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Website Design For Ordering And Management Of Traditional Food Stalls With A Responsive Display

ABSTRACT

Micro, Small, and Medium Enterprises (MSMEs) are the foundation of Indonesia's economy, especially in the traditional culinary sector. A family restaurant, in operation since 2013, struggles to manage operations because its manual recording system relies on notebooks and basic records. This problem results in a significant frequency of order inaccuracies (3-6 occurrences daily), an average wait time of around 22 minutes, and challenges in inventory oversight.

This project seeks to develop a cohesive, user-friendly ordering and administration website, with a responsive design, to address these operational issues. The study used a qualitative methodology, encompassing four months of observation, interviews with the restaurant proprietor, and literature reviews. The system development employs the Laravel Framework within an object-oriented programming paradigm, while requirements analysis is performed using use case, class, and sequence diagrams.

The results demonstrate that implementing the ordering website substantially enhances the restaurant's operational efficiency. The system effectively substitutes the traditional ordering process, minimizes recording errors, accelerates service, and offers clients the ease of online ordering without temporal or locational constraints. The real-time inventory management tool enables the owner to precisely track stock levels, while the automatic transaction recording system improves the accuracy of financial reports.

This study illustrates that digital transformation via an ordering website can preserve the attributes of a traditional warung while enhancing service quality and fostering the growth of culinary MSMEs in Indonesia.

Keywords: MSME, Traditional Restaurant, Ordering Website, Management System, Culinary Digitalization

INTRODUCTION

The advancement of information technology has enhanced data processing and bolstered the expansion of Micro, Small, and Medium Enterprises (MSMEs), which serve as the foundation of Indonesia's economy. Food stalls, as a category of micro, small, and medium enterprises in the culinary industry, possess considerable potential owing to their varied types and attributes. A family restaurant can process 80–110 orders daily, generating a monthly revenue of IDR 18–24 million. Nevertheless, the manual recording approach results in numerous problems, including order inaccuracies, chaotic queues, prolonged wait times, and difficulties with inventory management. These circumstances adversely impact customer satisfaction, particularly during busy periods. Consequently, a responsive, integrated ordering and administration website is required to replace manual recording, manage transactions, monitor inventory in real time, and improve service quality.

System concepts and design are crucial, as system designers profoundly influence data processing capabilities. A system fundamentally consists of a set of interconnected components that work together to accomplish defined goals (Nuraziza Novinda & Galih Widyatmaja, 2025). A practical application of this system is the online ordering procedure, in which users submit orders via internet-connected computers to access resources, navigation, and information retrieval (Hidayat et al., 2020). Online ordering encompasses the processes of reserving or requesting products from vendors, generally occurring within buy-sell transactions. The procedure begins with direct communication with the seller, followed by the consumer placing an order, and concludes with payment initiated upon confirmation of item availability (Khoirunnisa et al., 2023; Muliadi et al., 2020).

Websites typically enable these activities, serving as repositories of information pages on the internet that are worldwide accessible (H.P.Pangondian Lumbantoruan & Ramen A Purba, 2025). A website functions as an information repository accessible to all, including personal profiles, interests, and corporate information (Pusvita & S, 2025; Sibarani, 2024). Developers need visual languages, such as the Unified Modeling Language (UML), to build

complex systems, including web applications and enterprise information systems. UML functions as a standard for delineating, identifying, developing, and documenting software components using diagrams and text (Hasbillah et al., 2025; Rinaldo & Sauri, 2025; Wira Harjanti et al., 2025).

This research aims to develop a digital solution that improves efficiency, accuracy, and customer satisfaction. The study examines several facets of existing operational procedures to identify bottlenecks and inefficiencies that obstruct service delivery. The research specifically examines how human recording methods lead to errors and delays, and explores the impact of automation on workflow efficiency. The primary emphasis is on the distinct requirements of the firm and its clientele to identify essential features—such as online ordering, real-time inventory management, and enhanced communication tools—which are pivotal to the success of the digital solution.

