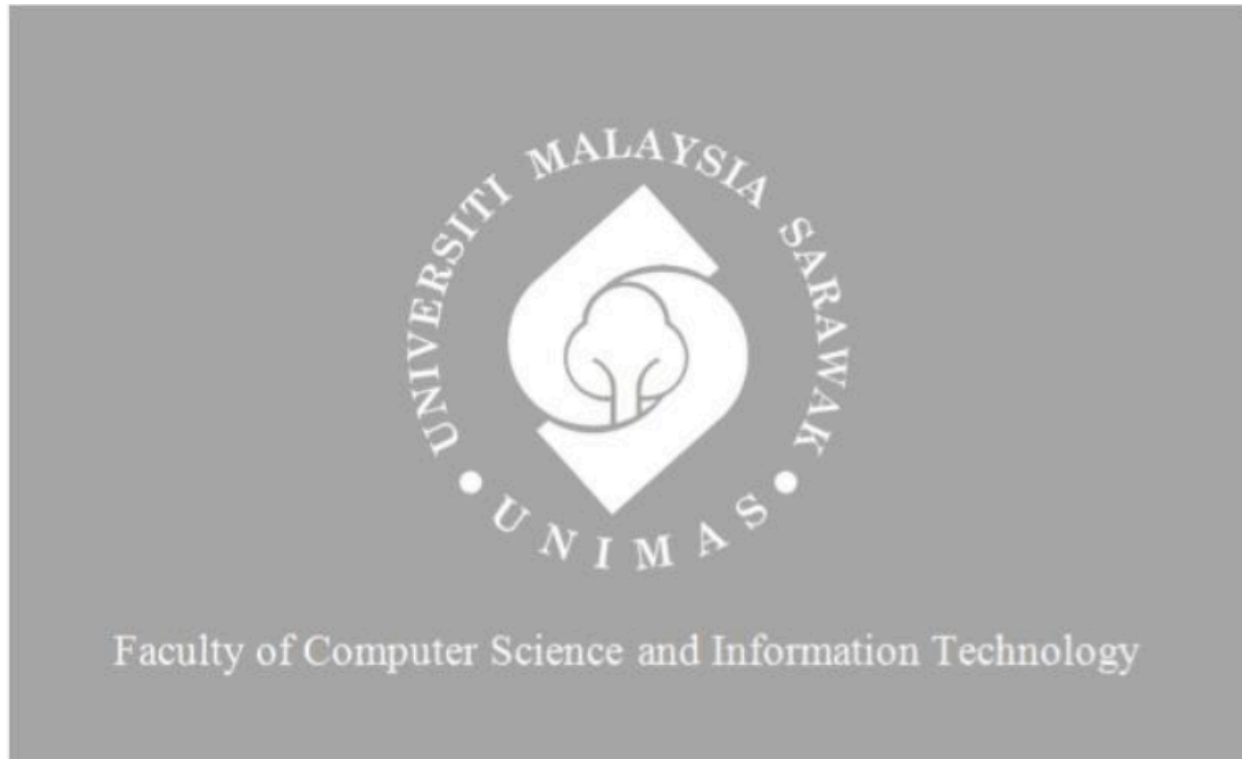




Rosecdy Kitchen: Booking Management System for a Sarawak Kek Lapis Business.

Daniel Aiman Fiqri Bin Hut

Bachelor of Computer Science with Honours (Network Computing)

**ROSECDY KITCHEN: BOOKING MANAGEMENT SYSTEM FOR A SARAWAK KEK
LAPIS BUSINESS.**

DANIEL AIMAN FIQRI BIN HUT

This project is submitted in partial fulfillment of the requirements of the degree of Bachelor of
Computer Science with Honours

(Network Computing)

Faculty of Computer Science and Information Technology

UNIVERSITI MALAYSIA SARAWAK

2025

**ROSECDY KITCHEN: SISTEM PENGURUSAN TEMPAHAN UNTUK
PERNIAGAAN KEK LAPIS SARAWAK.**

DANIEL AIMAN FIQRI BIN HUT

Projek ini dikemukakan untuk memenuhi sebahagian daripada keperluan Ijazah Sarjana
Muda Sains Komputer dengan Kepujian
(Pengkomputeran Rangkaian)

Fakulti Sains Komputer dan Teknologi Maklumat
UNIVERSITI MALAYSIA SARAWAK

2025

DECLARATION OF ORIGINALITY

I hereby declare that this project report entitled “Rosecdy Kitchen: Web-Based Booking Management System for a Sarawak Kek Lapis Business” is the result of my own work, except as cited in the references. This report has not been submitted to any other academic institution for any other degree or diploma. I also declare that all sources of information used in this project have been acknowledged appropriately.

Signed,



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24 JULY 2025

UNIVERSITI MALAYSIA SARAWAK

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ACADEMIC SESSION: 2024/2025

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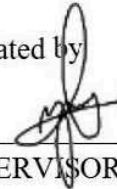
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ACKNOWLEDGEMENT

This final year project has become a reality with the support, guidance, and encouragement of many individuals, to whom I am sincerely grateful.

First and foremost, I thank the Almighty Allah S.W.T for granting me the strength, patience, and determination to complete this project successfully.

I would like to express my deepest appreciation to my supervisor, Dr. Yanti Rosmunie Binti Bujang, for her invaluable guidance, continuous encouragement, and unwavering support throughout the entire duration of this project. Her expertise, insightful feedback, and dedication have been instrumental in shaping the success of this work.

My heartfelt thanks also go to my beloved parents, Hut @ Seman Bin Buang and Rosnah Binti Morshidi, and to my siblings, for their unconditional love, prayers, and encouragement. Their moral and financial support have been the foundation of my perseverance and motivation.

To my dear friends — Ibnu Walid, Saidatulnisya, Ian Nathaniel, Fatin Nazifa and Nur Haziq Irshad — thank you for being by my side through every challenge, for the late-night study sessions, and for the constant support and laughter that helped me stay motivated. Your friendship has made this journey more memorable and meaningful.

Lastly, to Dayang Alia Natashar, thank you for always being there for me. Your consistent support, understanding, and encouragement through the ups and downs of this journey have been invaluable.

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ABSTRACT

This project presents the design and development of Rosecdy Kitchen: A Web-Based Booking Management System, aimed at enhancing the operational efficiency of a small Sarawak Kek Lapis business. The primary objective of this system is to provide a user-friendly platform that allows customers to view products, place orders, and upload payment receipts online, while enabling the business owner to manage bookings, track payments, and generate monthly income reports. The system was developed using PHP and MySQL and is designed for ease of use by both customers and administrators. Key features include user authentication, product management, shopping cart functionality, manual payment verification, and administrative reporting. The Rapid Application Development (RAD) methodology was adopted to ensure iterative development and continuous user feedback. Functional and reliability testing confirmed that the system meets its intended goals. While the system is optimized for desktop use and currently supports only English, future improvements may include mobile responsiveness, multilingual support, and integration with real-time payment gateways. Overall, this system demonstrates how digital tools can support small food businesses in managing orders more efficiently and improving customer experience.

ABSTRAK

Projek ini membentangkan reka bentuk dan pembangunan Rosecody Kitchen: Sistem Pengurusan Tempahan Berasaskan Web yang bertujuan untuk meningkatkan kecekapan operasi perniagaan Kek Lapis Sarawak berskala kecil. Objektif utama sistem ini adalah untuk menyediakan platform mesra pengguna yang membolehkan pelanggan melihat produk, membuat tempahan, dan memuat naik resit pembayaran secara dalam talian, manakala pemilik perniagaan dapat mengurus tempahan, menjejak pembayaran, dan menjana laporan pendapatan bulanan. Sistem ini dibangunkan menggunakan PHP dan MySQL dan direka bentuk agar mudah digunakan oleh kedua-dua pihak, iaitu pelanggan dan pentadbir. Antara ciri utama yang disediakan termasuk pengesahan pengguna, pengurusan produk, fungsi troli pembelian, pengesahan pembayaran secara manual, serta penjanaan laporan pentadbiran. Metodologi Rapid Application Development (RAD) telah digunakan untuk memastikan pembangunan secara berperingkat dengan maklum balas berterusan daripada pengguna. Ujian fungsi dan kebolehpercayaan telah membuktikan bahawa sistem ini mencapai objektif yang ditetapkan. Walaupun sistem ini dioptimumkan untuk paparan desktop dan hanya menyokong bahasa Inggeris buat masa ini, penambahbaikan masa hadapan akan merangkumi sokongan untuk peranti mudah alih, sokongan berbilang bahasa, dan integrasi dengan gerbang pembayaran masa nyata. Secara keseluruhan, sistem ini menunjukkan bagaimana alat digital dapat membantu perniagaan makanan kecil dalam menguruskan tempahan dengan lebih cekap dan meningkatkan pengalaman pelanggan.

Chapter 1: Introduction

1.1 Project Title

Rosecdy Kitchen: Booking Management System for a Sarawak Kek Lapis Business.

1.2 Introduction

Rosecdy Kitchen is a beloved home-based bakery that has built a strong reputation for its Sarawak Kek Lapis, a traditional layered cake that is especially popular during festive seasons and celebrations. Renowned for its unique flavors and intricate designs, the bakery has amassed a loyal customer base. However, managing bookings and orders manually has become increasingly challenging as the business grows. To address this challenge, the development of a web-based booking management system is proposed.

A web-based booking management system is an online booking system that allows customers to place orders and make payments online, offering the convenience of browsing and purchasing at any time and from any location (Yun Lim & Hamzah, 2023). The system aims to digitalize the order process, streamline operations, and significantly enhance the customer experience. The project will automate booking and ordering, reducing the administrative load on the bakery and allowing it to focus more on crafting its exquisite cakes. By implementing this system, Rosecdy Kitchen will be better equipped to handle the growing demand, especially during peak festive seasons, ensuring both efficiency and customer satisfaction. This project not only promises to improve operational efficiency but also to maintain and strengthen the connection between the bakery and its customers.

1.3 Problem Statement

The use of a manual booking system used by Rosecdy Kitchen involves a number of issues that can drastically reduce operational efficiency and customer satisfaction. One of the key concerns is the greater possibility of human error throughout the booking process. Manual methods are prone to errors including multiple bookings, inaccurate order inputs, and confusion about consumer preferences. These errors can result in customer discontent and loss of confidence, as demonstrated by the findings of Lei et al. (2023), who underline the importance of correct service delivery in improving customer experiences.

Another significant drawback of manual booking systems is the lack of data analytics capabilities. In contrast to automated systems, which can analyze market trends and customer preferences in real-time, manual systems do not provide insights that can inform business decisions. For instance, based on Takuatung et al. (2023), notes that digitalized systems allow managers to implement revenue management tasks without manual intervention, enabling them to respond swiftly to market changes and optimize pricing strategies. The absence of such analytical tools in a manual system can prevent pastry businesses from identifying customer trends and optimizing their offerings accordingly.

1.4 Scope

The system will benefit both Rosecdy Kitchen's customers who want to book and place Sarawak Kek Lapis orders online as well as the business owner, who needs a productive approach to handle bookings. To guarantee accessibility on a range of devices, the system will be created as a web-based platform with a responsive design. While the business owner will have access to customer data, order insights, and an analytics dashboard for assessing business

performance, customers will be able to explore the Kek Lapis choices, make bookings, track order status, and receive notifications due to the booking management capabilities. Furthermore, the system will incorporate QR payment to enable safe and simple transactions straight through the platform, ensuring a smooth experience for both customers and the business owner.

1.5 Research Objectives

The main objective of this project is to create a web-based booking management system that is tailored to the needs of Rosecdy Kitchen, a Sarawak Kek Lapis business. The system is intended to overcome the inefficiencies of the present manual booking process by incorporating digital features that improve operational workflow, increase consumer interaction, and enable improved corporate decision-making. The project's specific objectives are listed below:

1. To develop a user-friendly and accessible system for both the business owner and customers. The system's interface is basic and intuitive, allowing users of all backgrounds to navigate easily. This improves usability and shortens the learning curve for both users and administrators.
2. To implement a monthly report for the business owner to keep track of their income. The system has a reporting feature that automatically organizes transaction data into monthly summaries. This function enables the business owner to evaluate sales performance and make informed financial decisions.
3. To implement key features such as order tracking and customer account management. Customers can check the status of their orders and manage their personal information

right from their accounts. These features improve the user experience while lowering the workload for the business owner.

1.6 Brief Methodology

The Rapid Application Development (RAD) methodology is excellent for creating the Kek Lapis Booking Management System for Rosecdy Kitchen because it highlights rapid prototyping and continuous user input, all of which are necessary when constructing a user-centered web-based application. The RAD technique is separated into four main phases which include Requirements Planning, User Design, Construction, and Cutover. During the requirements planning phase, the development team collaborates with stakeholders to identify and prioritize system requirements, ensuring that user needs are met successfully (Awaliah et al., 2023). The user design phase includes creating prototypes that allow users to interact with the system early in the development process, allowing for immediate feedback and adjustments (Gerald et al., 2021). During the construction phase, the system is created in cycles, allowing for ongoing testing and refining, which is critical to the booking system's quality and usefulness (Wulandari et al., 2022). Finally, the cutover phase allows a smooth transfer to the new system by providing user training and assistance to increase adoption (Syafrizal, 2021). Rosecdy Kitchen may utilize RAD to construct a comprehensive and user-friendly booking management system that matches the changing needs of its consumers.

1.7 Significance of Project

The system will not only improve the efficiency of managing orders but also enhance the customer experience. By automating order handling and reducing manual errors, Rosecdy

Kitchen can focus on delivering quality products while expanding its customer base. This project is significant for several reasons:

1. Operational Efficiency:

Automating the booking process reduces the possibility of human mistake, such as duplicate bookings or inaccurate information, by doing away with the necessity for manual order entry. Employees can now concentrate on higher-value duties like kitchen management or customer service. The system can increase productivity, increase accuracy, and optimize workflow by incorporating features like order tracking, automated confirmations, and reminders. This may eventually result in a more orderly order handling system and reduced operating expenses.

2. Customer Satisfaction:

A seamless, user-friendly reservation system is necessary for a satisfying customer experience. You can boost the possibility of returning customers by offering a user-friendly web interface that makes it simple for customers to choose products, personalize orders, and make payments. Customers are kept informed and involved through automated alerts (such as order confirmation, projected preparation time, and delivery updates). Better ratings, word-of-mouth referrals, and customer loyalty can result from the convenience of an effective, well-designed system, which also fosters consumer trust.

3. Business Growth:

Increased order quantities can be handled by an automated system without necessitating corresponding increases in personnel or resources. This scalability ensures that the booking

system can keep up with demand without sacrificing service quality as Rosecdy Kitchen expands. Additionally, the information gathered from reservations can be analyzed to assist the business in making well-informed choices on menu selections, busy periods, customers preferences, and marketing tactics. Rosecdy Kitchen can better target marketing efforts, streamline operations, and investigate new revenue streams by utilizing this information.

1.8 Project Schedule

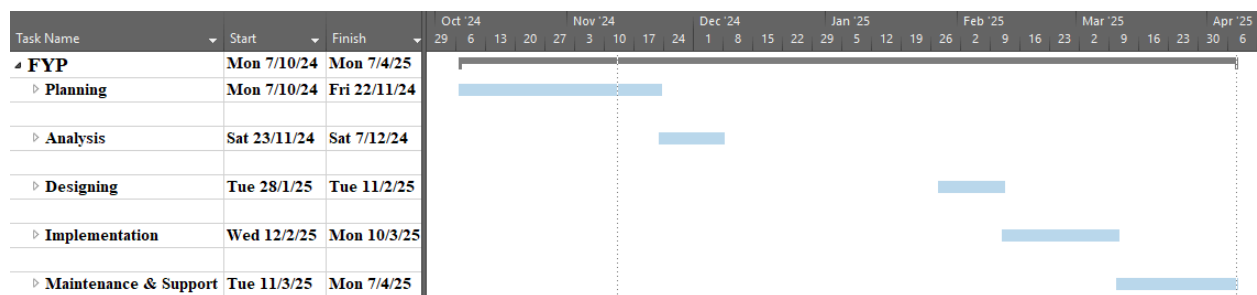


Figure 1.1 Gantt Chart for Rosecdy Kitchen: Booking Management System for a Sarawak Kek Lapis Business

Figure 1.1 displays a Gantt chart for both FYP 1 and FYP 2. FYP 1 is conducted in Semester 1 which focuses on the planning and analysis phase. This phase covers Chapter 1: Introduction, which gives context to what the project is about and its objectives; Chapter 2: Literature Review, which analyzes previous studies to find gaps and develop a theoretical framework; and Chapter 3: Methodology, which focuses on the data collection, analytical methods and research design. FYP 2 is conducted in Semester 2 and it highlights the design, implementation, testing and reporting of the project. The chapters that are included are Chapter 4: Implementation and Testing, which describes the development of the web-based booking management system and focuses on various testing methods such as reliability, efficiency,

functionality and usability testings; and Chapter 5: Conclusion & Future Work, highlighting results, pointing out shortcomings, and recommending areas for future improvements. This methodical approach guarantees comprehensive project planning, development, testing, and assessment of the project.

1.9 Expected Outcome

The project outcome of "Rosecdy Kitchen: Booking Management System for a Sarawak Kek Lapis Business" can be evaluated in terms of its successful development, deployment, and operational impact. The use of a booking management system would lead to operational improvements, enhance customer satisfaction, and provide a solid foundation for the future growth of Rosecdy Kitchen.

Automating the order process by using a booking management system will save time for Rosecdy Kitchen's staff, reducing the manual workload. This will allow the staff to focus more on the production of Kek Lapis and other value-added activities, ultimately improving productivity. An integrated analytics dashboard will provide valuable business insights, such as sales trends, peak order times, and customer preferences, enabling the business to make informed decisions for future growth.

Customers also will benefit from an intuitive and seamless booking experience. They will be able to place orders online, track the status of their orders, receive automated updates, and make secure payments, all of which will increase customer satisfaction and loyalty. Therefore, with a scalable system in place, Rosecdy Kitchen will be better equipped to expand its customer base and market reach. The system will support future business growth by making it easier to manage increasing orders and customer inquiries.

1.10 Report Outline

The final year project (FYP) will consist of five chapters that include detailed insights on the aspects in the development of the web-based booking management system for Rosecdy Kitchen. The summary of each chapter are listed as below:

Chapter 1: Introduction

This chapter will include an introduction regarding the Booking Management System For A Sarawak Kek Lapis Business. It will also include the problem statement, objectives, project scope, methodology, significance of project, project schedule, expected outcome and project outline to serve as an overview of the project.

Chapter 2: Literature Review

This chapter will contain a literature review where comparisons between a few existing systems and the Web-Based Booking Management System for a Sarawak Kek Lapis Business. The proposed system will be reviewed along with three other systems and the comparison aspects include functionalities, efficiency, effectiveness and reliability.

Chapter 3: Methodology/Requirement Analysis Design

This chapter will include a detailed establishment of requirement specification which consists of user, software and hardware requirements in order to develop the system. It will also include a detailed explanation of the methodology utilized in the project and complete justification to the interaction dynamics within the system.

Chapter 4: Implementation and Testing

This chapter will include a detailed explanation of the implementation of the system such as the system's functionalities. This chapter will also include an explanation and discussion of the system's testing phase regarding a few categorical testing. The details regarding the system testing such as feedback will also be included once the system is tested by real users which includes customers and business owners.

Chapter 5: Conclusion and Future Work

This chapter will include a discussion of the strengths and weaknesses of the Booking Management System for a Sarawak Kek Lapis Business through a quantitative evaluation of the objective and scope of the project. The recommendations to improve the system's functionalities and effectiveness will also be included.

The chapters will be divided into two parts which are Final Year Project 1 (FYP 1) and Final Year Project 2 (FYP 2). FYP 1 will consist of Chapter 1: Introduction, Chapter 2: Literature Review and Chapter 3: Methodology while FYP 2 will consist of Chapter 4: Implementation, Chapter 5: Testing and Chapter 6: Conclusion and Future Work.

1.11 Summary

Chapter 1 presents the "Rosecdy Kitchen: Booking Management System for a Sarawak Kek Lapis Business" project, which attempts to address the inefficiencies of manually managing orders and bookings for a Sarawak Kek Lapis-focused home-based bakery. The current manual procedure has a lower operational efficiency and worse customer satisfaction since it is prone to human error and lacks data analytics capabilities. These issues will be resolved by the suggested web-based solution, which would automate the order management process, optimize corporate operations, and enhance customer satisfaction. Order tracking, automated confirmation emails,

and customer account management are all features of the system, which was created utilizing the Rapid Application Development (RAD) approach to guarantee a smooth and intuitive user experience. In conclusion, it is anticipated that this system's deployment would improve operational effectiveness, raise client happiness, and aid Rosecdy Kitchen's expansion.

Chapter 2: Literature Review

2.1 Introduction

The goal of this project is to create a web-based booking management system for Rosecdy Kitchen, a Sarawak *kek lapis* business. Rosecdy Kitchen is a home-based bakery that has become a go-to destination for traditional Sarawak *kek lapis*, known for its vivid layers, exquisite decorations, and distinct flavors. Despite its success, the bakery's manual booking and order management system has limitations in terms of productivity, scalability, and customer satisfaction. As the company grows, there is a desire to streamline operations using a digital platform.

This booking management system seeks to address these difficulties by providing a comprehensive platform for both clients and company owners. Customers will be able to explore products, place orders, follow their status, and make payments with ease. Meanwhile, the system will provide Rosecdy Kitchen with capabilities for efficient booking management, access to vital information, and effective customer communication. This digital transformation will improve operational efficiency and customer happiness, helping the company to meet expanding needs, especially during busy seasons.

To build a system that effectively achieves the objectives, a review of existing booking and order management systems is required. These studies provide useful insights about the features, functionalities, and limitations of existing solutions, which help guide the project's development. The review will highlight the benefits of present systems that can be included into the proposed solution while identifying deficiencies that must be addressed.

Many Sarawak businesses, particularly small and medium enterprises (SMEs), continue

to use manual ordering processes due to cultural norms, insufficient technology infrastructure, and operational constraints. These organizations frequently value personal connections and traditional ways of service delivery, which can result in inefficiencies such as order problems and transaction processing delays (Triyanto, 2023). Manual systems are frequently characterized by handwritten records and face-to-face communication, which, while promoting client relationships, might impede scalability and market adaptability (Hussain et al., 2022). Furthermore, the lack of dependable internet and digital tools in rural areas exacerbates organizations' reliance on these antiquated methods, making it difficult to switch to more effective e-business platforms. As a result, despite the potential benefits of digitalization, many local businesses continue to operate using manual procedures, reflecting the region's greater socioeconomic issues.

Hence, this proposal presents a scalable, user-friendly booking management system to improve operational workflows and the overall client experience. This solution, which includes automatic order confirmation, order tracking, and analytics, will handle Rosecdy Kitchen's existing issues while also enabling future expansion. This introduction provides an overview of the project's objectives and sets the basis for further in-depth investigation of the system's creation, functionality, and impact.

2.2 Review of Similar Existing Systems

The suggested system for Rosecdy Kitchen aims to increase operational efficiency and user experience by solving typical difficulties faced by local companies. To guide its creation, existing systems were reviewed with a focus on three businesses which are Siti Payung, Mira Cake House, and Seni Patisserie. These systems provide useful insights into alternative

approaches to business operations management and customer involvement, serving as a framework for assessing the proposed system's strengths, limitations, and chances for innovation.

2.2.1 Mira Cake House

Mira Cake House is a well-known local *kek lapis* business in Kuching, Sarawak, and is considered one of the state's most popular *kek lapis* locations. The shop has its own online ordering system that serves both local and foreign customers. The system enables consumers to browse the menu, place orders for delivery within and outside of Sarawak, and track their orders in real time.

Customers can access the Mira Cake House Online Ordering System as shown in Figure 2.1. While creating an account or logging in with a registered email and password is optional, customers can still browse the wide inventory of *kek lapis* options, including seasonal specials and best-sellers, without logging in. According to figure 2.2, customers can add items to their shopping cart, select their preferred delivery or pickup options, and proceed to payment using a variety of secure methods, ensuring a seamless and user-friendly shopping experience. Based on figure 2.3, customers may also request customized delivery instructions or gift messages throughout the purchase process. Throughout the ordering process, customers can track their order based on figure 2.4. This streamlined system improves the customer experience while still maintaining operational efficiency for the store.

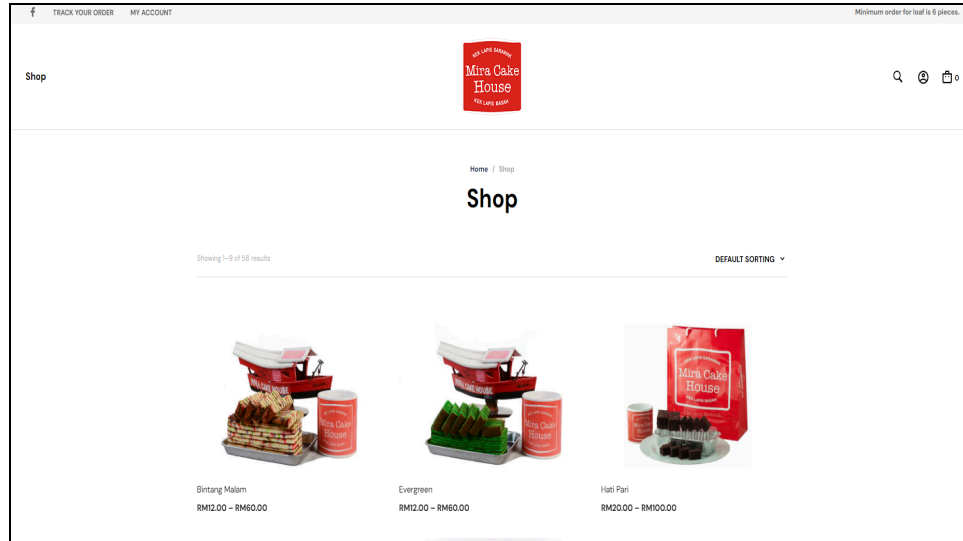


Figure 2.1: Main page for Mira Cake House Ordering System

Figure 2.1 is the main page for Mira Cake House ordering system. It features a clean and simple design with all the kek lapis options displayed in the shop section. On the top right of the page, it features a search option, profile option and cart option.

