

Sweet Heaven Bakery Shopping System

Eaint Po Po Kyaing, Yoon Nadi Lwin

Student, 5th Year, B.C.Sc.

University of Computer Studies, Hinthada

Supervised by

Thin Zar Ko Ko

Faculty of Computer Science

University of Computer Studies, Hinthada

Abstract. This project outlines the development of a modern, artisanal bakery shop designed to bridge traditional baking techniques with contemporary consumer preferences. The venture focuses on producing high-quality, preservative-free baked goods ranging from sourdough breads to specialty pastries using locally sourced, organic ingredients to appeal to health-conscious and premium markets. To ensure operational efficiency and market viability, the project integrates a robust business strategy combining an inviting brick-and-mortar storefront with a streamlined digital ordering platform for local delivery and catering. By analyzing market demand, establishing reliable supply chains, and implementing sustainable waste-reduction practices, the project aims to cultivate a loyal local customer base while maintaining strong financial profitability and scalability in a competitive food and beverage sector.

Keywords: bakery management, point of sale, order management, product catalog, sales reporting, customer relationship management, stock management, payment gateway integration.

INTRODUCTION

Food goes beyond simple nutrition to act as a universal language of comfort and connection, with baking transforming raw ingredients into memorable sensory experiences. Sweet Heaven Bakery Shop is designed as a modern, community-focused bakery dedicated to delivering fresh, artisanal baked goods. To meet growing consumer demand for authentic, quality ingredients over mass-produced goods, the bakery blends traditional baking techniques with innovative flavor profiles, including health-conscious options. Beyond culinary quality, the project relies on a rigorous strategic framework that evaluates market feasibility, supply chain efficiency, and financial sustainability. Ultimately, Sweet Heaven Bakery Shop aims to be more than a retail storefront; it is built to serve as a warm, beloved neighborhood anchor.

PROBLEM

Traditional retail and administrative operations at local bakery shops often rely on manual, paper-based, or fragmented software systems, leading to operational inefficiencies and revenue loss. Managing daily inventory such as raw ingredients and perishable baked goods manually frequently results in inaccurate stock levels, unexpected ingredient shortages, or product wastage due to unmonitored expiration dates. Additionally, taking customer orders, processing custom cake requests, and managing point-of-sale (POS) transactions manually slows down checkout times during peak hours, increasing customer wait times and the likelihood of order errors. Furthermore, without an integrated digital ordering and sales tracking system, business owners struggle to generate real-time financial reports, analyze top-

selling products, or track customer preferences effectively. This lack of automated data management hinders effective decision-making, supply chain optimization, and business scaling. Therefore, a comprehensive, user-friendly Bakery Management System is essential to streamline inventory control, automate order processing, improve customer satisfaction, and provide clear data analytics for efficient business management.

APPROACH

The system has three main roles: Admin, Cashier and Customer. The platform establishes secure operational privileges for Administrators, Cashiers, and Customers to maintain system integrity, transaction accuracy, and operational efficiency. As shown in Figure 1, the Admin must log in using an email and password to access system functionalities. Upon successful authentication, the Admin can view the dashboard, orders, customize orders, reviews, revenue reports, feedback, and the online store. The Admin also has elevated privileges to manage products and categories, discounts, payments, user accounts, export revenue reports to Excel, and print the revenue dashboard. After completing their tasks, the Admin can log out to terminate the session. This structured workflow ensures that all administrative operations remain secure and protected behind credential verification. Furthermore, centralized access control streamlines daily store management while maintaining full administrative oversight across all system features.

