SmartFit: Augmented Reality-Integrated Footwear Retail And Customization Portal With Ai-Powered Assistance

SmartFit: Augmented Reality-Integrated Footwear Retail and Customization Portal is a web-based system that enhances the AR shopping experience while also managing transactions and inventory. It allows customers to try on shoes virtually and explore various styles while helping to manage stock and track sales more efficiently.

The goal of this project is to simplify shoe retail by managing orders, tracking inventory, helping employees, and improving customer experience.

Objectives of the Study

The main objective of the study was to develop and implement an Augmented Reality-Integrated Footwear Retail and Customization Portal with AI-Powered Assistance, which aims to manage footwear shops and enable customers to virtually fit and customize shoes through AR model viewing and an AI chatbot.

Specifically, the study aims to:

- Design a portal that is capable of:
    a. Allowing all users to register through the registration module;
    b. Providing shop owners and add employees with an inventory management module to update stock levels and manage the product catalog through inventory module;

c. Enabling customers to access the augmented reality website that lets them try on the shoes virtually;
d. Offering a basic customization option for shoes that allows customers to personalize their selections and receive cost estimates through the customization module;
e. Facilitating customers to place shoe orders easily through the ordering module;
f. Implementing a tracking system that allows customers to monitor the status of their shoe orders in real time;
g. Integrating AI-powered customer support to assist customers with their inquiries;
h. Establishing a feedback system where users can submit ratings and reviews; and
i. Creating a report generation to collect data from the system for easy report creation.

- Create a system using Java EE (Jakarta EE), DeepAR, Firebase, an internet connection, and Windows OS (10 or 11) as software requirements and a desktop computer, laptop, printer, router, and a mobile device as a hardware requirements.
- Test and improve the system in terms of functional suitability, usability, maintainability, and security.

- Evaluate the performance of the system based on ISO 25010 characteristics such as functional suitability, maintainability, usability, performance efficiency, compatibility, reliability, security, and portability.

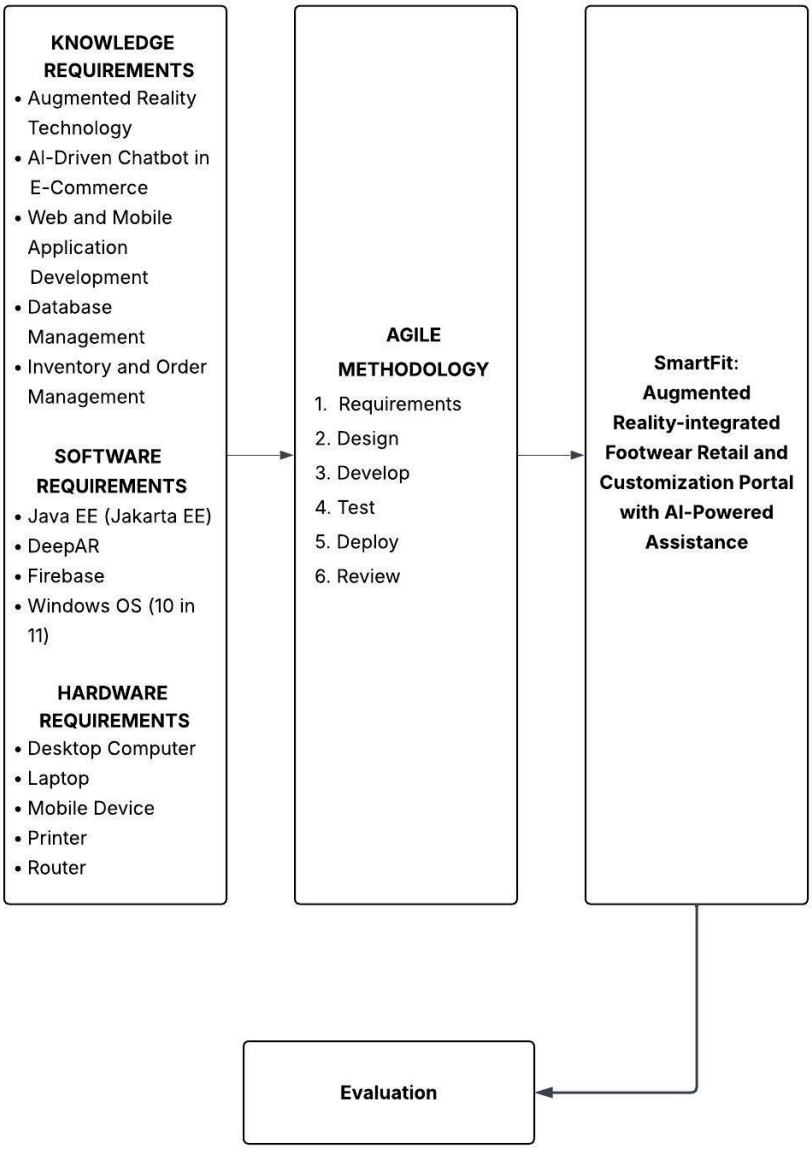


Figure 1.0 Conceptual Model of the Study

Figure 1 represents the conceptual model of the study which includes four phases, namely Input, Process, Output, and Evaluation.

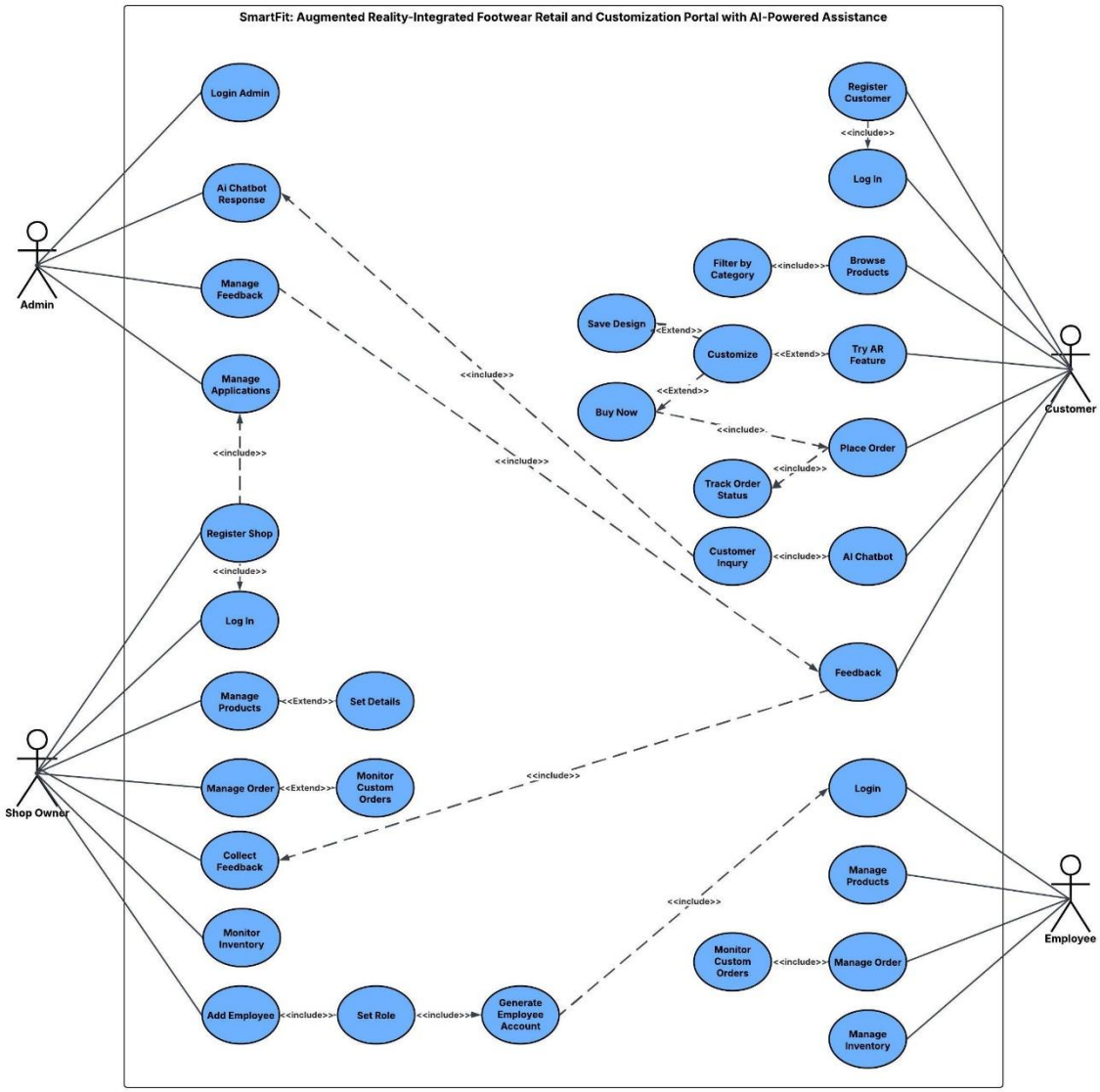


Figure 2.0 Use Case Diagram

Figure 2 shows the use case diagram of the SmartFit platform which is an augmented reality integrated footwear retail and customization portal with AI enhanced support. There are four key actors accommodated by the system; Customer, Shop Owner, Employee, Admin. Customers are able to register or log in, browse and filter products, make use of the AR feature through the website, place and track orders, manage their cart and profile, provide feedback and

engage the AI chatbot. Shop Owners can register their shop, upload documents to be approved and once approved can operate on products, orders, inventory, receive low stock alerts and add employees. Employees have the same set of functionalities that a shop owner would have, such as product admin, order management and stock monitoring. But managers only have access to sales records. Also, employees are not allowed to add other employees. The Admin helps to check and approve or reject shop owners' applications with correct notification, administers AI chatbot responses by adding, editing or deleting entries to provide smooth communication in the platform.

