

ORDERLIKEY:
SMART KIOSK ORDERING SYSTEM
FOR FK

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ABSTRAK

Tesis ini membentangkan pembangunan Orderlikey, sebuah sistem pesanan kiosk pintar berdasarkan web yang direka untuk mengatasi cabaran yang dihadapi oleh kantin dan kiosk Fakulti Komputeran (FK) di Universiti Malaysia Pahang (UMP). Sistem ini bertujuan untuk meningkatkan proses pesanan dengan mengurangkan masa pemrosesan pesanan dan kesilapan manusia, dengan tujuan meningkatkan kepuasan pelanggan. Kajian ini bermula dengan pengenalan kepada kepentingan makanan dan minuman (F&B) dalam industri restoran dan peranan teknologi dalam mengubah sektor F&B. Masalah yang dihadapi oleh kiosk FK, seperti kemas kini menu, pengiraan manual, dan jadual yang tidak konsisten, dikenalpasti sebagai motivasi untuk membangunkan Orderlikey. Objektif projek ini termasuk mengenal pasti modul dan ciri-ciri sistem, membangunkan aplikasi berdasarkan web dengan antara muka mesra pengguna untuk peranti mudah alih, dan menjalankan ujian penerimaan pengguna (UAT) untuk memastikan sistem memenuhi keperluan dan harapan pengguna yang dijangkakan. Kepentingan projek ini terletak pada kemampuannya untuk meningkatkan proses pesanan, mengurangkan kesilapan, dan meningkatkan kecekapan keseluruhan. Pembangunan Orderlikey dipengaruhi oleh analisis perbandingan sistem sedia ada, termasuk sistem pesanan sendiri (SOS), sistem titik jual (POS), dan sistem paparan di dapur (KDS). Ciri-ciri dan manfaat sistem-sistem ini digabungkan ke dalam Orderlikey untuk mengatasi kelemahan yang dikenalpasti. Sistem ini membolehkan pelanggan melihat menu terkini, harga, dan maklumat kiosk, manakala kakitangan kiosk boleh menguruskan pesanan, menu, dan maklumat kiosk melalui mana-mana peranti pelayar web moden. Proses UAT melibatkan pengguna dan pemegang taruh menggunakan Orderlikey dalam skenario dunia nyata untuk mengenal pasti sebarang isu atau ketidakselarasan. Fasa ujian ini memastikan bahawa sistem sedia untuk dilaksanakan dan memenuhi harapan pengguna. Tesis ini diakhiri dengan ringkasan objektif yang dicapai, had-had yang dihadapi semasa projek, dan bidang-bidang pembangunan masa depan yang mungkin, termasuk integrasi dengan platform pesanan dalam talian, pintu bayaran, analisis lanjutan dan pelaporan, program kesetiaan, dan sokongan pelbagai bahasa. Secara keseluruhannya, Orderlikey merupakan penyelesaian inovatif dan berkesan untuk meningkatkan proses pesanan kiosk FK, memberikan kemudahan, ketepatan, dan kepuasan pelanggan yang ditingkatkan.

ABSTRACT

This thesis presents the development of Orderlikey, a web-based smart kiosk ordering system designed to address the challenges faced by the Faculty of Computing (FK) cafeteria and kiosk at the University of Malaysia Pahang (UMP). The system aims to improve the ordering process by reducing order processing time and human errors, ultimately enhancing customer satisfaction. The research begins with an introduction to the importance of food and beverage (F&B) in the restaurant industry and the role of technology in transforming the F&B sector. The problems faced by the FK kiosk, such as menu updates, manual calculations, and inconsistent scheduling, are identified as the motivation for developing Orderlikey. The objectives of the project include identifying the system's modules and features, developing a web-based application with a mobile-friendly interface, and conducting user acceptance testing (UAT) to ensure the system meets the requirements and expectations of its intended users. The project's significance lies in its ability to enhance the ordering process, reduce errors, and improve overall efficiency. The development of Orderlikey is informed by a comparative analysis of existing systems, including self-ordering systems (SOS), point-of-sale (POS) systems, and kitchen display systems (KDS). The features and benefits of these systems are integrated into Orderlikey to overcome the identified disadvantages. The system allows customers to view updated menus, prices, and kiosk information, while kiosk staff can manage orders, menu items, and kiosk details through any modern web browser device. The UAT process involves end-users and stakeholders using Orderlikey in a real-world scenario to identify any issues or discrepancies. This testing phase ensures that the system is ready for deployment and meets user expectations. The thesis concludes with a summary of the objectives achieved, limitations faced during the project, and potential areas for future work, including integration with online ordering platforms, payment gateways, advanced analytics and reporting, loyalty programmes, and multi-language support. Overall, Orderlikey presents an innovative and efficient solution to improve the FK kiosk ordering process, providing convenience, accuracy, and enhanced customer satisfaction.

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LIST OF ABBREVIATIONS

FK	Fakulti Komputeran / Faculty of Computing
F&B	Food and Beverage
SOS	Self-Order System / Self Ordering System
POS	Point-of-Sale System
KDS	Kitchen Display System
UAT	User Acceptance Test
KESUKOMP	Kelab Kebajikan dan Sukan Fakulti Komputeran
SDLC	Software Development Life Cycle
RAD	Rapid Application Development
GUI	Graphical User Interface

CHAPTER 1

INTRODUCTION

1.1 Introduction

F&B is an abbreviation for food and beverage or drink. It is the most crucial aspect of a restaurant. Hence, in reality, a restaurant's foundation is food and drink. Without food and drink, no one can consider a restaurant. In a restaurant or hotel, F&B refers to every type of food and drink considered to be the restaurant's core. Human cannot survive without his or her own heart, just as a restaurant cannot thrive without a solid F&B section. Countless people worldwide work in the F&B sector, service, and management [1]. F&B Service can be broadly defined as preparing, presenting, and serving food and beverages to customers [2]. F&B Management is, in general, a sector of the hospitality business that focuses on operations in restaurants, cafeterias, hotels, resorts, catering firms, hospitals, and more. It covers ordering and inventory, budget management, and menu planning and costing. This thesis focuses on the Food & Beverage (F&B) ordering system.

Technology has transformed our environment and daily lives throughout the years. As a result, technology has produced incredible tools and services that put essential information at our fingertips. Modern technology has opened the road for gadgets with several functions, such as smartwatch and smartphone. Computers are becoming quicker, more portable, and more powerful than ever. Technology has also made our life easier, faster, better, and more pleasant due to all these changes. This also contributes to the F&B sector in the restaurant. Restaurants are now adapting technology that will allow them to manage their establishment efficiently. Therefore, restaurants worldwide have identified several methods of ordering systems that might increase sales [3]. Before focusing on the newly improved technological method, the manual way of ordering is exactly what the name seems to be. "Manual", which is when the whole food order processing procedure, including order collecting, transfer to the kitchen, and service to the customer, is performed manually with little to no automation [4]. Consequently, the

substantially enhanced approach has broad goals. Among these are real-time menus, client profiles, order histories, and the opportunity to place orders in advance [3]. This new method will be explained more in LITERATURE REVIEW.

In the context of the University of Malaysia Pahang (UMP) cafeteria and kiosk specifically Faculty of Computing (FK) cafeteria and kiosk which consider in F&B sector, since students lack time to cook for themselves, the cafeteria and kiosk is where they go to eat and restore their energy. The student does not merely eat here. It has also evolved into a place where students engage in discussion, meet new people, and organise student-centred activities. In addition, not only students but also lecturers and staff utilise the cafeteria and kiosk. However, FK kiosk have a few problems that causes the customer dissatisfaction. The kiosk staff and customer is facing challenges that negatively impact customer experience and the kiosk's reputation. Updating the menu on WhatsApp is time-consuming, manual calculations for orders are error-prone, and inconsistent scheduling creates frustration for customers. The absence of price tags and lack of communication add to customer inconvenience.

These issues inspire the development of a smart kiosk ordering system for Faculty of Computing kiosk. This web-based application aims to improve the kiosk's ordering procedure by reducing order process time and human error. The system is referred to as "Orderlikey". In order to improve the ordering system, a list of kiosk issues has been compiled in Problem Statements. The system ultimately provides solutions to the identified problems.

1.2 Problem Statements

Based on the introduction, there are a few problems that led to the idea of developing this system

1. Challenges for Kiosk Staff to Update Menu and Customer to View.

The first problem is that the kiosk staff need to update the menu on the WhatsApp group every day. This is a challenge because it requires them to update the menu items constantly every day. This can be time-consuming and requires a significant amount of effort on their part. However, the real challenge arises when customers view the updated menu after the food has run out. This can lead to wasted time and energy for the customers, especially if they constantly check the WhatsApp group daily and have to

walk from multiple floors and buildings to reach the kiosk in a few areas of the large FK building. For example, if a customer sees a menu item they really want to order, but when they arrive at the kiosk, it is no longer available, they may feel frustrated and disappointed. This can lead to negative customer experiences, ultimately harming the kiosk's reputation and business. Therefore, the kiosk staff must find a way to update the menu on time so that customers can make informed decisions about what to order and avoid unnecessary wasted time and energy.

2. Manual Calculations and Absence of Price Tags.

The second problem is that the kiosk staff still use manual calculations when taking orders. These manual calculations are prone to errors, resulting in miscalculations and financial losses for the kiosk. This can also lead to customer dissatisfaction and potentially damage the reputation of the kiosk. In addition to the potential for miscalculations, manual calculations can make it difficult for the kiosk staff to keep track of orders. This can result in longer customer wait times, leading to confusion and mistakes when fulfilling orders. Another issue that can arise when there are no price tags displayed at the kiosk is that customers may be required to ask for the price of each menu item. This can be inconvenient and time-consuming for customers and result in errors if the kiosk staff needs to provide the correct price information.

3. Inconsistent kiosk schedule.

Third, the significant problems facing the kiosk is its inconsistent schedule, which can result in frustration and inconvenience for customers. For instance, when the kiosk has many customers at peak hour, let alone when the student finishes class during brunch or lunch, it may run out of food and close early. Unfortunately, there is no proper method of communicating this to the customers, leaving them stranded and disappointed. Moreover, customers have to navigate multiple kiosks in the faculty to know which ones are open or closed, which can be time-consuming and frustrating. This wastes their time and creates confusion and difficulty in finding the desired food item or service.

Proposed Solution

Therefore, Orderlikey is designed to solve these problems by enhancing the ordering process's efficiency. The platform will be developed as a website application, enabling customers to access it using the browser on their mobile phones. This will allow them to view the latest menu, prices, kiosk details, location, and open/close status. Similarly,

kiosk staff can access the system using any supported modern browser device, preferably a touch device such as a tablet. They can manage kiosk information, location, status, menu prices, and take customer orders. Additionally, as an administrator, KESUKOMP (Kelab Kebajikan dan Sukan Fakulti Komputeran) will have the power to oversee the system and manage all kiosk information.

1.3 Objective

The objective of this project is:

- To identify the modules and features for the proposed system.
- To develop a web based Orderlikey: Smart Kiosk Ordering System with mobile friendly view.
- To test the acceptance of the proposed system using UAT method.

1.4 Scope

1.4.1 User

Orderlikey will be developed as a web-based application that can be used by any customer, kiosk staff and KESUKOMP.

Table 1: User Scope

User Category	Description
Customer	<ul style="list-style-type: none"> • Student • Lecturer • Staff • Visitor
Kiosk Staff	<ul style="list-style-type: none"> • Owner • Cashier

	<ul style="list-style-type: none"> • Staff
<p>KESUKOMP</p> <p>(Kelab Kebajikan dan Sukan Fakulti Komputeran)</p>	<ul style="list-style-type: none"> • System Admin

1.4.2 Features

Table 2: Features Scope

User Category	Features
Customer	<ul style="list-style-type: none"> • Register • Login. • Manage user profile. • Manage favourites. • View updated menu and prices. • View kiosk information. • View kiosk status (open or closed). • View menu availability.
Kiosk Staff	<ul style="list-style-type: none"> • Login. • Manage User Profile • Manage kiosk information. • Manage kiosk menu and prices. • View Dashboard • View Invoices

<p>KESUKOMP</p> <p>(Kelab Kebajikan dan Sukan Fakulti Komputeran)</p>	<ul style="list-style-type: none"> • Login. • Manage User Profile. • Manage all user Profile. • Manage Kiosk Information • Manage Menu • View Dashboard • View Invoices
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1.4.3 Hardware

- Hardware to use the system:
 - Any Desktop, Laptop, Tablet and Smartphone that support the use of modern web browser (Google Chrome, Mozilla Firefox, Apple Safari, Microsoft Edge, and Opera)
- Hardware to develop the system:
 - Device Type : Laptop
 - Device Brand : Acer
 - Device Model : Acer Swift X
 - Operating System : Windows 11 Home (64 bit)
 - CPU : AMD Ryzen 7 5800U (1.90Ghz)
 - GPU : 4095MB Nvidia GeForce RTX 3050Ti
 - RAM : 16.0GB DDR4 @ 2114 Mhz
 - Motherboard : CZ Orion_CA (FP6)
 - Storage : 476GB Western Digital WDC

1.4.4 Software

- Software to use the system:
 - Modern desktop and mobile web browser (Google Chrome, Mozilla Firefox, Apple Safari, Microsoft Edge, and Opera)
- Software used to develop the system:
 - Microsoft Word
 - Google Chrome
 - Figma
 - Microsoft Visual Studio Code
 - GitHub Desktop
 - XAMPP

1.5 Significance of Project

This project will enhance the ordering system for the kiosk at the Faculty of Computing. Orderlikey platform is significant as it addresses the challenges faced by the kiosk staff and customer and enhances the efficiency of the ordering process. By developing the platform as a website application, customers can access the latest menu, prices, kiosk details, location, and open/close status, eliminating the need for manual updates. Kiosk staff can manage kiosk information, location, status, menu prices, and take customer orders using any supported modern browser device, which reduces errors and wait times. The platform's administrator, KESUKOMP, can oversee the system and manage all kiosk information, providing better control and improving the overall customer experience.

1.6 Report Organization

This thesis consists of five chapters, each serving a specific purpose. The initial chapter provides a brief overview of the project, encompassing the introduction, problem

statement, objectives, scope, and the significance of the project, along with the organization of the thesis. This chapter establishes the general context of the system.

Moving on to Chapter 2, it includes literature reviews of three existing systems that have been selected due to their relevance to the proposed system. These systems are examined in detail, allowing for an observation of their current functionalities. This analysis aids in identifying the essential qualities and methods utilized in these existing systems, which can be incorporated into Orderlikey.

Chapter 3 delves into further crucial discussions regarding the development of Orderlikey. It thoroughly defines and discusses the methodology employed for the development of the system. Additionally, this chapter explores suitable software and hardware options for the system's development. Furthermore, it focuses on Orderlikey's design architecture, showcasing its compatibility with the overall system.

Following these preliminary chapters, Chapter 4, titled "Results and Discussion," offers a comprehensive overview of the development and implementation of Orderlikey, along with the system's interface and performance evaluation. It presents an analysis of the system's efficiency, accuracy, and metrics to measure its success. The chapter also addresses the limitations and challenges encountered during the implementation process, suggesting potential improvements. Additionally, a user manual is provided, guiding users on how to effectively utilize Orderlikey.

Lastly, Chapter 5, titled "Conclusion," revisits the objectives outlined in Chapter 1. It emphasizes the successful achievement of the main goal, which was to develop Orderlikey, a SMART ordering system for FK. The chapter also highlights the fulfillment of the three specific objectives identified earlier in the thesis. Furthermore, it discusses the limitations faced during the project and proposes various areas for future work and improvement.

In summary, this thesis is organized into five chapters, with each chapter serving a specific purpose. It begins by providing the project's context and reviewing relevant literature. Subsequently, it focuses on the development and design architecture of Orderlikey. Finally, it concludes by summarizing the achieved objectives, addressing limitations, and outlining potential future enhancements for the system.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter elaborates on the study of three existing systems relevant to the proposed ordering system. This further emphasises details about the system feature, process, and compatibility. This chapter also compares each system's advantages and disadvantages based on its characteristics and implementation method.

2.2 Existing System

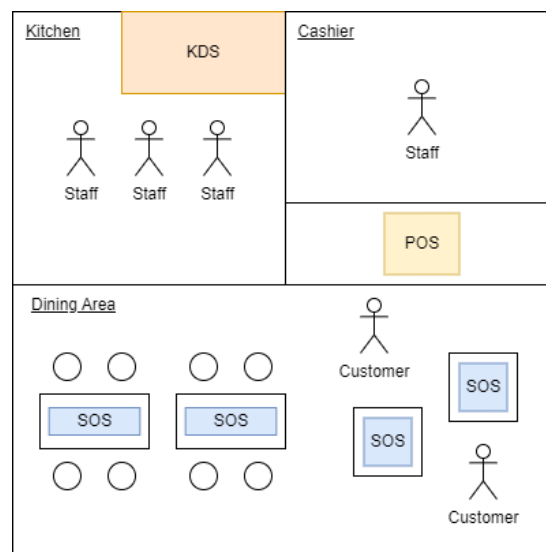


Figure 1: Illustration of Three Existing System

Figure 1 shows the general idea of three idea of ordering concept that has been develop into existing system that improve F&B ordering system. The three system are Self-Order System (SOS), Point of Sales System (POS) and Kitchen Display System (KDS).

2.2.1 Self-Order System (SOS)

What is a Self-Order System (SOS)?

A self-order system is a solution that eliminates long queues by putting customers in charge of the ordering and payment process. There are several self-ordering methods, and they comprise a self-ordering kiosk, a table-ordering device, and a QR code to order on the website application. This helps reduce wait times by keeping the line moving and sending orders to the kitchen as quickly as possible, just like additional kitchen staff would.

General flow of Self-Order System (SOS)

The flow of the Self Ordering System is depicted in Figure 2. It begins when a customer reads the content on the system's homepage using a self-service kiosk or any other device capable of accessing the website application. Then, the customer can begin placing orders based on the menu, and the total price will be instantly calculated and displayed automatically. The customer must then click "Yes" if they wish to continue with the order or "No" to cancel. The customer then completes the transaction with their preferred payment method, cash or online. Following the completion of payment, the order will be sent to the database, concluding the general procedure.

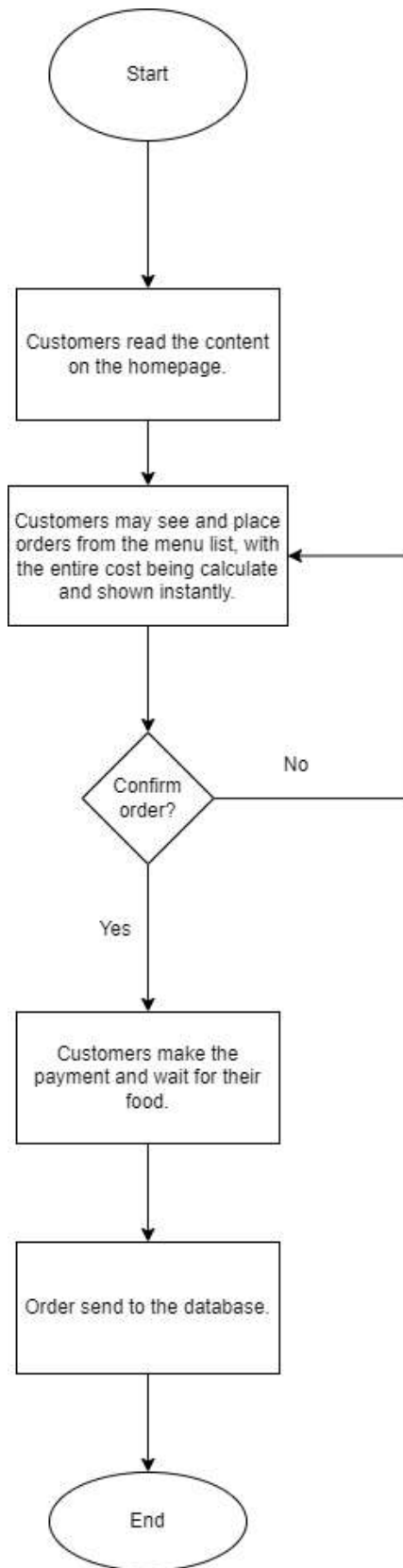


Figure 2: General flow of Self-Order System

Existing Literature related to Self-Ordering System (SOS)

1. *Interactive Service Quality on the Acceptance of Self-Service Ordering Systems*

Self-Order System has been the subject of numerous studies. The first example is the research of interactive service quality on the acceptance of self-service ordering systems for the restaurant industry [5]. This study aims to identify the elements that explain restaurants' adoption of the SOS. The objective is to examine customers who have recently used SOS to make food orders, and it uses accuracy, speed, and cost as acceptance criteria. This study includes two interactive service quality model components: self-service system service quality (SSQ) and interpersonal service quality (ISQ). The result of this study is that the speed and accuracy of SOS will be the essential element in determining whether or not customers utilise SOS.

2. *Self-Ordering Machine for Canteen*

The second example is that it used the idea of SOS to develop a self-ordering and cashless payment machine for the canteen and called it a "Self-Ordering Machine for Canteen" (SELFO) [5]. It is designed to consist of an ordering machine, server, and seller's application. The paper focuses on the reader module and the machine's underlying hardware. Based on the results of these two studies, it is apparent that the Self-Order System is regarded as one of the essential systems for enhancing restaurant ordering processes.

Existing System and Application that use Self-Ordering System (SOS)

There are a large number of companies in Malaysia that offer their services to restaurants desiring to implement the SOS system. Among them are ZEONIQ by Evoloper Sdn Bhd [6], SEITO by Seito Systems Sdn Bhd [7], and QUBEAPPS [8]. In addition, McDonald's, and KFC are examples of well-known restaurants and fast-food franchises that have already implemented this system in their restaurants.

1. ZEONIQ

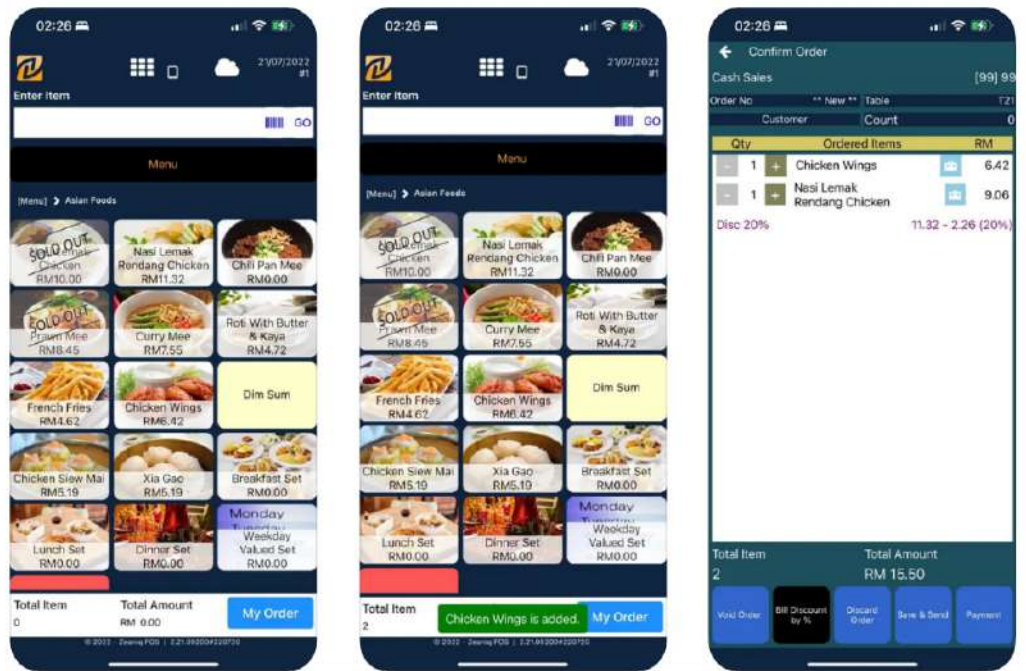


Figure 3: Mobile interface of Self Ordering System by ZeonIQ [9]

2. SEITO



Figure 4: Mobile interface of Self Ordering System by SEITO [10]

3. QUBEAPPS



Figure 5: Tablet interface and QR Menu Code of Self Ordering System by Qubeapps [11], [12]

2.2.2 Point of Sales System (POS)

What is Point of Sales System (POS)?

A Point of Sales (POS) system enables F&B businesses to accept customer payments and track sales. Despite its apparent simplicity, the implementation might vary depending on whether the restaurant sells online, have a physical location, or both. Usually, the cash register at a shop is referred to as the point-of-sale system. Modern POS systems are digital, allowing restaurants to check out customers from anywhere. A POS app and an internet-enabled device, such as a smartphone or tablet, are all required.

General flow of Point of Sales System (POS)

Figure 6 depicts the general workflow of the point-of-sale system. It began when the customer gave the cashier their order. The cashier will then enter the order using the digital cash register or other specialised tablets or smart devices. Third, the smart devices will automatically compute the total and display the selected order. The customer then pays for the order using their preferred payment method. After the

payment has been processed, the order will be transmitted and stored in the database. The general flow will conclude, a receipt will be printed, and the cashier will hand the receipt to the customer.

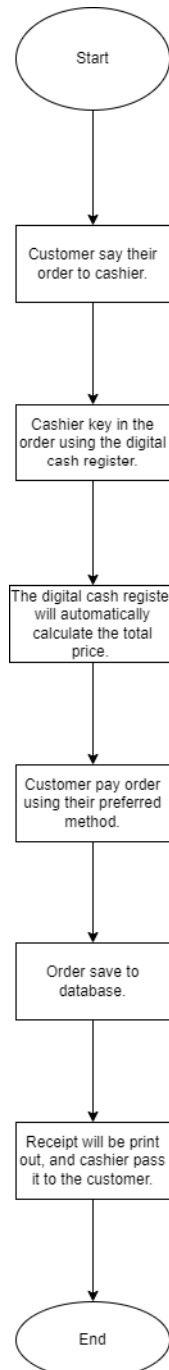


Figure 6: General flow of Point-of-Sale System

Existing Literature related to Point of Sales System (POS)

1. *Point-of-Sale in XYZ Restaurant*

Various studies related to the Point of Sales System. The first study is titled "Point-of-Sale System in XYZ Restaurant" [13]. This study is intended to replace the old restaurant management system with the Point of Sales system. In conclusion, the implementation of the POS system aids the restaurant XYZ in overcoming its issues and enhancing its management process.

2. *Class Balancing for Fraud Detection in Point-of-Sale System*

The second study is entitled "Class Balancing for Fraud Detection in Point-of-Sale Systems" [14]. This study aims to demonstrate the feasibility of detecting a small amount of fraud with machine learning in a Point-of-Sale System. These two studies demonstrate that the POS system is widely used worldwide.

Existing System and Application that use Point-of-Sale System (POS)

Numerous companies in Malaysia offer their services to implement POS systems in restaurants. Among them are ZEONIQ by Evoloper Sdn Bhd[15], dinlr Waiter [16] and Qashier [17]. Furthermore, McDonald's, KFC, and Taco Bell also are examples of well-known restaurants and fast-food franchises that already use this system in their restaurants.

1. ZEONIQ



Figure 7: Tablet interface of Point-of-Sale System by ZeonIQ [18]

2. dinlr



Figure 8: Tablet interface of Point-of Sale System by dinlr[19]

3. Qashier



Figure 9: QashierXS a Point-of Sale System device by Qashier [20]

2.2.3 Kitchen Display System (KDS)

What is Kitchen Display System (KDS)?

