

## Syahz Ziaz Trading Online Store Management System

**Raudhah Syazwana Norhamizan<sup>1</sup>, Nayef Abdulwahab Mohammed Alduais<sup>1\*</sup>**

<sup>1</sup> *Fakulti Sains Komputer dan Teknologi Maklumat,  
Universiti Tun Hussein Onn Malaysia, Parit Raja, Batu Pahat, 86400, MALAYSIA*

Corresponding Author: [nayef@uthm.edu.my](mailto:nayef@uthm.edu.my)

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### Abstract

The Syahz Ziaz Trading Online Store Management System was created in response to the inefficiencies of manual processes in handling goods sales. A completely functional web-based e-commerce platform designed for small enterprises that specialize in Sawanah Koko items is presented by this completed project, which was carried out under PSM2. Modules for customer registration, product catalog, order and inventory management, stock alerts, safe payment integration, and report production are all part of the system. The system was created following the Agile technique and included PHP, MySQL, HTML, CSS, and JavaScript. The outcomes of the tests demonstrated increased customer satisfaction, inventory tracking, and order accuracy. To improve accessibility and user experience, future improvements can include mobile optimization and more payment choices.

## 1. Introduction

In today's digital world, many businesses are shifting online to improve efficiency and customer reach. SYAHZ ZIAZ Trading, a company selling Sawanah Koko products, originally managed sales manually through a Facebook page. While this approach worked initially, it led to problems like stock errors, delayed order processing, and limited customer interaction. Manual tracking made it easy to lose track of inventory, causing customers to order out-of-stock items. Relying only on cash-on-delivery (COD) created security concerns and often led to incomplete transactions. The business also lacked features like product filtering, reviews, and secure payments—resulting in a less satisfying shopping experience. To address these issues, this project introduces a custom-built Online Store Management System. The system includes modules for user registration, product catalog, stock and order management, secure payment integration, and reporting. Developed using HTML, CSS, JavaScript, PHP, and MySQL, the system is designed to be user-friendly, secure, and scalable. Web-based systems help businesses manage operations efficiently by enabling real-time data access and reducing human error [1], [4]. They also improve user experience with faster and more reliable online shopping features [2], [3]. The project followed the Agile methodology, allowing for continuous improvements through testing and feedback. This report explains how the system was developed to solve real business problems and support future growth.



## 1.1 Project Background

Currently, SYAHZ ZIAZ Trading, a company that specializes in Sawanah Koko items, runs its business using a Facebook page and manual order and inventory management procedures. This method is laborious, prone to mistakes, and devoid of essential e-commerce features like safe payment methods, product filtering, and customer feedback. Inefficiencies, a bad customer experience, and restricted scalability have resulted from problems including out-of-date inventory data and a reliance on cash-on-delivery payments. To overcome these obstacles, improve customer engagement, streamline operations, and boost overall business efficiency, a contemporary solution is required.

The SYAHZ ZIAZ Trading Online Store Management System project seeks to solve these problems by creating a web-based platform that is customized to the requirements of the company. Important procedures like order processing, inventory management, and safe online payments will all be automated by the system. Customers will be able to browse and buy things with ease because of its features, which include a product catalog, client registration, and order tracking tools. The technology will improve workflow efficiency, provide reports, and make stock monitoring easier for the business owner. The solution is intended to decrease errors, save time, enhance customer happiness, and assist the expansion of the company in the cutthroat digital marketplace by incorporating interactive and secure features.

## 1.2 Problem Statement

The business owner has several difficulties with the current manual inventory management system, including laborious procedures and common mistakes like out-of-date stock changes and erroneous counts. Customers may place orders for out-of-stock items as a result of these inefficiencies, which could interrupt sales and result in needless costs or revenue loss.

Only using a Facebook page to run the store restricts consumer participation and interaction. Potential sales growth is eventually hampered by the lack of crucial e-commerce tools like product filters, reviews, and personalized suggestions, which lead to a bad browsing experience, lower consumer happiness, and weakened brand loyalty.

Customers and business owners find it inconvenient and inefficient when cash-on-delivery (COD) is used as the main payment option. Due to its lack of security, COD deters customers from making purchases and makes delivery more difficult for the owner, increasing the possibility of unfinished transactions.

## 1.3 Objective

In order to guarantee scalability and alignment with company objectives, the project intends to design an online shop management system for Syahz Ziaz Trading utilizing an organized methodology. The system, which was created as a web-based solution, would streamline inventory management and reporting for the company while offering consumers an interactive platform for product browsing, ordering, and feedback. The system's web-based methodology guarantees usability and accessibility for any user. Thorough testing will confirm that the system satisfies Syahz Ziaz Trading's operational requirements by validating functionality, performance, and usability. The project's goal is to provide a dependable, approachable solution that will increase productivity and client satisfaction.

## 1.4 Project Scope

The project aims to design a flexible e-commerce website for SYAHZ ZIAZ TRADING, focusing on selling Sawanah Koko products. The site will feature customer interaction, product information, order management, order processing, payment integration, and reporting. These features will simplify shopping for customers and streamline operations for the business owner.

The system will be scalable for future growth and handle a moderate customer base. It will focus on online sales without offline capabilities or advanced features like artificial intelligence. The platform will use safe, effective, and user-friendly tools within a defined timeframe and technological constraints.

Key modules include Registration, Product Catalog, Stock Management, Order Processing, Stock Alerts, Payment Integration, Reviews, and Reporting. Special features like sales reports, secure payments, and stock alerts will improve efficiency and user experience. Target users are customers and administrators.

Developed using HTML, CSS, JavaScript, and PHP, with MySQL as the database, the website will undergo rigorous testing to ensure functionality and responsiveness across devices and browsers. The project aims to provide a seamless shopping experience and support business growth.

## 1.5 Expected Result

The system aims to implement an easy-to-use and efficient e-commerce website for Sawanah Koko products. The website will make shopping simple and enjoyable by offering features like a clear product catalog, secure

customer accounts, and smooth payment options. Customers will be able to track their orders, and save their favorite products, while the business owner can easily manage inventory, track orders, and view helpful reports to make better decisions.

## 1.6 Project Significance

By providing an integrated platform for inventory management and online sales, the initiative makes a substantial contribution to the e-commerce industry and small to medium-sized firms. The system can be proposed for use by companies dealing with orders and product distribution, providing tools to monitor stock levels, process orders, and generate insightful reports. It increases efficiency, lowers errors, and streamlines processes. In addition to benefiting individual companies, this project shows how to streamline corporate operations using a scalable approach.

## 1.7 Project Organization

The focus of this project is to create an easily navigable and intuitive website design best suited to SYAHZ ZIAZ TRADING which deals in Sawanah Koko products. The project background argues for the establishment of an online system that will help improve the sales of products and the relationship between businesses and buyers. Another advantage of the project is the fact that it can be of tremendous importance to other companies who manage products, goods, and inventory as well. Thus, the project advances the overall goal of developing the industry and the community by providing a solutions that improves the efficiency, minimizes mistakes and invites people to join the journey of digital improvement

## 2. Literature Review

E-commerce Store Management Services provide a holistic solution that relieves businesses from the burden of day-to-day operations. This service isn't limited to just listing items on e-marketplaces, it encompasses a comprehensive range of support. From meticulously managing product listings to promptly responding to customer inquiries within the platform, these services cover all aspects of running an online store. By outsourcing these tasks, businesses can focus on core activities while ensuring seamless management of their online presence. [3].