Activity Diagram

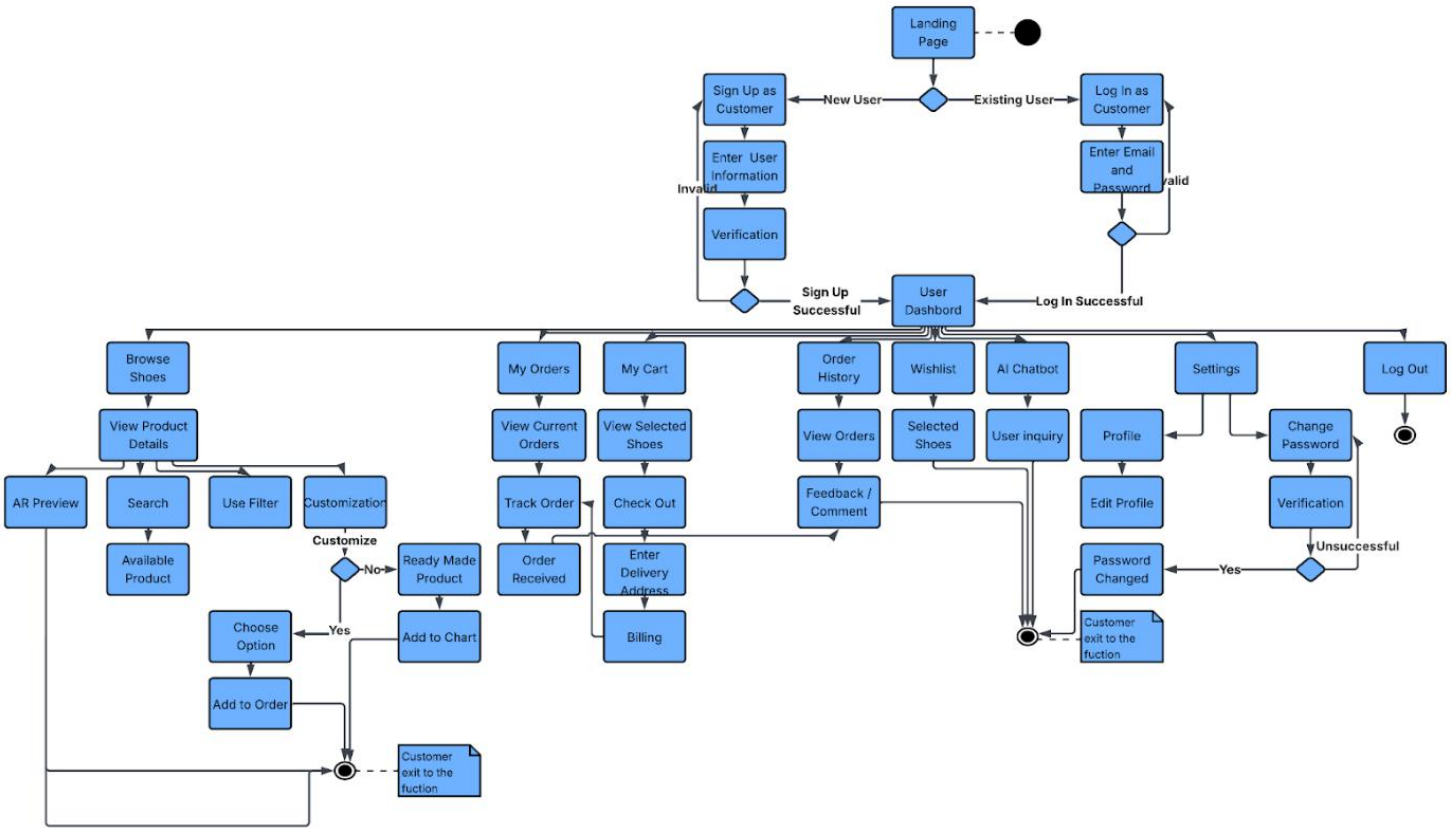


Figure 3.0 Activity Diagram (Customer Side)

In figure 3, In order to access the developed system, customers start from the landing page where they have an option to register or login. The new customer provides necessary information and gets verified through email before accessing the customers dashboard. Current customers can log in by using their credentials. Customers from the dashboard can explore offered footwear, read product descriptions, available stock, use filters and use augmented reality previews with the direct link to web browser. For customizable products, customers input choice options like color that is available, then place adds to cart or place order directly. Customers are able to see and track current orders, access checkout, enter delivery details, and choose payment methods using QR code. Upon successful payment a digital receipt was provided. Failed transactions trigger a retry option. Other features include order's history viewing, placement of feedback, wish list, customer inquiries using AI chatbot. Account settings enable uploading profiles and changing passwords and verify. There is a logout function which safely closes the session.

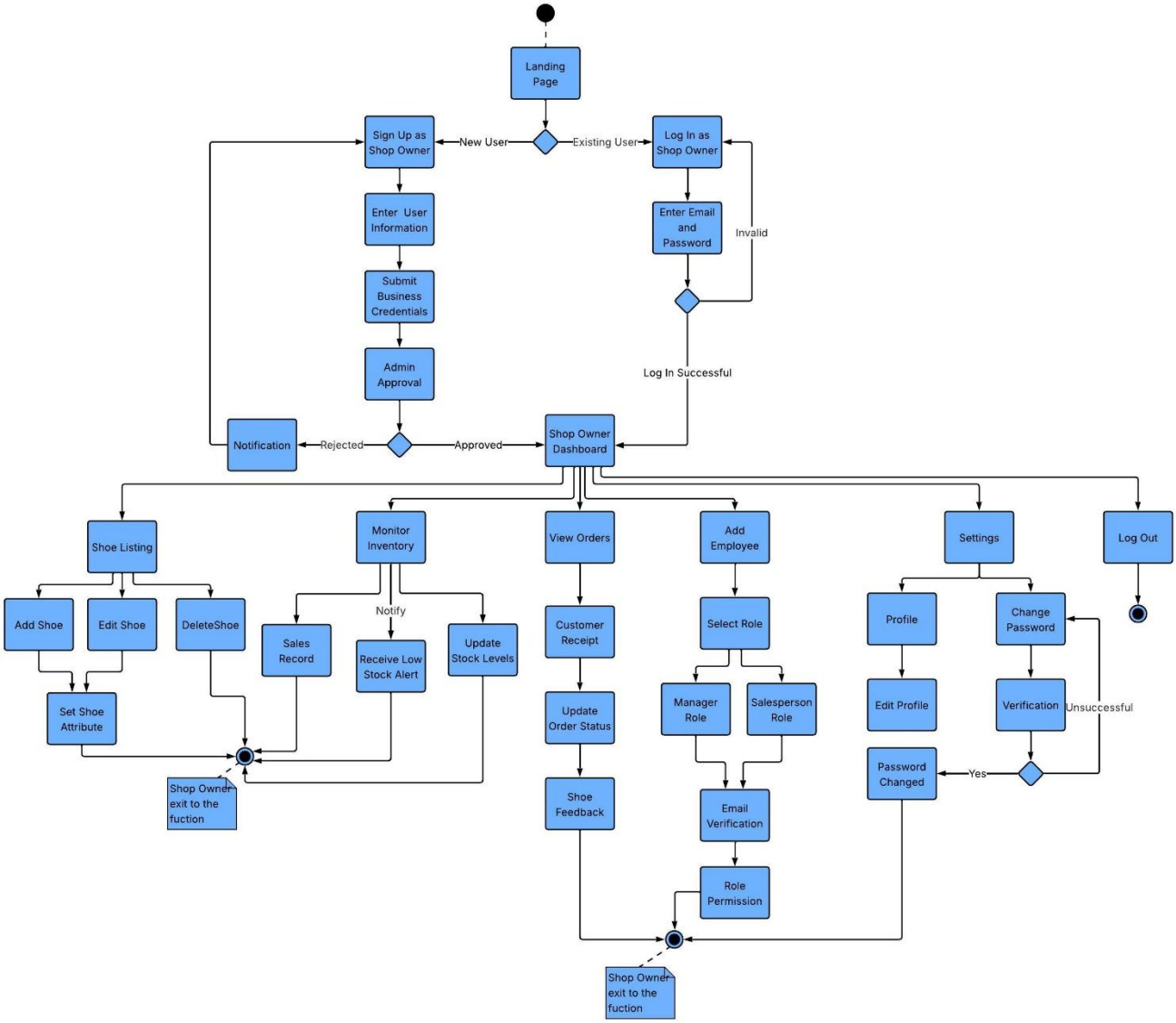


Figure 4.0 Activity Diagram (Shop Owner Side)

In figure 4, the shop owner may either register by providing personal information and business credentials for admin approval or log in using authorized credentials. After approval or successful login, the shop owner is able to enter the dashboard. In the dashboard, the shop owner can place products by adding,

editing, or deleting shoes, whereby one can even detail a particular product specification. It supports inventory monitoring, sales records, low stock notifications are received, and update stock levels. Also, the shop owner can control customer orders, view order details, issue receipts, update order status, and view customer feedback. The shop owner can also manage employees by assigning them roles such as manager or salesperson, with permission attached to roles through email verification. In addition, account settings enable the shop owner to edit profile information and reset passwords but only on verification. The activity closes once the shop owner logs-out or leaves the function.