METHOD

This research employs a qualitative methodology. The research gathers data through literature reviews, observations, and interviews to acquire critical information. Direct observation is conducted for 4 months. The interviews employ a direct question-and-answer methodology with the owner. The study includes a literature review that analyzes and interprets pertinent prior research to establish a theoretical framework for the research subject. This multifaceted approach guarantees a more thorough comprehension of the research subject.

This study used Object-Oriented Analysis and Design (OOAD) as the development methodology, focusing on depicting the system as a collection of interacting objects. Each object represents a real-world entity, with data qualities (attributes) and functions (methods) that define its behavior. Object-Oriented Analysis and Design (OOAD) enhances the flexibility, scalability, and maintainability of software (Camilleri, 2022). This research employs a qualitative methodology. The research gathers data through literature reviews, observations, and interviews to acquire critical information. Direct observation is conducted

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RESULTS AND DISCUSSION

According to the findings from user requirements interviews, the Administrator can oversee product and category data, encompassing the addition, modification, and removal of items. Customers may select and examine product details, add products to their cart, proceed to checkout, select a payment option, verify their status, and receive payment success alerts.

Table 1. Functional Requirements

Admin	Customer
Admin can manage product and category data.	Customers can choose from available products.
Admin can add new products or categories.	Customers can view product details.
Admin can edit product or category data.	Customers can add products to the cart.
Admin can delete product or category data.	Customers can open the basket menu and view the contents of the order.
The system displays a notification or success message after data changes are made.	Customers can fill out the order data form.
	Customers can checkout their orders.
	Customers can choose the payment method (bank transfer).
	Customers can see the payment pop-up.

	Customers can check their payment status.
	Customers can receive successful payment status information.

The validity of discrimination is measured through the value of cross loading, where a The Use Case Diagram below illustrates the interactions between the Administrator and Customers within the sales system. The Admin is tasked with overseeing the menu, categories, and transaction monitoring, whilst Customers are accountable for order placement, payment processing, and review submission. This figure also depicts crucial operations, including login and logout, necessary for both actors.

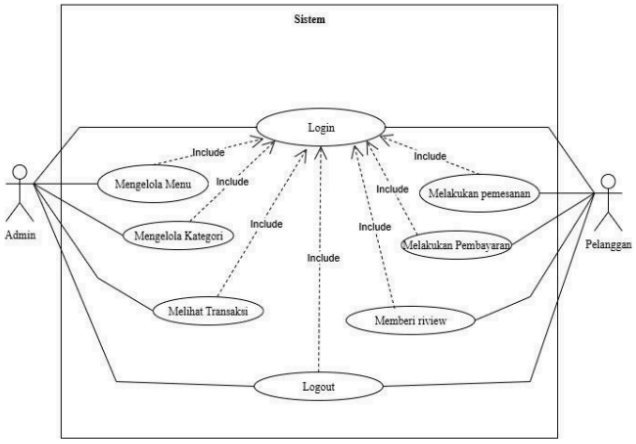


Figure 1. Use Case Diagram

Table 2. Use Narrative Login

Identification	
No	1
Name	Login
Objective	Go to the main page, employee data, salary calculation.

Description	The login process is a user authentication process to enter the main page, employee data, salary calculations, recaps and logout.
Actor	Admin, Employee.
Main Scenario	
Initial conditions	From login displayed
Actor Action	**System reaction**
1. Enter your username and password	2. Authenticate login data in the database.
	3. If appropriate, the system displays the main page.
Alternative Scenario	
Final Condition	Display System

Table 3. Use Narrative Ordering

Identification	
No	2
Name	Make an Order
Objective	Order food products/menus online
Description	Customers select products, fill in data, and check out.
Actor	Customer
Main Scenario	
Initial conditions	Customers select products, fill in data, and check out.
Actor Action	**System reaction**
1. Customers browse and select products	2. The system displays a list & product details.
3. Customer adds product to cart	4. The system saves the product to basket
5. Violation of opening the cart and clicking checkout	6. The system displays the checkout form

7. Customers fill in the data and click confirm.	8. Save the order to the system
Alternative Scenario	
Final Condition	The system displays a summary of the order and payment instructions.