A kitchen display system, or KDS, is a computerised screen system used in restaurants to monitor customer orders. It helps restaurants manage, prioritise, and track orders by replacing orders on paper.

General flow of Kitchen Display System (KDS)

The general flow of the kitchen display system is depicted in Figure 10. It began once the customer completed payment for the order. The order will then be stored in the database. The order list will then be displayed on the monitor in the kitchen. This will assist kitchen staff in determining which orders require preparation. Once the order has been prepared, the user may click "Complete" on the screen. The order will disappear from the display, and the general flow will conclude.

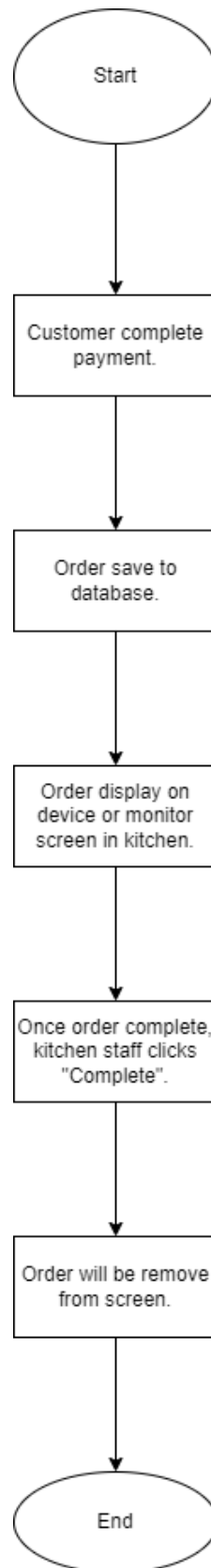


Figure 10: General flow of Kitchen Display System

Existing Literature related to Kitchen Display System (KDS)

1. *An Analysis of Technology Applications in The Restaurant Industry*

The first study that relates to Kitchen Display Systems is “An Analysis of Technology Applications in The Restaurant Industry” [21]. This study aims to determine if the KDS is crucial to the service success of a restaurant. The report concludes that the KDS can assist the kitchen in better managing orders and ensuring they are prepared on time.

2. *Monitoring Restaurants in Real-Time*

The second study is “Monitoring Restaurants in Real-Time” [22]. This study aims to implement KDS by developing a SmartBuffet Architecture. These two studies prove that KDS is valuable and beneficial in the restaurant ordering system.

Existing System and Application that use Kitchen Display System (KDS)

Multiple companies in Malaysia offer this system to their clients, including ZEONIQ by Evoloper Sdn Bhd [23], dinlr [24] and xilnex [25]. Frequently, restaurants that have already implemented SOS and POS systems will also implement KDS. McDonalds, KFC, and Taco Bell, which serve as examples for SOS and POS, are also well-known restaurants and fast-food franchises that use the KDS system to their restaurant's advantage.

1. Zeoniq

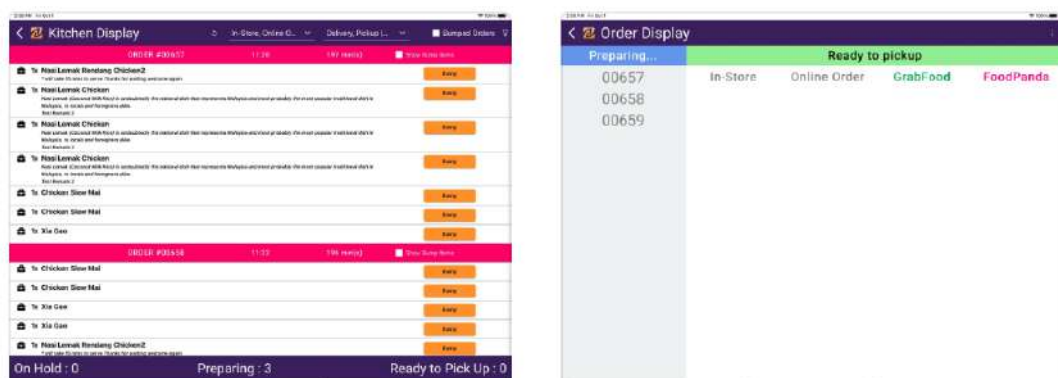


Figure 11: Tablet interface for Kitchen Display System by Zeoniq [9]

2. dinlr

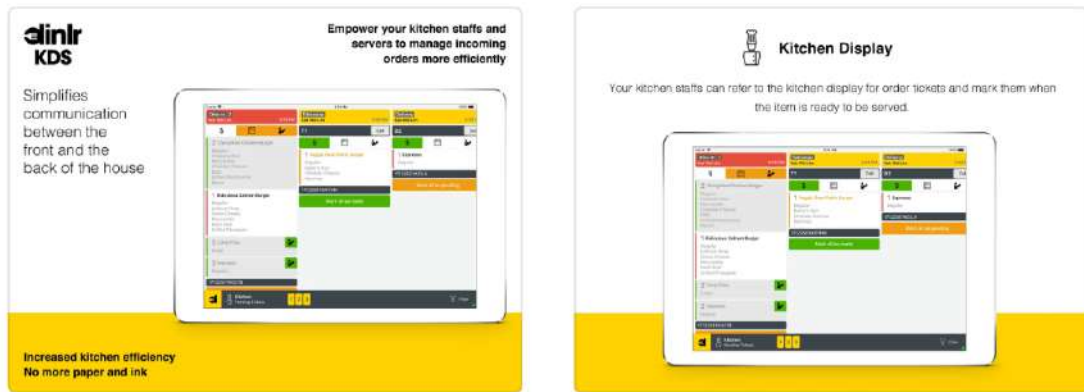


Figure 12: Table interface of Kitchen Display System by dinlr [26]

3. xilnex



Figure 13: Interface of Kitchen Display System by Xilnex [27]

2.3 Comparative Analysis

There are two subtopics for Comparative Analysis. The first is a comparative analysis of the three existing systems, and this will involve comparing the objective, system features, and related system users. In addition, the comparative analysis of advantages and disadvantages also will be described. The second subtopic focuses on the relevancy of the three systems with Cafesify.




2.3.1 Analysis of comparison on existing system

As stated in 2.2, there are three existing system that offer features that are serves different purpose. Therefore, this comparison is conducted to compare company that offers the system to their client. The systems will be evaluated based on their features in order to identify the most important ones and to determine the best choice for the development of the purposed system.

Comparison for Self-Order System (SOS)

1. Comparison of Company

Table 3: Comparison of company that offers Self-Order System (SOS)

ASPECT	ZEONIQ	SEITO	QUBEAPPS
Logo			
Name of Offered Services	Self-Order System	Self-Ordering Kiosk and Online Ordering System	Restaurant Self-Ordering Kiosk and QR Menu Ordering

Objective	The ZeonIQ self-ordering system gives your customers full autonomy over the process of ordering and paying for their meals.	Seito aims to minimize queues and help both restaurants and customers manage and control food orders efficiently.	Delivers a faster and more personalized ordering experience, enabling restaurant to effortlessly adapt to customers' evolving expectations.
Price	N/A	RM288/Month	N/A
URL	https://zeonIQ.com/page/sospage.html	1. https://seito.my/articles/ki osk 2. https://seito.my/articles/ki osk	1. https://qubeapps.com/product/qubekiosk-fb-self-ordering-kiosk/ 2. https://qubeapps.com/product/qr-menu-ordering/

Table 3 shows that ZeonIQ, Seito, and Qubeapps are companies that offer Self-Ordering System (SOS) solutions for restaurants. ZeonIQ's SOS gives customers full autonomy over ordering and paying for their meals, with no pricing information provided. Seito's SOS includes both a self-ordering kiosk and an online ordering system, with the goal of minimizing queues and improving efficiency for both restaurants and customers at a cost of RM288 per month. Qubeapps' SOS includes a restaurant self-ordering kiosk and QR menu ordering, with the goal of providing a faster and more personalized ordering experience for customers, with no pricing information provided.

2. System Features

Table 4: Features for Self-Order System (SOS)

ASPECT		DESCRIPTION
Ordering Method	Mobile Ordering	A method of ordering food or goods through a mobile application. Customers can browse menus, place orders, and pay through their smartphones or tablets.
	Self-Ordering Kiosk	A physical kiosk or terminal that customers can use to place orders and pay for food.
	Table Ordering Device	A device placed on table in restaurant where customers can place order and make payment.
	QR Menu Ordering	A method of ordering food or goods using a QR code. Customers scan a QR code on a menu or display, which takes them to a mobile ordering platform where they can place their order and pay.
Menu Customization		The ability for customers to personalize their orders according to their preferences and dietary restrictions. This can include options such as adding or removing ingredients, adjusting portion sizes, or choosing from different preparation methods.
Payment Method	Cash	Traditional way of paying for foods by physically handing over cash to the seller.
	Credit/Debit Cards	The use of a card that is linked to a customer's bank account. Customers can swipe or insert their card into a card reader or enter their card information into a self-ordering kiosk or mobile ordering app.

	Mobile Payments/QR Code	The use of a mobile device, such as a smartphone or tablet, to make a payment. This can include using a mobile wallet, mobile banking app, or other payment app to pay for an order. Customers can use their mobile device to scan a QR code or enter their payment information into a self-ordering kiosk or mobile ordering app.
Operation Modes	Guest Mode	Customers can place orders by scanning a QR code or accessing the website URL directly, reducing wait time and increasing table turnover.
	Waiter Mode	Staff can take orders using a mobile device at tableside, reducing customer wait time and staff movement.
	Pre-Order Mode	Customers can place orders and specify pick-up time

Table 4 explains various aspects of SOS solutions. In terms of ordering method, the options include Mobile Ordering, Self-Ordering Kiosk, Table Ordering Device, and QR Menu Ordering. The table also includes an aspect for Menu Customization, allowing for personalized ordering experiences. Payment options listed include Cash, Credit/Debit Cards, and Mobile Payments/QR Code. Additionally, the table includes information on different operation modes available, such as Guest Mode, Waiter Mode, and Pre-Order Mode. These different features provide various options for customers to place their orders and make payments, as well as different modes of operation for restaurant staff to manage orders.

3. Comparison of Company Features

Table 5: Comparison of Company features for Self-Ordering System (SOS)

ASPECT		ZEONIQ	SEITO	QUBEAPPS
Ordering Method	Mobile Ordering	✓	✓	✓
	Self-Ordering Kiosk	✓	✓	✓
	Table Ordering Device	✓	✗	✗
	QR Menu Ordering	✓	✗	✓
Menu Customization		✓	✓	✓
Payment Method	Cash	✓	✓	✓
	Credit/Debit Cards	✓	✓	✓
	Mobile Payments/QR Code	✓	✓	✓
Operation Modes	Guest Mode	✓	✓	✓
	Waiter Mode	✗	✓	✗
	Pre-Order Mode	✗	✓	✗




Table 5 compares the features offered by three different companies, ZeonIQ, Seito, and Qubeapps. All three companies offer similar features such as Mobile Ordering, Self-Ordering Kiosk, Menu Customization, Cash, Credit/Debit Card, Mobile Payments/QR Code, and Guest Mode. However, they differ in the availability of certain features such as Table Ordering Device, QR Menu Ordering, Waiter Mode and Pre-Order Mode. ZeonIQ offers all these features except for Waiter Mode and Pre-Order Mode, Seito offers

all these features, and Qubeapps does not offer Table Ordering Device and QR Menu Ordering but offers Waiter Mode and Pre-Order Mode.

Comparison for Point-Of Sale System (POS)

1. Comparison of Company

Table 6: Comparison of company that offers Point-of-Sale System (POS)

ASPECT	ZEONIQ	DINIR	QASHIER
Logo			
Name of Offered Services	Point-of-Sales System	DinIr Waiter	QashierXS
Objective	Zeoniq POS ensures a seamless customer experience, while simplifying and streamlining daily business operations for improved speed and efficiency.	Dinlr is developed to assist your business in enhancing table turnover, providing more efficient service, and reducing the reliance on human labor while navigating through tight margins and fierce competition.	All-in-one POS Terminal, it allows you to handle all types of payments and manage your business operations seamlessly in one compact device.
Price	N/A	<ul style="list-style-type: none"> • RM200/Month (First Device) • RM80/Month (Per Additional Device) 	RM1598

URL	https://zeoniq.com/page/pospage.html	https://www.dinlr.com/my/waiter	https://qashier.com/my/#pos
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Table 6 compares various POS solutions offered by different companies. Zeoniq offers a POS system with the objective of ensuring a seamless customer experience and streamlining daily business operations, with no pricing information provided. Dinlr offers a POS system called Dinlr Waiter, which aims to enhance table turnover, provide more efficient service, and reduce reliance on human labor, with pricing at RM200 per month for the first device and RM80 per month for additional devices. Qashier offers a POS system called QashierXS, which is an all-in-one POS terminal that allows for handling all types of payments and managing business operations seamlessly in one compact device, with a one-time cost of RM1598.

2. System Features

Table 7: Features for Point-of-Sale System (POS)

ASPECT		DESCRIPTION
Type of POS Terminal	Countertop POS Terminal	Traditional POS terminals that are typically placed on a counter or a desk. They include a computer, a display screen, a printer, and a card reader.
	Mobile POS Terminal	These are portable POS terminals that can be used by businesses that need to process transactions on the go, such as in food trucks or at outdoor events. They built-in card reader and a battery, and they can connect to a mobile device or a cloud-based POS system.
	All-in-One POS Terminal	A combination of multiple types of terminals.

Hardware compatibility	The ability to work with different types of hardware, such as barcode scanners, receipt printers, and cash drawers.
Payment Processing	Support for various payment methods, such as credit/debit cards, mobile payments, and gift cards.
Inventory management	The ability to track inventory levels, set reorder points, and generate reports on sales and inventory.
Sales and Reporting	The ability to generate sales reports, track customer behaviour, and analyse sales data.
Employee Management	Support for employee time tracking, permission levels, and sales reporting.
Customer Management	Ability to store customer information, track customer behaviour, and create loyalty programs.
Cloud-based	Cloud-based POS systems can be accessed from anywhere with an internet connection, allowing for remote access and easy sharing between multiple locations. They also often have automatic updates and backups, reducing maintenance and IT support needs.
On-Premises based	On-premises systems can be fully customizable and don't require internet connection but can also have more control over the security of their data.

Table 7 explains various aspects of POS solutions. In terms of POS terminal, the options include Countertop POS terminal, Mobile POS Terminal, and All-in-one POS Terminal. The table also includes an aspect for Hardware Compatibility, allowing for

integration with various hardware devices. Payment Processing, Inventory Management, Sales and Reporting, Employee Management, and Customer management are also included as features. Additionally, the table includes information on Cloud-based and On-premises Based options, allowing for different deployment and accessibility options. These different features provide various options for businesses to manage and process their sales, inventory, employee, customer and reporting data with ease.

3. Comparison of Company Features

Table 8: Comparison of Company Features for Point-of-Sale System (POS)

ASPECT		ZEONIQ	DINIR	QASHIER
Type of POS Terminal	Countertop POS Terminal	✓	✓	✗
	Mobile POS Terminal	✓	✓	✗
	All-in-One POS Terminal	✗	✗	✓
Hardware compatibility		✗	✗	✓
Payment Processing		✓	✓	✓
Inventory management		✗	✓	✗
Sales and Reporting		✗	✓	✓
Employee Management		✗	✓	✗
Customer Management		✓	✓	✓




Cloud-based	✓	✓	✓
On-Premises based	✓	✓	✗

Table 8 compares the features offered by three different companies, ZEONIQ, Dinir, and Qashier. All three companies offer similar features such as Payment Processing, Customer management, Cloud-based, and On-premises Based. However, they differ in the availability of certain features such as Type of POS Terminal, Hardware Compatibility, Inventory Management, Sales and Reporting, and Employee Management. ZEONIQ offers Countertop POS terminal, Mobile POS Terminal, but not All-in-one POS Terminal and does not have features for Hardware Compatibility, Inventory Management, Sales and Reporting and Employee Management. Dinir offers Countertop POS terminal, Mobile POS Terminal, but not All-in-one POS Terminal and does not have features for Hardware Compatibility, but offers features for Inventory Management, Sales and Reporting, and Employee Management. Qashier offers All-in-one POS Terminal but does not offer Countertop POS terminal and Mobile POS Terminal, it offers Hardware Compatibility but does not offer Inventory Management and Employee Management and offers Sales and Reporting.

Comparison for Kitchen Display System

1. Comparison of Company

Table 9: Comparison of company that offers Kitchen Display System (KDS)

ASPECT	ZEONIQ	DINIR	XILNEX
Logo			

Name of Offered Services	Kitchen Display System	Dinlr KDS	Kitchen Display System
Objective	Zeoniq KDS enhances staff productivity, resulting in shorter wait times during peak hours and satisfied customers. Happy employees lead to happy patrons.	Enhance your kitchen and server's ability to handle incoming orders effectively. By using our solution, you can empower your staff to manage orders in a more efficient way.	Use multiple screens in kitchen to display orders and expedite urgency, visual cues indicate completed orders.
Price	N/A	RM45/Monthly (1 Location. Per Device.)	Starting from RM100/monthly (per outlet)
URL	https://zeoniq.com/page/kdspage.html	https://www.dinlr.com/my/kds	https://www.xilnex.com/kitchen-display-system

Table 9 compares various KDS solutions offered by different companies. Zeoniq offers a KDS with the objective of enhancing staff productivity and resulting in shorter wait times and satisfied customers, with no pricing information provided. Dinlr offers a KDS called Dinlr KDS, which aims to enhance kitchen and server's ability to handle incoming orders effectively, with pricing at RM45 per month for 1 location per device. Xilnex offers a KDS with the objective of using multiple screens in the kitchen to display orders and expedite urgency, with a one-time cost of RM1598. All these companies are trying to improve the efficiency of kitchen operations and to satisfy customers by providing visual cues and reducing wait times.

2. System Features

Table 10: Features for Kitchen Display System (KDS)

ASPECT	DESCRIPTION
Order Management	The ability to receive, track and manage orders in real-time, with options to modify or cancel orders.
Kitchen View	The ability to view order details, including customer information, special requests, and preparation time.
Priority Management	The ability to set priority levels for different orders and manage the queue of orders effectively.
Customizable Option	The ability to customize the interface, configure settings and build the layout to suit specific kitchen needs.
Integrated Queue System	Provide customers with their queue number on the display system and keep them informed of when their food is ready for pickup or service.

Table 10 explains various aspects of KDS solutions. Order Management is one of the features provided by KDS systems, it allows kitchen staff to view and manage incoming orders. Kitchen View is another feature; it allows kitchen staff to have a clear overview of all the orders and their status. Priority Management is also a feature, it allows kitchen staff to prioritize orders based on their importance. Customizable Option is another feature, it allows users to customize the display and settings of the KDS system according to their preferences. Integrated Queue System is also included as a feature, it allows integration with queue management systems to manage and display customer wait times. These different features provide various options for kitchen staff to manage and prioritize orders and to have a clear overview of the kitchen operations.

3. Comparison of Company Features

Table 11: Comparison of Company Features for Kitchen Display System (KDS)

ASPECT	ZEONIQ	DINIR	XILNEX
Order Management	✓	✓	✓
Kitchen View	✓	✓	✓
Priority Management	✓	✗	✗
Customizable Option	✗	✗	✓
Integrated Queue System	✓	✓	✗

Table 11 compares the features offered by three different companies, ZeonIQ, Dinir, and Xilnex. All three companies offer similar features such as Order Management, Kitchen View, and Integrated Queue System. However, they differ in the availability of certain features such as Priority Management and Customizable Option. ZeonIQ offers all the features mentioned, Dinir offers Order Management, Kitchen View, and Integrated Queue System but does not offer Priority Management and Customizable Option. Xilnex offers Order Management, Kitchen View, and Customizable Option but does not offer Priority Management and Integrated Queue System. All the companies are trying to improve the efficiency of kitchen operations and to provide a clear overview of the kitchen operations to the kitchen staff.

Advantages and Disadvantages of Existing Systems

Table 12: Comparison of Advantages and Disadvantages of Existing Systems

	Advantages	Disadvantages
SOS	<ul style="list-style-type: none"> • Less room for error and waiting time. • Reducing queuing line. • Reduce labour cost. 	<ul style="list-style-type: none"> • Confuse navigation for new user. • Equipment malfunction. • Implementation cost.
POS	<ul style="list-style-type: none"> • Reduce human error. • Increase order accuracy. • Easier Management. 	<ul style="list-style-type: none"> • Price is costly. • Rely on internet connection. • Security Risk.
KDS	<ul style="list-style-type: none"> • Kitchen staff alerted upon receiving orders. • Reduce order wait times. 	<ul style="list-style-type: none"> • Rely on internet. • Initial cost is high.

Based on Table 12, the three existing systems have both advantages and disadvantages. The implementation of SOS has the potential to reduce waiting time, lines, labour costs, and error margins. POS systems can reduce human error, improve order accuracy, and enhance management. KDS can reduce customer waiting time by immediately notifying kitchen staff of new orders. However, there are disadvantages to the implementation of these systems as well. New users may find SOS confusing and there is a possibility of malfunction. POS systems are vulnerable to security risks such as malware attacks. Both POS and KDS rely on the internet, which could be problematic for restaurants located in rural areas. Additionally, all three systems are costly to implement.

2.3.2 Relevance of comparison with Orderlikey

The conducted comparison is relevant for Orderlikey to determine which features from each system that solve the disadvantages and can be implemented in Orderlikey. By combining some of the important features of the Self-Ordering System (SOS), Point-of-Sale (POS), and Kitchen Display System (KDS), this could be a solution to the disadvantages of each individual system. Orderlikey ordering system proposing features by integrating digital cash register feature of the POS, the system can provide a user-friendly interface while reducing human error and improving order accuracy. This solution can also mitigate the problem of internet connectivity in rural areas by using a combination of wireless and wired connections. Furthermore, implementing these features as a single integrated system can also help to reduce the overall cost of implementation.

The implementation of the features is listed in Table 13. The Self Order System (SOS) features that will be implemented in Orderlikey is the use of a web-based application for customers. They can access it directly through the URL. This ensures that customers can access the system with any mobile browser-capable device. The use of a digital cash register by the cashier is the next feature inspired by a Point-of-Sale system. This will make it easier for cashiers to calculate orders at the kiosk.

Table 13: Features for Orderlikey based on Existing Systems

System	Features
Self-Order System	<ul style="list-style-type: none"> • Web based application for customer to view the kiosk info and updated menu and prices.
Point-of-Sale System	<ul style="list-style-type: none"> • Any device that supports modern web browser (preferably touch device) to be a digital cash register for cashier for easy order and calculation. • This device can also be used to manage the kiosk info and menu.
Kitchen Display System	<ul style="list-style-type: none"> • An updated stock for customer to check based on the current order.

2.4 Summary

In summary, each feature and benefit of the three existing systems will ultimately enhance the ordering procedure in restaurants that implement them. Therefore, it is believed that Orderlikey will be able to achieve its development goals with the help of system features that will be implemented in the system, which is to enhance the Faculty of Computing kiosk ordering process and resolve its problems.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter will explain the software development life cycle use in the project management framework subtopic. Next, the project requirement will describe the system's functional and non-functional requirements, constraints, and limitations. The third is the data design and initial proof of concept for the purposed system. In addition, the testing plan and possible uses of the proposed system will also be discussed in this chapter.

The methodology for this project will be Rapid Application Development (RAD). This is due to the development time available for Orderlikey, which is approximately three to six months, and this aligns with the RAD principle of rapid development. In addition, the flexibility of RAD is compatible with Orderlikey development, as new features can be added at any time.

3.2 Software Project Management

RAD, or Rapid Application Development, is a widely known Software Development Life Cycle (SDLC). It is an agile software development that emphasises rapid prototyping and immediate feedback throughout the development process. This model enables the developer to make multiple changes and updates during the development process without having to restart from the beginning each time.

Rapid Application Development (RAD)

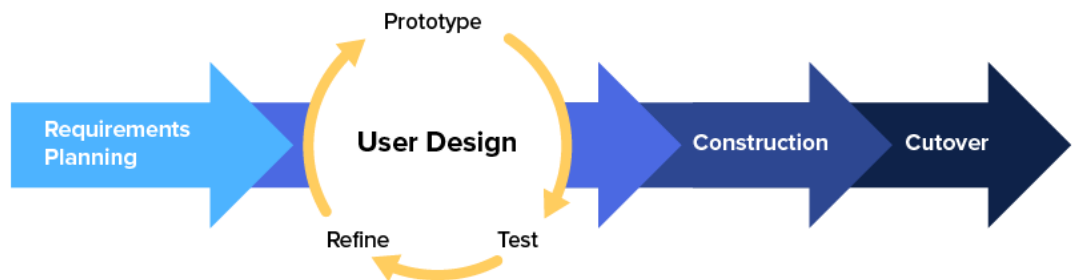


Figure 14: Rapid Application Development (RAD) Model

Figure 14 shows the phases in RAD methodology. The first is Requirements Planning, and the second is User Design, which consists of 3 sub-phases cycle: Prototype, Test, and Refine. The third one is construction, and the final one is Cutover.

3.2.1 Requirements Planning

The RAD methodology begins with requirement planning, also referred to as the Analysis and Quick Design phase. This is a crucial stage in the development of Orderlikey and this is the phase in which the project's objectives, scope, and expectations are determined. During this phase, potential difficulties and problems that may arise during development are also addressed.

This process involves the identification of all stakeholders involved in the ordering system, including customers, and kiosk staff. Observation is then conducted to gather information about the needs and requirements for the system. The data gathered from this observation is analyzed to identify common themes and requirements, which are then used to create a detailed requirements document. This document outlines all the functional and non-functional requirements for the orderlikey ordering system.

Once this is done, the requirements are prioritized based on their importance and potential impact on the ordering system. In addition, it is important to note that this requirements planning process is an ongoing one, as new requirements may arise during the development process and stakeholders' needs may change over time.

3.2.2 User Design

User Design is the following phase of RAD methodology. They are also known as the prototype cycles. This phase is vital to the RAD methodology, and this is the foremost reason for choosing this methodology for the development of Orderlikey. This phase begins the development process following the conclusion of the comprehensive requirements planning phase. There are three iterations. The first is the prototype, where the developer creates the Orderlikey prototype. Then, the Test phase is the next iteration, where either the developer or the client tests the prototype. Feedback is collected to refine the prototype. This procedure will be repeated until everything is acknowledged as best suited and reliable regarding the project's main objective.

During the first iteration, a rough representation of the application is created, known as a mockup and a prototype. The mockup is a layout foundation of the user interface for the system. The prototype serves as a visual representation of the application's layout, navigation, and overall functionality. This allows the developer to test the application's usability and gather feedback from potential users.

The next iteration in the development process is the test phase. In this phase, the prototype will be tested to evaluate its functionality and usability. This phase allows for the identification of any issues or problems with the prototype, such as usability problems or technical bugs.

Once the issues are identified, feedback step will be start. This step is crucial as it allow to gather feedback from the users or clients about the prototype. This feedback is then used to refine the prototype and improve its overall design and functionality. This feedback can also use to identify any new requirements or features that need to be added to the application.

In conclusion, the prototype, test phase and feedback collection are three essential steps in the user design process of a web based application such as Orderlikey. By creating a prototype, testing it, and gathering feedback, it can ensure that the system

meets the needs and expectations of the users and clients. These steps are iterative and may be repeated multiple times until the final product is achieved.