### 2.1 Related Work

Li, R., Yang, J., & Zhang, W. (2023) proposed a web-based inventory management system tailored for small businesses, focusing on real-time inventory tracking and order management. Their research, published in the Journal of Applied Computing and Informatics, emphasized scalability and integration with third-party services. This work complements the Syahz Ziaz Trading system by offering insights into scalable designs suitable for SMEs and highlights the importance of seamless user experiences in small business e-commerce platforms.

### 2.2 Comparison with Similar Projects

The following table presents a comparison between the Syahz Ziaz Trading Online Store Management System and similar projects in terms of features, technologies used, scalability, and user interface quality.

| Feature/Criteria     | Syahz Ziaz System        | Zoho Inventory  | Odoo Inventory       | Li et al. (2023)      |
|----------------------|--------------------------|-----------------|----------------------|-----------------------|
| Platform Type        | Web-based (PHP/MySQL)    | Cloud-based     | Cloud/On-premise     | Web-based             |
| Inventory Management | Yes                      | Yes             | Yes                  | Yes                   |
| Order Management     | Yes                      | Yes             | Yes                  | Yes                   |
| Payment Integration  | Yes (COD)                | Yes (Online)    | Yes (Online)         | Yes                   |
| User Roles           | Admin, Customer          | Admin, User     | Multi-role           | Admin, Customer       |
| Scalability          | Moderate (SMEs)          | High            | High                 | Scalable for SMEs     |
| User Interface       | Simple, Themed for Brand | Professional UI | Complex but powerful | Modern and responsive |
| Custom Reporting     | Yes                      | Yes             | Yes                  | Yes                   |
| Technology Stack     | HTML/CSS/JS/PHP/MySQL    | Proprietary     | Python/PostgreSQL    | Modern web stack      |

## 2.3 Introduction to Inventory Management System and Web-Based System

Inventory management requires inventory visibility, knowing when to order, how much to order and where to store stock. Multichannel order fulfillment operations typically have inventory spread across many places throughout the supply chain. Businesses need an accurate view of inventory to guarantee fulfillment of customer orders, reduce shipment turnaround times and minimize stockouts, oversells and markdowns [4]. Nowadays, many e-commerce store uses inventory management system for their products to reduce errors by entering stocks manually. This system is a productive way to manage stocks in the store and also makes it easier especially to small businesses so that the workflow will be smooth.

A web-based system is an application that is accessed via HTTP. The term web-based is usually used to describe applications that run in a web browser. It can, though, also be used to describe applications that have a very small component of the solution loaded on the client's PC. The host server for a web-based system could be local, or it could be accessed via the internet [1]. Web-based systems on the other hand are based on the World Wide Web or the intranet and are installed on no single computer and so are platform supply. These systems employ technologies that are familiar on the world wide web, in terms of front-end development; HTML, CSS, JavaScript, and back-end technologies; such as PHP, Python, Node.js among others. Web-based systems offer features like instant data processing, more and more interactions from the users, and remote acceses.

One of the existing system is Zoho Inventory. Zoho Inventory is a powerful and easy-to-use inventory and order management software designed for businesses of all sizes to meet their end-to-end inventory management needs. Keep track of your inventory, manage your orders, track your shipments, and control warehouses from a single interface [9].

Zoho Inventory is the tool to address all the requirements for optimal inventory management. Its attractive control panel helps present overall information on sale and quantity of items and the inventory gives the users, the ability to create items with images and groups them in categories. It makes the order and sales administration easier by generating the sales and purchase orders instantly and also makes order fulfilment easy through package slips, shipping labels and live shipment tracking.

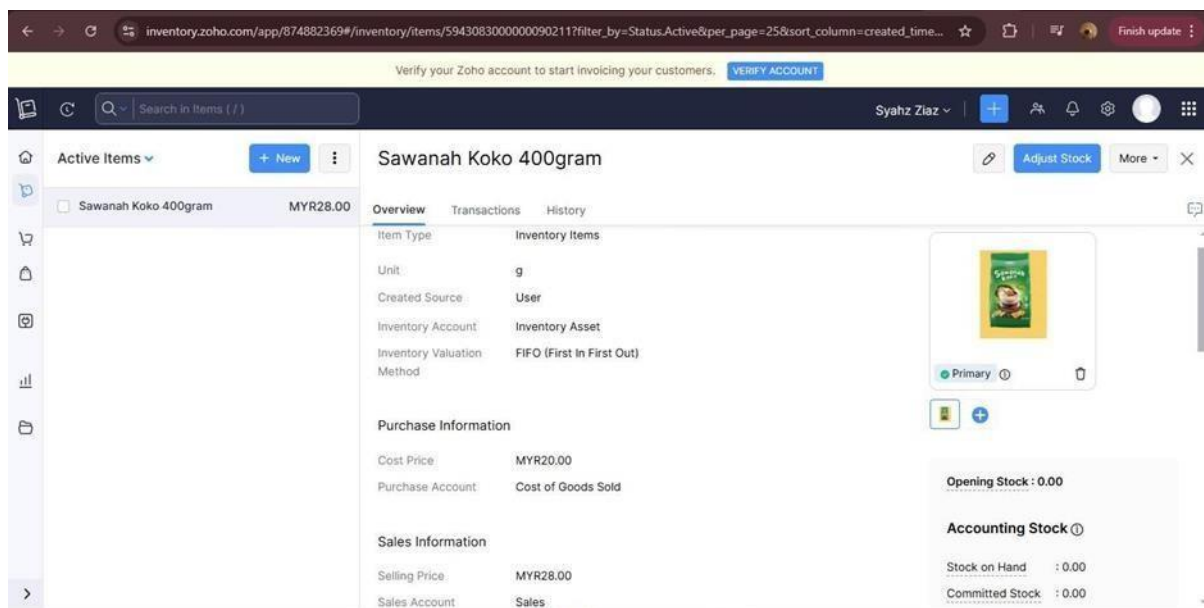


Figure 1 Zoho Inventory interface

## 3. Methodology

It is a development process that is both fast and flexible, designed with the customer in mind – this is employing an iterative methodology known as agile. Breaks projects into smaller and more manageable cycles known as sprints that each results in the delivery of a function product increment. Agile is specifically appropriate for online store and inventory management systems because this approach enables developers to build a flexible system that can be changed to address emerging business objectives; it enables the implementation of the “build and measure” feature that creates prototype features and integrates users’ feedbacks to improve the system. This approach makes it possible to end up with the kind of system that is easy to use, effective and one that meets the needs of the business.

### 3.1 System Development Workflow

According to Table A2, the project follows an Agile approach, starting with concept and planning (Sprint 1), where stakeholders define system needs, prioritize features, and create database tables in MySQL. In system design and prototyping (Sprint 2), prototypes of key features like the product catalog and inventory are created, and feedback is gathered for refinement. During development and integration (Sprints 3-5), functionalities such as inventory management, order processing, secure payment gateways, and reporting tools are implemented and tested for module compatibility. Testing and quality assurance (Sprint 6) involve unit, integration, and acceptance testing to ensure the system meets SYAHZ ZIAZ Trading's requirements and works across devices and browsers. Finally, deployment and maintenance (Sprint 7) include hosting the system, live testing, employee training, and ongoing support for improvements.

### 3.2 System Requirements

By defining the essential activity, task, or action that needs to be completed, a functional requirement clarified what has been done. It explains how inputs are transformed into the user's desired output. The functional requirement analysis of the proposed system is shown in Appendix A.