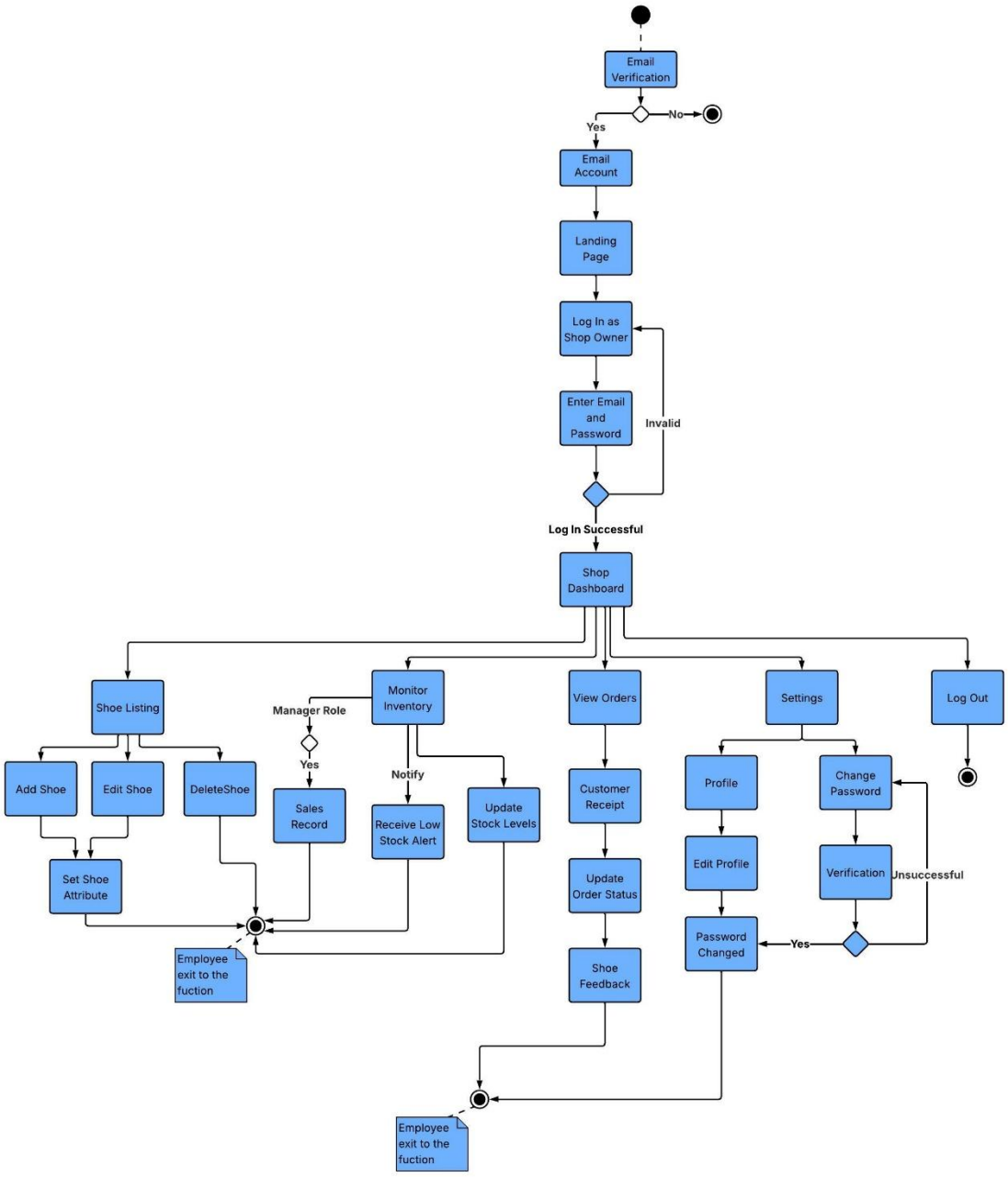


Figure 5.0 Activity Diagram (Employee Side)

In Figure 5, the employee begins with email verification. Once they have been verified, they have to log in using their credentials. After logging in, it directed to the shop dashboard. The employees can control shoe listings, adding, editing, or deleting shoes. Employees can also monitor stock, have alerts on low stock and

update stock levels. Employees can view and update customer orders, accessing customer receipts and respond to customer feedback. In settings, they may update their profile and change their password after verification. However, only employees having a manager role can access the sales record. The session is ended when the employee signs out or exits the function.

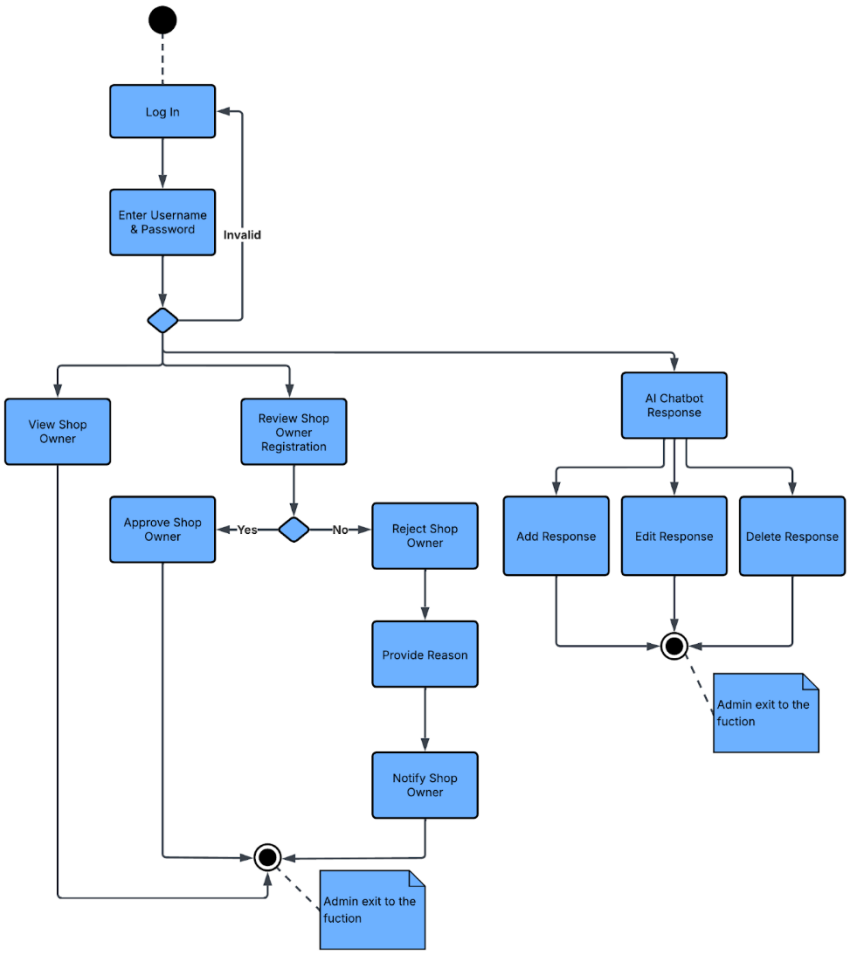


Figure 6.0 Activity Diagram (Admin Side)

In figure 6, to log into the admin side within the developed system, the admin first login using credentials. The admin was made to open up system functionalities such as viewing the registered shop owners and viewing the shop owners'

registration requests from new ones. While going through the review, the admin evaluates the sent business credentials and documents. The administrator approves the shop owner then on the registration if it meets the appropriate requirements. Otherwise, the registration is denied, and a reason is given and a formal notification is given to the shop owner. The admin controls AI chatbot responses such as add, edit, or delete the predefined system answer to customer questions. The administrator can then move on to perform other tasks, or when done exiting the administrative interface he can exit the entire session.

Database Design

The database design contains the entity-relationship models and data dictionaries that were used to develop the system. Some of the major tables are Customer, Shoe, and Shop Table.

