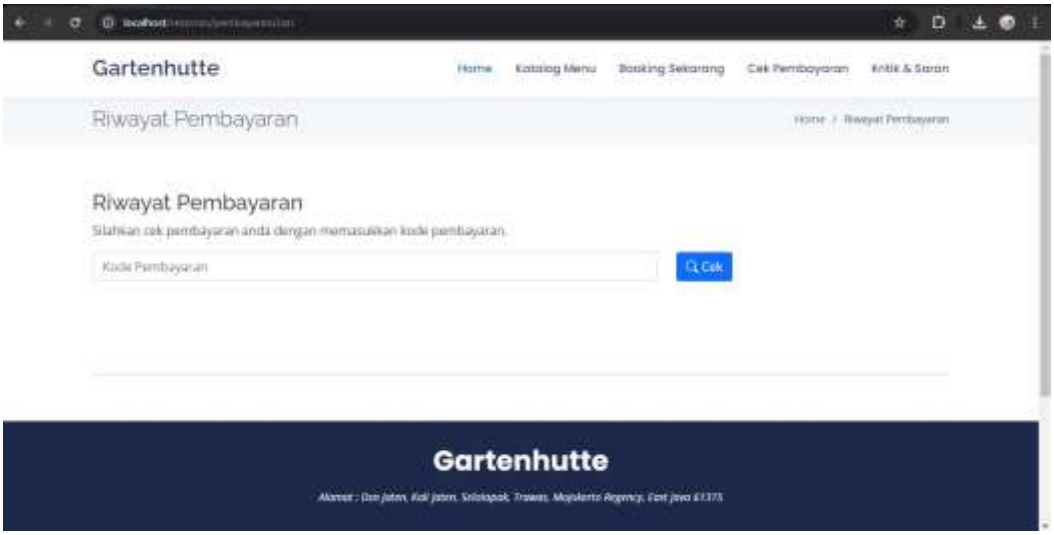

Figure 4. Payment Check Page

On this page, users can check their payment by entering the payment code.

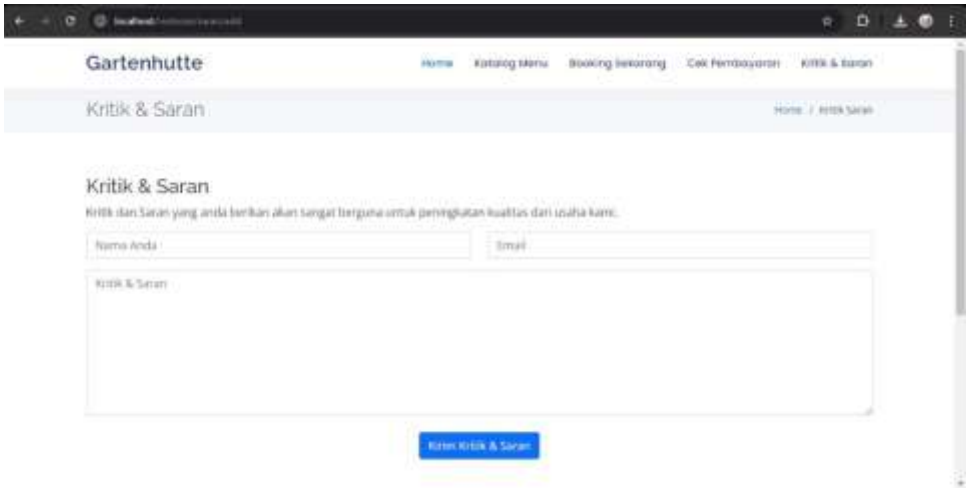

Figure 5. Criticism and Suggestions Page

On this page, users can fill out a form that includes fields for submitting criticism, suggestions, or other relevant input. The primary purpose of this feature is to gather useful feedback to improve the cafe's service quality, address system deficiencies, and provide a platform for customers to contribute to the ongoing development of the reservation app.

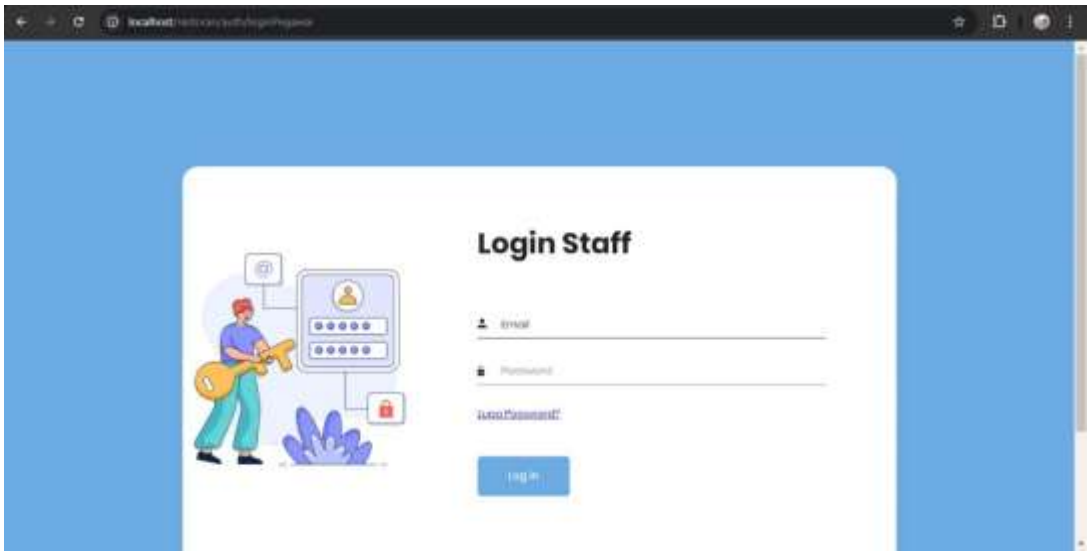

Figure 6. Staff Login Page

This page displays a simple login form that asks for a username and password. Once staff successfully log in, they are redirected to the main dashboard.