Table 4. Use of Product Narrative

Identification	
No	3
Name	Manage Menu/Products
Objective	Adding, changing, and deleting food menu categories
Description	The menu form is used to set the types of menus available in the system.
Actor	Admin
Main Scenario	
Initial conditions	The menu displays a list of menus/products.
Actor Action	**System reaction**
1. Admin clicks the add menu/product button	2. The system displays the menu/product input form
3. Admin fills in the menu/product name and clicks save.	4. Validate system and save to database
5. Admin clicks edit on the product	6. The system displays a form with old data.
7. Admin changes the data and clicks update	8. Product data update system
Alternative Scenario	
9. Admin clicks the delete button	10. Product confirmation and deletion system
Final Condition	The system displays the updated product list again.

The diagram below presents the comprehensive Activity Diagram of the system, depicting the primary activity flow between the actors (Admin and Customers) and the system. This graphic illustrates interactions that begin with the login procedure and data management, and extend to accessing the primary functions based on each user's role.

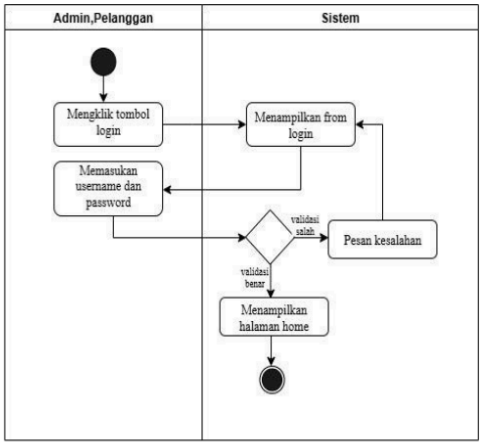


Figure 2. Login Activity Diagram

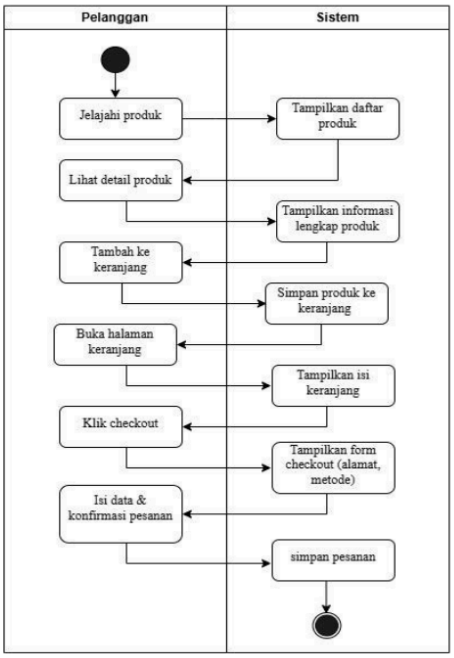


Figure 3. Ordering Activity Diagram

The subsequent graphic illustrates the login sequence diagram, detailing the interaction between the user and the system, commencing with access to the login menu, followed by entering the email and password, and culminating in the validation procedure. If the data is accurate, the system displays the dashboard; if it is inaccurate, an error message is displayed. The following is the sequence diagram illustrating the login procedure of the sales information system.

