



TRƯỜNG ĐẠI HỌC FPT

MAVID SKINCARE

Software Requirement Document

– HoChiMinh, January 2025 –

Table of Contents

Record of Changes.....	4
I. Introduction.....	5
1. Product Background.....	5
2. Existing Systems.....	5
2.1 Skin Type Solutions Website - https://skintypesolutions.com	5
2.2 Cocoon Vietnam website - https://cocoonvietnam.com	7
3. Business Opportunity.....	9
4. Software Product Vision.....	9
5. Major Features.....	10
6. Limitations and Exclusions.....	11
II. Overall Description.....	11
1. Product Overview.....	11
2. Business Process.....	12
❖ Swimlane 1: Take the skin type quiz and create a buy order for the recommended products.....	13
❖ Swimlane 2: Create and process the buy order, ship, create report, update inventory... 14	
1. Actors.....	16
2. Use Cases.....	17
2.1 Diagram.....	17
2.2 Descriptions.....	17
3. Business Rules.....	30
IV. Functional Requirements.....	33
1. System Functional Overview.....	33
1.1 Screen Flow.....	33
1.2 Screen Descriptions.....	34
1.3 Screen Authorization.....	35
1.4 Non-Screen Functions.....	36
2. Data Requirements.....	36
2.1 Logical Data Model.....	36
2.2 Data Dictionary.....	37
3. Product Feature.....	47
❖ 3.1 Homepage.....	47
❖ 3.2 Products Page.....	49
3.3 Cart Page.....	50
3.3 Checkout Page.....	50
3.4 Manage Profile Page.....	51
3.5 Order History Page.....	51
3.6 Skin Type Test Page.....	52
3.7 Skin Type Test Result Page.....	52
3.7 Recommended Page.....	53
V. Non-Functional Requirements.....	53
1. External Interface Requirements.....	53
1.1 User Interfaces.....	53

1.2 Software Interfaces.....	53
1.3 Hardware Interfaces.....	54
1.4 Communications Interfaces.....	54
2. Quality Attributes.....	54
2.1 Usability.....	54
2.2 Performance.....	54
2.3 Security.....	55
2.4 Safety.....	55
2.5 Availability.....	55
2.6 Reliability.....	56
2.7 Design Constraints.....	56
2.8 [Others as relevant].....	56

Record of Changes

*A - Added M - Modified D - Deleted

I. Introduction

1. Product Background

In today's world, skincare has become an integral part of personal wellness and self-care routines. With the rapid expansion of the beauty and skincare industry, customers are increasingly seeking personalized solutions tailored to their unique needs—particularly when it comes to understanding their skin types and selecting the most suitable products. This growing demand presents a significant opportunity for businesses to harness technology in enhancing the customer experience.

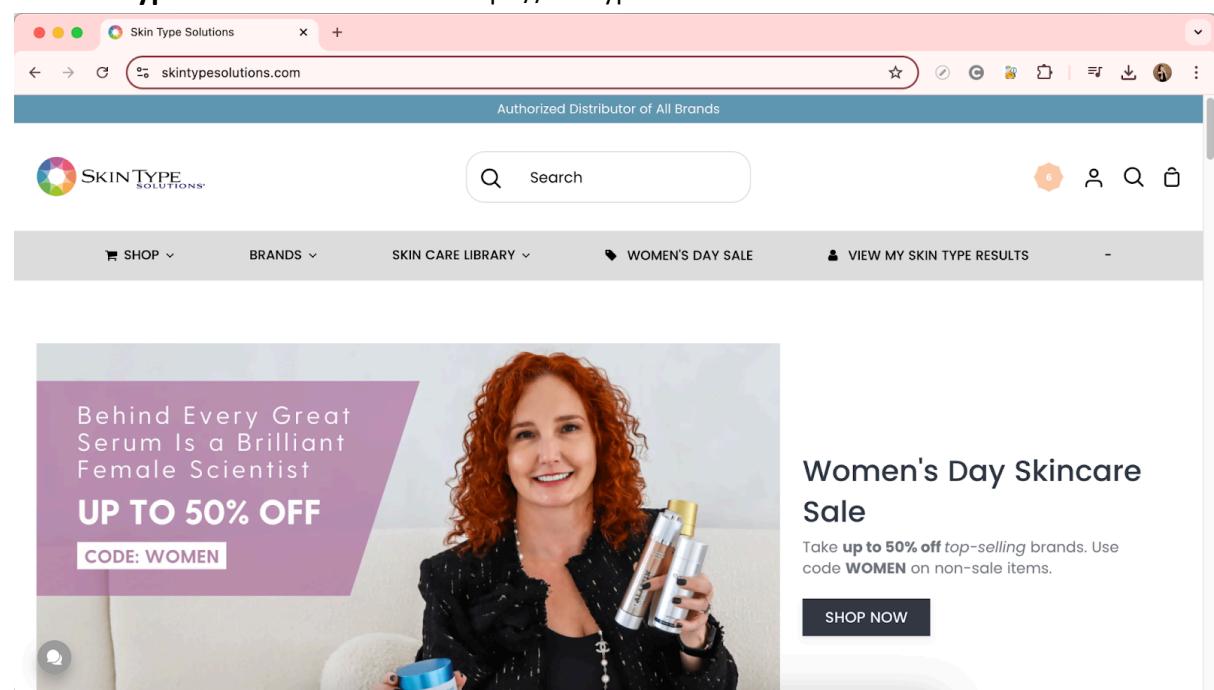
The **Skincare Product Management System** is designed to meet this demand by offering a comprehensive platform that seamlessly integrates skincare product sales with a highly personalized user experience. The system aims to assist customers in identifying their skin types, discovering customized skincare routines, and selecting the right products to enhance their skincare journey. Simultaneously, it equips staff and managers with essential tools for efficient order processing, inventory management, and customer support.

This platform supports multiple user roles—**guests, customers, staff, and managers**—each with a dedicated set of features to ensure a smooth and intuitive experience. By incorporating advanced functionalities such as **personalized product recommendations, an AI-powered skin type assessment survey, product comparison tools, and a streamlined order and feedback management system**, the platform delivers a comprehensive, all-in-one solution tailored for skincare businesses.

With a strong emphasis on **convenience, personalization, and operational efficiency**, the system not only elevates the shopping experience for customers but also optimizes business workflows. By fostering a deeper connection between businesses and their customers, this project is positioned as a vital tool for driving success in the highly competitive skincare industry.

2. Existing Systems

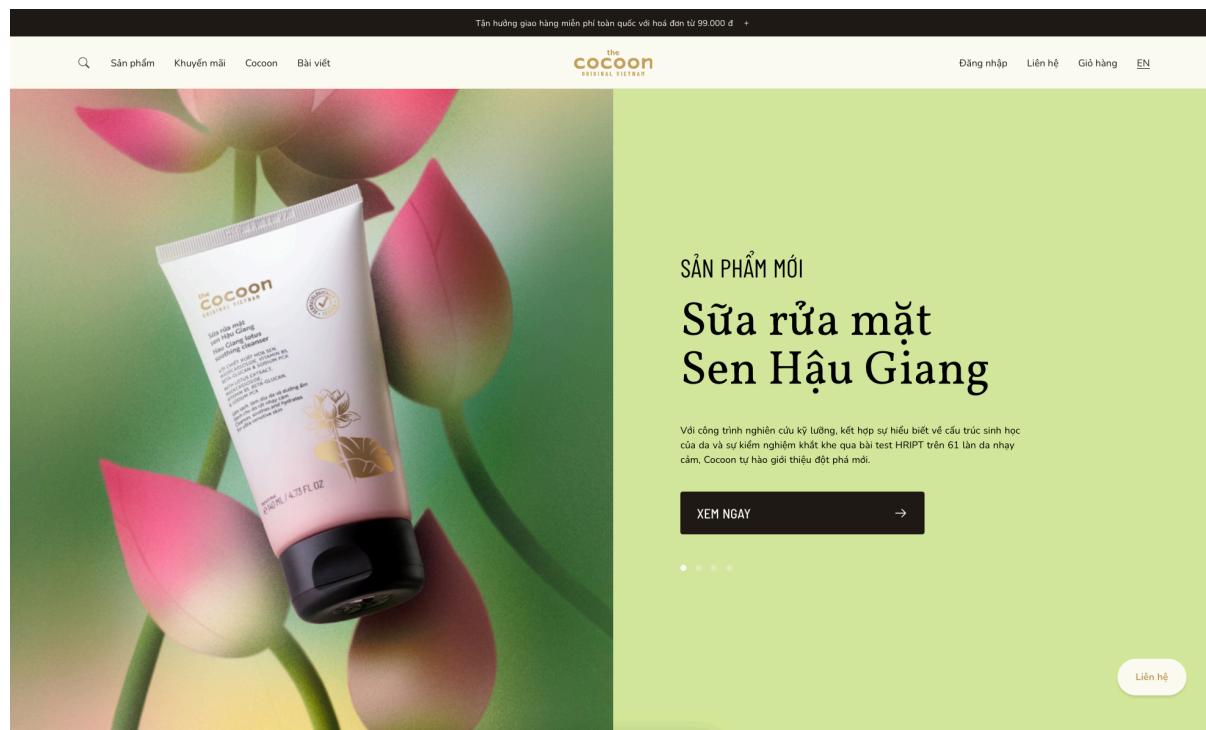
2.1 Skin Type Solutions Website - <https://skintypesolutions.com>

A screenshot of a web browser displaying the homepage of Skin Type Solutions. The header features the brand logo, a search bar, and account management links. The main navigation menu includes 'SHOP', 'BRANDS', 'SKIN CARE LIBRARY', 'WOMEN'S DAY SALE', and 'VIEW MY SKIN TYPE RESULTS'. A prominent banner on the left side of the page offers a discount of 'UP TO 50% OFF' with the code 'CODE: WOMEN'. Another banner on the right side promotes the 'Women's Day Skincare Sale' with a note about taking up to 50% off top-selling brands using the code 'WOMEN'. The central area of the page shows a woman holding skincare products.

This is an e-commerce platform specializing in health care products, offering a wide range of high-quality items to support wellness and personal care. The platform provides a user-friendly shopping experience with detailed product information and convenient purchasing options.

- **System actors:** Guest, Customer, Staff and Manager
- **Features:**
 1. Quiz to determine skin type
 2. Personalized Skincare Routine
 3. Product Comparison
 4. Sales Management
 5. Payment and Cancellation Policy Management
 6. Promotion and Reward Points Management
 7. Rating and Feedback Management
 8. Customer Profile and Order History Management
 9. Dashboard & Report
- **Advantages:**
 1. **Clean UX/UI:**
 - The platform offers a user-friendly and visually appealing design, ensuring an intuitive and seamless browsing experience.
 2. **In-depth Quiz**
 - Includes an in-depth Quiz to accurately determine the customer's skin type
 3. **Care Plan:**
 - Care plan feature to provide users with structured skincare routines tailored to their skin type.
 4. **Recommendations Based on Care Plan:**
 - Offers personalized product recommendations aligned with a user's specific care plan, good for user experience and decision-making support.
 - Offers products comparation for customers that may have an allergy
- **Limitations:**
 1. **Limited Payment Options:**
 - The website does not support multiple payment methods, restricting flexibility for customers who prefer diverse payment options like e-wallets, international cards, or bank transfers.
 - This limitation might inconvenience potential buyers and impact conversion rates.
 2. **Limited Product Options:**
 - Some product can not be access to view detail
 - UI do not friendly with gen Z generation

2.2 Cocoon Vietnam website - <https://cocoonvietnam.com>



This is a website for Cocoon Vietnam, an online platform designed to sell skincare products tailored to diverse skin types. The website also serves as a hub for brand information, offering insights into the company's mission and values, while providing blogs and expert tips to guide consumers in their skincare journey.

- **System actors:** Guest, Customer, Staff and Manager
- **Features:**

1. Kind of product is Skincare products:
2. Manage products
3. Manage promotion
4. Search and filter
5. Sharing tips
6. Recommendations system
7. Shopping Features
8. Order management
9. Customer Loyalty
10. Feedback and Reviews
11. Profile management

12. Manage order
13. Manage inventory
14. Customer support

- **Advantages:**

1. UI/UX Design:

- The website offers a clean and intuitive user interface, ensuring a seamless browsing experience for users.
- Thoughtful navigation and well-structured layouts make it easy for visitors to find the products and information they need.

2. Attractive Visuals:

- High-quality and aesthetically pleasing images enhance the overall appeal of the website.
- Visuals effectively showcase products, engaging users and creating a professional brand image.

3. Responsive Design:

- The website is fully responsive, providing a consistent and optimized experience across multiple devices, including desktops, tablets, and smartphones.
- Ensures accessibility and convenience for users on the go.

4. Clear and Comprehensive Information:

- Well-organized content clearly presents essential details about products, the brand, and blogs.
- Transparency in information builds trust and makes decision-making easier for consumers.

- **Limitations:**

1. Lack of "Skin Type Test and Personalized Care" Feature:

- The website does not offer a skin type test, limiting the ability to provide personalized skincare recommendations tailored to individual needs.
- This absence might reduce engagement and personalization, which are crucial for enhancing customer experience.

2. Limited Payment Options:

- The website does not support multiple payment methods, restricting flexibility for customers who prefer diverse payment options like e-wallets, international cards, or bank transfers.
- This limitation might inconvenience potential buyers and impact conversion rates.

3. No Live Chat Support:

- The absence of a live chat feature makes it difficult for customers to receive instant assistance or resolve queries in real-time.
- This could lead to delays in addressing customer concerns, reducing satisfaction and trust in the service.