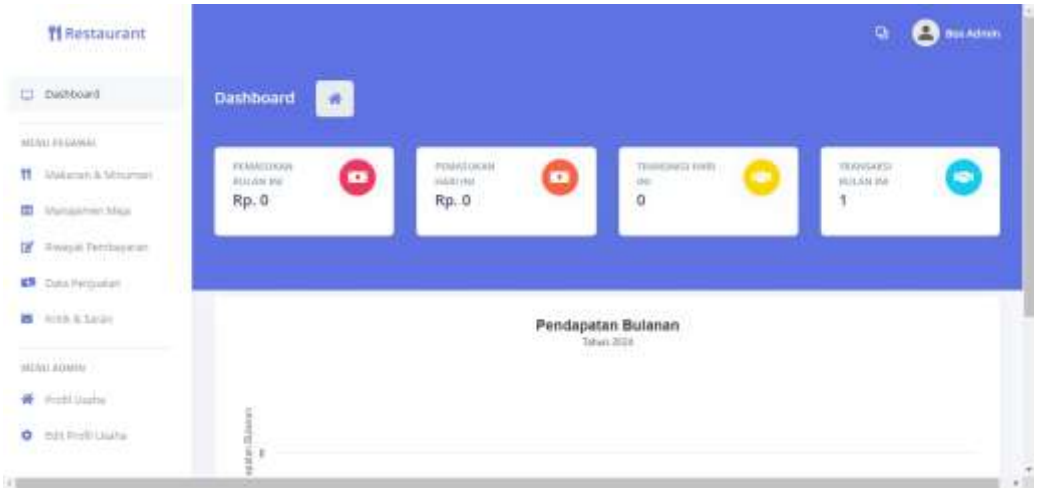

Figure 7. Admin Dashboard Page

This dashboard displays a summary of important information such as the number of active reservations, payment status, number of customers, and data related to ongoing and completed bookings. Admins can easily access various features to add, edit, or delete reservation data, products, and services. Additionally, there are options to monitor transaction reports, manage table availability schedules, and confirm or cancel reservations.

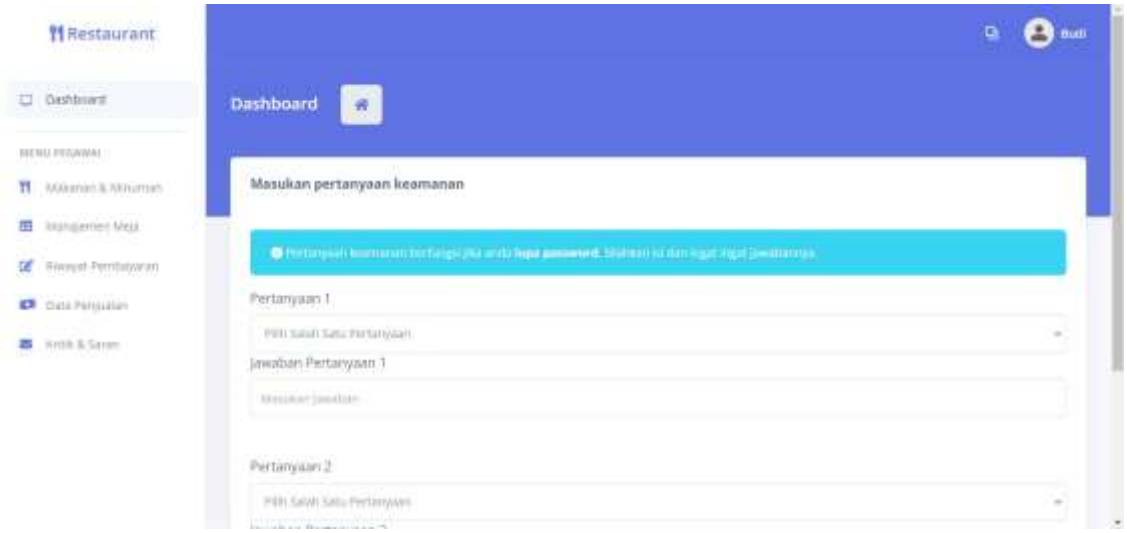

Figure 8. Employee Dashboard Page

This dashboard displays a summary of important information, such as the number of daily reservations, table status (available or occupied), and notifications for reservation confirmations and cancellations. Employees can also access customer data, view booking details, and update reservation status directly from the dashboard.

CONCLUSION

Fundamental Finding : This study successfully developed a **web-based reservation system** for Café Gartenhütte that automates booking processes, including time selection, confirmation, and customer data management. The system effectively enhances flexibility for customers and operational control for administrators, thereby improving overall efficiency and user satisfaction. **Implication :** The implementation of this system demonstrates that adopting digital solutions in small-scale hospitality businesses can significantly streamline operations, reduce human error, and strengthen competitiveness in the digital era. **Limitation :** However, the system still relies on stable internet connectivity and does not yet integrate with advanced analytics or mobile applications, which may limit its accessibility and scalability. **Future Research :** Subsequent studies are recommended to integrate mobile-based platforms, artificial intelligence for customer behavior prediction, and real-time data analytics to further enhance the system's performance, personalization, and decision-making capabilities in digital business environments.

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