

Requirement & Design Specification

**The Freeze Online Shop**

**Version: 1.0**

|  |  |
| --- | --- |
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– Hanoi, November 2024 –

# Record of Changes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Version | Date | A\* M, D | In charge | Change Description |
| 1.0 |  |  |  |  |
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\*A - Added M - Modified D - Deleted

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# **I. Overview**

## **1. System Context**

**The Freeze Online Shop (TFOS**) is a software platform designed to replace traditional methods of managing retail operations, from product marketing and order processing to shipping. By integrating various online channels, the system connects users (customers, sales staff, managers) with essential functionalities such as shopping, inventory management, and order tracking.

The context diagram below illustrates the external entities and system interfaces. The system interacts with components such as customers, suppliers, delivery personnel, and electronic payment services. Data and control flows are transmitted via secure protocols, ensuring a seamless and secure experience for end users.

A diagram of a frozen online shop

Description automatically generated

## **2. User Requirements**

### **2.1 Actors**

|  |  |  |
| --- | --- | --- |
| **#** | **Actor** | **Description** |
| 1 | Administrator | Manages the entire system, including user roles, system settings, and overall statistics. Can perform CRUD operations on all data. |
| 2 | Marketing Manager | |  | | --- | | Oversees the marketing activities. Responsible for approving and managing campaigns, blogs, and promotional sliders. |  |  | | --- | |  | |
| 3 | Marketer | |  | | --- | | Focuses on marketing tasks. Can create, update, and delete blogs, product promotions, and sliders under the supervision of the Marketing Manager. |  |  | | --- | |  | |
| 4 | Sales Manager | |  | | --- | | Supervises sales activities, assigns tasks to sales staff, and monitors sales-related statistics and performance. |  |  | | --- | |  | |
| 5 | Sales Staff | |  | | --- | | Directly interacts with customers. Responsible for managing customer feedback, processing orders, and assisting with inquiries. |  |  | | --- | |  | |
| 6 | Customer | |  | | --- | | Registered users who can browse products, add items to the cart, place orders, view order history, and provide feedback. |  |  | | --- | |  | |
| 7 | Guest | |  | | --- | | Unregistered users who can only view product lists and blogs but cannot place orders or access customer-specific features. |  |  | | --- | |  | |
| 8 | Shipper | Handles delivery operations. Can view assigned orders, update shipping status, and ensure accurate and timely delivery. |