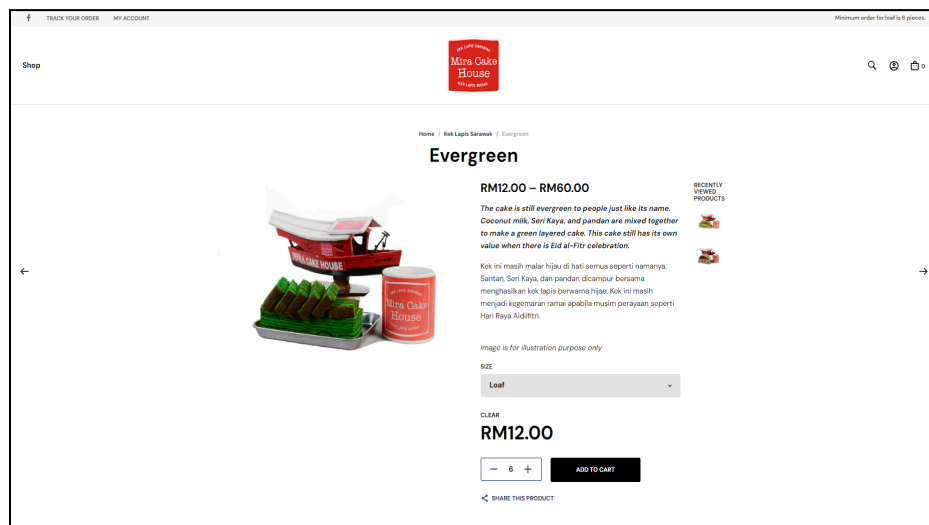


Figure 2.2: Ordering page for Mira Cake House Ordering System

Figure 2.2 shows the ordering page for Mira Cake House ordering system. This page

enables the customers to add their order into their cart and proceed to checkout.

The screenshot shows the checkout page for Mira Cake House. At the top is the logo. Below it is the title "Checkout". The main section is "Billing details", which includes fields for "NAME", "LAST NAME", "ADDRESS", "PHONE", "CITY", "STATE", "ZIP", and "COUNTRY". There is a "SEND TO A DIFFERENT ADDRESS?" checkbox. Below this is a "MESSAGE (OPTIONAL)" field. At the bottom, there is a table showing the order summary: "PRODUCT" (MIRACAKE), "QUANTITY" (1), "UNIT PRICE" (RM75.00), "TOTAL" (RM75.00), "TAX" (RM19.00), and "GRAND TOTAL" (RM94.00). A "PLACE ORDER" button is at the bottom.

Figure 2.3: Checkout Page for Mira Cake House Ordering System

Figure 2.3 shows the Checkout Page for Mira Cake House ordering system. In this page, the customers will need to fill in their billing address. They can also request customized delivery instructions.

The screenshot shows the "Track Your Order" page for Mira Cake House. It features the logo at the top. The title "Track Your Order" is prominently displayed. Below the title, there is a paragraph explaining that users should enter their Order ID and press the "Track" button. The "ORDER ID" field is a text input with a hint "Found in your order confirmation email." Below it is the "BILLING EMAIL" field, also a text input with a hint "Email you used during checkout." At the bottom, there is a large black button labeled "TRACK".

Figure 2.4: Order Tracking Page for Mira Cake House Ordering System

Figure 2.4 shows the Order Tracking Page for Mira Cake House ordering system. Customers can input their order ID and Billing Name to track their order.

2.2.2 Kek Lapis Sarawak by Seni Patisserie

Kek Lapis Sarawak by Seni Patisserie, based in Shah Alam, is known for its delicious handmade ‘Kek Lapis Sarawak’. Their easy-to-use online ordering system lets you browse different flavors, place your order, and have it delivered straight to your door, whether you’re in Malaysia or overseas. You can track your order, With a focus on quality and great service, they make it simple for you to enjoy the best *kek lapis* from Shah Alam.

Customers can access Kek Lapis Sarawak by Seni Patisserie as shown in figure 2.5. Customers will need to create an account and log in to be able to order according to figure 2.6. After customers are done choosing their *kek lapis* and adding it into their cart as shown in figure 2.7, they will move on to the checkout page as shown in figure 2.8. In this page, customers will need to input their delivery address and contact details.. Customers can also leave remarks for customized delivery. After that, customers can move on to the payment section of the system as shown in figure 2.9 in which they can choose to pay using card or online banking.

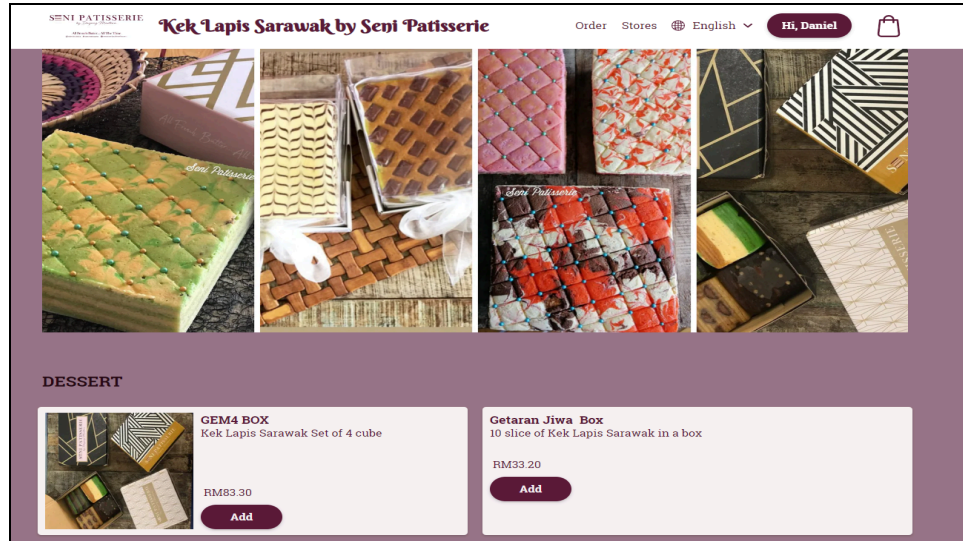


Figure 2.5: Main page for Kek Lapis Sarawak by Seni Patisserie Ordering System

Figure 2.5 shows the main page for Kek Lapis Sarawak by Seni Patisserie ordering system. It showcases beautifully crafted Kek Lapis Sarawak with vibrant design with all their various *kek lapis* options and the prices are displayed in it.

Figure 2.6: Account creation and login page for Kek Lapis Sarawak by Seni Patisserie Ordering System

Figure 2.6 is the account creation and login page for Kek Lapis Sarawak by Seni Patisserie Ordering System. The login screen is where customers can enter their email or phone number to log in, sign up, or continue with Facebook.



Figure 2.7: Cart Page for Kek Lapis Sarawak by Seni Patisserie Ordering System

Figure 2.7 is the cart page for Kek Lapis Sarawak by Seni Patisserie Ordering System. The cart page shows the customer's order summary, subtotal price and delivery fee. The delivery address and time are also displayed on the page. At the bottom of the page, the total amount needed to be paid by the customer is shown.

Checkout Summary

You're placing an order from
Legasi Kampung Bharu KL (Pre order) for Delivery on Tue,
 31 Dec at 04:15 PM to 04:45 PM

Delivering to
 241, Minara Bersejarah Petronas, Kuala Lumpur City Centre, 50088 Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia

☒ Apartment / Office ☐ Home / Landlord

Track Warehouse

Delivery Instructions e.g. Building opposite Starbucks (Optional)

Contact Details

Name
 Email
 Phone Number
 Organisation Name

Recipients

☐ This is for my friends or family

Billing Address

☐ Billing address is different to delivery address

Additional Information

Customer remarks

[Continue to Payment](#)

Ordered On	31 December 2024
for LEGASI BUKU	RM00.00
Subtotal	RM00.00
Delivery Fee	RM00.00
Total	RM00.00

Figure 2.8: Checkout Page for Kek Lapis Sarawak by Seni Patisserie Ordering System

Figure 2.8 shows the checkout page for Kek Lapis Sarawak by Seni Patisserie Ordering System. The checkout page shows the order details, delivery information to the customer's location, and contact details. Additional fields for customer remarks and billing address are also included.

[Back to Delivery Details](#)

You're placing an order from
Legasi Kampung Bharu KL (Pre order) for Delivery on Tue,
 31 Dec at 04:15 PM to 04:45 PM

Delivery Summary [Change Details](#)

Delivering to 241, Minara Bersejarah Petronas, Kuala Lumpur City Centre, 50088 Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur, Malaysia, 50088 Kuala Lumpur, Malaysia, 50088 Kuala Lumpur, Malaysia

Designer's Name
 Contact Number

Payment Details [Secure checkout](#)

Select a Payment Method

☒ FPM ☐ Card

☐ I accept the [Terms & Conditions](#) and [Privacy Policy](#)

☐ Subscribe now and be the first to know about our latest sales, deals, and events

[Place Order](#)

Ordered On	31 December 2024
for LEGASI BUKU	RM00.00
Subtotal	RM00.00
Delivery Fee	RM00.00
Total	RM00.00

Figure 2.9: Payment page for Kek Lapis Sarawak by Seni Patisserie Ordering System

Figure 2.9 is the payment page for Kek Lapis Sarawak by Seni Patisserie Ordering System. The payment page summarizes the delivery details, order, and total cost. Customers can select payment methods like online banking or card and place their order.

2.2.3 Siti Payung

Based in Miri, Sarawak, Siti Payung is a well-known store that sells a wide range of traditional Sarawakian goods, including biscuits and *kek lapis*. In order to cater to customers both locally and throughout Malaysia, the store has its own online ordering system that can be accessed through its official website. Consumers can easily browse a variety of Sarawakian treats, such as the state's famous *kek lapis*, tasty biscuits, and other distinctive products. Customers outside of Sarawak can savor the genuine flavors of Sarawak by placing orders with ease for delivery anywhere in the country. The technology makes purchasing easy, dependable, and enjoyable by providing information on new products and great specials.

As depicted in Figure 2.10, the Siti Payung Online Ordering System has a main page that makes it simple for customers to purchase their preferred Sarawakian products. Creating an account is not mandatory to order products. Customers can add their preferred items to the cart, as shown in Figure 2.11, after browsing the extensive assortment of *kek lapis*, biscuits, and other Sarawakian products. According to Figure 2.12, customers can review their order in their cart before they proceed to the checkout page. Figure 2.13 shows the checkout page in which customers have to enter their contact information and delivery address. Customized delivery instructions can be done by leaving a note in the special notes section. Payments can be done using online banking through Billplz payment gateway.

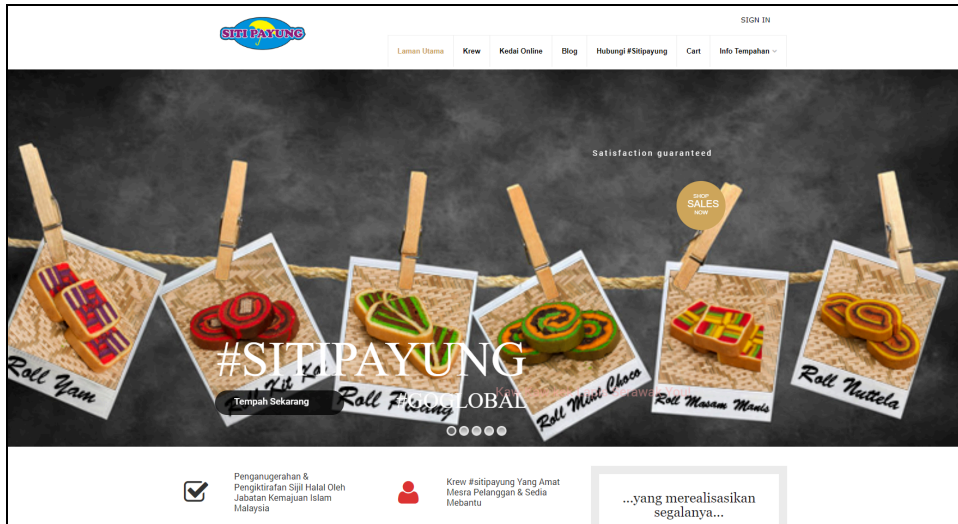


Figure 2.10: Main page for Siti Payung Ordering System

Figure 2.10 is the main page for Siti Payung ordering system. The main page features a navigation bar with links to various sections, such as the online store, blog, and contact information. The main page also shows a large banner with images of *kek lapis* rolls in vibrant designs and flavors, emphasizing the brand's quality and Halal certification.

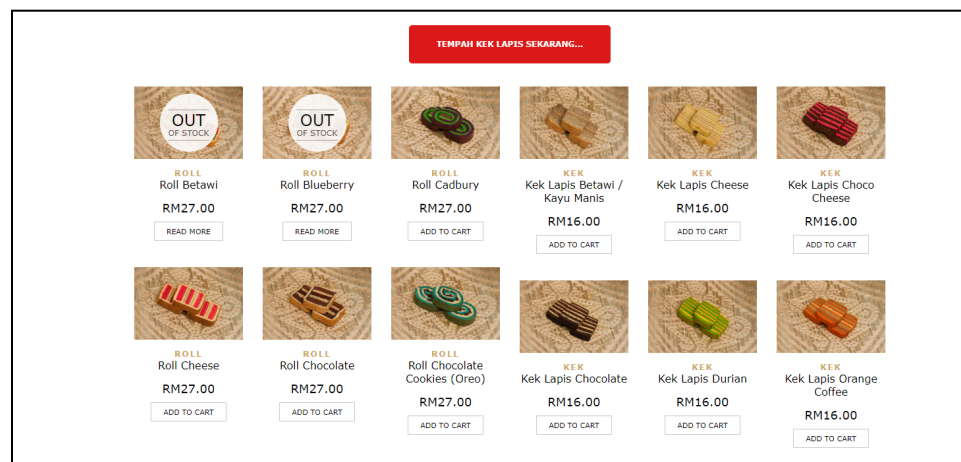
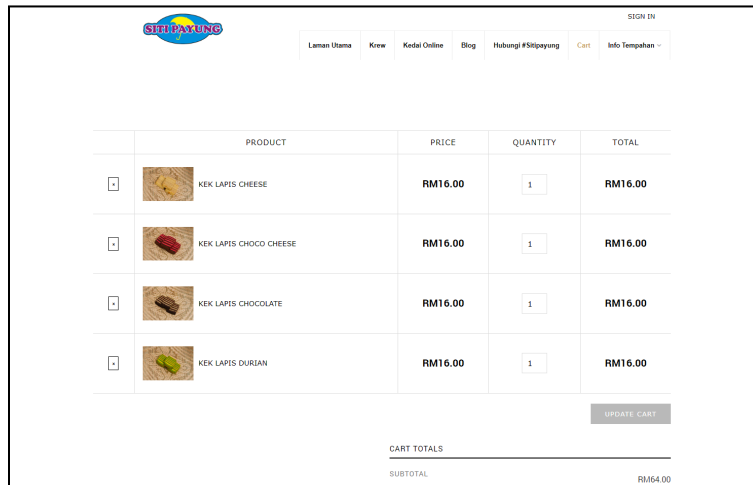


Figure 2.11: Popular section page for Siti Payung Ordering System

Figure 2.11 shows the popular section page for Siti Payung ordering system. A grid of

kek lapis products available is displayed for purchase. There are "Add to Cart" buttons for each item, and out-of-stock products are clearly marked, ensuring customers can easily identify available options.



	PRODUCT	PRICE	QUANTITY	TOTAL
	 KEK LAPIS CHEESE	RM16.00	1	RM16.00
	 KEK LAPIS CHOCO CHEESE	RM16.00	1	RM16.00
	 KEK LAPIS CHOCOLATE	RM16.00	1	RM16.00
	 KEK LAPIS DURIAN	RM16.00	1	RM16.00

[UPDATE CART](#)

CART TOTALS

SUBTOTAL RM64.00

Figure 2.12: Cart page for Siti Payung Ordering System

Figure 2.12 shows the cart page for Siti Payung ordering system. Customers can review their selected items in the cart page. Each product is displayed with an image, name, price quantity, and the total price for each product. The bottom of the page provides a summary of the cart total.

Pastikan alamat yang diberikan adalah tepat dan lengkap. Sila pilih Bilik/Plas sekiranya anda ingin menggunakan perkhidmatan Perbankan Internet/ FPX.

BILLING DETAILS

First Name: Last Name:

Company Name (optional):

Country: Province:

Street Address:

Apartment, Suite, Unit No. (optional):

Town / City:

State / County:

Postcode / ZIP:

Phone:

Email Address:

☐ Subscribe to our newsletter

☐ Create an account?

YOUR ORDER

PRODUCT	TOTAL
Siti Payung x 1	RM10.00
Siti Payung x 1	RM10.00
Siti Payung x 1	RM10.00
Siti Payung x 1	RM10.00
SUBTOTAL	RM40.00
SHIPPING	RM5.00
TOTAL	RM45.00

SHIPPING ADDRESS

☐ Ship to a different address?

First Name: Last Name:

Company Name (optional):

Country: Province:

Street Address:

Apartment, Suite, Unit No. (optional):

Town / City:

State / County:

Postcode / ZIP:

Order notes (optional):

Notes about your order, e.g. special notes for delivery.

Place Order

Figure 2.13: Checkout page for Siti Payung Ordering System

Figure 2.13 shows the checkout page for Siti Payung ordering system. A form is shown where customers input their billing and shipping details. The form includes fields for the customer's name, address, phone number, and email, with an option to provide a different shipping address. There is also an order summary that lists the selected products and the total amount needed to be paid. A "Place Order" button is available for customers to finalize their purchase.

2.3 Comparison Between Existing Systems

		Business Name			
		Siti Payung	Mira Cake House	Seni Patisserie	Proposed System
Features	Popular items section	Siti Payung does not have a section that displays their most popular items.	Mira Cake House has a section that displays their most popular items called “Meet Our Favourites.”	Seni Patisserie does not have a section that displays their most popular items.	The proposed system will have a popular items section.
	Payment method	Siti Payung uses “Billplz” payment gateway to implement their payment method.	Mira Cake House uses “ipay88” payment gateway to implement their payment method.	Seni Patisserie uses “FPX” payment gateway and debit or credit card to implement	The proposed system will implement a QR code payment for the payment method.

				their payment method.	
	Monthly Report	Siti Payung does not have a monthly report feature.	Mira Cake House does not have a monthly report feature.	Seni Patisserie does not have a monthly report feature.	The proposed system will have a monthly report feature.
	Profile Management	Siti Payung does have a profile management feature.	Mira Cake House does have a profile management feature.	Seni Patisserie does have a profile management feature.	The proposed system will have a profile management feature.
	Order Tracking	Siti Payung does have an order tracking feature.	Mira Cake House does have an order tracking feature.	Seni Patisserie does have an order tracking feature.	The proposed system will have an order tracking feature.
	Website Link	https://sitipayung.com.my/	https://miracakehouse.com/	https://keklapissarawakbyssenipatisseriep	

				reorder.oddle. me/en_MY/	
--	--	--	--	--	--

Table 2.1: Comparison of features between existing systems

Siti Payung, Mira Cake House, and Seni Patisserie have different features, as the comparison table illustrates. Whereas Mira Cake House has a "Meet Our Favorites" area and Seni Patisserie does not, Siti Payung also lacks a section dedicated to popular items. To improve user experience, a Popular Items section will be incorporated into the proposed system to highlight customer favorites. In terms of payment options, Seni Patisserie accepts "FPX" and credit/debit card payments, Mira Cake House uses "ipay88," and Siti Payung utilizes the "Billplz" platform. For greater convenience and flexibility, the proposed system will implement QR code payments. Siti Payung, Mira Cake House, and Seni Patisserie do not have a monthly report feature. The proposed system will have a monthly report feature to enhance business insights and financial monitoring. Siti Payung, Mira Cake House, and Seni Patisserie have a profile management feature. A profile management feature will be included in the proposed system. Order tracking features are implemented for Siti Payung, Mira Cake House, and Seni Patisserie. Order tracking will also be implemented in the proposed system to ensure users can monitor the status of their orders easily. The overall goal of the proposed system is to address the weaknesses of these existing platforms while incorporating their strengths to deliver a more complete and efficient solution.

2.4 Software and Technology Used

The technologies used in this project's development, including JavaScript, Hypertext Markup Language (HTML), Cascading Style Sheet (CSS), XAMPP as well as the Visual Studio Code

(VS Code) software will be examined.

2.4.1 VS Code

Visual Studio Code (VS Code) is a free, open-source, cross-platform code editor developed by Microsoft. It provides a comprehensive editing experience with features such as syntax highlighting, IntelliSense, debugging, and Git integration (Johnson, 2019). VS Code is highly extensible, allowing users to customize its functionality through a vast marketplace of extensions, enabling support for a wide range of programming languages and development tools (Johnson, 2019). It runs on Windows, macOS, and Linux, and leverages technologies like Electron and the Monaco editor to provide a consistent and performant development environment (Johnson, 2019).

2.4.2 JavaScript

JavaScript is a client-side scripting language that improves the interaction and functionality of websites. It supports dynamic alteration of HTML components, event handling, and asynchronous communication with services. JavaScript runs directly within the user's web browser, allowing for features like form validation, animations, and real-time content updates without requiring a full page reload (Nixon, 2021). JavaScript acquired significant capabilities with the development of the Document Object Model (DOM), which provides a structured representation of HTML documents and allows JavaScript to interact with and modify web page content (Nixon, 2021). JavaScript offers developers a flexible and potent toolkit for creating contemporary web apps by enabling them to define custom functions and objects (Nixon, 2021).

2.4.3 HTML (HyperText Markup Language)

The basic language used to structure web information is HTML (HyperText Markup Language). It arranges text, graphics, links, and other elements to form a webpage's layout. HTML, along with CSS for styling and JavaScript for interactivity, is the foundation of web development. This markup language enables browsers to render the material properly, making it more accessible and interactive for users. HTML is essential to every web development project because it ensures correct content presentation across several devices and browsers.

2.4.4 CSS (Cascading Style Sheet)

Cascading Style Sheets (CSS) is a style sheet language used to describe the presentation of a document written in a markup language such as HTML. CSS associates style rules with HTML elements, governing how the content of specific elements should be displayed in a web browser (Duckett, 2011). These rules can control various aspects of presentation, such as colors, fonts, layout, and spacing. CSS works by applying styles to individual HTML elements, which are treated as if they reside in their own invisible boxes. CSS rules are typically defined in a separate file linked to the HTML document, enabling reusability and separation of concerns between content and presentation (Duckett, 2011). Key features of CSS include selectors, which specify the elements the rules apply to, declarations, which define the styles to be applied, and properties and values, which control specific aspects of the element's appearance, such as font family, color, and margin (Duckett, 2011). CSS allows for the creation of visually appealing and well-structured web pages, enhancing the user experience and ensuring consistency across different browsers (Duckett, 2011).

2.4.5 PHP

PHP (Hypertext Preprocessor) is a server-side scripting language commonly used in combination with MySQL for building dynamic, database-driven web designs (Nixon, 2021). It is a convenient and popular choice for web development because it is free to implement due to its open-source nature (Nixon, 2021). PHP allows for embedding dynamic activity into web pages, giving pages with a '.php' extension direct access to the scripting language (Nixon, 2021). PHP offers web developers a scripting language that integrates seamlessly with HTML markup and is incredibly speedy (Nixon, 2021). It gives developers control over their web server, letting them modify HTML on the fly, process credit cards, add user details to a database, and fetch information from a third-party website all from within the same PHP files where the HTML code resides. PHP is one of the core technologies of dynamic web design, working with MySQL, JavaScript, CSS, and HTML5 to generate interactive web content (Nixon, 2021).

2.4.6 XAMPP

XAMPP is a free, open-source cross-platform web server solution stack package created by Apache Friends. It offers a simple and lightweight approach to create a local server environment for web development. The package contains essential components such as Apache (web server), MySQL/MariaDB (database server), PHP, and Perl, making it suitable for testing and deploying PHP-based web applications on a local PC before moving them to a live server. XAMPP's user-friendly control panel enables developers to easily manage and configure services, making it a popular choice for both beginners and professionals.

2.5 Summary

This chapter presents a literature review for the proposed project, which begins with an introduction that discusses the essential aspects relevant to understanding the problem statement. It also analyzes findings relevant to the proposed system. A review of similar existing systems is done, followed by a comparison of the strengths and weaknesses to help guide the creation of the proposed system. The chapter finishes with an overview of the software and technologies used during the development process, providing insights into the tools and utilities that help create the proposed system.

Chapter 3: Requirements Analysis Design

3.1 Introduction

This chapter describes the approach and design aspects of the proposed project. It starts with a full discussion of the methodology, including its phases, to give an overview of the activities involved in constructing the suggested system. A complete requirements analysis is used to identify and analyze the project's necessary needs. Additionally, the suggested system's user design is offered, accompanied by diagrams that show and clarify the project's features and structure, providing a clear view on its execution.

3.2 Methodology

This project uses the Rapid Application Development (RAD) methodology. Rapid prototyping and constant user feedback have made RAD a popular approach in software development, allowing for the design of user-centric systems. The RAD technique is divided into four phases which are Requirements Planning, User Design, Construction, and Cutover (Awaliah et al., 2023; Gerald et al., 2021). This chapter explores these chapters further, depicting how they help Rosecdy Kitchen create a comprehensive and user-friendly booking management system more efficiently. The focus on iterative design and collaboration ensures that the finished system meets the requirements of both users and stakeholders.

3.2.1 Requirements Planning

During the Requirements Planning phase, the development team and stakeholders work closely together to define, prioritize, and explain system needs. This guarantees that the system meets the needs of the users and achieves the company's objectives. The continuous structure of

RAD allows for improvements based on ongoing stakeholder feedback, increasing the system's relevance and success (Syifa et al., 2023).

3.2.2 User Design

During the User Design phase, prototypes are produced to allow users to interact with the system early on. This interactive technique allows developers to modify functionalities and fulfill user requirements more efficiently by providing rapid feedback. This iterative feedback loop guarantees that the system design is both functional and user-friendly (Siallagan, 2024).

3.2.3 Construction

The Construction phase focuses on continuous development and ongoing testing. Developers work in cycles, using feedback from previous phases to assure system quality and performance. This method of iteration reduces risks and improves system reliability by identifying and resolving issues quickly (Tarsono, 2024).

3.2.4 Cutover

Finally, the Cutover phase involves the transition to the newly created system, which includes user training and support. By providing users with the essential knowledge and tools, this phase assures smooth adoption and reduces interruptions. Effective training boosts user confidence and satisfaction, helping to ensure a smooth deployment (Gerald et al., 2021).

3.3 Requirements Analysis

The requirements analysis phase for the Rosecdy Kitchen project is critical to developing a booking management system that meets user needs and aligns with the company's objectives. Collaboration with stakeholders during this phase ensures the definition, prioritization, and

clarification of system requirements. Questionnaires were used as the primary tool to gather valuable insights from prospective users, enabling a comprehensive understanding of their preferences, challenges, and expectations. The iterative nature of the Rapid Application Development (RAD) methodology facilitates ongoing refinement of these requirements based on stakeholder feedback, enhancing the system's relevance and effectiveness (Awaliah et al., 2023). Understanding diverse user needs is crucial, as software engineers often have different perspectives from end users (Gerald et al., 2021). By involving stakeholders actively, the project remains adaptable to changing requirements, ensuring the delivery of a user-centric and efficient system.