3. Business Opportunity

The skincare industry is rapidly expanding, driven by growing consumer awareness of self-care and the demand for personalized skincare solutions. Developing a Skincare Product Management System presents significant business opportunities by addressing key market needs and challenges.

1. Personalization:

- The ability to provide tailored skincare recommendations through features like skin type quizzes and personalized care plans caters to the growing consumer preference for individualized solutions.
- A recommendation engine for products based on care plans can boost customer satisfaction and sales.

1. Enhanced Customer Engagement:

- Features such as product comparison, loyalty programs, and detailed customer profiles encourage deeper interaction and long-term relationships with the brand.
- The integration of blogs, tips, and FAQs positions the platform as an authoritative source for skincare education, increasing trust and brand loyalty.

2. Market Differentiation:

- Providing unique features like personalized care plans and targeted promotions differentiates the platform from competitors, helping attract and retain customers.

3. Streamlined Operations:

- Efficient sales, inventory, and order management systems enhance operational effectiveness, reducing errors and improving customer experience.
- Dashboards and reports enable data-driven decision-making, optimizing marketing strategies and identifying top-performing products.

4. Growth Potential:

- The platform's scalability allows for future expansion into related products or services, such as wellness items or virtual consultations with skincare professionals.

4. Software Product Vision

Our Skincare product sales system aims to deliver an all-in-one system that combines skin diagnosis, personalized skin care routines, product recommendations, and robust e-commerce functionality, making skincare shopping efficient, enjoyable. By using skin diagnostic quizzes, personalized skincare routine recommendations, and seamless ecommerce functionality, our platform aims to empower individuals to make informed choices about their skincare journey. The platform will streamline operations with robust tools for inventory management, order processing, payment handling, and customer relationship management (CRM). A powerful analytics dashboard will enable businesses to understand customer behavior, optimize marketing strategies, and boost sales performance. Our vision is to bridge the gap between personalized skincare and operational efficiency, fostering trust, enhancing customer satisfaction, and driving business growth in the skincare industry.

5. Major Features



❖ Guest Web Application

- FE-01: Register;
- ❖ **User Web Application**
- FE-01: Login
- FE-02: Verify Email
- FE-03: Change Password
- FE-04: View, search, filter Product
- FE-05: View Promotions
- FE-06: View Voucher
- FE-07: Test Skin Type
- FE-08: Personalized Care
- FE-09: Apply Promotion
- FE-10: Create Order
- FE-11: Make Payment
- FE-12: Request order cancellation
- FE-13: View order history
- FE-14: Make Reward Point
- FE-15: View Reward Point
- FE-16: Return Order

❖ Staff Web Application

FE-01: Manage Product
FE-02: Manage Category
FE-03: Manage Order
FE-04: Manage Review
FE-05: Manage Order Status
FE-06: Manage Return Request

❖ Manager Web Application

FE-01: Manage Account
FE-02: Manage Event
FE-03: Manage Statistic
FE-03: Manage Quiz

6. Limitations and Exclusions

- **LI-01: No Dedicated Mobile App at Launch**
The system will be designed with a responsive web interface optimized for mobile devices; however, a standalone mobile application will not be included in the initial release.
- **LI-02: Limited Payment Methods**
The first version will support common payment methods such as credit/debit cards and bank transfers, but digital wallets (e.g., e-wallets, cryptocurrency) may not be available initially.
- **LI-03: No International Shipping**
The system will only support domestic shipping in its first phase. International shipping and logistics integration will be considered in future updates.
- **LI-04: No Installment Payment Option**
The system does not support installment payments or consumer credit options in the initial version.

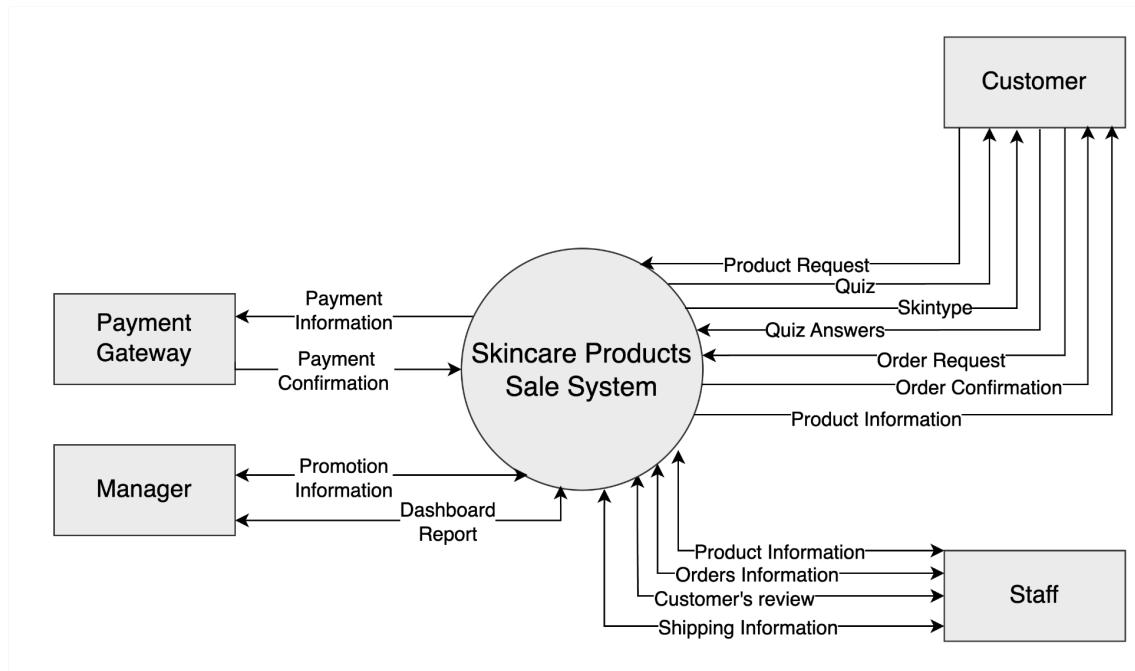
II. Overall Description

1. Product Overview

- The **Skincare Products Sale System** is an online platform designed to facilitate the sale and management of skincare products. This system serves multiple stakeholders, including customers, guests, staff, managers, an inventory system, and a payment gateway. It enables users to search for products, manage orders, process payments, and generate reports.
- The system is expected to streamline the product ordering process, ensure efficient inventory management, and provide valuable insights through reporting. Additionally, it integrates with external services such as inventory management and payment processing to enhance its functionality.

The **Skincare Products Sale System** interacts with various external entities, as illustrated in the context diagram:

- **Customers:** Can search for products, provide quiz answers for personalized recommendations, and access product details.
- **Staff:** Handle customer support requests and process orders.
- **Managers:** Generate sales reports, request dashboard reports, and manage promotional campaigns.
- **Payment Gateway:** Handles payment validation and requests to ensure secure transactions.

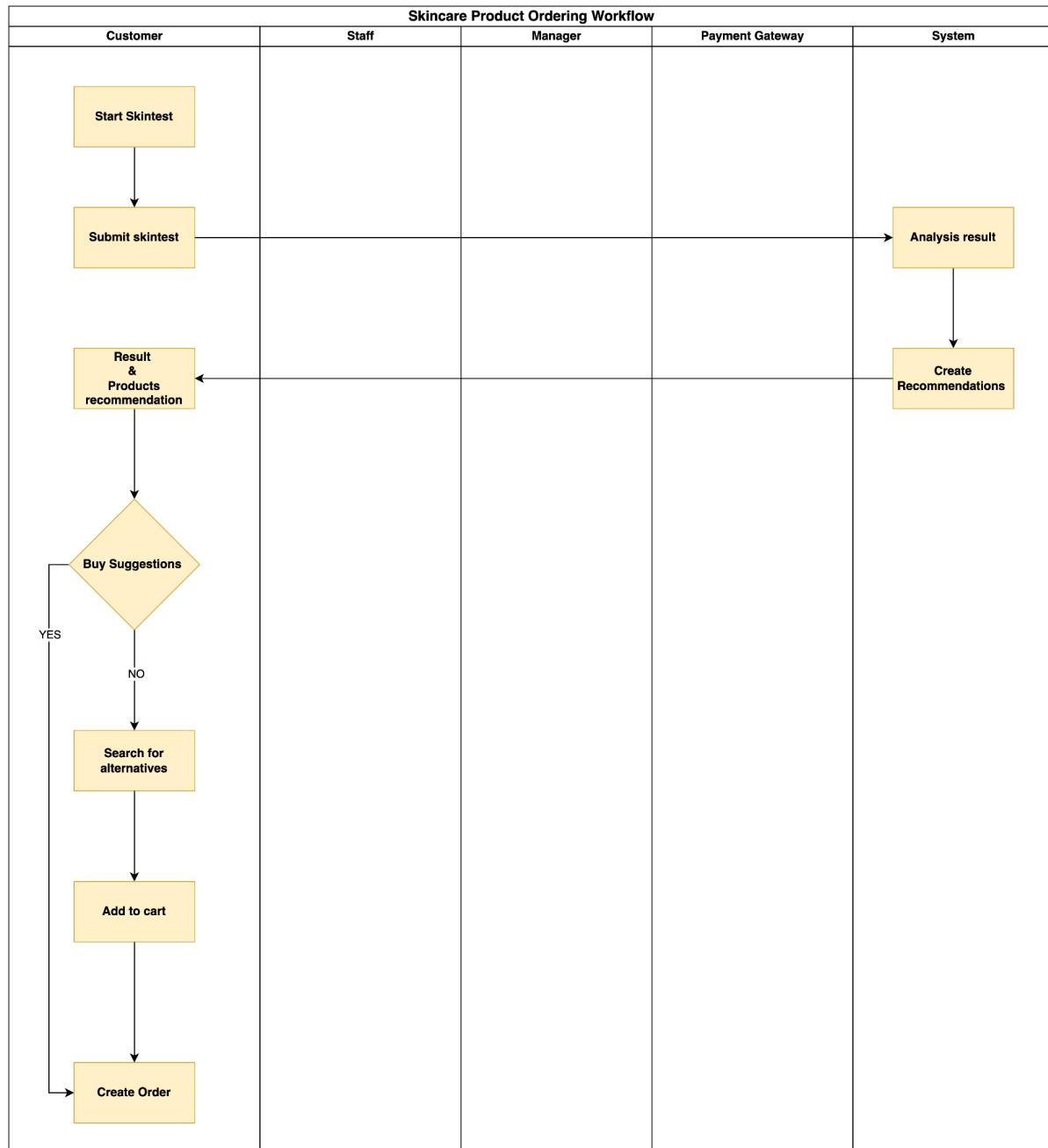


2. Business Process

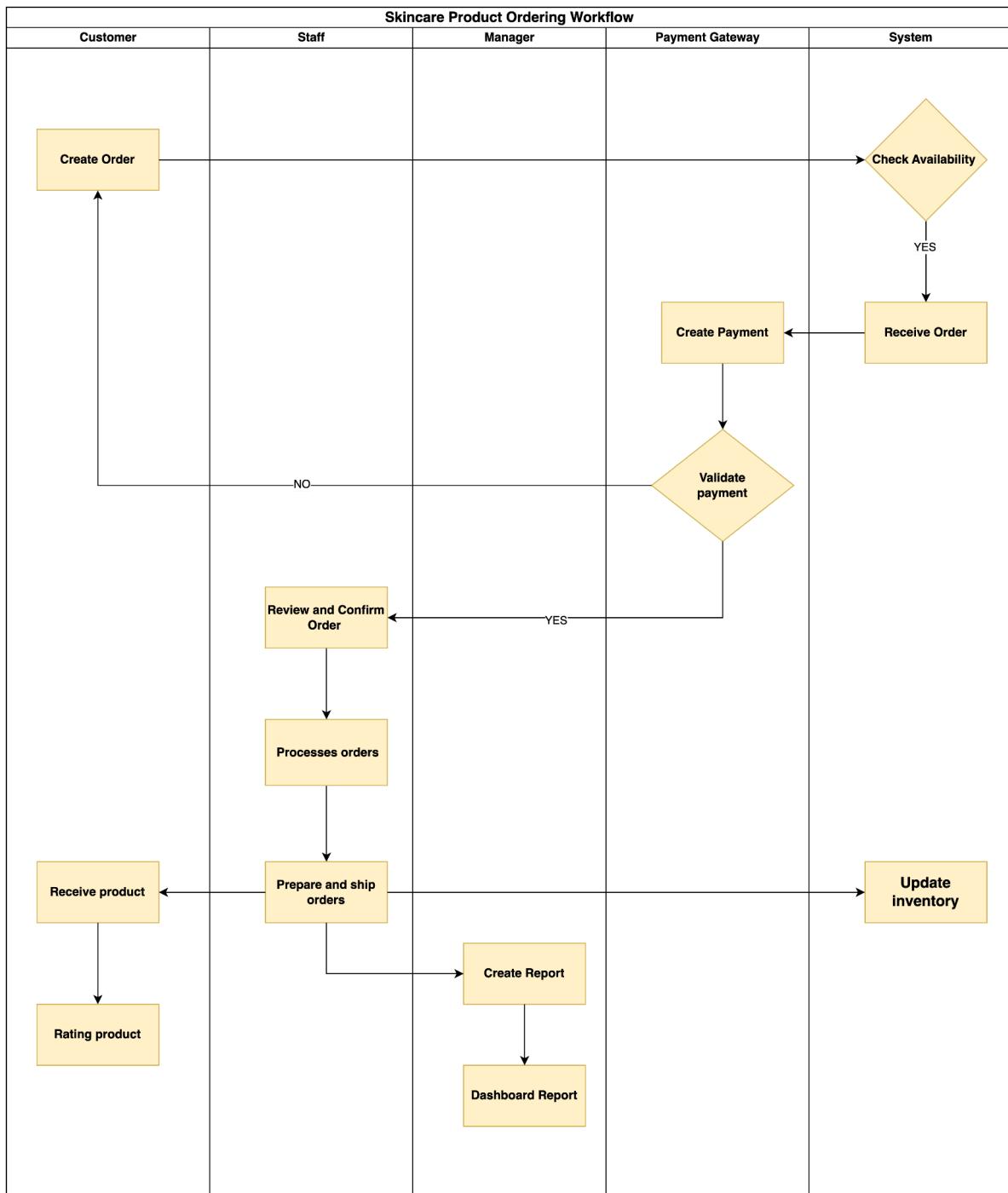
This section describes the business processes of the **Skincare Products Sale System** using a **swimlane diagram**. The swimlanes represent different roles involved in ordering and managing skincare products, showing how tasks are divided among stakeholders.