3.2.3 Construction

The construction phase is the third phase of the Rapid Application Development (RAD) methodology and is where the actual system development of Orderlikey occurs. This phase follows the user design phase, where multiple prototypes of the system have been developed. The goal of this phase is to ensure the rapid development of the system, as numerous modifications were made during the prototype phase. This enables to implement any changes identified during the prototype phase, in order to improve the overall design and functionality of the system.

During the construction phase, a detailed plan is created that outlines the steps and resources required to develop the system. The development process is then initiated, with using the models and prototypes created during the user design phase as a guide. The developer also implements any necessary programming languages, development tools, and frameworks.

3.2.4 Cutover

The Cutover phase is the fourth and final phase of the Rapid Application Development (RAD) methodology, and it marks the official launch of the Orderlikey system. This phase is the culmination of all the previous steps, including requirements planning, user design, and construction. After the system has been developed and tested, it is ready for launch and for Faculty of Computing kiosk to use.

During the Cutover phase, includes training users on how to use the new system and providing support. This phase will ensure that the system is fully functional and ready for use by conducting final testing and quality assurance.

Once the system is launched, the developer will continue to monitor the system and provide support to the kiosk. This includes troubleshooting any issues that may arise and addressing any bugs that are discovered. The Cutover phase is critical to the success of the RAD methodology, as it ensures that the system is fully functional, stable, and ready for use by the end-users.

3.3 Project Requirement

This subtopic aims to provide a comprehensive understanding of functional requirements, which are the specific tasks that a purposed system must be able to perform, as well as non-functional requirements. Additionally, this subtopic will examine constraints and limitations, which are factors that limit the design and functionality of a system.

3.3.1 Functional Requirement

Table 14: Cafesify Functional Requirement

User	Functional Requirement
Customer	<ul style="list-style-type: none">• User shall be able to register, login and manage their profile.• User shall be able to access the web-based application directly with the URL• User shall be able to see all the latest menu with updated price.• User shall be able to see kiosk information.• User shall be able to see the latest status whether the kiosk is "OPEN" or "CLOSE".
Kiosk Staff	<ul style="list-style-type: none">• User shall be able to login and manage kiosk info and status.• User shall be able to manage menu, prices, schedule.• User shall be able to select menu and create order for customer from the digital cash register.
KESUKOMP	<ul style="list-style-type: none">• User shall be able to login and manage their profile in the system.

	<ul style="list-style-type: none"> User shall be able to manage kiosk profile such as create the kiosk account.
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3.3.2 Non-Functional Requirement

Non-Functional Requirement	Description
Scalability	The system should be able to handle a large number of orders and customers simultaneously without experiencing performance issues.
Reliability	The system should be available and always functioning properly, with minimal downtime for maintenance or updates.
Security	The system should protect customer and payment information from unauthorized access and ensure compliance with relevant data protection regulations.
Usability	The system should be easy for customers and staff to use, with a user-friendly interface and clear instructions.
Customization	The system should allow for customization of orders and support for promotional offers and discounts.
Performance	The system should process orders and payments efficiently, with minimal delay
Maintenance	The system should have a plan for ongoing maintenance and updates to ensure it remains effective over time.

3.3.3 Constraints

The constraint of the system is that it can only accommodate a limited number of concurrent users, and this is due to the high number of user commonly student and staff at Faculty of Computing and to reduce Orderlikey's server costs. As a web-based application, the user must also have an internet connection to access the system.

3.3.4 Limitations

This system's limitation is that it is exclusive to the Faculty of Computing kiosk only. If necessary, this issue may be resolved further by purchasing an expensive server capable of supporting a more extensive database and higher user traffic.

3.4 Proposed Design

This subtopic explains the proposed design of the purposed system, including the use of context diagrams to identify the external interactions of the purposed system, use case diagrams to outline the system's functional requirements, use case descriptions to provide detailed information about each use case, activity diagrams to detail the system's workflow, and a development framework to guide the implementation of the design.

3.4.1 Context Diagram

The purposed system is called Orderlikey. A smart kiosk ordering system for FK. Orderlikey is a web responsive based on Laravel framework. There are three users of the system, which is the customer, kiosk staff and KESUKOMP. User which is customer can access the website using the mobile browser as do the kiosk staff. The staff can access the system using any browser but preferably using a tablet or a touch screen device. The interaction of the system and the three user is depicted in Figure 15.

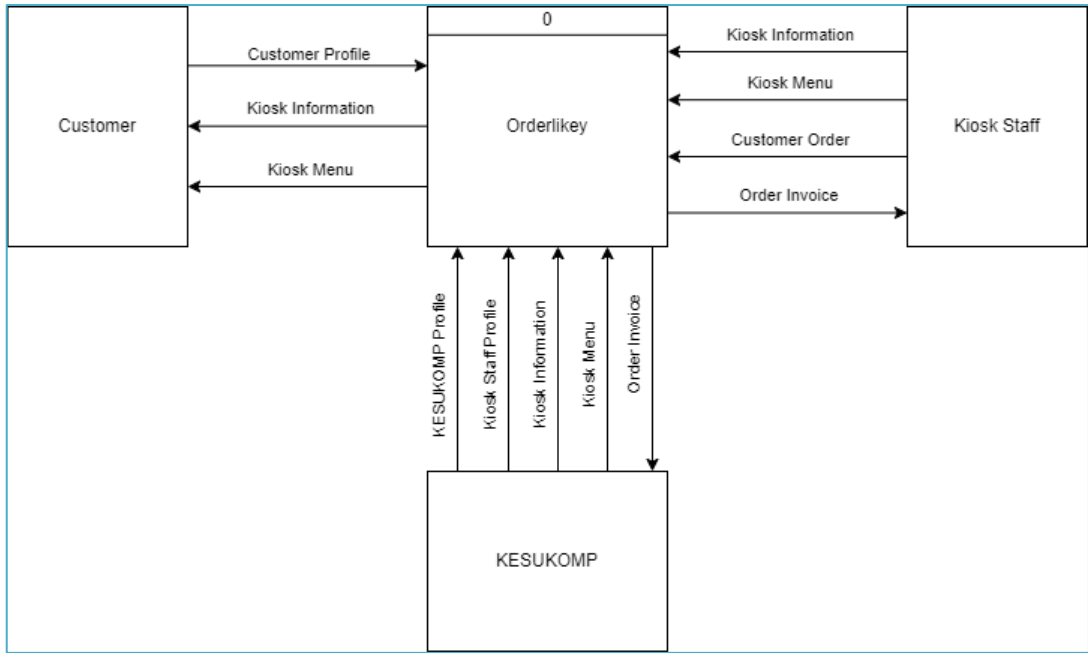


Figure 15: Orderlikey Context Diagram

3.4.2 Use Case Diagram

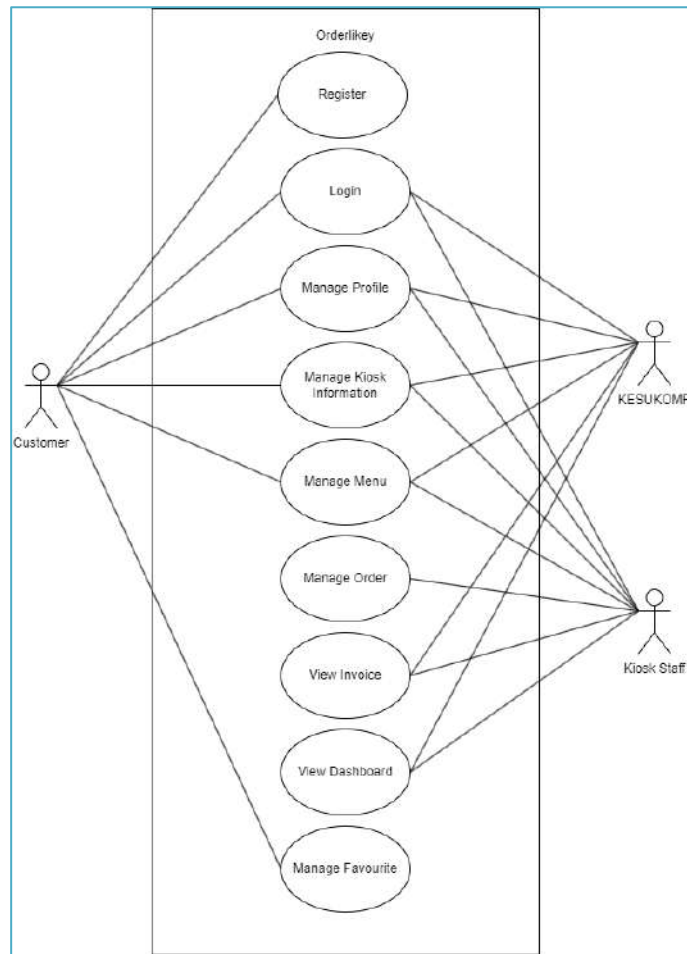


Figure 16: Orderlikey Use Case Diagram

Figure 16 shows the use case diagram for Orderlikey. There is a total of 9 use cases:

1. Register
2. Login
3. Manage Profile
4. Manage Kiosk Information
5. Manage Menu
6. Manage Order
7. View Invoice
8. View Dashboard
9. Manage Favourite

3.4.2.1 Register

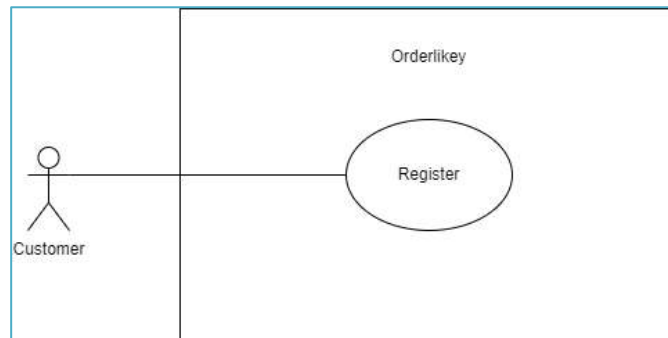


Figure 17: Use Case Diagram for Register

Table 15: Use Case Description for Register

Use Case ID	UC-OLK-100
Brief Description	This use case allows new customer to register a valid account with the system. In addition, this use case also allows KESUKOMP to register a new kiosk and new account for the kiosk staff.
Actor	<ul style="list-style-type: none"> Customer
Pre-Condition	<p>CUSTOMER</p> <ul style="list-style-type: none"> Customer does not have an existing account on the system.
Basic Flow	<ol style="list-style-type: none"> 1. This use case begins when the user clicks "Register" button. 2. System displays the registration page. 3. User enters the required information. 4. User clicks "Submit" button. <ul style="list-style-type: none"> [A1 – User does not fulfil the required fields] [E1 – Email address already registered] 5. System displays successful message. 6. Systems displays login page. 7. The use case ends.

Alternative Flow	<p>A1 – User does not fulfil the required fields.</p> <ol style="list-style-type: none"> 1. System displays error message. 2. User fulfils all required fields. 3. The use case continues.
Exception Flow	<p>E1 – Email address already registered.</p> <ol style="list-style-type: none"> 1. System displays error message. 2. User enters new email address. 3. The use case continues.
Post-Condition	<ul style="list-style-type: none"> • A new account has been created for new user.
Rules	<ul style="list-style-type: none"> • Username must be unique. • Passwords must meet the minimum requirements that has been set to ensure a secure account for the user.
Constraints	<ul style="list-style-type: none"> • User input validation. • Maximum field lengths. • Specific format of the email address and phone number.

3.4.2.2 Login

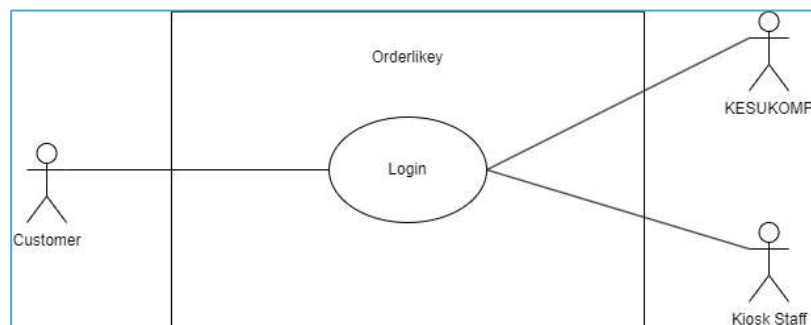


Figure 18: Use Case Diagram for Login

Table 16: Use Case Description for Login

Use Case ID	UC-OLK-200
Brief Description	This use case allows registered user to access the system securely.
Actor	<ul style="list-style-type: none"> • Customer • KESUKOMP • Kiosk Staff
Pre-Condition	<ul style="list-style-type: none"> • The user has already registered in the system.
Basic Flow	<ol style="list-style-type: none"> 1. This use case begins when the user clicks “Login” button. 2. System displays the login page. 3. User enters their username and password. 4. User clicks “Login” button. 5. System verifies the information. [A1 – Incorrect user or password] 6. If the credential is valid, system displays the home page of the system. 7. The use case ends.
Alternative Flow	<p>A1 – Incorrect username or password.</p> <ol style="list-style-type: none"> 1. System displays error message. 2. User enters the required information. 3. System verifies the information. 4. For password, if it is still incorrect, user may click “Forgot Password” button to reset it. 5. System displays password recovery page. 6. User enters new password. 7. User clicks “Submit” button. 8. System displays successful message. 9. System displays login page. 10. The use case continues
Exception Flow	Not applicable.
Post-Condition	<ul style="list-style-type: none"> • The user logged into the system.

Rules	<ul style="list-style-type: none"> • User must enter the registered username and password.
Constraints	<ul style="list-style-type: none"> • User input validation. • Maximum field lengths. • Securely store and validate user's password.

3.4.2.3 Manage Profile

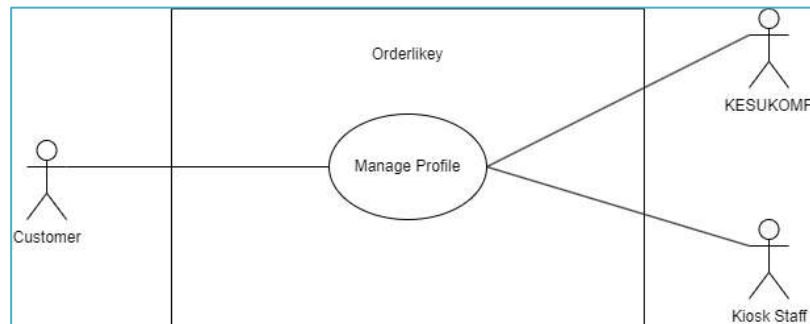


Figure 19: Use Case Diagram for Manage Profile

Table 17: Use Case Description for Manage Profile

Use Case ID	UC-OLK-300
Brief Description	This use case allows registered user to manage their user profile. They can view, update and also delete their profile. In addition, they can also logout from the system.
Actor	<ul style="list-style-type: none"> • Customer • KESUKOMP • Kiosk Staff
Pre-Condition	<ul style="list-style-type: none"> • User already logged into the system.
Basic Flow	<p>B1 – View and edit user profile</p> <ol style="list-style-type: none"> 1. This use case begins when the user clicks “My Profile” button. 2. System displays user information. 3. User clicks “Edit” button.

	<ol style="list-style-type: none"> 4. System displays edit page. 5. User enters required information. [A1 – User does not fulfil the required fields] [E1 – Email address already registered] 6. User clicks “Save” button. 7. System displays successful message. 8. The use case ends. <p>B2 – Delete user profile (Customer Only)</p> <ol style="list-style-type: none"> 1. This use case begins when the user clicks “My Profile” button. 2. System displays all user information. 3. User clicks “Deactivate My Account” button. 4. System displays confirmation box. 5. User clicks “Yes” button. 6. System display login page. 7. The use case ends. <p>B3 – Logout</p> <ol style="list-style-type: none"> 1. This use case begins when the user clicks “My Profile” button. 2. System display user information. 3. User clicks “Logout” button. 4. System displays confirmation box. 5. User clicks “Yes” button. 6. System display login page. 7. The use case ends.
Alternative Flow	<p>A1 – User does not fulfil the required fields.</p> <ol style="list-style-type: none"> 1. System displays error message. 2. User fulfils all required fields. 3. The use case continues.
Exception Flow	<p>E1 – Email address already registered.</p> <ol style="list-style-type: none"> 1. System displays error message. 2. User enters new email address.

	3. The use case continues.
Post-Condition	<p>B1 – View and edit user profile</p> <ul style="list-style-type: none"> • New information for the user has been updated. <p>B2 – Delete user profile</p> <ul style="list-style-type: none"> • User information for deleted user has been deleted. <p>B3 – Logout</p> <ul style="list-style-type: none"> • User is logged out from the system.
Rules	<ul style="list-style-type: none"> • To access the profile the user must be logged into the system. • To update the information, user must click the “Save” button. • To delete the user profile, user must click “Yes” when the confirmation message appeared. • To logout from the system, user must click “Yes” when the confirmation message appeared.
Constraints	<ul style="list-style-type: none"> • User input validation. • Maximum field lengths. • Specific format of the email address and phone numbers. • User only able to view, update and delete their own profile. • User cannot change certain information like their username.

3.4.2.4 Manage Kiosk Information

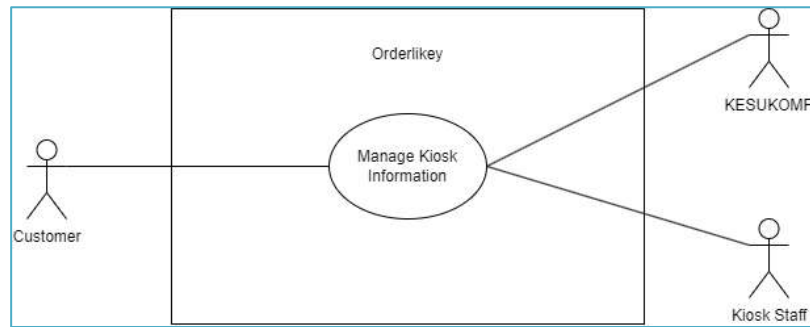


Figure 20: Use Case Diagram for Manage Kiosk Information

Table 18: Use Case Description for Manage Kiosk Information

Use Case ID	UC-OLK-400
Brief Description	This use case allows KESUKOMP and kiosk staff to manage kiosk profile. They can view update and delete information. As for customer, this use case allows them to view the kiosk information only.
Actor	<ul style="list-style-type: none"> • Customer • KESUKOMP • Kiosk Staff
Pre-Condition	<ul style="list-style-type: none"> • User must be logged into the system.
Basic Flow	<p>KESUKOMP</p> <ol style="list-style-type: none"> 1. This use case begins when the user clicks “Manage Kiosk” button. 2. System displays Manage Kiosk page. 3. User clicks “New Kiosk” button. 4. User enters required information. 5. User clicks “Submit” button. [A1 – User does not fulfil the required fields] 6. System displays successful message. 7. System displays kiosk information. 8. User clicks “Edit” button. 9. System displays edit page. 10. User enters required information.

	<p>11. User clicks “Save” button. [A1 – User does not fulfil the required fields]</p> <p>12. System displays successful message.</p> <p>13. User clicks “Delete Kiosk” button.</p> <p>14. System displays confirmation box.</p> <p>15. User clicks “Yes” button.</p> <p>16. System displays successful message.</p> <p>17. The use case ends.</p> <p>KIOSK STAFF</p> <p>1. This use case begins when the user clicks “My Kiosk” button.</p> <p>2. System displays kiosk information.</p> <p>3. User clicks “Edit” button.</p> <p>4. System displays edit page.</p> <p>5. User enters required information.</p> <p>6. User clicks “Save” button. [A1 – User does not fulfil the required fields]</p> <p>7. System displays successful message.</p> <p>8. The use case ends.</p> <p>CUSTOMER</p> <p>1. This use case begins when the user clicks “View Kiosk Profile” button.</p> <p>2. System displays kiosk information.</p> <p>3. The use case ends.</p>
Alternative Flow	<p>A1 – User does not fulfil the required fields.</p> <p>1. System displays error message.</p> <p>2. User fulfils all required fields.</p> <p>3. The use case continues.</p>
Exception Flow	<p>Not applicable.</p>
Post-Condition	<ul style="list-style-type: none"> • New kiosk information has been updated.
Rules	<ul style="list-style-type: none"> • To manage the kiosk profile KESUKOMP and kiosk staff must be logged into the system.

	<ul style="list-style-type: none"> • To update the information staff must clicks “Save” button. • To view the kiosk profile, customer must be logged in the system. • Customer can only view the kiosk profile.
Constraints	<ul style="list-style-type: none"> • Staff input validation. • Maximum field lengths. • Only KESUKOMP and kiosk staff able to view, update and delete their kiosk profile. • Customer can only view the kiosk profile.

3.4.2.5 Manage Menu

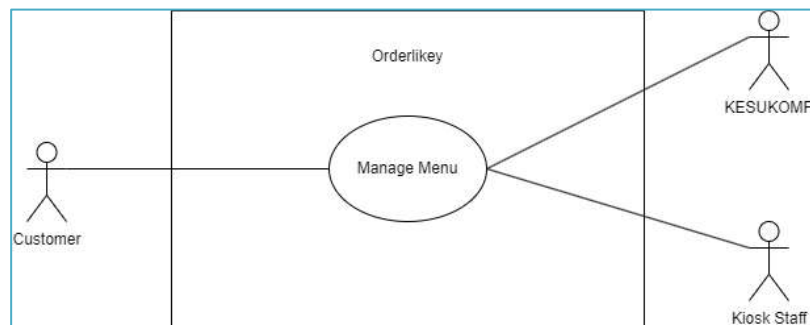


Figure 21: Use Case Diagram for Menu

Table 19: Use Case Description for Menu

Use Case ID	UC-OLK-500
Brief Description	This use case allows KESUKOMP and Kiosk Staff to manage menu. As for customer, this use case allows them to view the menu only.
Actor	<ul style="list-style-type: none"> • Customer • KESUKOMP • Kiosk Staff
Pre-Condition	<ul style="list-style-type: none"> • User must be logged into the system.

Basic Flow	<p>KESUKOMP, Kiosk Staff</p> <ol style="list-style-type: none"> 1. This use case begins when the user clicks “Manage Menu” button. 2. System displays Manage Menu page. 3. User clicks “New Menu” button. 4. User enters required information. 5. User clicks “Submit” button. [A1 – User does not fulfil the required fields] 6. System displays successful message. 7. System displays menu information. 8. User clicks “Edit” button. 9. System displays edit page. 10. User enters required information. 11. User clicks “Save” button. [A1 – User does not fulfil the required fields] 12. System displays successful message. 13. User clicks “Delete Menu” button. 14. System displays confirmation box. 15. User clicks “Yes” button. 16. System displays successful message. 17. The use case ends. <p>CUSTOMER</p> <ol style="list-style-type: none"> 1. This use case begins when the user clicks “View Menu” button. 2. System displays all menu. 3. The use case ends.
Alternative Flow	<p>A1 – User does not fulfil the required fields.</p> <ol style="list-style-type: none"> 1. System displays error message. 2. User fulfils all required fields. 3. The use case continues.
Exception Flow	<p>Not applicable.</p>
Post-Condition	<ul style="list-style-type: none"> • New kiosk information has been updated.
Rules	<ul style="list-style-type: none"> • To manage the kiosk profile KESUKOMP and kiosk staff must be logged into the system.

	<ul style="list-style-type: none"> • To update the information staff must clicks “Save” button. • To view the kiosk profile, customer must be logged in the system. • Customer can only view the kiosk profile.
Constraints	<ul style="list-style-type: none"> • Staff input validation. • Maximum field lengths. • Only KESUKOMP and kiosk staff able to view, update and delete their kiosk profile. • Customer can only view the kiosk profile.

3.4.2.6 Manage Order

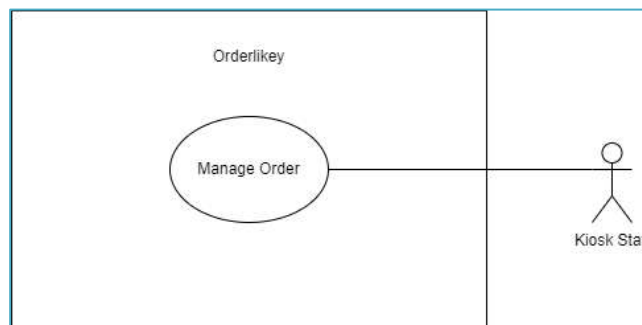


Figure 22: Use Case Diagram for Manage Order

Table 20: Use Case Description for Manage Order

Use Case ID	UC-OLK-600
Brief Description	This use case allows kiosk staff to create order for the customer in the system.
Actor	<ul style="list-style-type: none"> • Kiosk Staff
Pre-Condition	<ul style="list-style-type: none"> • User must be logged in the system.
Basic Flow	<ol style="list-style-type: none"> 1. The use case starts when user clicks “POS” button. 2. Then, user clicks “Add to cart” button to add menu to the cart. 3. The user clicks “+” or “-“ to change the quantity of the menu.

	<ol style="list-style-type: none"> 4. Repeat steps 2-3 for every menu. 5. Then, user clicks either “Cash”, “Debit” or “Scan” depending on the customer payment type. 6. The use case ends.
Alternative Flow	Not applicable.
Exception Flow	Not applicable.
Post-Condition	<ul style="list-style-type: none"> • List of invoices must be updated after the user finish the order process.
Rules	Not applicable.
Constraints	Not applicable.