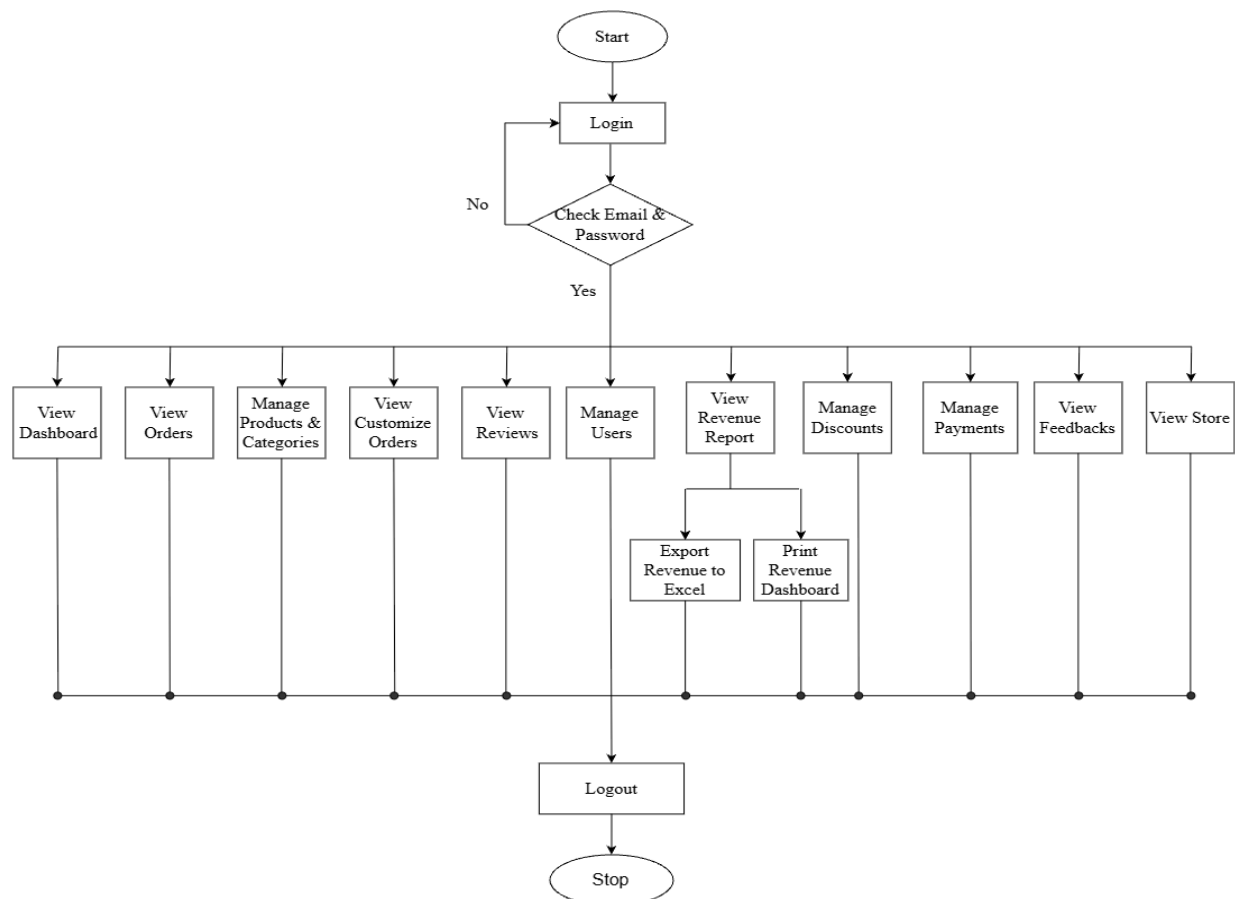


Figure 1: System Flow Diagram for Admin

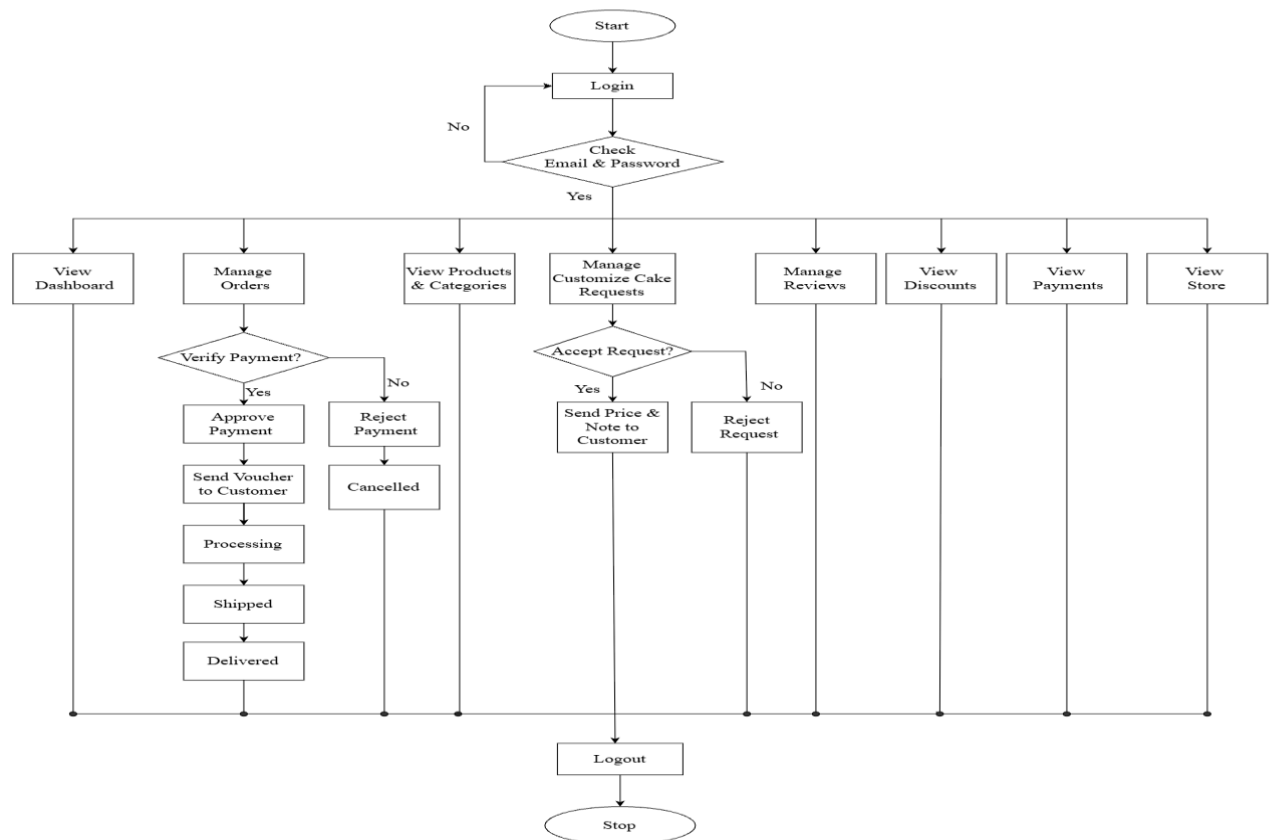


Figure 2: System Flow Diagram for Cashier

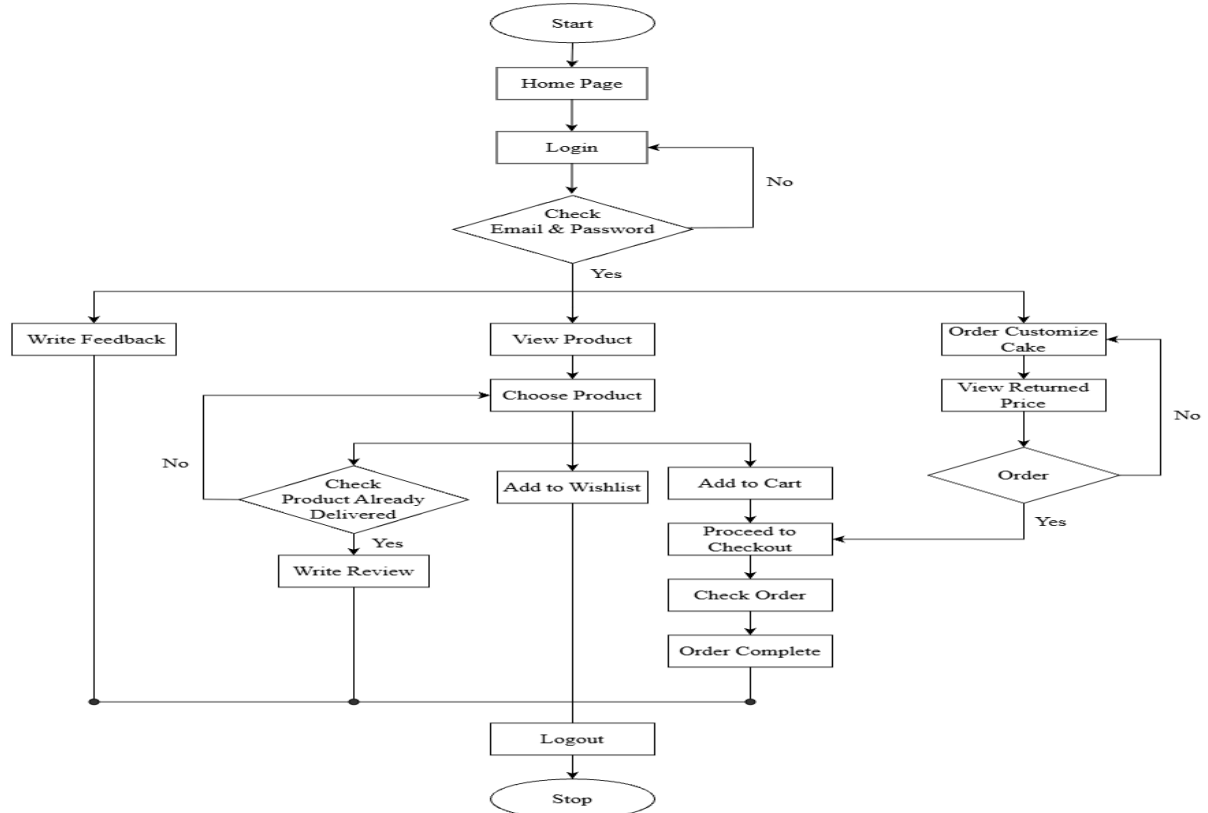


Figure 3: System Flow Diagram for Customer

As shown in Figure 2, the Cashier must also log in using an email and password to access the system. Upon logging in, the Cashier can view the dashboard, products and categories, discounts, payments, and the store. Cashier also can manage reviews. Unlike the Admin, the Cashier handles direct fulfillment processes: they verify payments to approve orders (sending vouchers and updating statuses through Processing, Shipped, and Delivered) or reject invalid payments (setting status to Cancelled). Additionally, the Cashier manages customized cake requests by accepting them (sending price and notes to the customer) or rejecting them. The Cashier terminates their session by logging out.

As shown in Figure 3, the Customer accesses the system starting from the Home Page and logs in via email and password verification. Once authenticated, the Customer can perform various actions including submitting feedback, browsing products, and requesting customized cake orders. When viewing products, Customers can choose items to add to their wishlist or shopping cart or write product reviews (restricted to items verified as delivered). For custom cakes, Customers can request a design, view the returned price quote, and confirm the order. Cart items and accepted custom orders proceed to checkout, order review, and completion. Finally, the Customer can log out to end their session.

