

Web-Based Catering Application With "Mix Menu" Feature

Siskha Handayani¹, Maidel Fani², Muhamad Sahrul Nizan³

^{1,2,3}Department of Informatics Engineering, Politeknik Negeri Batam, Batam, Indonesia
E-mail: siskha@polibatam.ac.id, maidelfani@polibatam.ac.id, nizan@polibatam.ac.id

Abstract

The rapid increase in information technology has provided benefits to society in various fields, including culinary businesses such as catering. One example is Aisyah Purple Kuliner Catering, which offers various foods such as tumpeng rice, market snack cakes and traditional snacks. However, until now, this catering business has not fully utilized information technology such as a catering marketplace, which can facilitate communication and transactions between buyers and catering entrepreneurs. Apart from that, the process of collecting data and recording orders is still done manually, which results in problems in reporting order data. Therefore, the solution offered is to use a website in the catering business, by building a web-based application that uses a marketplace concept and has a "Mix Menu" feature. This feature allows customers to choose the items they want to order themselves, which makes it more similar to the experience of eating at a restaurant or food stall. This application was developed using the waterfall model and has been tested. Test results using the black box test showed that all application functionalities were running according to their function.

Keywords: Application, Catering, Mix Menu, Web

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Corresponding Author:

Siskha Handayani

Email: siskha@polibatam.ac.id

1. Introduction

The shift in social culture occurred due to restrictions on direct communication due to the Covid Pandemic. Trading activities such as markets or crowds have shifted from the real world to the virtual world or social media(Purnomo, Widyaningsih, and Oktaviani 2022). This also affects the marketing process of MSME products which is carried out conventionally (offline). MSMEs must provide online sales services to keep up with existing changes(Zaenuri and Suswanta 2022).

Rapid advances in information technology contribute to society in various ways. Riyanto stated that technology plays a very important role and has a good influence on the business life of Indonesian people(Riyanto 2020). Apart from that, culinary businesses such as catering can be developed by utilizing the role of information technology. Catering is a business that provides services for ordering various types of food and drinks for certain events(Putra Gede Agung Yudi Dharma and Suputra 2017). Utilizing information technology in the catering business can help catering entrepreneurs in running their business, thereby facilitating communication and transactions between buyers and catering entrepreneurs.

'Aisyah Purple Kuliner' is a catering business owned by Mrs. Susan Lestari whose address is at OMA Batam Center Housing Block A3 No 8, Baloi Permai Village, Batam City District. This catering business has been operating for around 7 years, starting in 2016. The products offered by this catering business include tumpeng rice, market snack cakes, traditional snacks, and various kinds of brownies. Until now, the process of collecting data and recording orders is still done manually, causing problems in storing and organizing order data. Apart from that, the owner of this catering business does not yet have a website for promotional purposes. To market catering products, this is done through social media such as Facebook and WhatsApp, as well as by entrusting products to traders in the market.

Based on the problems above, an application was built with a marketplace concept. The marketplace application turns out to be more effective and makes it easier for customers



to search for catering information and place orders for catering products(Lutfiyah and Saryoko 2021). The application to be built is web-based. Based on the results of research conducted by Nurlaila, it was concluded that the use of web-based food ordering applications can help restaurants in terms of promoting and handling customer orders.(Nurlaila 2019). A web-based platform will help catering service providers to reach a wider market(Wisesa et al. 2021). The e-marketplace application can be an alternative solution for developing promotional and product marketing activities for MSMEs(Purnomo et al. 2022). In designing this application, all catering data can be stored properly and neatly summarized(Asyifa Rahmadila and Noprisson 2019). This catering application has the advantage of a feature called "Mix Menu", customers can create their own menu, meaning that apart from the menu (package) that has been provided by the trader, customers can also order or choose items (side dishes, vegetables) on the menu like a stall, restaurants and the like(Putra Gede Agung Yudi Dharma and Suputra 2017).