3.4.2.7 View Invoice

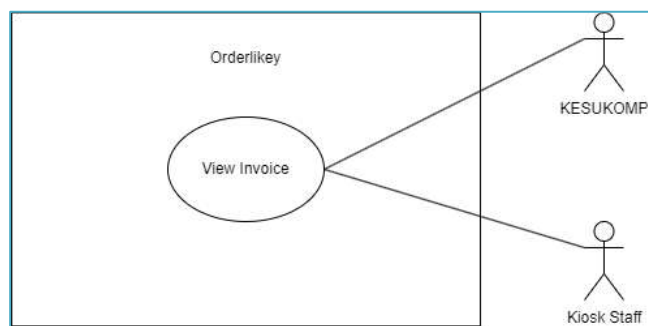


Figure 23: Use Case Diagram for View Invoice

Table 21: Use Case Description for View Invoice

Use Case ID	UC-OLK-700
Brief Description	This use case allows KESUKOMP and Kiosk Staff to view invoice.
Actor	<ul style="list-style-type: none"> • KESUKOMP

	<ul style="list-style-type: none"> • Kiosk Staff
Pre-Condition	<ul style="list-style-type: none"> • User must be logged in the system.
Basic Flow	<ol style="list-style-type: none"> 1. This use case begins when user clicks “View Invoice” button. 2. System displays table with list of invoices. 3. The use case ends.
Alternative Flow	Not applicable
Exception Flow	Not Applicable
Post-Condition	Not Applicable
Rules	Not Applicable
Constraints	Not Applicable

3.4.2.8 View Dashboard

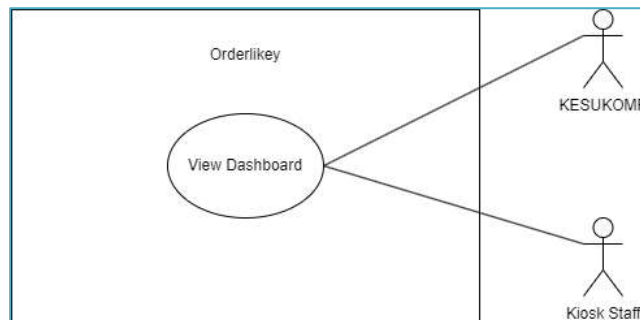


Figure 24: Use Case Diagram for View Dashboard

Table 22: Use Case Description for View Dashboard

Use Case ID	UC-OLK-800
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Brief Description	This use case allows KESUKOMP and Kiosk Staff to view dashboard.
Actor	<ul style="list-style-type: none"> • KESUKOMP • Kiosk Staff
Pre-Condition	<ul style="list-style-type: none"> • User must be logged in the system.
Basic Flow	<ol style="list-style-type: none"> 1. This use case begins when user clicks “View Dashboard” button. 2. System displays chart with the related data. 3. The use case ends.
Alternative Flow	Not Applicable
Exception Flow	Not Applicable
Post-Condition	Not Applicable
Rules	Not Applicable
Constraints	Not Applicable

3.4.2.9 Manage Favourite

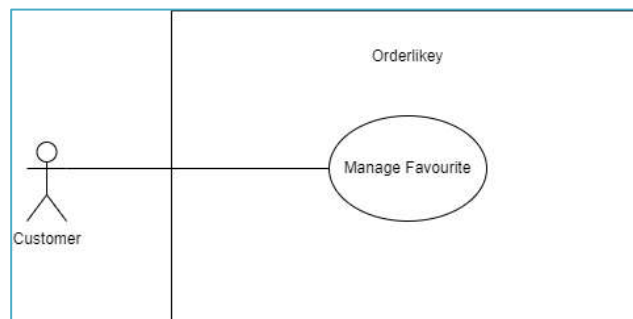


Figure 25: Use Case Diagram for Manage Favourite

Table 23: Use Case Description for Manage Favourite

Use Case ID	UC-OLK-900
Brief Description	This use case allows customer to manage their favourite menu.
Actor	<ul style="list-style-type: none"> • Customer
Pre-Condition	<ul style="list-style-type: none"> • User must be logged in the system.
Basic Flow	<ol style="list-style-type: none"> 1. The use case starts when user clicks "Favourite" button. 2. The system will display all the menu that have been favourited. 3. If the user wants to add new menu to the favourite, user clicks "Star" button on each menu. 4. If the user wants to remove menu from the favourite, user clicks "Unstar" button on each menu. 5. The use case ends.
Alternative Flow	Not applicable
Exception Flow	Not applicable
Post-Condition	<ul style="list-style-type: none"> • List of favourites must be updated everytime user clicks the "Star" or "Unstar" button.
Rules	Not applicable
Constraints	Not applicable

3.4.3 Activity Diagram

This subtopic shows the activity diagram for each of the use case module to get a clearer understanding on the flow of the system.

3.4.3.1 Register

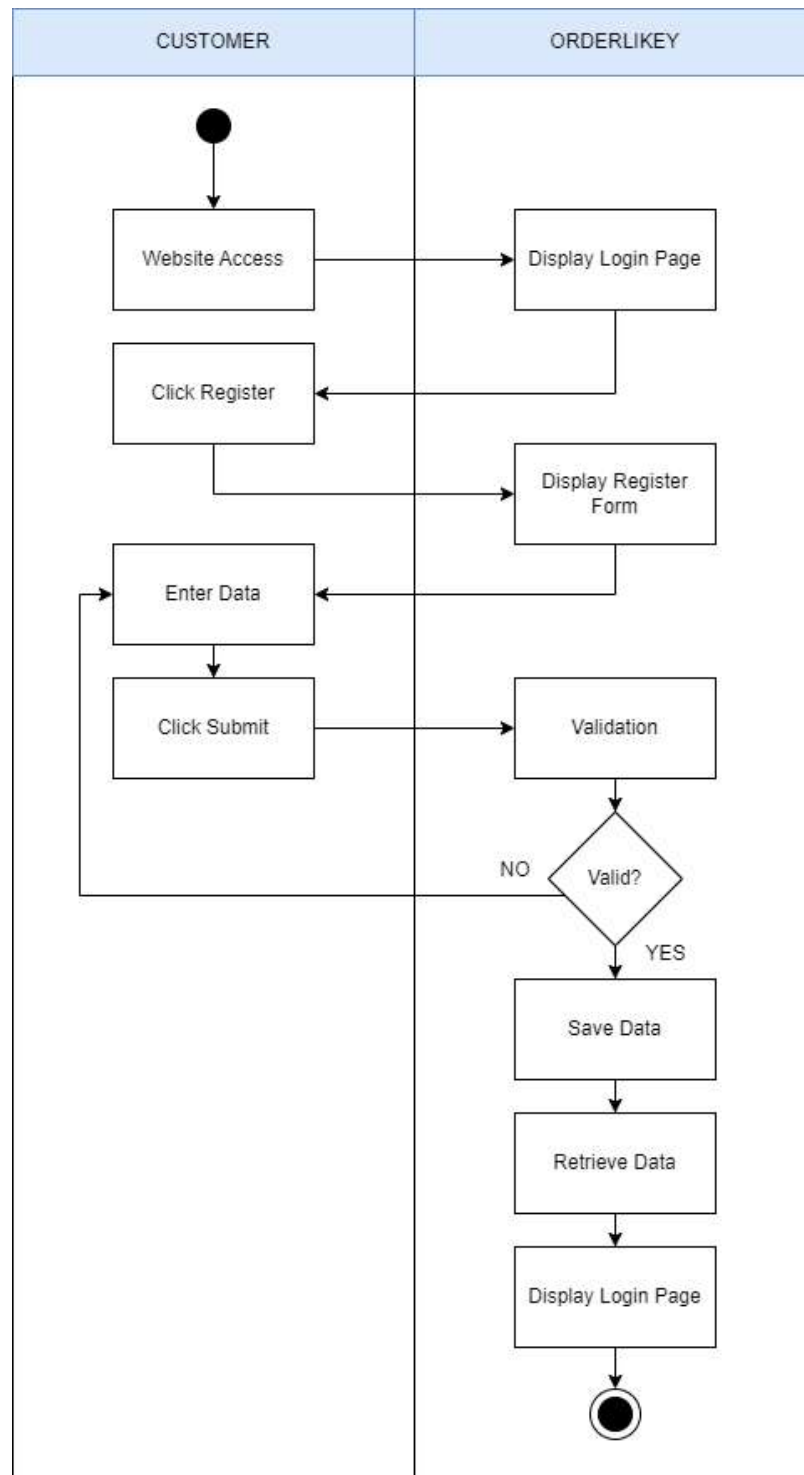


Figure 26: Activity Diagram for Register

3.4.3.2 Login

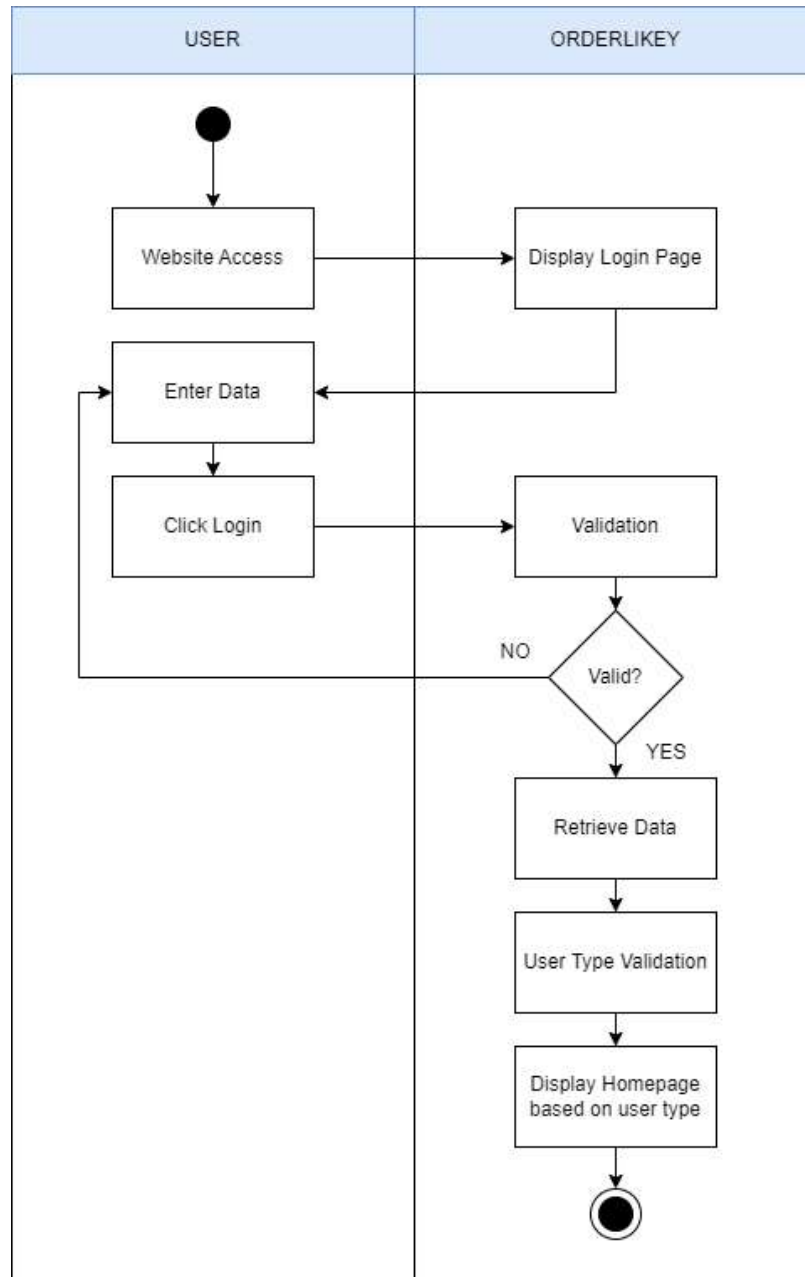


Figure 27: Activity Diagram for Login

3.4.3.3 Manage Profile

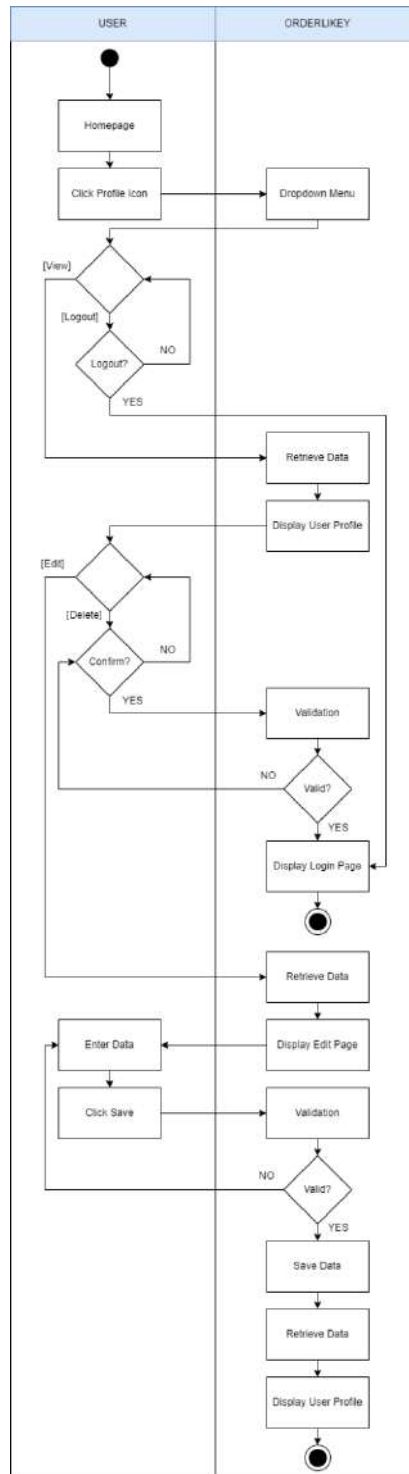


Figure 28: Activity Diagram for Manage Profile

3.4.3.4 Manage Kiosk Information

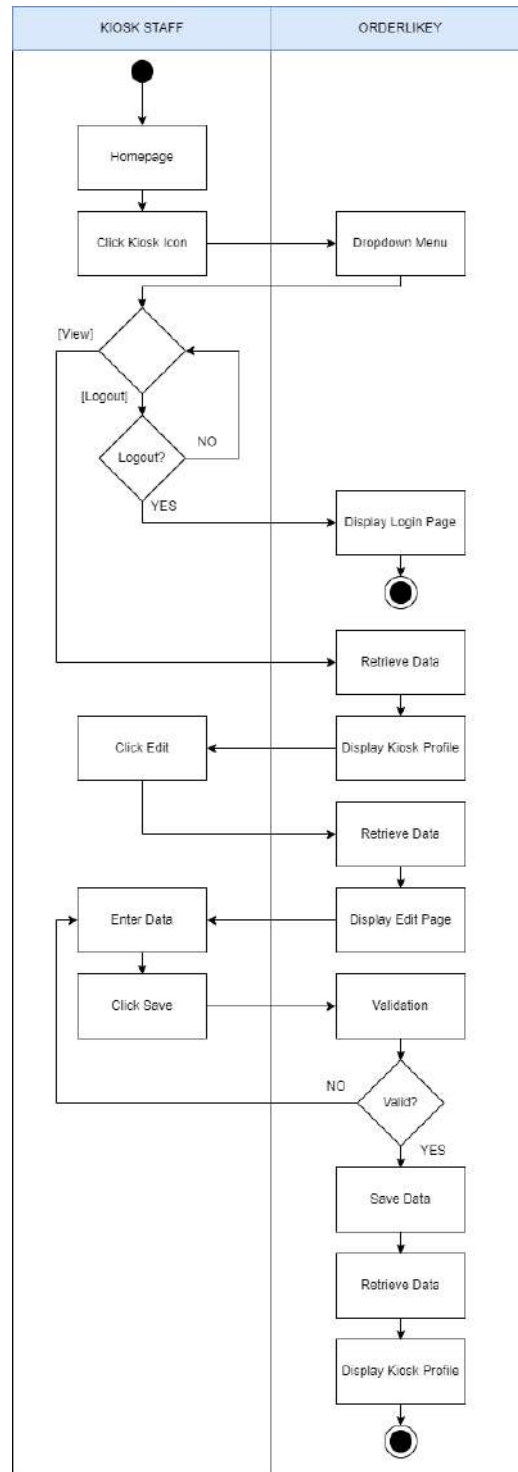


Figure 29: Activity Diagram for Manage Kiosk Information

3.4.3.5 Manage Menu

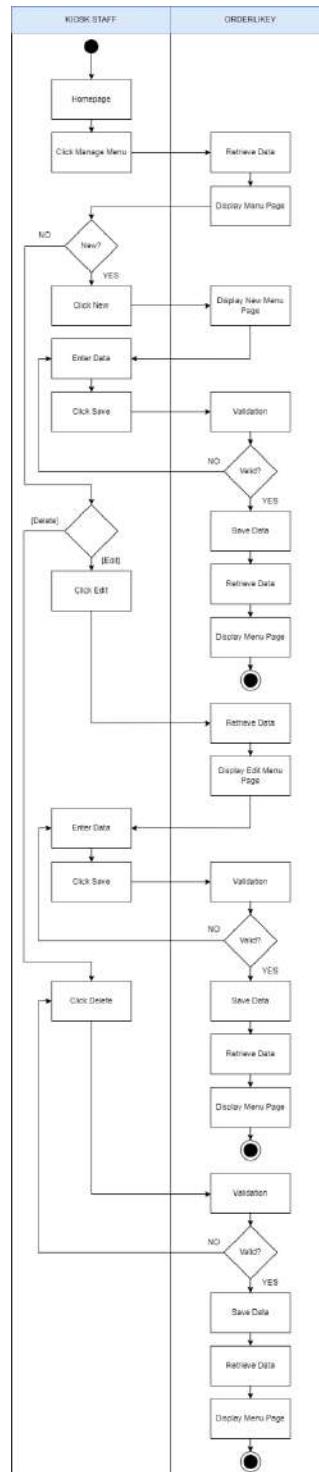


Figure 30: Activity Diagram for Menu

3.4.3.6 Manage Order

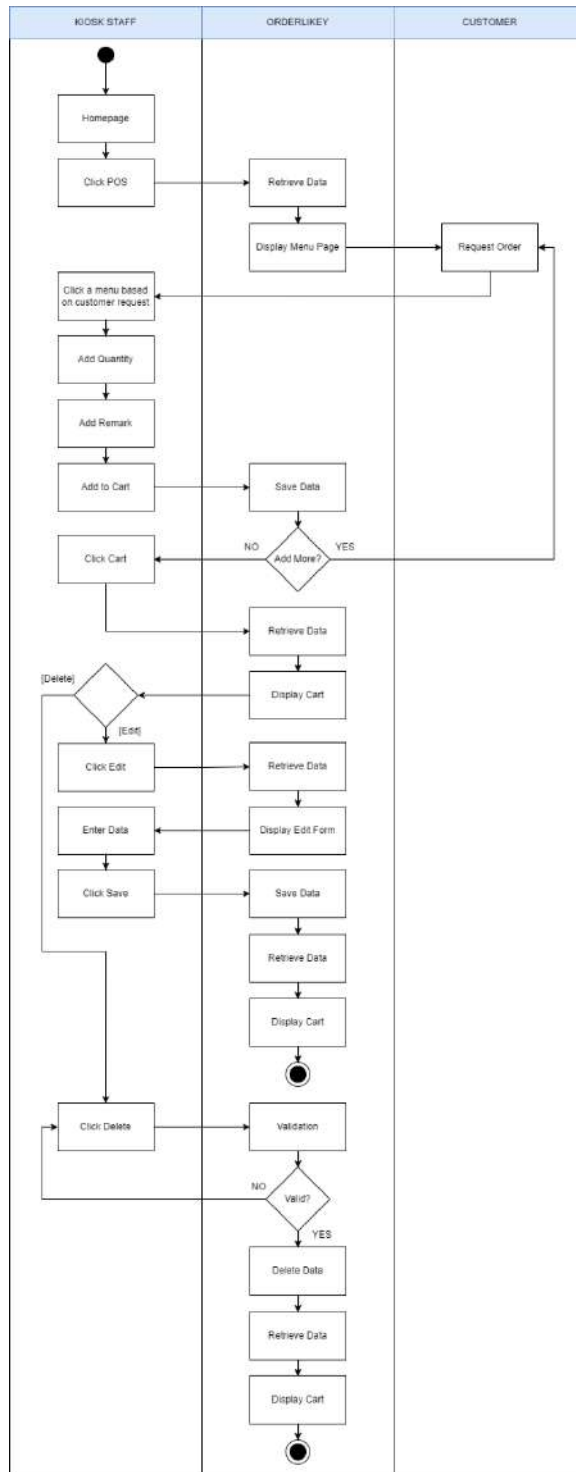


Figure 31: Activity Diagram for Manage Order

3.4.3.7 View Invoice

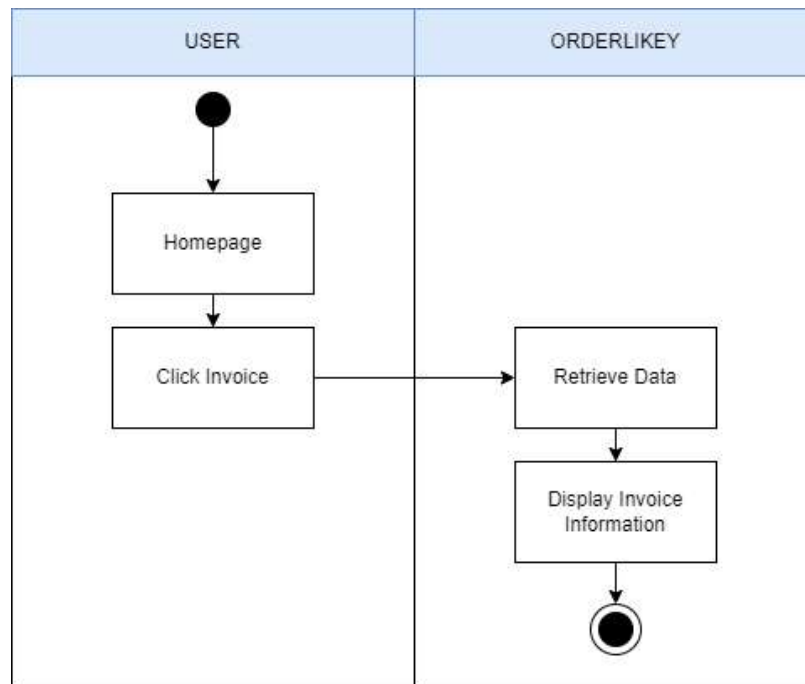


Figure 32: Activity Diagram for View Invoice

3.4.3.8 View Dashboard

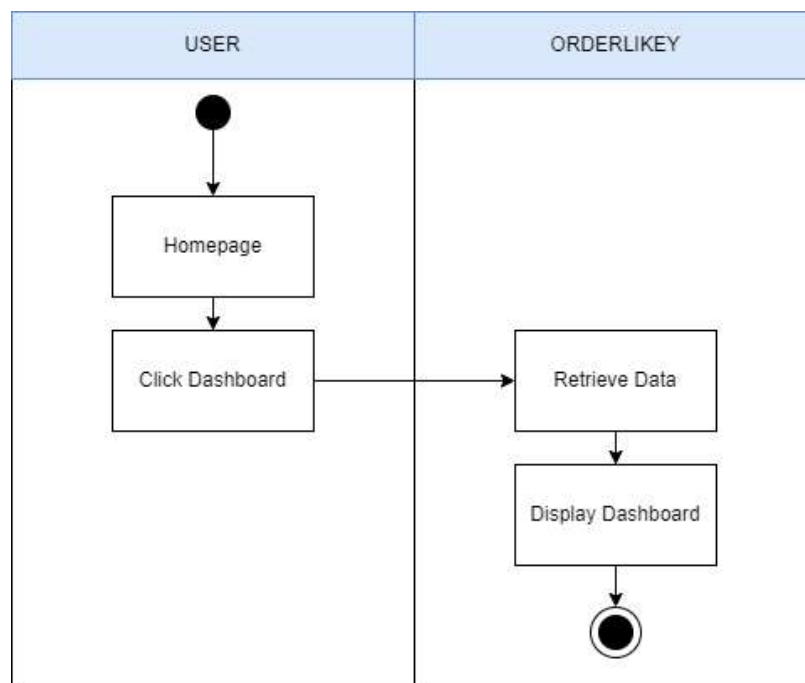


Figure 33: Activity Diagram for View Dashboard

3.4.3.9 Manage Favourite

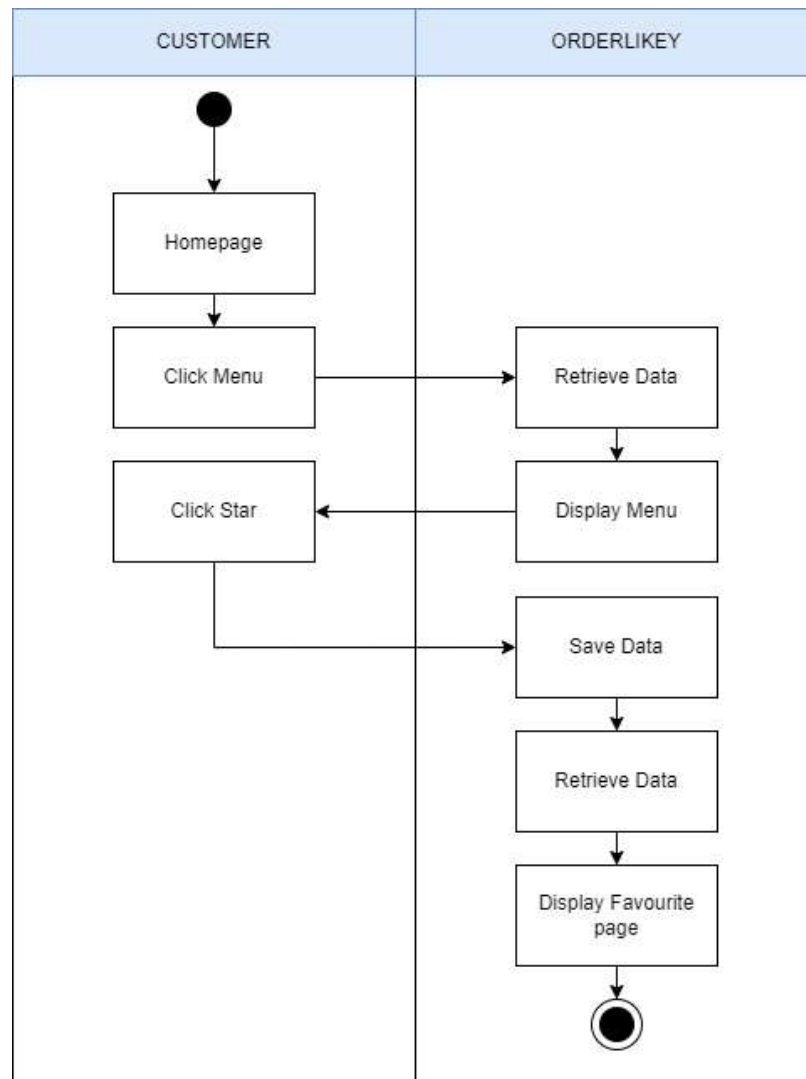


Figure 34: Activity Diagram for Manage Favourite

3.5 Data Design

This subtopic is called data design. It is the process of creating a logical and physical representation of the data that will be used in a system. A key component of data design is the Entity-Relationship Diagram (ERD), which illustrates the relationships between different entities in the system. Another important component is the data dictionary, which describes the structure, organization, and attributes of the data.