Entity Relationship Diagram

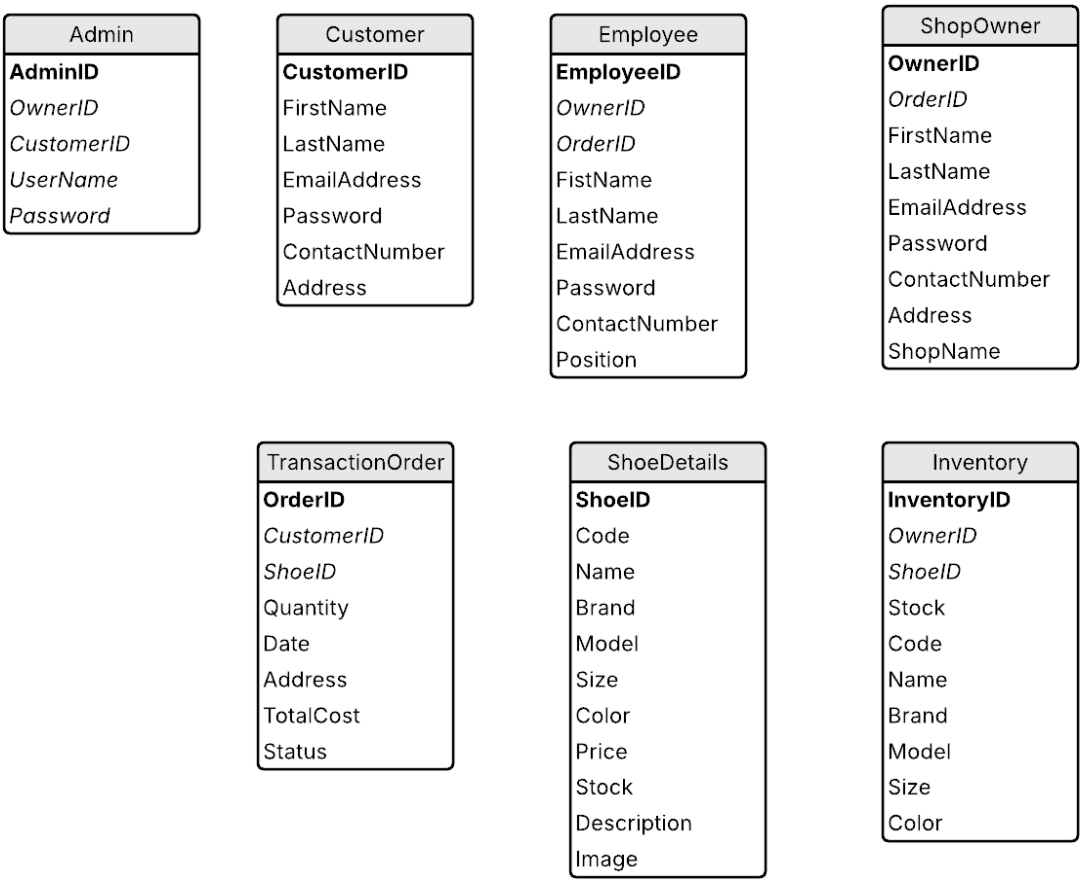


Figure 7.0 Entity Relationship Model

Figure 7 illustrates the NoSQL data model of SmartFit: A Developed Augmented Reality-Integrated Footwear Retail and Customization Portal with AI-Powered Assistance uses Firebase Firestore to fund shoe sale operations by controlling inventory, handling user-accounts, and transactions. The database is designed into various collections of Admins, Customers, ShopOwners,

Employees, ShoeDetails, Inventory, and TransactionOrder all of which contain documents containing the appropriate information.

The management of user accounts is carried out through the admins collection, which can work with the documents of both the Customers and ShopOwners collections. Customers collection relates to TransactionOrders collection where data such as purchase records of customers is stored. Equally, the ShopOwners collection refers to the Employees and Inventory collection to trace their store staff and product stocks.

Each transaction is saved to the TransactionOrders collection and can have transaction reference to the employee who placed the order and embedded or linked shoe records of the ShoeDetails collection. The availability and quantity of products are handled in the Inventory collection that keeps shop-specific data and references to products in ShoeDetails. This system enables every shop owner to have complete access to his inventory as well as enabling scalability and real-time data access and updating across the platform.

Data Dictionary

This explains what each data element means and how to use it correctly. It includes metadata about data elements, which helps define their scope and characteristics and the rules for how they should be used and applied.

Table 1.0 Customer Table

System Name: Smartfit: Augmented Reality-Integrated Footwear Retail and Customization Portal with AI-Powered Assistance				
Subject: Customer Table				
PK	FK	Field Name	Data Type	Description
Yes	No	customer_id	INT	Customer ID
No	No	fname	VARCHAR	First Name
No	No	lname	VARCHAR	Last Name
No	No	email_address	VARCHAR	Email Address
No	No	password	VARCHAR	Password
No	No	contact_number	INT	Contact Number
No	No	address	VARCHAR	Address

Table 1.0 displays the Customer table of the Smartfit: Augmented Reality-Integrated Footwear Retail and Customization Portal with AI-Powered Assistance. This table holds the data of the customer. This table's fields include: customer_id, fname, lname, email_address, password, contact_number, and address.

Table 2.0 Shoe Table

System Name: Smartfit: Augmented Reality-Integrated Footwear Retail and Customization Portal with AI-Powered Assistance				
Subject: Shoe Table				
PK	FK	Field Name	Data Type	Description
Yes	No	shoe_id	INT	Shoe ID
No	No	code	INT	Code
No	No	name	VARCHAR	Name
No	No	brand	VARCHAR	Brand
No	No	model	VARCHAR	Model
No	No	size	INT	Size
No	No	color	VARCHAR	Color
No	No	price	INT	Price
No	No	stock	INT	Stock
No	No	description	VARCHAR	Description
No	No	image	IMAGE	Image

Table 2.0 presents the Shoe table of the Smartfit: Augmented Reality-Integrated Footwear Retail and Customization Portal with AI-Powered Assistance. This table holds the data of the shoes. This table's fields include: shoe_id, code, name, brand, model, size, color, price, stock, description, and image.

Table 3.0 Shop Table

System Name: Smartfit: Augmented Reality-Integrated Footwear Retail and Customization Portal with AI-Powered Assistance				
Subject: Shop Table				
PK	FK	Field Name	Data Type	Description
Yes	No	shop_id	INT	Shop ID
No	Yes	order_id	INT	Order ID
No	No	fname	VARCHAR	First Name
No	No	lname	VARCHAR	Last Name
No	No	email_address	VARCHAR	Email Address
No	No	password	VARCHAR	Password
No	No	contact_number	INT	Contact Number
No	No	address	VARCHAR	Address
No	No	shop_name	VARCHAR	Shop Name

Table 3.0 shows the Shop table of the Smartfit: Augmented Reality-Integrated Footwear Retail and Customization Portal with AI-Powered Assistance. This table holds the data of the shop. This table's fields include: shop_id, order_id, fname, lname, email_address, password, contact_number, address, and shop_name.

Project Development

The system that was developed have used an Agile-based approach, focsuing on flexibility, teamwork, and continuous deployment. The use of Agile allows the development team to deliver functionality in cycles; for example, the Augmented Reality capability, Artificial Intelligence (AI) assistance, and shoe

design customizing are divided into smaller, more manageable pieces and delivered in Sprints. The Agile methodology allows for continuous feedback from users and quick responses, so the system can be adjusted quickly to meet changing goals and user expectations. Even though there was a degree of planning done initially to define the project's scope, the focus remained on adaptability and responsiveness; therefore, the development and testing activities were performed concurrently so that the team could maximize efficiency while continuously refining the system via real-time feedback and incremental enhancements.

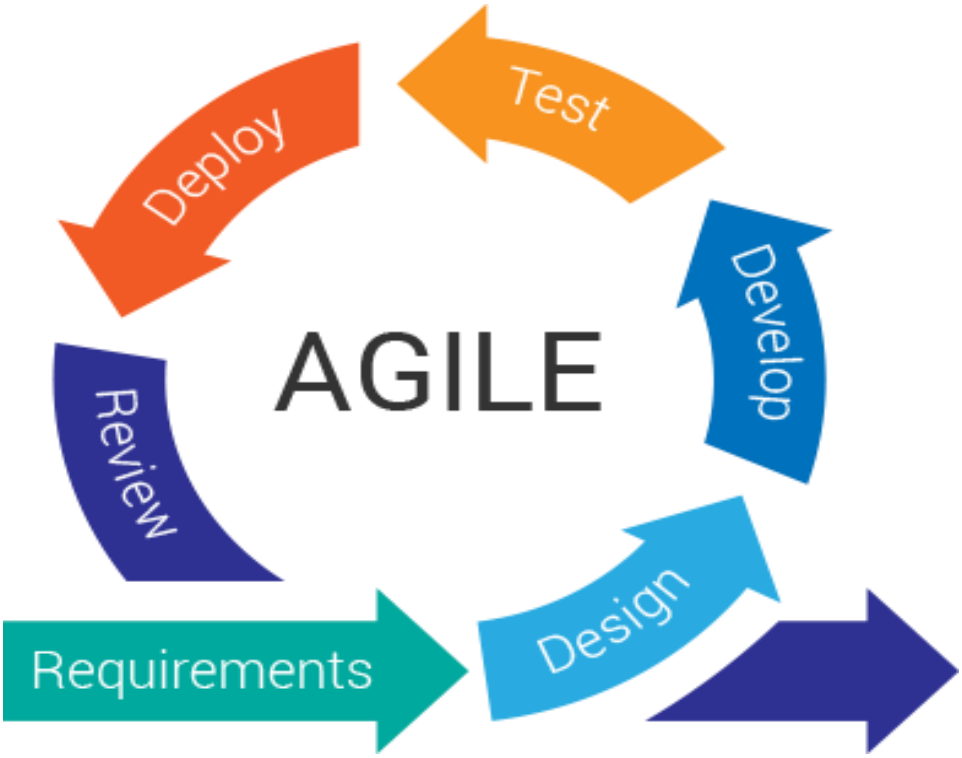
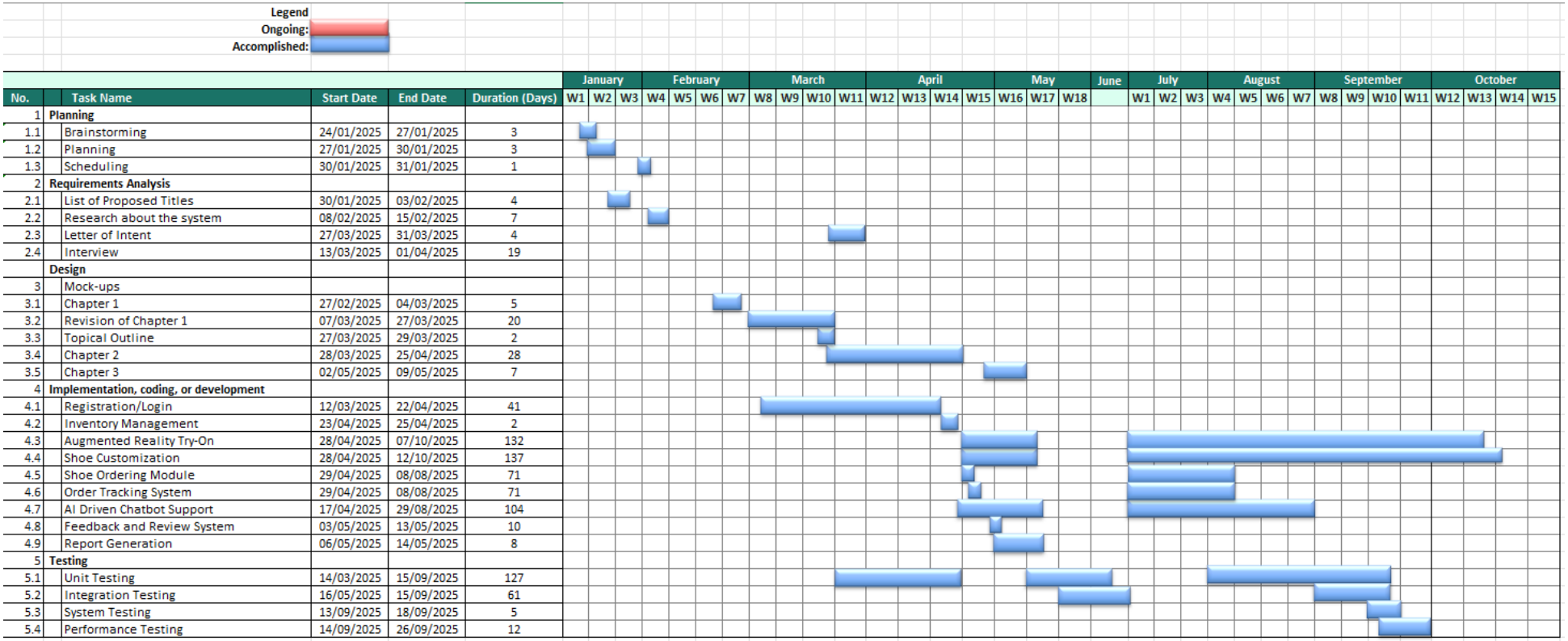