Besides this application can be used for promotions on the internet, sales and purchase transaction data that is stored properly in the database can be used for system development. This is in accordance with the conclusions of research conducted by Anugrah, namely a computerized data processing system that makes process data stored in a database.(Anugrah, Hatmoko, and Ramdhan 2022). Existing data can be used for decision making and company planning. It is hoped that the existence of this catering application can help small businesses in carrying out transactions with their customers. Apart from that, customers are also satisfied with the freedom given by the application in choosing their order menu.

2. Method

Data collection technique

The data collection technique used is a qualitative approach. According to Sugiyono, researchers in qualitative research are key instruments(Sugiyono 2011). The following are data collection techniques using a qualitative approach, which include:

Interview

Interviews were conducted with catering owners to obtain complete information regarding activities related to the food ordering process.

Observation

To make observations, researchers visited the catering location directly and observed the condition of the place, ordering procedures, and the food production process. Observation guidelines are prepared to provide a list of activities that can be observed during observations.

Literature review

Data collection is done through library research by reading information and collecting data from written sources such as websites, scientific journals, theses, books and other sources that can be relied upon as references in creating applications.

Research Stages

This research follows the waterfall software development model, where the creation of a catering marketplace application on a website platform is carried out in stages and each stage must be completed before proceeding to the next stage. This model describes the sequential flow of the software development process from top to bottom(Amelia, Hendi Suhendi, ST 2020). The stages that the author went through include planning, analysis, design, implementation, testing and maintenance, presented in the block diagram shown in Figure 1.

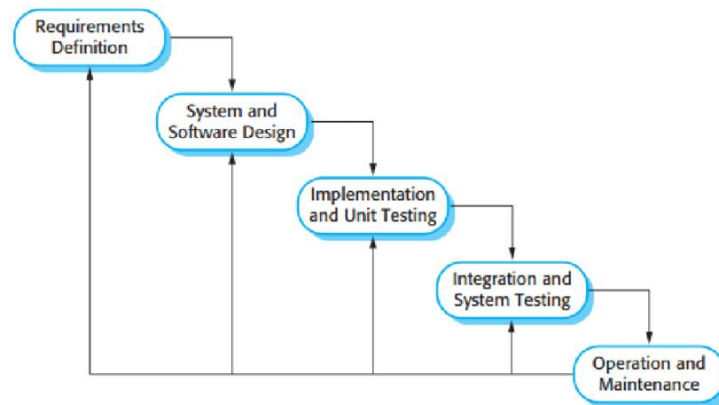


Figure 1. Waterfall diagram

Source: Ian Sommerville in (Amelia & Suhendi, 2020)

The following is a description of the stages carried out in creating this e-marketplace catering application, namely:

Requirements Definition

At the beginning of creating this application, the first stage was carried out by collecting appropriate software requirements to meet user needs. This step involves direct interviews with application users.

Systems and Software Design

At this design stage, an application design is created using UML diagrams and UI/UX. This design will be used as a guide for the next stage, namely implementation.

Implementation and Unit Testing

At the implementation stage, a comprehensive application creation process is carried out which includes typing program code (coding) using Visual Studio Code. The design used at this stage is the result of the previous design stage.

Integration and System Testing

After the implementation phase is complete, the next step is the testing phase. The purpose of this stage is to check and guarantee that all functions of the application are running correctly and according to their function.

Operation and Maintenance

This stage is an application maintenance and development process that is carried out to maintain and improve application performance so that it can run optimally according to user needs.

3. Results and Discussion

This research develops a catering application which aims to help catering businesses in promoting their food menus. The application developed has a "Mix Menu" feature, meaning buyers can freely choose and mix their menus. The application creation in this research uses the waterfall design structure model. The stages of this model are planning, analysis, design, implementation, testing and maintenance. The Waterfall method prioritizes needs analysis at an early stage. Apart from that, each stage is checked first before moving on to the next stage (Nurlaila 2019). Several stages have been completed starting from data collection carried out through interviews, observation and literature study. After carrying out an analysis based on the results of this data collection, it can be identified that this application consists of two users, namely the catering owner and the customer.