Nonfunctional requirements, or NFRs, are a set of specifications that describe the system's operation capabilities and constraints. These are basically the requirements that outline how well it operates, including things like speed, security, reliability, data integrity, etc [2]. Table 2 shows the Non-Functional Requirements of the proposed system.

Table 2 Non-Functional Requirements

| Requirement | Description                                                                                                                                                                                |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Performance | <ul style="list-style-type: none"> <li>The system should be able to use anytime.</li> <li>The system must handle traffic for at least 100 concurrent users.</li> </ul>                     |
| Operational | <ul style="list-style-type: none"> <li>The system should be user friendly.</li> <li>The system should be easily maintained and updated.</li> </ul>                                         |
| Security    | <ul style="list-style-type: none"> <li>The system should allow user to access their own account with user id and password.</li> <li>Only administrator can generate the report.</li> </ul> |

### 3.3 System Analysis

#### 3.3.1 Context Diagram

Figure A2 is the Context Diagram for the SYAHZ ZIAZ Trading Online Store Management System that provides a clear, high-level view of how the system interacts with its two primary external entities: the Administrator and the Customer. It deals with the exchange of information between this system and these entities on their role and responsibilities of this system in supporting the normal flow of business.

Figure A3 shows the Data Flow Diagram Level 1 of the Manage Order process. Product browsing, order placement, and order status tracking are all handled by the Manage Order procedure. The customer starts the data flow by looking for products that are offered. The system shows the customer the product details, including stock levels, that it has retrieved from the Inventory Database.

Figure A4 shows the Entity Relationship Diagram for this project. The e-commerce system's Entity-Relationship Diagram (ERD) shows the connections between various entities, their characteristics, and their interactions. It ensures effective data storage and retrieval by acting as a fundamental blueprint for database structure design. Entities such as Customer, Product, Order, Payment, Review, Administrator, StockAlert, and Report are all essential to the functioning of this system. The Customer entity, which consists of characteristics like Name, Email, Password, Phone, Address, and CustomerID (a unique identifier), represents the system's users. A single client can place several orders because of its one-to-many relationship with the Order object. Details regarding products that are for sale, such as ProductID, Name, Description, Price, StockQuantity, and Category, are stored in the Product entity. It has a one- to-many relationship with the OrderItem entity, as one product can be part of multiple orders.

Figure A5 shows the Customer Flowchart. The sequential actions and choices a customer makes when interacting with the e-commerce platform are depicted in the customer flowchart. Every step keeps the system operating while guaranteeing a seamless purchasing experience. The client starts by creating a new user account or logging into an already-existing one. If the client is new, they provide the necessary information, including their name, email address, password, and address. The information is saved by the system in the registration database after registration. The system verifies the login credentials that returning consumers supply. The customer is prompted to reset their password or input their credentials again if they are unable to log in.

Figure A6 and Figure A7 shows the Login Interface and Product Catalog.

## 4. Implementation and Testing

### 4.1 User Registration and Login

The login and registration pages for the Syahz Ziaz Trading website are designed to help users access and create accounts easily. The registration page is meant for new users who want to sign up. It includes a form where users can enter their first and last names, address, city, postcode, email, and a password. Once they fill in the details and click the Register button, their information is saved into the system so they can log in later. There's also a Reset button to clear the form if they make a mistake or want to start over. The layout is clean, with a chocolate-themed background that matches the brand, and the form is placed in the center for better focus and user experience.

The login page is for users who already have an account. It has two simple fields — one for email and one for password. After entering their details, they can click the Login button to access their account. If they enter the wrong info, the system will show an error and ask them to try again. There's also a Reset button here to clear the fields. Just like the registration page, the login form is also neatly centered with the same chocolate-themed design. Both pages are easy to understand, user-friendly, and follow a consistent look and feel, which helps users feel comfortable and confident while using the website. Figure 2 shows Login and Registration page.

The figure displays two screenshots of the Syahz Ziaz Trading website's user interface. The top screenshot shows the Login page, which features a central white form with the heading "Welcome to Syahz Ziaz Trading". The form includes two input fields: "Enter your email" and "Enter your password", followed by "Login" and "Reset" buttons. The bottom screenshot shows the Registration page, which also has a central white form with the heading "Welcome to Syahz Ziaz Trading". This form includes input fields for "First Name", "Last Name", "Address", "City", "Postcode", "E-Mail", and "Password", followed by "Register" and "Reset" buttons. Both pages have a dark navigation bar at the top with links for "About", "Products", "View Cart", "My Orders", "Contact", "Log In", and "Register". The background of both pages is a high-quality image of various chocolate products, including bars and truffles.

Figure 2 Login and Registration Page

## 4.2 Product Catalog

This product catalog page on the Syahz Ziaz Trading website displays the available items that customers can buy. The page showcases three main products: Sawanah Koko 400g, Sawanah Koko Sachet, and Sawanah Cafe. Each product is shown with a clear image, product name, and a few important details such as the product code, number of units available, and price per unit. There's also an Add To Cart button under each item, which allows users to add the product to their shopping cart for checkout. The layout is simple, clean, and easy to understand, making it convenient for customers to browse and shop. The page also maintains a consistent design with the rest of the website, using the same chocolate-themed branding and a top navigation bar for easy access to other pages like View Cart, My Orders, and Contact. Figure 3 shows the product catalog module.

