

## Design and Development of an Information System for Aneka Kue Store in Padangsidempuan

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### ABSTRACT

This abstract discusses various cakes, the result of culinary artistic creations that combine flavor, texture, and aesthetics in diverse forms and concepts. These cakes range from traditional cakes to modern cakes, as well as fusion creations that incorporate cultural elements and contemporary food technology. Each type of cake reflects specific characteristics, such as local ingredients, production techniques, and diverse presentation methods. Traditional cakes often use natural ingredients such as rice flour, coconut, and palm sugar, while modern cakes utilize innovative ingredients such as chocolate, cream, and cheese combined with the latest baking technology. This research also highlights the importance of innovation in recipe development, such as substituting healthier ingredients, using organic ingredients, and adopting technologies like 3D printing for more complex cake designs. Furthermore, the role of cakes in various celebrations and traditions is discussed as symbols of local culture and identity. Cakes are valued not only for their taste but also for their aesthetic value, which can enhance their appeal, both as personal treats and as commercial products. Thus, this study provides in-depth insight into the diversity of cakes from various perspectives, including economics, culture, and creativity, as well as their potential for development to meet the needs of the ever-expanding culinary market.

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## 1. INTRODUCTION

Cakes are a culinary creation that have become an integral part of human life. Cakes come in a variety of shapes, flavors, and textures, reflecting the creativity and diversity of cultures around the world [1]-[2]. In every tradition, cakes often have symbolic meaning, used to celebrate special occasions such as birthdays, weddings, or other holidays. Furthermore, cakes are a popular culinary product as a daily snack or as a regional souvenir [3]. The rapid development of the culinary industry has driven innovation in cake making, both in terms of ingredients, techniques, and design. Traditional cakes that use local ingredients such as rice flour, coconut, and brown sugar are now being transformed into more modern cakes with the addition of new ingredients such as chocolate, cheese, and cream. Furthermore, modern cakes are also influenced by local culture, creating unique and interesting flavor combinations[4]-[5]. Furthermore, technological advances have simplified the

cake-making process, allowing for more artistic and complex designs. Healthy lifestyle trends have also encouraged innovations in cakes made from organic, gluten-free, or low-sugar ingredients, making them accessible to a wide range of people, including those with special dietary requirements [6]-[8]. This introduction aims to provide an initial overview of the diversity of cakes, both in terms of type, cultural value, and ongoing innovation. Understanding the potential and creativity in cake making is expected to open up new opportunities. dalam dunia kuliner yang terus beradaptasi dengan selera dan kebutuhan masyarakat modern.

## 2. RESEARCH METHOD

This research uses qualitative and quantitative approaches to analyze cake diversity in terms of types, raw materials, manufacturing techniques, and consumer preferences. The following methods were used in this study:

### 1. Literature Review

Researchers collected secondary data from various sources such as books, scientific journals, culinary articles, and historical documents. This study aims to understand the cultural background, types of cakes, as well as technological developments and innovations related to cake making.

### 2. Field Observations

Observations were conducted at several cake production sites, such as traditional markets, modern cake shops, and small and medium enterprises (SMEs). Researchers observed the cake-making process, raw material use, manufacturing techniques, and presentation methods. The data obtained were used to compare the differences between traditional and modern cakes.

### 3. In-Depth Interviews

Interviews were conducted with culinary industry players, such as traditional cake makers, professional pastry chefs, and cake entrepreneurs. These interviews aimed to gather information about manufacturing techniques, recipe innovations, and challenges in the cake industry.

### 4. Consumer Survey

The survey was conducted using a questionnaire distributed to consumers from various backgrounds. This survey aims to identify consumer preferences regarding taste, texture, price, and aesthetic factors when choosing cakes.

### 5. Cake Making Experiments

Researchers also conducted experiments by trying several traditional and modern cake recipes. The goal was to directly understand the differences in making techniques and the final results of each type of cake.

### 6. Data Analysis

The collected data was analyzed using descriptive methods to explain the diversity of cakes in detail. Quantitative analysis was conducted on the survey results to determine consumer preference patterns, while qualitative analysis was used to understand the cultural context and innovation.

With this method, the research is expected to provide a comprehensive overview of various cakes, from their characteristics to their potential as culinary products with cultural and economic value

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### 3. RESULTS AND DISCUSSION

Based on our research, we uncovered several important findings regarding cake diversity, including types, ingredients, manufacturing techniques, and consumer preferences. The following are the results and a detailed discussion:

#### 3.1 Design

Design is the process of planning and creating a plan to produce a specific product, system, or solution that meets a predetermined need or goal. More broadly, design involves creativity, analysis, and the structured arrangement of elements to achieve functional, aesthetic, and effective results. Design can be applied in various fields, such as product design, graphic design, software design, or architectural design.