### **2.2 Diagrams**

#### **2.2.1 Use Case Overview**

A diagram of a frozen online shop

Description automatically generated

#### **2.2.2 UCs for Guest**

*A diagram of a product

Description automatically generated*

#### **2.2.3 Customer**

A diagram of a shop

Description automatically generated

#### **2.2.4 Ucs for Saler and Sale Manager**

A diagram of a store

Description automatically generated

#### **2.2.5 Ucs for Marketer and Marketing Manager**

A diagram of a shop

Description automatically generated

#### **2.2.6 Ucs for Admin**

A diagram of a store

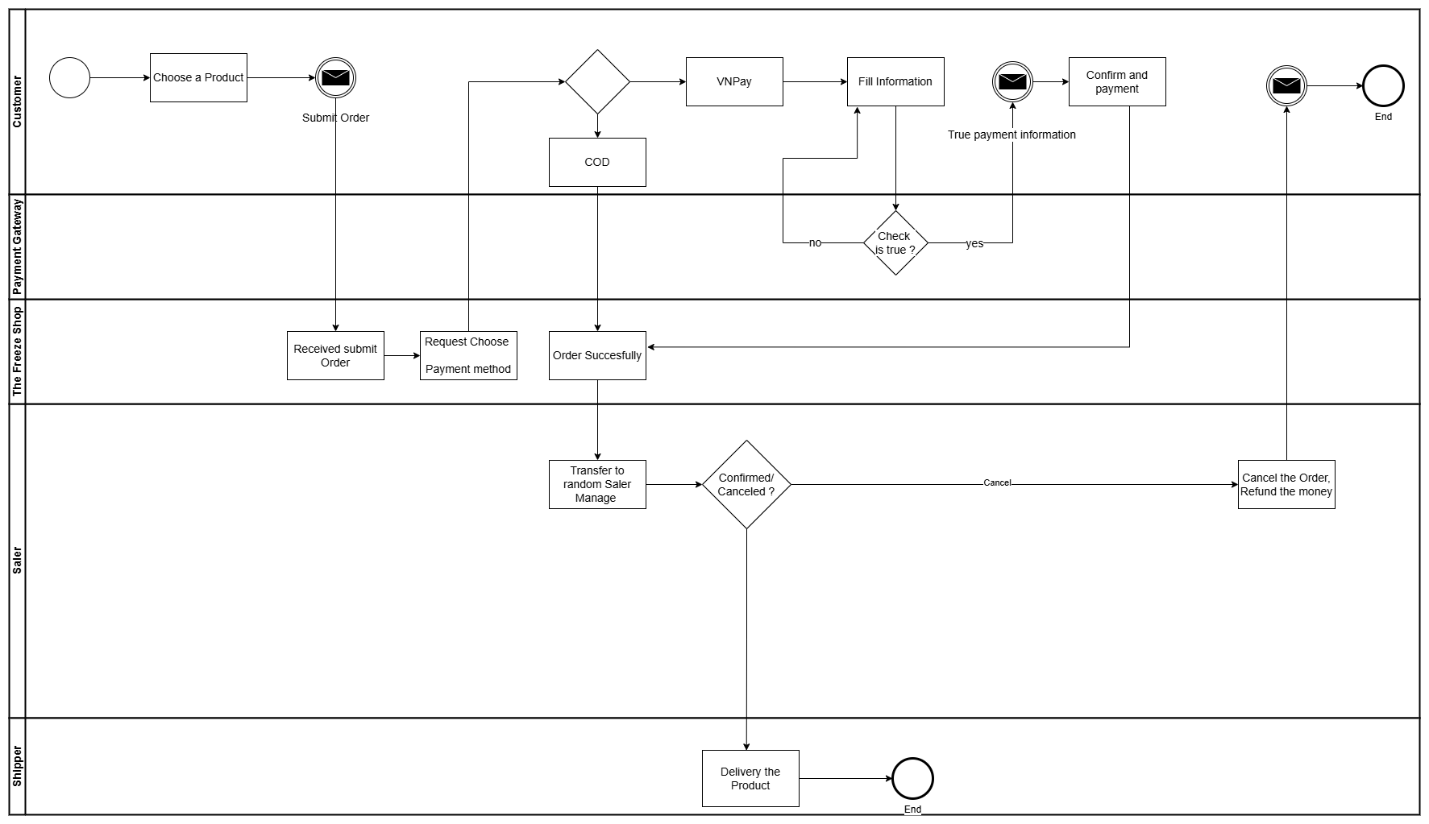
Description automatically generated

### **2.3 Descriptions**

|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Use Case** | **Actors** | **Use Case Description** |
|  | Register | Guest | Allows a guest to create an account |
|  | Login | Customer, Marketer, Sales Staff, Sales Manager, Marketing Manager, Admin | Enables users to authenticate and access the system based on their roles. Users must provide valid credentials (e.g., email and password). |
|  | View Blog | Guest | Allows a guest to read blog content published by the shop. |
|  | View Feedback | Guest | Enables a guest to view feedback or reviews provided by other users. |
|  | View Order History | Customer | Allows a customer to view their past orders and order details. |
|  | CRUD Product in Cart | Customer | Enables the customer to add, update, or remove products in their cart. |
|  | Log Out | Customer | Allows the customer to log out of their account. |
|  | View Product | Customer | Enables the customer to view the list of products. |
|  | Make Payment Request to E-payment | Customer | Initiates the payment process for items in the cart. |
|  | Edit Profile | Customer | Allows the customer to update personal details in their profile. |
|  | View Overall Dashboard | Admin | Provides an overview dashboard for the admin to monitor system activity and performance. |
|  | View Marketing Campaign Statistic | Marketer, Admin | Allows the marketer to view statistics related to marketing campaigns. |
|  | CRUD Product | Marketer, Admin | Enables the marketer to create, read, update, or delete products. |
|  | Add Slider | Marketer, Admin | Allows the marketer to add promotional sliders to the website. |
|  | View Sale Statistic | Marketing Manager, Admin | Provides access to view overall sales statistics. |
|  | View Marketing Statistic | Marketing Manager, Admin | Enables viewing of statistics related to marketing performance. |
|  | CRUD Blog | Marketing Manager, Admin | Allows the manager to create, read, update, or delete blog posts. |
|  | CRUD Slider | Marketing Manager, Admin | Enables the manager to manage promotional sliders. |
|  | CRUD Marketer | Marketing Manager, Admin | Allows the manager to manage marketer accounts and roles. |
|  | View Sale Statistic | Sale Manager, Admin | Allows the sale manager to view sales statistics. |
|  | CRUD Saler | Sale Manager, Admin | Enables the sale manager to create, read, update, or delete sales staff records. |