Requirements Definition

This catering application is designed to help catering owners promote products and generate sales reports. Sellers and buyers can make transactions with this application. Apart from that, in this application there is a "Mix Menu" feature where buyers can determine or choose their own food menu mix or choose their side dishes independently. Table 1 shows the functional needs of users in catering applications. The functional requirements of the application are used in designing the system.

Table 1. Application Functional Requirements

Actor	Need	Description
Catering owner	Change profile	Users can change profile data such as name, photo, etc.
	Change password	Users can change their password
	Manage the food menu	Users can edit food menus such as food photos, prices, food names, etc
	Look at the food menu	Users can see the food menu in the application
	Confirming the order	Users can confirm orders from customers
	Delivery status	Users can determine the order delivery process
	Print sales reports	Users can print sales reports
Customers	Manage users	Users can add, change and delete customer data
	Registration	Customer registration in the application
	Change profile	Users can change profile data such as name, photo, etc.
	Change password	Users can change their password
	View menus	Users can see the existing food menu
	Select the "Mix menu" menu	Users can add items (side dishes) to food, such as when ordering tumpeng there is a rice item and a choice of items on the tumpeng.
	Add and subtract orders	Users can add or subtract from the food menu to be ordered
	Add notes	Users can add notes
	Place an order	Users can place food orders
	Confirming the order	Users can see order confirmation
	Print invoices	Users can print purchase invoices
	Upload proof of payment	Users can upload proof of payment
	Delivery status	Users can see the order delivery status
	View order history	Users can view order history

Source: Data Processing

Systems and Software Design

The following is a draft use case diagram from Aisyah Purple Kuliner.

Use Case diagrams catering application

Use cases which is designed to describe the interaction between 2 actors, namely the catering owner and the customer/buyer with the catering application being developed. Figure 2 is a use case when the catering owner and customer carry out food ordering transactions.

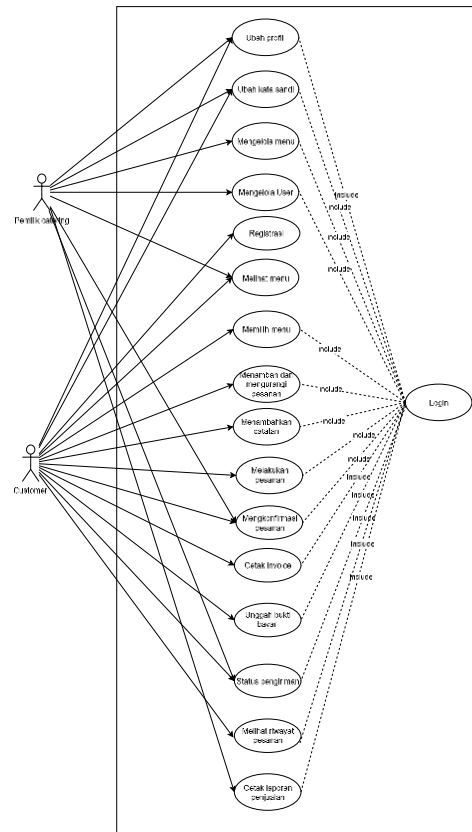


Figure 2. Use Case Diagram
Source: Data Processing

a. Activity Diagrams

Activity diagrams have the meaning that they focus more on describing business processes and the sequence of activities in a process. Used in business modeling to show the sequence of business process activities. The admin activity diagram for the Aisyah Purple Kuliner catering application can be seen in Figure 3 as follows.