3.5.1 ERD (Entity Relationship Diagram)

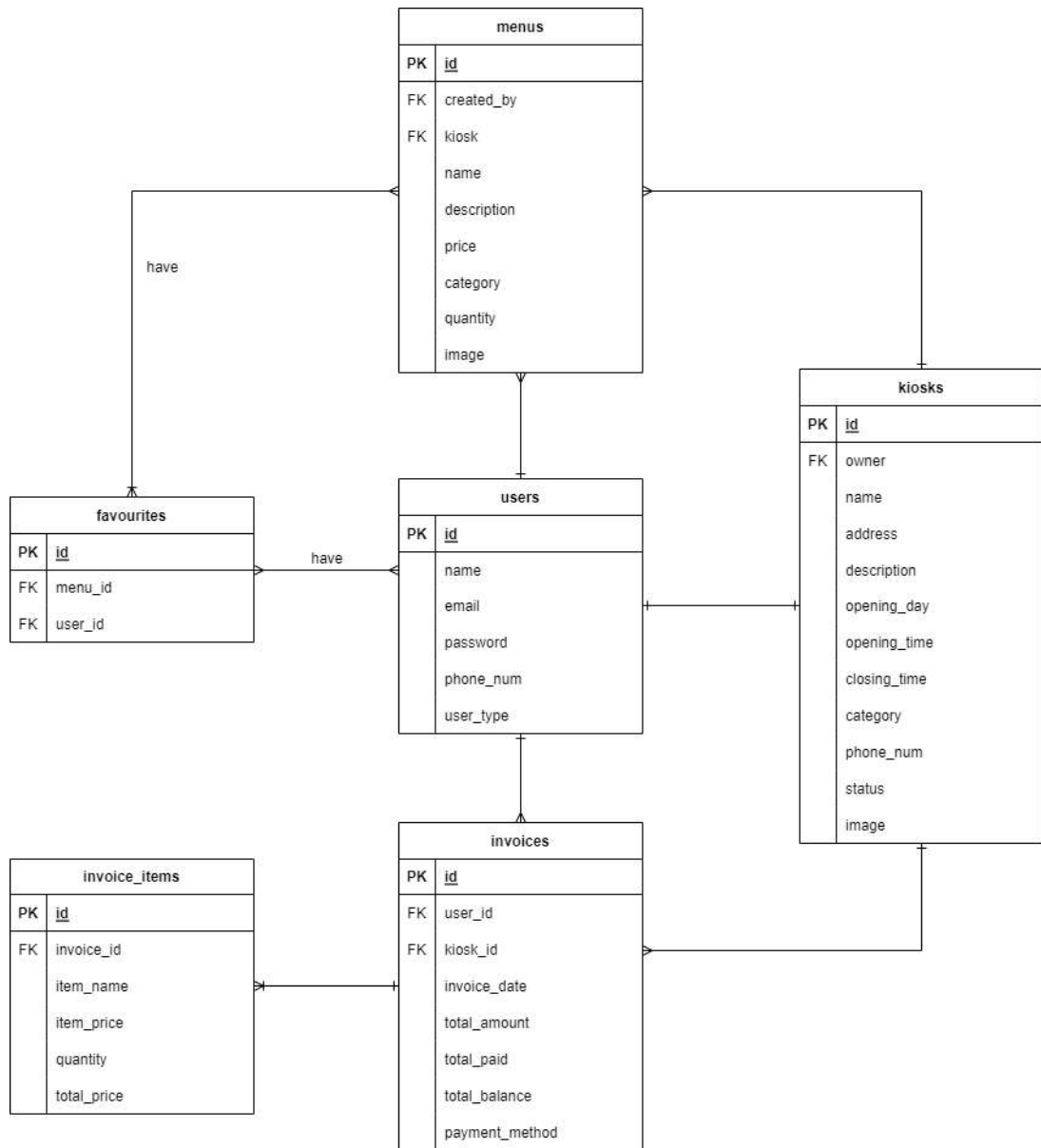


Figure 35: Orderlikey Entity Relationship Diagram

3.5.2 Data Dictionary

This subtopic will show the data dictionary based on the Orderlikey Entity Relationship Diagram (ERD) depicted in Figure 35.

3.5.2.1 Users

Table 24: Users Data Dictionary

Field Name	Data Type	Description	Constraint
id	bigint(20)	ID for user	PK
name	varchar(255)	Name for user	
email	varchar(255)	Email for user	
password	varchar(255)	Password for user	
phone_num	number	Phone number for user	
user_type	varchar(255)	User type	

3.5.2.2 Kiosks

Table 25: Kiosks Data Dictionary

Field Name	Data Type	Description	Constraint
id	bigint(20)	ID for kiosk	PK
owner	bigint(20)	Id for user	
name	varchar(255)	Name for kiosk	
address	varchar(255)	Address for kiosk	

description	varchar(255)	Description for kiosk	
opening_day	varchar(255)	Opening day for kiosk	
opening_time	time	Opening time for kiosk	PK
closing_time	time	Closing time for kiosk	
category	varchar(255)	Category for kiosk	
phone_num	varchar(255)	Phone Number for kiosk	
status	text	Status for kiosk	
image	varchar(255)	Image for kiosk	

3.5.2.3 Menus

Table 26: Menus Data Dictionary

Field Name	Data Type	Description	Constraint
id	bigint(20)	ID for menu	PK
created_by	bigint(20)	ID for user	FK
kiosk	bigint(20)	ID for kiosk	FK
name	varchar(255)	Name for menu	
description	varchar(255)	Description for menu	

price	decimal(8,2)	Price for menu	
category	varchar(255)	Category for menu	
quantity	int	Quantity for menu	
image	varchar(255)	Image for menu	

3.5.2.4 Favourites

Table 27: Favourites Data Dictionary

Field Name	Data Type	Description	Constraint
id	bigint(20)	ID for favourites	PK
menu_id	bigint(20)	ID for menu	FK
user_id	bigint(20)	ID for user	FK

3.5.2.5 Invoices

Table 28: Invoices Data Dictionary

Field Name	Data Type	Description	Constraint
id	bigint(20)	Id for invoices	PK
user_id	bigint(20)	Id for user	FK
kiosk_id	bigint(20)	Id for kiosk	FK
invoice_date	date	Date for invoice	
total_amount	decimal(8,2)	Total amount for invoice	

total_paid	decimal(8,2)	Total paid for invoice	
total_balance	decimal(8,2)	Total balance for invoice	
payment_method	varchar(255)	Payment method for invoice	

3.5.2.6 Invoice Items

Table 29: Invoice Items Data Dictionary

Field Name	Data Type	Description	Constraint
id	bigint(20)	Id for invoice items	PK
invoice_id	bigint(20)	Id for invoice	FK
item_name	varchar(255)	Name for menu	
item_price	decimal(8,2)	Price for menu	
quantity	int	Quantity for menu	
total_price	decimal(8,2)	Total price for menu	

3.6 Proof of Initial Concept

This subtopic shows the user interface mock-up of the purposed system. It shows the foundation layout on the image, button and icon. The system is a web-responsive design where the design will changes depending on the size of the screen.

3.6.1 Register



Figure 36: User Interface Mockup for Register

3.6.2 Login

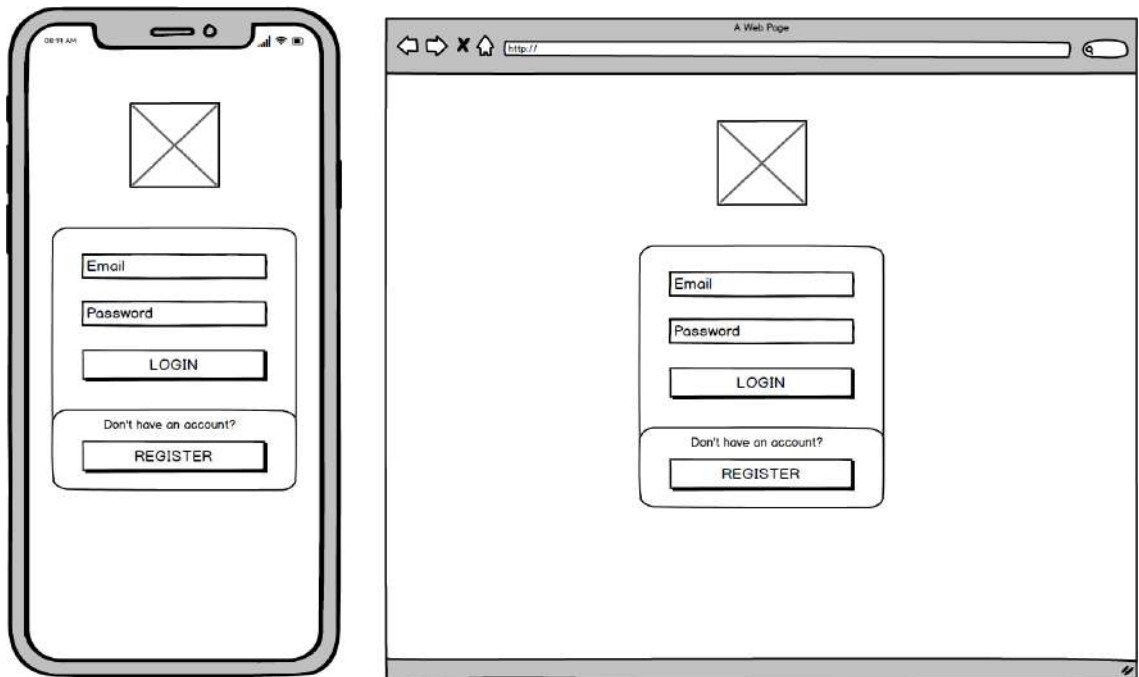


Figure 37: User Interface Mockup for Login

3.6.3 Manage Profile

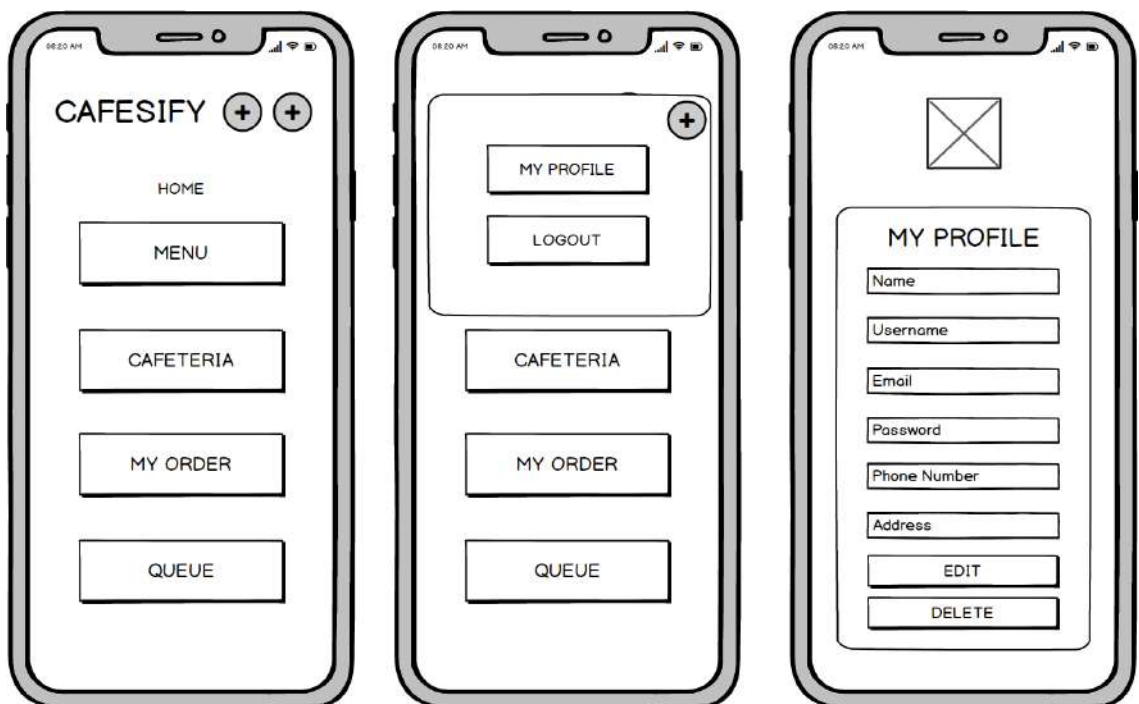


Figure 38: User Interface Mockup for Manage Profile

3.6.4 Manage Kiosk Profile

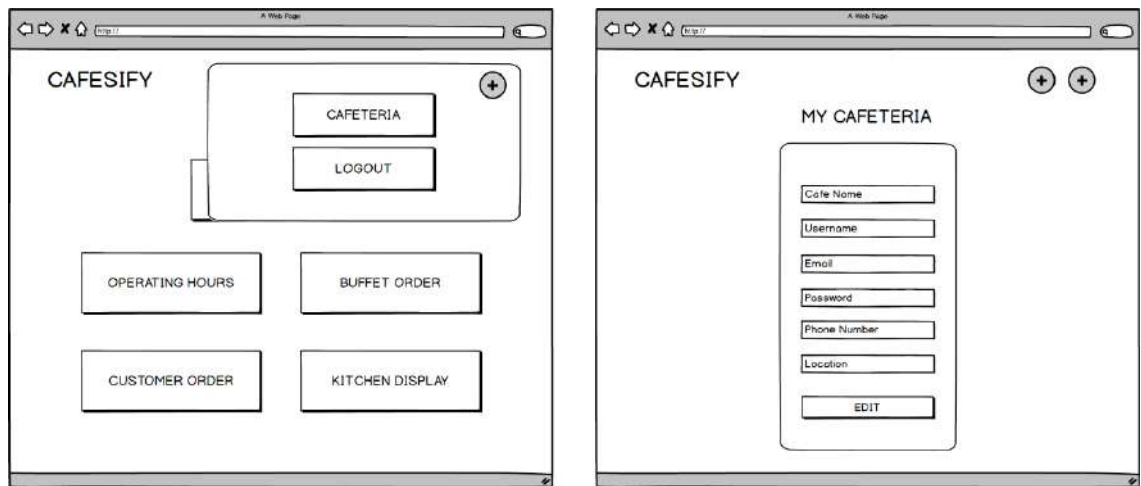


Figure 39: User Interface Mockup for Manage Kiosk Profile (Kiosk Staff)

3.6.5 Manage Menu

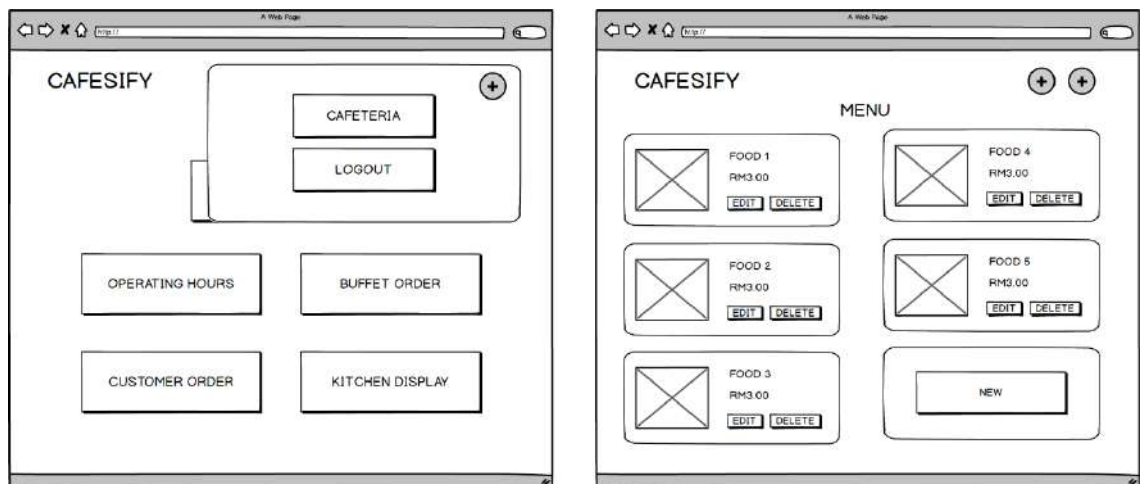


Figure 40: User Interface Mockup for Manage Menu (Kiosk Staff)

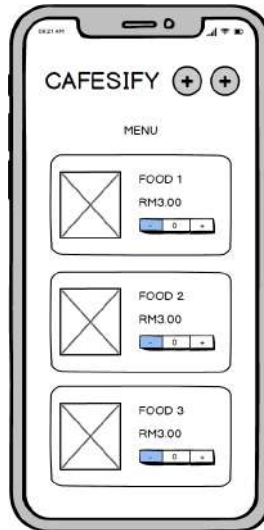


Figure 41: User Interface Mockup for Manage Menu (Customer)

3.6.6 Manage Order

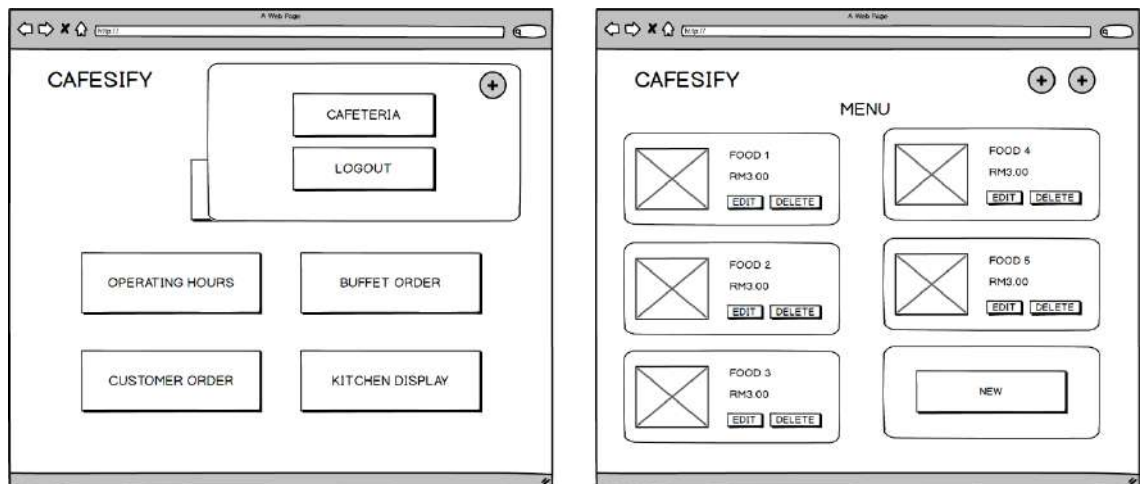


Figure 42: User Interface Mockup for Manage Order (Kiosk Staff)

3.7 Testing Plan (UAT)

This subtopic is to show the form for the testing that will be done once the system is developed. This is to ensure that all the functions are working to achieve the purpose of the system.

Table 30: User Acceptance Test

NO	MODULE	ACTIVITY	STATUS		COMMENT
			PASS	FAIL	
1	Register	Register new user into the system			
2	Login	Login existing user into the system			
3	Manage Profile	View user profile			
		Edit user profile			
		Delete user profile			
		Logout from the system			
4	Manage Kiosk Information	View Kiosk profile			
		Edit Kiosk profile			
		View Kiosk profile			

5	Manage Menu	Create new menu			
		View Menu			
		Edit Menu			
		Delete Menu			
6	Manage Order	Add menu to cart			
		Edit menu in the cart			
		Remove menu from the cart			
		Cancel order			
7	View Invoice	View invoice list			
8	View dashboard	View dashboard			
9	Manage Favourite	View Favourite			
		Add Favourite			
		Remove Favourite			

3.8 Potential Use of Proposed Solution

Enhanced menu management: By implementing the proposed system, kiosk staff can easily update and view the menu, ensuring that customers have access to an up-to-date menu with accurate prices. This empowers customers to make informed decisions and minimizes frustration and wasted time.

Streamlined operations and improved accuracy: The proposed solution eliminates manual calculations and introduces menu and price management features for kiosk staff. This reduces errors and financial losses by ensuring accurate calculations for customer orders. Additionally, the inclusion of price tags enhances convenience for customers.

Improved customer experience and schedule management: Implementing the proposed system addresses the challenge of an inconsistent kiosk schedule. It provides features such as kiosk status, menu availability, and kiosk information management. This ensures that customers are aware of the kiosk's status and available menu items, leading to a better customer experience and minimizing frustration and confusion.

Efficient user profile management: The proposed system offers user profile management for both customers and kiosk staff, enabling personalized experiences and seamless operations. Kiosk staff can easily manage their profiles, and the system efficiently handles user profiles, resulting in smoother interactions and effective collaboration.

Comprehensive overview and invoicing: By adopting the proposed solution, kiosk staff and KESUKOMP gain access to a dashboard view, allowing them to monitor performance and track progress. Additionally, the system includes an invoicing view, streamlining the invoicing process and ensuring accurate records for efficient financial management.

By utilizing the potential use of the proposed solution, the system enhances menu management, streamlines operations, improves schedule management, provides efficient user profile management, offers comprehensive overviews, and facilitates invoicing. These features effectively address the identified problems and contribute to an improved overall experience for both customers and kiosk staff. Ultimately, the proposed solution leads to increased efficiency, accuracy, and customer satisfaction.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the development and implementation of Orderlikey, a Kiosk Ordering System, including its system design and interface, as well as the results and discussion of its performance. The chapter analyses the system's efficiency, accuracy, and metrics to measure its success, identifying limitations and challenges faced during its implementation and suggesting potential improvements. Additionally, the chapter provides a user manual that guides users on how to effectively use Orderlikey, with step-by-step instructions and relevant information. Overall, the chapter provides a comprehensive overview of the Orderlikey system, from its development to its user interface and performance evaluation.

4.2 Implementation

This section discusses the development and implementation process of Orderlikey including its hardware and software components. The design architecture of the system, including its database structure and user interfaces, is also discussed. Additionally, the section covers the challenges faced during the implementation of the system and the steps taken to overcome them.

4.2.1 Development

4.2.1.1 Tools

The development of Orderlikey utilized the following tools:

- Microsoft Word for documentation.
- Google Chrome for testing and debugging.
- Figma for designing the system's user interface.

- Microsoft Visual Studio Code for coding and development.
- GitHub Desktop for version control and collaboration.
- XAMPP for local server hosting and testing.

4.2.1.2 Environment

Orderlikey's development environment used Laravel, an open-source PHP web application framework that provided a comprehensive set of tools and features. It utilized Laravel architecture as seen in Figure 44 to create the system's database schema, user interface components, and handle business logic of Orderlikey..

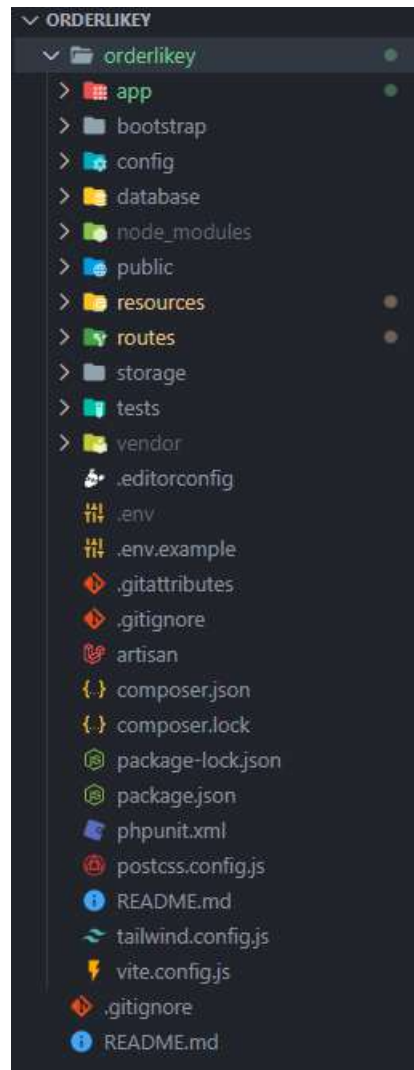


Figure 44: Orderlikey Laravel architecture

4.3 System Interface

This section explains the graphical user interface (GUI) of the Orderlikey system, which is designed to be user-friendly and intuitive. The user interface is discussed in detail, covering the layout, colour scheme, and functionality of each component. The section also discusses the usability testing conducted to evaluate the effectiveness of the system interface and the feedback received from users.

4.3.1 Register

4.3.1.1 Customer

The screenshot displays the 'Create an Account' registration form for the Orderlikey system. The form is presented on a light blue background with a white content area. On the right side of the page, there is a dark blue vertical banner featuring the Orderlikey logo. The registration form includes the following fields and elements:

- Orderlikey** logo at the top left.
- Create an Account** heading.
- Full Name** field: A text input box with the placeholder text 'Enter your full name' and a small 'x' icon on the right.
- Email** field: A text input box with the placeholder text 'Enter your email address' and an '@' icon on the right.
- Password** field: A text input box with the placeholder text 'Enter your password' and an eye icon on the right.
- Password Confirmation** field: A text input box with the placeholder text 'Enter your password' and an eye icon on the right.
- Phone Number** field: A text input box with the placeholder text 'Enter your phone number'.
- Register** button: A prominent yellow button located below the form fields.
- Already a user? Sign In** link: A smaller, less prominent link located below the Register button.

Figure 45: Register Interface (Desktop)

The image shows a tablet view of the Orderlikey registration form. At the top left is the Orderlikey logo. Below it is the heading "Create an Account". The form consists of several input fields: "Full Name" with a placeholder "Enter your full name", "Email" with "Enter your email address", "Password" with "Enter your password", "Password Confirmation" with "Enter your password", and "Phone Number" with "Enter your phone number". Each password field has a small eye icon for toggling visibility. At the bottom is a large yellow "Register" button and a link "Already a user? Sign In."

Figure 46: Register Interface (Tablet)

The image shows a mobile view of the Orderlikey registration form. It features the same layout as the tablet view, including the Orderlikey logo, "Create an Account" heading, and input fields for Full Name, Email, Password, Password Confirmation, and Phone Number. The yellow "Register" button and "Already a user? Sign In." link are also present at the bottom.