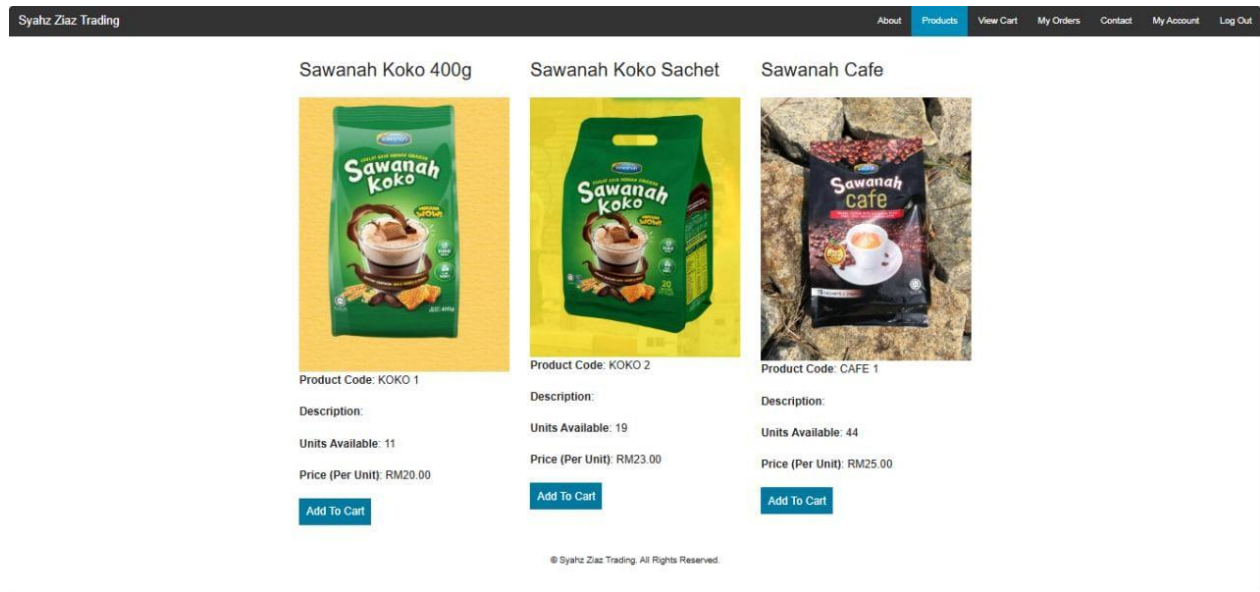


Figure 3 Product Catalog Module

## 4.3 Add to Cart

This is a shopping cart page for Syahz Ziaz Trading, where users can review the items they've added before making a purchase. The page displays a table listing each product by code and name, along with its quantity and total cost. For example, the user has added 2 units of Sawanah Koko Sachet (code KOKO 2), 1 unit of Sawanah Koko 400g (code KOKO 1), and 1 unit of Sawanah Cafe (code CAFE 1). Next to each item, there are plus (+) and minus (-) buttons that allow the user to adjust the quantity directly from the cart. The cost for each item is shown based on the quantity selected, and at the bottom, the total cost of all items combined is displayed, which in this case is RM91. Below the product list, there are three action buttons: Empty Cart to remove all items, Continue Shopping to go back and browse more products, and COD (Cash on Delivery) to proceed with placing the order. The layout is simple, clean, and easy to navigate, making the checkout process straightforward for the user. Figure 4 shows the add to cart module.

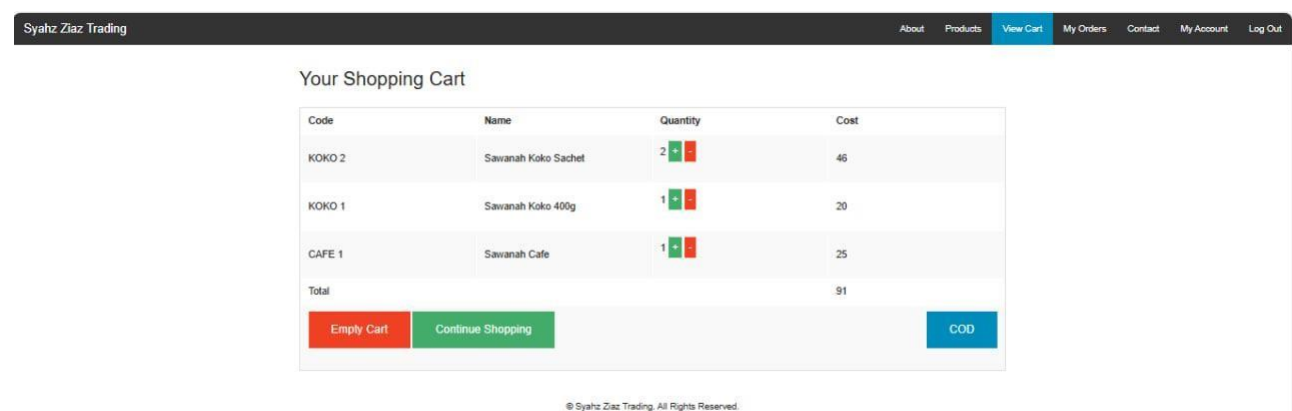
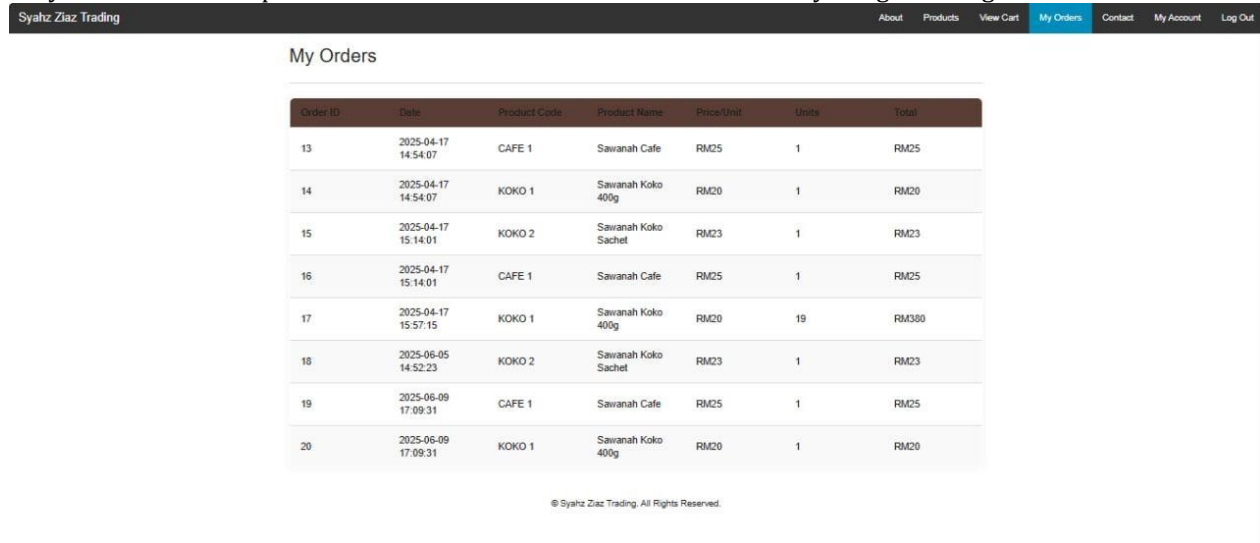


Figure 4 Add to Cart Module

#### 4.4 Orders

This is the My Orders page from the Syahz Ziaz Trading system, which displays a list of all the past purchases made by the user in an organized table format. Each row in the table represents a single order and includes important details such as the Order ID, Date and Time of purchase, Product Code, Product Name, Price per Unit, the number of units ordered, and the Total Cost for that item. For example, on April 17, 2025, the user ordered 19 units of Sawanah Koko 400g (KOKO 1), which cost RM20 each, totaling RM380. This module allows users to easily track what they have purchased, when they bought it, and how much they spent. It helps with order history, accountability, and simplifies any follow-up actions like reordering or confirming delivery. The clean layout makes it easy for users to find specific orders and review their transaction history at a glance. Figure 5 shows order module.