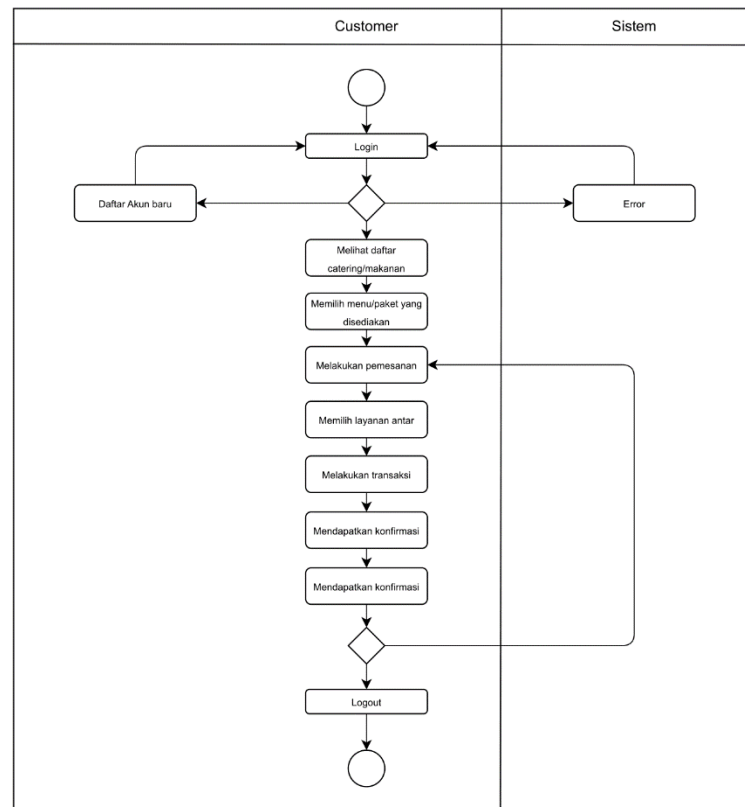


Figure 3. Customer Activity Diagram
Source: Data Processing

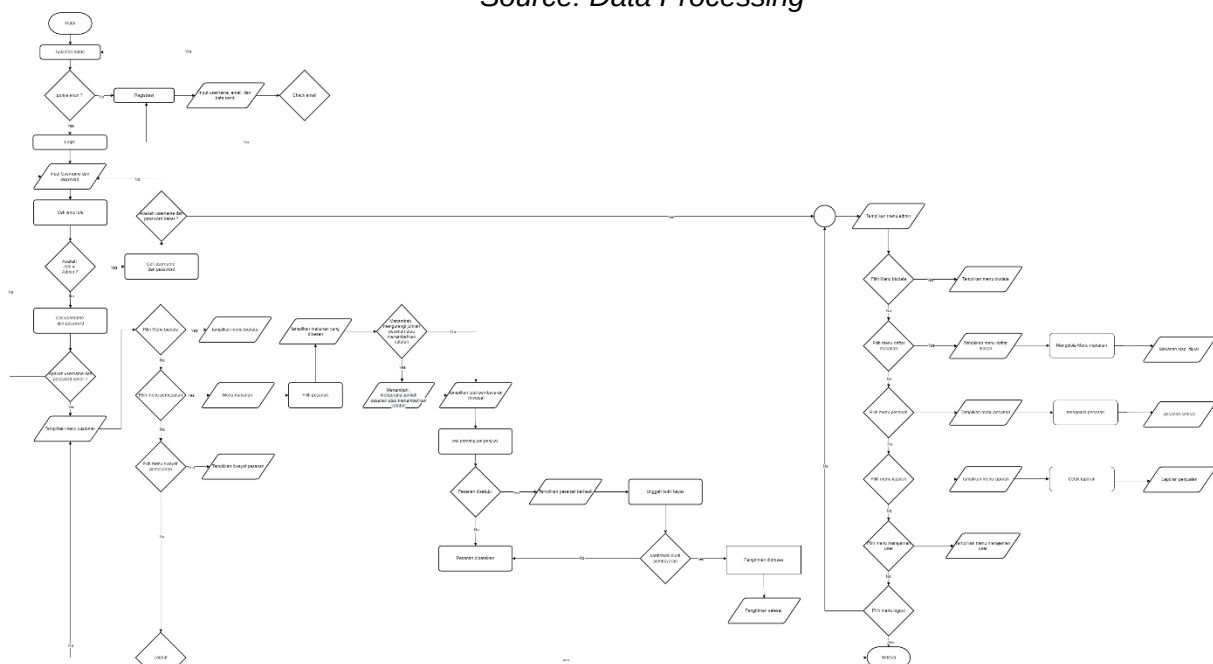


Figure 3. Flow Chart
Source: Data Processing

b. Implementation

The implementation stage is coding for the application. The first page is the dashboard page as shown in Figure 4. The dashboard page can be visited by anyone without needing to log in. If you want to make an order, you will be directed to log in. But if you haven't registered yet, you will be directed to register an account.