Figure 47: Register Interface (Mobile)

4.3.2 Login

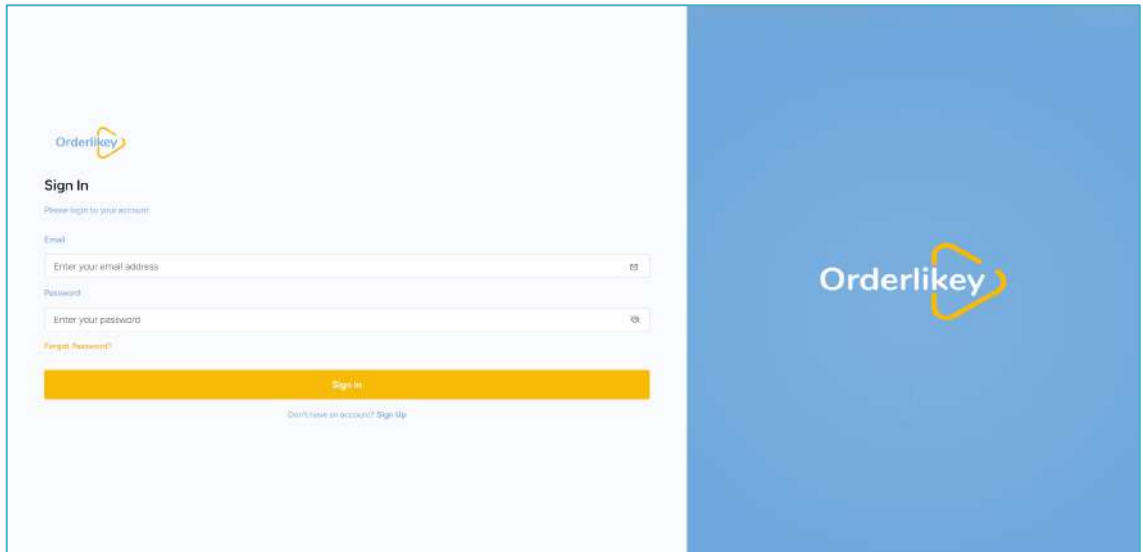


Figure 48: Login Interface (Desktop)

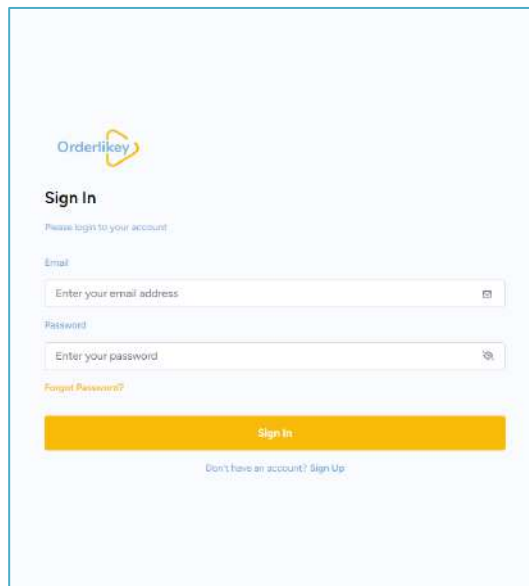


Figure 49: Login Interface (Tablet)

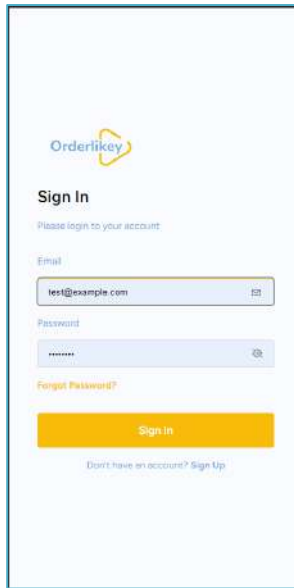


Figure 50: Login Interface (Mobile)

4.3.3 Manage Profile

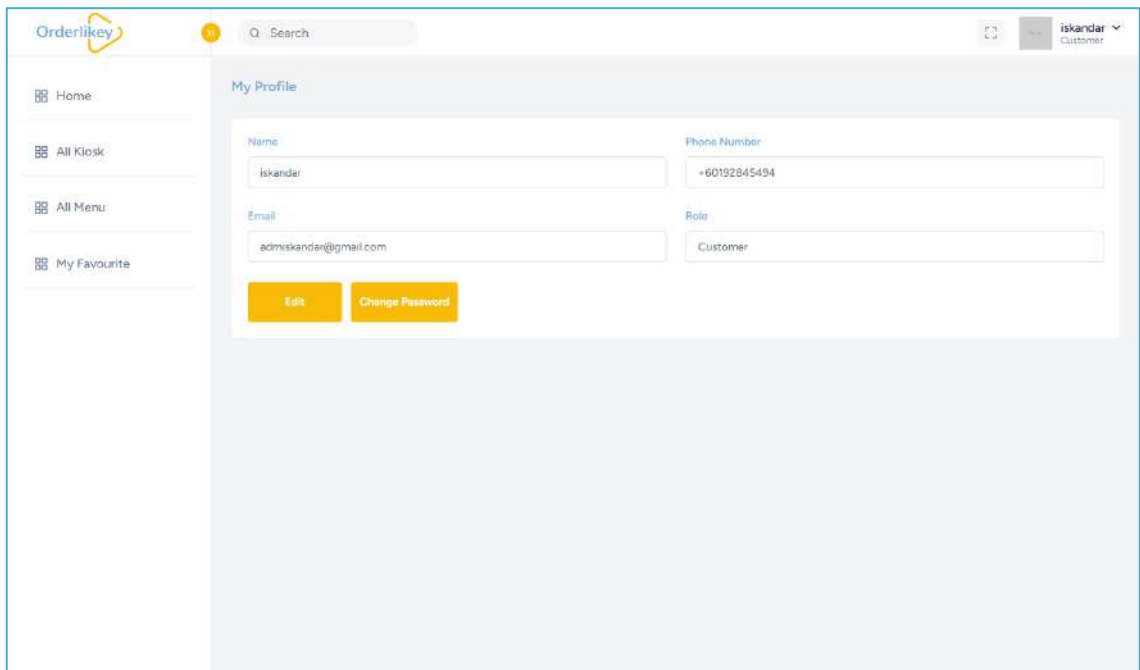


Figure 51: My Profile Interface

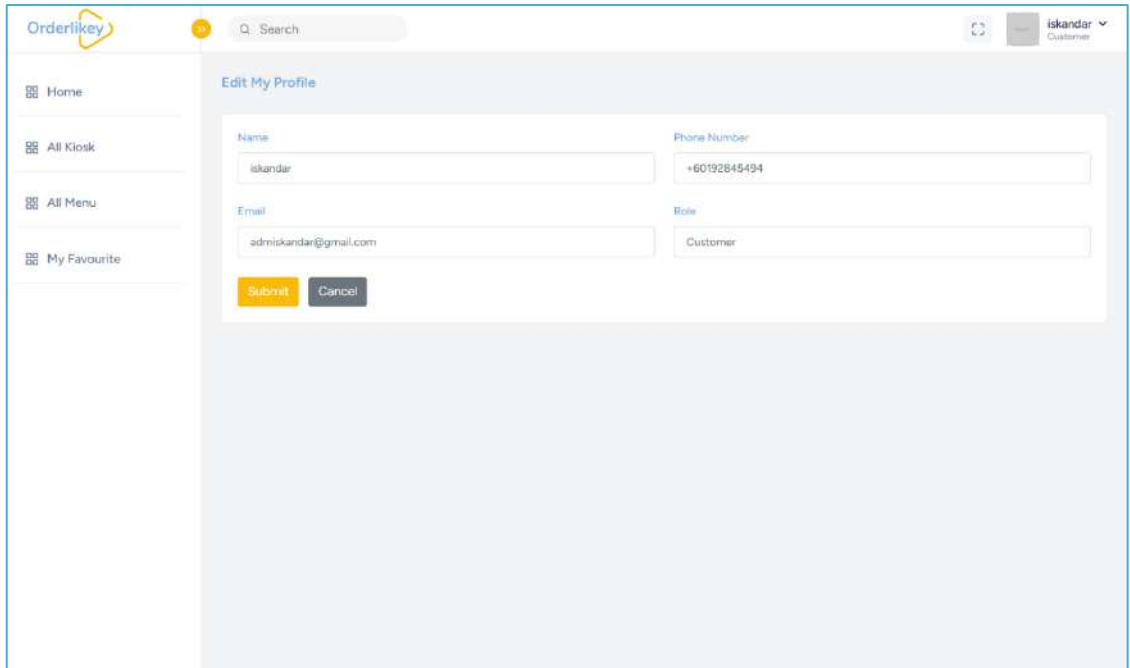


Figure 52: Edit My Profile Interface

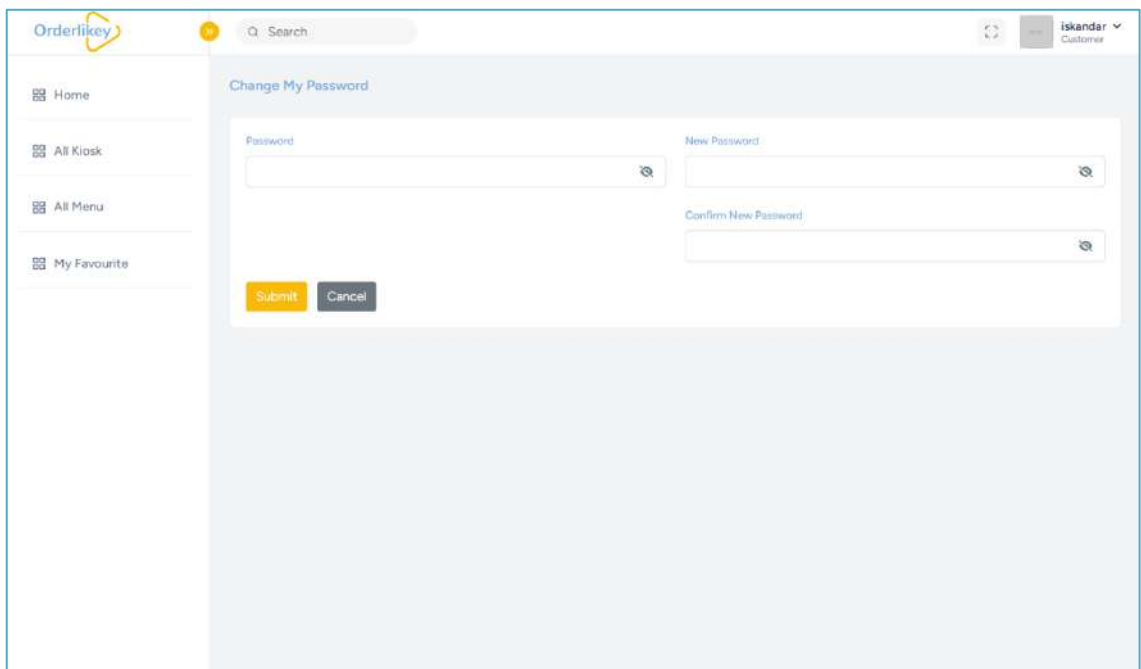


Figure 53: Edit My Password Interface

4.3.4 Manage Kiosk Information

4.3.4.1 KESUKOMP

Kiosk Name	Address	Opening Day	Opening Time	Closing Time	Status	Action
Kiosk 1	Right Wing	Monday	09:00:00	18:00:00	OPEN	
Kiosk 2	Left Wing	Tuesday	08:00:00	17:00:00	OPEN	
Kiosk 3	Right Wing	Wednesday	10:00:00	19:00:00	OPEN	

Figure 54: Kiosk List Interface for KESUKOMP

Kiosk Name:

Kiosk Description:

Kiosk Location:

Kiosk Operating Day: Monday Tuesday Wednesday Thursday Friday

Kiosk Operating Hours: Opening Time: Closing Time:

Kiosk Category:

Kiosk Owner:

Kiosk Contact:

Kiosk Image:

Figure 55: Add Kiosk Interface for KESUKOMP

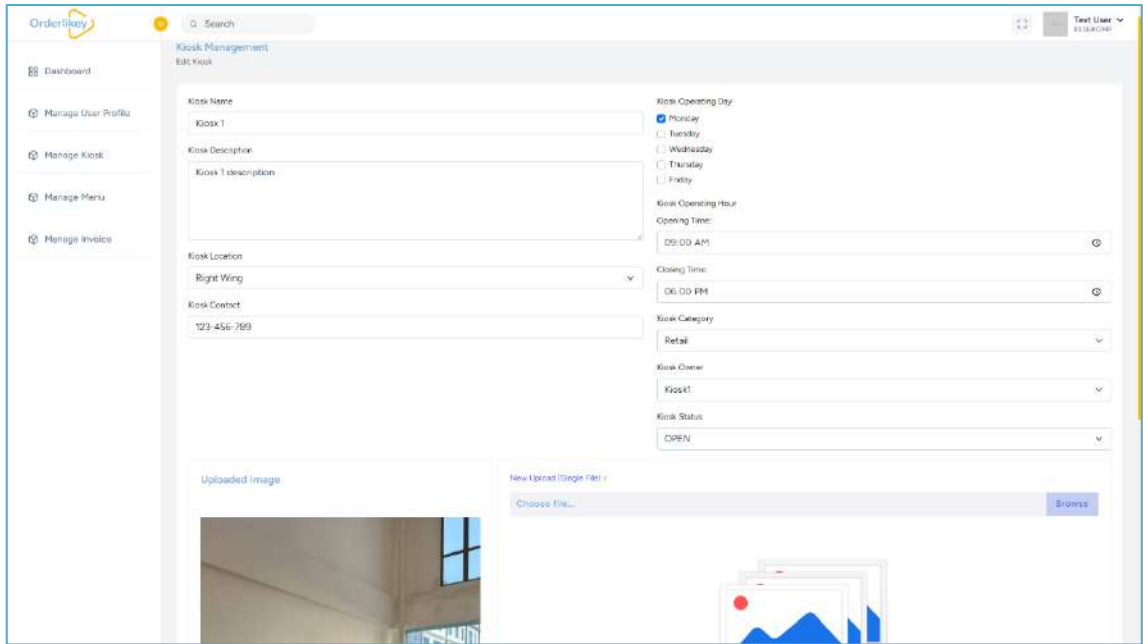


Figure 56: Edit Kiosk Interface for KESUKOMP

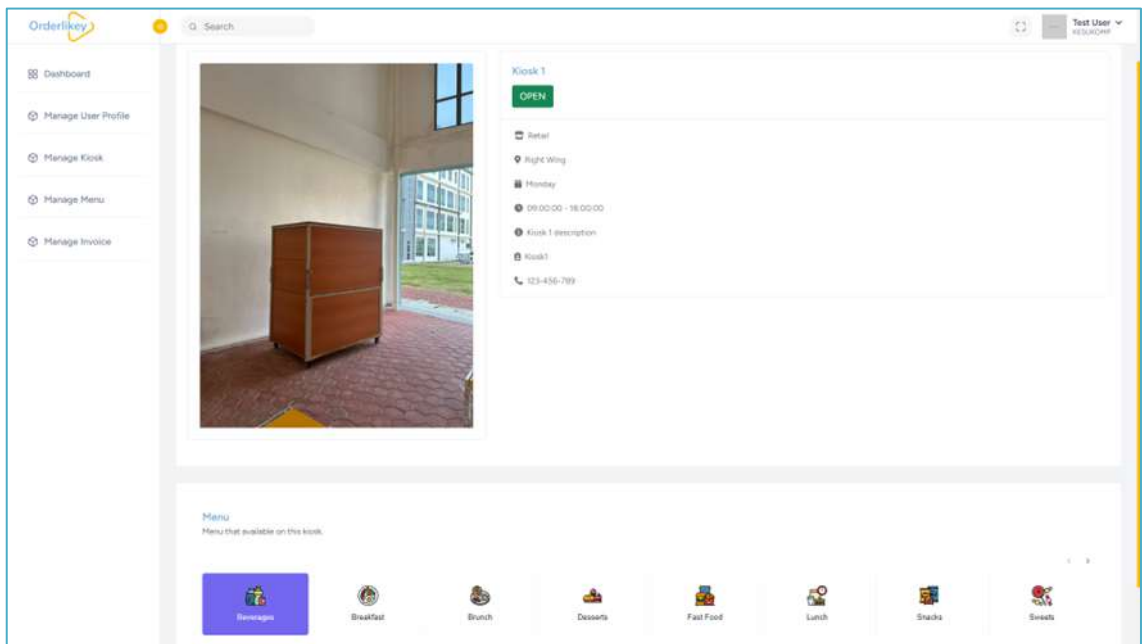


Figure 57: Kiosk Info Interface for KESUKOMP

4.3.4.2 Kiosk Staff

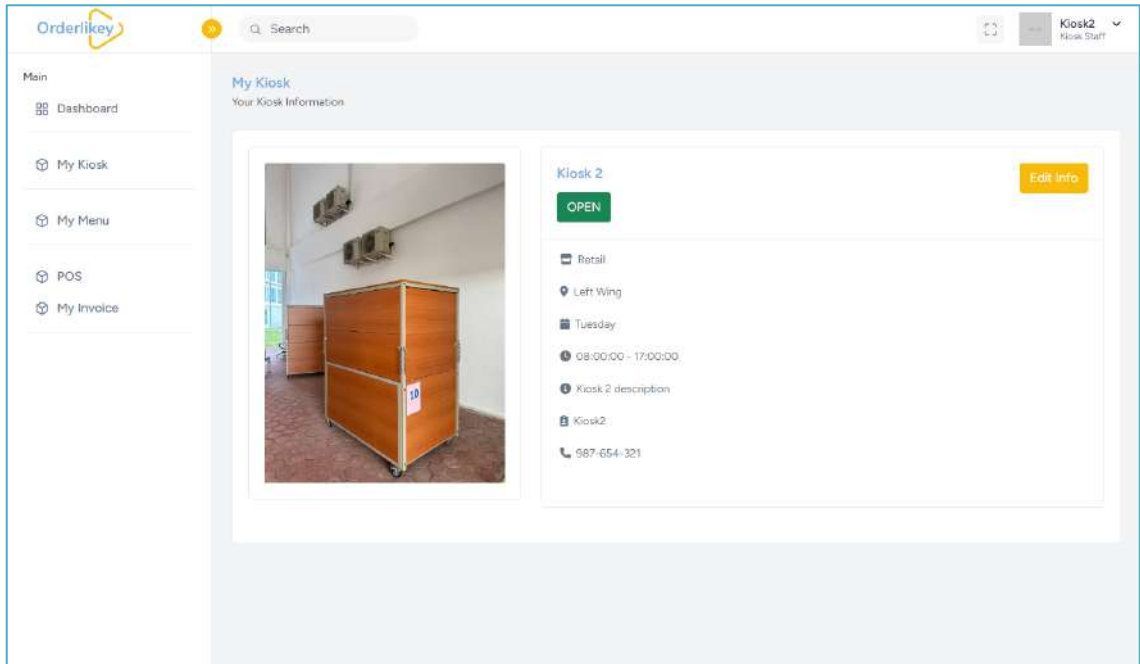


Figure 58: My Kiosk Interface for Kiosk Staff

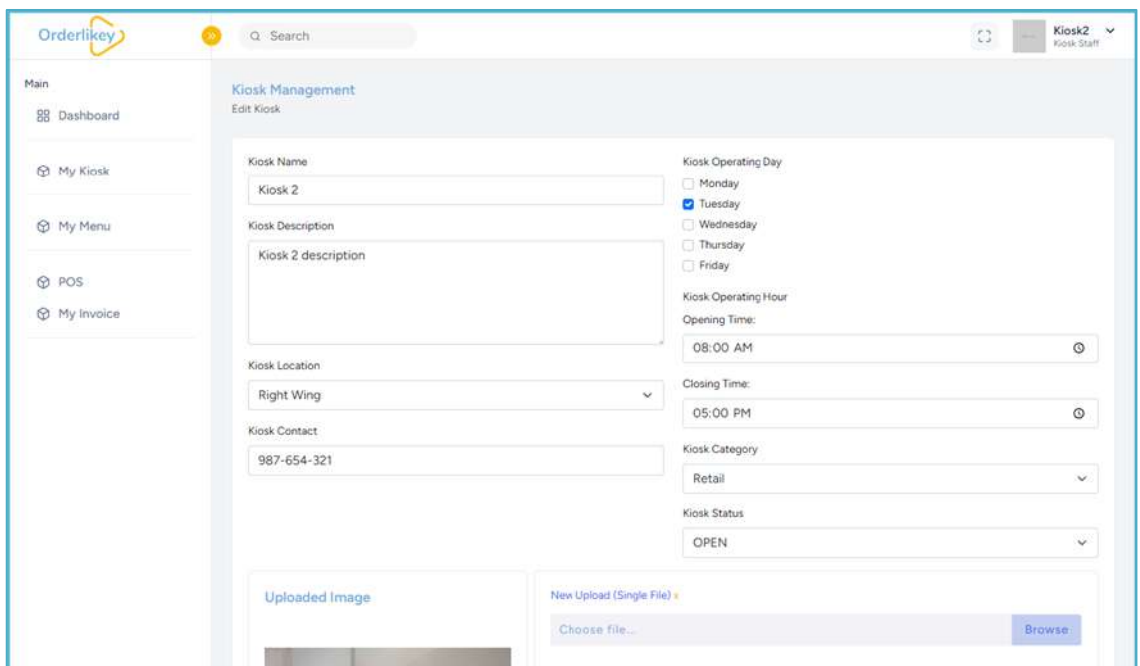


Figure 59: Edit My Kiosk Interface for Kiosk Staff

4.3.4.3 Customer

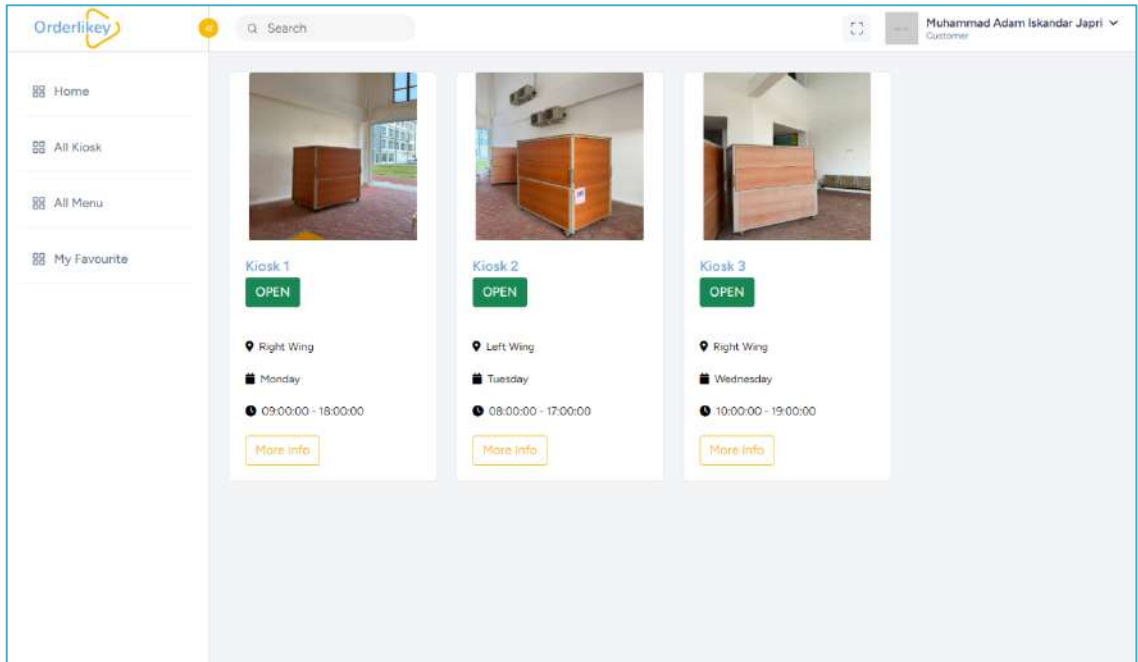


Figure 60: Kiosk List Interface for Customer (Desktop)

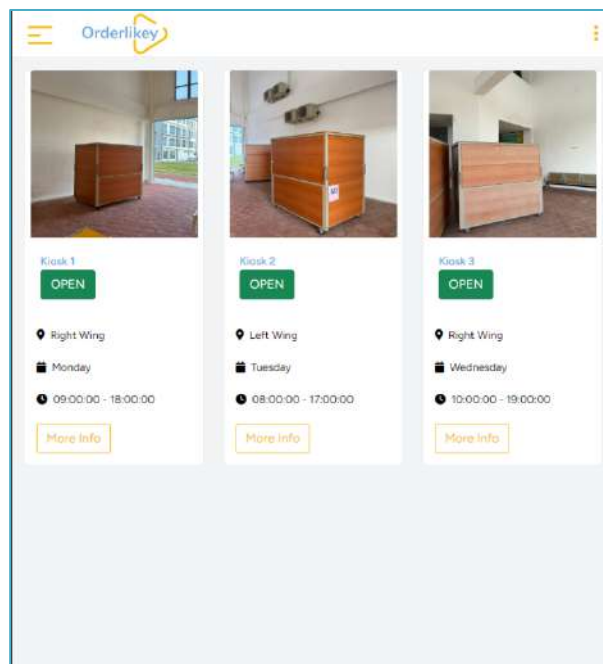


Figure 61: Kiosk List Interface for Customer (Tablet)

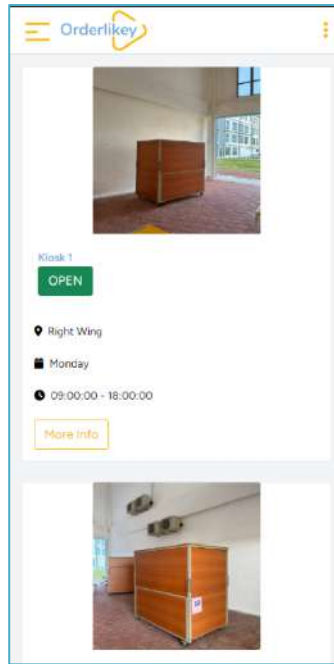


Figure 62: Kiosk List Interface for Customer (Mobile)

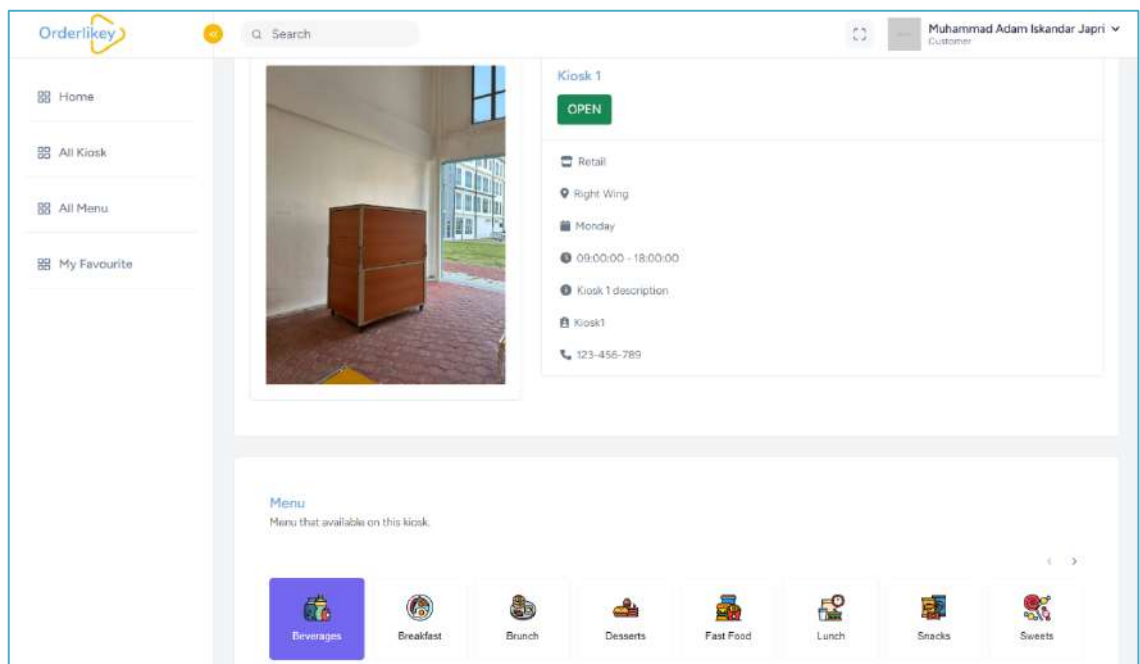


Figure 63: Kiosk Info Interface for Customer (Desktop)

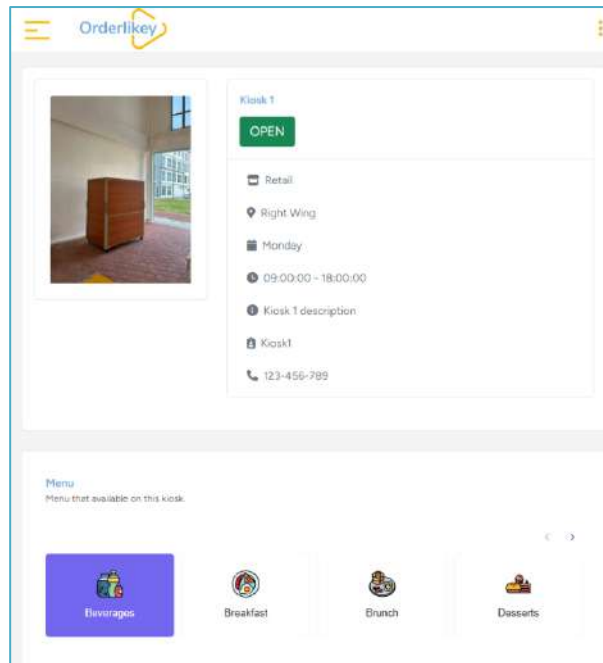


Figure 64: Kiosk Info Interface for Customer (Tablet)

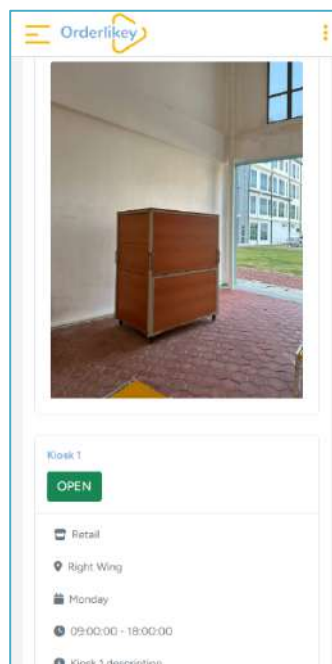


Figure 65: Kiosk Info Interface for Customer (Mobile)

4.3.5 Manage Menu

4.3.5.1 KESUKOMP

Name	Price	Category	Quantity	Image	Kiosk	Action
Menu 1	RM 10.00	Brunch	50		1	
Menu 2	RM 8.50	Fast Food	30		1	
Menu 3	RM 5.00	Breakfast	95		2	
Menu 4	RM 3.75	Beverages	80		2	
Menu 5	RM 12.00	Fast Food	25		1	

Figure 66: Menu List Interface for KESUKOMP

Menu Add
Create new menu

Menu Name: Price: Quantity:

Description:

Category:

- Beverages
- Brunch
- Fast Food
- Snacks
- Vegetarian
- Breakfast
- Desserts
- Lunch
- Sweets

Kiosk Image

Upload (Single File)

Choose File...