- **Swimlane Diagram Explanation**
- ***The diagram includes the following roles:***
 - **Customer:** Searches for products, places an order, and makes payment.
 - **Staff:** Processes orders, updates order status, and provides customer support.
 - **Manager:** Monitors sales, generates reports, and oversees promotions.
 - **Skincare Product:** Updates product availability and processes product restocking.
 - **Payment Gateway:** Validates and processes payments

❖ **Swimlane 1: Take the skin type quiz and create a buy order for the recommended products**



❖ **Swimlane 2: Create and process the buy order, ship, create report, update inventory**



#	Process Step	Description
1	Start Skin test	Customer starts the skincare test to determine skin type.
2	Submit skin test	Customer submits the test for analysis.
3	Analysis result	System processes and analyzes the skin test data.

4	Create Recommendations	System generates personalized product recommendations based on the skin test result.
5	Result & Products recommendation	Customers receive skincare test results along with recommended products.
6	Buy Suggestions	Customer decides whether to purchase the suggested products.
7	Search for alternatives	If the customer does not want the suggested products, they can browse for other skincare products.
8	Add to cart	Customer selects products and adds them to the shopping cart.
9	Create Order	Customer proceeds to place the order.
10	Check Product Availability	System verifies stock availability in the inventory.
11	Receive Order	System confirms the order and logs it in the database.
12	Create Payment	Payment Gateway processes the payment request.
13	Validate Payment	Payment Gateway verifies payment details and confirms the transaction.
14	Review and Confirm Order	Staff reviews and confirms the order before processing.
15	Process Orders	Staff updates the order status and prepares for fulfillment.
16	Prepare and Ship Orders	Staff packs and ships the order to the customer.
17	Receive Product	Customer receives the product after delivery.
18	Rating Product	Customer provides feedback and ratings for the purchased product.
19	Update Inventory	System updates stock levels after the order is processed.
20	Create Report	Manager generates reports on sales and order processing.
21	Dashboard Report	Manager reviews analytics and sales performance via dashboard.

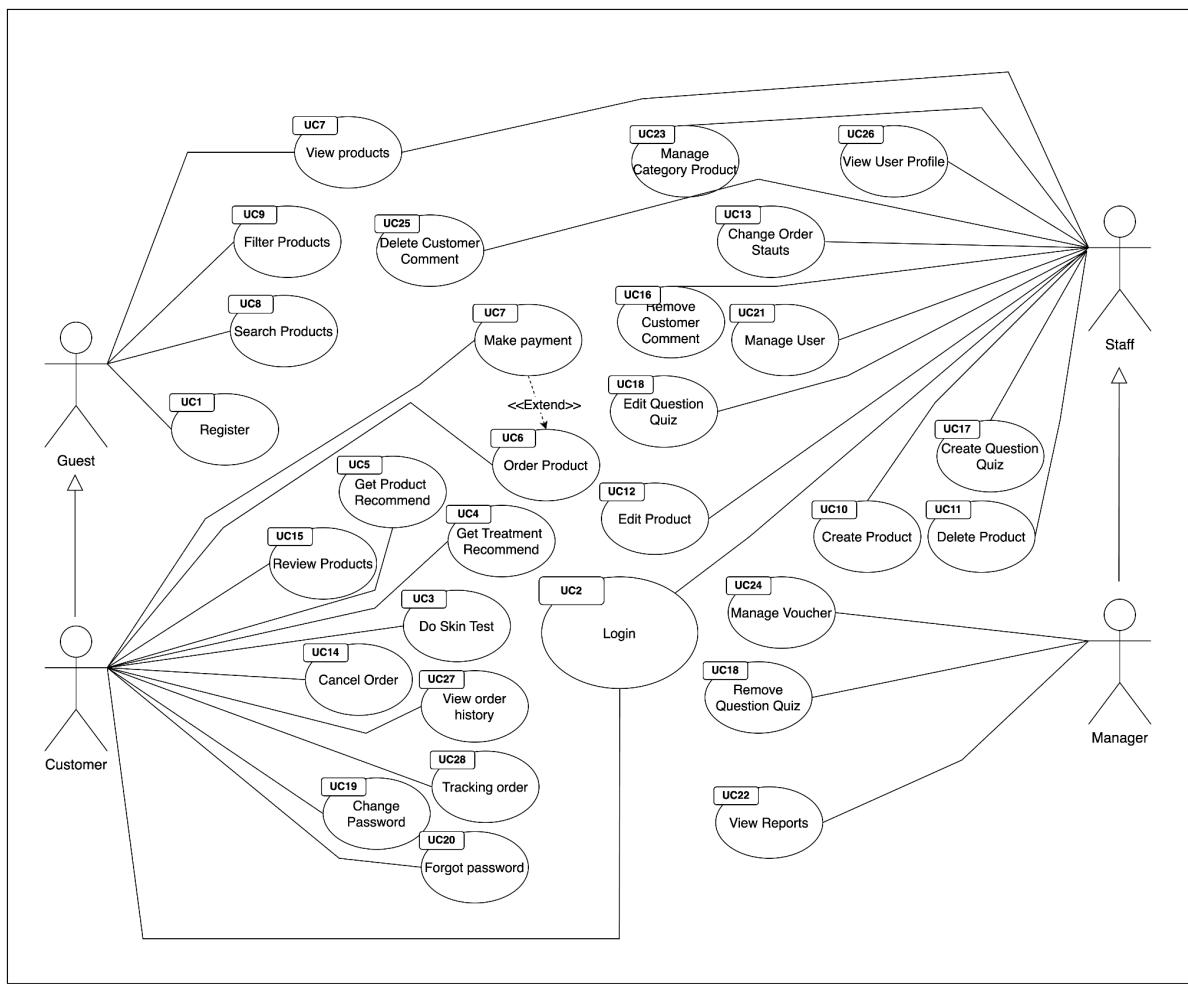
III. User Requirements

1. Actors

#	Actor	Description
1	Manager	A person responsible for supervising staff, managing products, orders, customers, and promotions, and monitoring business performance. Managers interact with the system to oversee operations and ensure smooth workflow.
2	Staff	Employees who receive orders from customers, prepare and package them for delivery, and request shipping. They interact with the system to update order status and manage inventory.
3	Customer	Users who order skincare products online, take a skin test, and visit the company headquarters for shopping. They interact with the system by browsing products, placing orders, and receiving recommendations.
4	Guest	Visitors who can browse the skincare product catalog, read blogs, and take the skin test without registering. However, they must create an account to place orders or access exclusive promotions."

2. Use Cases

2.1 Diagram



2.2 Descriptions

ID	Use Case	Actors	Use Case Description
UC1	Login	Customer	Allows a registered customer to enter their credentials and access their account to browse, shop, and track orders.
UC2	Register	Guest	Enables new users to create an account by providing necessary details, allowing them to shop and access personalized features.
UC3	Verify Email	Guest, Customer	Ensures account security and validity by requiring users to confirm their email addresses before gaining full access to the system.
UC4	Forgot password	Customer	Allows customers to reset their password via email verification if they forget their login credentials.
UC5	Logout	Customer, Staff, Manager	Provides a secure way for users to sign out of their accounts, ensuring data protection.

UC6	View All Product	Guest, Customer, Staff, Manager	Allows users to browse the entire product catalog, making it easier to explore available skincare items.
UC7	Search Product	Guest, Customer, Staff, Manager	Enables users to find specific skincare products by entering keywords or product names.
UC8	Filter Product	Guest, Customer, Staff, Manager	Helps users refine product search results based on criteria such as skin type, price, or ingredients.
UC9	View Product Detail	Guest, Customer, Staff, Manager	Provides comprehensive product information, including descriptions, ingredients, reviews, and recommended usage.
UC10	Order Product	Customer	Allows customers to add products to their cart and place an order for purchase.
UC11	Payment	Customer	Enables customers to complete transactions using different payment methods securely.
UC12	View Order History	Customer	Allows customers to review past orders, including details such as order status, payment confirmation, and delivery updates.
UC13	Accumulate Reward	Customer	Enables customers to earn reward points for purchases, which can be redeemed for discounts or special offers.
UC14	Tracking Order Status	Customer	Provides real-time updates on order progress, including processing, shipping, and delivery status.
UC15	Review Product	Customer	Allows customers to leave feedback and ratings on purchased products, helping other buyers make informed decisions.
UC16	Return Product	Customer	Allows customers to request a return for purchased products within the specified return policy timeframe, ensuring a smooth refund or exchange process.
UC17	Skin Type Test	Customer	Provides an interactive assessment to help customers determine their skin type, enabling them to make better skincare choices.
UC18	Get Skincare Roadmap	Customer	Generates a personalized skincare routine based on the customer's skin type and concerns, guiding them through an effective regimen.
UC19	View Recommendation Treatment	Customer	Offers tailored skincare treatment suggestions based on the customer's skin analysis and preferences.
UC19	View Profile	Guest, Customer, Staff, Manager	Allows users to access their personal or professional profile details, including account information and activity.

UC20	Update Profile	Guest, Customer, Staff, Manager	Enables users to edit personal details such as name, contact information, and preferences.
UC21	Change Cover Photo	Guest, Customer, Staff, Manager	Allows users to customize their profile by uploading or changing their cover photo.
UC22	Change Avatar	Guest, Customer, Staff, Manager	Enables users to update their profile picture for a personalized experience.
UC23	Change Password	Guest, Customer, Staff, Manager	Allows users to update their login credentials for enhanced account security.
UC24	Add Address	Customer	Enables customers to save a new shipping address for a faster checkout experience.
UC25	Remove Address	Customer	Allows customers to delete an existing shipping address from their profile.
UC26	Add New Product	Manager, Staff	Allows authorized users to add new skincare products to the system, ensuring an updated product catalog.
UC27	Delete Product	Manager, Staff	Enables managers and staff to remove discontinued or irrelevant products from the catalog.
UC28	Update Product	Manager, Staff	Allows authorized users to edit product details, including pricing, description, and availability.
UC29	View All Category	Guest, Customer, Staff, Manager	Displays a list of all product categories to help users navigate available skincare solutions.
UC30	Search Category	Guest, Customer, Staff, Manager	Enables users to find specific categories by name or keywords.
UC31	Filter Category	Guest, Customer, Staff, Manager	Helps users refine category searches based on different criteria.
UC32	Add New Category	Manager, Staff	Allows authorized users to create new product categories for better product organization.
UC33	Delete Category	Manager, Staff	Enables managers and staff to remove outdated or irrelevant categories.
UC34	Update Category	Manager, Staff	Allows authorized users to modify category details such as names or descriptions.
UC35	View All User	Manager, Staff	Provides a list of all registered users for administrative purposes.
UC36	Search User	Manager, Staff	Enables managers and staff to find specific users based on their names, email, or ID.
UC37	Filter User	Manager, Staff	Helps refine the user search based on account status, role, or activity level.
UC38	View User Detail	Manager, Staff	Allows administrators to access detailed information about a specific user.
UC39	Add New Staff	Manager	Enables managers to register new staff accounts, assigning them appropriate roles and permissions.

UC40	Deactivate User	Manager, Staff	Allows authorized users to disable accounts that violate policies or are inactive.
UC41	View All Question Quiz	Manager, Staff	Displays a list of all questions related to the skin type test or skincare recommendations.
UC42	View Question Detail	Manager, Staff	Provides detailed information about a specific quiz question.
UC43	Add New Question	Manager	Enables managers to create new quiz questions to improve skin type assessments.
UC44	Delete Question	Manager	Allows managers to remove outdated or irrelevant questions.
UC45	Update Question	Manager	Enables managers to edit quiz questions to improve accuracy.
UC46	View All Category Question	Manager, Staff	Displays all available quiz question categories.
UC47	View Category Question Detail	Manager, Staff	Provides detailed information about a specific quiz category.
UC48	Add New Category Question	Manager	Allows managers to create new categories to group quiz questions efficiently.
UC49	Delete Category Question	Manager	Enables managers to remove unnecessary categories.
UC50	Update Category Question	Manager	Allows managers to modify category details such as names or descriptions.
UC51	View Analyze Customer Behavior	Manager	Enables managers to access insights on customer interactions, shopping patterns, and preferences to optimize business strategies.
UC52	View Statistic	Manager	Allows managers to track business performance metrics such as sales, revenue, and customer engagement.
UC53	View Overview Report	Manager	Provides a summarized dashboard displaying key performance indicators related to sales, returns, and customer activity.
UC54	View All Event	Manager, Staff	Displays a list of all promotional or business-related events.
UC55	View Event Detail	Manager, Staff	Allows authorized users to access detailed information about a specific event, including date, description, and participants.
UC56	Add New Event	Manager	Enables managers to create new events, such as promotions, skincare workshops, or loyalty programs.
UC57	Delete Event	Manager	Allows managers to remove outdated or irrelevant events.
UC58	Update Event	Manager	Enables managers to edit event details, including schedule changes or content updates.