3.3.1 Questionnaire

The questionnaire is divided into three sections with the goal of gathering thorough insights into the proposed project. Section A (Demographic Information) seeks to collect key demographic information from respondents, such as age, gender, and company ownership status, in order to better understand the different backgrounds and opinions of potential customers. Section B (Survey on the Need for a Web-Based Ordering System) aims to assess respondents' impressions of the obstacles and constraints associated with current manual ordering techniques, establishing the need for a digital alternative. Finally, Section C (Survey on Preferred Features in a Web-Based Ordering System) focuses on determining users' preferences and expectations for web-based ordering system functionalities such as payment methods, reporting features, and user-friendly interfaces, in order to align the system's design with user needs and expectations. The relevant questions that are used in the questionnaire for analysis are as follows:

Section A: Demographic Information

1. What is your gender?

2. What is your age?
3. How often do you order food from websites/apps/social media? (Example: Shopee, Foodpanda, Facebook, Whatsapp, etc)

Section B: Current Practices of a Booking Management System

4. How often do you buy Kek Lapis Sarawak from Rosecdy Kitchen?
5. How do you typically book/order Kek Lapis Sarawak from Rosecdy Kitchen?
6. What challenges do you face with your current booking or ordering process from Rosecdy Kitchen?
7. How do you currently make payments to Rosecdy Kitchen?
8. Would you prefer Rosecdy Kitchen using a website for booking and payments?

Section C: Preferences and Feedback of a Booking Management System

9. As a user, what features in the Rosecdy Kitchen website that you would find most useful for the ordering process?
10. What factors would discourage you from using the Rosecdy Kitchen website?
11. Would you be willing to use the Rosecdy Kitchen website if implemented?

3.3.2 Discussion of Questionnaire's Findings

A total number of 37 respondents took part in the analysis survey. The demographic of the respondents varies in terms of gender, age groups and their frequency of ordering food through websites, apps and social media platforms. The analysis of the approach and design requirements for the proposed project will be discussed based on the results and findings of the questionnaire.

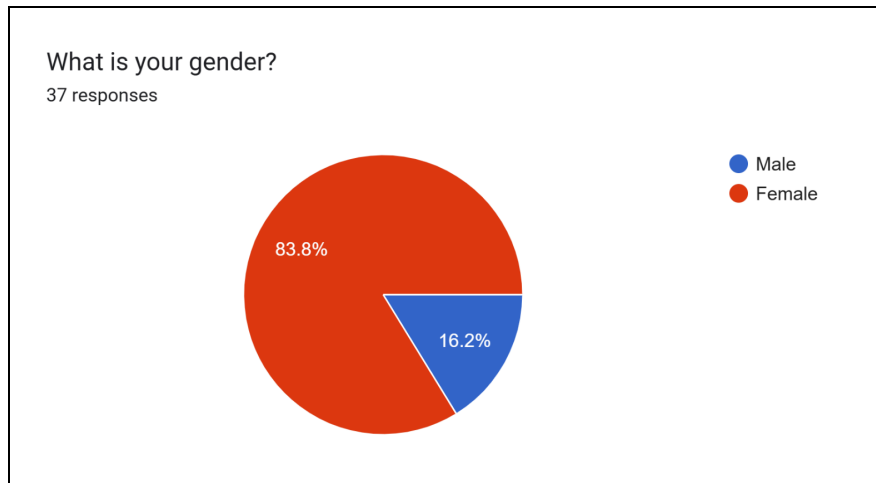


Figure 3.1: Pie Chart of the distribution of respondents according to gender.

A total number of 37 respondents took part in the analysis survey. Figure 3.1 shows the distribution of respondents according to gender in which (N = 31; 83.8%) represents the female respondents while (N = 6; 16.2%) represents the male respondents.

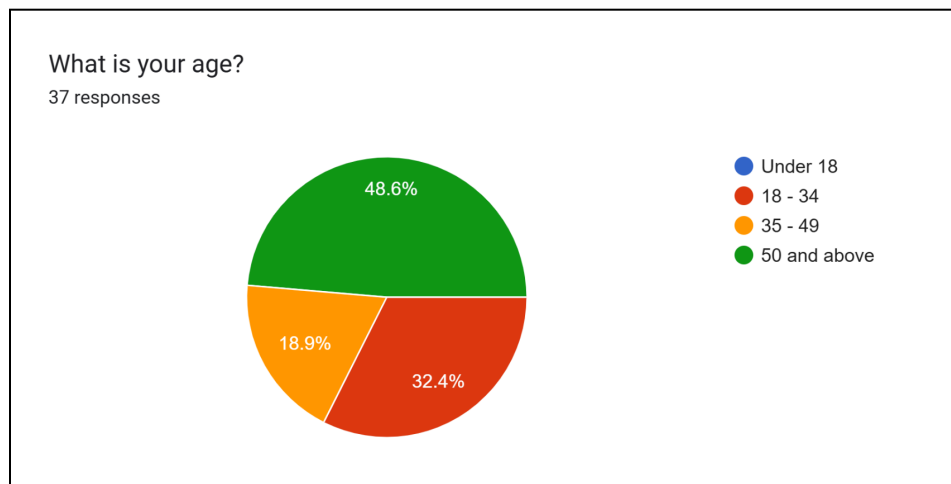


Figure 3.2: Pie Chart of the distribution of respondents according to age.

Figure 3.2 shows the distribution of respondents according to age in which (N = 12; 32.4%) represents age group of 18-34 years old respondents, (N = 7; 18.9%) represents age

group of 35-49 years old respondents, while (N = 18; 48.6%) represents the age group of 50 years old and above respondents.

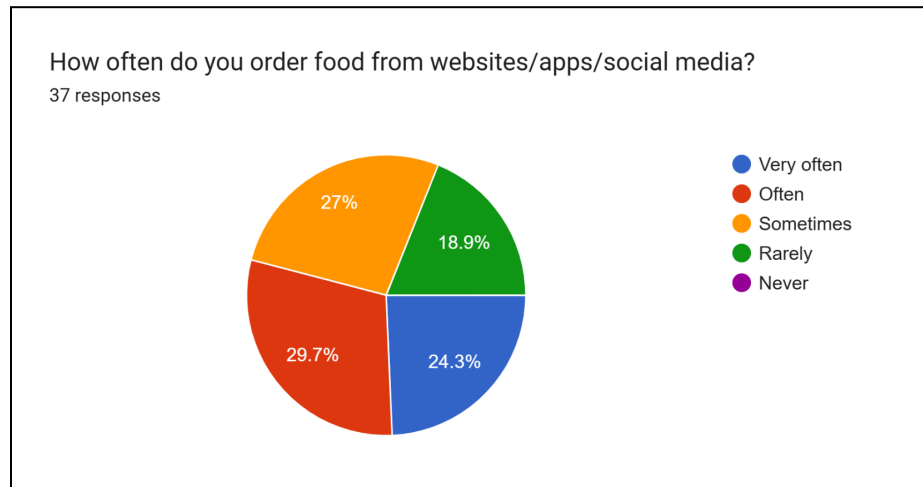


Figure 3.3: Pie Chart of the distribution of responses for “How often do you order food from websites/apps/social media?”

As shown in figure 3.3, the combined total of "Very often," "Often," and "Sometimes" (N = 20, 81%) suggests that the majority of respondents actively use digital platforms for food ordering, showing that this is a prevalent behavior.

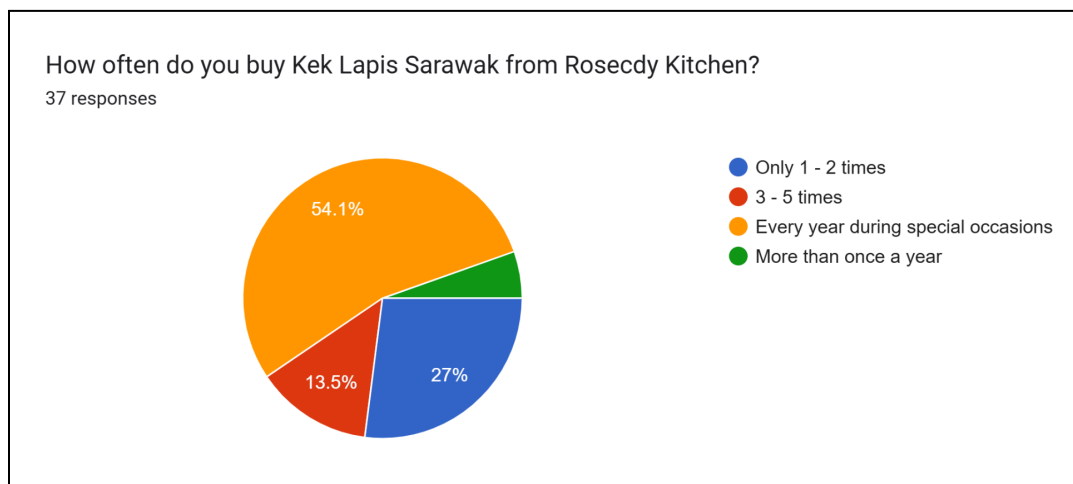


Figure 3.4: Pie Chart of the distribution of responses for “How often do you buy Kek Lapis Sarawak from Rosecdy Kitchen?”

As shown in figure 3.4, most respondents (N = 20, 54.1%), purchase Kek Lapis Sarawak annually, typically during special occasions. This indicates that the product is highly associated with festive or celebratory events and is likely viewed as a seasonal or special-occasion item. However, only a smaller group of respondents (N=2, 5.4%) reported purchasing Kek Lapis Sarawak more than once a year. This highlights that very few customers see this as a regular product to consume multiple times throughout the year.

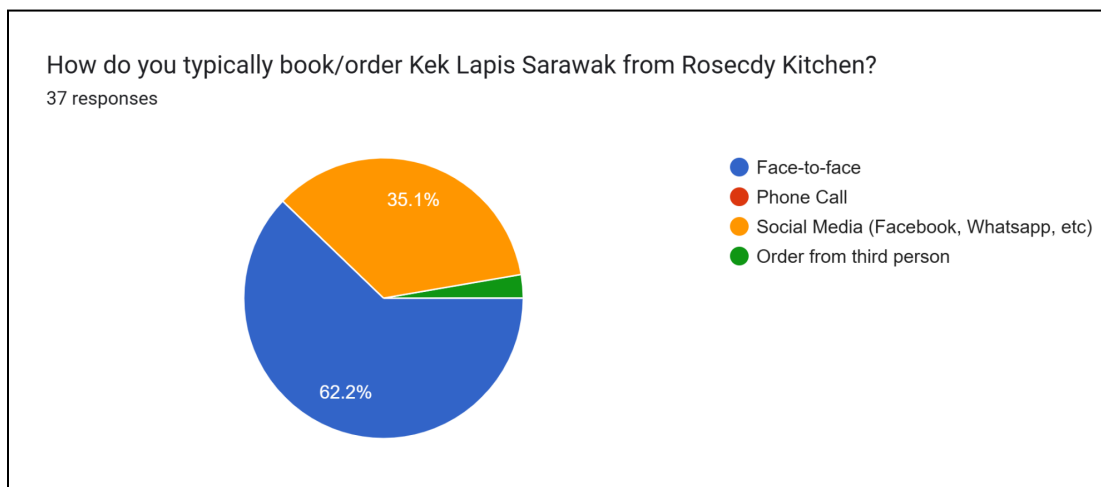


Figure 3.5: Pie Chart of the distribution of responses for “How do you typically book/order Kek Lapis Sarawak from Rosecdy Kitchen?”

As shown in figure 3.5, most respondents (N = 23, 62.2%), order Kek Lapis Sarawak from the owner of Rosecdy Kitchen. Some respondents (N = 13, 35.1%) order Kek Lapis Sarawak from Rosecdy Kitchen via social media such as Facebook and Whatsapp while only one respondent orders Kek Lapis Sarawak from a third person.

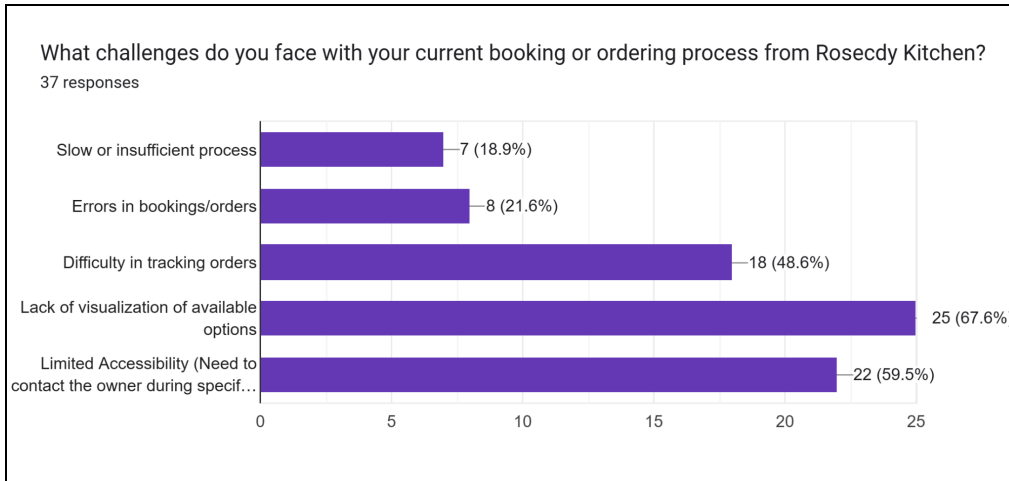


Figure 3.6: Bar chart of the distribution of responses for “What challenges do you face with your current booking or ordering process from Rosecdy Kitchen?”

Respondents were allowed to choose more than one answer for this question. As shown in figure 3.6, a significant number of respondents (N = 25, 67.26%) reported that the lack of visualization of available options was their challenge during the ordering process from Rosecdy Kitchen. Apart from that, with 22 responses (59.5%), a significant number of respondents face the inconvenience of contacting the owner during specific times. Lastly, some respondents (N = 18, 48.6%) also reported that there is a difficulty in tracking orders when ordering from Rosecdy Kitchen.

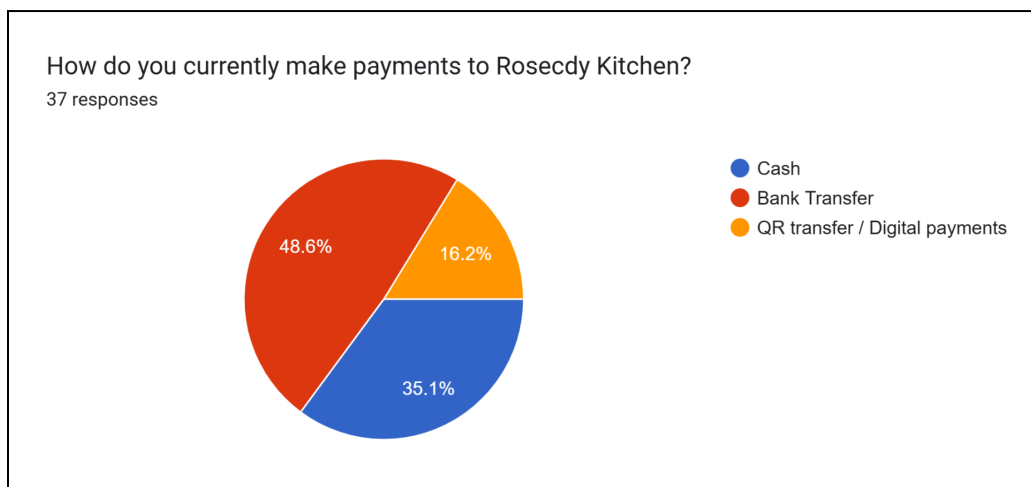


Figure 3.7: Pie chart of the distribution of responses for “How do you currently make payments to Rosecdy Kitchen?”

As shown in figure 3.7, almost half of the respondents (N = 18, 48.6%) make payments to Rocsecdy Kitchen via Bank Transfer. Other than that, 13 respondents (35.1%) make payment via cash while 6 respondents (16.2%) make payment via QR transfer.

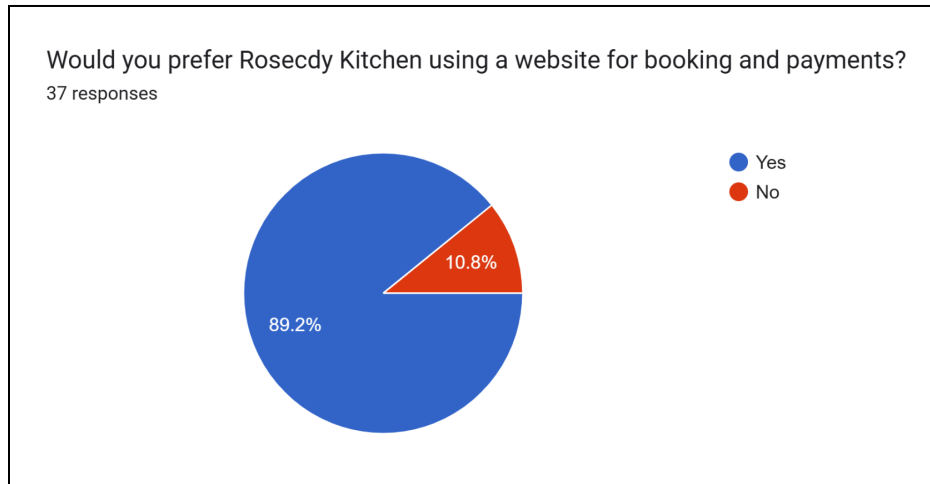


Figure 3.8: Pie chart of the distribution of responses for “Would you prefer Rosecdy Kitchen using a website for booking and payments?”

As shown in figure 3.8, most of the respondents (N = 33, 89.2%) would prefer Rosecdy Kitchen to use a website for its booking and payments while a number of respondents (N = 4, 10.8%) do not prefer online booking.

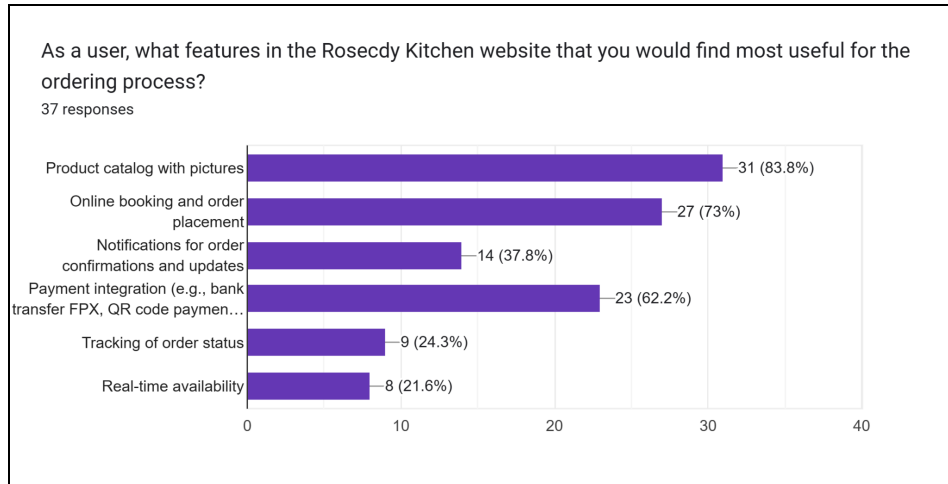


Figure 3.9: Bar chart of the distribution of responses for “As a user, what features in the Rosecody Kitchen website that you would find most useful for the ordering process?”

Respondents were allowed to choose more than one answer for this question. As shown in figure 3.9, the most respondents (N = 31, 83.8%) value the feature of product catalog with pictures. Next, a significant number of respondents (N = 27, 73%) prefer online booking and online placement as one of their valued features. Payment integration options (such as bank transfer or QR code payment) are also significant, with 62.2% (N = 23). Features like notifications for order confirmations and updates (37.8%), tracking of order status (24.3%), and real-time availability (21.6%) are valued less but still indicate areas where improvements can enhance the overall customer experience.

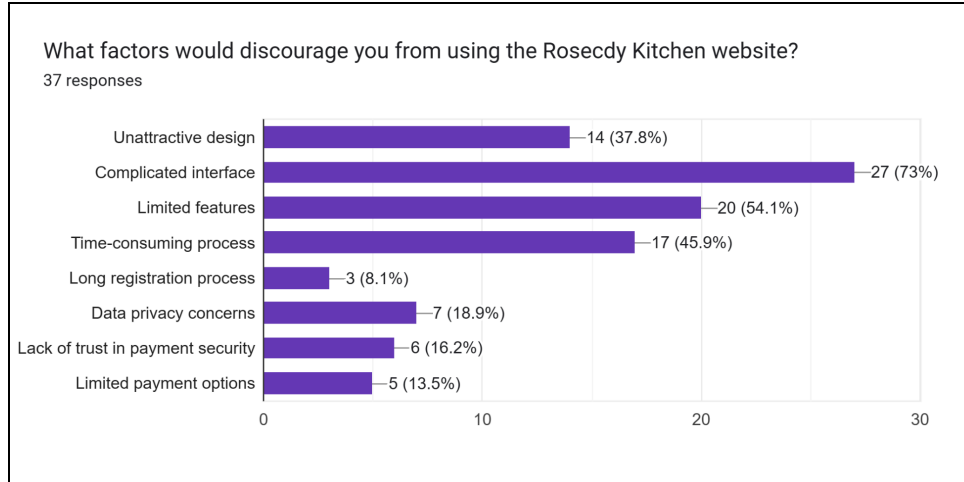


Figure 3.10: Bar chart of the distribution of responses for “What factors would discourage you from using the Rosecdy Kitchen website?”

Respondents were allowed to choose more than one answer for this question. As shown in figure 3.10, the most significant issue chosen by the respondents (N = 27, 73%), is a complicated interface. Limited features were the second most common deterrent chosen by 54.1% (N = 20) of the respondents. Next, 45.9% (N = 17) of respondents raised a concern on the time-consuming process while an unattractive design was identified as a discouraging factor by 37.8% (N = 14) of respondents. Other factors, such as data privacy concerns (N = 7, 18.9%), lack of trust in payment security (N= 6, 16.2%), and limited payment options (N = 5, 13.5%), were less prominent but still noteworthy. The least concerning factor was a long registration process, which only 8.1% (N = 3) of respondents found discouraging.

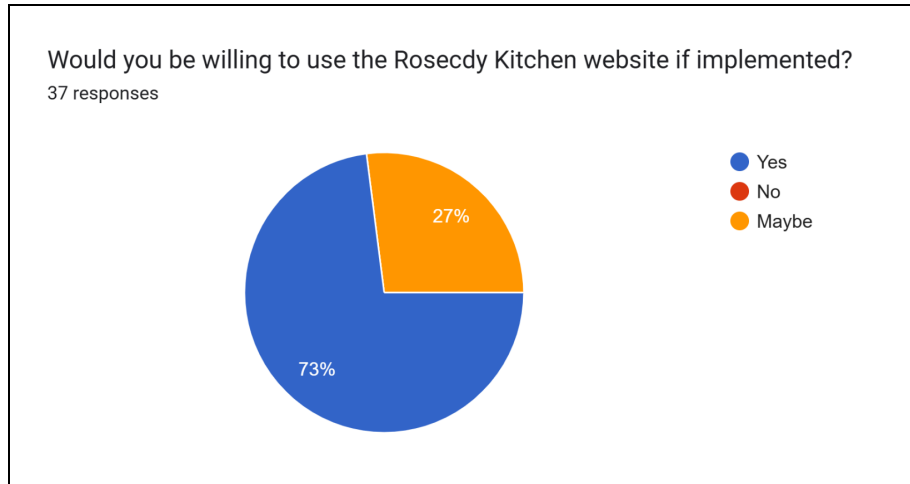


Figure 3.11: Pie chart of the distribution of responses for “Would you be willing to use the Rosecdy Kitchen website if implemented?”

As shown in figure 3.11, most of the respondents (N = 27, 73%) would be willing to use the Rosecdy Kitchen website if implemented while a number of respondents (N = 10, 27%) would be open to trying using the Rosecdy website if implemented.

3.4 Use Case Diagram

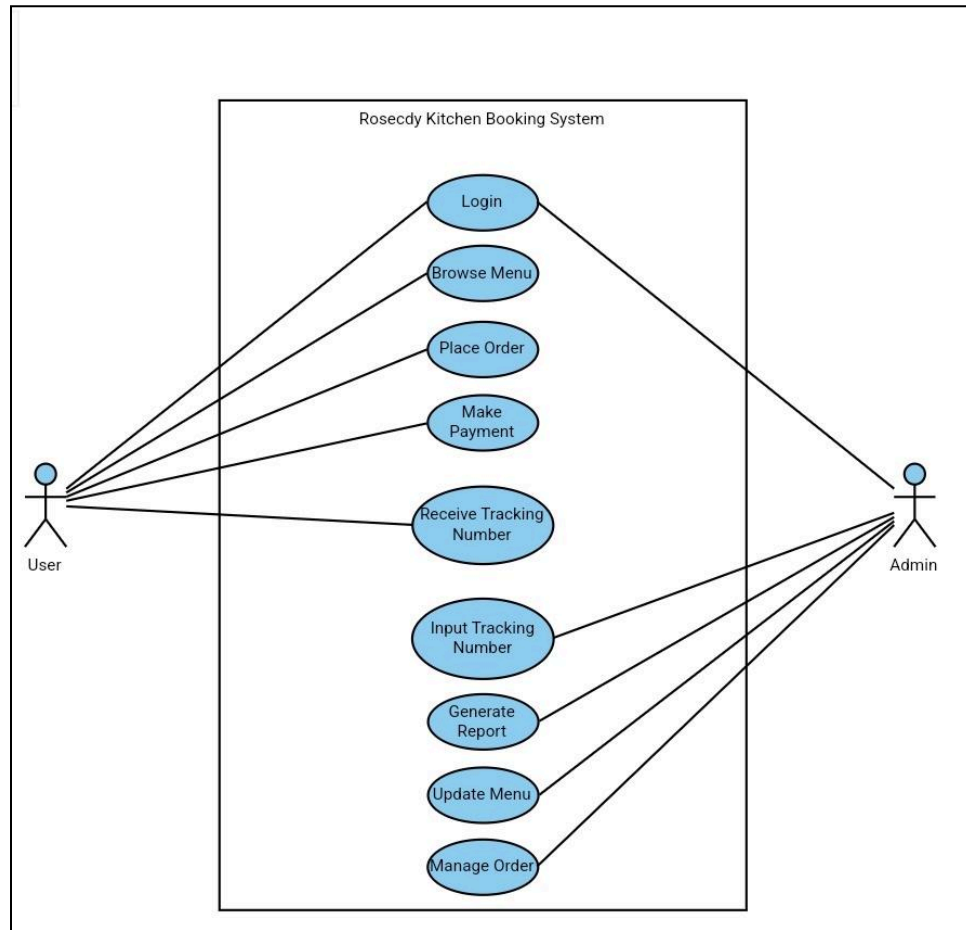


Figure 3.12: Use Case Diagram

Figure 3.12 shows the use case diagram for the proposed system. Based on figure 3.13, there are two actors, User and Admin, and how they interact with the system.