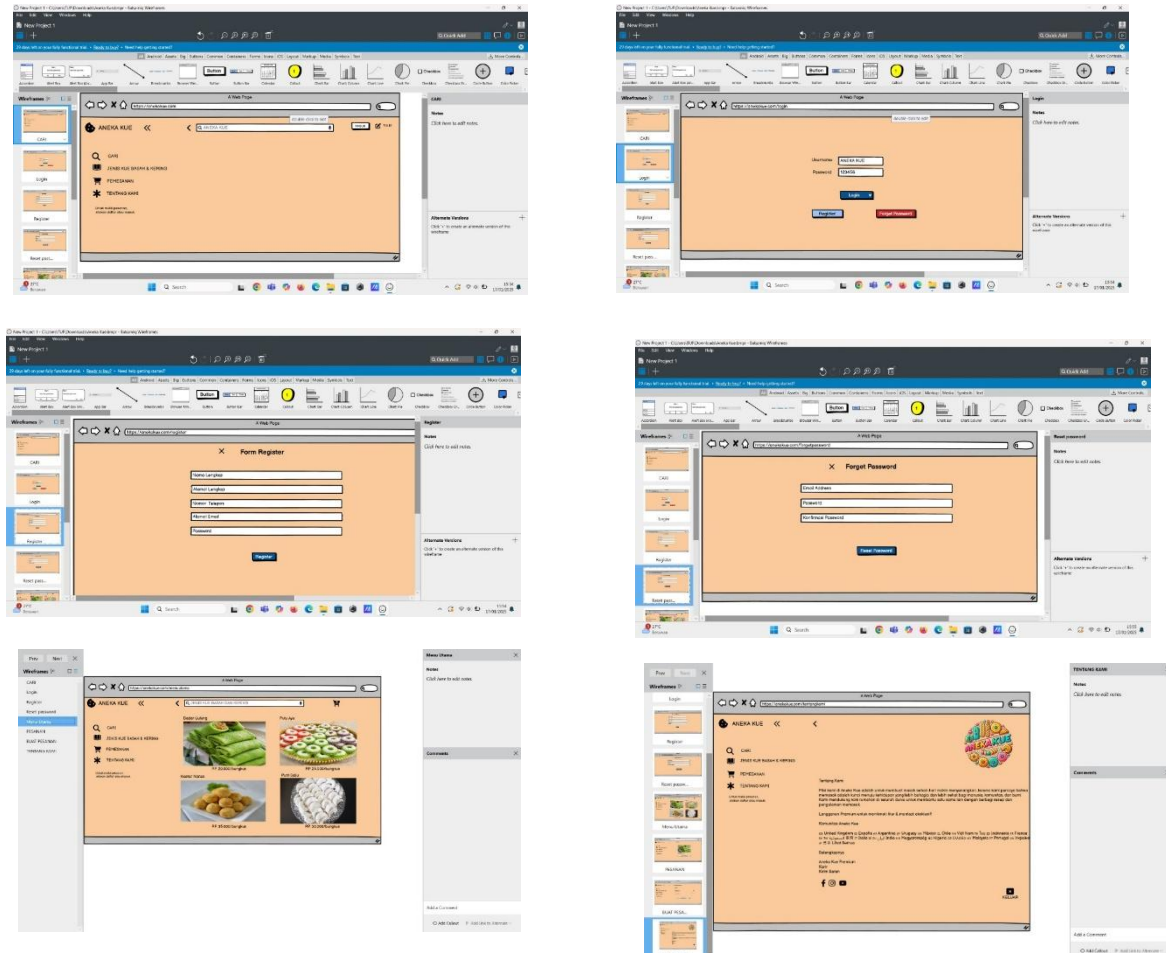


Figure 1. Design Application

#### 3.2 Implementation

Implementation is the process of carrying out or implementing a previously conceived plan, design, or strategy. Implementation involves turning an idea into a tangible or operational form, whether in the form of a product, system, or service. This process encompasses various stages, such as execution, testing, and adjustments to ensure that the final result meets the desired objectives. Implementation is usually the next step after the design process is complete, aiming to ensure that the design functions optimally. These two concepts are interrelated, with design serving as the initial foundation for generating solutions, and implementation responsible for bringing that design to life.

#### 1. Admin Login Page Display

This page allows users or administrators to log in to the system by entering their username/email address and password. It usually includes a "Login" button and a "Forgot Password" option to reset the password.