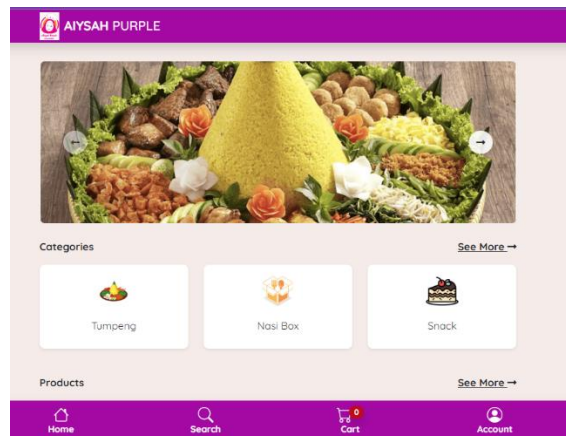


Figure 4. First page of the website
Source: Data Processing

An important feature in this application is the mix menu where buyers can choose their own food. In this application system, prices will automatically be totaled based on the menu choices ordered by the buyer. The Mix menu page display can be seen in Figure 5.

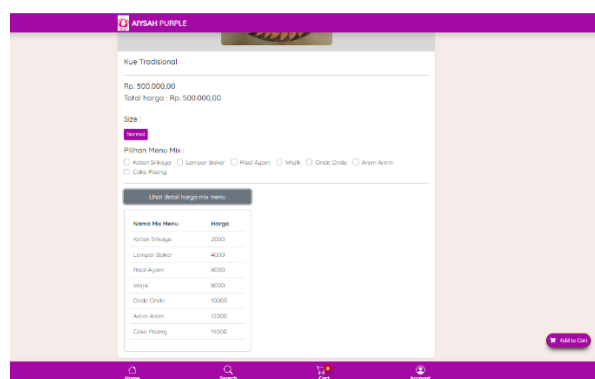


Figure 5. Mix menu feature
Source: Data Processing

Figure 6 below is the catering admin/owner dashboard. Admins can manage all the features in the application.

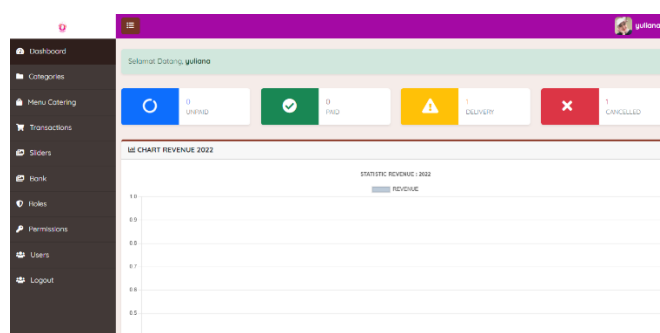
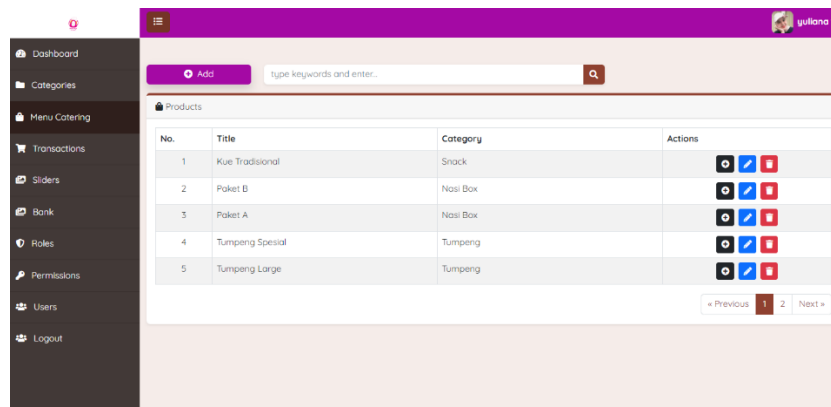