Figure 67: Add Menu Interface for KESUKOMP

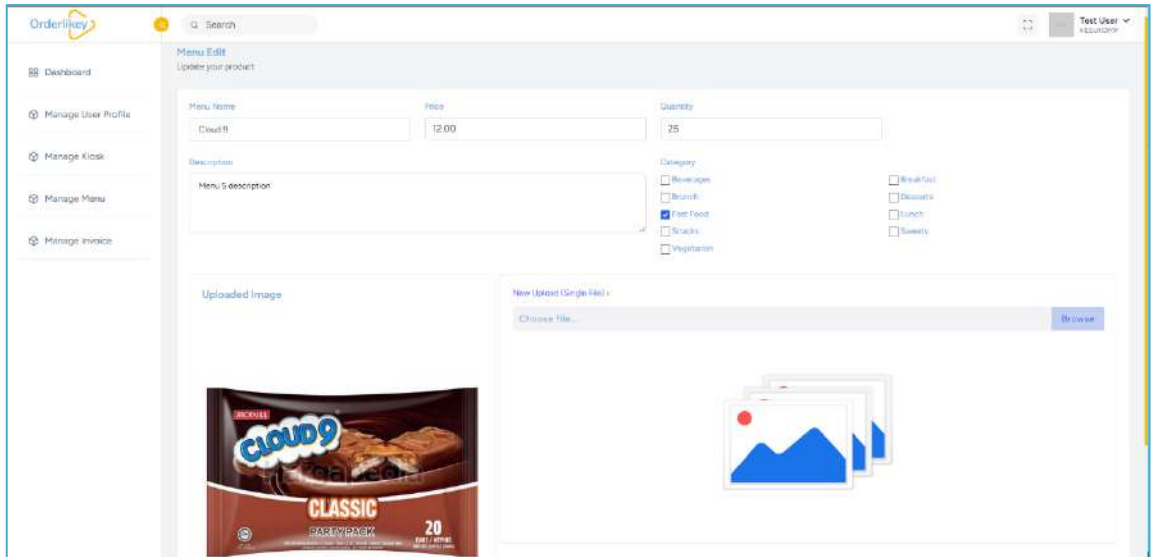


Figure 68: Edit Menu Interface for KESUKOMP

4.3.5.2 Kiosk Staff

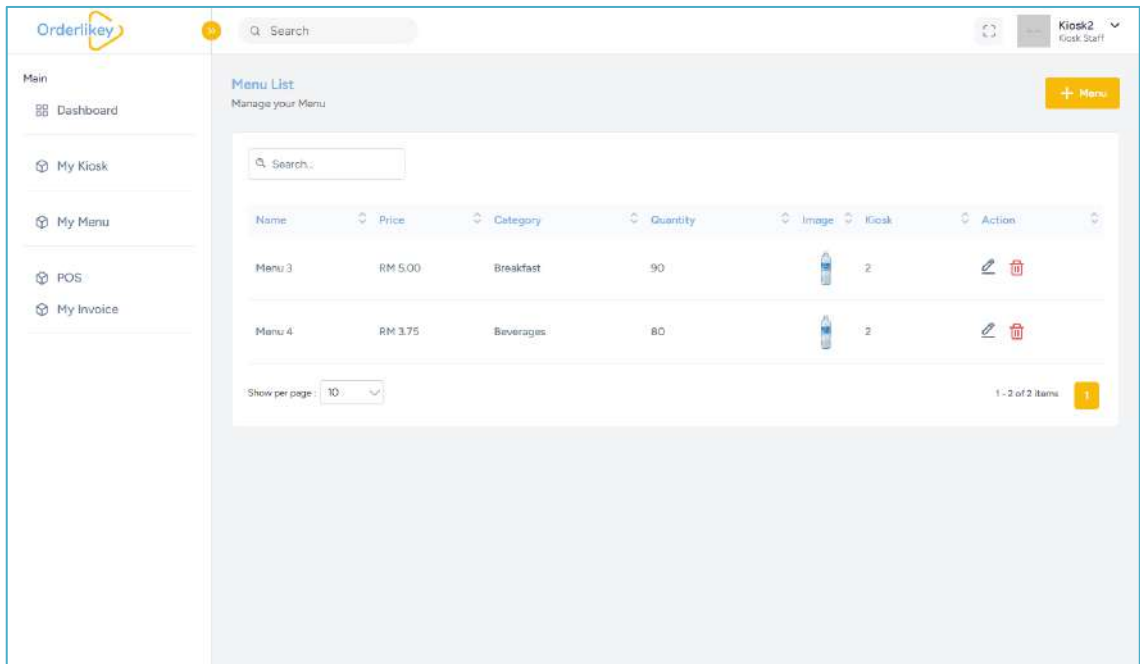


Figure 69: My Menu for Kiosk Staff

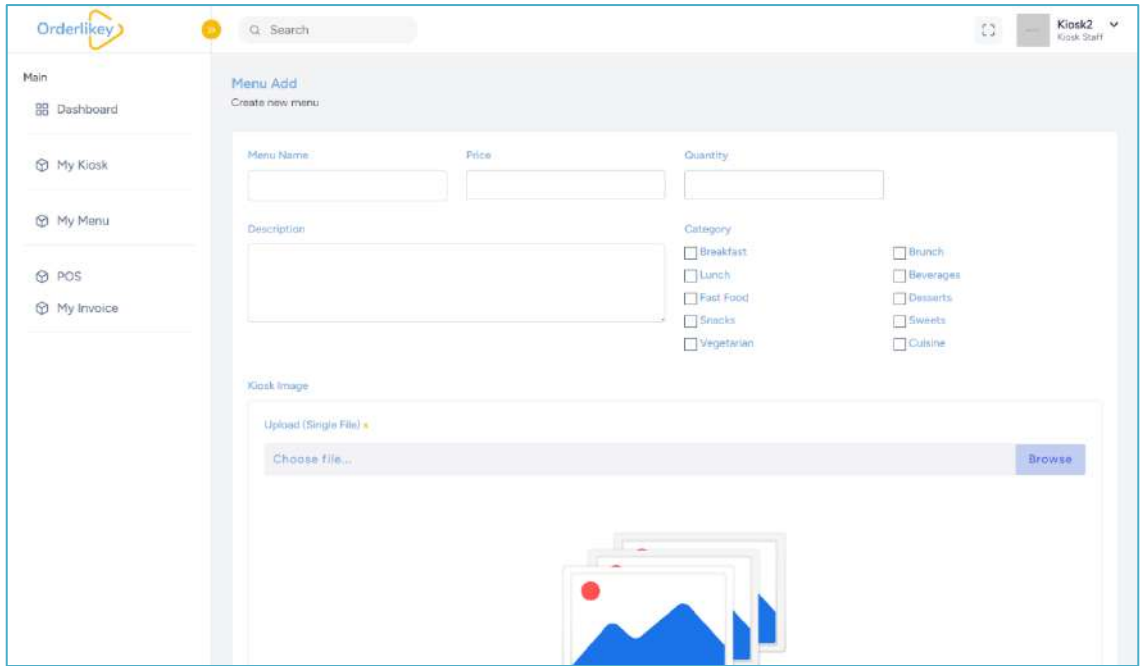


Figure 70: Add My Menu for Kiosk Staff

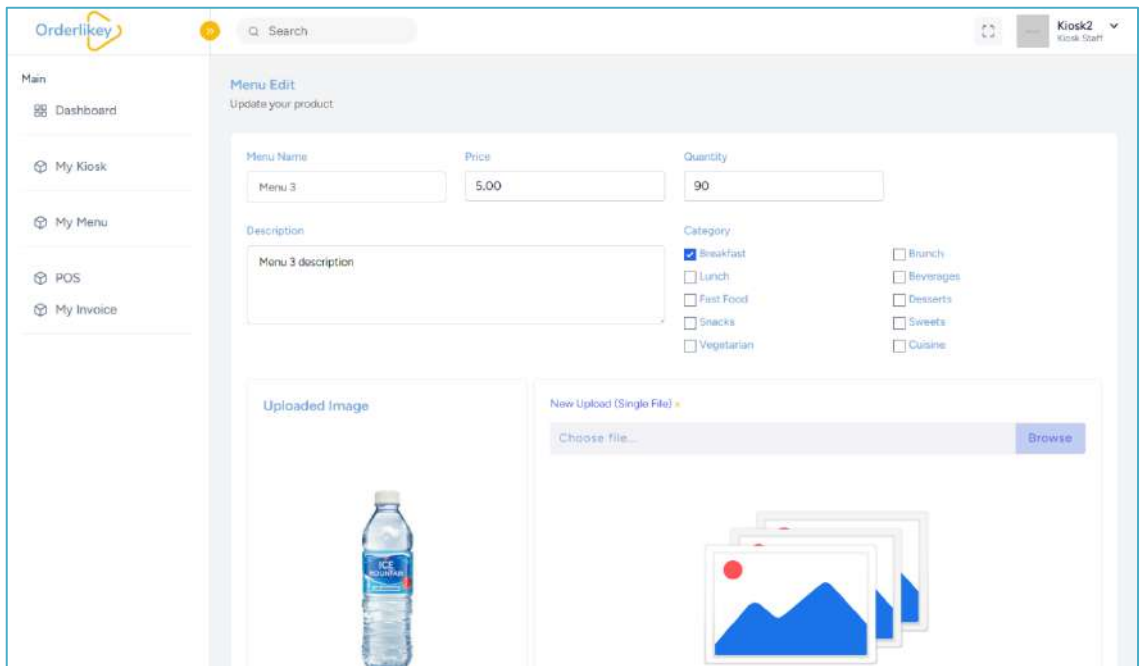


Figure 71: Edit My Menu for Kiosk Staff

4.3.5.3 Customer

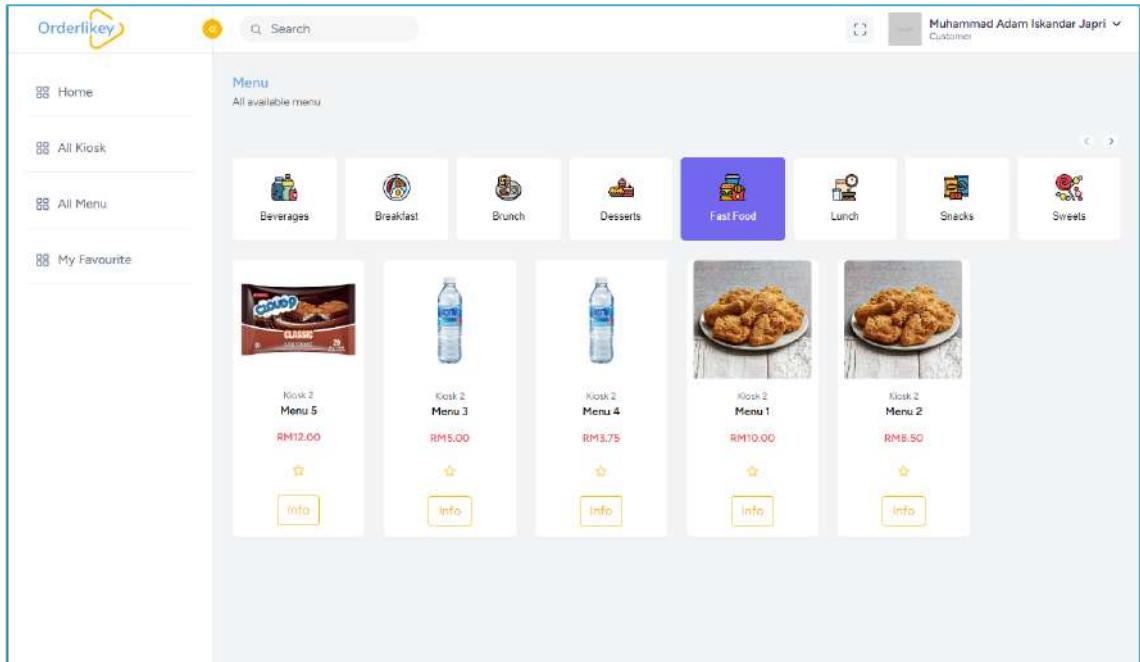


Figure 72: All Menu Interface for Customer (Desktop)

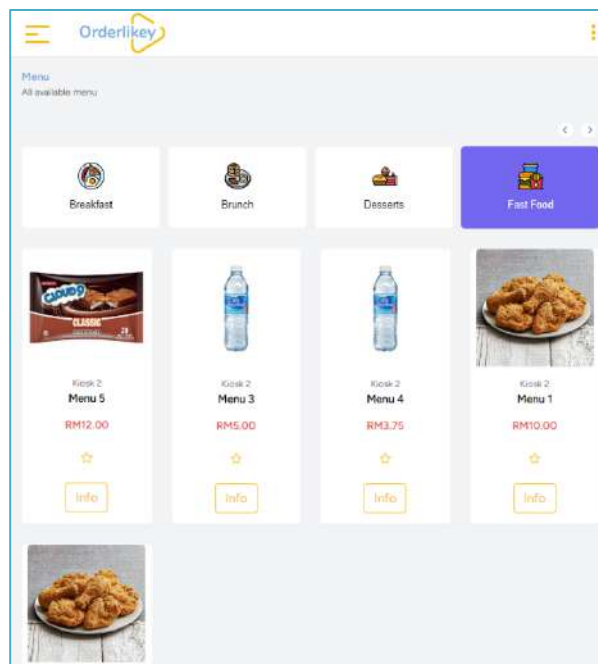


Figure 73: All Menu Interface for Customer (Tablet)

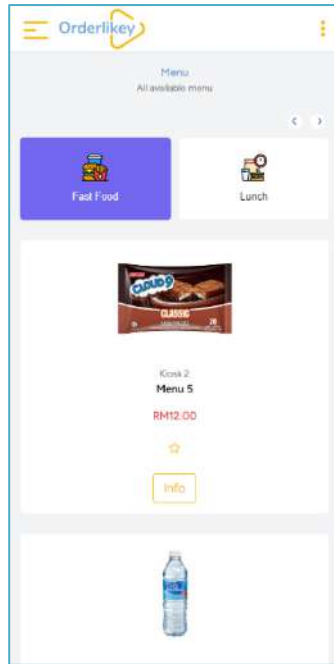


Figure 74: All Menu Interface for Customer (Mobile)

4.3.6 Manage Order

4.3.6.1 Kiosk Staff

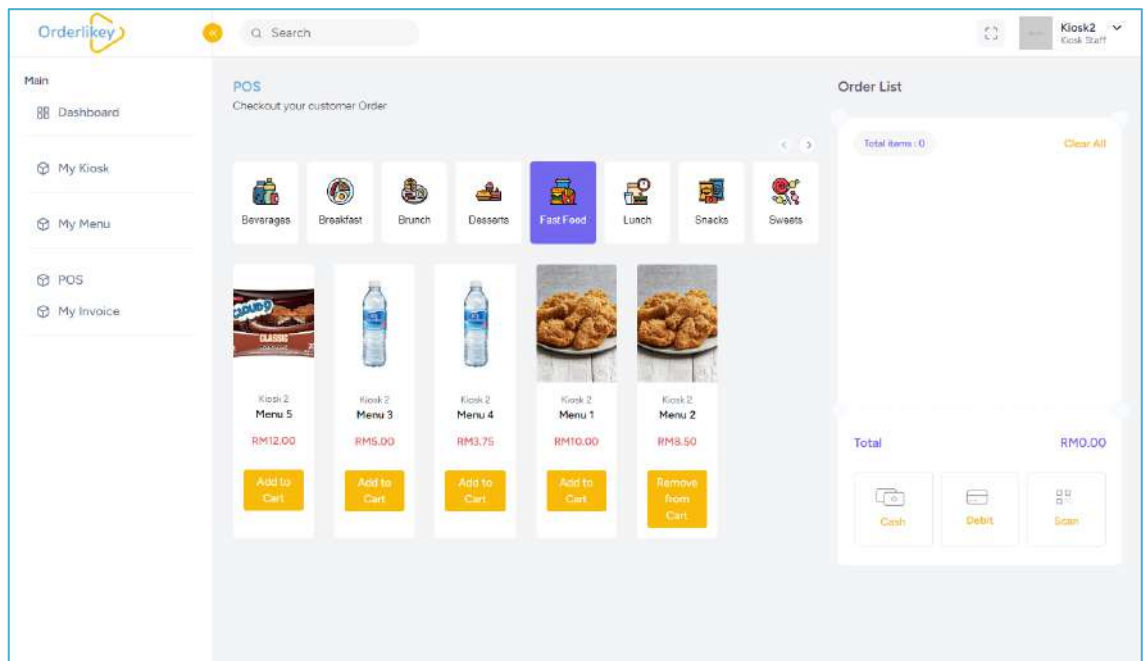


Figure 75: POS Order Interface for Kiosk Staff

4.3.7 View Invoice

4.3.7.1 KESUKOMP

Invoice Number	Invoice Date	Total Amount	Total Paid	Balance	Payment Type	Kiosk	Staff ID
1	2023-06-10	20.00	20.00	0.00	cash	1	12
2	2023-06-10	8.50	8.50	0.00	cash	1	12
3	2023-06-10	25.00	25.00	0.00	cash	2	13
4	2023-06-10	11.25	11.25	0.00	cash	2	13
5	2023-06-10	0.00	7.50	7.50	cash	2	13
6	2023-06-10	8.75	8.75	0.00	cash	2	13
7	2023-06-10	8.75	8.75	0.00	cash	3	13
8	2023-06-10	8.75	8.75	0.00	cash	2	13
9	2023-06-10	8.75	8.75	0.00	cash	1	13
10	2023-06-10	8.75	8.75	0.00	cash	2	13
11	2023-06-10	264.00	264.00	0.00	cash	3	14
12	2023-06-10	0.00	25.00	25.00	cash	2	13
13	2023-06-10	25.00	25.00	0.00	cash	2	13

Figure 76: Invoice List Interface for KESUKOMP

4.3.7.2 Kiosk Staff

Invoice Number	Invoice Date	Total Amount	Total Paid	Balance	Payment Type	Kiosk	Staff ID
1	2023-06-10	20.00	20.00	0.00	cash	1	12
2	2023-06-10	8.50	8.50	0.00	cash	1	12
3	2023-06-10	25.00	25.00	0.00	cash	2	13
4	2023-06-10	11.25	11.25	0.00	cash	2	13
5	2023-06-10	0.00	7.50	7.50	cash	2	13
6	2023-06-10	8.75	8.75	0.00	cash	2	13
7	2023-06-10	8.75	8.75	0.00	cash	3	13
8	2023-06-10	8.75	8.75	0.00	cash	2	13
9	2023-06-10	8.75	8.75	0.00	cash	1	13
10	2023-06-10	8.75	8.75	0.00	cash	2	13
11	2023-06-10	264.00	264.00	0.00	cash	3	14

Figure 77: My Invoice List Interface for Kiosk Staff

4.3.8 View Dashboard

4.3.8.1 KESUKOMP

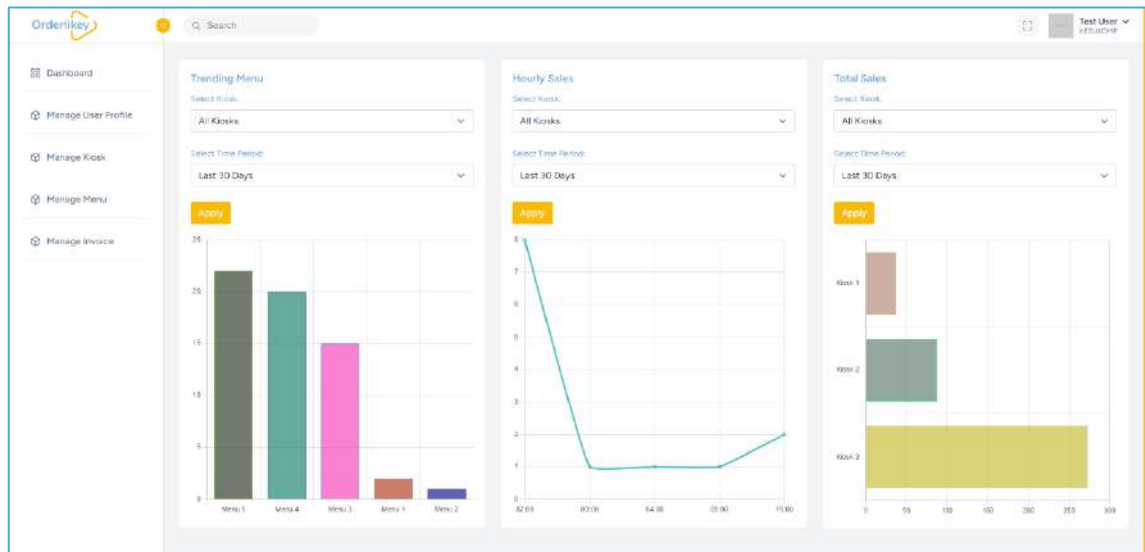


Figure 78: Dashboard Interface for KESUKOMP

4.3.8.2 Kiosk Staff

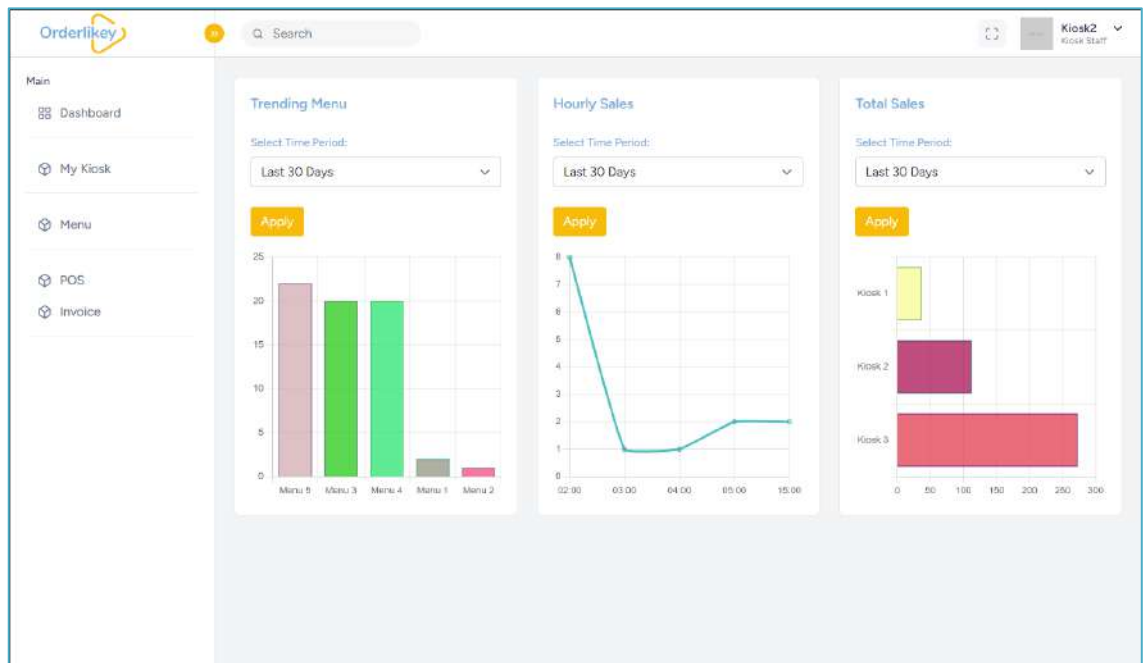


Figure 79: Dashboard Interface for Kiosk Staff

4.3.9 Manage Favourite

4.3.9.1 Customer

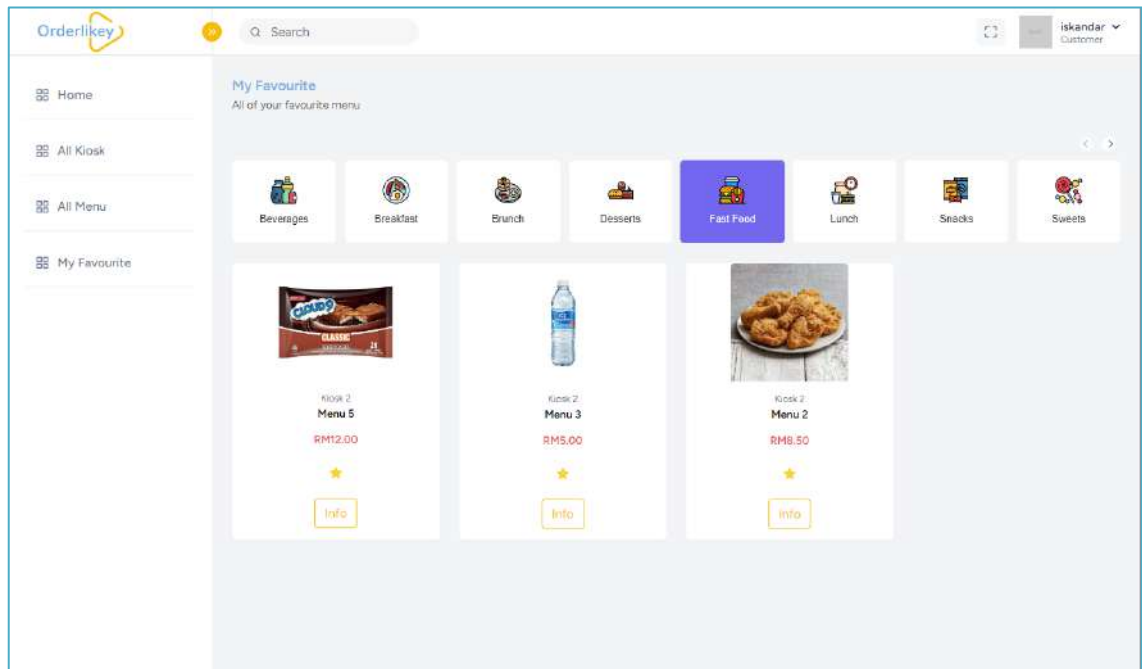


Figure 80: My Favourite Interface for Customer

4.4 Testing

4.4.1 Test Cases

The test cases of testing process for Orderlikey are as follows (by module):

4.4.1.1 Register

Table 31: Test Case Description for Register

Test Case ID	Test Case Description
TC-OLK-101	Test the ability of the system to allow Customer to register an account in the system.