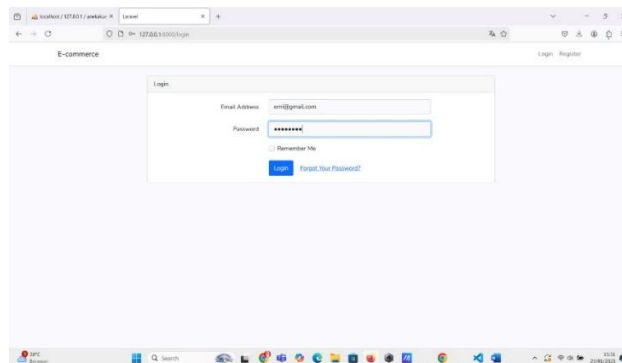


Figure 2. Login

## 2. Register

This page is used to register a new account. Users will be asked to enter information such as their full name, email address, phone number, username, and password. There's also a "Submit" button to complete the registration process.

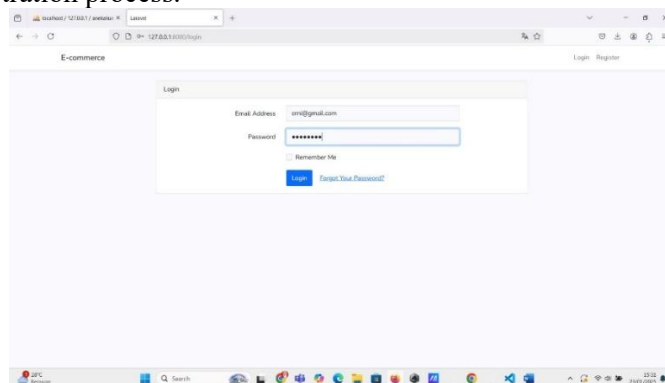


Figure 3. Register

## 3. Create Product

This is a page only accessible to admins to add new products. The form includes the product name, description, category, price, stock, and image upload.

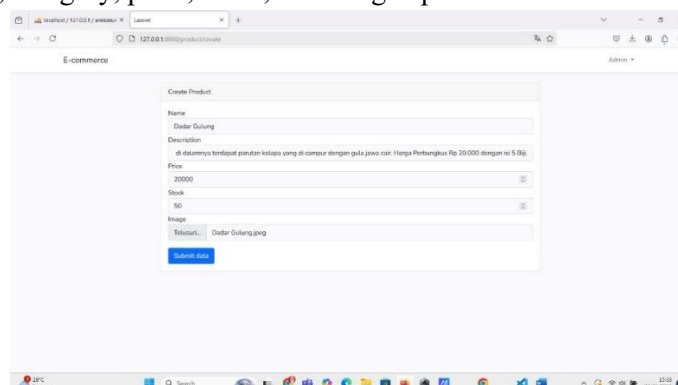


Figure 4. Create Product

#### 4. Order Page

This page is used by admins to view a list of user orders. Admins can view order details, payment status, and manage shipping statuses (e.g., "Packed," "Shipped," or "Completed").

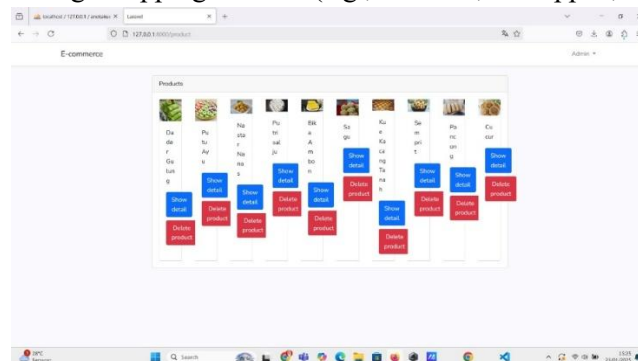


Figure 5. Order Page

#### 5. Confirm Payment

This page allows users to upload proof of payment after completing a transaction. There's usually a file upload form and a button to confirm payment.

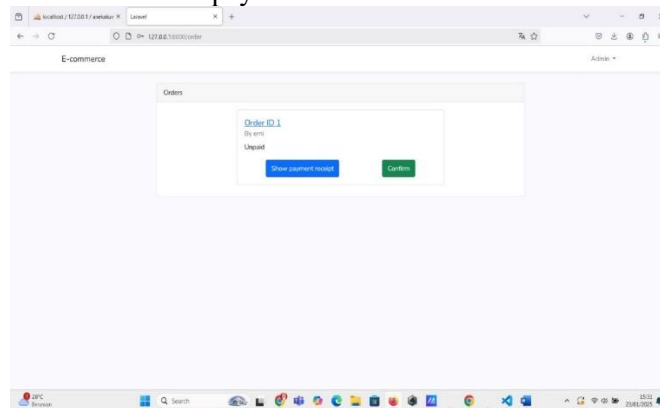


Figure 6. Confirm Payment

#### 6. Order Page View

This page is used to complete a purchase after selecting a product from the cart. Users fill in information such as their shipping address, shipping method, and payment method.