UC59	View All Return Request	Manager, Staff	Displays a list of all return requests made by customers.
UC60	View Return Request Detail	Manager, Staff	Provides detailed information about a specific return request, including reason, product condition, and approval status.
UC61	Add new Return Request	Manager, Staff	Allows authorized personnel to manually input a return request on behalf of a customer.
UC62	Update Return Request Status	Manager, Staff	Enables staff and managers to approve, reject, or modify the status of a return request.
UC63	Return Product to Stock	Manager, Staff	Ensures that returned products in acceptable condition are added back to inventory for resale.
UC63	View all Order	Manager, Staff	Displays a list of all customer orders, including pending, completed, and canceled ones.
UC64	View Order Detail	Manager, Staff	Provides detailed information about a specific order, including products, payment, and delivery status.
UC65	Update Order	Manager, Staff	Allows authorized personnel to modify order details such as status, delivery date, or payment confirmation.
UC66	Delete Order	Manager, Staff	Enables managers and staff to remove an order if necessary, such as fraudulent or duplicate transactions.
UC67	Add Voucher	Manager	Enables managers to create discount vouchers for promotions or loyalty programs.
UC68	Update Voucher	Manager	Allows managers to modify existing vouchers, including discount value, validity period, and usage conditions.

❖ UC-01 Login

ID and Name:	UC-01 Login		
Created By:	Mai Anh Duy	Date Created:	10/01/2025
Primary Actor:	Customer	Secondary Actors:	DAS system
Description:	This use case allows a guest log in using their credentials. The system verifies the provided credentials and grants access to the customer's account. Once logged in, the customer can browse products, shop, and track orders.		
Trigger:	Customer wants to create a new account on the system.		
Preconditions:	PRE-1: The customer must have a registered account. PRE-2: The customer must have a valid username and password.		
Postconditions:	POST-1: The customer gains access to their account. POST-2: The system updates the last login timestamp.		
Normal Flow:	1. Customer Login		

	<ol style="list-style-type: none"> 2. The customer navigates to the login page. 3. Enter their username and password. 4. Click the "Login" button. 5. The system verifies the credentials. 6. If valid, the customer is redirected to their account dashboard. 7. The system processes the order and updates stock levels. 8. The system sends an order confirmation to the user. 9. Displays "Order placed successfully".
Alternative Flows:	<ul style="list-style-type: none"> - 1.1: Incorrect Credentials If the entered credentials are incorrect, the system displays an error message and allows the customer to retry. - 1.2: Forgot Password If the customer forgets their password, they can request a password reset. The system sends a reset link to their registered email.
Exceptions:	1.0.E1: System error → Displays "Login failed, please try again later"
Priority:	High
Business Rules:	BR-01, BR-02, BR-03, BR-04
Frequency of Use:	Estimated 100-500 logins per day.
Other Information:	The system should log failed login attempts and enforce account lockout after multiple failed attempts. Secure session management is required.
Assumptions:	The system provides secure transactions and maintains order history. The system ensures real-time stock updates.

❖ UC-02 Register

ID and Name:	UC-02 Register		
Created By:	Mai Anh Duy	Date Created:	10/01/2025
Primary Actor:	Guest	Secondary Actors:	DAS system
Description:	This use case allows a new user (guest) to create an account by providing the necessary information such as username, password, and email. Once registered, the user can log in to the system to access personalized features like shopping and order tracking.		
Trigger:	Guest wants to create a new account on the system.		
Preconditions:	PRE-1: The guest must not have a registered account. PRE-2: The system must be operational.		
Postconditions:	POST-1: The system successfully creates a new user account. POST-2: A verification email is sent to the registered email address.		
Normal Flow:	Guest navigates to the registration page. Enters the required details (username, password, email). Clicks the "Register" button. The system validates the input. The system creates the account and sends a verification email. Displays a success message: "Registration successful, please verify your email."		
Alternative Flows:	1.1: Missing or invalid data → Displays "Please fill out all required fields correctly." 1.2: Duplicate account → Displays "Email already registered."		
Exceptions:	1.0.E1: System error → Displays "Registration failed, please try again later."		

Priority:	High
Business Rules:	BR-05, BR-06
Frequency of Use:	Estimated 50-100 registrations per day.
Other Information:	Account data must be stored securely
Assumptions:	The guest has access to a valid email address.

❖ **UC-03 Verify Email**

ID and Name:	UC-03 Verify Email		
Created By:	Mai Anh Duy	Date Created:	10/01/2025
Primary Actor:	Customer	Secondary Actors:	Email Service
Description:	This use case ensures account security by requiring users to verify their email address after registration. Verification grants full access to system features.		
Trigger:	User clicks on the verification link sent via email.		
Preconditions:	PRE-1: The user has registered an account. PRE-2: The system has sent a verification email.		
Postconditions:	POST-1: The user's account is marked as verified. POST-2: Full access to system features is granted.		
Normal Flow:	<ol style="list-style-type: none"> 1. User receives the verification email. 2. Clicks on the verification link. 3. The system validates the link and marks the account as verified. 4. Displays a success message: "Your account has been verified." 		
Alternative Flows:	1.1: Invalid or expired link → Displays "Verification link is invalid or expired." 1.2: Link already used → Displays "Account already verified."		
Exceptions:	1.0.E1: Server error → Displays "Verification failed, please try again later."		
Priority:	Medium		
Business Rules:	BR-07 (Email must be verified before full access)		
Frequency of Use:	Estimated 50-100 verifications per day.		
Other Information:	Verification links expire after 24 hours.		
Assumptions:	User has access to their email account.		

❖ **UC-04 Forgot Password**

ID and Name:	UC-04 Forgot Password		
Created By:	Mai Anh Duy	Date Created:	10/01/2025
Primary Actor:	Customer	Secondary Actors:	Email Service
Description:	This use case allows a registered user to reset their password by receiving a password reset link via email.		
Trigger:	User forgets their password and requests a reset.		
Preconditions:	PRE-1: The customer must have a registered account. PRE-2: The customer must have a valid email address linked to the account.		
Postconditions:	POST-1: The system sends a password reset link to the registered email. POST-2: The customer successfully resets their password.		
Normal Flow:	<ol style="list-style-type: none"> 1. Customer navigates to the "Forgot Password" page. 2. Enters their registered email address. 3. Clicks the "Submit" button. 4. The system sends a reset link to the provided email. 		

	5. Customer clicks the link and sets a new password. 6. Displays a success message: "Password has been reset successfully."
Alternative Flows:	1.1: Invalid email → Displays "Email not found in the system." 1.2: Link expired → Displays "Reset link has expired."
Exceptions:	1.0.E1: Email delivery failure → Displays "Unable to send reset link, please try again later."
Priority:	High
Business Rules:	BR-08, BR-09 (Secure password reset, email verification)
Frequency of Use:	Estimated 20-50 requests per day.
Other Information:	Password reset links expire after 15 minutes.
Assumptions:	User has access to their registered email.

❖ UC-05 Log out

ID and Name:	UC-05 Log out		
Created By:	Mai Anh Duy	Date Created:	10/01/2025
Primary Actor:	Customer, Staff, Manager	Secondary Actors:	None
Description:	This use case provides a secure way for users to sign out of their accounts, ensuring data protection.		
Trigger:	User wants to end their session.		
Preconditions:	PRE-1: User must be logged into the system.		
Postconditions:	POST-1: The user is successfully logged out. POST-2: Session data is cleared from the system.		
Normal Flow:	1. User clicks the "Logout" button. 2. The system confirms the action. 3. The system ends the session and redirects the user to the homepage. 4. Displays "You have successfully logged out."		
Alternative Flows:	1.1: Invalid email → Displays "Email not found in the system." 1.2: Link expired → Displays "Reset link has expired."		
Exceptions:	1.0.E1: System error → Displays "Logout failed, please try again later."		
Priority:	Medium		
Business Rules:	BR-10 (Session termination should be secure)		
Frequency of Use:	Frequent, estimated 100-200 times per day.		
Other Information:	Sessions should be securely cleared.		
Assumptions:	User has completed their tasks.		

❖ UC-06 View All Product

ID and Name:	UC-06 View All Product		
Created By:	Mai Anh Duy	Date Created:	10/01/2025
Primary Actor:	Customer, Staff, Manager	Secondary Actors:	Product Database
Description:	Allows users to browse the entire product catalog, making it easier to explore available skincare items.		
Trigger:	User navigates to the product catalog page.		
Preconditions:	PRE-1: The system has a list of products available.		
Postconditions:	POST-1: Product list is displayed.		

Normal Flow:	<ol style="list-style-type: none"> User selects the "View All Products" option. The system fetches the list of available products. Displays the products along with details such as name, price, and description.
Alternative Flows:	1.1: Invalid email → Displays "Email not found in the system." 1.2: Link expired → Displays "Reset link has expired."
Exceptions:	1.0.E1: System error → Displays "Logout failed, please try again later."
Priority:	High
Business Rules:	BR-11 (Product data should be retrieved from the database)
Frequency of Use:	High
Other Information:	None
Assumptions:	The product database is updated.

❖ UC-07 Search Product

ID and Name:	UC-07 View All Product		
Created By:	Mai Anh Duy	Date Created:	10/01/2025
Primary Actor:	Customer, Staff, Manager	Secondary Actors:	Product Database
Description:	Enables users to find specific skincare products by entering keywords or product names.		
Trigger:	User enters a keyword in the search bar.		
Preconditions:	PRE-1: The product database is available.		
Postconditions:	POST-1: Search results are displayed.		
Normal Flow:	<ol style="list-style-type: none"> User types a keyword into the search field. Clicks the "Search" button. The system retrieves matching products. Displays the search results. 		
Alternative Flows:	1.1: No results found → Displays "No products match your search."		
Exceptions:	1.0.E1: System error → Displays "Logout failed, please try again later."		
Priority:	High		
Business Rules:	BR-12 (Search results should be accurate and relevant)		
Frequency of Use:	High		
Other Information:	None		
Assumptions:	Users know the product name or keyword.		

❖ UC-08 Filter Product

ID and Name:	UC-08 Filter Product		
Created By:	Mai Anh Duy	Date Created:	10/01/2025
Primary Actor:	Customer, Staff, Manager	Secondary Actors:	None
Description:	Helps users refine product search results based on criteria such as skin type, price, or ingredients.		
Trigger:	User wants to narrow down search results.		
Preconditions:	PRE-1: Search results are displayed.		
Postconditions:	POST-1: Filtered results are displayed.		
Normal Flow:	<ol style="list-style-type: none"> User selects filter criteria (e.g., skin type, price range). The system applies the filters to the search results. 		

	3. Displays the refined list of products.
Alternative Flows:	1.1: No results found → Displays "No products match your search."
Exceptions:	1.0.E1: System error → Displays "Logout failed, please try again later."
Priority:	Medium
Business Rules:	BR-12 (Search results should be accurate and relevant)
Frequency of Use:	Medium
Other Information:	None
Assumptions:	Users know the criteria they want to filter by.

❖ **UC-09 View Product Detail**

ID and Name:	UC-09 View Product Detail		
Created By:	Mai Anh Duy	Date Created:	10/01/2025
Primary Actor:	Customer, Staff, Manager	Secondary Actors:	Product Database
Description:	Provides comprehensive product information, including descriptions, ingredients, reviews, and recommended usage.		
Trigger:	User clicks on a product.		
Preconditions:	PRE-1: The product exists in the database.		
Postconditions:	POST-1: Detailed product information is displayed.		
Normal Flow:	<ol style="list-style-type: none"> 1. User clicks on the desired product. 2. The system retrieves the product details. 3. Displays the product information page. 		
Alternative Flows:	None		
Exceptions:	None		
Priority:	Medium		
Business Rules:	BR-14 (Product details must be accurate and comprehensive)		
Frequency of Use:	High		
Other Information:	None		
Assumptions:	The product information is up-to-date.		

❖ **UC-10 Order Product**

ID and Name:	UC-10 Order Product		
Created By:	Mai Anh Duy	Date Created:	10/01/2025
Primary Actor:	Customer	Secondary Actors:	Inventory System, Payment Gateway
Description:	Allows customers to add products to their cart and place an order for purchase.		
Trigger:	Customer wants to purchase selected products.		
Preconditions:	PRE-1: Customer must be logged in. PRE-2: Products must be available in the inventory.		
Postconditions:	POST-1: Order is successfully placed. POST-2: Inventory is updated.		
Normal Flow:	<ol style="list-style-type: none"> 1. Customer selects products and adds them to the cart. 2. Clicks the "Checkout" button. 3. Reviews the order summary (items, quantities, prices). 4. Selects a payment method and enters payment details. 5. Clicks "Place Order". 		