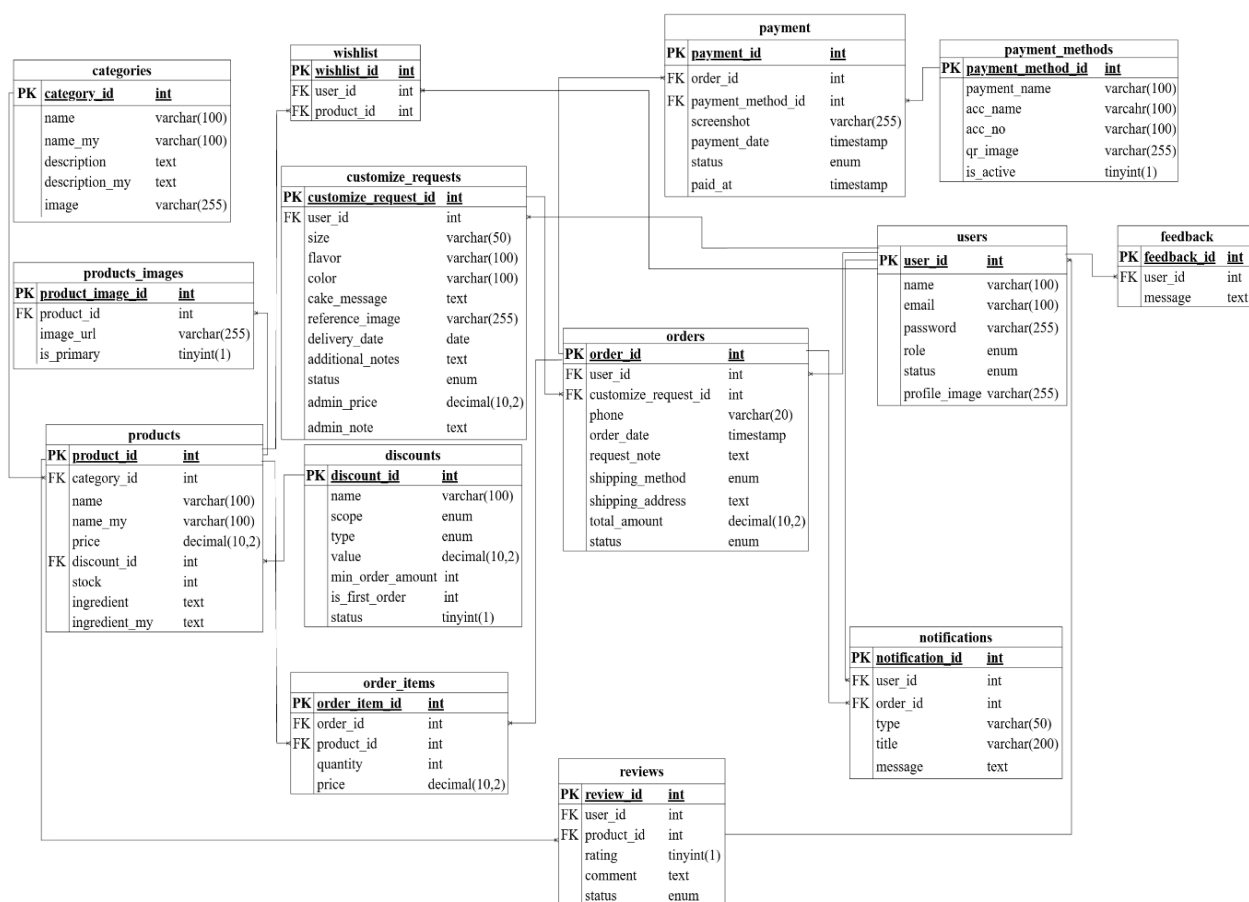


Figure 4: Database Architecture

Figure 4 presents the Entity Relationship Diagram (ERD) for the Sweet Heaven Bakery Shopping System. The diagram shows how the main database tables are organized and how they connect to one another. It supports clear data modeling by defining primary keys, foreign keys, and table relationships so related records stay consistent and can be queried efficiently.

In the system, the ER diagram includes the core tables used for user management, product cataloging, custom order requests, ordering processes, payments, and feedback. The main tables include:

- users: stores account details, login credentials, user roles, account statuses, and profile image paths
- categories: stores product category names, descriptions, and category images
- products: stores product information including pricing, stock quantities, ingredients, and references to categories and discounts
- products_images: stores additional product image URLs and flags for primary display images
- discounts: stores promotion details such as scope, type, discount values, minimum order amounts, and status
- customize_requests: stores custom cake specifications like size, flavor, color, custom notes, reference images, delivery dates, and admin price quotes
- orders / order_items: stores order header details (shipping info, total amounts, statuses) and itemized order quantities with pricing
- payment / payment_methods: stores payment transactions, transaction screenshots, payment statuses, and available payment method configurations
- wishlist: links users with saved products for future purchasing
- reviews: stores product ratings and customer comments for delivered items
- feedback: stores general feedback messages submitted by users
- notifications: stores system notification titles, messages, and types mapped to specific users and orders

Each operational table is linked through primary and foreign keys to maintain referential integrity. Most transaction tables connect directly to user accounts, products, or specific orders. The ERD also shows cardinality, mainly one-to-many relationships, to reflect how one user or product can relate to multiple order items, reviews, or payments. Overall, Figure 4 provides the database foundation for catalog management, custom cake processing, order fulfillment, payment verification, and secure user management in the system.

RESULTS

The Sweet Heaven Bakery Shopping System provides a centralized web platform for managing bakery operations and customer orders, including products, categories, customized cake requests, sales discounts, payment verifications, and customer feedback. It also provides Excel export and printing functions for revenue reporting and administrative record-keeping. The system helps administrators manage bakery resources in an organized manner while reducing manual tracking, payment errors, and fragmented communication.

The dashboard presents key operational metrics through visual summaries, allowing administrators to monitor revenue, order fulfillment stages (Pending, Processing, Shipped, Delivered), product stock, and customer reviews at a glance. These visual insights support daily sales management and administrative decision-making. Role-based access control ensures that Admins, Cashiers, and Customers can perform actions strictly according to their assigned permissions.