Figure 8.0 Agile Model

Reference: https://medium.flutterdevs.com/what-is-agile-methodology-in-mobile-app-development- fa83ed6ac09

Gantt Chart

This section enable activities to be clustered in phases to view the organization of the project better and to acquaint the project teams with the total timetable and workflow.



No.	Task Name	Start Date	End Date	Duration (Days)
1	**Planning**			
1.1	Brainstorming	24/01/2025	27/01/2025	3
1.2	Planning	27/01/2025	30/01/2025	3
1.3	Scheduling	30/01/2025	31/01/2025	1
2	**Requirements Analysis**			
2.1	List of Proposed Titles	30/01/2025	03/02/2025	4
2.2	Research about the system	08/02/2025	15/02/2025	7
2.3	Letter of Intent	27/03/2025	31/03/2025	4
2.4	Interview	13/03/2025	01/04/2025	19
	Design			
3	Mock-ups			
3.1	Chapter 1	27/02/2025	04/03/2025	5
3.2	Revision of Chapter 1	07/03/2025	27/03/2025	20
3.3	Topical Outline	27/03/2025	29/03/2025	2
3.4	Chapter 2	28/03/2025	25/04/2025	28
3.5	Chapter 3	02/05/2025	09/05/2025	7
4	**Implementation, coding, or development**			
4.1	Registration/Login	12/03/2025	22/04/2025	41
4.2	Inventory Management	23/04/2025	25/04/2025	2
4.3	Augmented Reality Try-On	28/04/2025	07/10/2025	132
4.4	Shoe Customization	28/04/2025	12/10/2025	137
4.5	Shoe Ordering Module	29/04/2025	08/08/2025	71
4.6	Order Tracking System	29/04/2025	08/08/2025	71
4.7	AI Driven Chatbot Support	17/04/2025	29/08/2025	104
4.8	Feedback and Review System	03/05/2025	13/05/2025	10
4.9	Report Generation	06/05/2025	14/05/2025	8
5	**Testing**			
5.1	Unit Testing	14/03/2025	15/09/2025	127
5.2	Integration Testing	16/05/2025	15/09/2025	61
5.3	System Testing	13/09/2025	18/09/2025	5
5.4	Performance Testing	14/09/2025	26/09/2025	12

Figure 9.0 Gantt Chart

Figure 9.0 represents the Gantt chart that shows the timeline of activities, or phases listed, which consist of planning, requirements analysis, design, development, and testing. The system development started on January 27, 2025, to October 20, 2025. The proponents started the development with brainstorming, deciding which title or topic to propose based on some circumstances. When the final title was approved, the proponents started planning the project proposal and scheduling the development process of the system. In gathering data, they started preparing a letter of intent addressing the company's approval of their research, followed by conducting an interview with the company. After gathering the data needed, the proponents started developing the system. They began initially working with the documents so that they could plan and organize the process they followed and serve as a basis after deciding what to do in developing the web and application. After completing the whole system, the proponents conducted a series of testing procedures to ensure that the system is working properly starting with the unit testing, followed by the integration testing, then the system testing, and lastly, the performance testing.

Project Structure

This part shows the major forms of the system and highlights its main capabilities with a corresponding screenshot. This includes the inventory management module, augmented reality features, customization options, ordering module, order tracking system, AI-powered chatbot support, and a feedback system.

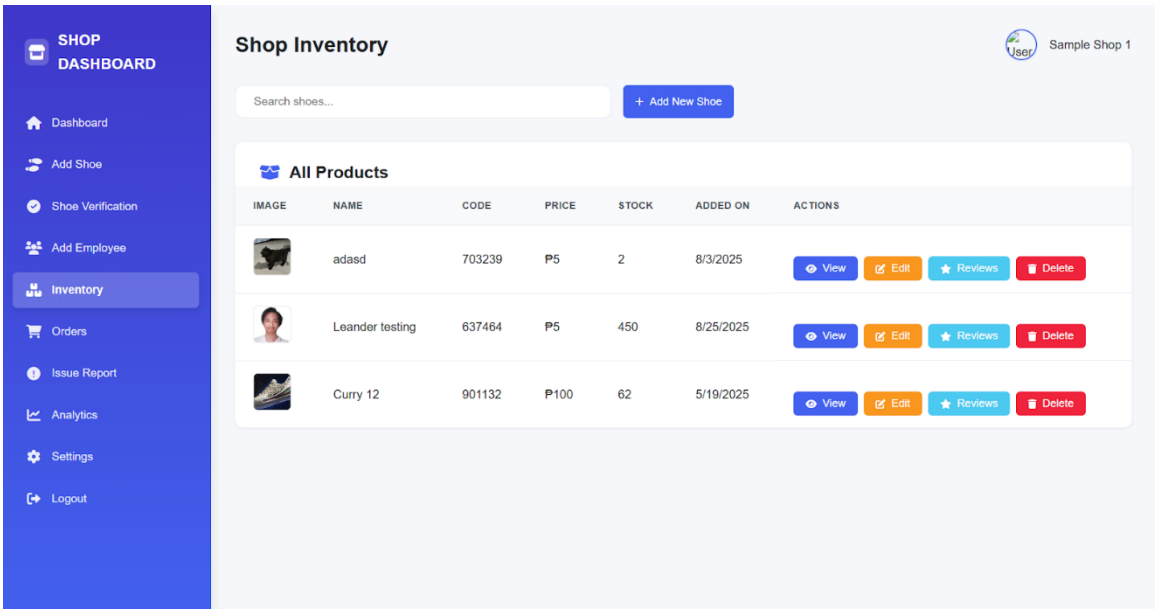


Figure 10. Inventory Management Module

Figure 10 shows the inventory management module that helps the shop owners and employees to easily manage the inventory, process orders, and update product availability.

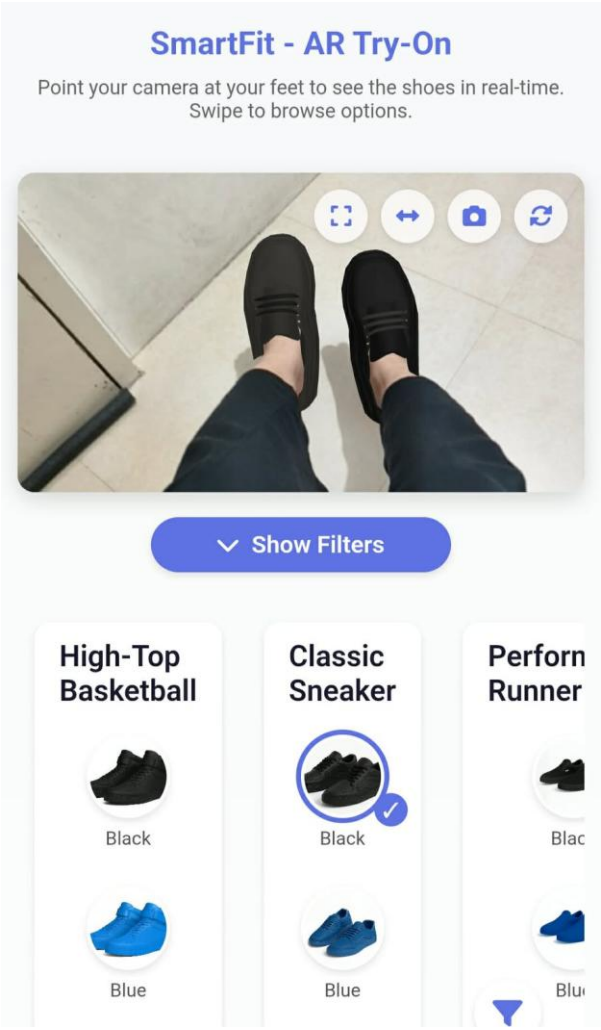


Figure 11. Augmented Reality (AR) Try-On

Figure 11 presents that the system allows customers to use the website to try on shoes virtually using the Augmented Reality feature before purchasing.

