

Bakery Shop Cake Customization Management System

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Abstract - In the current digital age, customers expect personalized services even in traditional bakery businesses. Customized cakes are widely demanded for occasions such as birthdays, weddings, and anniversaries. However, many small bakery shops still depend on manual order-taking methods, which often result in errors, miscommunication, and loss of order details. This research paper proposes a Bakery Shop Cake Customization Management System in which customers can visit the bakery and customize cakes directly using a computer-based system. The system allows customers to select cake weight, flavors, design, occasion, message, and required delivery date. All order details are stored digitally and can be accessed by bakery staff easily. The proposed system improves order accuracy, reduces manual effort, saves time, and enhances customer satisfaction. This system is especially suitable for small and medium-scale bakery shops that want to modernize their operations without high investment.

Keywords: Bakery Management System, Cake Customization, Offline Ordering System, Web Application, Order Management.

I. INTRODUCTION

The bakery industry is an important part of the food sector and plays a vital role in social celebrations such as birthdays, weddings, and anniversaries. In recent years, customer preferences have shifted from ready-made cakes to customized cakes that meet personal requirements. Customers now expect cakes with specific flavors, designs, names, and messages. Despite this increasing demand for customization, many bakery shops still use manual order-taking processes such as written registers and verbal communication. These traditional methods are time-consuming and prone to errors. Important details like cake weight, spelling of names, or delivery dates may be recorded incorrectly. With the growth of information technology, computerized systems have been introduced to automate such business processes. This research focuses on an offline cake customization management system where customers place orders using a computer available in the bakery shop. This approach combines personal interaction with digital accuracy. Manual cake order management creates several issues for small bakery shops. Errors in cake weight, incorrect spelling of names and wrong delivery dates are

common problems. Customers may feel uncertain about whether their requirements are recorded correctly. Additionally, manual record-keeping makes it difficult for bakery owners to search old orders, track current orders, and manage multiple bookings on the same date. These problems can lead to customer dissatisfaction and business loss. Therefore, there is a need for a computerized cake customization management system that ensures accuracy and efficiency.

II. PROBLEM STATEMENT

Manual cake order management creates several issues for small bakery shops. Errors in cake weight, incorrect spelling of names, and wrong delivery dates are common problems. Customers may feel uncertain about whether their requirements are recorded correctly.

Additionally, manual record-keeping makes it difficult for bakery owners to search old orders, track current orders, and manage multiple bookings on the same date. These problems can lead to customer dissatisfaction and business loss. Therefore, there is a need for a computerized cake customization management system that ensures accuracy and efficiency.

III. OBJECTIVES OF THE SYSTEM

The main objectives of the proposed system are:

- To provide a digital cake customization facility inside the bakery
- To reduce errors caused by manual order taking to store customer and order details securely
- To improve operational efficiency of bakery staff
- To enhance overall customer satisfaction

IV. LITERATURE REVIEW

Various studies have been conducted on cake ordering and customization systems. The Dec-O-Cake Ordering Customizing Cake System emphasizes the use of software applications to simplify cake customization and order management. Other research related to e-commerce cake shop systems highlights features such as cake size selection, flavors choice, personalized messages, and order tracking. Most

existing systems focus on online ordering. However, small bakery shops may not prefer fully online systems due to cost and technical limitations. This research adapts similar concepts for offline, in-shop usage, making it affordable and easy to use for small bakery businesses.

V. PROPOSED SYSTEM DESCRIPTION

The proposed system is a computer-based application installed in the bakery shop. Customers can customize their cakes by selecting category, weight, flavors, design, occasion, message, and required delivery date using the system interface. Once the order is confirmed, all details are stored digitally. Bakery staff can view the orders anytime and prepare cakes according to exact customer requirements. This reduces confusion and improves work efficiency.

VI. SYSTEM ARCHITECTURE

The system architecture consists of the following components:

- Customer Interface
- Admin Interface
- Database

The customer interacts with the system to customize and place cake orders. The admin manages cake designs, views orders, updates order status, and maintains records. The database stores all order-related information securely.

VII. SYSTEM MODULES

The Bakery Shop Cake Customization Management System consists of the following modules:

i. Customer Module:

This module allows customers to customize cakes digitally inside the bakery shop. Customers can select cake category and design, choose cake weight and flavors, select the occasion, enter a personalized message on the cake, and choose the required delivery date. This ensures that customer requirements are recorded accurately.

ii. Admin Module:

The admin module is used by bakery staff or owner to manage the system. The admin can add and manage cake designs and categories, view customer orders, track delivery dates, and maintain order records. This module helps in smooth management of bakery operations.

iii. Order Management Module:

This module manages all customer orders. It stores complete order details and helps track pending and completed orders. It also helps in managing multiple orders scheduled for the same date.

iv. Database Management Module:

This module stores customer details, cake customization information, and order records securely. It allows quick access to data and maintains data accuracy.

VIII. METHODOLOGY

The system is developed using the Waterfall Model, which includes requirement analysis, system design, implementation, testing, and maintenance. This model is suitable for small projects as it provides a structured and systematic development approach.

IX. ADVANTAGES OF THE PROPOSED SYSTEM

Reduces manual errors
Improves order accuracy
Saves time and effort
Easy order tracking

Enhances customer satisfaction

Suitable for small and medium-scale bakery shops

X. APPLICATION

Small bakery shops

Medium-scale bakery businesses
Home-based baking businesses

XI. FUTURE SCOPE

The system can be enhanced further by adding online ordering facilities, online payment integration, mobile application support, and delivery tracking features. These enhancements can help expand the business reach.

XII. CONCLUSION

The Bakery Shop Cake Customization Management System provides an effective solution for managing customized cake orders in bakery shops. By replacing manual processes with a computerized system, the bakery can improve efficiency, accuracy, and customer satisfaction. The system is practical, cost-effective, and suitable for diploma-level projects.

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