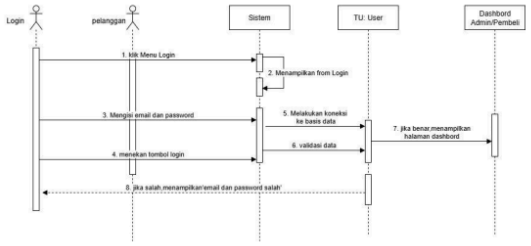


Figure 5. Login Sequence Diagram

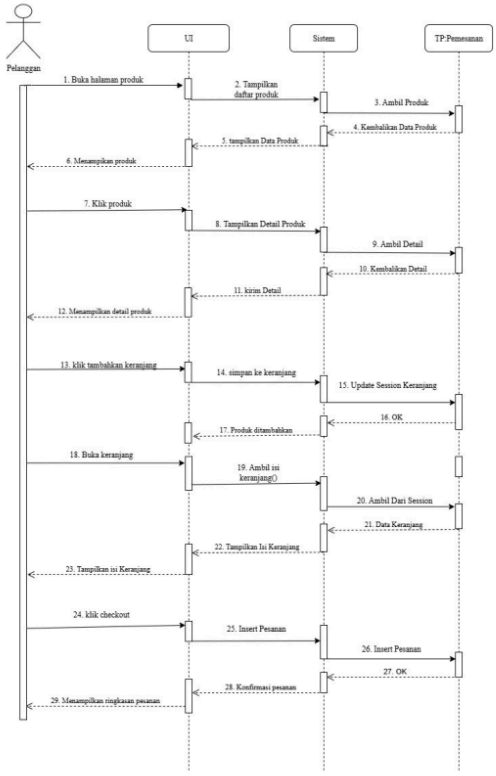


Figure 6. Ordering Sequence Diagram

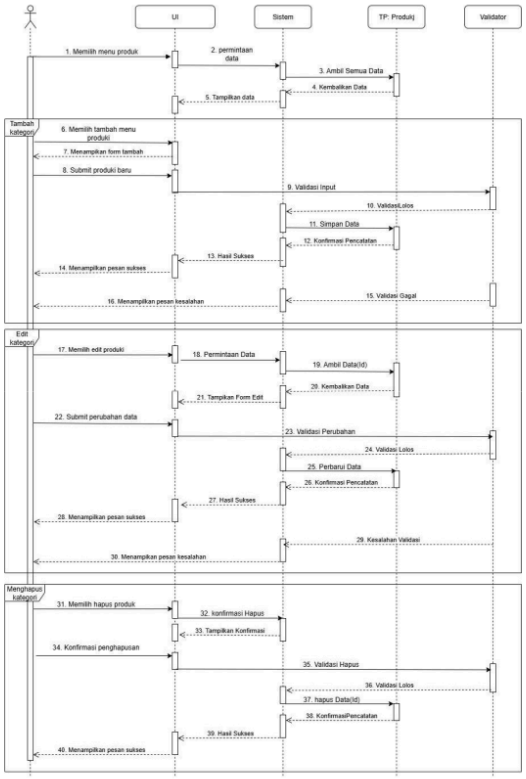


Figure 7. Sequence Diagram for Managing Products

The following graphic illustrates the class diagram, delineating the data structure and the interrelationships among the system's components. This design comprises multiple primary classes, including users, products, categories, transactions, payments, carts, transaction_details, payment_methods, and customer_reviews, all of which are interlinked to facilitate business activities.