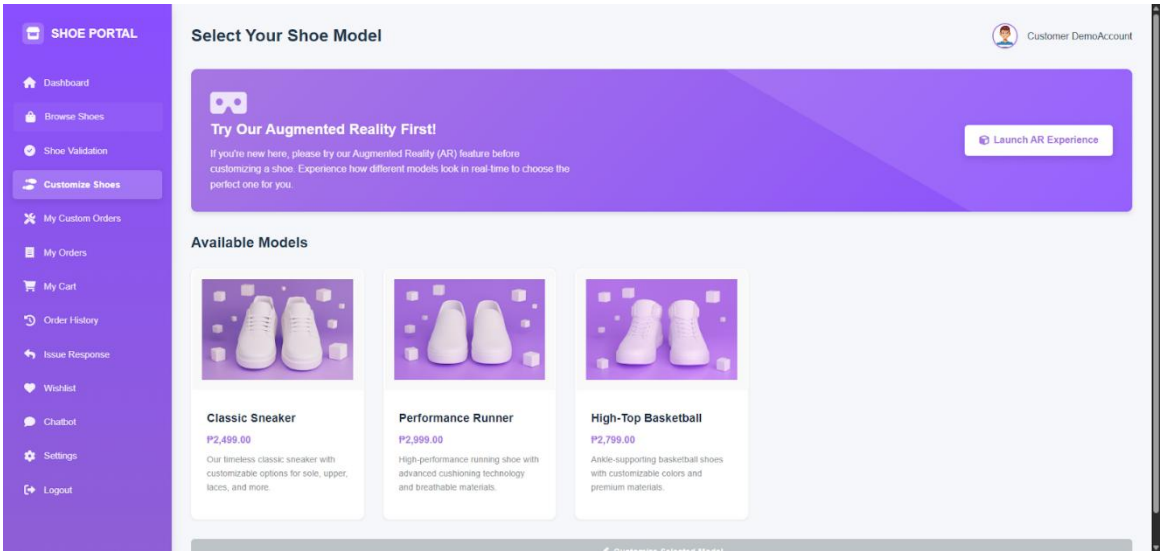


Figure 12. Customization

Figure 12 shows that the system allows customers to customize shoe designs and view the financial breakdown and total cost before placing an order.

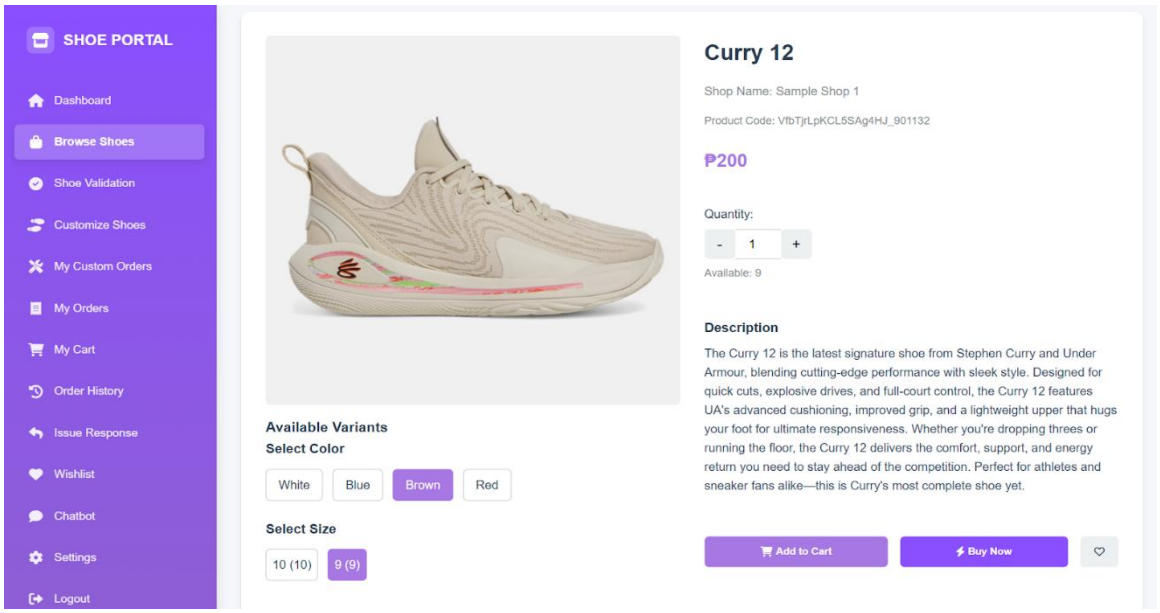


Figure 13. Ordering Module

Figure 13 displays the ordering page wherein the customer can easily place orders. It features the product details, select variants, and choose a quantity. Customers can either add the item to their cart or click buy now to proceed to checkout.

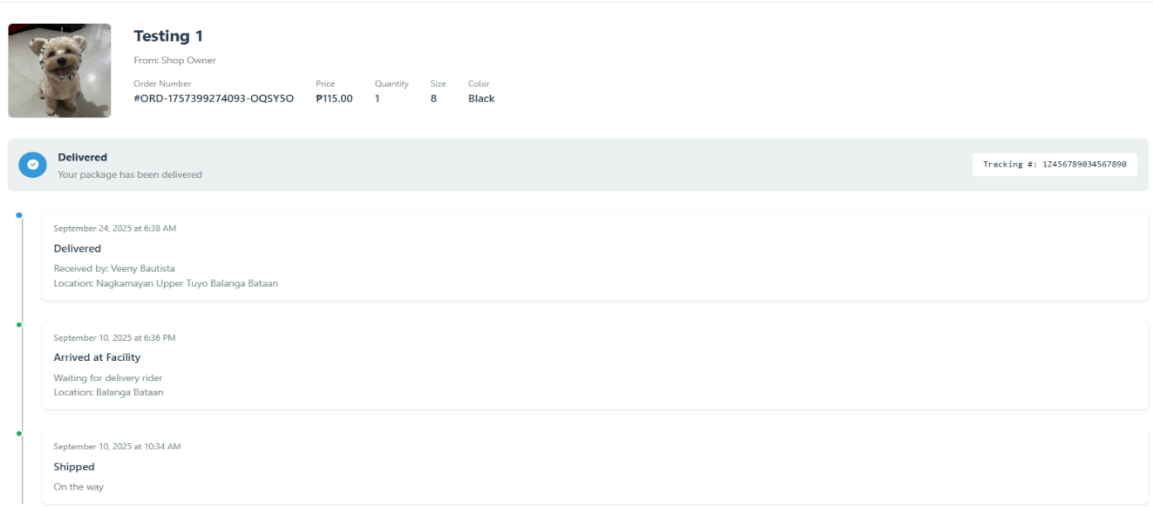


Figure 14. Tracking System

Figure 14 demonstrates how the system allows customers to track their orders and enables the shop owner and employees to update their delivery status.

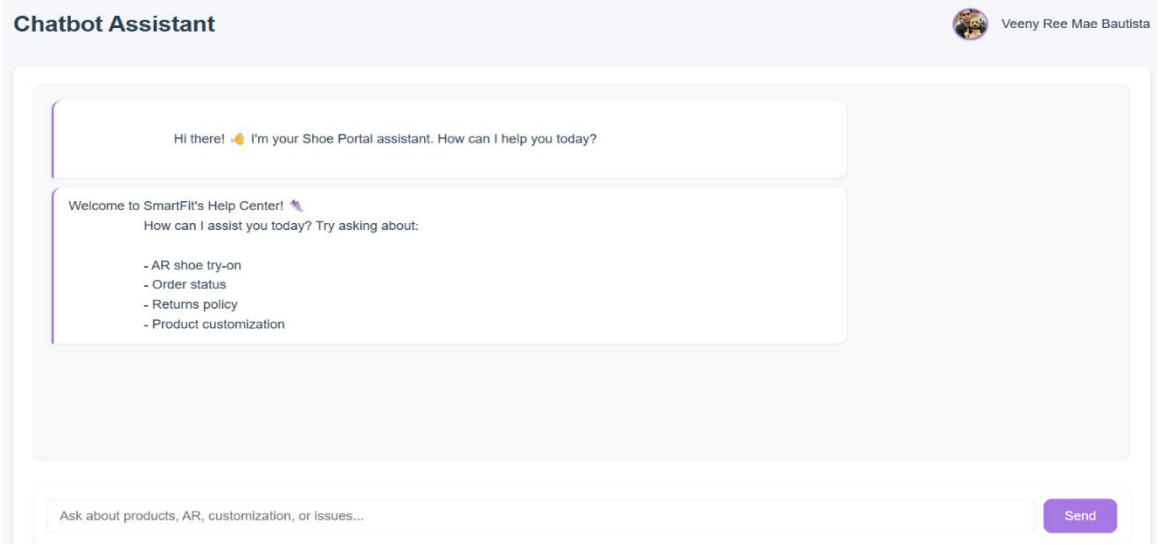


Figure 15. AI-Powered Chatbot Support

Figure 15 displays that the system provides an AI-powered chatbot on the website to assist customers with questions about the system and its functions.