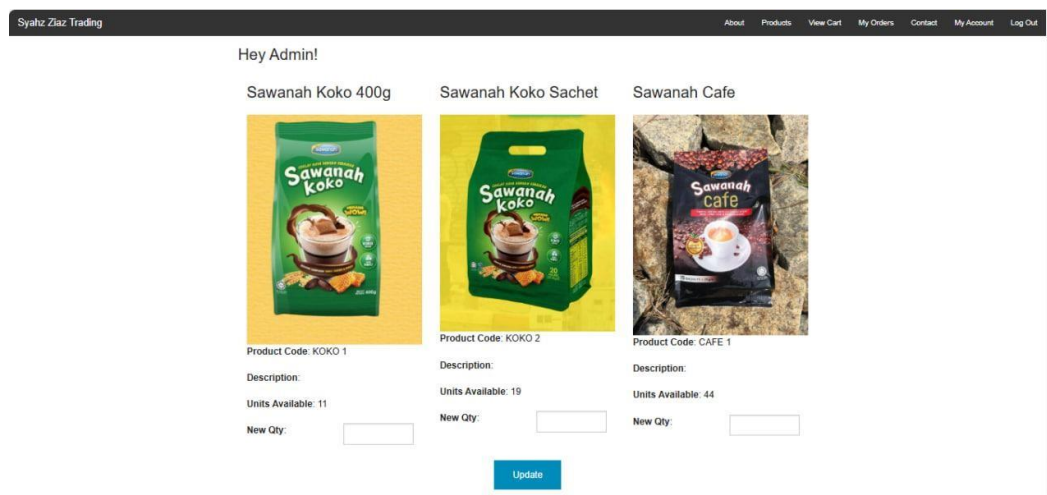


| Order ID | Date                | Product Code | Product Name        | Price/Unit | Units | Total |
|----------|---------------------|--------------|---------------------|------------|-------|-------|
| 13       | 2025-04-17 14:54:07 | CAFE 1       | Sawanah Cafe        | RM25       | 1     | RM25  |
| 14       | 2025-04-17 14:54:07 | KOKO 1       | Sawanah Koko 400g   | RM20       | 1     | RM20  |
| 15       | 2025-04-17 15:14:01 | KOKO 2       | Sawanah Koko Sachet | RM23       | 1     | RM23  |
| 16       | 2025-04-17 15:14:01 | CAFE 1       | Sawanah Cafe        | RM25       | 1     | RM25  |
| 17       | 2025-04-17 15:57:15 | KOKO 1       | Sawanah Koko 400g   | RM20       | 19    | RM380 |
| 18       | 2025-06-05 14:52:23 | KOKO 2       | Sawanah Koko Sachet | RM23       | 1     | RM23  |
| 19       | 2025-06-09 17:09:31 | CAFE 1       | Sawanah Cafe        | RM25       | 1     | RM25  |
| 20       | 2025-06-09 17:09:31 | KOKO 1       | Sawanah Koko 400g   | RM20       | 1     | RM20  |

Figure 5 Order Module

#### 4.5 Stock Management

This is the **Admin Stock Management** page for Syahz Ziaz Trading, designed specifically for administrator to update product stock levels. The page shows three products—Sawanah Koko 400g, Sawanah Koko Sachet, and Sawanah Cafe—each displayed with an image, product code, and the current number of units available. Under each item, there's a text box labeled New Qty, where the admin can enter a new quantity to restock the product. After filling in the new quantities, the admin can click the Update button at the bottom to apply the changes. This makes it easy for the admin to keep inventory up-to-date in just a few clicks, ensuring accurate stock levels are shown to customers on the shopping site. The layout is simple and user-friendly, so even someone without technical skills can manage stock efficiently. Figure 6 shows the stock management module.



Hey Admin!

Sawanah Koko 400g



Product Code: KOKO 1

Description:

Units Available: 11

New Qty:

Sawanah Koko Sachet



Product Code: KOKO 2

Description:

Units Available: 19

New Qty:

Sawanah Cafe



Product Code: CAFE 1

Description:

Units Available: 44

New Qty:

Figure 6 Stock Management Module

#### 4.6 System Testing

During the testing phase, the system was thoroughly checked to ensure all features functioned correctly and met the project requirements. This included testing modules like the shopping cart, order history, and admin stock updates for both functionality and accuracy. Any bugs or errors found during testing were fixed to improve the overall performance and user experience of the system. Table 3 to 6 shows the result.

Table 3 Registration Function

| Test                                                      | Expected result                                                   | Actual result |
|-----------------------------------------------------------|-------------------------------------------------------------------|---------------|
| Fill in the valid information in the registration form.   | Successfully registered and the users redirected to homepage.     | Passed.       |
| Fill in the invalid information in the registration form. | Shows error message and require users to input the details again. | Passed.       |

Table 4 Login Function

| Test                                   | Expected Result                                                                   | Actual Result |
|----------------------------------------|-----------------------------------------------------------------------------------|---------------|
| Fill in valid username and password.   | Users will go to home page and redirect administrator to administrator home page. | Passed.       |
| Fill in invalid username and password. | Show error message and require the user to login again.                           | Passed.       |

Table 5 Add to Cart Function

| Test                                                                               | Expected Result                                          | Actual Result |
|------------------------------------------------------------------------------------|----------------------------------------------------------|---------------|
| Customer click on the Add To Cart button below the product to enter the cart page. | Customer will be automatically directed to cart page.    | Passed.       |
| Customers click on the continue shopping button to explore and add more products.  | Customer will be redirected to the product catalog page. | Passed.       |
| Customer clicks on empty cart button to empty their cart.                          | The cart will be empty and message will be shown.        | Passed.       |

Table 6 Stock Management Function

| Test                                                                                           | Expected Result                                                 | Actual Result |
|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|---------------|
| Administrator enter the amount of new stock for the product and will be automatically updated. | The product quantity will increase on the product catalog page. | Passed.       |

#### 4.7 User Acceptance Testing

User Acceptance Testing (UAT) is the final phase of the testing process where the system is tested by actual users to ensure that it meets the business requirements and performs as expected. It is conducted to verify that the system functions correctly from the user's perspective and that all features work in real-world scenarios. For this project, UAT is essential because it helps confirm that key functions such as user registration, login, viewing products, and placing orders operate smoothly and are user-friendly. This phase also allows any remaining issues or bugs to be identified and resolved before the system is officially launched. Table 7 shows the result for UAT testing for Syahz Ziaz Trading Online Store Management System.

Table 7 User Acceptance Testing

| No              | Acceptance Requirement          | Actual Result |   |   |   |   |
|-----------------|---------------------------------|---------------|---|---|---|---|
|                 |                                 | 1             | 2 | 3 | 4 | 5 |
| User interface  |                                 |               |   |   |   |   |
| 1               | Easy to use                     |               |   |   | \ |   |
| 2               | Navigation                      |               |   | \ |   |   |
| 3               | Interface Design                |               |   |   | \ |   |
| System Function |                                 |               |   |   |   |   |
| 1               | Login and Registration function |               |   | \ |   |   |
| 2               | Add to Cart function            |               |   |   | \ |   |
| 3               | Stock management function       |               |   |   | \ |   |
| 4               | Product Management function     |               |   | \ |   |   |
| 5               | Profile Management function     |               |   |   | \ |   |

User acceptance testing was conducted using Google Forms, and the results were analyzed and visualized using Google Sheets. Feedback was collected from five respondents. The overall results indicate that the system was positively received. Core features such as Login and Add to Cart, Stock, and Interface were rated highly, with most users giving the maximum score of 4. Other elements like Ease of Use, Navigation, and Product also received favorable responses, although there was some variation in individual ratings. For instance, features like Navigation and Add to Cart were rated slightly lower by one or two respondents, indicating areas where minor improvements could be made. Overall, the responses suggest that the system is functional, user-friendly, and meets user expectations, with only a few areas that may benefit from further refinement. Figure 7 shows the analysis for User Acceptance Testing.