Actors

1. User (Customer):

-Represents customers who interact with the system to perform actions such as browsing the menu, placing orders, making payments, and tracking orders.

2. **Admin:**

-Represents the system administrator responsible for managing backend operations, including updating the menu, managing orders, generating reports, and inputting tracking numbers.

Use Cases

Figure 3.13 also highlights the following functionalities provided by the system:

For Users:

1. **Login:** Users can log in to access their accounts and personalized features.
2. **Browse Menu:** Users can view the menu and explore available items.
3. **Place Order:** Users can select items and place an order.
4. **Make Payment:** Users can complete their orders by making payments.
5. **Receive Tracking Number:** After an order is placed, users receive a tracking number for status updates.

For Admin:

1. **Input Tracking Number:** Admins input tracking numbers for users to monitor their orders.
2. **Generate Report:** Admins generate reports for business insights and analytics.
3. **Update Menu:** Admins manage the menu by adding, removing, or updating items.
4. **Manage Orders:** Admins oversee and process customer orders to ensure smooth operations.

Use Case Scenarios

1. Use Case: Place Order

Actors: New User

Description: Allows a new user to register an account on the platform.

Preconditions:

- Users must provide valid registration details.

Flow of Events:

1. The user navigates to the registration page.
2. User fills in username, password, and other required details.
3. System validates input and creates a new user record.
4. User receives confirmation and can proceed to login.

Alternative Flow:

- If username already exists, system prompts user to choose another.
- If validation fails, system shows error messages.

Postconditions:

- New user account is created in the database.

2. Use Case: User Login

Actors: Registered User

Description: Allows users to log in to their account.

Preconditions:

- Users must have a registered account.

Flow of Events:

1. The user enters username and password on the login page.
2. System verifies credentials.
3. If valid, the user is granted access to their profile and features.

Alternative Flow:

- If credentials are invalid, the system shows an error message.

Postconditions:

- User session is created.

3. Use Case: Browse Products and Add to Cart

Actors: Logged-in User

Description: User browses available Kek Lapis products and adds desired items to the cart.

Preconditions:

- Users must be logged in.

- Products must be available and active.

Flow of Events:

1. User views product listings.
2. The user selects the product, chooses size and quantity.
3. The user adds the product to the cart.
4. System updates cart contents.

Alternative Flow:

- If a product is inactive or out of stock, the system notifies the user.

Postconditions:

- The cart is updated with selected products.

4. Use Case: Place Order

Actors: Logged-in User

Description: User places an order for items in the cart.

Preconditions:

- Users must have items in the cart.
- Users must be logged in.

Flow of Events:

1. The user reviews the cart and proceeds to checkout.
2. The user confirms order details and delivery address.
3. The system creates order records and order_products entries.
4. The system notifies the admin of the new order.

Alternative Flow:

- If the cart is empty, the system prevents checkout.

Postconditions:

- Order and order details are saved in the database.

5. Use Case: Make Payment

Actors: Logged-in User

Description: User completes payment for an order.

Preconditions:

- Users must have a pending order.

Flow of Events:

1. The user selects the payment method (e.g., deposit receipt upload).
2. The user uploads payment proof if required.
3. System records payment details and updates order status.

Alternative Flow:

- If payment fails or is invalid, the user is prompted to retry.

Postconditions:

- Payment record is saved and order status updated.

6. Use Case: Admin Manage Orders

Actors: Admin

Description: Admin views and updates order statuses.

Preconditions:

- Admin must be logged in.
- Orders must exist in the system.

Flow of Events:

1. Admin logs into the dashboard.
2. Admin views list of orders and payment statuses.
3. Admin updates order status (e.g., processing, shipped).

Alternative Flow:

- Admin cancels orders if necessary.

Postconditions:

- Order statuses are updated and users notified.

7. Use Case: User Profile Management

Actors: Logged-in User

Description: User views and updates their profile information.

Preconditions:

- User must be logged in

Flow of Events:

1. User accesses profile page.
2. The user updates personal details and delivery address.
3. The system saves updated information.

Postconditions:

- User profile data is updated in the database.

8. Use Case: User Profile Management

Actors: User

Description: User resets password if forgotten.

Preconditions:

- Users must provide a valid username.

Flow of Events:

1. The user navigates to the reset password page.
2. User enters username and new password twice.

3. System validates and updates password hash in users table.

Alternative Flow:

- If username is not found or passwords do not match, the system shows error.

Postconditions:

- User password is updated.

3.5 Class Diagram

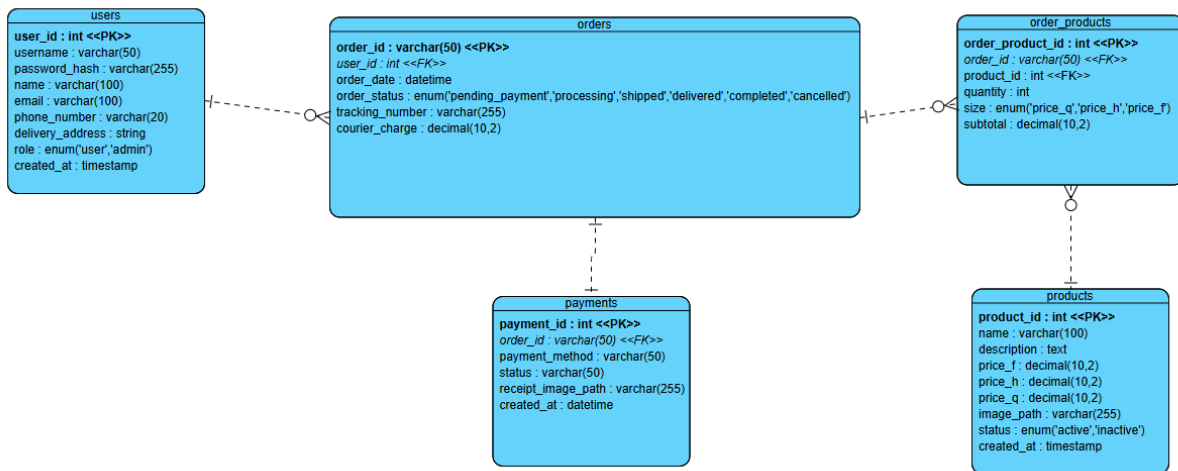


Figure 3.13: Entity- Relationship Diagram

Figure 3.13 shows the Entity-Relationship between entities that are involved in Rosecdy Kitchen Booking System. The entities that are involved are customer, menu, order details, order, admin and payment. The relationship between the entities are as follows:

1. One user can place many orders (1-to-M)
2. One order can contain many order products (1-to-M)

3. Many order products belong to one product (M-to-1)
4. One order can have many payments (1-to-M)

3.6 Data Dictionary

The data dictionary for the entities along their data types, key types and descriptions are shown in the table below.

Entity	Attribute	Data Type	Key type	Description
Users	user_id	int(11)	Primary Key	Unique identifier for the users.
	username	varchar(50)	-	User's username for login.
	password_hash	varchar(255)	-	Encrypted password for the users.
	name	varchar(100)	-	Display name for each user.
	phone_number	varchar(20)	-	Contact phone number of the customer.

	delivery_address	string	-	User's delivery address
	role	enum('user', 'admin')	-	Role of the user.
	created_at	timestamp	-	Timestamp of when the user was created.
Orders	order_id	varchar(50)	Primary Key	Unique identifier for each order.
	user_id	int(11)	Foreign Key	ID of the user who placed the order
	order_date	datetime	-	Date and time when the order was placed
	order_status	enum('pending_payment', 'processing', 'shipped', 'delivered', 'completed', 'cancelled')	-	Status of the order

	tracking_number	varchar(255)	-	Tracking number for shipment
	courier_charge	decimal(10,2)	-	Shipping cost
Products	product_id	int(11)	Primary Key	Unique identifier for each product
	name	varchar(100)	-	Name of the product
	description	text	-	Description of the product
	price_f	decimal(10,2)	-	Full price
	price_h	decimal(10,2)	-	Half price
	price_q	decimal(10,2)	-	Quarter price
	image_path	varchar(255)	-	Path to product image
	status	enum('active','in active')	-	Product status
	created_at	timestamp	-	Timestamp of when the product

				was created
Order Products	order_product_id	int(11)	Primary Key	Unique identifier for the order product record.
	order_id	int(11)	Foreign Key	ID of the order
	product_id	int(11)	Foreign Key	ID of the product
	quantity	int(11)	-	Quantity of the product ordered.
	subtotal	decimal(10,2)	-	Subtotal price for this product in the order
Payment	payment_id	int(11)	Primary Key	Unique identifier for the payment record.
	order_id	int(11)	Foreign Key	ID of the order being paid
	created_at	datetime	-	Timestamp when the payment was made.

	payment_method	varchar(50)	-	Method of payment.
	receipt_image_path	varchar(255)	-	Path to the payment receipt image
	status	varchar(50)	-	Status of the payment

Table 3.1: Data Dictionary

3.7 Design Interface

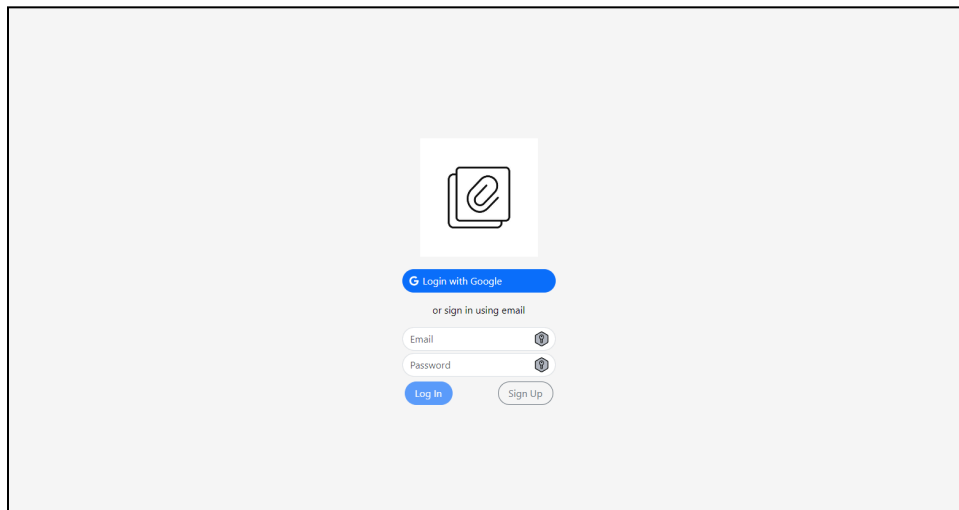


Figure 3.14: Mockup Login Page

As shown in Figure 3.14, the proposed system allows users to login into the system using Google or any of their preferred email addresses.

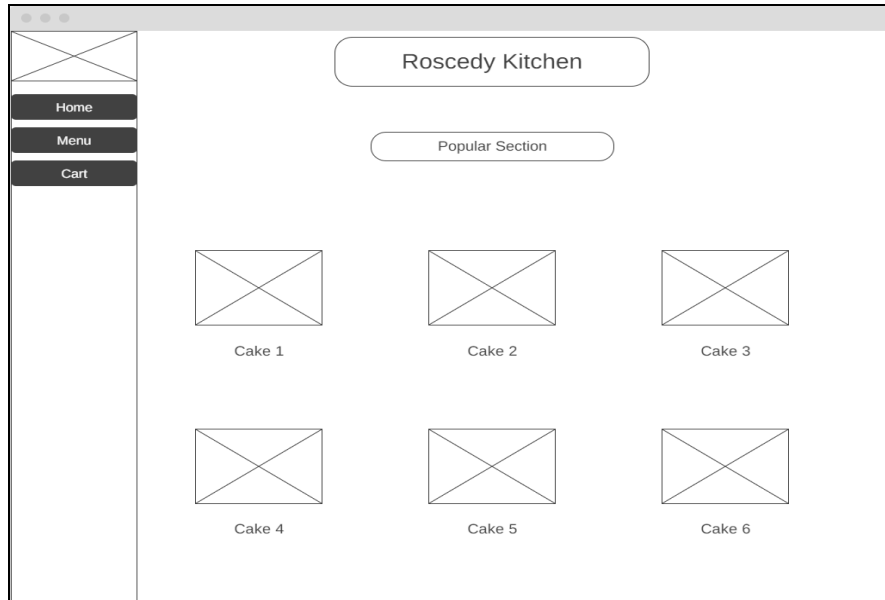


Figure 3.15: Mockup Main Page

As shown in Figure 3.15, the main page contains the various options of *Kek Lapis*. Users can freely navigate to other pages as well as browse through the popular section.

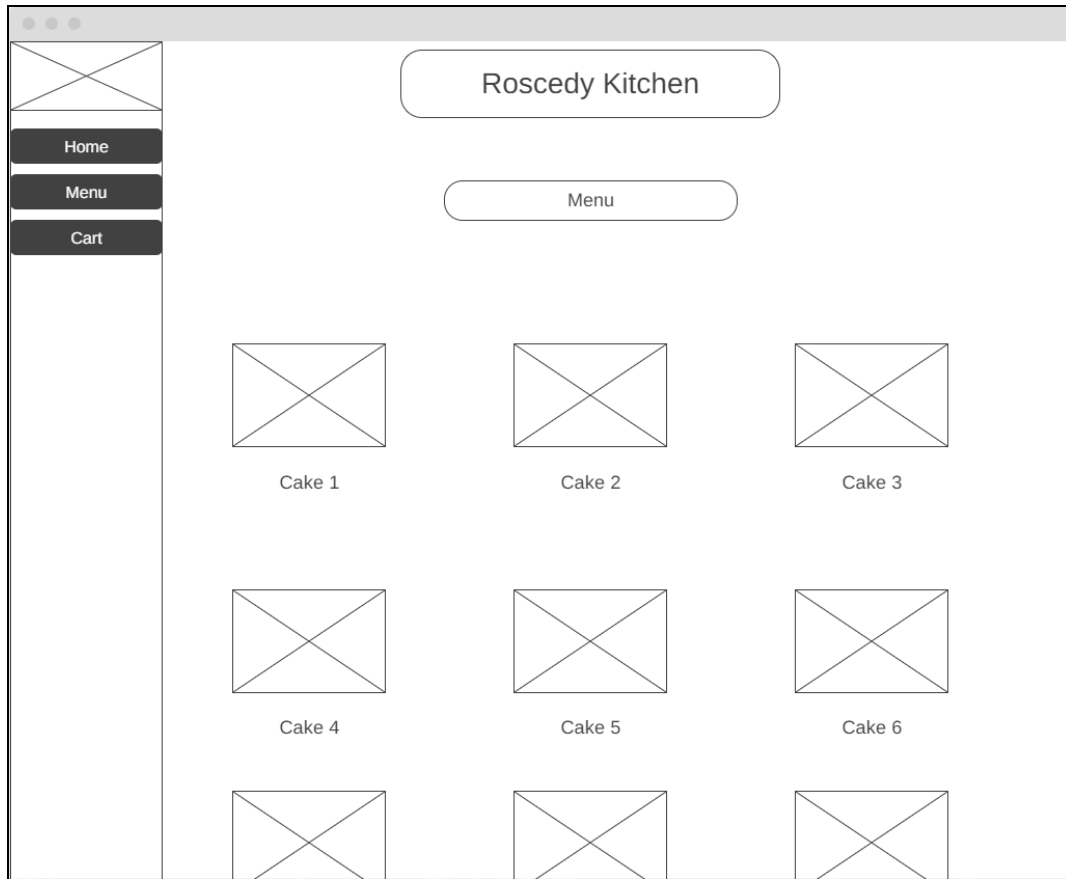


Figure 3.16 Mockup Menu Page

As shown in figure 3.16, users are able to browse through the various selections of *Kek Lapis*. They can also check for the availability of the *Kek Lapis* options.

Payment

Price

Name

Address

Reference Number

Figure 3.17: Payment Page

Figure 3.17 shows the payment page for the proposed system. Users will need to scan the QR code to pay and input the necessary details to confirm their order.

Order						
ID	Name	Order Date	Payment	Status	View Order	Edit Order

Figure 3.18: Order Page for Admin

Figure 3.17 shows the order page in which admin is able to view the current orders in the system. The admin is able to view each order or edit each order to give customers their tracking number.

3.8 Summary

This chapter presents a requirements analysis and design particularly for the Rosecdy Kitchen Booking Management System. It begins with an overview of the structured approach and design considerations for developing a system that effectively meets the needs of both customers and business owners. Using the Rapid Application Development (RAD) methodology, the project assures a user-centric design through iterative feedback and stakeholder participation, allowing the system to evolve and adapt during development.

The requirements analysis phase is important in ensuring that the system meets Rosecdy Kitchen's operating challenges. A detailed questionnaire reveals important user challenges, such as a lack of product visualization, restricted tracking possibilities, and difficulties in communicating directly with the owner for bookings. The analysis also identifies user preferences for crucial features such as an easy-to-navigate product catalog, integrated payment alternatives (such as QR payments), and live order tracking. These findings immediately inform the system's operation, ensuring that it fits the specific requirements of Rosecdy Kitchen's consumers.

Technical designs, such as the entity-relationship diagram, give a clear structure for the system's database, allowing for effective handling of data including client information, orders, and payments. The use case diagram depicts the interactions between customers and administrators, including major features such as order placement, payment management, and

report generation. The data dictionary facilitates development by describing the attributes and relationships required for database deployment.

System interface mockups fulfill the observed user preferences by emphasizing visual appeal and usability. Pages like the payment interface, product catalog, and login screen are made to improve the business owner's operating efficiency while providing a smooth and enjoyable customer experience.

In conclusion, this chapter provides a thorough foundation for the Rosecdy Kitchen Booking Management System's development and execution, ensuring that it successfully meets the operational requirements of the company and enhances the customer experience. The project provides a system that is both scalable and functional by utilizing user feedback and following the RAD methodology, opening the door for future expansion and success.

Chapter 4: Implementation

4.1 Introduction

This chapter details the implementation phase of the Rosecdy Kitchen project, a web-based Kek Lapis store designed to provide an accessible and user-friendly platform for customers to browse and purchase Kek Lapis cakes. The implementation covers the development environment, tools used, system architecture, and the key modules that make up the application. It also discusses the user interface design, security considerations, and testing procedures to ensure a robust and reliable system.

4.2 Implementation Tools

The Rosecdy Kitchen project was developed using a combination of tools and technologies to implement efficient coding, testing, and deployment. Visual Studio Code served as the primary code editor, providing a robust environment for PHP, HTML, and CSS development. XAMPP was utilized as the local server environment, bundling Apache and MySQL to host and manage the web application and its database. PHPMyAdmin was employed for database administration, enabling easy management of tables and data. The backend logic was implemented using PHP, while MySQL handled data storage for users, products, orders, and payments.

4.2.1 Visual Studio Code

Figure 4.1 shows Visual Studio Code (VS Code) which is created by Microsoft. Vs Code is a source-code editor known for its extensive feature set that includes code refactoring, syntax highlighting, embedded Git control, intelligent code completion, snippets, and debugging. This

instrument was mostly used for creating and modifying the PHP, JavaScript, CSS, and HTML code that make up the web application's framework. The decision to use Visual Studio Code has been influenced by its vast extension library, which improves code quality and productivity.

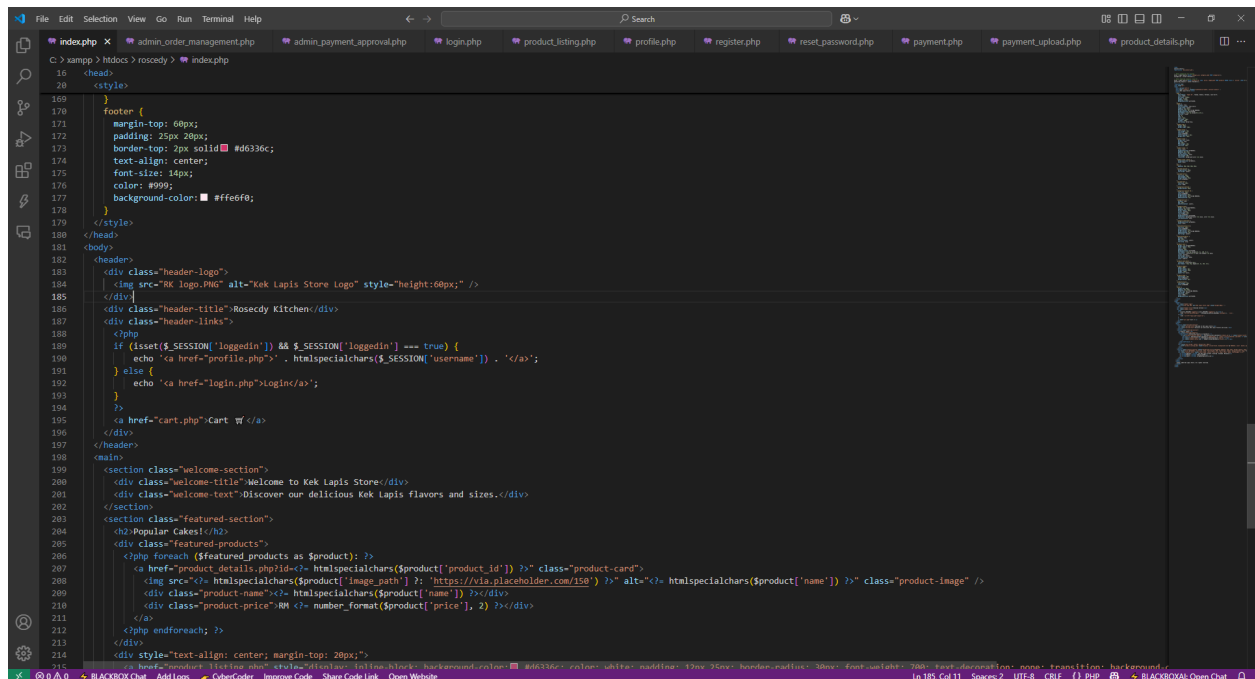


Figure 4.1: Screenshot of Visual Studio Code

4.2.2 XAMPP

Figure 4.2 shows XAMPP which is a free, open-source cross-platform web server solution stack package created by Apache Friends. It provides a simple installation and configuration environment for developers to run a local web server on their personal computers. XAMPP provides the Apache HTTP Server, the MariaDB database (a derivative of MySQL), and PHP and Perl interpreters. It is commonly used to develop and test web applications locally before deploying them to a live server. XAMPP simplifies the setup process by combining all required components into a single package, allowing developers to focus on writing rather than server configuration difficulties.

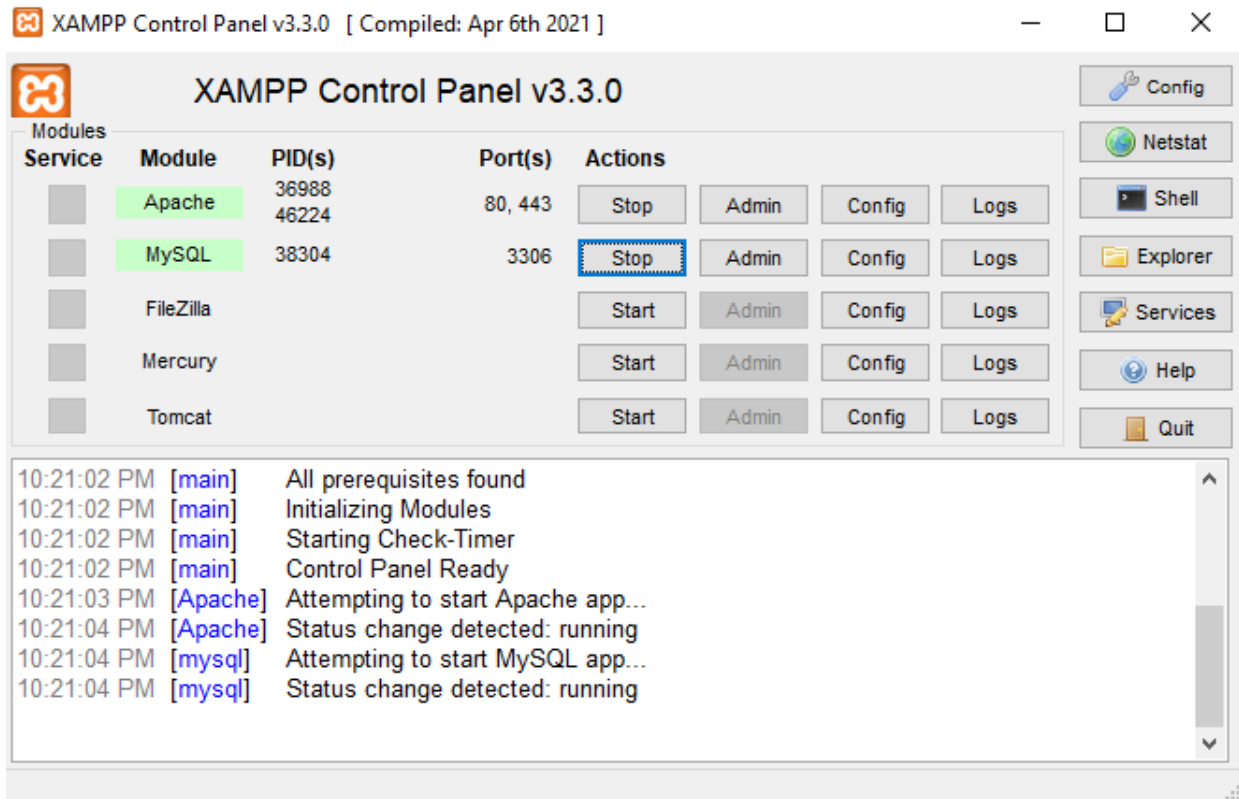


Figure 4.2: Screenshot of XAMPP

4.2.3 PHPMyAdmin

Figure 4.3 shows PHPMyAdmin which is a free and open-source web-based database management application written in PHP. It offers a user-friendly graphical interface for working with MySQL or MariaDB databases. PHPMyAdmin allows users to create, modify, and delete databases, tables, and records. It also lets you run SQL queries, manage users and permissions, import and export data, and execute database maintenance chores. PHPMyAdmin simplifies database administration, making it accessible to people who are not comfortable with command-line tools.