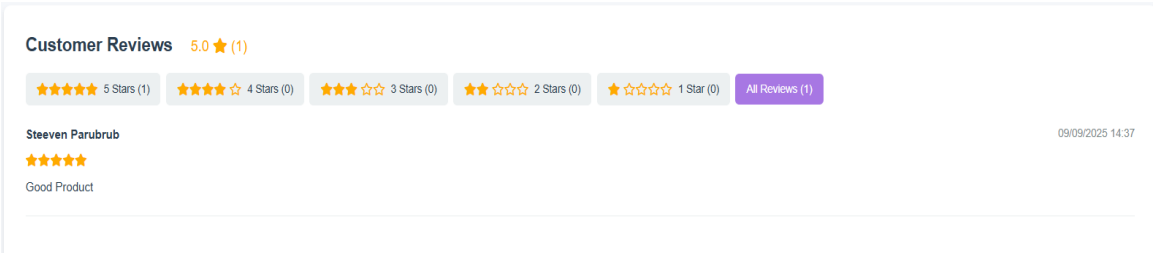


Figure 16. Feedback System

Figure 16 shows that the system allows customers to give product reviews and ratings, which shop owners can view to improve their services.

Project Capabilities and Limitations

The following are the capabilities of SMARTFIT: Augmented Reality-Integrated Footwear Retail and Customization Portal with AI-Powered Assistance:

1. Allowing all users to register through the registration module;
2. Providing shop owners and adding employees with an inventory management module to update stock levels and manage the product catalog through the inventory module;
3. Enabling customers to access the augmented reality website that lets them try on the shoes virtually;
4. Offering a basic customization option for shoes that allows customers to personalize their selections and receive cost estimates through the customization module;
5. Facilitating customers to place shoe orders easily through the ordering module;
6. Implementing a tracking system that allows customers to monitor the status of their shoe orders in real time;
7. Integrating AI-powered customer support to assist customers with their inquiries;
8. Establishing a feedback system where users can submit ratings and reviews; and
9. Creating a report generation feature to collect data from the system for easy report creation.

The following are the limitations of the developed system:

1. The system exclusively features products from a single shoemaker.

2. AR try-on is also offered only on compatible devices that is supported by WebAssembly (Wasm) and WebGL.
3. Although the AR feature doesn't provide accurate foot measurements, it effectively enables visual previews of the items.
4. The platform supports the Classic sneaker, Performance runner, and High-top basketball models of AR shoes.
5. Only the authorized users can manage the inventory.
6. The system does not process payment transactions.
7. It needs a stable internet connection for all core functions.

Test Results

The test results show the different testing procedures for the major capabilities of the system. It presents the items tested, the expected outputs, and the actual outputs. The developers checked the system's performance and verified its functionality to ensure it meets the intended requirements.

Table 6.0 Inventory Management Module Test Script	
Date	September 09, 2025
Tested by	Marc Steeven Parubrub
Test Case Number	001
Test Case Name	Inventory Management Module
Test Case Description	This allows the shop owner and employees to update stock levels and manage the product catalog.

Item(s) to be tested	
1 2 3 4 5 6 7 8 9 10 11	Inventory Add New Shoe Button (X) Button Add Size Button Remove Variant Button Add Color Variant Button Add Shoe Button View Button Edit Button Reviews Button Delete Button
Procedural Steps	
1 2 3 4 5 6 7 8 9 10 11	After Logging in, Click the Navigation Bar “Inventory” Click Add New Shoe Button Fill in the required information about the shoes and upload an image. Click (X) Button Click Add Size Button Click Remove Variant Button Click Add Color Variant Click Add Shoe Click View Button Click Edit Button Click Reviews Button Click Delete Button

Specifications			
Input	Expected Output/ Result	Pass Y/N	Actual Result/Output

Inventory	When Inventory is clicked, the system prompts the user to the Shop Inventory Page.	Y	User directed to shop inventory page
Add New Shoe Button	When the Add New Shoe Button is clicked, the user redirected to the Add New Shoe Form.	Y	User directed to add new shoe form
(X) Button	When the Close Button is clicked, it should remove the size & stock.	Y	The size & stock are removed.
Add Size Button	When the Add Size Button is clicked, it should add a size & stock to the form.	Y	Size & stock are added to the form
Remove Variant Button	When the Remove Variant button is clicked, it should remove the color variant that the user entered.	Y	The color was removed from the variant.
Add Shoe Button	When the Add Shoe button is clicked, all of the shoe information that the user has entered should be upload to the shop inventory.	Y	Uploaded in the Shop Inventory
View Button	When the View button is clicked, the entire shoe details should appear.	Y	View the Shoe Details
Edit Button	When Edit button is clicked, the user can edit the shoe details.	Y	Edit the shoe details
Reviews Button	When the Review Button is clicked, the customer reviews appear.	Y	Customer Reviews
Delete Button	If the Delete button is clicked, the system prompts a confirmation whether the user is certain about the deleting the shoe product. If user clicks the Cancel button, the shoe product was not deleted. If user clicks the OK button, the shoe product should remove from the inventory.	Y Y Y	Confirmation Shoe Product is not deleted Shoe Product is deleted

Table 6.0 represents the test script for Inventory Management Module. The system inventory features were tested and worked as expected. The shop owner and employees are able to add, edit, and delete shoe products, sizes, colors, and stock levels. Customers are also able to review the products and reviews on the module. In case of wrong action being chosen, the system requires confirmation before the changes are affected.

Table 7.0 Augmented Reality (AR) Try-On Test Script	
Date	September 09, 2025
Tested by	Veeny Ree Mae Bautista
Test Case Number	002
Test Case Name	Augmented Reality (AR) Try-On
Test Case Description	This allows the user to try on shoes virtually using an augmented reality (AR) website.
Item(s) to be tested	
1 2 3 4 5 6 7 8 9 10 11	Try AR Now Switch Camera Running-White Running-Red Running-Black Running-Blue Basketball-White Basketball-Black Basketball-Red Basketball-Blue Close Button
Procedural Steps	

1	Click Try AR Now Button
2	Click Switch Camera
3	Click Running-White
4	Click Running-Red
5	Click Running-Black
6	Click Running-Blue
7	Click Basketball-White
8	Click Basketball-Black
9	Click Basketball-Red
10	Click Basketball-Blue
11	Click Close Button

Specifications			
Input	Expected Output/ Result	Pass Y/N	Actual Result/Output
Try AR Now	When the Try AR Now button is clicked, the user redirect to the DeepAR website.	Y	The user directed to the DeepAR website
Switch Camera	When the Switch Camera button is clicked, the user should switch the camera view (e.g., from front-facing to rear-facing or vice-versa).	Y	The user switches the camera view neither front nor rear view
Running-White	If the Running-White toggle switch button is clicked, the running-white effect should be enabled.	Y	The running-white effect was enabled and ready to view.
Running-Red	If the Running-Red toggle switch button is clicked, the running-red effect should be enabled.	Y	The running-red effect were enabled and ready to view.

Running-Black	If the Running-Black toggle switch button is clicked, the running-black effect should be enabled.	Y	The running-black effect was enabled and ready to view.
Running-Blue	If the Running-Blue toggle switch button is clicked, the running-blue effect should be enabled.	Y	The running-blue effect was enabled and ready to view.
Basketball-White	If the Basketball-White toggle switch button is clicked, the basketball-white effect should be enabled.	Y	The basketball-white effect was enabled and ready to view.
Basketball-Black	If the Basketball-Black toggle switch button is clicked, the basketball-black effect should be enabled	Y	The basketball-black effect was enabled and ready to view.
Basketball-Red	If the Basketball-Red toggle switch button is clicked, the basketball-red effect should be enabled	Y	The basketball-red effect was enabled and ready to view.
Basketball-Blue	If the Basketball-Blue toggle switch button is clicked, the basketball-blue effect should be enabled	Y	The basketball-blue effect was enabled and ready to view.
Close Button	After picking an effect and the Close button is clicked, the effect is ready to view.	Y	The user has viewed the effect.

Table 7.0 shows the test script for Augmented Reality Feature. As expected, the Augmented Reality (AR) Try-On buttons were tested and successfully passed the expected result. The customers were able to enable a variety of specific using their respective toggle switches, including all running and basketball effects. After an effect is chosen, clicking the close button successfully prepares the effect for viewing.