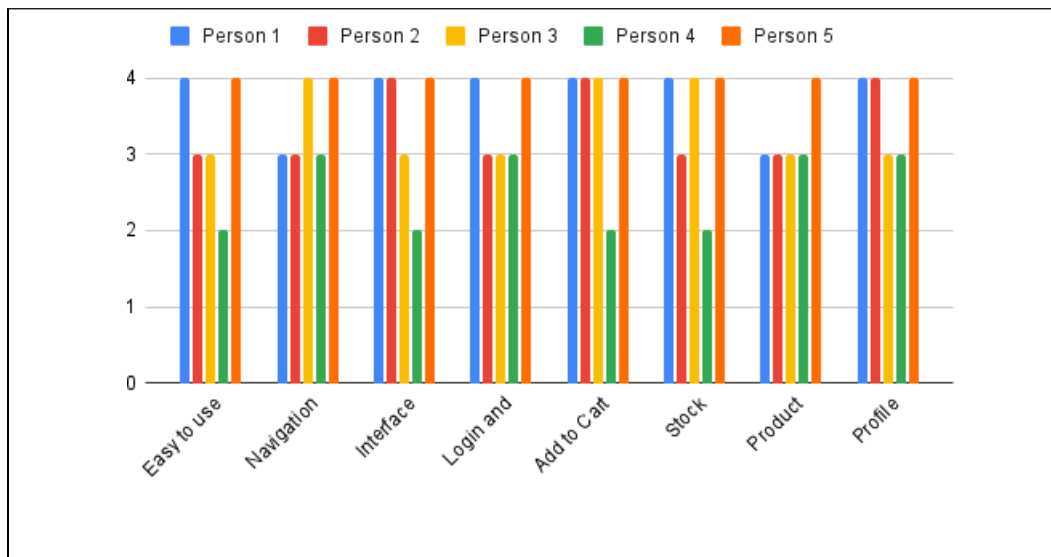


Figure 7 Graph analysis for User Acceptance Testing

## 5. Result and Discussion

The system was developed following the Agile software development methodology, which facilitated incremental delivery and continuous feedback. Each sprint focused on implementing core functionalities such as user authentication, product cataloging, cart management, and admin-based stock control. Upon completion of each module, internal testing was conducted to ensure proper functionality. Functional testing confirmed that all modules performed as expected. The login and registration modules correctly handled user input and redirection, while the shopping cart and stock management modules accurately processed inventory and order data. User Acceptance Testing (UAT) was carried out with five respondents. The UAT focused on areas such as ease of use, navigation, interface design, login and registration, and stock and product management. The majority of the participants rated the system features positively, particularly in terms of interface and core functionality. Some lower ratings were observed for navigation and the Add to Cart feature, indicating areas for further refinement. Nevertheless, the overall feedback indicates that the system aligns well with user expectations and business objectives.

## 6. Conclusion

In conclusion, this project successfully developed a web-based Online Store Management System for SYAHZ ZIAZ Trading to help improve the way the business handles product sales, inventory, and customer orders. By replacing the previous manual system, the new platform makes it easier for both the business owner and customers to manage and interact with the store. Key features such as user registration, product catalog, shopping cart, order tracking, and secure payments were implemented and tested. Feedback from real users showed that the system is easy to use and functions well, with only a few areas needing small improvements. Overall, the system helps save time, reduce errors, and create a better shopping experience—supporting the business as it grows in the digital market. The system is also designed to be scalable, meaning more features and users can be added in the future. It provides a strong foundation for the business to compete more effectively online. Future improvements could include integrating more payment options and mobile responsiveness to further enhance usability.

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## Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

## Author Contribution

The authors confirm contribution to the paper as follows: **study conception and design:** Raudhah Syazwana binti Norhamizan, Author Nayef Abdulwahab Mohammed Alduais; **data collection:** Raudhah Syazwana binti Norhamizan; **analysis and interpretation of results:** Raudhah Syazwana binti Norhamizan, Author Nayef Abdulwahab Mohammed Alduais; **draft manuscript preparation:** Raudhah Syazwana binti Norhamizan, Author Nayef Abdulwahab Mohammed Alduais. All authors reviewed the results and approved the final version of the manuscript.

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**Appendix A:**

Table A1 Functional Requirement

| No. | Module                     | Functionality                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Registration Module        | <ul style="list-style-type: none"> <li>• The system should allow users to create accounts by providing personal details.</li> <li>• The system should enable login/logout functionality.</li> <li>• The system should send email verification and password reset links.</li> <li>• The system should allow the new user to register before login.</li> <li>• The system should redirect user to dashboard after successful login.</li> </ul> |
| 2   | Product Catalog Module     | <ul style="list-style-type: none"> <li>• The system should display Sawanah Koko products with descriptions, images, and prices.</li> <li>• The system should provide a search bar for quick product lookup.</li> <li>• The system should display recommended or featured products based on sales trends.</li> </ul>                                                                                                                          |
| 3   | Add to Cart Module         | <ul style="list-style-type: none"> <li>• The system enable users to add selected products to their cart with proper tracking of product name and quantities.</li> <li>• The system should allow users to update item or quantities or remove products from the cart.</li> <li>• The system should show the total price based on item quantities and display cart value.</li> </ul>                                                           |
| 4   | Order Management Module    | <ul style="list-style-type: none"> <li>• The system should manage customer orders from placement to delivery.</li> <li>• The system should update order status in real-time (e.g., "Processing," "Shipped").</li> <li>• The system should allow customers to view their order history and details.</li> </ul>                                                                                                                                |
| 5   | Payment Integration Module | <ul style="list-style-type: none"> <li>• The system should provide secure online payment options (e-wallets, credit cards, bank transfers).</li> <li>• The system should handle refunds or cancellations through the system.</li> <li>• The system should encrypt payment data for transaction security.</li> </ul>                                                                                                                          |
| 6   | Customer Management Module | <ul style="list-style-type: none"> <li>• The system should allow customers to modify their shipping and billing address details.</li> <li>• The system should enable secure password changes for enhanced account security.</li> <li>• The system should let customers view and update personal details such as name, email, and contact number.</li> </ul>                                                                                  |

Table A2 System Development Workflow

| Phase                                | Tasks                                                                                                                                                                                                                                                                                                                                        | Output                                                                                                                                                       |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Concept and Planning</b>          | <ul style="list-style-type: none"> <li>- Conduct stakeholder meetings to identify requirements</li> <li>- Define project scope and objectives</li> <li>- Create project and timeline</li> </ul>                                                                                                                                              | <ul style="list-style-type: none"> <li>- Project scope document</li> <li>- User stories</li> <li>- Project timeline</li> </ul>                               |
| <b>System Design</b>                 | <ul style="list-style-type: none"> <li>- Develop system architecture</li> <li>- Design database schema</li> <li>- Create wireframes and UI prototypes</li> </ul>                                                                                                                                                                             | <ul style="list-style-type: none"> <li>- System design document</li> <li>- Wireframes and prototypes</li> <li>- Database schema</li> </ul>                   |
| <b>Development</b>                   | <ul style="list-style-type: none"> <li>- Code modules</li> <li>- Integrate third-party platforms</li> <li>- Conduct module-level testing</li> </ul>                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>- Functional modules</li> <li>- Integrated system components</li> <li>- Initial test result</li> </ul>                |
| <b>Testing and Quality Assurance</b> | <ul style="list-style-type: none"> <li>- Conduct unit testing for individual modules</li> <li>- Perform integration testing for seamless module interaction</li> <li>- Conduct user acceptance testing (UAT) <ul style="list-style-type: none"> <li>- Test system on multiple devices and browsers for responsiveness</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>- Bug reports</li> <li>- Test cases and results</li> <li>- UAT approval</li> </ul>                                    |
| <b>Deployment and Maintenance</b>    | <ul style="list-style-type: none"> <li>- Deploy system on a live server</li> <li>- Conduct live testing</li> <li>- Provide user training for system operation</li> <li>- Collect feedback for future improvements</li> </ul>                                                                                                                 | <ul style="list-style-type: none"> <li>- Fully deployed system</li> <li>- User training documentation</li> <li>- Feedback for system enhancements</li> </ul> |