	<p>6. The system verifies product availability.</p> <p>7. The system processes the payment.</p> <p>8. The system updates the inventory</p> <p>9. An order confirmation email is sent.</p> <p>10. The system displays a success message: "Order placed successfully."</p>
Alternative Flows:	<p>1.1: Product Unavailable</p> <ul style="list-style-type: none"> Condition: One or more products become unavailable during checkout. System Response: Displays "Some items in your cart are no longer available. Please update your cart." Redirects the customer to the cart to remove or update items. <p>1.2: Insufficient Inventory</p> <ul style="list-style-type: none"> Condition: Ordered quantity exceeds available stock. System Response: <ul style="list-style-type: none"> Displays "Requested quantity is not available. Please reduce the quantity." Allows the customer to update the order.
Exceptions:	<p>1.0.E1: Payment Declined</p> <ul style="list-style-type: none"> Condition: Payment gateway rejects the transaction (e.g., insufficient funds, expired card). System Response: Displays "Payment failed. Please check your payment details or try another method." Provides options to re-enter payment details or select a different method. <p>1.0.E2: Payment Gateway Unavailable</p> <ul style="list-style-type: none"> Condition: Payment gateway is temporarily down. System Response: Displays "Payment service is currently unavailable. Please try again later." Allows the customer to save the cart for later. <p>1.0.E3: Order Processing Error</p> <ul style="list-style-type: none"> Condition: System error occurs while processing the order. System Response: Displays "An error occurred while placing your order. Please try again." Logs the error and notifies the system administrator. <p>1.0.E4: Price Change During Checkout</p> <ul style="list-style-type: none"> Condition: The price of one or more products changes between adding to the cart and final checkout. System Response: Displays "The price of one or more items has changed. Please review your order." Updates the cart with the new prices. <p>1.0.E5: Confirmation Email Failure</p> <ul style="list-style-type: none"> Condition: The system fails to send the order confirmation email. System Response: Displays "Order placed successfully, but confirmation email could not be sent." Logs the failure for follow-up.
Priority:	High

Business Rules:	BR15, BR16, BR20, BR21, BR22, BR23
Frequency of Use:	Estimated 50-100 orders per day.
Other Information:	<ul style="list-style-type: none"> Orders must be processed in real-time, and inventory levels should be accurately maintained. Sensitive payment data must be securely handled in compliance with data protection regulations.
Assumptions:	<ul style="list-style-type: none"> Customer has sufficient funds to complete the transaction. The payment gateway is functioning correctly.

❖ UC-11 Payment

ID and Name:	UC-11 Payment		
Created By:	Mai Anh Duy	Date Created:	10/01/2025
Primary Actor:	Customer	Secondary Actors:	Payment Gateway
Description:	This use case enables customers to complete transactions securely using various payment methods.		
Trigger:	Customer proceeds to payment after placing an order.		
Preconditions:	PRE-1: Customer must have a valid order ready for checkout. PRE-2: Payment gateway must be available.		
Postconditions:	POST-1: Payment is successfully processed. POST-2: Order status is updated to "Paid". POST-3: Payment receipt is sent to the customer.		
Normal Flow:	<ol style="list-style-type: none"> Customer reviews the order summary. Selects the preferred payment method. Enters payment details and clicks "Pay Now". System processes the payment through the gateway. Displays confirmation message: "Payment successful." Sends a receipt to the customer's email. 		
Alternative Flows:	<p>1.1: Payment Method Not Supported</p> <ul style="list-style-type: none"> Displays: "Selected payment method is not supported. Please choose a different method." <p>1.2: Payment Gateway Timeout</p> <ul style="list-style-type: none"> Displays: "Payment gateway did not respond. Please try again." 		
Exceptions:	<p>1.0.E1: Insufficient Funds</p> <ul style="list-style-type: none"> Condition: The payment is declined due to insufficient balance. System Response: <ul style="list-style-type: none"> Displays: "Payment declined. Insufficient funds." Prompts customer to use another payment method. <p>1.0.E2: Invalid Payment Details</p> <ul style="list-style-type: none"> Condition: Entered details do not match bank records. System Response: <ul style="list-style-type: none"> Displays: "Invalid payment details. Please recheck your information." Allows the customer to correct details. 		
Priority:	High		
Business Rules:	BR16, BR24		
Frequency of Use:	Estimated 50-100 payments per day.		
Other Information:	<ul style="list-style-type: none"> Payments must be logged for auditing purposes. Refunds should be processed through the same payment gateway. 		
Assumptions:	<ul style="list-style-type: none"> Customer has a valid payment method ready. 		

❖ UC-12 View Order History

ID and Name:	UC-12 View Order History		
Created By:	Mai Anh Duy	Date Created:	10/01/2025
Primary Actor:	Customer	Secondary Actors:	Order Database
Description:	Allows customers to view their previous orders and transaction details.		
Trigger:	Customer wants to check past order information.		
Preconditions:	PRE-1: Customer must be logged in.		
Postconditions:	POST-1: Displays a list of past orders. POST-2: Allows viewing order details and statuses.		
Normal Flow:	<ol style="list-style-type: none"> Customer navigates to "Order History". System retrieves and displays the list of orders. Customer selects an order to view details. System displays order information (date, items, amount, status). 		
Alternative Flows:	1.1: No Previous Orders -> Displays: "No order history available."		
Exceptions:	1.0.E1: Database Unavailable Displays: "Unable to retrieve order history. Please try again later."		
Priority:	Medium		
Business Rules:	BR25, BR26		
Frequency of Use:	Estimated 20-50 times per day.		
Other Information:	Customers can filter by date range or order status.		
Assumptions:	Orders have been recorded correctly in the database.		

❖ UC-13 Accumulate Reward

ID and Name:	UC-13 Accumulate Reward		
Created By:	Mai Anh Duy	Date Created:	10/01/2025
Primary Actor:	Customer	Secondary Actors:	Order Database
Description:	Enables customers to earn reward points for their purchases, which can be redeemed later.		
Trigger:	Customer completes a purchase.		
Preconditions:	PRE-1: Customers must have a registered account. PRE-2: Reward system is active.		
Postconditions:	POST-1: Points are accumulated in the customer's account. POST-2: Notification is sent confirming the points earned.		
Normal Flow:	<ol style="list-style-type: none"> Customer completes a purchase. System calculates reward points based on the purchase amount. Points are credited to the customer's account. Notification is sent: "You have earned X reward points." 		
Alternative Flows:	1.1: Reward System Unavailable Displays: "Unable to credit points at this time. Please check later."		
Exceptions:	1.0.E1: Calculation Error Displays: "Error in calculating points. Please contact support."		
Priority:	Medium		
Business Rules:	BR17, BR18		
Frequency of Use:	Estimated 30-60 times per day.		
Other Information:	Reward points expire after a specific period if unused.		
Assumptions:	Reward system is properly configured.		

❖ UC-17 Do Skin Test

ID and Name:	UC-17 Do Skin Test		
Created By:	Mai Anh Duy	Date Created:	11/01/2025
Primary Actor:	Customer	Secondary Actors:	Order Database
Description:	This use case provides an interactive skin assessment to help customers determine their skin type. The system asks a series of questions about skin conditions and preferences, then analyzes the answers to categorize the customer's skin type.		
Trigger:	A customer decides to take a skin test to get treatment solutions and product recommendations.		
Preconditions:	PRE-1: The customer must have access to the skin test module.		
Postconditions:	POST-1: The system determines and displays the customer's skin type. POST-2: The system saves the skin type information in the customer's profile (if logged in).		
Normal Flow:	<ol style="list-style-type: none"> 1. The customer starts the skin test. 2. Multiple choice question will be sent step by step for customer 3. The system will calculate the cumulative point for each answer 4. Total 16 question for each quiz test 5. The result will be display after quiz test 		
Alternative Flows:	<p>1.1: Guest User If the customer is not logged in, they can not take the test</p>		
Exceptions:	1.0.E1: System error → Displays "Skin test unavailable, please try again later".		
Priority:	Estimated 100-500 tests per day.		
Business Rules:	BR17, BR18, BR19		
Frequency of Use:	Estimated 30-60 times per day.		
Other Information:	The system should log failed login attempts and enforce account lockout after multiple failed attempts. Secure session management is required.		
Assumptions:	The system provides secure transactions and maintains order history. The system ensures real-time stock updates.		

3. Business Rules

ID	Rule Definition
BR-01	User just only login into system when account have not been banned
BR-02	Users must enter a valid username/email and password combination to proceed with login.
BR-03	The system will validate the entered credentials against the stored data in the database (e.g., hashed password comparison).
BR-04	If the credentials are incorrect, the system will display an error message stating that the login attempt was unsuccessful.
BR-05	The system must validate the user inputs during registration, including: <ul style="list-style-type: none"> • Username: Must be unique and non-empty.

	<ul style="list-style-type: none"> ● Password: Must meet complexity requirements (e.g., minimum length, special characters). ● Email: Must follow a valid email format and be unique.
BR-06	During the registration process, the system must check whether the provided email address is already registered. If yes, the registration should fail with an appropriate message.
BR-07	<ul style="list-style-type: none"> ● Users must verify their email address after registration to gain full access to the system. ● Unverified accounts should have limited access, such as browsing but not placing orders. ● The system must track whether an email has been verified or not.
BR-08	<ul style="list-style-type: none"> ● The system must verify the registered email address before sending a password reset link. ● Reset links must be unique, time-limited (e.g., expire after 15 minutes), and securely generated. ● The new password must follow the same complexity rules as the registration password.
BR-09	<ul style="list-style-type: none"> ● The system should send a password reset link only to the verified email address associated with the account. ● If the account is not verified, prompt the user to complete the email verification process before resetting the password.
BR-10	<ul style="list-style-type: none"> ● The system must securely terminate the user session upon logout, ensuring that all session data and temporary caches are cleared. ● Any attempt to access the system after logout should redirect the user to the login page.
BR-11	<ul style="list-style-type: none"> ● The system must fetch product data from the centralized product database. ● Data should include essential attributes like name, description, price, availability, and category. ● Any changes in the product database should be immediately reflected in the product listing.
BR-12	<ul style="list-style-type: none"> ● The search function must support partial matching, case insensitivity, and keyword relevance. ● Results should be sorted by relevance by default. ● The search must also support filtering by product attributes if specified.
BR-13	<ul style="list-style-type: none"> ● Users should be able to apply multiple filters simultaneously, including: <ul style="list-style-type: none"> ○ Skin Type: Normal, Dry, Oily, Combination, Sensitive ○ Price Range: User-defined minimum and maximum ○ Ingredients: Including or excluding specific components ○ Filtered results must dynamically update without requiring a page reload.
BR-14	<ul style="list-style-type: none"> ● Product details must be accurately retrieved from the database, including: <ul style="list-style-type: none"> ○ Product Name: Unique identifier ○ Description: Detailed usage and benefits

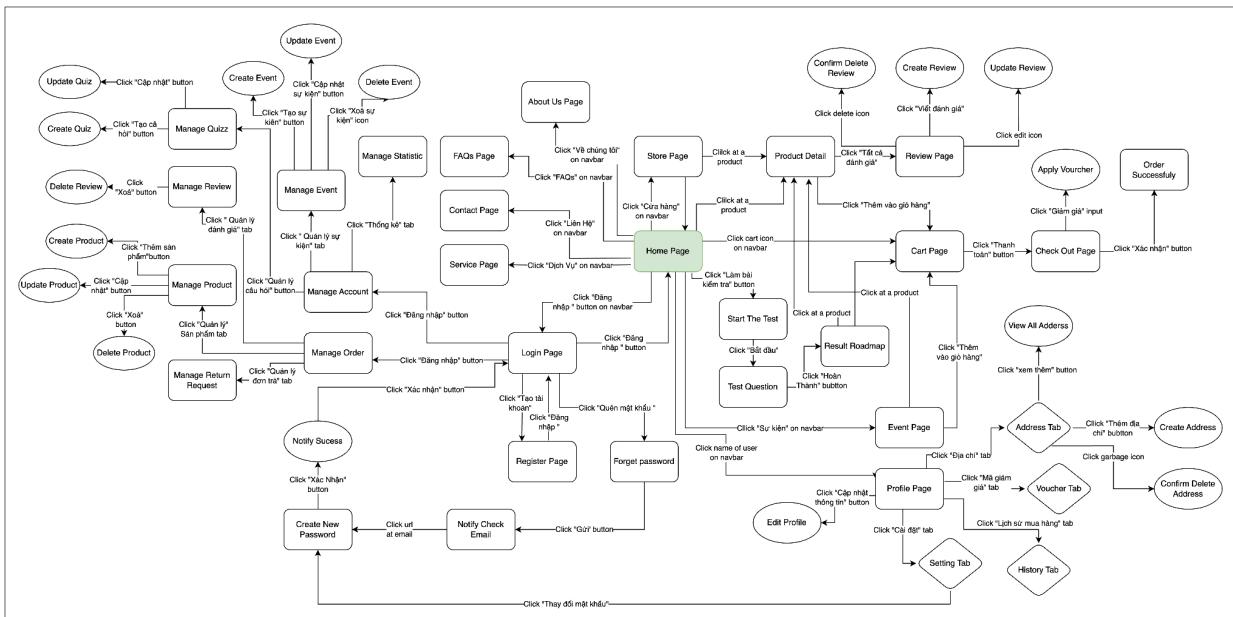
	<ul style="list-style-type: none"> ○ Ingredients: Complete list of active and inactive components ○ Reviews: User-generated feedback ○ If a product is unavailable or discontinued, display a notification with suggested alternatives.
BR-15	The system must check product availability before confirming the order.
BR-16	Payment processing must be secure and handle failures appropriately.
BR-17	Question quiz will be random selected in question bank
BR-18	Total 16 question for each time or less than depend on answering
BR-19	Refunds are only applicable for damaged or incorrect products and must be requested within 7 days of receiving the order.
BR-20	<p>Order Status have 6 kind of status include: :</p> <ul style="list-style-type: none"> ● "Pending" ● "Processing" ● "Shipping" ● "Shipped" ● "Completed" ● "Cancelled"
BR-21	The system must validate prices before final order confirmation.
BR-22	The system must record order details and update the inventory in real-time.
BR-23	Confirmation emails must be sent after a successful order.
BR-24	<ul style="list-style-type: none"> ● All payment transactions must comply with the Payment Card Industry Data Security Standard (PCI-DSS). ● Card information must be encrypted during transmission. ● The system should log transaction success or failure without storing sensitive details.
BR-25	<ul style="list-style-type: none"> ● Only authenticated users can access their own order history. ● The system must verify user credentials before displaying order details. ● Order data must be securely stored and protected against unauthorized access.
BR-26	<ul style="list-style-type: none"> ● Each customer can only view their own order history. ● Orders should be displayed in chronological order by default, with options to filter by date or status. ● The system should provide a summary view with options for more detailed information.
BR-27	<ul style="list-style-type: none"> ● Reward points are calculated as a fixed percentage (e.g., 5%) of the total purchase amount, where 1 point is equivalent to 10,000 VND. ● The system must round down to the nearest integer when calculating points. ● The calculation rule (percentage rate) should be configurable from the admin panel. ● Points should be credited immediately upon successful transaction completion. ● The customer's membership level is determined based on the accumulated points:

	<ul style="list-style-type: none"> (Bronze): 0 - 500 points (Silver): 501 - 1000 points (Gold): Above 1000 points The system should automatically update the customer's membership level when their points balance crosses the defined thresholds.
BR-28	<ul style="list-style-type: none"> Reward points can only be redeemed on future purchases. Points are valid for 12 months from the date of issuance. Expired points are automatically removed from the account balance. Points cannot be exchanged for cash or transferred to other accounts. The system must inform users of any expiring points at least one month in advance.