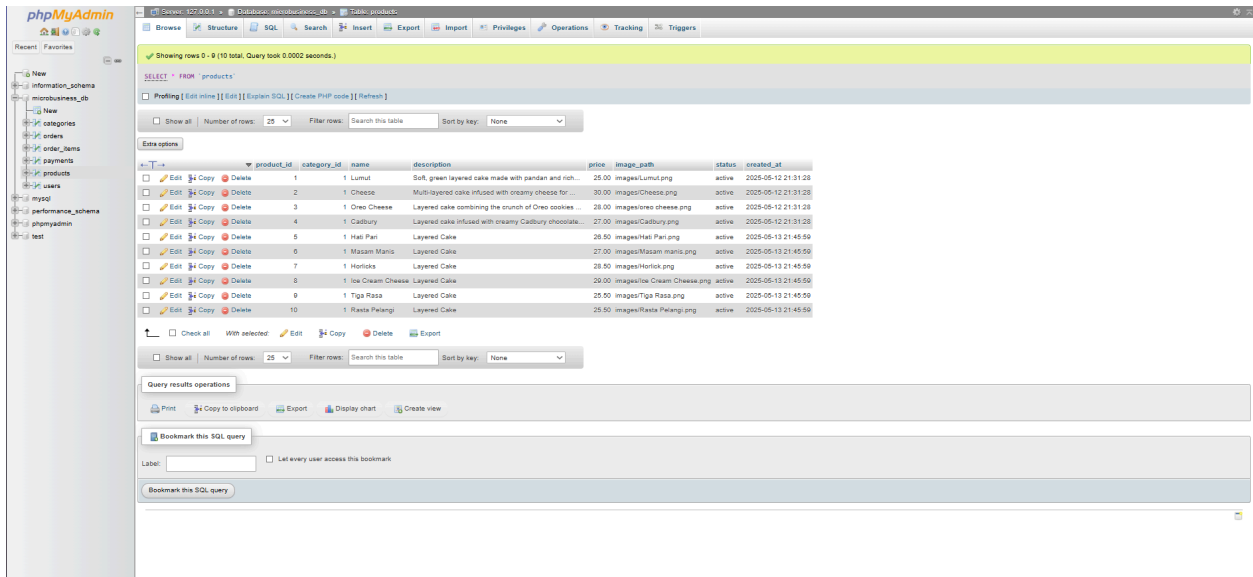


Figure 4.3: Screenshot of phpMyAdmin

4.3 Web-Based Booking Management System for Rosecdy Kitchen Prototype

This section describes the prototype of the Kek Lapis Store online application, focusing on the system hierarchy and overall organization. The prototype functions as a functional model, showcasing the essential functionalities and user interactions planned for the final system.

4.3.1 System Hierarchy

The system is designed to be versatile and scalable, with each module responsible for specific functionalities. The main components are:

- **User Authentication Module:** Manages user credentials and session management. It supports user login, registration, password reset, and profile management functionalities.
- **Profile Management Module:** Allows users to view and update their personal information, view order history, and manage payment receipts

- Main Site Module: Serves as the landing page displaying featured products, categories, and user session links, providing a user-friendly interface for browsing and shopping.
- Product Details Module: Shows detailed information about a specific product, including images, description, pricing options, and availability. Users then can continue to the item to cart or immediately proceed to checkout.
- Product Management Module: Handles product catalog management including listing products, displaying detailed product information, and managing product categories.
- Shopping Cart Module: Manages the shopping cart functionality, allowing users to add, view, and modify items before proceeding to payment.
- Checkout Module: Handles the order placement process, collecting necessary user information and payment details to complete the purchase.
- Payment Processing Module: Handles payment transactions including displaying payment QR codes and uploading payment receipts..
- Order Management Module: Provides administrative capabilities to manage customer orders, track order statuses, and handle order-related operations.
- Add Product Module: Provides a form for administrators to add new products to the store, including product name, description, pricing, and images.
- Monthly Profits Module: Provides a summary of monthly sales revenue, displaying total profits by year and month in a clear table format. It helps administrators quickly assess the store's financial performance over time.

4.3.2 User Authentication Module

According to Figure 4.4, this module provides user authentication and session management, allowing for secure login, registration, password recovery, and profile updates. It guarantees that user credentials are safely kept and that sessions are correctly maintained, thereby protecting user data and providing a personalized experience throughout the system.

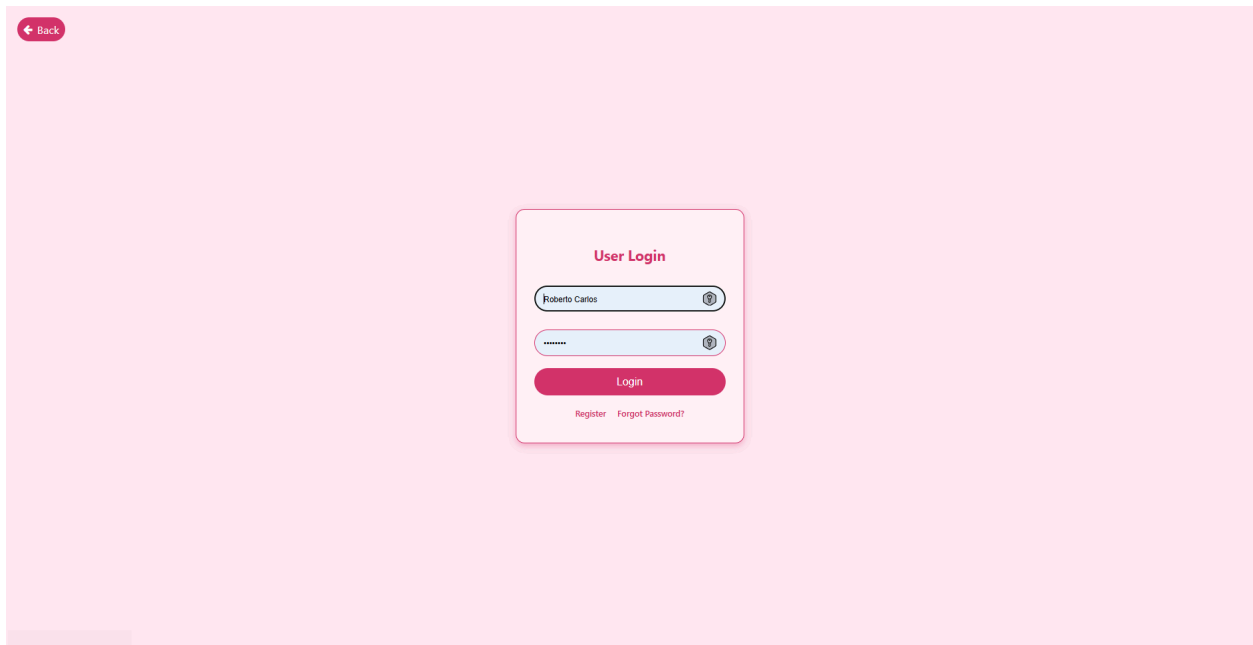


*Figure 4.4: Login Page for Web-Based Booking Management System for Rosecdy Kitchen
Prototype*

4.3.3 Profile Management Module

Figure 4.5 shows the profile page of the user where their personal details are displayed and can be updated via form submission. The profile page also displays the user's order history and payment status. Users can view details of their past orders and upload payment receipts for

pending payments directly from their profile page. This module provides a comprehensive overview and management interface for user account and order-related activities

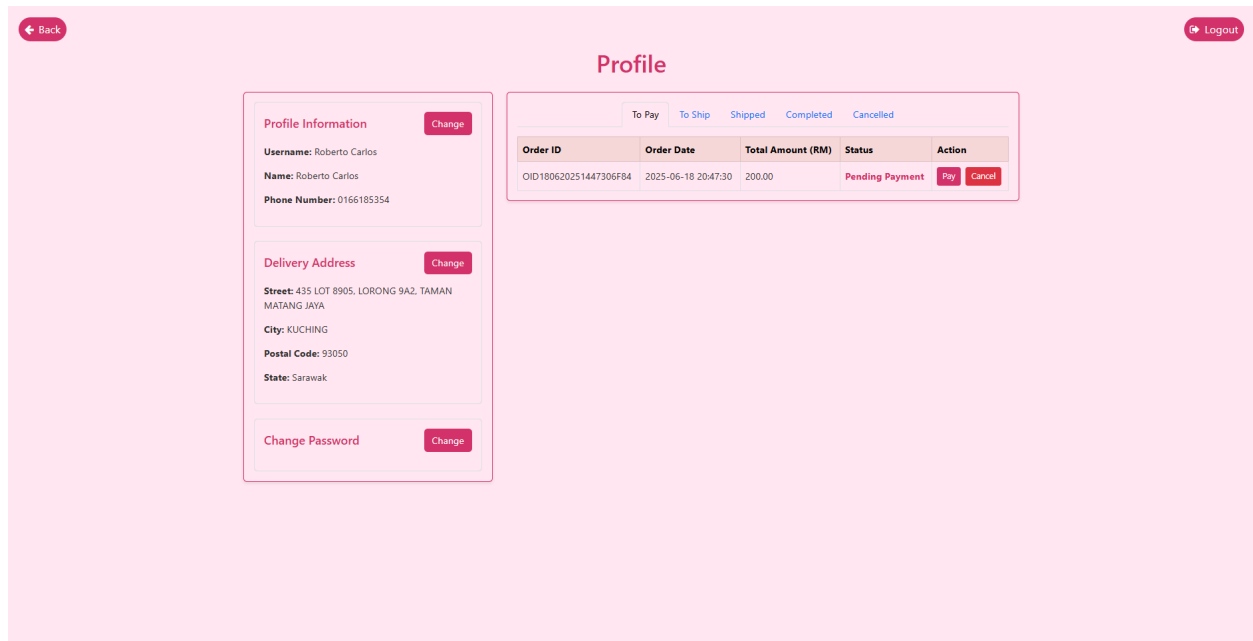


Figure 4.5: Profile Page for Users

4.3.4 Main Site Module

Figure 4.6 shows the main landing page for Rosecdy Kitchen, showcasing featured products with images, names, and prices. It provides easy navigation through product categories and quick access to user login, profile, and shopping cart which offers an engaging shopping experience.

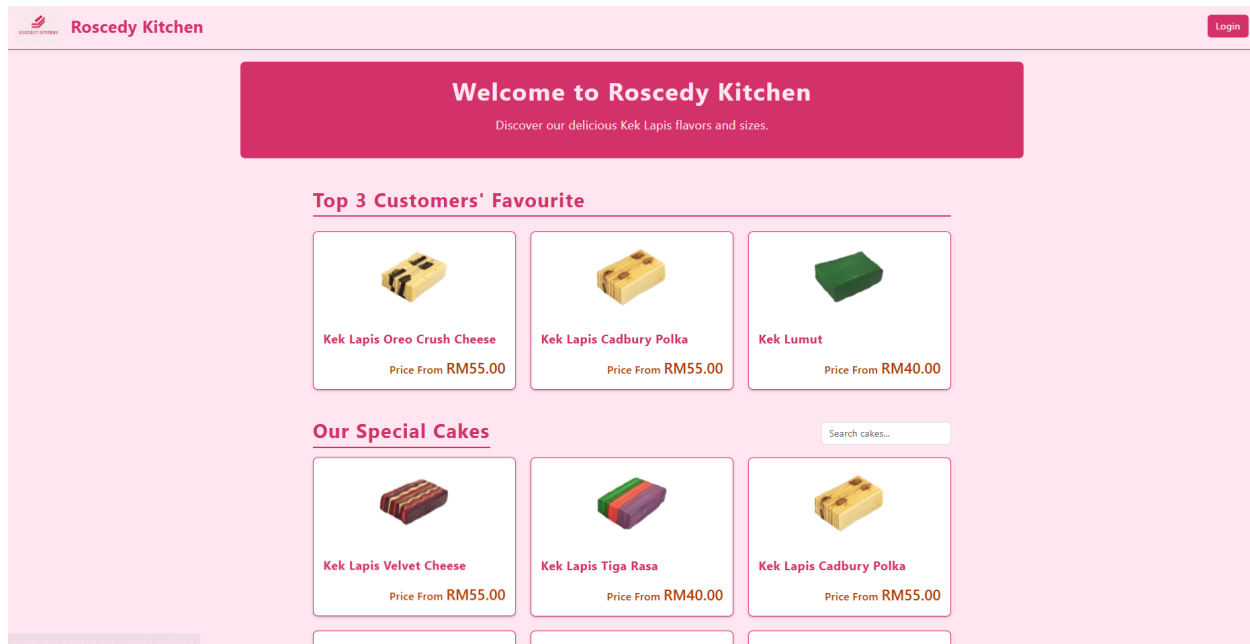


*Figure 4.6: Main Page for Web-Based Booking Management System for Roscedy Kitchen
Prototype*

4.3.5 Product Details Module

Figure 4.7 shows the Product Details Page, which gives users detailed information about a specific product they are interested in. This page has high-resolution photos that provide a clear visual depiction of the item, a thorough product description, pricing options for different sizes or variations, and real-time availability status. The layout is intended to assist users make informed purchasing decisions by presenting all necessary information in an organized and user-friendly fashion. In addition, visitors are offered the option of adding the item to their shopping cart for further browsing or proceeding directly to the checkout page to complete their purchase. This functionality improves the overall purchasing experience by providing flexibility and efficiency.

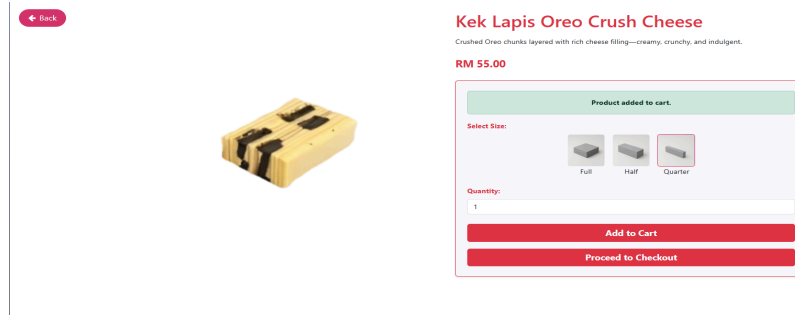


Figure 4.7: Product Details Page

4.3.6 Shopping Cart Module

The Shopping Cart Page, shown in Figure 4.8, gives customers a thorough rundown of the products they have chosen to buy. The product names, related photos, chosen quantities, individual pricing, and the order's estimated total cost are all displayed in detail on this page. Users have complete control over changing product amounts, getting rid of things they don't want, and going back to the product catalog to keep shopping. Customers can make the necessary changes to their cart before completing the checkout process thanks to the page's design, which guarantees simplicity of navigation and fosters an intuitive user experience. Furthermore, a dynamic total price is automatically updated in accordance with the modifications made, guaranteeing transparency and assisting consumers in efficiently managing their purchasing decisions.

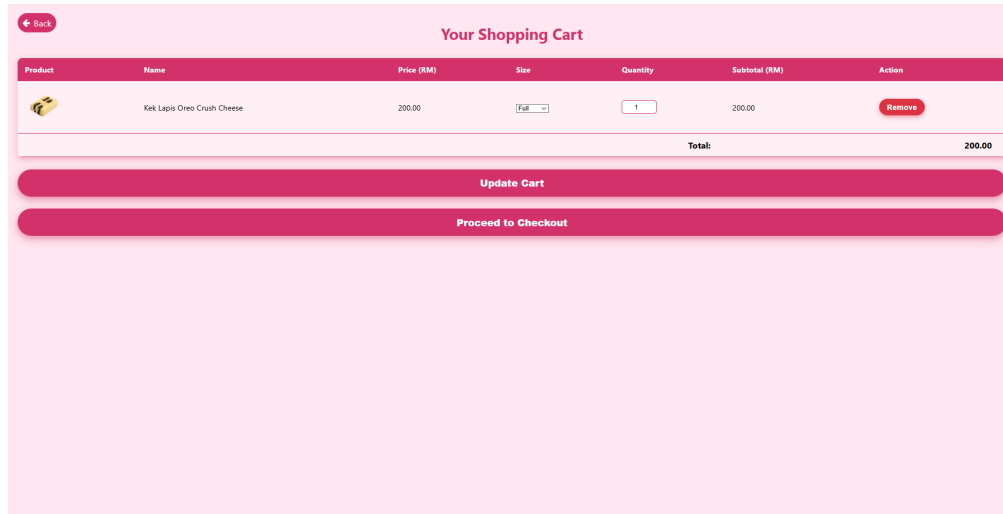


Figure 4.8: Shopping Cart Page

4.3.7 Checkout Module

Figure 4.9 depicts the Checkout Page, which is essential to the order placement process since it guides users through the last steps of their purchase. This page is intended to collect all relevant client information, such as name, contact number, and delivery address, as well as secure payment information required to complete the transaction. The layout offers a smooth and user-friendly experience, reducing errors and increasing client confidence while they complete their order. It also contains a summary of the products in the cart, allowing consumers to examine and confirm their order before final submission.

Back to Home

Delivery Information

Name: Roberto Carlos

Street: 435 LOT 8905, LORONG 9A2, TAMAN MATANG JAYA

City: KUCHING

State: Sarawak

Postal Code: 93050

Change Delivery Address

Checkout

Delivery State

Sarawak

Product	Quantity	Subtotal (RM)
Kek Lapis Oreo Crush Cheese	1	200.00
Product Total:		200.00
Estimated Product Weight : 2 kg		
West Malaysia RM20/kg, with additional RM10/kg		
East Malaysia RM15/kg, with additional RM10/kg		
Per Full Case roughly 2kg		
Courier Charges:		50.00
Grand Total:		250.00

Place Order

Figure 4.9: Checkout Page

4.3.8 Payment Processing Module

Figure 4.10 shows the part of the system that is in charge of processing payment transactions, ensuring that they are both safe and user-friendly. It has tools for showing dynamic payment QR codes, which customers can scan with their favorite mobile banking or e-wallet programs to complete the payment. Additionally, users can upload their payment receipts as proof of transaction, which aids in the verification and confirmation of the payment. This two-step method increases openness and accountability while speeding order processing and reducing potential payment difficulties.

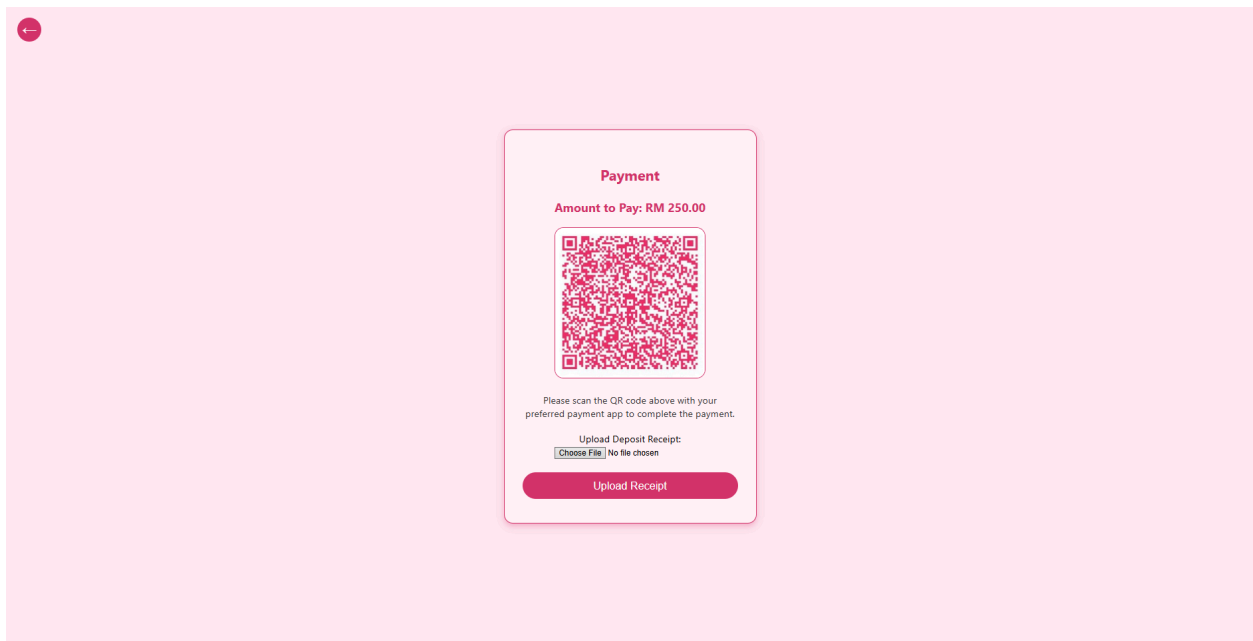


Figure 4.10: Payment Page

4.3.9 Product Management Module

Figure 4.11 displays the Product Management Page which is a critical component of the administration interface that enables administrators to efficiently manage and control the product catalog. Administrators can see a detailed list of all existing items, including product names, descriptions, pricing, photos, and availability status. The system allows you to alter product information, update inventory numbers, modify price, and upload new photos to keep the catalog correct and up to date. Administrators can also activate or deactivate products based on stock availability or promotional campaigns, providing them complete control over which items appear in the storefront. This page is built with usability in mind, easing product administration duties and ensuring the online store's efficient operation.

Admin Product Management							
Image	Cake Name	Description	Price Full (RM)	Price Half (RM)	Price Quarter (RM)	Status	Action
	KEKEKEKEE	KEKE	2,131.00	123.00	213.00	Inactive	Mark Active Delete
	Kek Lapis Tiga Rasa	A triple-flavored delight combining chocolate, vanilla, and pandan in one cake.	140.00	75.00	40.00	Active	Mark Sold Out Delete
	Kek Lapis Cheezy Rainbow	Bright rainbow-colored layers with a cheesy, buttery taste—both eye-catching and rich.	200.00	105.00	55.00	Active	Mark Sold Out Delete
	Kek Lapis Oreo Crush Cheese	Crushed Oreo chunks layered with rich cheese filling—creamy, crunchy, and indulgent.	200.00	105.00	55.00	Active	Mark Sold Out Delete
	Kek Lapis Masam Manis Horlick	Sweet and tangy layers infused with Horlicks, offering a zesty malt flavor.	160.00	85.00	45.00	Active	Mark Sold Out Delete
	Kek Lumut	Green moss-like appearance with pandan and kaya flavors: moist and aromatic.	140.00	75.00	40.00	Active	Mark Sold Out Delete
	Kek Lapis Velvet Cheese	Velvety red layers paired with creamy cheese, giving a rich and tangy twist.	200.00	105.00	55.00	Active	Mark Sold Out Delete
	Kek Hati Pari	Classic dark layered cake with a moist, dense texture and bold spice notes.	140.00	75.00	40.00	Active	Mark Sold Out Delete

Figure 4.11: Order Management Page for Admin

4.3.10 Order Management Module

Figure 4.12 shows the Order Management Page, which gives administrators with options for effectively managing customer orders. The website allows users to see, search, and filter

orders, providing quick access to specific transactions. Administrators can change order statuses (pending, processed, delivered, or completed) and include tracking numbers to help with delivery tracking. Each transaction includes detailed order information, such as the customer's name, phone number, order date, total money, current status, tracking number, and uploaded payment receipt. This single interface simplifies order administration, enhances administrative efficiency, and ensures fast and accurate fulfillment. The organized style and user-friendly design improve operational efficiency, allowing administrators to keep clear and up-to-date records while also supporting better communication and service delivery to customers.

Order ID	Customer Name	Phone Number	Order Date/Time	Total Amount (RM)	Courier Charge (RM)	Status	Tracking Number	Receipt	Action
OID220620250636446624	Maldini	01612321341	22-06-2025 12:36 PM	255.00	97.50	Completed	Enter tracking number	View Receipt	Update Delete
OID220620250636226206	Maldini	01612321341	22-06-2025 12:36 PM	55.00	37.50	Completed	Enter tracking number	View Receipt	Update Delete
OID220620250635580359	Maldini	01612321341	22-06-2025 12:35 PM	225.00	225.00	Completed	Enter tracking number	View Receipt	Update Delete
OID2106202507043F0B1	Roberto Carlos	0166185354	21-06-2025 01:04 PM	420.00	150.00	Completed	Enter tracking number	View Receipt	Update Delete
OID210620250643176FE8	Roberto Carlos	0166185354	21-06-2025 12:43 PM	200.00	50.00	Completed	Enter tracking number	View Receipt	Update Delete
OID210620250643087BE8	Roberto Carlos	0166185354	21-06-2025 12:43 PM	200.00	50.00	Completed	Enter tracking number	View Receipt	Update Delete

Figure 4.12: Order Management Page

4.3.11 Order Management Module

Figure 4.13 shows the form interface that allows administrators to easily add new products to the store's inventory. This form includes elements for important product characteristics such as the product name, full description, pricing information for multiple

variations or sizes, and the ability to add high-quality photos. The interface is intended to assure uniformity and correctness in product listings, allowing for fast catalog expansion while presenting a professional and user-friendly storefront.

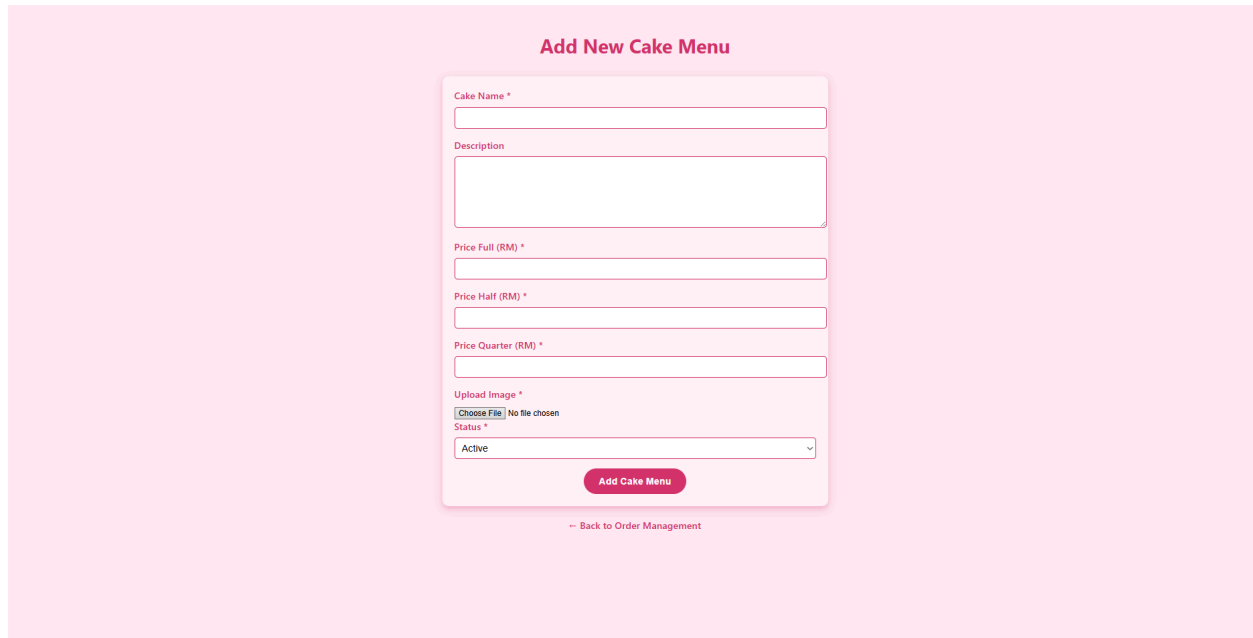
The image shows a web form titled "Add New Cake Menu" on a light pink background. The form itself is a white rounded rectangle with a pink border. It contains several input fields: "Cake Name *" (a text box), "Description" (a larger text area), "Price Full (RM) *" (a text box), "Price Half (RM) *" (a text box), and "Price Quarter (RM) *" (a text box). Below these is an "Upload Image *" section with a "Choose File" button and the text "No file chosen". At the bottom of the form is a "Status *" dropdown menu currently set to "Active". A pink "Add Cake Menu" button is located at the bottom right of the form. Below the form, centered, is a link that says "← Back to Order Management".