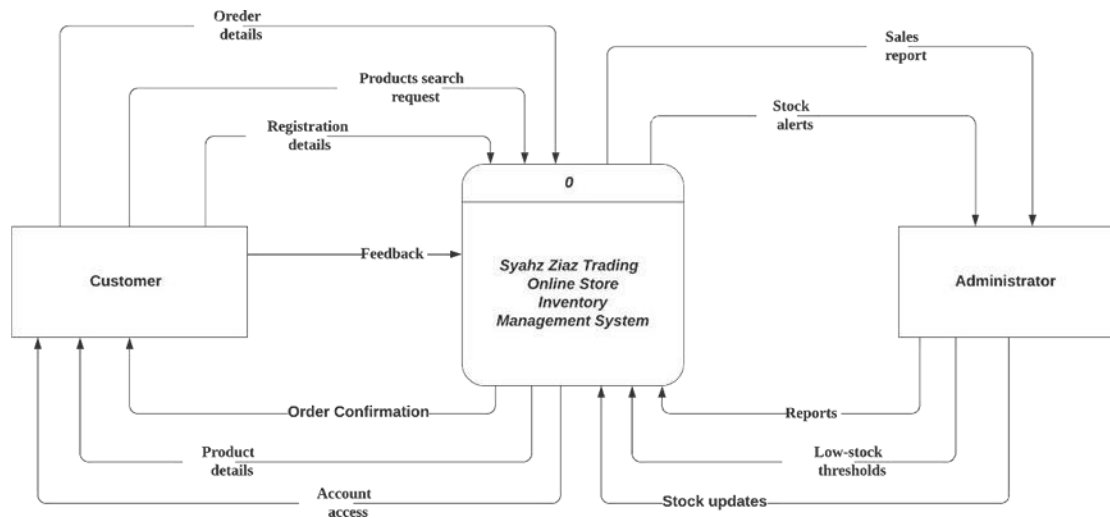


Figure A2 Context Diagram

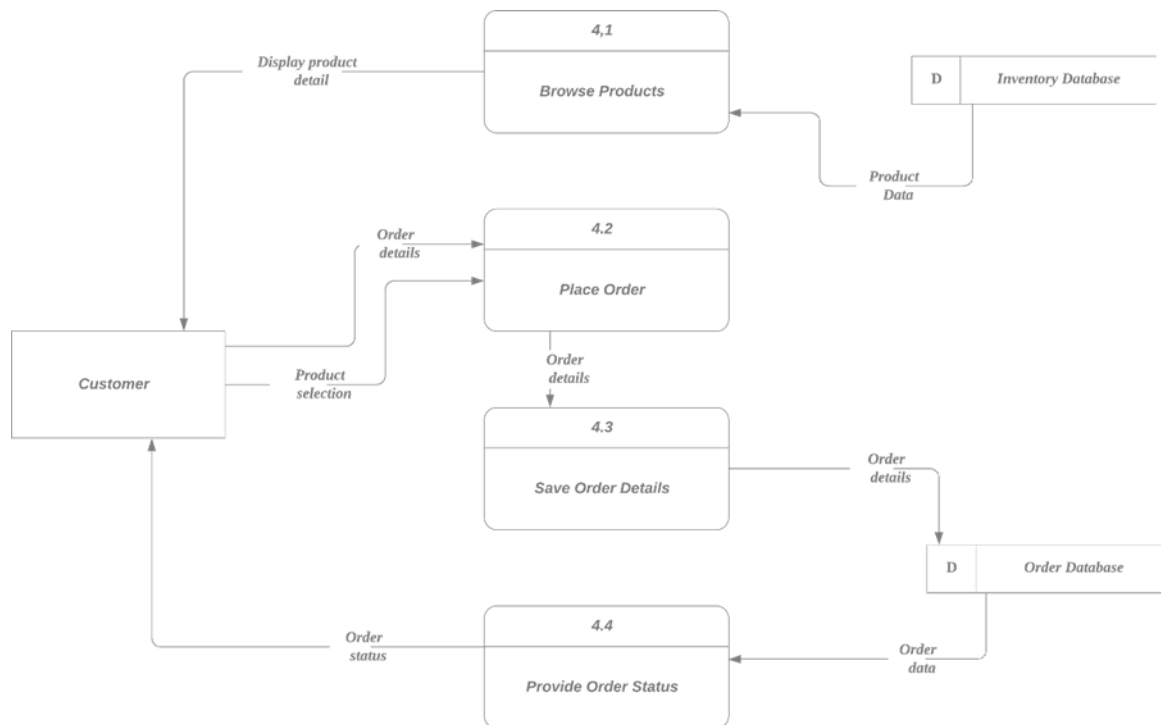


Figure A3 Data Flow Diagram Level 1 Manage Order

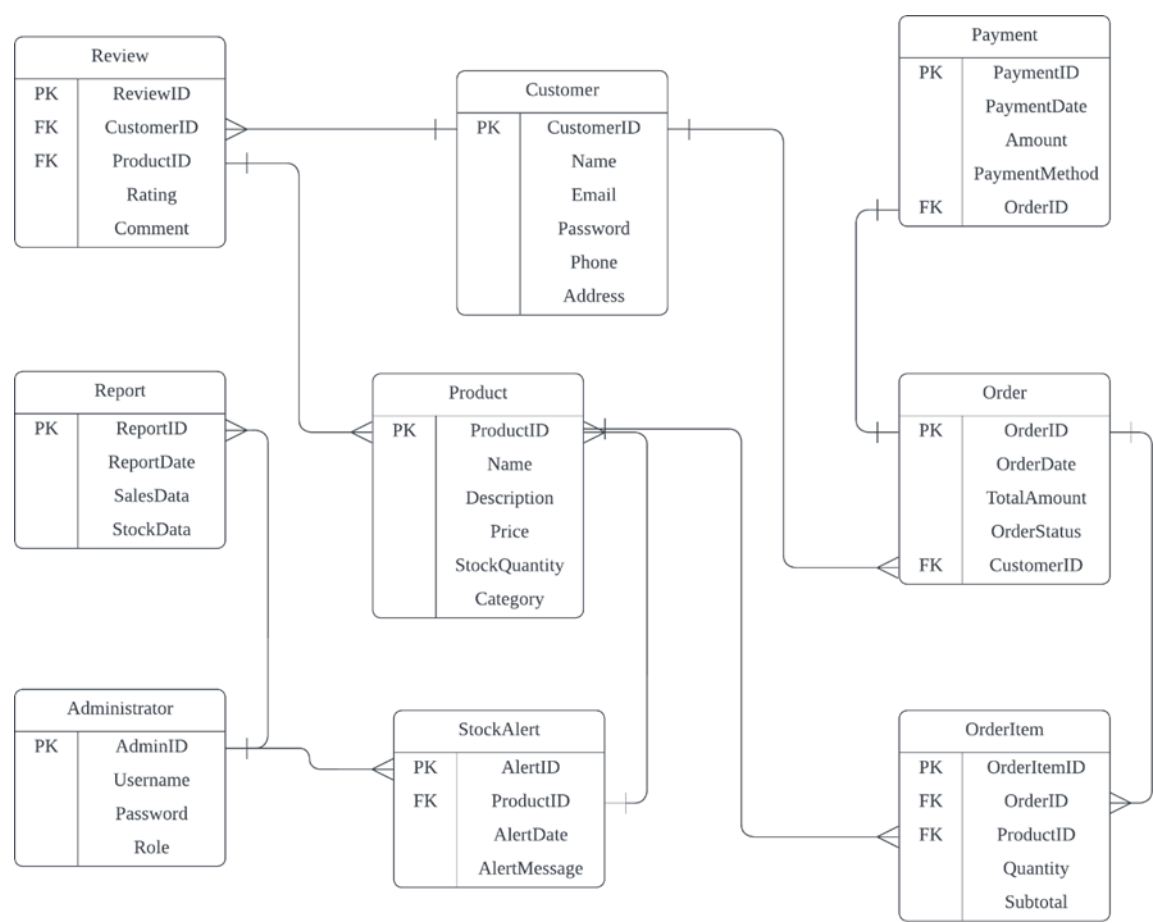