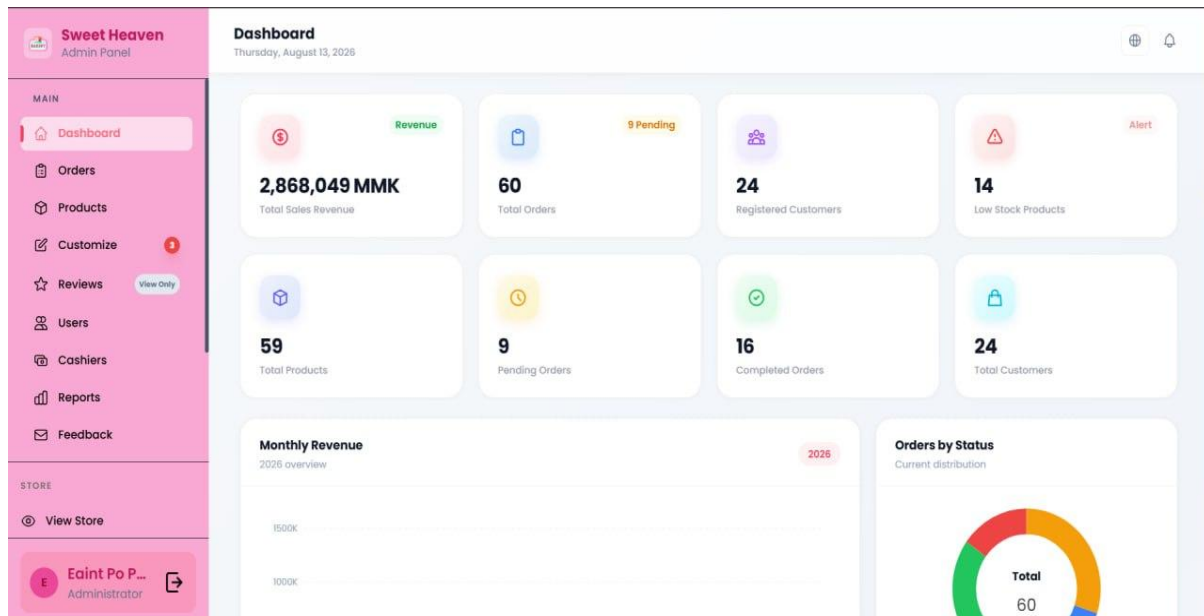


Figure 5: Dashboard of the Sweet Heaven Bakery Shopping System

In Figure 5, the donut chart shows the total order distribution by fulfillment status (Shipped, Processing, Cancelled, Delivered, and Pending).

Order ID	Customer Name	Total Amount	Payment	Status	Date
#0067	Aung Aung	20,700	Wave Pay	Shipped	2026-08-20
#0066	Min Zayar Aung	13,500	KBZ Pay	Delivered	2026-08-20

Figure 6: Daily Report Excel Sheet

In Figure 6, the exported Excel spreadsheet displays detailed order report records, including Order ID, Customer Name, Total Amount, Payment Method, Order Status, and Transaction Date.

In Figure 7, the customer receipt pop-up dialog displays order slip details, including the order number, transaction date, customer contact information, itemized product list with prices and discounts, final total amount, and a print receipt button. Clicking the print button allows customers to generate a hard copy or PDF version of their receipt for personal record-keeping.