Figure 4.13: Add New Product Page

4.3.12 Monthly Sales Module

Figure 4.14 displays Rosecdy Kitchen's monthly profits dashboard. It gives administrators a clear and straightforward table of the store's monthly sales revenue, which is calculated as the sum of completed order product subtotals organized by year and month. The page has a clean, user-friendly design with a stylized table that shows the year, month (as a full month name), and total profit in Malaysian Ringgit (RM). It also contains a navigation link back to the Order Management page, which allows for quick access to extensive order controls. This dashboard provides administrators with vital insights into the store's financial performance over time, allowing them to make more educated decisions and conduct business analysis.

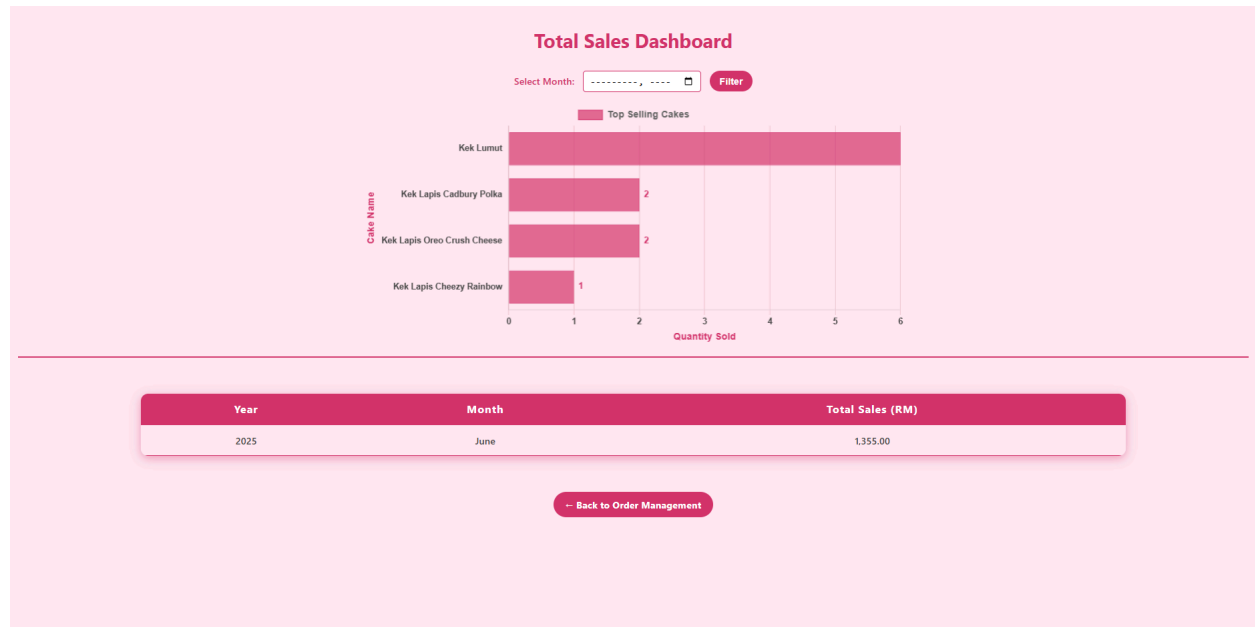


Figure 4.14: Monthly Sales Page

4.4 Discussion

The Rosecdy Kitchen Web-Based Booking Management System was implemented by merging a variety of tools and technologies to produce a functioning and user-friendly platform for customers and administrators alike. The system was created quickly and modularly to facilitate ease of maintenance and scalability, with Visual Studio Code for code development, XAMPP for local server hosting, and PHPMyAdmin for database management. Each module, which included user login, product browsing, order placement, payment processing, and administrative controls, was built with straightforward navigation, safe transactions, and responsive design. Dynamic features including real-time cart updates, QR code payments, and monthly profit tracking have been added to improve functionality and user experience.

4.5 Summary

In summary, this chapter described how the Rosecdy Kitchen Web-Based Booking Management System was implemented, including the tools, technologies, and system modules used. The system was successfully built with Visual Studio Code for coding, XAMPP for local server management, and PHPMYAdmin for database operations. The prototype includes key features such as user registration, product browsing, shopping cart functionality, payment processing, and administrative controls. It efficiently supports both consumer contact and backend management, achieving the system's goal of expediting Kek Lapis ordering while increasing operational efficiency at Rosecdy Kitchen.

Chapter 5: Testing

5.1 Introduction

This chapter focuses on the testing phase of the Rosecdy Kitchen Web-Based Booking Management System. Testing is critical in verifying that the system works as intended and meets the requirements established during the planning and design phases. The primary goal is to ensure that each module, such as user registration, product browsing, cart, payment processing, and administrative controls are running quickly and reliably. This chapter describes the many testing methodologies used to guarantee the system provides a seamless experience for both consumers and administrators, including functionality testing, usability testing, performance evaluation, and validation against user requirements.

5.2 Functionality Testing

Functionality testing was carried out to ensure that each aspect of the Rosecdy Kitchen Web-Based Booking Management System met the required specifications. This testing phase was centered on validating the main modules, which included user registration and login, product browsing, shopping cart management, checkout, payment processing, and order management. Each functionality was tested with both valid and invalid inputs to monitor system responses and verify appropriate feedback was supplied. The purpose was to validate that user actions resulted in the desired results, such as successful form submissions, accurate data changes, and proper page navigation, ensuring that the system performed consistently and reliably under expected conditions.

5.2.1 Functionality Testing of Modules

Table 5.1 shows the functionality testing of the User Authentication Module, which controls user credentials and session handling for Rosecdy Kitchen's customers and administrators. This module secures login, registration, and session control by checking user input against the database. Functionality testing centered on evaluating the login and registration processes, session commencement after successful login, error handling for invalid credentials, and logout procedures. This module is crucial for ensuring that only authorized users have access to system features, and its successful testing demonstrates that secure access control is properly maintained throughout the system.

Module Name: User Authentication Module Objective: To verify that the login functionality correctly authenticates users based on valid credentials and handles invalid input gracefully by displaying appropriate error messages. Pre-condition: The system must be running and accessible via a web browser. The user database must contain at least one registered user account with valid credentials.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Valid Login	1. Navigate to the Login Page. 2. Enter valid username and password. 3. Click "Login".	The user is successfully logged in and redirected to the main index page.	The user is successfully logged in and redirected to the main index page.	Pass	N/A
Invalid Login	1. Navigate to the Login Page. 2. Enter invalid username or password.	The user receives an error message "Invalid username or password."	The user receives an error message "Invalid username or password."	Pass	N/A

	3. Click "Login".				
Empty Fields	1. Navigate to the Login Page. 2. Leave username or password empty. 3. Click "Login".	The user receives an error message "Please enter username and password."	The user receives an error message "Please enter username and password."	Pass	N/A

Table 5.1: Functionality Testing for User Authentication Module

Table 5.2 shows the functionality testing results for the Profile Management Module, which enables customers to manage their personal information as well as monitor their order history and payment status. This module allows users to update their profile information, such as name and phone number, and submit payment receipts for pending orders. Functionality testing focused on making sure that user data was retrieved, displayed, and updated correctly, as well as that profile changes were accurately recorded and reflected. The testing also confirmed the secure processing of sensitive information, ensuring a dependable and user-friendly account management experience for all users.

Module Name: Profile Management Module Objective: To ensure that users may effectively manage their personal information, such as updating profile information, changing passwords, and changing delivery addresses. Pre-condition: The user must have a valid registered account and be successfully logged into the system.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Update Personal	1. Log in to the system	Updated personal	Updated personal	Pass	N/A

Information	with valid credentials. 2. Navigate to the profile section. 3. Update personal information fields (username, name, phone number). 4. Click the "Save" button.	information should be saved and displayed correctly in the profile.	information is saved and displayed correctly in the profile.		
Change Password	1. Log in to the system with valid credentials. 2. Navigate to the profile section. 3. Enter current password, new password, and confirm new password. 4. Click the "Save" button.	Passwords should be changed successfully and users can log in with the new password.	The password changed successfully and the user can log in with the new password.	Pass	N/A
Update Delivery Address	1. Log in to the system with valid credentials. 2. Navigate to the profile section. 3. Update delivery address fields (street, city,	Updated delivery address should be saved and displayed correctly in the profile.	Updated delivery address is saved and displayed correctly in the profile.	Pass	N/A

	postal code, state). 4. Click the "Save" button.				
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Table 5.2: Functionality Testing for Profile Management Module

Table 5.3 displays the Functionality Testing results for the Main Site Module, which acts as the Rosecdy Kitchen system's landing page. This module gives customers access to featured products, product categories, and key navigation features including login, profile, and cart links. This module's functionality testing involves ensuring that featured products are displayed correctly, that links to product detail pages work properly, that navigation elements are responsive, and that dynamic updates are based on user session data. This guarantees that users have a smooth and engaging browsing experience when they visit the site.

Module Name: Main Site Module Objective: To ensure that the main site correctly displays featured and active products as well as dynamically updates navigation links based on user login status. Pre-condition: The system must be operational and accessible, with at least one user account, active products in the database, and appropriate session handling enabled.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Display Top 3 Favourite Cakes	1. Navigate to the Mainpage. 2. Observe the "Top 3 Customers' Favourite" section. 3. Verify the top 3 cakes are displayed	Top 3 cakes are displayed correctly based on order quantities.	Top 3 cakes are displayed correctly based on order quantities.	Pass	N/A

	with correct images, names, and prices.				
Display All Active Products	1. Navigate to the Mainpage. 2. Observe the "Our Special Cakes" section. 3. Verify all active products are displayed with images, names, and prices. 4. Use the search box to filter products by name.	All active products are displayed and the filter works correctly.	All active products are displayed and the filter works correctly.	Pass	N/A
Navigation Links Based on Login Status	1. Navigate to Mainpage as a logged-in user. 2. Verify navigation links include Profile and Cart with correct item count. 3. Log out and navigate to index.php. 4. Verify navigation shows the Login button only.	Navigation links update correctly based on user login status.	Navigation links update correctly based on user login status.	Pass	N/A

Table 5.3: Functionality Testing for Main Site Module

Table 5.4 shows the Functionality Testing for the Product Details Module, which provides users with detailed information about a single Kek Lapis product. This module displays high-resolution photos, product descriptions, pricing options, and inventory availability. It also allows customers to add products to their shopping carts or go straight to checkout. This module's functionality testing includes ensuring that product data is accurately retrieved and displayed, that image and pricing displays are responsive, and that the "Add to Cart" and "Buy Now" buttons work properly. This experiment demonstrates that customers may make informed purchasing decisions when all relevant product information is presented effectively.

Module Name: Product Details Module Objective: The system must be running with a valid product record in the database, and user login functionality must be operational. Pre-condition: The system must be running with a valid product record in the database, and user login functionality must be operational.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
View Product Details	1. Navigate to the Product Details Page with a valid product ID. 2. Verify product image, name, description, and prices are displayed. 3. Verify size options and quantity input are present.	Product details and options are displayed correctly	Product details and options are displayed correctly.	Pass	N/A
Add to Cart -	1. Log in to	Product is	Product is	Pass	N/A

Logged In User	the system. 2. Navigate to the Product Details Page. 3. Select size and quantity. 4. Click "Add to Cart".	added to cart and success message is shown.	added to cart and success message is shown.		
Add to Cart - Not Logged In User	1. Ensure the user is logged out. 2. Navigate to the Product Details Page. 3. Attempt to add product to cart.	User is redirected to the login page.	User is redirected to the login page.	Pass	N/A
Invalid Size Selection	1. Navigate to the Product Details Page. 2. Submit form without selecting a size.	Error message "Please select a size." is displayed.	Error message "Please select a size." is displayed.	Pass	N/A

Table 5.4: Functionality Testing for Product Details Module

Table 5.5 shows the Functionality Testing for the Product Management Module, which enables administrators to properly manage the product catalog. This module allows you to see, modify, activate, and deactivate product listings, as well as update their names, descriptions, pricing, photos, and availability status. This module's functionality testing included ensuring that product information was shown correctly, that product details were successfully updated, and that changes were properly reflected on the user-facing storefront. The research also verified that products may be switched between active and inactive states to control visibility based on supply

availability or promotions. The dependability of this module ensures that users receive a seamless and accurate presentation of their products.

Module Name: Product Management Module Objective: To ensure that administrators can accurately manage product information, including viewing, updating, activating, deactivating, and deleting products within the system. Pre-condition: The user must be logged in with administrative privileges and the product catalog must contain existing product records.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
View Product List	1. Log in as admin. 2. Navigate to the Product Management Page. 3. Verify all products are listed with images, names, descriptions, prices, and status.	All products are displayed correctly with accurate details.	All products are displayed correctly with accurate details.	Pass	N/A
Mark Product as Sold Out	1. Log in as admin. 2. Navigate to the Product Management Page. 3. Click the "Mark Sold Out" button for an active product. 4. Verify product status changes to inactive.	Product status updates to inactive and UI reflects the change.	Product status updates to inactive and UI reflects the change.	Pass	N/A

Mark Product as Active	1. Login as admin. 2. Navigate to the Product Management Page. 3. Click the "Mark Active" button for an inactive product. 4. Verify product status changes to active.	Product status updates to active and UI reflects the change.	Product status updates to active and UI reflects the change.	Pass	N/A
Delete Product	1. Login as admin. 2. Navigate to the Product Management Page. 3. Click the "Delete" button for a product. 4. Confirm deletion. 5. Verify product is removed from the list.	Product is deleted successfully and no longer appears in the list.	Product is deleted successfully and no longer appears in the list.	Pass	N/A

Table 5.5: Functionality Testing for Product Management Module

Table 5.6 shows the Functionality Testing for the Shopping Cart Module, which is responsible for maintaining users' selected products prior to payment. This module allows users to dynamically add products to their carts, adjust amounts, remove things, and view total costs. This module's functionality testing included ensuring that products could be appropriately added and shown in the cart, quantity modifications accurately recalculated totals, and item deletion

worked as expected. In addition, the cart's contents were checked for persistence during the user's session and effective redirection to the checkout page. This testing ensures that users have a smooth and interactive purchasing experience.

Module Name: Shopping Cart Module Objective: To verify that users can manage their cart by adding, updating, and removing products, and proceed smoothly to checkout with accurate cart details. Pre-condition: The user must be logged in and have added at least one product to the cart.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
View Cart Items	1. Add products to cart. 2. Navigate to Cart Page. 3. Verify all cart items are displayed with correct images, names, prices, sizes, quantities, and subtotals.	All cart items are displayed correctly with accurate details.	All cart items are displayed correctly with accurate details.	Pass	N/A
Update Cart Quantities and Sizes	1. Navigate to Cart Page. 2. Change quantities and sizes of items. 3. Click the "Update Cart" button. 4. Verify cart updates accordingly.	Cart quantities and sizes update correctly and totals recalculate.	Cart quantities and sizes update correctly and totals recalculate.	Pass	N/A
Remove Item from Cart	1. Navigate to Cart Page.	Item is removed	Item is removed	Pass	N/A

	2. Click the "Remove" button for an item. 3. The verified item is removed from the cart.	successfully and cart updates.	successfully and cart updates..		
Proceed to Checkout	1. Navigate to Cart Page. 2. Click the "Proceed to Checkout" button. 3. Verify the redirection to Checkout Page.	The user is redirected to the checkout page for order confirmation.	The user is redirected to the checkout page for order confirmation.	Pass	N/A

Table 5.6: Functionality Testing for Shopping Cart Module

Table 5.7 displays the Functionality Testing for the Checkout Module, which simplifies the final part of the ordering process by gathering client information and validating transactions. This module collects important information such as the customer's name, phone number, and delivery address, and then generates a summary of the items in the cart for evaluation. Functionality testing entailed validating data input fields, guaranteeing appropriate form submission, and ensuring that order details were correctly provided to the backend for processing. It also verified the redirection to the payment page and the correctness of data contained in the database. This testing guarantees that users can finish their orders consistently and without data loss.

Module Name: Checkout Module

Objective: To ensure that the checkout process accurately collects user delivery details, validates cart contents, and processes orders correctly, leading to successful redirection to the payment page.

Pre-condition: The user must be logged in with a valid profile and have at least one product in their cart to access the checkout page.

Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Access Checkout Page	1. Log in as a user. 2. Add items to cart. 3. Navigate to the Checkout Page.	Checkout page loads with delivery information and cart summary.	Checkout page loads with delivery information and cart summary.	Pass	N/A
Place Order Successfully	1. Fill in the delivery address if not set. 2. Verify cart items and totals. 3. Click the "Place Order" button.	Order is placed successfully, cart is cleared, and user is redirected to payment page.	Order is placed successfully, cart is cleared, and user is redirected to payment page.	Pass	N/A
Place Order with Empty Cart	1. Navigate to checkout.php with an empty cart. 2. Attempt to place order.	Error message "Your cart is empty." is displayed and order is not placed.	Error message "Your cart is empty." is displayed and order is not placed.	Pass	N/A
Place Order without Delivery State	1. Remove delivery state from user profile. 2. Attempt to place order..	Error message "Delivery state is not set in your profile. Please update your delivery address." is	Error message "Delivery state is not set in your profile. Please update your delivery address." is	Pass	N/A

		displayed.	displayed.		
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Table 5.7: Functionality Testing for Checkout Module

Table 5.8 presents the Functionality Testing for the Payment Processing Module, which is responsible for managing payment-related operations within the system. This module allows users to scan a dynamic QR code to make payments and upload payment receipts as proof of transaction. Functionality testing focused on validating the display of the correct QR code based on the order, testing receipt upload functionality, and verifying whether the uploaded receipts were correctly stored and linked to the respective orders in the database. It also ensured that the system could handle various file types and sizes for uploads while maintaining data security. This testing ensures a seamless and secure payment experience for users.

Module Name: Payment Processing Module Objective: To verify that the payment processing module correctly displays the payment information, supports secure receipt uploads, and links uploaded files to the correct orders for confirmation. Pre-condition: The user must have a valid order placed and be redirected to the payment page with a valid Order ID stored in the session.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Display Payment Page	1. Navigate to Payment Page with a valid Order ID in session. 2. Verify the payment amount is displayed. 3. Verify the QR code image is	Payment page displays amount, QR code, and upload form correctly.	Payment page displays amount, QR code, and upload form correctly.	Pass	N/A

	shown. 4. Verify the upload receipt form is present.				
Upload Deposit Receipt	1. On the Payment Page, upload a valid image file as a deposit receipt. 2. Submit the form. 3. Verify the success message is displayed. 4. Verify receipt is saved and linked to the order.	Receipt uploads successfully and confirmation message is shown.	Receipt uploads successfully and confirmation message is shown.	Pass	High
Upload Invalid Receipt File	1. Attempt to upload a non-image or invalid file. 2. Submit the form. 3. Verify error message is displayed.	Error message is shown and upload is rejected.	Error message is shown and upload is rejected.	Pass	N/A

Table 5.8: Functionality Testing for Payment Processing Module

Table 5.9 displays the Functionality Testing for the Order Management Module, which provides administrative users with capabilities for managing and monitoring customer orders. This module allows for the viewing, filtering, and changing of order statuses such as pending, processed, delivered, and completed. It also allows for the insertion of tracking numbers and

verification of uploaded payment receipts. Functionality testing entailed ensuring that administrators could appropriately examine order data, adjust statuses, and assign tracking numbers, and that these changes were properly reflected in the system. The module's capacity to manage many simultaneous updates while maintaining data consistency was also tested. This ensures efficient backend operations and clear communication with clients about their orders.

Module Name: Order Management Module Objective: To ensure the Order Management Module enables administrators to accurately view, update, and manage customer orders, including status changes, receipt verification, and search filtering. Pre-condition: The administrator must be logged into the system with access to the order management interface and at least one order must exist in the database.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
View All Orders	1. Log in as admin. 2. Navigate to admin_order_management.php. 3. Verify all orders are listed with order ID, customer name, order date, total amount, status, and receipt link.	All orders are displayed correctly with accurate details.	All orders are displayed correctly with accurate details.	Pass	N/A
Update Order Status	1. Log in as admin. 2. Navigate to admin_order_management.	Order and payment statuses update successfully and UI	Order and payment statuses update successfully and UI	Pass	High

	php. 3. Select an order and change its status. 4. Submit the update. 5. Verify the order status and payment status update accordingly.	reflects changes.	reflects changes.		
Search Orders	1. Use the search input to filter orders by order ID or customer name. 2. Verify the displayed orders match the search criteria.	Search results display matching orders correctly.	Search results display matching orders correctly.	Pass	Medium
View Receipt Image	1. Click the "View Receipt" button for an order with a receipt. 2. Verify the receipt image opens in a new tab or window.	Receipt image opens correctly.	Receipt image opens correctly.	Pass	Low

Table 5.9: Functionality Testing for Order Management Module

Table 5.10 shows the Functionality Testing for the Add Product Module, which lets administrators add new Kek Lapis products to their shop inventory. This module has fields for entering the product name, description, price, and uploading product photos. Functionality

testing entailed ensuring that the form accepts acceptable data inputs, validates needed fields, and correctly records new product information in the database. The test also validated that newly added products are immediately visible in the storefront and can be updated or controlled using the Product Management Module. This ensures that the inventory expands seamlessly and the user experience remains consistent.

Module Name: Add Product Module Objective: To verify that the Add Product Module allows administrators to successfully input valid product information and images, and that new products are validated, stored, and reflected correctly in the storefront. Pre-condition: The administrator must be logged in with appropriate privileges and have access to the Add Product page.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Access Add Product Page	1. Log in as admin. 2. Navigate to admin_add_product.php.	Add product form loads correctly with all required fields.	Add product form loads correctly with all required fields.	Pass	N/A
Add New Product Successfully	1. Fill in all required fields with valid data. 2. Upload a valid image file. 3. Submit the form.	A new product is added successfully and a confirmation message is shown.	A new product is added successfully and a confirmation message is shown.	Pass	High
Validation for Required Fields	Submit the form with missing required fields.	Error message "Please fill in all required fields." is displayed.	Error message "Please fill in all required fields." is displayed.	Pass	Medium
Validation for	1. Enter	Error	Error	Pass	Medium

Numeric Prices	non-numeric values in price fields. 2. Submit the form.	message "Prices must be numeric values." is displayed.	message "Prices must be numeric values." is displayed.		
Invalid Price Input (Negative Value)	1. Enter negative values in price fields. 2. Submit the form	The system should reject the negative price input and display a validation error message.	The system accepts the negative value and updates the product with incorrect pricing.	Fail	High
Invalid Image Upload	1. Upload a file with invalid extension. 2. Submit the form.	Error message "Invalid file type. Allowed types: jpg, jpeg, png, gif." is displayed.	Error message "Invalid file type. Allowed types: jpg, jpeg, png, gif." is displayed.	Pass	Medium
Missing Image Upload	Submit the form without uploading an image.	Error message "Please upload an image file." is displayed.	Error message "Please upload an image file." is displayed.	Pass	Medium

Table 5.10: Functionality Testing for Add Product Module

Table 5.11 displays the Functionality Testing for the Monthly Profits Module, which summarizes the store's revenue by calculating total sales based on completed orders, organized by month. This module helps administrators monitor sales performance over time. Functionality testing ensures that the module accurately aggregates data from completed transactions, displays it in a clearly formatted table, and correctly reflects monthly total sales. Additionally, testing confirmed the functionality of navigation links, allowing quick access back to the order

management page. This module is important for financial tracking and business decision-making.

Module Name: Monthly Profits Module Objective: To verify that the Monthly Profits Module accurately calculates and displays revenue data based on completed transactions, enabling administrators to track financial performance by month and year. Pre-condition: The administrator must be logged in and have access to the dashboard; the database should contain order data with various statuses, including at least some marked as "completed" to generate sales summaries.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
View Monthly Profits Dashboard	1. Log in as admin. 2. Navigate to admin_dashb oard.php. 3. Verify the monthly profits table is displayed. 4. Verify year, month, and total profit columns are correct.	Monthly profits are displayed correctly with accurate data.	Monthly profits are displayed correctly with accurate data.	Pass	N/A
No Profit Data Available	1. Ensure no completed payments exist. 2. Navigate to admin_dashb oard.php.	Message "No profit data available." is displayed.	Message "No profit data available." is displayed.	Pass	Low

Table 5.11: Functionality Testing for Monthly Profits Module

5.3 Reliability Testing

Reliability testing was carried out to ensure that the Rosecdy Kitchen Web-Based Booking Management System operates consistently and accurately in predicted usage scenarios. The tests were designed to ensure system stability over time, as well as data integrity throughout order placement, payment processing, and product management. To discover crashes or failures, the system was put through repeated operations such as multiple user logins, concurrent order placements, and frequent data changes. Backup and recovery techniques were also evaluated to guarantee that the system could recover from unexpected outages without losing data. The results showed that the system maintained consistent performance, handled repetitive tasks effectively, and conserved accurate data, validating its reliability for long-term use.

5.3.1 Reliability Testing for Modules

Table 5.12 shows the reliability testing results for the User Authentication Module, which handles essential functions such as user login, registration, password reset, and session handling. This testing verifies that the authentication mechanism works reliably with repeated use, concurrent access, and bad situations. The tests were designed to ensure the module's stability, data integrity, and resilience to problems such as session expiration or network outages. Reliable authentication is required to enable secure system access for all users.

Module Name: User Authentication Module

Objective: To ensure the User Authentication Module consistently performs login, registration, password reset, and session management operations under various conditions such

as repeated usage, simultaneous access, and session expiry.

Pre-condition: The system must be deployed and accessible with at least one registered user account in the database, and test environments should support multiple devices or sessions for simulation.

Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Repeated Login Attempts	1. Attempt to log in with valid credentials multiple times in quick succession. 2. Verify that the system handles multiple login requests without errors or session conflicts.	The user is logged in successfully each time without session issues or errors.	No errors observed during repeated login attempts.	Pass	High
Simultaneous Logins from Multiple Devices	1. Log in with the same user account from different devices or browsers simultaneously. 2. Verify session management and data consistency.	User sessions are maintained correctly without data loss or conflicts.	User sessions are maintained correctly without data loss or conflicts.	Pass	High
Session Expiry and Re-login	1. Log in and remain idle until the session expires. 2. Attempt to	The session expires correctly and the user is required to re-authenticate	The session expires correctly and the user is required to re-authenticate	Pass	Medium

	perform actions requiring authentication. 3. Verify users are prompted to log in again.	e.	e.		
Password Reset Reliability	1. Request password reset multiple times. 2. Verify reset tokens are unique and valid. 3. Complete password reset process successfully.	Password reset tokens work correctly and passwords can be reset reliably.	Password reset tokens work correctly and passwords can be reset reliably.	Pass	High
Invalid Login Attempts Handling	1. Attempt to log in with invalid credentials multiple times. 2. Verify that the system handles invalid attempts gracefully without locking out legitimate users.	The system blocks invalid attempts appropriately and allows legitimate logins.	The system blocks invalid attempts appropriately and allows legitimate logins.	Pass	Medium

Table 5.12: Reliability Testing for User Authentication Module

Table 5.13 covers the reliability testing of the Profile Management Module, which allows users to change their personal information, see order history, and manage payment receipts. The

reliability testing guarantees that the system can withstand repeated profile updates, concurrent access, and temporary outages without losing data or causing inconsistencies. This dependability is critical for preserving correct client data and providing a consistent user experience for order monitoring and account management.

Module Name: User Authentication Module Objective: To verify that the Profile Management Module consistently supports accurate and secure updates to user information, even under conditions like concurrent edits, invalid data entries, session persistence, and network disruptions. Pre-condition: The user must be registered and logged into the system, and the profile page must be accessible on multiple tabs or devices to simulate concurrent interactions.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Concurrent Profile Updates	1. Log in as a user. 2. Open profile page in two different browser tabs. 3. Make different updates in each tab. 4. Submit updates simultaneously. 5. Verify data consistency and conflict resolution.	Profile updates are handled correctly without data loss or conflicts.	Profile updates are handled correctly without data loss or conflicts.	Pass	High
Profile Data Validation	1. Attempt to update profile with invalid data (e.g., invalid email, empty	Validation errors are displayed and invalid data is rejected.	Validation errors are displayed and invalid data is rejected.	Pass	Medium

	required fields). 2. Verify validation errors are shown and data is not saved.				
Session Persistence on Profile Update	1. Log in and update profile. 2. Verify that the session remains active and the user is not logged out.	Session persists after profile update.	Session persists after profile update.	Pass	Medium
Profile Update with Network Interruptions	1. Start profile update. 2. Simulate network interruption during submission. 3. Verify that the system handles interruption gracefully and data integrity is maintained.	The system handles network issues without data corruption.	The system handles network issues without data corruption.	Pass	High

Table 5.13: Reliability Testing for Profile Management Module

Table 5.14 outlines the reliability testing for the Main Site Module, which serves as the landing page displaying featured products, product categories, and user session links. The reliability testing ensures that the homepage loads consistently under various conditions, including high user traffic and repeated access. It also verifies that the content remains accurate,

navigation links work properly, and the system gracefully handles temporary connectivity issues. This is essential to ensuring a smooth and dependable browsing experience for all users visiting the Rosecdy Kitchen platform.

Module Name: Main Site Module Objective: To validate that the Main Site Module reliably delivers accurate content, responsive design, and functional navigation under varying conditions, including high traffic, multiple devices, and user errors. Pre-condition: The user must have access to the internet and a compatible web browser; the Rosecdy Kitchen homepage must be deployed and accessible via a stable URL.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Homepage Load Performance	1. Access the homepage. 2. Measure page load time under normal and peak traffic. 3. Verify page loads within acceptable time limits.	Homepage loads quickly without errors.	Homepage loads quickly without errors.	Pass	High
Navigation Links Functionality	1. Click all main navigation links. 2. Verify each link directs to the correct page. 3. Check for broken links or errors.	All navigation links work correctly without errors.	All navigation links work correctly without errors.	Pass	Medium
Responsive Design	1. Access the site on various	The site displays correctly and	The site displays correctly and	Pass	Medium

	devices and screen sizes. 2. Verify layout and elements adjust correctly. 3. Check usability on mobile, tablet, and desktop.	is usable on all devices.	is usable on all devices..		
Error Handling on Invalid URLs	1. Enter invalid or non-existent URLs. 2. Verify user-friendly error pages are shown. 3. Check for proper HTTP status codes.	Proper error pages and status codes are displayed.	Proper error pages and status codes are displayed.	Pass	High

Table 5.14: Reliability Testing for Main Site Module

Table 5.15 covers the reliability testing for the Product Details Module, which displays detailed product information such as photos, descriptions, pricing, and availability. Reliability testing guarantees that product information is consistently obtained and displayed correctly even after repeated user access and amid system load. It also tests for stability when consumers add goods to their carts or go directly to checkout from the product page. This is critical to ensuring users receive correct product information at all times, resulting in a dependable and trustworthy buying experience on the Rosecdy Kitchen platform.

Module Name: Product Details Module
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Objective: To ensure that the Product Details Module consistently delivers accurate product data, responsive layouts, and stable functionality during repeated access and administrative updates.

Pre-condition: The user must access a valid product details page via the system with active product listings already configured by the admin.

Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Product Information Accuracy	1. View product details page. 2. Verify product name, description, price, and images are correct. 3. Check for any missing or incorrect information.	All product information is accurate and complete.	All product information is accurate and complete.	Pass	High
Image Loading and Display	1. Load product images. 2. Verify images load quickly and display correctly. 3. Check for broken or missing images.	Product images load without errors and display properly.	Product images load without errors and display properly.	Pass	Medium
Price Update Reflection	1. Update product price in admin panel. 2. Verify updated price reflects correctly on product	Price updates are reflected immediately and accurately.	Price updates are reflected immediately and accurately.	Pass	High

	details page.				
Responsive Layout	1. View product details page on various devices. 2. Verify layout adjusts correctly for different screen sizes.	The product details page is usable and visually correct on all devices.	The product details page is usable and visually correct on all devices.	Pass	Medium

Table 5.15: Reliability Testing for Product Details Module

Table 5.16 shows the reliability testing for the Product Management Module, which is in charge of managing the product catalog by listing products, changing data, and grouping them into categories. The reliability testing focuses on ensuring the stability of product creation, updates, and deletion processes under a variety of usage situations, including frequent revisions and high admin activity. When many administrators access the system at the same time, the module must keep the data consistent. Maintaining the dependability of this module is critical for keeping the Rosecdy Kitchen product listings accurate and up to date without interruption or error.

Module Name: Product Management Module Objective: To verify the reliability of product creation, editing, deletion, and image management under various operational conditions and concurrent administrative access. Pre-condition: The admin user must be logged into the system with access to the Product Management interface and existing products available in the database.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Product Addition	1. Add a new product with	Product is added	Product is added	Pass	High

	valid details. 2. Verify product is added successfully and appears in product list. 3. Check for validation on required fields.	correctly and validation works.	correctly and validation works.		
Product Editing	1. Edit existing product details. 2. Verify changes are saved and reflected correctly. 3. Check validation on edited fields.	Product edits are saved and validated properly.	Product edits are saved and validated properly.	Pass	Medium
Product Deletion	1. Delete a product. 2. Verify product is removed from the list. 3. Check for confirmation prompts and error handling.	Product deletion works with proper confirmation and error handling.	Product deletion works with proper confirmation and error handling.	Pass	High
Image Upload and Display	1. Upload product images. 2. Verify images are saved and displayed correctly.	Images upload and display correctly with validation.	Images upload and display correctly with validation.	Pass	Medium

	3. Check for file size and format validation.				
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Table 5.16: Reliability Testing for Product Management Module

Table 5.17 covers the reliability testing for the Shopping Cart Module, which handles the process of adding, viewing, and changing goods in a customer's cart. Reliability testing verifies that the module retains accurate cart contents during a variety of events, including frequent item updates, quantity changes, and many user sessions. It also evaluates the system's ability to keep cart data following momentary disconnections or page refreshes. This is necessary to avoid losing consumer selections and to deliver a smooth and trustworthy buying experience on the Rosecdy Kitchen platform.

Module Name: Shopping Cart Module Objective: To ensure the shopping cart consistently maintains accurate product data and handles user interactions reliably, including item addition, quantity updates, removals, and session persistence. Pre-condition: The user must be logged into the system with access to view products and interact with the shopping cart functionalities.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Add Item to Cart	1. Add a product to the shopping cart. 2. Verify the item appears in the cart with correct details. 3. Check for duplicate	Items are added correctly and duplicates are handled.	Items are added correctly and duplicates are handled.	Pass	High

	items handling.				
Update Item Quantity	1. Change the quantity of an item in the cart. 2. Verify the total price updates accordingly. 3. Check for invalid quantity inputs.	Quantity updates and price calculations are correct.	Quantity updates and price calculations are correct.	Pass	Medium
Remove Item from Cart	1. Remove an item from the cart. 2. Verify the item is removed and totals update. 3. Check for confirmation prompts.	Item removal works correctly with proper updates.	Item removal works correctly with proper updates.	Pass	High
Cart Persistence	1. Add items to cart. 2. Log out and log back in. 3. Verify cart contents persist across sessions.	Cart contents are saved and restored correctly.	Cart contents are saved and restored correctly.	Pass	High

Table 5.17: Reliability Testing for Shopping Cart Module

Table 5.18 shows the reliability testing for the Checkout Module, which manages the order placement procedure, including the collecting of user and payment information. The testing focuses on the module's ability to keep form data intact during submission, handle numerous

checkout sessions at once, and recover gracefully from interruptions such as session timeouts or network difficulties. This dependability is critical for guaranteeing successful and consistent order processing while eliminating errors that may influence customer happiness or order correctness.

Module Name: Checkout Module Objective: To verify that the checkout process handles user inputs, address updates, shipping calculations, and interruptions consistently and reliably to ensure successful order placement. Pre-condition: The user must be logged in with at least one item in the cart and a valid delivery address saved in their profile.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Delivery Address Display and Update	1. Verify delivery address is fetched and displayed. 2. Update delivery address in profile. 3. Verify updated address reflects on checkout page.	Delivery address is accurate and updates are reflected.	Delivery address is accurate and updates are reflected.	Pass	Medium
Shipping Charge Calculation	1. Verify shipping charge calculation based on state and weight. 2. Test with different states and cart weights. 3. Verify	Shipping charges and grand total are calculated correctly.	Shipping charges and grand total are calculated correctly.	Pass	High

	correct shipping charge and grand total.				
Empty Cart Handling	1. Attempt to place an order with an empty cart. 2. Verify error message is shown and order is not placed.	Empty cart orders are prevented with appropriate errors.	Empty cart orders are prevented with appropriate errors.	Pass	Medium

Table 5.18: Reliability Testing for Checkout Module

Table 5.19 outlines the reliability testing for the Payment Processing Module, which manages payment transactions by displaying QR codes and allowing users to upload payment receipts. The reliability testing ensures the module can handle multiple simultaneous uploads, process high-resolution receipt images without errors, and recover from disruptions such as incomplete uploads or network issues. This reliability is vital to guarantee accurate payment verification and prevent transaction errors, ensuring customer trust and operational efficiency.

Module Name: Payment Processing Module Objective: To ensure the reliability of the payment process by validating the correct display of payment information, secure and consistent receipt uploads, and accurate order status updates even under various user behaviors and conditions. Pre-condition: The user must be logged in with a valid order placed and redirected to the payment page with a correct order ID present in the session.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Display Payment Amount and	1. Access payment page with valid	Payment amount and QR code	Payment amount and QR code	Pass	High

QR Code	order. 2. Verify the correct amount is displayed. 3. Verify QR code image is shown with payment instructions.	display correctly.	display correctly.		
Upload Deposit Receipt - Valid File	1. Upload a valid image file (jpg, png, gif) under 5MB. 2. Verify file is accepted, converted to PNG, and saved. 3. Verify payment records are created or updated. 4. Verify order status updates to 'processing'. 5. Verify the success message and redirect to the confirmation page.	Receipt upload succeeds with correct processing and status update.	Receipt upload succeeds with correct processing and status update.	Pass	High
Upload Deposit Receipt - Invalid File Type	1. Attempt to upload a file with a disallowed extension. 2. Verify upload is rejected with appropriate	Invalid file types are rejected with clear error.	Invalid file types are rejected with clear error.	Pass	Medium

	error message.				
Upload Deposit Receipt - No File Selected	1. Submit upload form without selecting a file. 2. Verify upload is rejected with appropriate error message.	Empty uploads are rejected with clear errors.	Empty uploads are rejected with clear errors.	Pass	Medium
Receipt Image Conversion	1. Upload JPG, PNG, and GIF images. 2. Verified images are converted to PNG format and originally deleted.	Images are converted to PNG and originals removed.	Images are converted to PNG and originals removed.	Pass	Medium

Table 5.19: Reliability Testing for Payment Processing Module

Table 5.20 outlines the reliability testing for the Order Management Module, which allows administrators to manage customer orders, track order statuses, and perform order-related operations. The reliability testing focuses on the system's ability to consistently update order statuses, handle multiple order modifications simultaneously, and recover from interruptions such as server restarts or connectivity issues. Ensuring the reliability of this module is critical for maintaining accurate order records and delivering a smooth and dependable order fulfillment process.

Module Name: Order Management Module

Objective: To verify the reliability of the order management module in accurately updating order statuses, handling concurrent modifications, and maintaining consistent order records under various operational conditions.

Pre-condition: The administrator must be logged into the system and have access to the order management interface with existing orders available for viewing and updating.

Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Update Order Status and Tracking Number	1. Select an order. 2. Update order status and enter a tracking number. 3. Submit the update. 4. Verify the status and tracking number are saved correctly.	Status and tracking number are updated and displayed correctly.	Status and tracking number are updated and displayed correctly.	Pass	Medium
View Orders List with Tracking Number	1. Access the orders list. 2. Verify tracking numbers are displayed for each order. 3. Check for correct display of other order details.	Orders list shows tracking numbers and other details correctly.	Orders list shows tracking numbers and other details correctly.	Pass	High
Input Validation on Update Form	1. Submit update form with missing order ID or status. 2. Verify error	Validation prevents incomplete updates with appropriate errors.	Validation prevents incomplete updates with appropriate errors.	Pass	High

	messages are shown and updates are blocked.				
Search Orders	1. Use search input to find orders by order ID or customer name. 2. Verify search results are accurate and relevant.	Search returns correct orders matching criteria.	Search returns correct orders matching criteria.	Pass	Medium
View Receipt Image	1. Click the "View Receipt" button for an order with receipt. 2. Verify receipt image opens correctly in a new window.	Receipt images open and display correctly.	Receipt images open and display correctly.	Pass	Low

Table 5.20: Reliability Testing for Order Management Module

Table 5.21 shows the dependability testing for the Add Product Module, which gives administrators a form to add new items to the store, including the product name, description, pricing, and photos. The module's reliability testing assures that it can support repeated product submissions, manage concurrent modifications by many administrators, and recover from temporary problems (such as incomplete uploads or connection timeouts) without data loss or duplication. This assures the product catalog's integrity and availability at all times.

Module Name: Add Product Module

Objective: To ensure the Add Product Module reliably handles multiple product submissions, validates input data, processes image uploads correctly, and recovers gracefully from interruptions or backend failures.

Pre-condition: The administrator must be logged into the system with valid credentials and have access to the Add Product interface.

Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Admin Authentication	1. Access add product page without admin login. 2. Verify redirection to login page. 3. Log in as admin and access the product page.	Only admin users can access the product page.	Only admin users can access the product page.	Pass	High
Form Input Validation	1. Submit form with missing required fields. 2. Submit form with non-numeric prices. 3. Submit form with invalid image file type. 4. Submit form without image upload.	Form validation prevents invalid submissions with appropriate error messages.	Form validation prevents invalid submissions with appropriate error messages.	Pass	High
Image Upload and Conversion	1. Upload valid image files (jpg, jpeg, png, gif). 2. Verified	Image upload and conversion work correctly with file	Image upload and conversion work correctly with file	Pass	Medium

	images are converted to PNG format. 3. Verify images are saved in the correct directory. 4. Verify original uploaded files are deleted after conversion.	management.	management.		
Product Addition	1. Submit form with valid data. 2. Verify products are added to the database. 3. Verify the success message is displayed.	Product is added successfully and confirmation is shown.	Product is added successfully and confirmation is shown.	Pass	High
Error Handling on Database Failure	1. Simulate database insertion failure. 2. Verify error message is displayed and no partial data is saved.	Database errors are handled gracefully with user notification.	Database errors are handled gracefully with user notification.	Pass	High

Table 5.21: Reliability Testing for Add Product Module

Table 5.22 outlines the reliability testing for the Monthly Profits Module, which generates a summary of monthly sales revenue, displaying total profits by year and month. The reliability testing ensures that the module can consistently fetch, calculate, and display financial data

accurately under various conditions, including high data volume, frequent access, and data retrieval delays. This reliability is essential to support timely business decisions and maintain trust in the system's financial reporting.

Module Name: Monthly Profits Module Objective: To verify that the Monthly Profits Module accurately calculates and displays profit data under varying access conditions, ensuring dependable financial reporting for business decision-making. Pre-condition: The administrator must be logged into the system and have access rights to view the admin dashboard.					
Scenario	Test Steps	Expected Result	Actual Result	Status	Severity Failure
Admin Authentication	1. Access admin dashboard without login. 2. Verify redirection to login page. 3. Log in as admin and access the dashboard.	Only admin users can access the dashboard.	Only admin users can access the dashboard.	Pass	High
Monthly Profits Data Display	1. Access dashboard. 2. Verify monthly profits table displays year, month, and total profit. 3. Check for correct formatting and sorting	Monthly profits data is displayed accurately and sorted by date descending.	Monthly profits data is displayed accurately and sorted by date descending.	Pass	High

Table 5.22: Reliability Testing for Monthly Profits Module

In conclusion, the testing phase for the Rosecdy Kitchen Booking Management System involved comprehensive functionality and reliability testing across all key modules, including user authentication, profile management, product listings, shopping cart, checkout, payment processing, order management, and monthly profits. Functionality tests verified that each module performed its intended tasks correctly, such as accurate product display, cart operations, order placement, and secure login processes. Reliability tests ensured system stability under repeated usage, simultaneous access, and unexpected disruptions like session timeouts or invalid inputs. All test cases passed successfully, confirming that the system is both robust and dependable, providing a smooth experience for both users and administrators.

5.4 User Acceptance Testing (UAT)

User Acceptance Testing (UAT) aims to validate the usability, functionality, and overall performance of the Rosecdy Kitchen: Booking Management System for a Sarawak Kek Lapis business. During this phase, real users interact with the system and provide feedback based on their experience. The primary objective is to ensure that the system meets end-user needs and expectations by confirming its effectiveness in a real-world context.

5.4.1 Methodology

The User Acceptance Testing (UAT) was conducted using a Google Form survey, which was distributed to a sample of Rosecdy Kitchen's customers. Participants were asked to provide feedback on their experience using the system. The responses were then analyzed to identify

areas for improvement and to assess the system's readiness for deployment. The survey was divided into three sections:

- **Section A:** Demographic Information
- **Section B:** Usability and Functionality Feedback
- **Section C:** General Feedback and Suggestions

In Section B, participants were asked to rate their experience using a Likert scale from 1 to 5, where 1 represents "Strongly Agree" and 5 represents "Strongly Disagree." Additionally, an open-ended question was included to gather qualitative feedback.

5.6.2 Section B (Usability and Functionality Feedback)

The purpose of this section is to evaluate the usability and functionality of the booking management system. The feedback collected will provide insights into how users interact with the system and how well it supports their needs. The questions included in this section are as follows:

A) Usability Testing Feedback

- a) Ease of navigation: Was it easy to navigate through the system?
- b) Interface design: Do you find the design of the user interface to be attractive?
- c) Clarity of the instructions: Were the instructions within the system clear and easy to follow?
- d) Overall user experience: Would you consider your experience using the system to be user-friendly?

B) Functionality Testing Feedback

- a) Profile Management: Was it easy to manage the profile information?

- b) Booking Management: Do you find the booking management features to be effective?
- c) Payment Management: Do you find the payment management features to be effective?

5.6.3 Section C (General Feedback and Suggestion)

This section aims to gather open-ended feedback and suggestions from users to further enhance the booking management system . Participants are encouraged to share their thoughts on the system's features, highlight areas for improvements and provide any additional comments. The questions included in this section are as follows:

1. What features did you find most useful about the system?
2. What features did you find least useful about the system?
3. Would you recommend this system to others?
4. Overall, how satisfied are you with the system
5. Do you have any suggestions/comments/feedback for improving the system?

5.6.4 Results and Analysis

This section presents the results and analysis of the User Acceptance Testing (UAT) conducted for the "Rosecdy Kitchen: Booking Management System for a Sarawak Kek Lapis Business." The feedback collected from the participants is summarised and analyzed to provide insights into the system's performance, usability and areas for improvement. The major findings from the UAT survey are as follows:

- **Section A (Demographic)**

There were 31 respondents that took part in this study. Figure 5.1 shows the distribution of respondents according to “*How often do you buy Kek Lapis Sarawak from Rosecdy Kitchen?*” in which (N = 13; 41.9%) represents “*every year during special occasions*” and “*more than once a year*” respectively, (N = 3; 9.7%) represents “*3-5 times*” while (N = 2; 6.5%) represents “*only 1-2 times.*”

How often do you buy Kek Lapis Sarawak from Rosecdy Kitchen?

31 responses

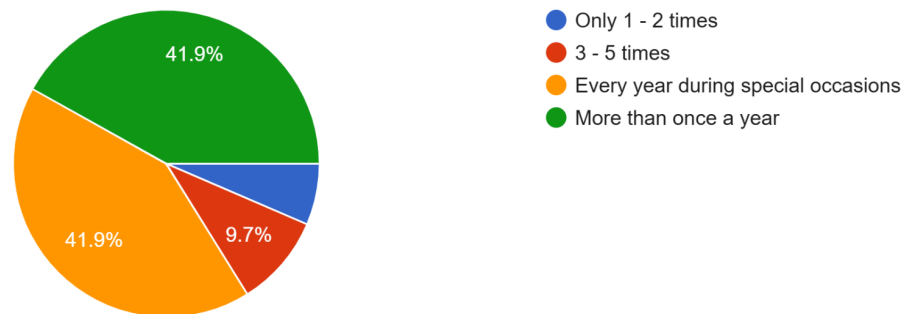


Figure 5.1: Pie Chart of the distribution of respondents according to “How often do you buy Kek Lapis Sarawak from Rosecdy Kitchen.”

There were 31 respondents that took part in this study. Figure 5.2 shows the distribution of respondents according to “*How do you typically book/order Kek Lapis Sarawak from Rosecdy Kitchen?*” in which (N = 13; 41.9%) represents ordering via social media, (N = 12; 38.7%) represents ordering face-to-face, while (N = 3; 9.7%) represents ordering via phone call and ordering from a third person respectively.

How do you typically book/order Kek Lapis Sarawak from Rosecdy Kitchen?

31 responses

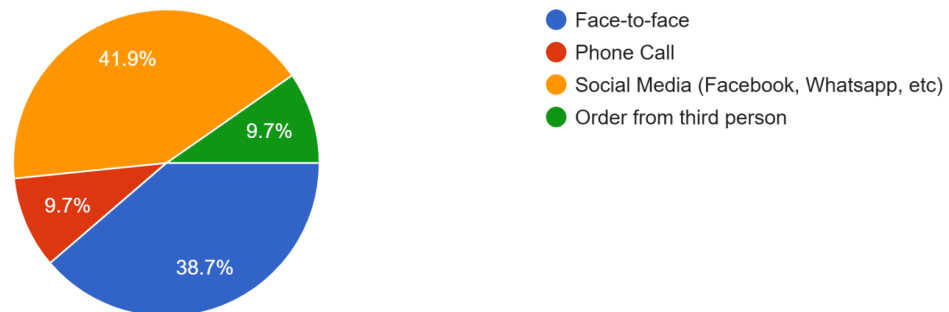


Figure 5.2: Pie Chart of the distribution of respondents according to “How do you typically book/order Kek Lapis Sarawak from Rosecdy Kitchen?”

- **Section B (Usability and Functionality Feedback)**

- A) Usability Testing Feedback**

As shown in Figure 5.3, the majority of respondents (N = 18, 58.1%) selected “Strongly Agree” in relation to the ease of navigation. This suggests that most users found the system intuitive and easy to use, indicating that the navigation design effectively supports user interaction.

Ease of navigation: Was it easy to navigate through the system?

31 responses

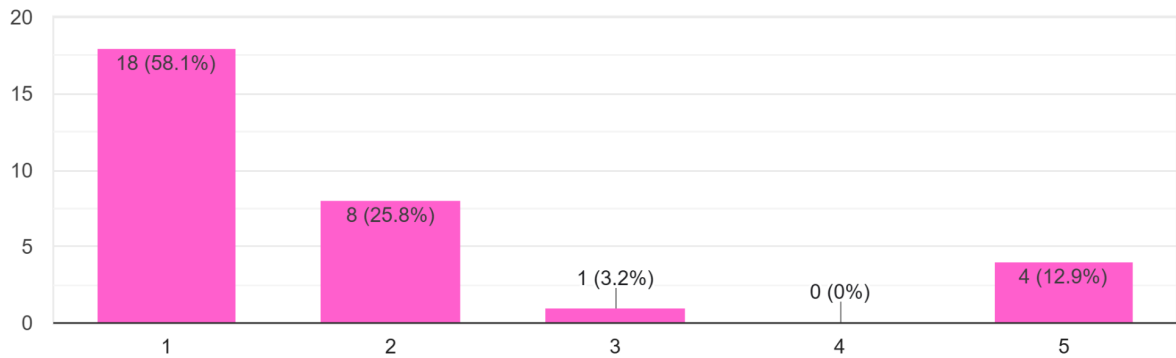


Figure 5.3: Bar Chart Summary of Responses for Ease of Navigation.

As shown in Figure 5.4, the majority of respondents (N = 20, 64.5%) selected “Strongly Agree” in relation to the interface design. This suggests that most users found the interface visually appealing, well-organized, and user-friendly, contributing positively to their overall experience with the system.

Interface design: Do you find the design of the user interface to be attractive?

31 responses

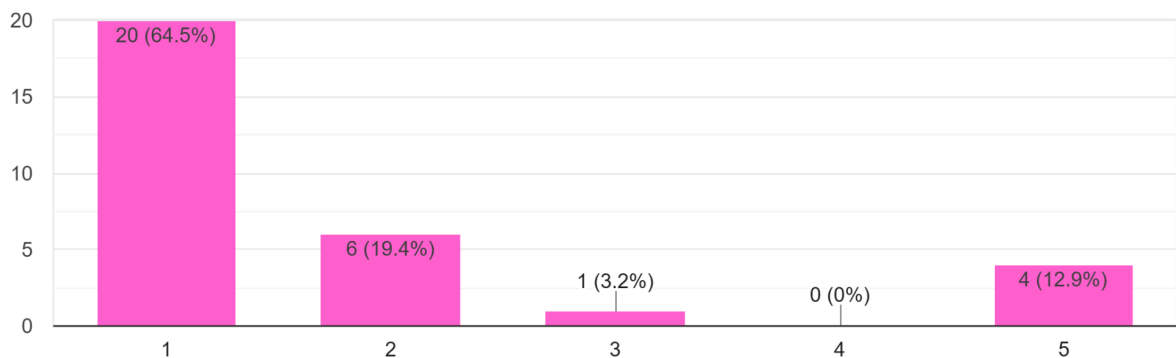


Figure 5.4: Bar Chart Summary of Responses for Interface Design

As shown in Figure 5.5, the majority of respondents (N = 20, 64.5%) selected “Strongly Agree” in relation to the clarity of the instructions. This suggests that users found the instructions clear, easy to understand, and helpful in guiding them through the system.