IV. Functional Requirements

1. System Functional Overview

1.1 Screen Flow



1.2 Screen Descriptions

#	Screen	Feature	Description
FR-01	Home Page	Navigation	The main interface where users can access different features, including browsing skincare products, viewing recommendations, and navigating to other key sections.
FR-02	Login Page	Authentication	Allows users to log in using their credentials to access personalized features and manage their accounts.
FR-03	Register	Authentication	Enables new users to create an account by providing necessary details such as name, email, and password.
FR-04	Forgot Password	Authentication	Allows users to reset their password via email verification.
FR-05	Create New Password	Authentication	Allows users to set a new password after verifying their identity via email.
FR-06	Store Page	Authentication	Shows a list of skincare products with search, filter, and sorting functionalities.
FR-07	Product Detail	Authentication	Displays detailed information about a selected product, including description, usage, and reviews.
FR-07	Review Page	Authentication	Enables users to write, edit, and delete reviews for products.
FR-08	Cart Page	Authentication	Allows users to review the items in their cart before proceeding to checkout.
FR-09	CheckOut	Authentication	Facilitates the checkout process where users enter payment and shipping details.
FR-10	Order Successfully	Authentication	Displays a confirmation message after a successful purchase, summarizing order details and next steps.
FR-11	Event	Authentication	Displays upcoming events, promotions, or special skincare-related activities. Users can view details and participate in events.
FR-012	AboutUs	Authentication	Provides information about the company, mission, vision, and values. Helps users understand the brand and its purpose.
FR-13	FAQs Page	Authentication	Displays frequently asked questions and answers to help users with common inquiries about products, services, and account management.
FR-14	Service Page	Authentication	Offers information about available customer services, such as skincare consultations, support policies, and how users can get assistance.
FR-15	Contact Page	Authentication	Provides users with ways to contact customer support, including email, phone, and live chat. It may also include a contact form for inquiries.
FR-16	Start The Test Page	Authentication	Allows users to begin a personalized skin type test by answering a series of questions to determine the most suitable skincare products.
FR-17	Test Question	Authentication	Displays a series of questions related to the user's skin condition and preferences, helping generate personalized skincare recommendations.

FR-18	Result Roadmap	Authentication	Shows test results along with recommended skincare products. Users can view product details or add them to their cart for purchase.
FR-19	Profile Page	Authentication	Displays user details, including personal information and accumulated reward points.
FR-20	History Tab	Authentication	Allows users to view their past orders, including order details and status.
FR-21	Setting Tab	Authentication	Provides options to change the app theme (dark/light mode), select a preferred language, and update the password.
FR-22	Address Tab	Authentication	Enables users to view saved addresses, add new addresses, and select one for checkout.
FR-23	Voucher Tab	Authentication	Displays available vouchers that users can apply to their orders for discounts.
FR-24	Manage Product	Authentication	Enables staff to add, update, or delete products in the system.
FR-25	Manage Category	Authentication	Allows staff to manage product categories and organize listings.
FR-26	Manage Order	Authentication	Provides an interface for staff to track, update, and manage customer orders.
FR-27	Manage Review	Authentication	Lets staff review and manage customer feedback on products.
FR-28	Manage Return Request	Authentication	Staff can manage the return request order
FR-29	Manage Account	Authentication	Allows managers to manage user and staff accounts.
FR-30	Manage Event	Authentication	Enables managers to create, update, and delete promotional events..
FR-31	Manage Quiz	Authentication	Allows managers to create and manage quizzes for customer engagement.
FR-32	Manage Statistic	Authentication	Displays sales, orders, and customer engagement analytics.

1.3 Screen Authorization

Screen	Guest/Customer	Assessment Staff	Manager	Admin
Home Screen	X	X	X	X

In which:

- Guest/Customer:** The Guest/Customer role represents users who access the system without needing to log in or create an account. They have limited access but can still browse and interact with various informational sections of the application
- Assessment Staff:** The Assessment Staff role is designed for staff members who handle the assessment and verification processes. They have access to detailed assessment information and can update the status of requests. This role involves interacting with various system functionalities to manage assessments effectively and ensure accurate records.

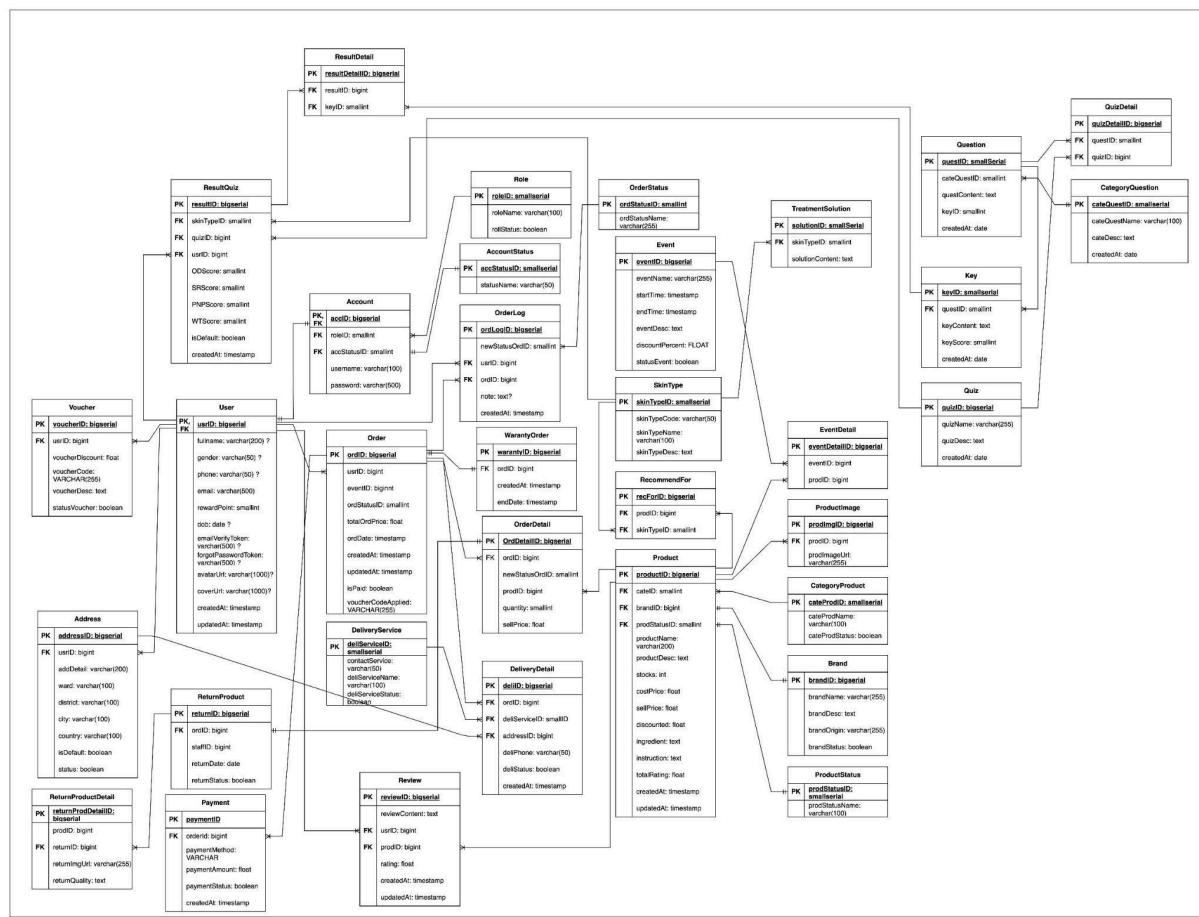
- **Manager:** The Manager role is designed for individuals who oversee operations and staff. They have access to advanced management features and can view comprehensive reports and statistics. This role involves interacting with various system functionalities to ensure efficient operation and effective management of assessments, certifications, staff assignments, and service management.

1.4 Non-Screen Functions

#	System Function	Feature	Description
FR-33	Content Recommendation Engine	Automation	Suggests relevant content to users based on their activities and preferences
FR-34	Daily Data Backup	Data Management	Performs daily backups of the system database to ensure data integrity and availability
FR-35	Data Synchronisation	Data Management	Synchronises data between different parts of the system to ensure consistency
FR-36	Continuous Integration/Continuous Deployment (CI/CD)	Deployment	Automates the process of testing and deploying code changes to the production environment
FR-37	Email Notification Service	Notification	Sends email notifications to users for various events such as account registration, password reset, and assessment updates
FR-38	Load Balancer	Performance	Distributes incoming network traffic across multiple servers to ensure optimal performance and reliability
FR-39	Auto-Scaling Service	Performance	Automatically scales the system resources up or down based on the current load and usage
FR-40	Scheduled Reports	Reporting	Generates and sends scheduled reports to administrators and other stakeholders
FR-41	API Rate Limiting	Security	Limits the number of API requests that can be made in a given time period to prevent abuse
FR-42	Data Encryption	Security	Encrypts sensitive data both at rest and in transit to ensure data security

2. Data Requirements

2.1 Logical Data Model



Link ERD Document: <https://dbdocs.io/andyninety9/MavidSkincareShop>

2.2 Data Dictionary

Data Element	Description	Composition or Data Type	Length	Values
Account				
accID		bigserial		Primary Key
roleID		SMALLINT		not_null
accStatusID		SMALLINT		not_null

username		VARCHAR	255	not_null, unique
password		VARCHAR	255	not_null
User				
usrlD		bigserial		not_null
fullname		VARCHAR	255	
gender		SMALLINT		
phone		VARCHAR	255	unique
email		VARCHAR	255	not_null
dob		DATE		
createdAt		TIMESTAMP		not_null
updatedAt		TIMESTAMP		not_null
emailVerifyToken		VARCHAR	255	unique
forgotPasswordToken		VARCHAR	255	unique
avatarUrl		VARCHAR	255	
rewardPoint		SMALLINT		not_null
Role				
roleID		SMALLINT		not_null, PK

roleName		VARCHAR	255	not_null
roleStatus		BOOLEAN		not_null
AccountStatus				
accStatusID		smallserial		not_null, PK, increment
statusName		VARCHAR	255	not_null
Address				
addressID		bigserial		not_null, PK, increment
usrID		BIGINT		not_null
addDetail		VARCHAR	255	not_null
ward		VARCHAR	255	not_null
district		VARCHAR	255	not_null
city		VARCHAR	255	not_null
country		VARCHAR	255	not_null
isDefault		BOOLEAN		not_null
status		BOOLEAN		not_null
SkinType				
skinTypeID		smallserial		not_null, PK, increment

skinTypeCodes		VARCHAR	255	not_null
skinTypeName		VARCHAR	255	not_null
skinTypeDesc		TEXT		not_null
CategoryQuestion				
cateQuestionID		smallserial		not_null, PK, increment
cateName		VARCHAR	255	not_null
cateDesc		TEXT		not_null
createdAt		DATE		not_null
Product				
productID		bigserial		not_null, PK, increment
cateID		smallserial		not_null, increment
brandID		BIGINT		not_null
productName		VARCHAR	255	not_null
productDesc		TEXT		
stocks		INTEGER		not_null
costPrice		FLOAT	53	not_null
sellPrice		FLOAT	53	not_null

discountedPrice		FLOAT	53	not_null
totalRating		FLOAT	53	
ingredient		TEXT		not_null
instruction		TEXT		not_null
prodUseFor		TEXT		
prodStatusID		SMALLINT		not_null
createdAt		TIMESTAMP	0	not_null
updatedAt		TIMESTAMP	0	not_null
totalSold		SMALLINT		not_null
totalReview		SMALLINT		not_null
Brand				
brandID		bigserial		not_null, PK, increment
brandName		VARCHAR	255	not_null
brandDesc		TEXT		
brandOrigin		VARCHAR	255	not_null
brandStatus		BOOLEAN		not_null
isDeleted		BOOLEAN		not_null