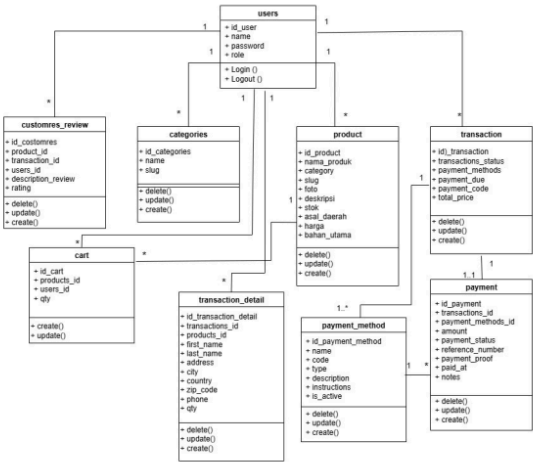


Figure 8. Class Diagram

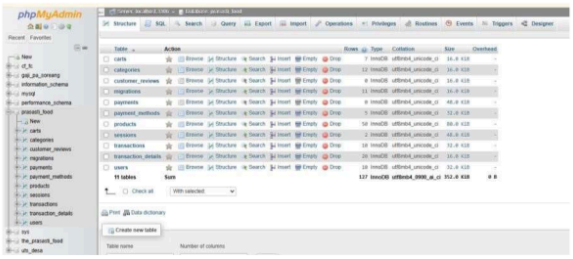


Figure 9. Database Table

Implementation Explanation on the Transaction Page

The transaction page includes a data search option. This feature employs the Subjective Filling System, which categorizes and retrieves information based on the subjects the user enters in the search field. Users can enter keywords relevant to a specific transaction, and the system will display only the data that matches those keywords. The subsequent code sample illustrates the segment of the search form utilized:



Figure 10. Transaction Data Search

The review search tool employs the Chronological Filling System, which organizes data in temporal sequence. User-entered keywords from the search form are processed to present reviews within the supplied timeframe recorded in the database. Consequently, the search results not only correspond with the keywords but are also arranged chronologically, facilitating users' ability to track review data over time.



Figure 11. Review data search

During implementation, the interface design is executed in accordance with the previously established design, facilitating user comprehension of the application's usage flow.

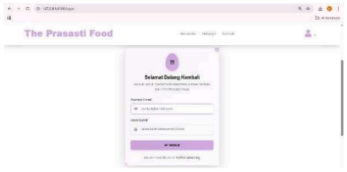


Figure 12. Sales Admin Login Page, Customer

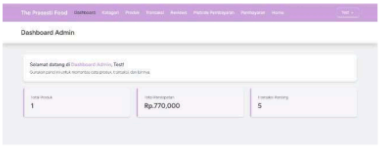


Figure 13. Dashboard page

The Shopping Page presents a catalog of accessible food items for consumers, with price filters and category selections to facilitate search. Each product is displayed with its pricing information and a "View Details" button for additional explanations.

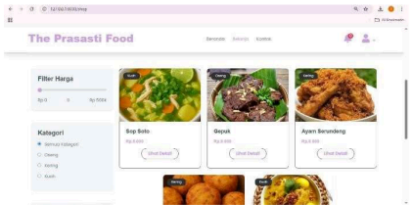


Figure 14. Shopping Page

The Payment List Page displays the transaction status for clients, grouped into Pending, Verification, Successful, and Failed. The table below includes the transaction ID, client name, payment method, amount, status, date, and a link to view details. This perspective helps the administrator oversee and validate customer payments.

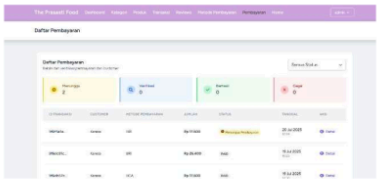


Figure 15. Payment List Page

The Products Page facilitates inventory management for available products, including product name, category, price, stock, origin, primary ingredients, and images. The administrator can add new items, modify current ones, or remove products as necessary on this site.

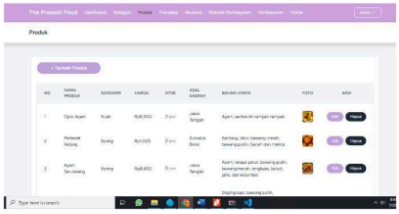


Figure 16. Product Page

CONCLUSION

The research indicates that adopting a web-based food ordering system at an MSME in Bandung has favorably influenced business management. This system has effectively supplanted traditional methods, accelerated service, reduced wait times, and enabled consumers to order at any time and from any location. The integrated transaction recording and inventory management tools enable the owner to monitor business circumstances in real time with enhanced precision. To fully leverage its advantages, the system can be enhanced with functionalities such as order customization, mobile application adaptation, and routine maintenance to ensure consistent performance, data security, and alignment with organizational requirements. Consequently, this solution enhances operational efficiency while facilitating the digitalization of MSMEs in the culinary industry.

REFERENCES

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