4.4.1.2 Login

Table 32: Test Case Description for Login

Test Case ID	Test Case Description
TC-OLK-201	Test the ability of the system to allow KESUKOMP to login to the system.
TC-OLK-202	Test the ability of the system to allow Kiosk Staff to login to the system.
TC-OLK-203	Test the ability of the system to allow Customer to login to the system.

4.4.1.3 Manage Profile

Table 33: Test Case Description for Manage Profile

Test Case ID	Test Case Description
TC-OLK-301	Test the ability of the system to allow KESUKOMP to edit their profile.
TC-OLK-302	Test the ability of the system to allow KESUKOMP to create new KESUKOMP profile.
TC-OLK-303	Test the ability of the system to allow KESUKOMP to edit KESUKOMP profile.
TC-OLK-304	Test the ability of the system to allow KESUKOMP to create new Kiosk Staff profile.
TC-OLK-305	Test the ability of the system to allow KESUKOMP to edit Kiosk Staff profile.
TC-OLK-306	Test the ability of the system to allow Kiosk Staff to edit their profile.
TC-OLK-307	Test the ability of the system to allow Customer to edit their profile.

4.4.1.4 Manage Kiosk Information

Table 34: Test Case Description for Manage Kiosk Information

Test Case ID	Test Case Description
TC-OLK-401	Test the ability of the system to allow KESUKOMP to view the list of all kiosks.
TC-OLK-402	Test the ability of the system to allow KESUKOMP to create new kiosk.
TC-OLK-403	Test the ability of the system to allow KESUKOMP to edit kiosk information.

TC-OLK-404	Test the ability of the system to allow KESUKOMP to delete kiosk.
TC-OLK-405	Test the ability of the system to allow Kiosk Staff to view the information of their kiosk.
TC-OLK-406	Test the ability of the system to allow Kiosk Staff to edit their kiosk information.
TC-OLK-407	Test the ability of the system to allow Customer to view the list of all kiosks.
TC-OLK-408	Test the ability of the system to allow Customer to view specific kiosk information.

4.4.1.5 Manage Menu

Table 35: Test Case Description for Manage Menu

Test Case ID	Test Case Description
TC-OLK-501	Test the ability of the system to allow KESUKOMP to view the list of all menus.
TC-OLK-502	Test the ability of the system to allow KESUKOMP to create new menu.
TC-OLK-503	Test the ability of the system to allow KESUKOMP to edit menu.
TC-OLK-504	Test the ability of the system to allow KESUKOMP to delete menu.
TC-OLK-505	Test the ability of the system to allow Kiosk Staff to view all their menu.
TC-OLK-506	Test the ability of the system to allow Kiosk Staff to create new menu.
TC-OLK-507	Test the ability of the system to allow Kiosk Staff to edit their menu.

TC-OLK-508	Test the ability of the system to allow Kiosk Staff to delete their menu.
TC-OLK-509	Test the ability of the system to allow Customer to view the list of all menus.

4.4.1.6 Manage Order

Table 36: Test Case Description for Manage Order

Test Case ID	Test Case Description
TC-OLK-601	Test the ability of the system to allow Kiosk Staff to use the POS function of calculating the customer order.

4.4.1.7 View Invoice

Table 37: Test Case Description for View Invoice

Test Case ID	Test Case Description
TC-OLK-701	Test the ability of the system to allow KESUKOMP to view the list of all invoices.
TC-OLK-702	Test the ability of the system to allow Kiosk Staff to view all their invoices.

4.4.1.8 View Dashboard

Table 38: Test Case Description for View Dashboard

Test Case ID	Test Case Description
TC-OLK-801	Test the ability of the system to allow KESUKOMP to view the dashboard of the system.

TC-OLK-802	Test the ability of the system to allow Kiosk Staff to view the dashboard of the system.
------------	--

4.4.1.9 Manage Favourite

Table 39: Test Description for Manage Favourite

Test Case ID	Test Case Description
TC-OLK-901	Test the ability of the system to allow Customer to view list of all their favourite menu.
TC-OLK-902	Test the ability of the system to allow Customer to add menu to their favourite menu.
TC-OLK-903	Test the ability of the system to allow Customer to delete menu from their favourite menu.

4.4.2 Test Result

The test result for each test case executed are explained by module:

4.4.2.1 Register

Table 40: Test Result for TC-OLK-101

Test Case ID	TC-OLK-101
Test Case	Test the ability of the system to allow Customer to register an account in the system.
Test Data	name: iskandar email: iskandar@gmail.com password: 12345678 phone_num: 0123456789

Expected Result	System will redirect customer to the homepage of the system. This indicate that the customer successfully registers an account in the system.
Actual Result	System redirect customer to the homepage of the system after entering test data and click the "Register" button.
Test Status	PASS

4.4.2.2 Login

Table 41: Test Result for TC-OLK-201

Test Case ID	TC-OLK-201
Test Case	Test the ability of the system to allow KESUKOMP to login to the system.
Test Data	email: kesukomp@gmail.com password: 87654321
Expected Result	System will redirect KESUKOMP to the dashboard of the system. This indicate that KESUKOMP successfully login the system.
Actual Result	System redirect KESUKOMP to the dashboard of the system after entering the test data and click the "Login" button.
Test Status	PASS

Table 42: Test Result for TC-OLK-202

Test Case ID	TC-OLK-202
Test Case	Test the ability of the system to allow Kiosk Staff to login to the system.

Test Data	email: kiosk@gmail.com password: 87654321
Expected Result	System will redirect Kiosk Staff to the dashboard of the system. This indicate that Kiosk Staff successfully login the system.
Actual Result	System redirect Kiosk Staff to the dashboard of the system after entering the test data and click the "Login" button.
Test Status	PASS

Table 43: Test Result for TC-OLK-203

Test Case ID	TC-OLK-203
Test Case	Test the ability of the system to allow Customer to login to the system.
Test Parameter	email: iskandar@gmail.com password: 12345678
Expected Result	System will redirect customer to the homepage of the system. This indicate that the customer successfully login the system.
Actual Result	System redirect customer to the homepage of the system after entering test data and click the "Register" button.
Test Status	PASS

4.4.2.3 Manage Profile

Table 44: Test Result for TC-OLK-301

Test Case ID	TC-OLK-301
Test Case	Test the ability of the system to allow KESUKOMP to edit their profile.

Test Data	name: KESUKOMP > KESUKOMP_1 email: kesukomp@gmail.com > kesukomp1@gmail.com phone_num: 0123456789 > 0198765432
Expected Result	System will reflect the newly entered test data. This indicates that KESUKOMP successfully edit their profile.
Actual Result	System reflects the entered test data after entering it and click "Submit" button.
Test Status	PASS

Table 45: Test Result for TC-OLK-302

Test Case ID	TC-OLK-302
Test Case	Test the ability of the system to allow KESUKOMP to create new KESUKOMP profile.
Test Data	name: KESUKOMP 2 email: kesukomp2@gmail.com password: 123456789 phone_num: 0123456789
Expected Result	System will redirect KESUKOMP to the User List page and display the new KESUKOMP profile details on the user table list. This indicates the new KESUKOMP profile successfully created.
Actual Result	System redirects to the User List page and displays the new KESUKOMP profile on the table after entering the test data and click the "Submit" button.
Test Status	PASS

Table 46: Test Result for TC-OLK-303

Test Case ID	TC-OLK-303
Test Case	Test the ability of the system to allow KESUKOMP to edit KESUKOMP profile.
Test Data	name: KESUKOMP 2 > KESUKOMP_2 email: kesukomp2@gmail.com > kesukomp_2@gmail.com phone_num: 0123456789 > 0198765432
Expected Result	System will redirect KESUKOMP to the User List page and display the new KESUKOMP profile details on the user table list. This indicate the KESUKOMP profile is successfully edited.
Actual Result	System redirects to the User List page and displays the edited KESUKOMP profile on the table after entering the test data and click the "Submit" button.
Test Status	PASS

Table 47: Test Result for TC-OLK-304

Test Case ID	TC-OLK-304
Test Case	Test the ability of the system to allow KESUKOMP to create new Kiosk Staff profile.
Test Data	name: Kiosk Staff 2 email: kioskstaff2@gmail.com password: 123456789 phone_num: 0123456789
Expected Result	System will redirect KESUKOMP to the User List page and display the new KESUKOMP profile details on the user table list. This indicates the new Kiosk Staff profile successfully created.

Actual Result	System redirects to the User List page and displays the new Kiosk Staff profile on the table after entering the test data and click the “Submit” button.
Test Status	PASS

Table 48: Test Result for TC-OLK-305

Test Case ID	TC-OLK-305
Test Case	Test the ability of the system to allow KESUKOMP to edit Kiosk Staff profile.
Test Data	name: Kiosk Staff 2 > KioksStaff_2 email: kioskstaff2@gmail.com > kioskstaff_2@gmail.com phone_num: 0123456789 > 0198765432
Expected Result	System will redirect KESUKOMP to the User List page and display the new Kiosk Staff profile details on the user table list. This indicate the Kiosk Staff profile is successfully edited.
Actual Result	System redirects to the User List page and displays the edited Kiosk Staff profile on the table after entering the test data and click the “Submit” button.
Test Status	PASS

Table 49: Test Result for TC-OLK-306

Test Case ID	TC-OLK-306
Test Case	Test the ability of the system to allow Kiosk Staff to edit their profile.

Test Data	name: Kiosk Staff > Kiosk Staff 1 email: kioskstaff@gmail.com > kioskstaff1@gmail.com phone_num: 0123456789 > 0198765432
Expected Result	System will reflect the newly entered test data. This indicates that Kiosk Staff successfully edit their profile.
Actual Result	System reflects the entered test data after entering it and click "Submit" button.
Test Status	PASS

Table 50: Test Result for TC-OLK-307

Test Case ID	TC-OLK-307
Test Case	Test the ability of the system to allow Customer to edit their profile.
Test Data	name: Iskandar > Adam Iskandar email: iskandar@gmail.com > admiskandar@gmail.com phone_num: 0123456789 > 0198765432
Expected Result	System will reflect the newly entered test data. This indicates that Customer successfully edit their profile.
Actual Result	System reflects the entered test data after entering it and click "Submit" button.
Test Status	PASS

4.4.2.4 Manage Kiosk Information

Table 51: Test Result for TC-OLK-401

Test Case ID	TC-OLK-401
---------------------	------------

Test Case	Test the ability of the system to allow KESUKOMP to view the list of all kiosks.
Test Data	-
Expected Result	System will display the table of kiosk list with all available kiosk data in database.
Actual Result	System displays table of kiosk list with all the necessary data from database.
Test Status	PASS

Table 52: Test Result for TC-OLK-402

Test Case ID	TC-OLK-402
Test Case	Test the ability of the system to allow KESUKOMP to create new kiosk.
Test Data	name: Kiosk 1 description: Kiosk 1 Description location: Right Wing operating day: Monday, Tuesday operating hour: 8am – 3pm category: Retail owner: Kiosk Staff 1 contact: 0123456789 status: Open image: kiosk1.jpg
Expected Result	System will redirect KESUKOMP to the kiosk list page and display the new Kiosk information. This indicates the new kiosk is successfully created.

Actual Result	System redirects to the kiosk list page and display the new kiosk information after entering the test data and click the “Submit” button.
Test Status	PASS

Table 53: Test Result for TC-OLK-403

Test Case ID	TC-OLK-403
Test Case	Test the ability of the system to allow KESUKOMP to edit kiosk information.
Test Data	name: Kiosk 1 > Kiosk1
Expected Result	System will redirect KESUKOMP to the kiosk list page and display the new Kiosk information. This indicates the kiosk is successfully edited.
Actual Result	System redirects to the kiosk list page and display the edited kiosk information after entering the test data and click the “Submit” button.
Test Status	PASS

Table 54: Test Result for TC-OLK-404

Test Case ID	TC-OLK-404
Test Case	Test the ability of the system to allow KESUKOMP to delete kiosk.
Test Data	-
Expected Result	System will remove the kiosk information from the kiosk list table.
Actual Result	System removes the kiosk information after clicking the “Delete” button.

Test Status	PASS
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Table 55: Test Result for TC-OLK-405

Test Case ID	TC-OLK-405
Test Case	Test the ability of the system to allow Kiosk Staff to view the information of their kiosk.
Test Data	-
Expected Result	System will display the information of Kiosk Staff's Kiosk in the My Kiosk page.
Actual Result	System displays the related information in the My Kiosk page.
Test Status	PASS

Table 56: Test Result for TC-OLK-406

Test Case ID	TC-OLK-406
Test Case	Test the ability of the system to allow Kiosk Staff to edit their kiosk information.
Test Data	operating day: Monday, Tuesday > Wednesday, Thursday
Expected Result	System will redirect Kiosk Staff to my kiosk page and display the new Kiosk information. This indicates the kiosk is successfully edited.
Actual Result	System redirects to my kiosk page and display the edited kiosk information after entering the test data and click the "Submit" button.
Test Status	PASS

Table 57: Test Result for TC-OLK-407

Test Case ID	TC-OLK-407
Test Case	Test the ability of the system to allow Customer to view the list of all kiosks.
Test Data	-
Expected Result	System will display all kiosk that available.
Actual Result	System displays all kiosk that available.
Test Status	PASS

Table 58: Test Result for TC-OLK-408

Test Case ID	TC-OLK-408
Test Case	Test the ability of the system to allow Customer to view specific kiosk information.
Test Data	-
Expected Result	System will display the specific kiosk information.
Actual Result	System displays the specific kiosk information that has been clicked.
Test Status	PASS

4.4.2.5 Manage Menu

Table 59: Test Result for TC-OLK-501

Test Case ID	TC-OLK-501
Test Case	Test the ability of the system to allow KESUKOMP to view the list of all menus.
Test Data	-
Expected Result	System will display the table of menu list with all available menus.
Actual Result	System displays the table of menu list with all menus.
Test Status	PASS

Table 60: Test Result for TC-OLK-502

Test Case ID	TC-OLK-502
Test Case	Test the ability of the system to allow KESUKOMP to create new menu.
Test Data	name: Nasi Lemak price: RM 1.50 quantity: 30 description: nasi lemak bungkus category: breakfast image: nasilemak.jpg
Expected Result	System will display the new menu on the table of menu list.
Actual Result	System displays new menu on the table of menu list.
Test Status	PASS

Table 61: Test Result for TC-OLK-503

Test Case ID	TC-OLK-503
Test Case	Test the ability of the system to allow KESUKOMP to edit menu.
Test Data	menu: Nasi Lemak > Nasi Lemak Ayam
Expected Result	System will redirect to my menu page and display the edited menu in the table.
Actual Result	System redirects to my menu page and displays the edited menu in the table.
Test Status	PASS

Table 62: Test Result for TC-OLK-504

Test Case ID	TC-OLK-504
Test Case	Test the ability of the system to allow KESUKOMP to delete menu.
Test Data	-
Expected Result	System will remove the deleted menu from the table of menu list.
Actual Result	System removes the deleted menu from the table of menu list.
Test Status	PASS

Table 63: Test Result for TC-OLK-505

Test Case ID	TC-OLK-505
Test Case	Test the ability of the system to allow Kiosk Staff to view all their menu.

Test Data	-
Expected Result	System will display the table of menu list with all available menus.
Actual Result	System displays the table of menu list with all menus.
Test Status	PASS

Table 64: Test Result for TC-OLK-506

Test Case ID	TC-OLK-506
Test Case	Test the ability of the system to allow Kiosk Staff to create new menu.
Test Data	name: Cloud 9 price: RM 0.50 quantity: 30 description: cloud 9 snack category: snack image: cloud9.jpg
Expected Result	System will display the new menu on the table of menu list.
Actual Result	System displays new menu on the table of menu list.
Test Status	PASS

Table 65: Test Result for TC-OLK-507

Test Case ID	TC-OLK-507
Test Case	Test the ability of the system to allow Kiosk Staff to edit their menu.
Test Data	menu: Cloud 9 > Cloud 10

Expected Result	System will redirect to my menu page and display the edited menu in the table.
Actual Result	System redirects to my menu page and displays the edited menu in the table.
Test Status	PASS

Table 66: Test Result for TC-OLK-508

Test Case ID	TC-OLK-508
Test Case	Test the ability of the system to allow Kiosk Staff to delete their menu.
Test Data	-
Expected Result	System will remove the deleted menu from the table of menu list.
Actual Result	System removes the deleted menu from the table of menu list.
Test Status	PASS

Table 67: Test Result for TC-OLK-509

Test Case ID	TC-OLK-509
Test Case	Test the ability of the system to allow Customer to view the list of all menus.
Test Data	-
Expected Result	System will display the table of menu list with all available menus.
Actual Result	System displays the table of menu list with all menus.
Test Status	PASS

4.4.2.6 Manage Order

Table 68: Test Result for TC-OLK-601

Test Case ID	TC-OLK-601
Test Case	Test the ability of the system to allow Kiosk Staff to use the POS function of calculating the customer order.
Test Data	-
Expected Result	System will allow the Kiosk Staff to add the menu to the cart and customize it and click payment method and checkout.
Actual Result	System allows to add menu to the cart, customize and checkout.
Test Status	PASS

4.4.2.7 View Invoice

Table 69: Test Result for TC-OLK-701

Test Case ID	TC-OLK-701
Test Case	Test the ability of the system to allow KESUKOMP to view the list of all invoices.
Test Data	-
Expected Result	System will display the table of my invoices list to the Kiosk Staff.
Actual Result	System displays the table of my invoices list.
Test Status	PASS

Table 70: Test Result for TC-OLK-702

Test Case ID	TC-OLK-702
Test Case	Test the ability of the system to allow Kiosk Staff to view all their invoices.
Test Data	-
Expected Result	System will display the table of my invoices list to the Kiosk Staff.
Actual Result	System displays the table of my invoices list.
Test Status	PASS

4.4.2.8 View Dashboard

Table 71: Test Result for TC-OLK-801

Test Case ID	TC-OLK-801
Test Case	Test the ability of the system to allow KESUKOMP to view the dashboard of the system.
Test Data	-
Expected Result	System will display the dashboard and necessary information.
Actual Result	System displays the dashboard and all the necessary information.
Test Status	PASS

Table 72: Test Result for TC-OLK-802

Test Case ID	TC-OLK-802
---------------------	------------

Test Case	Test the ability of the system to allow Kiosk Staff to view the dashboard of the system.
Test Data	-
Expected Result	System will display the dashboard and necessary information.
Actual Result	System displays the dashboard and all the necessary information.
Test Status	PASS

4.4.2.9 Manage Favourite

Table 73: Test Result for TC-OLK-901

Test Case ID	TC-OLK-901
Test Case	Test the ability of the system to allow Customer to view list of all their favourite menu.
Test Data	-
Expected Result	System will display all the menu that has already been favourited by the customer.
Actual Result	System displays all the menu that has been favourited.
Test Status	PASS

Table 74: Test Result for TC-OLK-902

Test Case ID	TC-OLK-902
Test Case	Test the ability of the system to allow Customer to add menu to their favourite menu.

Test Data	-
Expected Result	System will add the menu to the favourite list.
Actual Result	System adds the menu into the favourite list after clicking the “Star” button.
Test Status	PASS

Table 75: Test Result for TC-OLK-903

Test Case ID	TC-OLK-903
Test Case	Test the ability of the system to allow Customer to delete menu from their favourite menu.
Test Data	-
Expected Result	System will remove the menu from the favourite list.
Actual Result	System removes the menu from the favourite list after clicking the “Unfavourite” button.
Test Status	PASS

4.4.3 Test Summary

Test summary of total number of test cases passes and fail including the pass percentage are show by module:

4.4.3.1 Register

Table 76: Test Summary for Register

Total Test Cases	Pass	Fail	Pass Percentage
1	1	0	100%

4.4.3.2 Login

Table 77: Test Summary for Login

Total Test Cases	Pass	Fail	Pass Percentage
3	3	0	100%

4.4.3.3 Manage Profile

Table 78: Test Summary for Manage Profile

Total Test Cases	Pass	Fail	Pass Percentage
7	7	0	100%

4.4.3.4 Manage Kiosk Information

Table 79: Test Summary for Kiosk Information

Total Test Cases	Pass	Fail	Pass Percentage
8	8	0	100%

4.4.3.5 Manage Menu

Table 80: Test Summary for Menu

Total Test Cases	Pass	Fail	Pass Percentage
9	9	0	100%

4.4.3.6 Manage Order

Table 81: Test Summary for Order

Total Test Cases	Pass	Fail	Pass Percentage
1	1	0	100%

4.4.3.7 View Invoice

Table 82: Test Summary for Register

Total Test Cases	Pass	Fail	Pass Percentage
2	2	0	100%

4.4.3.8 View Dashboard

Table 83: Test Summary for Register

Total Test Cases	Pass	Fail	Pass Percentage
2	2	0	100%

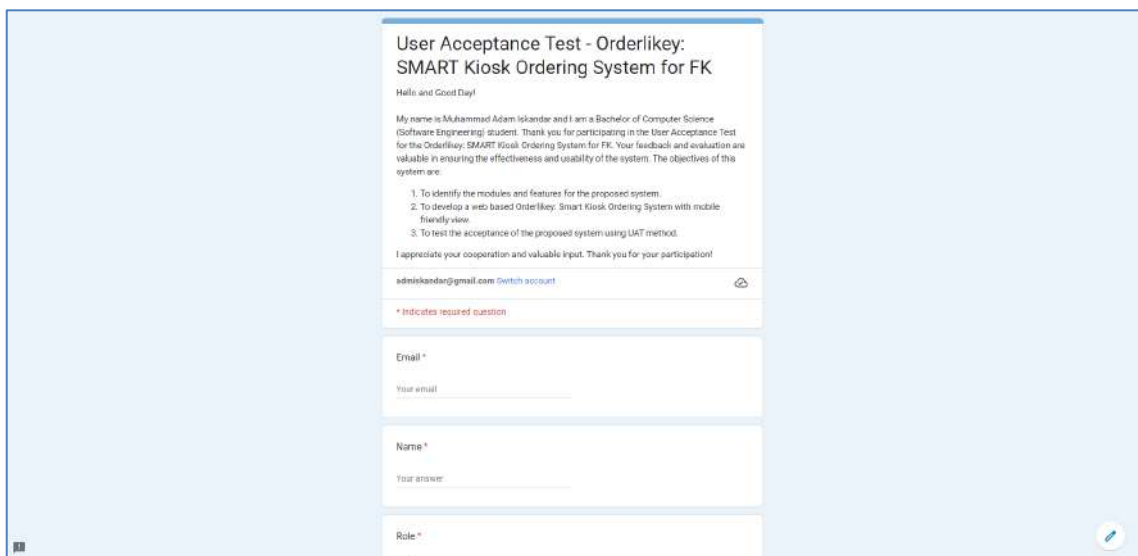
4.4.3.9 Manage Favourite

Table 84: Test Summary for Register

Total Test Cases	Pass	Fail	Pass Percentage
3	3	0	100%

4.5 User Acceptance Test

User Acceptance Testing (UAT) is a process conducted to validate whether the Orderlikey system meets the requirements and expectations of its intended users. It is performed towards the end of the development lifecycle once Orderlikey has undergone functional testing and other testing phases. UAT involves end-users or stakeholders using the Orderlikey system in a real-world scenario to identify any issues, discrepancies, or deviations from the desired functionality. User Acceptance Testing plays a crucial role in ensuring that the Orderlikey software application is ready for deployment and use by its intended audience. By involving the users directly in the testing process, UAT helps to identify potential issues, usability concerns, or gaps in functionality that may not have been captured during earlier testing stages.



**User Acceptance Test - Orderlikey:
SMART Kiosk Ordering System for FK**

Hallo and Good Day!

My name is Muhammad Adam Iskandar and I am a Bachelor of Computer Science (Software Engineering) student. Thank you for participating in the User Acceptance Test for the Orderlikey SMART Kiosk Ordering System for FK. Your feedback and evaluation are valuable in ensuring the effectiveness and usability of the system. The objectives of this system are:

1. To identify the modules and features for the proposed system.
2. To develop a web-based Orderlikey SMART Kiosk Ordering System with mobile-friendly view.
3. To test the acceptance of the proposed system using UAT method.

I appreciate your cooperation and valuable input. Thank you for your participation!

admskadar@gmail.com [Switch account](#)

* Indicates required question

Email *

Your email

Name *

Your answer

Role *

Figure 81: Orderlikey UAT

4.6 Summary

In summary, this chapter provides a comprehensive overview of the Orderlikey Kiosk Ordering System, from its development and implementation to its interface and performance evaluation. The system design and architecture were discussed, covering its hardware and software components, as well as the challenges faced during its implementation. The user interface was also described in detail, emphasizing its usability and user-friendliness. Furthermore, the chapter presented the evaluation results of the system's performance, identifying its strengths and

limitations. A user manual was also provided, offering a step-by-step guide for users on how to use the system effectively. In summary, the Orderlikey system is an innovative and efficient solution, with potential for future improvement and development.

CHAPTER 5

CONCLUSION

5.1 Objective Revisited

As mentioned in Chapter 1, the main goal of this project is to develop Orderlikey: SMART ordering system for FK which was achieved by developing the system successfully. The first objective is to identify the modules and features for the proposed system. This is achieved in Chapter 1 and 2 where it started by identifying and analysing the problems and scope. The second objective is to develop a web based Orderlikey: Smart Kiosk Ordering System with mobile friendly view. This is achieved by successfully developing the web-based system with all the requirement specified in the Chapter 3. The third objective is to test the acceptance of the proposed system using UAT method. This is achieved by successfully test the system using test cases and UAT method in Chapter 4.

5.2 Limitation

Throughout the course of the project, there is constraints and limitations. One notable limitation was the time constraint. Due to academic commitments, there are a limited amount of time available for system development. Effective time management was crucial to ensure the optimization of the final system output. Understanding the implementation of the system and the coding functions related to the development of the system required a significant investment of time and effort.

5.3 Future Work

There are several potential areas of improvement and expansion that can be considered for future work. These include:

- Integration with Online Ordering: To further enhance the customer experience, the system can be expanded to integrate with online ordering platforms. This

would allow customers to place their orders remotely, reducing waiting times and improving overall efficiency.

- **Integration with Payment Gateways:** Adding payment gateway integration would enable seamless and secure transactions for customers. This feature would streamline the ordering and payment process, providing convenience and enhancing customer satisfaction.
- **Advanced Analytics and Reporting:** Incorporating advanced analytics and reporting capabilities would provide valuable insights into customer preferences, popular menu items, and sales trends. This data can help optimize menu offerings, pricing strategies, and operational decision-making.
- **Loyalty and Rewards Program:** Implementing a loyalty and rewards program within the system would incentivize customer loyalty and repeat business. This feature could include point accumulation, special offers, and personalized recommendations based on customer preferences.
- **Expansion to External Platforms:** In addition to universities, exploring opportunities to expand the system to other institutions such as colleges, hospitals, and shopping malls would increase market reach and diversify the customer base.
- **Integration with Inventory Management:** Integrating the system with inventory management software would enable real-time tracking of ingredient availability and automatic updating of menu items based on stock levels. This would streamline operations, reduce waste, and optimize inventory management.
- **Mobile App Enhancements:** Continuously improving the mobile app's user interface and adding additional features such as push notifications for promotions or order updates would further enhance the overall user experience.
- **Multi-language Support:** Providing multi-language support within the system would cater to a broader range of customers, including international students and tourists, improving accessibility and user satisfaction.

By focusing on these areas of future work, the system can continue to evolve and meet the changing needs of the target market while expanding its market reach and achieving its competitive edge in the industry.

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