CategoryProduct				
cateProdID		smallserial		not_null, PK, increment
cateProdName		VARCHAR	255	not_null
cateProdStatus		BOOLEAN		not_null
Review				
reviewID		bigserial		not_null, PK, increment
reviewContent		TEXT		not_null
usrID		BIGINT		not_null
prodID		BIGINT		not_null
rating		FLOAT	53	not_null
createdAt		TIMESTAMP		not_null
updatedAt		TIMESTAMP		not_null
Payment				
paymentID		bigserial		not_null, PK, increment
orderID		BIGINT		not_null
paymentMethod		VARCHAR		not_null
paymentAmount		FLOAT	53	not_null

paymentStatus		BOOLEAN		not_null
createdAt		TIMESTAMP		
Order				
ordID		bigserial		not_null, PK, increment
usrID		BIGINT		not_null
eventID		BIGINT		
ordDate		TIMESTAMP		not_null
ordStatusID		SMALLINT		not_null
totalOrdPrice		FLOAT	53	not_null
createdAt		TIMESTAMP		not_null
updatedAt		TIMESTAMP		not_null
isPaid		BOOLEAN		not_null
voucherCodeApplied		VARCHAR	255	not_null
OrderDetail				
ordDetailID		bigserial		not_null, PK, increment
ordID		BIGINT		not_null
prodID		BIGINT		not_null

quantity		SMALLINT		not_null
sellPrice		FLOAT	53	not_null
OrderStatus				
ordStatusID		SMALLINT		not_null, PK
ordStatusName		VARCHAR		255
OrderLog				
ordLogID		bigserial		not_null, PK, increment
newStatusOrdID		SMALLINT		not_null
ordID		BIGINT		not_null
usrID		BIGINT		not_null
note		TEXT		
createdAt		TIMESTAMP		not_null
Warranty Order				
warantyID		bigserial		not_null, PK, increment
ordID		BIGINT		not_null
createdAt		TIMESTAMP		not_null
endDate		TIMESTAMP		not_null

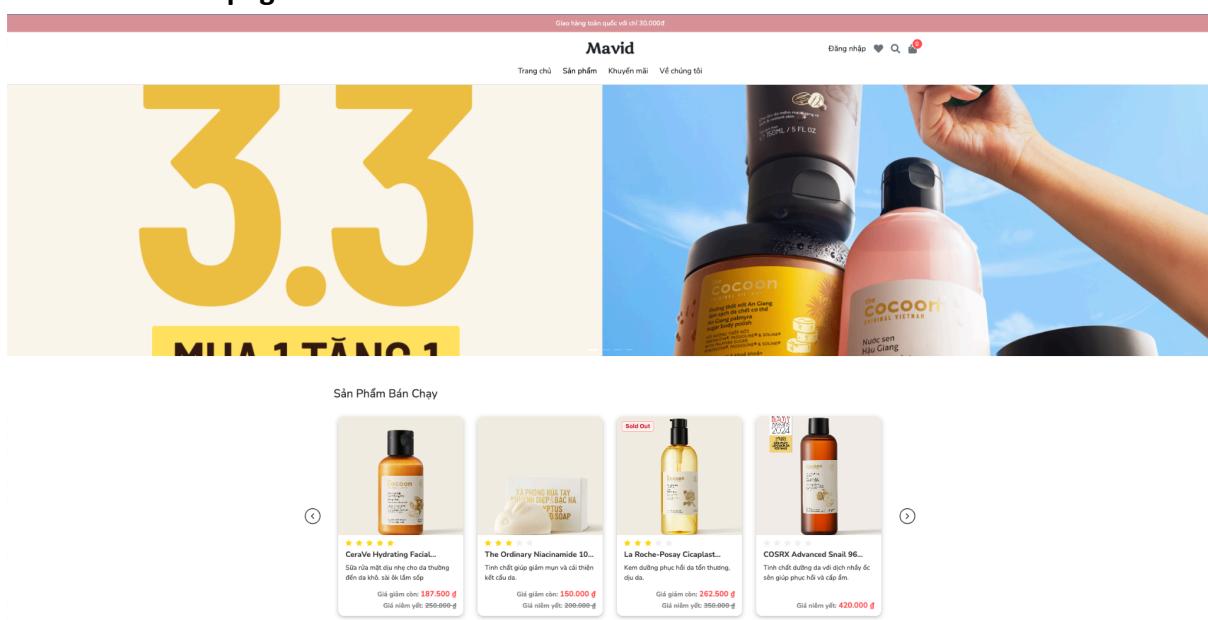
Event				
eventID		bigserial		not_null, PK, increment
eventName		VARCHAR	255	not_null
startTime		TIMESTAMP		not_null
endTime		TIMESTAMP		not_null
eventDesc		TEXT		
discountPercent		FLOAT	53	not_null
statusEvent		BOOLEAN		not_null
EventDetail				
eventDetailID		bigserial		not_null, PK, increment
productID		BIGINT		not_null
eventID		BIGINT		not_null
Voucher				
voucherID		bigserial		not_null, PK, increment
voucherCode		VARCHAR		not_null, unique
voucherDiscount		FLOAT		not_null
usrID		BIGINT		not_null

voucherDesc		TEXT		not_null
statusVoucher		BOOLEAN		not_null
Address				
addressID		bigserial		not_null, PK, increment
usrID		BIGINT		not_null
addDetail		VARCHAR		not_null
ward		VARCHAR		not_null
district		VARCHAR		not_null
city		VARCHAR		not_null
country		VARCHAR		not_null
isDefault		BOOLEAN		not_null
status		BOOLEAN		not_null
DeliveryDetail				
deliID		bigserial		not_null, PK, increment
deliServiceID		BIGINT		not_null
addressID		BIGINT		not_null
deliPhone		VARCHAR		not_null

ordID		BIGINT		not_null
deliStatus		BOOLEAN		not_null
createAt		TIMESTAMP		not_null
DeliveryService				
DeliServiceID		bigserial		not_null, PK, increment
contactService		VARCHAR		not_null
DeliServiceName		VARCHAR		not_null
deliServiceStatus		BOOLEAN		not_null

3. Product Feature

❖ 3.1 Homepage



- Screen Name: Homepage

- **Screen ID:** 3.1
- **Purpose:**
 - The homepage serves as the main entry point for users to explore the website, view promotions, and navigate to different product categories. It showcases featured products, promotional banners, and quick access to essential sections.
- **Layout and Components:**
 - **Layout and Components:**
 - Logo: Positioned at the center, representing the website's branding (Mavid).
 - Navigation Menu: Located below the logo, including key links:
 - Home: Redirects to the homepage.
 - Products: Directs to the product catalog.
 - Skincare Tips: Accesses the skincare advice section.
 - Membership: Provides details about membership levels and rewards.
 - Search Bar: Allows users to search for products.
 - User Account and Cart Icons:
 - User Icon: Accesses the login, registration, or user profile.
 - Cart Icon: Displays the current shopping cart status.
- **Promotional Banner:**

Positioned prominently at the top of the content area.

 - Displays the current promotion: "**3.3 Mua 1 Tặng 1**" (Buy 1 Get 1 Free) to attract customer attention.
 - High-resolution product image associated with the promotion (Cocoon product line).
- **Featured Product Section - "Sản Phẩm Bán Chạy" (Best-Selling Products):**
 - A horizontally scrollable carousel displaying popular products.
 - Each product card includes:
 - **Product Image:** High-quality image for visual appeal.
 - **Product Name:** Descriptive title of the item.
 - **Rating:** Displayed as stars to indicate customer satisfaction.
 - **Price:** Clearly labeled, with discounts highlighted if applicable.
 - **Tags/Labels:** Such as "Best Seller" or "Discount" for better visibility.
 - **Action Button:** Directs to the product detail page when clicked.

❖ 3.2 Products Page

The screenshot shows the Mavid website's products page. At the top, there is a header with a search bar and a link to 'Giao hàng toàn quốc với chỉ 30.000đ'. Below the header, the logo 'Mavid' is centered. To the right of the logo are links for 'Đăng nhập', a heart icon, a magnifying glass icon, and a shopping cart icon. The main content area has a large banner with several skincare products. Below the banner, there is a navigation bar with four categories: OSPW, OSPF, OSNW, and OSNT. To the right of the navigation bar are two dropdown menus: 'Chọn thương hiệu' and 'Chọn danh mục'. The main content area displays a grid of product cards. Each card includes a small image of the product, its name, a brief description, and its price. One card has a 'Sold Out' label. Another card has a 'Rating 2024' badge. The products shown include CeraVe Hydrating Facial Cleanser, The Ordinary Niacinamide 10%, La Roche-Posay Cicaplast Baume, and COSRX Advanced Snail 96 Mucin.

- **Screen Name:** Products Page
- **Screen ID:** 3.2
- **Purpose:**
 - The Products Page serves as a central location for users to explore all available skincare products. It provides features for browsing, filtering, and selecting items for purchase, promoting easy product discovery.
- **Layout and Components:**
 1. **Header:**
 - **Logo:** Positioned at the center, representing the website's branding (Mavid).
 - **Navigation Menu:** Below the logo, including:
 - **Home:** Returns to the homepage.
 - **Products:** Redirects to the products catalog (current page).
 - **Skincare Tips:** Links to helpful skincare information.
 - **Membership:** Details about customer tiers and rewards.
 - **Search Bar:** Allows users to search for specific products.
 - **User Account and Cart Icons:**
 - **User Icon:** Opens login/profile.
 - **Cart Icon:** Shows the current shopping cart status.
 2. **Product Banner**

3.3 Cart Page

Giao hàng toàn quốc với chỉ 30.000đ

Mavid

Trang chủ Sản phẩm Khuyến mãi Về chúng tôi Kiểm tra loại da của bạn

Giỏ hàng (5 sản phẩm)

Sản phẩm	Giá tiền	Số lượng	Thành tiền	Xoá
Bioderma Cave Hydrating Facial Cleanser Còn lại: 7 sản phẩm	250,000 đ	<input type="button" value="-"/> <input checked="" type="button" value="1"/> <input type="button" value="+"/>	250,000 đ	
Thayers Thayers Alcohol-Free Rose Petal Witch Hazel Toner Còn lại: 108 sản phẩm	340,000 đ	<input type="button" value="-"/> <input checked="" type="button" value="1"/> <input type="button" value="+"/>	340,000 đ	
L'Oréal Paris L'Oréal Paris Revitalift hydrating Cleanser Còn lại: 99 sản phẩm	350,000 đ	<input type="button" value="-"/> <input checked="" type="button" value="1"/> <input type="button" value="+"/>	350,000 đ	
Olay Olay Gentle Foaming Cleanser Còn lại: 98 sản phẩm	320,000 đ	<input type="button" value="-"/> <input checked="" type="button" value="1"/> <input type="button" value="+"/>	320,000 đ	
Eucerin Eucerin DermatoCLEAN Refreshing Cleansing Gel Còn lại: 100 sản phẩm	380,000 đ	<input type="button" value="-"/> <input checked="" type="button" value="1"/> <input type="button" value="+"/>	380,000 đ	

Hoá đơn của bạn

Tạm tính:	1,640,000 đ
Giảm giá:	-0 đ
Vui lòng kiểm tra giỏ hàng trước khi thanh toán	
Tổng cộng:	1,640,000 đ

Tiến hành đặt hàng

3.3 Checkout Page

Giao hàng toàn quốc với chỉ 30.000đ

Mavid

Trang chủ Sản phẩm Khuyến mãi Về chúng tôi Kiểm tra loại da của bạn

Quay về giỏ hàng

Thông tin nhận hàng

43 Xô Viết Nghệ Tĩnh, Phường 17, Quận Bình Thạnh, Hồ Chí Minh
duymase182823@ptt.edu.vn
Họ và Tên
0918788458
43 Xô Viết Nghệ Tĩnh
Phường 17
Quận Bình Thạnh
Hồ Chí Minh
Ghi chú

Đơn hàng (4 sản phẩm)

GeraVe Hydrating Facial Cleanser Số lượng: 1	250,000 đ
L'Oréal Paris Revitalift Hydrating Cleanser Số lượng: 1	350,000 đ
Olay Gentle Foaming Cleanser Số lượng: 1	320,000 đ
Eucerin DermatoCLEAN Refreshing Cleansing Gel Số lượng: 1	380,000 đ

Voucher khả dụng
Không có voucher nào khả dụng

Thanh toán

Thanh toán qua VNPay
 Thanh toán khi nhận hàng (COD)

Vận chuyển

Vận chuyển Giao Hàng nhanh

Tạm tính:
Phí vận chuyển: 21,500 đ
Tổng cộng: 1,321,500 đ

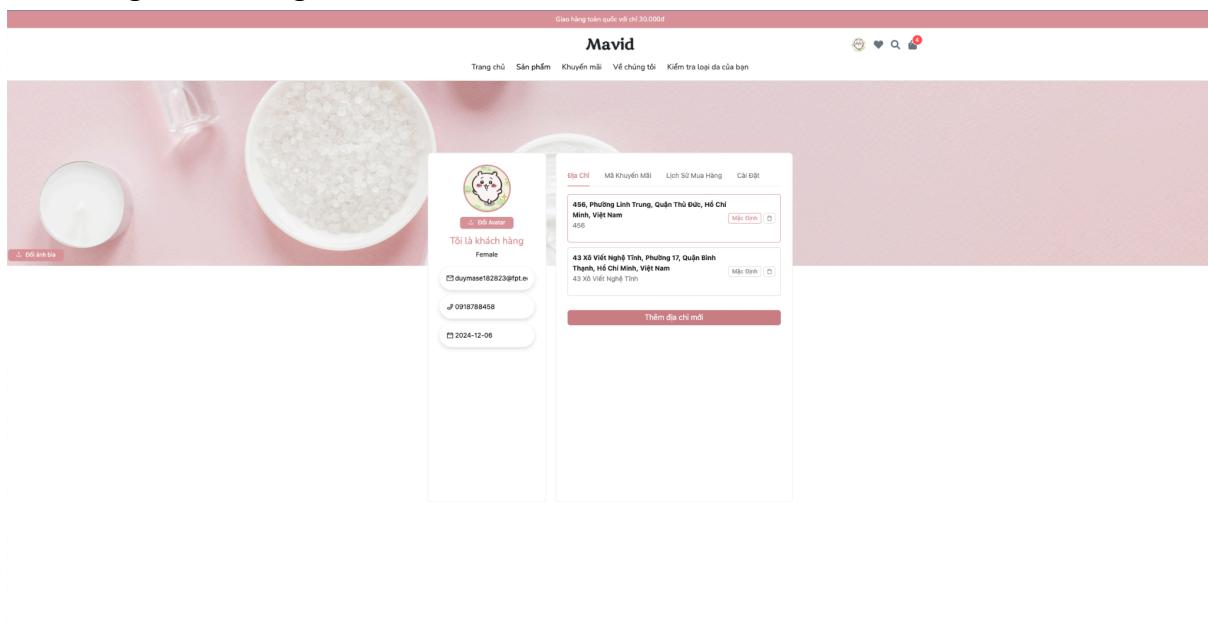
Đặt hàng

Mavid
Đặt mua ngay các sản phẩm mỹ phẩm phù hợp với làn da của bạn, cam kết 100% chính hãng.