|  | View Product | Sale Manager, Admin | Provides access to view products. |
|  | View Marketing Statistic | Sale Manager, Admin | Allows the sale manager to access marketing statistics. |
|  | View Product | Saler, Admin | Enables the sales staff to view product listings. |
|  | View Feedback | Saler, Admin | Allows the sales staff to view customer feedback. |
|  | Manage Feedback | Saler, Sale Manager, Admin | Enables the admin to review customer feedback and take appropriate actions, such as marking feedback as resolved. |
|  | View Sale Statistic | Saler, Admin | Provides access to view sales-related statistics. |
|  | View Received Order | Saler, Admin | Allows sales staff to view orders received from customers. |
|  | Change Order Status | Saler, Admin | Enables to update the status of customer orders. |
|  | View Received Order | Shipper, Admin | Allows to view orders that need to be shipped to customers. |
|  | Update Order Status | Shipper, Admin | Enables to update the shipping status of an order, such as "In Transit" or "Delivered". |

### **2.4 Main Workflows**

#### **1.2.1 Order Processing**



#### **1.2.2 Manage Product Workflow**

A diagram of a product

Description automatically generated

## **3. System Functionalities**

### **3.1 Screens Flow**

A diagram of a company

Description automatically generated

### **3.2 Screen Authorization**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **#** | **Screen** | Customer | Admin | Sale | Shipper | Guest | Marketing | Sale Manager |
| 1 | **Profile Management** | x | x | x | x |  | x | x |
| 2 | **User Management** |  | x |  |  |  |  |  |
| 3 | **Shopping Cart** | x |  |  |  |  |  |  |
| 4 | **Forgot Password** | x | x | x | x |  | x | x |
| 5 | **Login** | x | x | x | x |  | x | x |
| 6 | **Register** |  |  |  |  | x |  |  |
| 7 | **Product List** | x | x | x | x | x | x | x |
| 8 | **Product Detail** | x | x | x | x | x | x | x |
| 9 | **Home Page** | x | x | x | x | x | x | x |
| 10 | **Admin Dashboard** |  | x |  |  |  |  |  |
| 11 | **Sale Dashboard** |  | x | x |  |  |  |  |
| 12 | **Marketing Dashboard** |  | x |  |  |  | x |  |
| 13 | **Products List (manage)** |  | x |  |  |  | x |  |
| 14 | **Product Details (manage)** |  | x |  |  |  | x |  |
| 15 | **Feedbacks List** |  | x |  |  |  | x |  |
| 16 | **Feedback Details** |  | x |  |  |  | x |  |
| 17 | **Feedback** | x |  |  |  |  |  |  |
| 18 | **Wishlist** | x |  |  |  |  |  |  |
| 19 | **Cart Contact** | x |  |  |  |  |  |  |
| 20 | **Cart Completion** | x |  |  |  |  |  |  |
| 21 | **Order List** |  | x | x | x |  |  |  |
| 22 | **Order Details** |  | x | x |  |  |  |  |
| 23 | **My Order** | x |  |  |  |  |  |  |
| 24 | **My Order Details** | x |  |  |  |  |  |  |
| 25 | **Slider List** |  | x |  |  |  | x |  |
| 26 | **Slider Details** |  | x |  |  |  | x |  |
| 27 | **Blog List** | x |  |  |  | x |  |  |
| 28 | **Blog Details** | x |  |  |  | x |  |  |
| 29 | **Customer List** |  | x | x |  |  |  | x |
| 30 | **Customer Details** |  | x | x |  |  |  | x |
| 31 | **Setting List** |  | x |  |  |  |  | x |
| 32 | **Setting Details** |  | x |  |  |  |  |  |