Figure A3 Entity Relationship Diagram

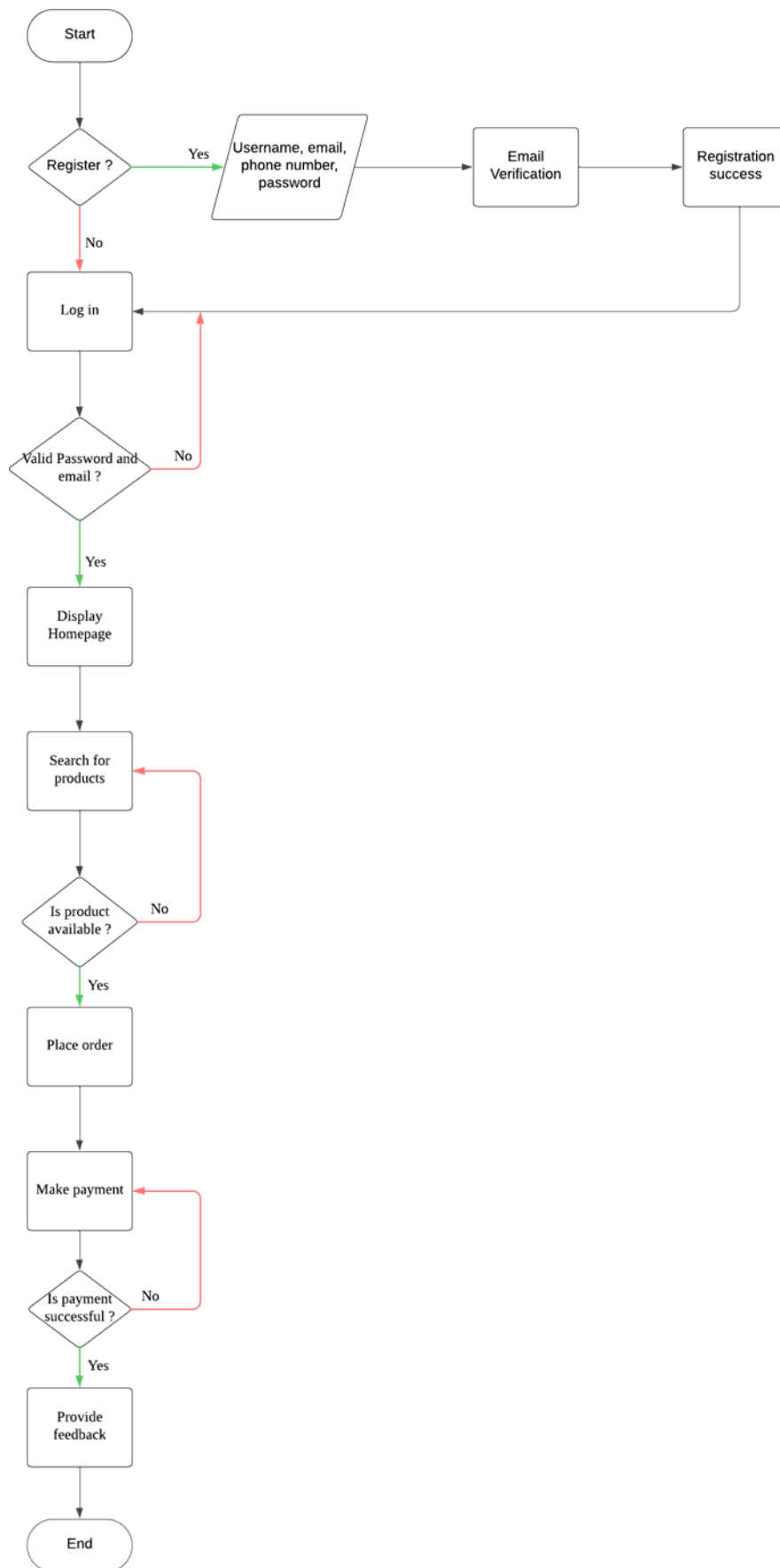


Figure A5 Customer Flowchart



Figure A6 Login Page Interface

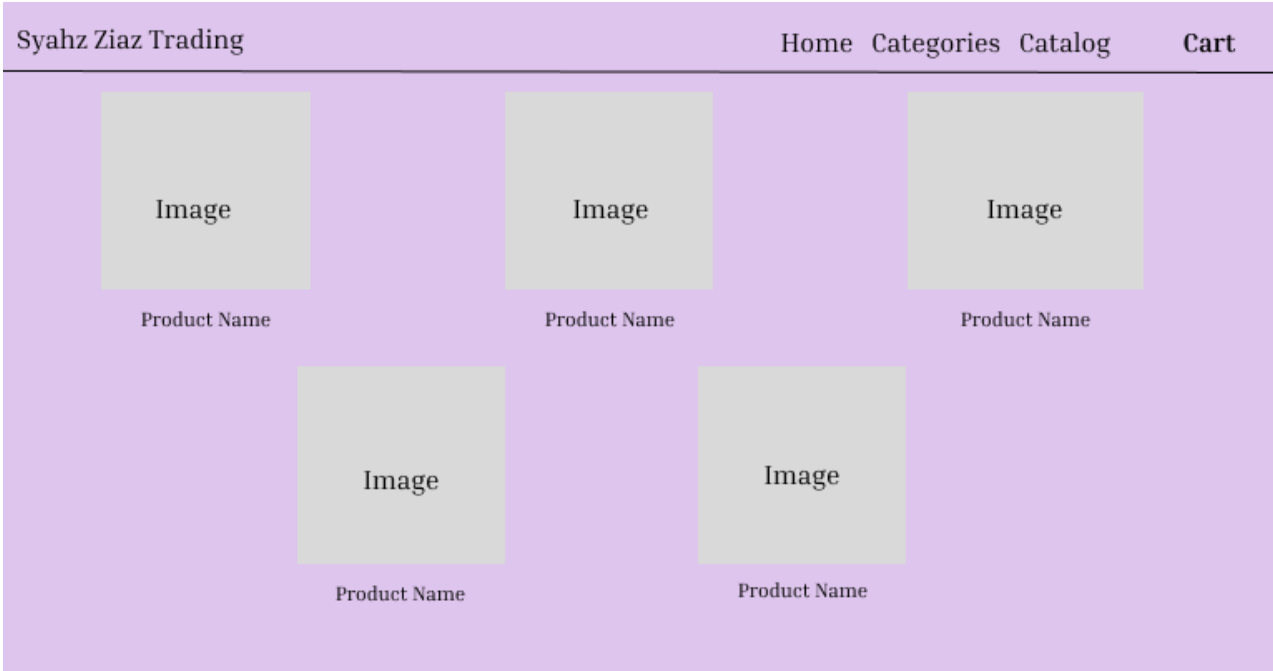


Figure A7 Product Catalog Interface