Figure 6. Admin Dashboard
Source: Data Processing

Catering owners only need to input product details into the application and provide product descriptions, and after that wait for customers to purchase goods through the application. This means that catering owners don't have to worry about marketing their products(Hengki Juliansa, Ahmadi 2022).Figure 7 is a catering menu page which contains the Add Menu, Search Menu, Table Title Menu, Category Name, Action (Edit, Delete, Add Image Product) features.



No.	Title	Category	Actions
1	Kue Tradisional	Snack	[Edit] [Delete] [Add Image]
2	Paket B	Nasi Box	[Edit] [Delete] [Add Image]
3	Paket A	Nasi Box	[Edit] [Delete] [Add Image]
4	Tumpeng Special	Tumpeng	[Edit] [Delete] [Add Image]
5	Tumpeng Large	Tumpeng	[Edit] [Delete] [Add Image]

Figure 7. Catering Menu
Source: Data Processing

c. Testing

The application that has been designed is then tested to find out whether it is in accordance with the initial design. Testing was carried out using a black box test. Table 2 presents the results of testing the application.

Table 2. Blackbox Testing Results

No	Test Cases	Condition	Results
1.	Login (catering owner)	Users (catering owners) can log in with the specified username and password.	Valid
2.	Change profile	Users (catering owners) can change profile data such as name, photo, etc.	Valid
3.	Change password	Users (catering owners) can change their password	Valid
4.	CRUD Customer	Users (catering owners) can add, change and delete customer data	Valid
5.	Manage the food menu	Users (catering owners) can edit food menus such as food photos, prices, food names, etc	Valid
6.	Look at the food menu	Users (catering owners) can see the food menu in the application	Valid
7.	Confirming the order	Users (catering owners) can confirm orders from customers	Valid
8.	Delivery status	Users (catering owners) can determine the order delivery process	Valid
9.	Print sales reports	Users (catering owners) can print sales reports	Valid
10.	Catering owner dashboard	The process displays the catering owner's dashboard page which can see statistics on incoming orders and sales	Valid
11.	Registration	Customer users can register a username and password	Valid
12.	Login (Customer)	Customer users can log in with the registered username and password	Valid
13.	Customer dashboard	The process displays a customer dashboard page that can view order history	Valid
14.	View menus	Users can see the existing food menu	Valid
15.	Select menus	Users can choose the food menu to order	Valid
16.	"Mix menu"	Users can add items (side dishes) to food, such as when ordering tumpeng there is a rice item and a choice of items on the tumpeng.	Valid
17.	Add and subtract orders	Users can add or subtract from the food menu to be ordered	Valid
18.	Add notes	Users can add notes	Valid
19.	Place an order	Users can place food orders	Valid
20.	Confirming the order	Users can see order confirmation	Valid
21.	Print invoices	Users can print purchase invoices	Valid

Source: Data Processing

Based on the test results in Table 2, it can be seen that the catering application being built is in accordance with the initial design. All functional requirements designed for this catering application work according to the conditions given in the test. The application created can now be used to promote catering businesses. This is supported by the results of Sigit Purnomo's research which states that e-marketplace applications can be an alternative solution for developing product promotion and marketing activities.(Purnomo et al. 2022).

4. Conclusions

The application created can now be used to promote catering businesses. System functionality testing provides results that the application runs according to its function. Catering owners can now input food menus and prices, print order reports, and carry out payment confirmation transactions. Apart from that, the application can also help buyers/customers in ordering food with the "Mix Menu" feature. This feature gives buyers the freedom to choose their own menu items.

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