Chăm Sóc Khách Hàng
Liên hệ chúng tôi
Hỗ trợ
Chính sách đổi trả

Mạng Xã Hội

3.4 Manage Profile Page



3.5 Order History Page

A screenshot of the Mavid website's Order History page. The page title is 'Chi tiết đặt hàng'. It shows an order with the ID '#690247048544387072' placed on '03/19/25'. The status of the order is 'Pending'. The order details include:

- Thông tin khách hàng:
 - Tên: Tôi Là Khách Hàng
 - Email: duymase182823@fpt.edu.vn
- Thời gian:
 - Còn xử lý: Đến hàng đúng thời hạn
 - Đang xử lý: Đến hàng đúng thời hạn
 - Đang vận chuyển: Đến hàng trên đường giao
 - Đã vận chuyển: Đến hàng đã được vận chuyển
 - Hoàn thành: Đến hàng đã được giao
 - Đã hủy: Đến hàng đã bị hủy
- Sản phẩm đã đặt:
 - Bioderma Sensibio H2O Micellar Water: Nước tẩy trang dịu nhẹ dành cho da nhạy cảm. Giá: ₫300,000/vỏ. Số lượng: x2. Đánh giá sản phẩm.
- Thông tin vận chuyển:
 - Thông tin bảo hành: Ngày bắt đầu: 03/19/25; Ngày kết thúc: 04/18/25.
 - Tổng tiền: ₫600,000
 - Phi vận chuyển: ₫0
 - Thành tiền: ₫621,500
 - Phương thức thanh toán: vnpay

3.6 Skin Type Test Page

Bạn thuộc Type Da Baumann nào trong số 16 loại da?

Bạn muốn có làn da đẹp rạng rỡ như ý muốn? Chỉ cần 3 phút thôi, bạn sẽ biết chính xác loại da của mình và có ngay một kế hoạch chăm sóc da phù hợp.

Bài kiểm tra loại da miễn phí của chúng tôi, được phát triển bởi các chuyên gia da liễu, giúp bạn xác định chính xác loại da của mình. Dựa trên kết quả, bạn sẽ nhận được gợi ý về quy trình chăm sóc da tối ưu, tương tự như những phương pháp được áp dụng trong phòng khám chuyên nghiệp. Giờ đây, bạn có thể trải nghiệm bài kiểm tra này ngay tại nhà và tìm kiếm những sản phẩm phù hợp nhất với Type Da Baumann của bạn!

Bạn đã sẵn sàng khám phá làn da của mình chưa?

Bắt đầu làm bài kiểm tra da

Bài kiểm tra mới

Mô tả bài quizz

Kiểm tra sức khỏe da

Xác định loại da ngay

Câu hỏi

Sau khi rửa mặt mà không thoa dưỡng ẩm, kem chống nắng... sau 2-3 giờ, trên và má của bạn trông hoặc cảm thấy thế nào?

Rất thô ráp, bong tróc hoặc xám xịt

Căng chát

Dưỡng ẩm tốt, không phản chiếu ánh sáng

Bóng dầu, có ánh sáng phản chiếu

Tiếp theo

♥ ♥

Phản tích da của bạn

Dộ dầu	Da khô
Dộ nhạy cảm	ít nhạy cảm
Dộ sắc tố	ít sắc tố
Dộ lão hóa	ít nếp nhăn

Kết quả sẽ được cập nhật khi bạn trả lời thêm câu hỏi

3.7 Skin Type Test Result Page

Giao hàng toàn quốc với chỉ 30.000đ

Mavid

Trang chủ | Sản phẩm | Khuyến mãi | Về chúng tôi | Kiểm tra loại da của bạn

OSAKI

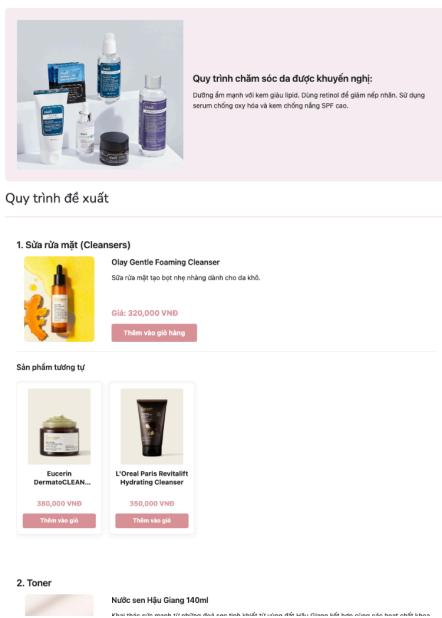
Loại da Baumann của bạn là:
Da khô, nhạy cảm, không sắc tố, có nếp nhăn

Da khô, dễ kích ứng, không có sắc tố nhưng dễ hình thành nếp nhăn. Cần dưỡng ẩm sâu và chống lão hóa.

Điểm Đánh Giá Da Của Bạn

Độ Khô / Độ Dầu	7/25
Khô	Dầu
Độ Nhạy Cảm / Độ Nâng Chịu Đựng	10/25
Nhạy Cảm	Chịu Đựng Tốt
Không Sắc Tố / Sắc Tố	10/25
Không Sắc Tố	Nhiều Sắc Tố
Có Nếp Nhăn / Không Nếp Nhăn	11/25
Nhiều Nếp Nhăn	Sẵn Chắc

3.7 Recommended Page



V. Non-Functional Requirements

1. External Interface Requirements

1.1 User Interfaces

- **UI-1:** Ensure the user interface (UI) is easy to use, user-friendly, and responsive across all devices, including desktops and mobile devices.
- **UI-2:** The interface will support users in interacting with the system for tasks such as logging in, searching, and processing actions related to certification and assessment.
- **UI-3:** The UI will be designed with minimalistic and modern principles to ensure that users can understand and complete tasks without difficulty.
- **UI-4:** The color scheme, typography, and UI elements will follow modern UI/UX design standards and align with the brand identity.

1.2 Software Interfaces

- **SI-1: API Gateway - Ocelot** will act as a bridge between the frontend and backend, managing all API endpoints and performing routing functions.
- **SI-2: Backend Services (REST-API Server):** These services will handle core functions such as processing user requests, managing data, and returning results.
- **SI-3: Cloud Services:**
Amazon Web Services (AWS): Utilize services like S3 for storage, SES for email sending, and IAM for access management.
Appwrite Storage: Used for storing and managing files and documents related to certificates and assessments.
 - **Redis Cloud:** Provides caching capabilities to speed up data retrieval for critical tasks, reducing the load on the primary database.
- **SI-4: Database:**

- **PostgreSQL:** Used as the primary database for storing user data, certificates, and other relevant information.

1.3 Hardware Interfaces

- **HI-1: Frontend - Web Application:**
 - Deploy on <https://vercel.com>
- **HI-2: Backend - REST-API Server:**
 - API Gateway - Ocelot:
 - 0.5CPU - 512MB RAM
 - Web API Services:
 - 0.5CPU - 512MB RAM
 - Both are deployed on <https://render.com/>
- **HI-3: Cloud services:**
 - Amazon Web Services(AWS): S3 Service, SES Service, IAM
 - Appwrite Storage: Storage
- **HI-4: Caches Server:**
 - Redis Cloud - Version: V6.2.14
 - Deploy on <https://render.com/>
 - 25MB RAM - 50 Connections Limit
- **HI-5: Database services:**
 - PostgreSQL
 - Deploy on <https://aiven.io/>
 - 1 CPU - 1GB RAM - 5Gb Storage

1.4 Communications Interfaces

- **CI-1:** The system shall utilise HTTPS protocol for all web-based communications to ensure secure data transmission.
- **CI-2:** The system shall support data transfer rates sufficient to handle large assessment certificate files and images, ensuring timely delivery of digital certificates to customers.

2. Quality Attributes

2.1 Usability

- **USE-1:** The system shall allow users to perform certificate lookups and request assessments with minimal training. The interface should be intuitive, making it easy for both customers and staff to navigate and use effectively.
- **USE-2:** 95% of new users shall be able to successfully navigate the system and perform key functions on their first attempt. Training materials such as user manuals and video tutorials shall be provided.
- **USE-3:** A help section with FAQs, search functionality, and contact options for customer support shall be available.

2.2 Performance

- **PER-1:** The system shall handle up to 100 concurrent users without performance degradation.
- **PER-2:** Response times for user actions shall not exceed 3 seconds under normal operating conditions.
- **PER-3:** The system shall generate and display reports within 5 seconds.
- **PER-4:** 95% of webpages shall load within 3 seconds over a 20Mbps internet connection.
- **PER-5:** Performance testing shall be conducted to ensure the system can handle the expected load without degradation.
- **PER-6:** Database queries shall be optimized to ensure quick data retrieval, with average query times under 200ms.

2.3 Security

- **SEC-1:** All sensitive data shall be encrypted both in transit (using HTTPS) and at rest (using encryption algorithms like AES-256) to ensure data security for a small-scale system.
- **SEC-2:** Users shall be required to authenticate using **JSON Web Tokens (JWT)** for session management and **OAuth2.0** for secure third-party authentication (such as Google login). Given the system's size, it is essential to have lightweight, secure authentication mechanisms.
- **SEC-3:** The system shall log all user actions for auditing purposes, including login/logout activities and sensitive actions, ensuring transparency. The system will implement **role-based access control (RBAC)** to restrict access to sensitive functions, with different access levels for admins and regular users.
- **SEC-4:** The system shall permit customers to view only orders that they have placed, ensuring data privacy. Each user will be able to access and manage their own data without accessing others' information.

2.4 Safety

- **SAF-1:** Safety measures must be implemented to ensure data integrity and prevent data loss. This includes performing **regular backups** (daily or weekly) and implementing **data validation mechanisms** to ensure the accuracy and consistency of the stored data.
- **SAF-2:** The system shall prevent unauthorized access to assessment data by using **strong authentication mechanisms** (JWT, OAuth2.0) and **secure coding practices** such as input validation and protection against SQL injection.
- **SAF-3:** Regular **security audits** shall be conducted quarterly to identify and mitigate potential vulnerabilities, ensuring the system is up to date with the latest security standards.
- **SAF-4:** Staff shall be trained on **incident response procedures**, focusing on how to quickly address and resolve security incidents. This ensures that the team is prepared for any potential threats.
- **SAF-5:** An **incident response plan** shall be established, detailing procedures for identifying, addressing, and mitigating security breaches or other critical incidents. The plan will be reviewed periodically and updated as needed.

2.5 Availability

- **AVL-1:** The Mavid sell skincare system must be available and operational at least 98% of the time between 5:00 A.M. to midnight (local time). This time does not include scheduled maintenance intervals.
- **AVL-2:** The system must ensure at least 95% availability during peak periods, typically from 10:00 A.M. to 2:00 P.M., when traffic is highest. These peak times do not include scheduled maintenance periods.
- **AVL-3:** The system must be able to maintain at least 85% availability even in the event of emergency maintenance or unexpected problems. Ensure that emergency downtime does not exceed 15% of total expected operating time.

2.6 Reliability

- **AVL-1:** The Mavid sell skincare system must be available and operational at least **98% of the time** during operating hours (from 5:00 A.M. to midnight local time), excluding scheduled maintenance intervals. This ensures minimal downtime for users.
- **AVL-2:** The system must ensure at least **95% availability** during peak periods (typically from 10:00 A.M. to 2:00 P.M.), when user traffic is highest. These peak times exclude scheduled maintenance periods to ensure reliability during high-demand hours.
- **AVL-3:** The system must maintain at least **85% availability** during emergency maintenance or unexpected issues, with emergency downtime not exceeding 15% of the total expected operating time. This ensures a high level of resilience for a small user base.

2.7 Design Constraints

- **DES-1:** Programming languages: CSharp(.NET), JavaScript (Node.js)
- **DES-2:** Web server: Docker, Vercel
- **DES-3:** Web browser: Chrome, Firefox, Safari, Edge
- **DES-4:** Database: PostgreSQL, Redis Cache
- **DES-5:** Report: Excel
- **DES-6:** Design tools: Figma
- **DES-7:** Programming tools: Visual Studio Code
- **DES-8:** Cloud services: AWS, Appwrite
- **DES-9:** Testing: Selenium, JUnit
- **DES-10:** Source code management: Git, GitHub

2.8 [Others as relevant]