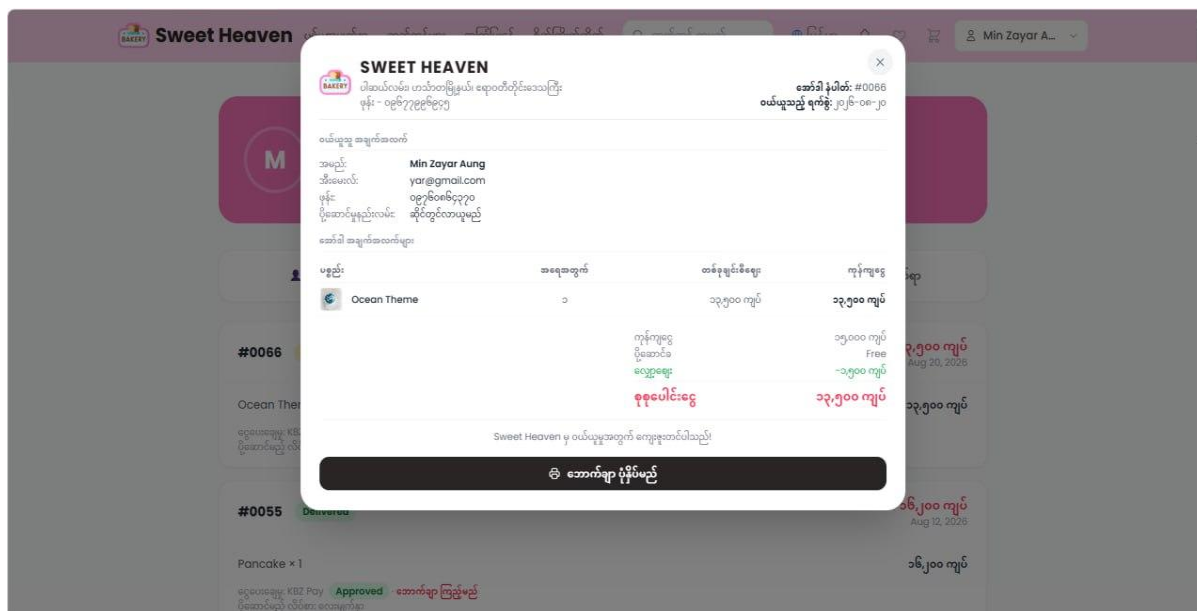


Figure7: Transaction Voucher

CONCLUSION

The Bakery Management System offers an integrated, reliable web solution that effectively streamlines end-to-end bakery store management and customer service workflows. By leveraging role-based architecture, automated payment verification pipelines, and customizable cake ordering mechanisms, the platform bridges the gap between customer convenience and administrative oversight. The implementation of responsive design principles alongside secure backend data processing ensures seamless user interactions and robust system performance. Ultimately, the system provides store management with scalable digital tools to optimize inventory control, elevate customer engagement, and drive data-informed business growth through centralized operational analytics. This robust framework simplifies routine administrative tasks, drastically reducing processing errors during peak ordering hours.

REFERENCES

- [1].Matt Doyle, “Beginning PHP 5.3”, 1st Edition, Wiley Publishing, ISBN-10: 9780470413968x, 2009.
- [2].Tom Bulter and Kevin Yank, “PHP & MySQL Novice to Ninja”, 7th Edition, Site Point Pty, Limited, Australia, 2024. http://classes.jgspectrum.com/classes/320_S24/classes/320_S24/LectureNotes/1-13_PHP_and_MySQL_Novice_to_Ninja_ed7_with_highlights.pdf.
- [3].O'Reilly, “Head First PHP & MySQL”, 1st Edition, O'Reilly Media, Inc., 2008.
- [4].Janet Valade, “PHP 5 For Dummies”, Hoboken, NJ: Wiley Publishing. ISBN: 0764541668, Indianapolis, Indiana, 2004.
- [5].Paul McFedries, “HTML, CSS, & JavaScript All-in-One for Dummies”, 1st Edition, Wiley Publishing, ISBN: 978-1-394-16472-1, 2023.
- [6].Ei Zin Phyoo, Hla Thinzar Soe “House Rental and Sale System”, University Journal of Student Projects and Research, Volume 2, October 2025, Hinthada, Myanmar, <https://ucsh.edu.mm/wp-content/uploads/2025/10/House-Rental-and-Sale-System.pdf>

- [7].Lin Lat Nay Chi, Nilar Kyaw , “Construction Materials Inventory Management System”, University Journal of Student Projects and Research, Volume 2, 2025, Hinthada, Myanmar, <https://ucsh.edu.mm/wp-content/uploads/2025/10/Construction-Materials-Inventory-Management-System.pdf>
- [8].Nanda Kyaw, Saw Hla Nandar, “SmartGrade: Grading Certificate Information System (Client-Server)”, University Journal of Student Projects and Research, Volume 2, 2025, Hinthada, Myanmar, <https://ucsh.edu.mm/wp-content/uploads/2025/10/SmartGrade-Grading-Certificate-Information-System.pdf>
- [9].Nwe Nwe Tun, Zar Chi Oo, “Chemical Store Room Management System”, University Journal of Student Projects and Research, Volume 2, October 2025, Hinthada, Myanmar, <https://ucsh.edu.mm/wp-content/uploads/2025/10/Chemical-Store-Room-Management-System.pdf>
- [10].Shio Ma Ma Min, “Travel Guide Information System For Myanmar”, University Journal of Student Projects and Research, Volume 2, October 2025, Hinthada, Myanmar, [http://ucsh.edu.mm/wp-content/uploads/2025/10/Travel-Guide-Information-System-For-Myanmar .pdf](http://ucsh.edu.mm/wp-content/uploads/2025/10/Travel-Guide-Information-System-For-Myanmar.pdf)