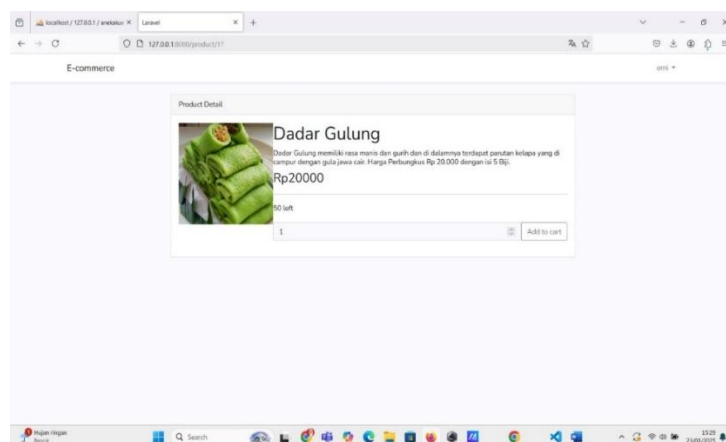
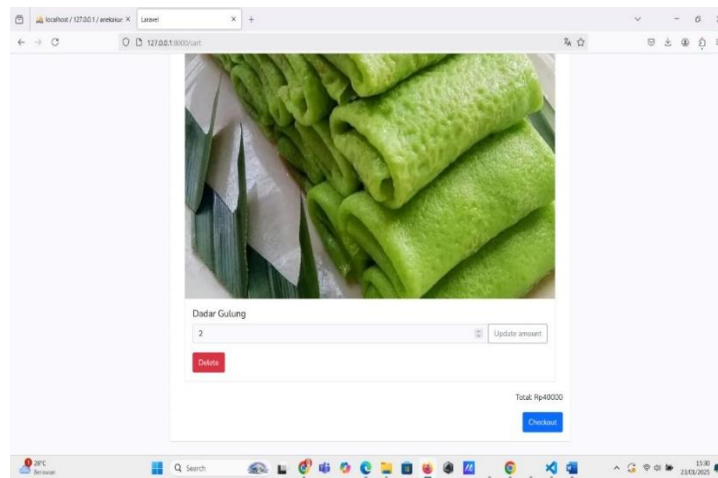


Figure 7. Order Page View

## 7. Cart

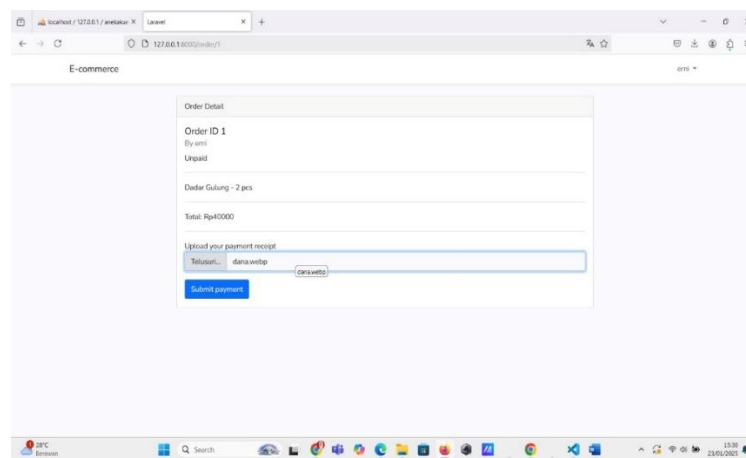
This page displays a list of products the user has selected for purchase. The user can change the quantity of products, remove items, or proceed to the order page..



**Figure 8. Cart**

## 8. Payment

This page displays the total amount to be paid, including shipping details and discounts (if any). The user selects a payment method and confirms the transaction..



**Figure 9. Payment**

## 4. CONCLUSION

This study examines various aspects related to cake diversity, including cake types, raw materials, manufacturing techniques, and consumer preferences. The results show that traditional and modern cakes have their own distinctive characteristics that complement each other. Traditional cakes prioritize natural ingredients and manual processes, while modern cakes prioritize innovation and the use of a wider variety of raw materials and more sophisticated manufacturing technologies. Furthermore, consumer preferences are influenced by factors such as taste, appearance, and cultural nostalgia. Innovation in the cake industry, both in terms of ingredients and design, provides significant opportunities for the development of the culinary market. The cake industry also has significant economic potential, especially with the right marketing strategies and the use of technology.

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