Table 8.0 Customization Test Script	
Date	September 09, 2025
Tested by	Marc Steeven Parubrub

Test Case Number	003
Test Case Name	Customization
Test Case Description	This allows the user to customize the available model in their own preference.
Item(s) to be tested	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	Customize Shoes Classic Sneaker under Available Model Performance Runner under Available Model High-Top Basketball under Available Model Customize Selected Model Button Shoe Sizes Body Color Standard Button under Laces Flat Button under Laces Elastic Button under Laces Laces Color Foam Button under Insole/Shoe Pad Gel Button under Insole/Shoe Pad Memory Foam under Insole/Shoe Pad Shoe Parts Button Size Reference Button Save Design Button Buy Now Button Payment Method Radio Button Edit Design Button Confirm Order Button
Procedural Steps	
1 2 3 4 5 6	Click the Navigation Bar “Customize Shoes” Click Classic Sneaker Button Click Performance Runner Button Click High-Top Basketball Button Click Customize Selected Model Button Click available Shoe Size

7	Click available Body Color
8	Click Standard Button under Laces
9	Click Flat Button under Laces
10	Click Elastic Button under Laces
11	Click available Laces Color
12	Click Foam Button under Insole/Shoe Pad
13	Click Gel Button under Insole/Shoe Pad
14	Click Memory Foam under Insole/Shoe Pad
15	Click Shoe Parts Button
16	Click Size Reference Button
17	Click Save Design Button
18	Click Buy Now Button
19	Click Edit Design Button
20	Click Confirm Order Button

Specifications			
Input	Expected Output/ Result	Pass Y/N	Actual Result/Output
Customize Shoes	When the Customize Shoes is clicked, the user should redirect to the Select your Shoe Model Page	Y	User directed Select your Shoe Model Page
Classic Sneaker	If the Classic Sneaker button is clicked, it should be selected, and the user is ready to customize the shoe.	Y	Classic Sneaker is selected
Performance Runner	If the Performance Runner button is clicked, it should be selected, and the user is ready to customize the shoe.	Y	Performance Runner is selected

High-Top Basketball	If the High-Top Basketball is clicked, it should be selected, and the user is ready to customize the shoe.	Y	High-Top Basketball is selected
Customize Selected Model Button	After the user selects one of the available models and the Customize Selected Model button is clicked, it should take the user to the Customization page.	Y	User was taken to the customization page
Shoe Size	When the user clicks any Shoe Size (5-15), that size is selected, and saved as the confirmed size for the order.	Y	Selected shoe size is saved
Body Color	When the user clicks a Body Color (White, Black, Blue, or Red), that color is selected, and saved as the primary body color for the shoe.	Y	Selected body color is saved
Standard Button	If the Standard option is clicked, Standard is instantly selected, and no additional price is added to the total cost.	Y	Standard is selected as the lace
Flat Button	If the Flat option is clicked, Flat is instantly selected and the price of +P150 is added to the total cost.	Y	Flat is selected as the lace
Elastic Button	If the Elastic option is clicked, Elastic is instantly selected and the price of +P200 is added to the total cost.	Y	Elastic is selected as the lace
Laces Color	When the user clicks a Laces Color (White, Black, Gray, Red, Green), that color is selected, and saved as the color for the lace style.	Y	Selected laces color has saved
Foam Button	If the Foam option is clicked, Foam is instantly selected, and no additional price is added to the total cost.	Y	Foam is selected as the Insole/Shoe Pad
Gel Button	If the Gel option is clicked, Gel is instantly selected and the price of +P150 is added to the total cost.	Y	Gel is selected as the Insole/Shoe Pad

Memory Foam Button	If the Memory Foam option is clicked, Memory Foam is instantly selected and the price of +P200 is added to the total cost	Y	Memory Foam is selected as the Insole/Shoe Pad
Shoe Parts Button	When the Shoe Parts button is clicked, the modal window is displayed that provides information for shoe components. If the Close button is clicked, the user should return to the customization page.	Y Y	Shoe information was displayed Return to the customization page
Size Reference Button	When the Size Reference button is clicked, the modal window is displayed that shows a conversion table for US, EU, and UK sizes along with the foot length in cm. If the Close button is clicked, the user should return to the customization page.	Y Y	Display the Size Chart Return to the customization page
Save Design Button	When the Save Design button is clicked, the system prompts a confirmation. If the OK button is clicked, the design progress should be saved.	Y Y	Confirmation Design progress was saved.
Buy Now Button	When the Buy Now button is clicked, the system prompts a confirmation of your order. If the OK button is clicked, the user should redirect to the checkout custom design page.	Y Y	Confirmation of the user's order has appeared The user directed to the checkout page.
Edit Design Button	When the Edit Design button is clicked, the user is navigated back to the customization page to edit their design.	Y	The user has return to the customization page.

Confirm Order Button	When the Confirm Order button is clicked, the order is submitted and displays the user order details.	Y	Shosws the order details of the user.

Table 8.0 exhibits the test script for Customization. The customization features were tested and successfully passed the expected result. The customers are able to select an available model of shoe to customize, including specifying the shoe size, selecting a body color, choosing a different laces option and a laces color, and selecting available insole/shoe pad. Furthermore, the system clearly shows the financial breakdown and total cost of the customized shoe, including a 12% VAT. Customers can either save the design or proceed to buy it now.

Table 9.0 Ordering Module Test Script	
Date	September 09, 2025
Tested by	Leander Ochea
Test Case Number	004
Test Case Name	Ordering Module
Test Case Description	This allows the user to easily place their order.
Item(s) to be tested	
1 2 3	Add to Cart Button Buy Now Button Place Order Button
Procedural Steps	

1	Click Add to Cart Button
2	Click Buy Now Button
3	Click Place Order Button

Specifications			
Input	Expected Output/ Result	Pass Y/N	Actual Result/Output
Add to Cart Button	When the Add to Cart button is clicked, the system prompt a notification that the item was successfully added to the cart. If the "OK" button is clicked, it should redirect to the ordering module.	Y Y	Notification appears Redirect to ordering module
Buy Now Button	If the Buy Now button is clicked, it should redirect to the checkout page where the customer can confirm their shipping information and payment method.	Y	Checkout Page
Place Order Button	If the Place Order button is clicked, the order confirmation should appear. If the Close(X) button is clicked, the user should be taken back to the previous page. If the Continue Shopping button is clicked, the order is confirmed, and the user should be redirected to the dashboard.	Y Y Y	Order Confirmation has appeared User has return to the previous page Order Confirmed

Table 9.0 displays the Ordering Module Test Script. In this form, the Add to cart, Buy now, and Place order button were tested and successfully met the expected result. The Add to cart button, Buy now button, and Place order button got its expected result and executed its proper function.

Table 10. Tracking System Test Script			
Date	September 09, 2025		
Tested by	Veeny Ree Mae Bautista		
Test Case Number	005		
Test Case Name	Tracking System		
Test Case Description	This allows the user to track the status of their orders, while also allowing shop owners and employees to update delivery progress.		
Item(s) to be tested			
1 2	My Order Track Package Button		
Procedural Steps			
1 2	Click My Order Click Track Package Button		
Specifications			
Input	Expected Output/ Result	Pass Y/N	Actual Result/Output
My Order	When the My Order is clicked, the My Order Page has appeared.	Y	My order page appeared
Track Package Button	If the Track Package is clicked, the user can monitor the status of their purchases in real time.	Y	The user can monitor the status of their package

Table 10 represents the Tracking System Test Script. As expected, the My Order and Track Package buttons were tested and successfully passed the test. Both buttons functioned properly and produced the expected results.

Table 11. AI-Powered Chatbot Support Test Script			
Date	September 09, 2025		
Tested by	Leander Ochea		
Test Case Number	006		
Test Case Name	AI-Powered Chatbot Support		
Test Case Description	This allows the user to access the AI-powered customer support for instant assistance with their inquiries.		
Item(s) to be tested			
1 2	Chatbot Send Button		
Procedural Steps			
1 2	Click the Navigation Bar “Chatbot” Input your questions or inquiries Click the Send Button		
Specifications			
Input	Expected Output/ Result	Pass Y/N	Actual Result/Output
Chatbot	When the Chatbot is clicked, the system prompts the user to the Chatbot Assistant Page	Y	Chatbot assistant page appeared
Send Button	When the Send button is clicked, the system sends the user's questions or inquiries to the API then prompt a response.	Y	The user can send questions or inquiries

Table 11 displays the test script for AI-Powered Chatbot Support. In this form, the Chatbot and Send button were tested and successfully passed the test. Both buttons executed properly and met their expected result.

Table 12. Feedback System Test Script	
Date	September 09, 2025
Tested by	Armabel Ramos
Test Case Number	007
Test Case Name	Feedback System
Test Case Description	This allows the user to submit ratings and reviews to the product they have purchased.
Item(s) to be tested	
1 2 3 4	Order History Leave Review Button Submit Feedback Button Edit Review Button
Procedural Steps	
1 2 3	Click the Navigation Bar “Order History” Click Leave Review Button Click Submit Feedback Button

4	Edit Review Button		
Specifications			
Input	Expected Output/ Result	Pass Y/N	Actual Result/Output
Order History	If the Order History is clicked, the system prompts the user into the Order History Page.	Y	The user directed to order history page
Leave Review Button	When the Leave Review button is clicked, the Ratings & Review Form should appear.	Y	Ratings & Review Form appear.
Submit Feedback Button	When the Submit Feedback button is clicked, the system prompts a warning message if the user enters inappropriate feedback. The warning message prompts the user to revise the feedback they have entered. If the user then clicks the OK button, they were taken back to the feedback form. After revising the feedback, and if the Submit Feedback button is clicked again, the feedback was saved.	Y Y Y	A warning message has appeared The user can revise their feedback Feedback has been saved
Edit Review Button	When the Edit Review button is clicked, the user should be able to revise their previously submitted review.	Y	The user can edit the review

Table 12 shows the Feedback System test script. As presented, the Order history, Leave review, Submit feedback, and Edit review buttons were tested and succesfully passed the test. All four buttons executed their proper function and delivered the expected results.