Clarity of the instructions: Were the instructions within the system clear and easy to follow?

31 responses

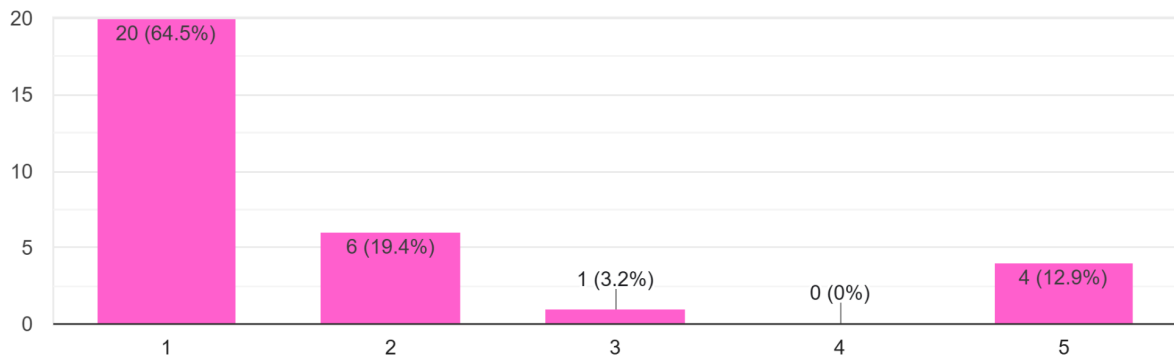


Figure 5.5: Bar Chart Summary of Responses for Clarity of the Instructions.

As shown in Figure 5.6, the majority of respondents (N = 21, 67.7%) selected “Strongly Agree” in relation to the overall user experience. This suggests that users were highly satisfied with the system as a whole, indicating that it successfully met their expectations in terms of usability, design, and functionality.

Overall user experience: Would you consider your experience using the system to be user-friendly?
31 responses

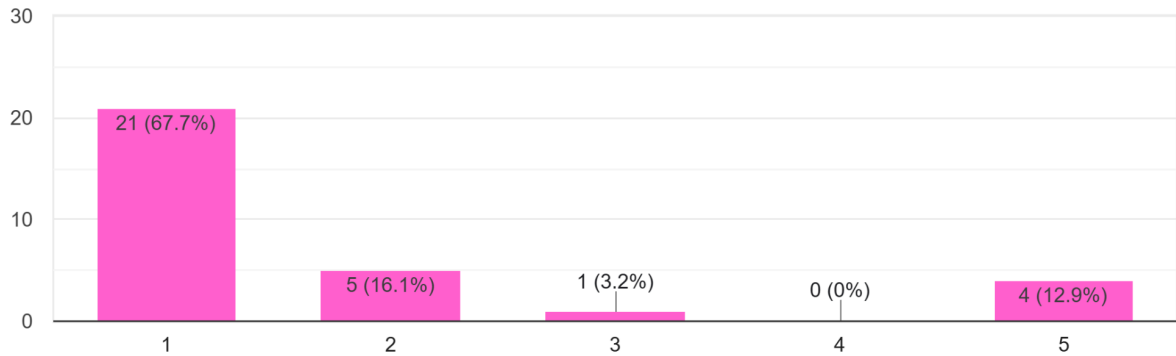


Figure 5.6: Bar Chart Summary of Responses for Overall User Experience.

B) Functionality Testing Feedback

As shown in Figure 5.7, the majority of respondents (N = 17, 54.8%) selected “Strongly Agree” in relation to the profile management. This suggests that users found the profile management feature efficient, easy to use, and effective in handling personal information within the system.

Profile Management: Was it easy to manage the profile information?
31 responses

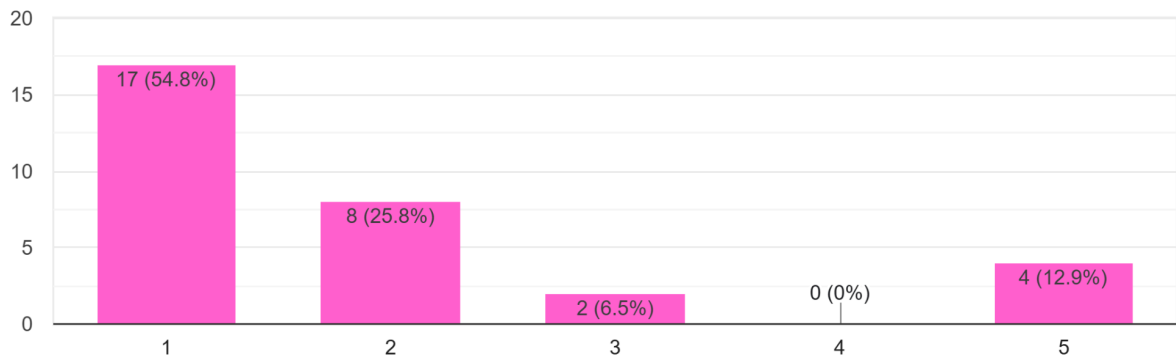


Figure 5.7: Bar Chart Summary of Responses for Profile Management.

As shown in Figure 5.8, the majority of respondents (N = 17, 54.8%) selected “Strongly Agree” in relation to the booking management. This suggests that users found the booking management feature reliable, user-friendly, and effective in facilitating their booking process.

Booking Management: Do you find the booking management features to be effective?
31 responses

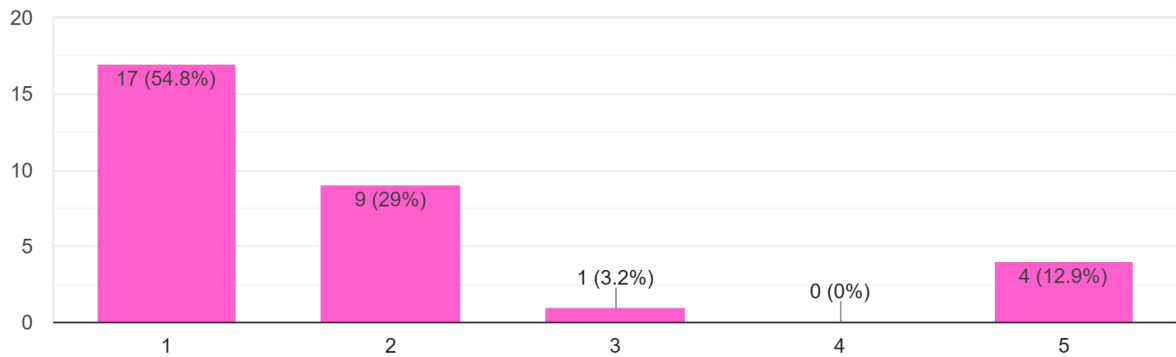


Figure 5.8: Bar Chart Summary of Responses for Booking Management.

As shown in Figure 5.9, the majority of respondents (N = 17, 54.8%) selected “Strongly Agree” in relation to the payment management. This suggests that users were satisfied with the payment process, finding it secure, seamless, and easy to complete within the system.

Payment Management: Do you find the payment management features to be effective?

31 responses

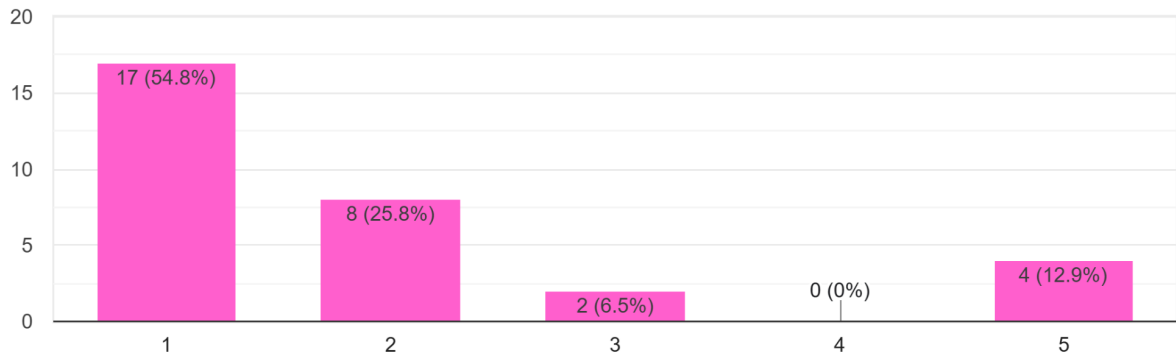


Figure 5.9: Bar Chart Summary of Responses for Payment Management.

- **Section C (General Feedback and Suggestions)**

Each respondent was allowed to choose three challenges that they faced the hardest while undergoing university adjustment. A total of 85 responses were obtained for this question. As shown in Figure 5.10, The result indicated that the feature users find most useful about the system was booking management and payment management (N = 23, respectively) followed by ease of navigation (N = 12) and interface design (N = 11). The feature that was chosen the least useful was profile management.

What features did you find most useful about the system?

31 responses

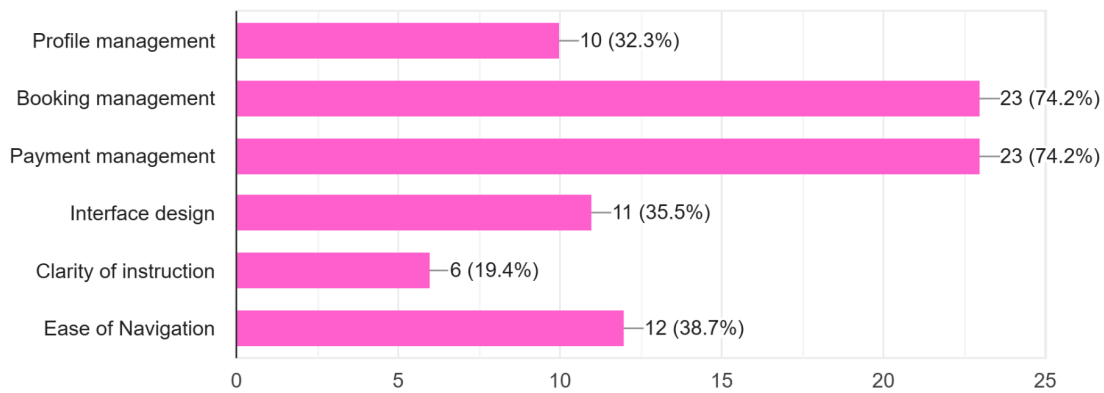


Figure 5.10: Bar Chart Summary of Responses for “What features did you find most useful about the system?”

As shown in Figure 5.11 and Figure 5.12, a vast majority of the respondents strongly agreed in terms of recommending the system to others along with overall satisfaction with the system which indicates that the system has successfully met the needs and expectations of its end-users.

Would you recommend this system to others?

31 responses

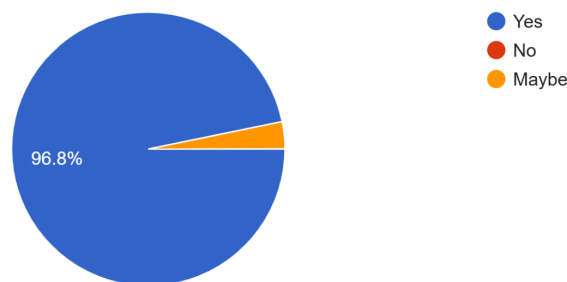


Figure 5.11: Bar Chart Summary of Responses for “Would you recommend this system to others?”

Overall, how satisfied are you with the system
31 responses

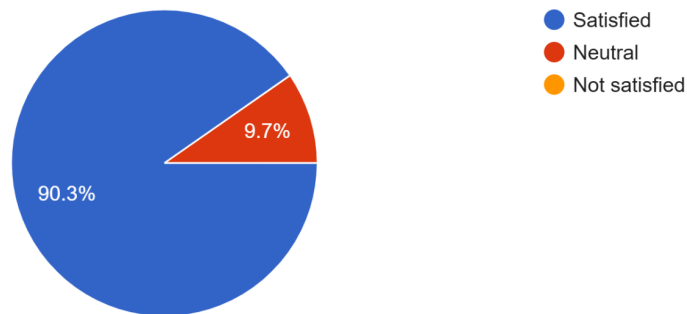


Figure 5.12: Bar Chart Summary of Responses for “Overall, how satisfied are you with the system?”

5.5 Summary

This chapter covers the testing operations for the Rosecdy Kitchen Web-Based Booking Management System, with a focus on functionality and reliability testing. Functionality testing ensured that each module from user login to order management worked as expected, satisfying specifications and allowing for seamless user interactions. Reliability testing assessed the system's ability to function consistently under normal and unexpected settings, such as repeated operations and temporary disturbances. The successful completion of both testing phases demonstrates that the system is stable, dependable, and ready for real-world use. The extensive testing process proved that the system is stable, user-friendly, and ready for implementation in real-world operational contexts, delivering an efficient and seamless user experience for both consumers and administrators.

Chapter 6: Recommendation and Conclusion

6.1 Introduction

This chapter gives a complete assessment and perspective on the project, examining its basic aims as well as the development process described in Chapters 1–5. It combines all of the project's major features, such as the reasoning for the methodology chosen, implementation tactics, and testing procedures. The debate also focuses on the data collected during the project, analyzes its success, and discusses the constraints faced. Furthermore, this chapter discusses prospective upgrades and future enhancements to the web-based booking administration system.

6.2 Objective Achievements

The goal of this project was to create a web-based booking management system for Rosecdy Kitchen that would enable fast order processing, product administration, and customer involvement. The technology was created to streamline processes, improve the customer experience, and provide the company with an organized platform for managing Kek Lapis reservations. Table 6.1 lists the project objectives and shows how each was met, resulting in a functional and user-friendly system that satisfies the needs of the business.

Objective	Achievement
To develop a user-friendly and accessible system for both the business owner and customers.	A responsive and intuitive interface was developed, allowing both parties to easily navigate and utilize the system across devices.

To implement a monthly report for the business owner to keep track of their income.	A reporting module was successfully integrated, enabling the owner to view and download monthly income summaries.
To implement key features such as order tracking and customer account management.	Order tracking and customer account functionalities were developed, allowing users to monitor orders and manage their profiles.

Table 6.1: Objective and Achievements

6.3 Limitation

It is critical to acknowledge and solve the system's limits during the implementation and testing phases in order to make future improvements. Despite the successful construction of the Rosecdy Kitchen web-based booking management system, as well as the comprehensive approach followed during its planning and execution, multiple challenges occurred that impacted the system's overall functionality, accessibility, and scalability.

One of the project's most major drawbacks is a lack of integration of real-time online payment gateways. While the system now supports manual payment confirmations, it does not accept popular payment methods like FPX, credit/debit cards, or e-wallets. This limitation decreases user satisfaction and may limit the system's scalability for larger business use. In today's digital economy, seamless and secure payment integration is an essential aspect of any online company platform. The lack of this functionality may lead to longer transaction processing, decreased user trust, and the loss of clients who prefer cashless and quick payment alternatives.

Another significant limitation is the absence of multilingual support. The system interface is currently only available in English, which causes accessibility issues for users who do not speak the language. This could make it difficult to navigate the website, interpret product descriptions, and complete purchases. In a multicultural and multilingual society like Malaysia, the inability to switch languages severely reduces inclusivity, reduces user engagement, and affects the overall user experience.

Furthermore, the system currently lacks a dedicated mobile application, and while it is available through web browsers on mobile devices, the design is not entirely optimized for mobile viewing. Due to this adaptability constraint, users may have layout issues or difficulty browsing on smaller screens. Many people rely on smartphones and tablets for daily internet access, thus the lack of a mobile-optimized experience can have a substantial impact on usability and enjoyment. For business owners and customers who are frequently on the move, a lack of mobile responsiveness limits their capacity to interact with the system.

6.4 Future Work

Several areas for future improvement have been identified based on the limits found and comments received during the system's development and testing phases. These enhancements attempt to improve the system's functionality, raise user satisfaction, and keep the platform relevant and effective as business requirements evolve.

One key area for future improvement is the integration of real-time online payment gateways which is critical for future advancement. Incorporating safe and commonly utilized payment mechanisms such as FPX, credit/debit card processing, and e-wallets will dramatically

improve user convenience and system credibility. This update will also serve to streamline the payment process, decreasing the need for manual confirmation from the business owner.

Another key area for future research is the implementation of multilingual support. Allowing users to switch between several languages, such as Malay, Mandarin, and Tamil, would improve accessibility and ensure that a broader range of users can efficiently explore and interact with the system. This adjustment will promote greater inclusivity and may increase customer involvement and satisfaction.

To solve accessibility difficulties, it is also recommended to create a responsive mobile-friendly version of the system, or perhaps a standalone mobile application. With an increasing number of people using smartphones to browse and shop, a mobile-optimized interface will allow for more seamless navigation and engagement across all devices. This enhancement would help both customers and business owners, particularly for order management on the go.

By addressing these potential improvements, the Rosecdy Kitchen web-based booking management system may develop into a more robust, user-centered, and scalable platform that better meets the company's operational demands and long-term ambitions.

6.5 Conclusion

In conclusion, the Rosecdy Kitchen web-based booking management system achieved its primary goals by providing a functioning, user-friendly platform for order administration, client interactions, and income tracking. Despite meeting these objectives, the system had some drawbacks, including the lack of real-time payment connection, restricted language options, inadequate reporting functions, and mobile optimization. These issues suggest areas for future

improvement that could considerably improve usability, accessibility, and overall system performance. The project not only established technical feasibility, but it also gave significant insights and a solid framework for future development to meet the changing needs of the business.

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Appendix

a) Pre-Project Analysis Survey

Rosecdy Kitchen: Booking Management System for a Sarawak Kek Lapis Business

Greetings!

I am Daniel Aiman Fiqri Bin Hut (79154), a 4th year Network Computing student, currently conducting Final Year Project entitled **Rosecdy Kitchen: Booking Management System for a Sarawak Kek Lapis Business**.

Rosecdy Kitchen is a beloved home-based bakery that has built a strong reputation for its Sarawak Kek Lapis, a traditional layered cake that is especially popular during festive seasons and celebrations. Renowned for its unique flavors and intricate designs, the bakery has amassed a loyal customer base. However, managing bookings and orders manually has become increasingly challenging as the business grows. To address this challenge, the development of a web-based booking management system is proposed.

The survey will take approximately 5 minutes of your time. The survey consists of three sections:

Section A: Demographics

Section B: Current Practices of a Booking Management System

Section C: Preferences and Feedback of a Booking Management System

All information will be kept confidential and will be used for academic purposes only. For more inquiries, you may contact me via email at **79154@siswa.unimas.my**.

Thank you for your time.

* Indicates required question

1. I accept that my responses will be used for academic purposes only. *

Mark only one oval.

☐ Yes

☐ No

2. What is your gender? *

Mark only one oval.

- ☐ Male
☐ Female

3. What is your age? *

Mark only one oval.

- ☐ Under 18
☐ 18 - 34
☐ 35 - 49
☐ 50 and above

4. How often do you order food from websites/apps/social media? *

(Example: Shopee, Foodpanda, Facebook, Whatsapp, etc)

Mark only one oval.

- ☐ Very often
☐ Often
☐ Sometimes
☐ Rarely
☐ Never

Current Practices of a Booking Management System

5. How often do you buy Kek Lapis Sarawak from Rosecdy Kitchen? *

Mark only one oval.

- ☐ Only 1 - 2 times
☐ 3 - 5 times
☐ Every year during special occasions
☐ More than once a year

6. How do you typically book/order Kek Lapis Sarawak from Rosecdy Kitchen? *

Mark only one oval.

- ☐ Face-to-face
☐ Phone Call
☐ Social Media (Facebook, Whatsapp, etc)
☐ Order from third person

7. What challenges do you face with your current booking or ordering process from Rosecdy Kitchen? *

(Choose ONLY 3 challenges)

Check all that apply.

- ☐ Slow or insufficient process
☐ Errors in bookings/orders
☐ Difficulty in tracking orders
☐ Lack of visualization of available options
☐ Limited Accessibility (Need to contact the owner during specific hours)

8. How do you currently make payments to Rosecdy Kitchen? *

Mark only one oval.

- ☐ Cash
☐ Bank Transfer
☐ QR transfer / Digital payments

9. Would you prefer Rosecdy Kitchen using a website for booking and payments? *

Mark only one oval.

- ☐ Yes
☐ No

10. As a user, what features in the Rosecdy Kitchen website that you would find most useful for the ordering process? *

(Choose ONLY 3 features)

Check all that apply.

- ☐ Product catalog with pictures
- ☐ Online booking and order placement
- ☐ Notifications for order confirmations and updates
- ☐ Payment integration (e.g., bank transfer FPX, QR code payments)
- ☐ Tracking of order status
- ☐ Real-time availability

11. What factors would discourage you from using the Rosecdy Kitchen website? *

(Choose ONLY 3 factors)

Check all that apply.

- ☐ Unattractive design
- ☐ Complicated interface
- ☐ Limited features
- ☐ Time-consuming process
- ☐ Long registration process
- ☐ Data privacy concerns
- ☐ Lack of trust in payment security
- ☐ Limited payment options

12. Would you be willing to use the Rosecdy Kitchen website if implemented? *

Mark only one oval.

- ☐ Yes
- ☐ No
- ☐ Maybe

b) User Acceptance Testing Survey

Final Year Project - Rosecdy Kitchen: Booking Management System for a Sarawak Kek Lapis Business

Greetings,

I am Daniel Aiman Fiqri Bin Hut (79154), a final year student in Network Computing from the Faculty of Computer Science and Information technology (FCSIT) at the University of Malaysia Sarawak (UNIMAS)

As Part of my Final Year Project (FYP), I have developed a "Rosecdy Kitchen: Booking Management System for a Sarawak Kek Lapis Business". This is a **User Acceptance Testing (UAT) survey** to evaluate the system's usability, functionality and overall performance.

Your participation in this survey is completely **voluntary**. By completing this questionnaire, you are providing your consent to participate in this UAT. Your responses will be kept confidential and used solely for the purpose of improving the system. The survey will take approximately **5-10 minutes** to complete and you may withdraw from the survey at any time without any consequences.

This survey is divided into the following sections:

- **Section A:** Demographic information
- **Section B:** Usability and Functionality Feedback
- **Section C:** General Feedback and Suggestions

If you have any questions regarding the study or your participation, please feel free to contact me at **79154@siswa.unimas.my**.

Thank you for your time and feedback.

* Indicates required question

1. **Consent Form**

★

I acknowledge that my participation in this survey is completely voluntary, and I have the right to withdraw from the testing at any time without providing any reason. I understand that my personal information will be kept confidential and only authorized individuals in the study will have access to my data.

Mark only one oval.

☐ I agree

SECTION A: DEMOGRAPHIC INFORMATION

2. **Gender** ★

Mark only one oval.

☐ Male

☐ Female

3. **Age** ★

Mark only one oval.

☐ 18 - 29

☐ 30 - 39

☐ 40 - 49

☐ 50 - 59

☐ 60 and above

4. **Occupation** ★

Mark only one oval.

☐ Student

☐ Unemployed

☐ Employed

☐ Self-employed

☐ Retired

5. How often do you buy Kek Lapis Sarawak from Rosecdy Kitchen?

Mark only one oval.

- ☐ Only 1 - 2 times
- ☐ 3 - 5 times
- ☐ Every year during special occasions
- ☐ More than once a year

6. How do you typically book/order Kek Lapis Sarawak from Rosecdy Kitchen?

Mark only one oval.

- ☐ Face-to-face
- ☐ Phone Call
- ☐ Social Media (Facebook, Whatsapp, etc)
- ☐ Order from third person

SECTION B: USABILITY AND FUNCTIONALITY FEEDBACK

The purpose of this section is to evaluate the usability and functionality of the Booking Management System for a Sarawak Kek Lapis Business. Please provide your feedback for each question by selecting the answer that best represents your experience. Your input will help us improve the user needs. Please state your opinion of the question below by choosing the answer that express how you feel.

1 = Strongly Agree

2 = Agree

3 = Neutral

4 = Disagree

5 = Strongly Disagree

A) USABILITY TESTING FEEDBACK

5. Ease of navigation: *

Was it easy to navigate through the system?

Mark only one oval.

1 2 3 4 5

Stro ☐ ☐ ☐ ☐ ☐ Strongly Disagree

6. Interface design: *

Do you find the design of the user interface to be attractive?

Mark only one oval.

	1	2	3	4	5	
Stro	☐	☐	☐	☐	☐	Strongly Disagree

7. Clarity of the instructions: *

Were the instructions within the system clear and easy to follow?

Mark only one oval.

	1	2	3	4	5	
Stro	☐	☐	☐	☐	☐	Strongly Disagree

8. Overall user experience: *

Would you consider your experience using the system to be user-friendly?

Mark only one oval.

	1	2	3	4	5	
Stro	☐	☐	☐	☐	☐	Strongly Disagree

B) FUNCTIONALITY TESTING FEEDBACK

9. Profile Management: *

Was it easy to manage the profile information?

Mark only one oval.

	1	2	3	4	5	
Stro	☐	☐	☐	☐	☐	Strongly Disagree

10. Booking Management: *

Do you find the booking management features to be effective?

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	☐	☐	☐	☐	☐	Strongly Disagree

11. Payment Management: *

Do you find the payment management features to be effective?

Mark only one oval.

	1	2	3	4	5	
Strongly Disagree	☐	☐	☐	☐	☐	Strongly Disagree

SECTION C (GENERAL FEEDBACK AND SUGGESTIONS)

12. What features did you find **most** useful about the system? *
- (You may choose up to 3 features)

Check all that apply.

- ☐ Profile management
- ☐ Booking management
- ☐ Payment management
- ☐ Interface design
- ☐ Clarity of instruction
- ☐ Ease of Navigation

13. What features did you find **least** useful about the system? *
- (You may choose up to 3 features)

Check all that apply.

- ☐ Profile management
- ☐ Booking management
- ☐ Payment management
- ☐ Interface design
- ☐ Clarity of instruction
- ☐ Ease of Navigation

14. Would you recommend this system to others? *

Mark only one oval.

- ☐ Yes
- ☐ No
- ☐ Maybe

15. Overall, how satisfied are you with the system *

Mark only one oval.

- ☐ Satisfied
- ☐ Neutral
- ☐ Not satisfied

16. Do you have any suggestions/comments/feedback for improving the system?