### **3.3 Non-UI Functions**

|  |  |  |  |
| --- | --- | --- | --- |
| **#** | **Feature** | **System Function** | **Description** |
| 1 | User Authentication | JWT Token Generation | |  | | --- | | Generates secure JSON Web Tokens (JWT) for user authentication. Used to verify user sessions across API requests. |  |  | | --- | |  | |
| 2 | User Management | Password Hashing | |  | | --- | | Encrypts user passwords using SHA-256 or bcrypt before saving to the database for enhanced security. |  |  | | --- | |  | |
| 3 | Product Management | Stock Update Service | |  | | --- | | Automatically updates the product stock quantity after an order is completed. |  |  | | --- | |  | |
| 4 | Feedback Management | Feedback Notification Job | |  | | --- | | Sends email notifications to admins or marketers when new feedback is submitted by customers. |  |  | | --- | |  | |
| 5 | Order Processing | Order Status Update Service | |  | | --- | | Monitors orders and automatically updates statuses (e.g., "Pending" to "Processing") based on predefined conditions. |  |  | | --- | |  | |
| 6 | Marketing Campaign | Scheduled Slider Update | |  | | --- | | A cron job to rotate sliders on the homepage based on predefined schedules or campaigns. |  |  | | --- | |  | |
| 7 | System Maintenance | Data Backup Job | |  | | --- | | Periodically backs up critical system data (e.g., user accounts, orders, products) to prevent data loss. |  |  | | --- | |  | |
| 8 | Analytics | Statistics Calculation Job | |  | | --- | | Runs nightly batch jobs to calculate sales, marketing, and user engagement statistics for dashboards. |  |  | | --- | |  | |
| 9 | Notification Service | Email and Push Notification | |  | | --- | | Sends email or push notifications for important events (e.g., order confirmation, shipping updates). |  |  | | --- | |  | |
| 10 | Security | ReCAPTCHA Verification | |  | | --- | | Validates whether a user is a human or bot during sensitive actions like login or registration. |  |  | | --- | |  | |
| 11 | Search Optimization | Index Rebuild Service | |  | | --- | | Periodically rebuilds the search index for faster product and blog search functionalities. |  |  | | --- | |  | |
| 12 | Payment Integration | Payment Verification Service | Verifies payment transactions from external systems and updates the order status accordingly. |

# **II. Functional Requirements**

## **1.** **Public Function**

### **1.1 Home Page**

This screen allows everyone to view the home page of our website

The main homepage is shown to the user in one of below cases:

He/she enter our default website URL

He/she clicks the shop logo in the header

He/she clicks the home link in the header nav-barsA screenshot of a website

Description automatically generated

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | View Homepage | | |
| Created By: | HaiDD | Update by |  |
| Primary Actor: | Customer | Secondary actors | Guest |
| Trigger: | User visits the website's homepage or clicks on the home link. | | |
| Description: | Displays the main content of the homepage, including sliders, product categories, and featured products. | | |
| Preconditions: | - The system must have active product records available to display.  - Sliders and products must be retrieved from the database. | | |
| Postconditions: | - Successfully displays content sections. | | |
| Normal Flow: | Step 1:User navigates to the homepage.  Step 2: System retrieves the list of slider images and their links from the database.  Step 3: System retrieves the list of latest products and featured products.  Step 4:  System displays the slider images, latest products, and featured products on the homepage. | | |
| Alternative Flows: | Step 4.1If no products are available, the system displays a placeholder message for each product section.  Step 4.2:If there are no active sliders, the system does not display the slider section. | | |
| Exceptions: | Step 4:If a network or database issue occurs, the system displays a general error message. | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03,BR04 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | The system should display only active slider images in the swiper carousel. |  |
| BR02 | The product categories (latest and featured) should be displayed based on specific criteria. |  |
| BR03 | If no products exist in a section, a message indicating unavailability should be displayed. |  |
| BR04 | All product details must be retrieved correctly to display name, description, and image. |  |

Error Message

|  |  |  |
| --- | --- | --- |
| Error ID | Error Description | Business Rules |
| EM01 | "There are no products available at the moment." | BR03 |

### **1.2 Blog List**

This screen allows everyone to view the blog list of our website

The blog list is shown to the user in one of below cases:

He/she enter our Blog link in header nav-bars

A screenshot of a website

Description automatically generated

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | View Blog List | | |
| Created By: | ThanhNT | Update by |  |
| Primary Actor: | User, Guest | Secondary actors |  |
| Trigger: | User navigates to the Blog section and interacts with the search box or blog items. | | |
| Description: | Allows users to view a list of blog posts, search for specific blogs, and view individual blog | | |
| Preconditions: | - Blog must be retrieved from the database. | | |
| Postconditions: | The blog list is displayed based on search and filter criteria. | | |
| Normal Flow: | Step 1: User accesses the Blog List page.  Step 2: User/Guest can search for blog posts by title or keywords.  Step 3:User/Guest can view a list of available blogs displayed as per search criteria.  Step 4: If no search criteria are applied, the default list of blogs is shown.  Step 5:User/Guest clicks on a blog post to view its details. | | |
| Alternative Flows: | Step 3.1: If no products are available for the selected criteria, the system displays an error message.  Step 3.2:If the user applies new filters, the system re-fetches and updates the displayed products.  Step 3.3: User clicks "Load More" to view more items. | | |
| Exceptions: | Step 6:If account creation fails due to system issues, the system displays a general error message. | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | Only published blog posts should be visible in the blog list. |  |
| BR02 | The search should match against blog titles and keywords. |  |
| BR03 | Blog posts should be ordered by publish date by default, with the newest posts appearing first. |  |

### **1.3 Blog Detail**

This screen allows everyone to view the blog detail

The blog detail is shown to the user in one of below cases:

He/she clicks on any Blog in the Blog list

A screenshot of a computer

Description automatically generated

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | View Blog Detail | | |
| Created By: | ThanhNT | Update by |  |
| Primary Actor: | User,Guest | Secondary actors |  |
| Trigger: | User clicks on the Shop button on HomePage | | |
| Description: | Displays a list of products based on the selected category, filters, or search criteria. | | |
| Preconditions: | The blog post exists and is available in the system. | | |
| Postconditions: | The blog detail page is displayed with the correct content and images. | | |
| Normal Flow: | Step 1:User/Guest clicks on a blog post title from the blog list.  Step 2: User/Guest is redirected to the blog detail page.  Step 3:User/Guest views the blog post title, content, and associated images.  Step 4: User/Guest can view the author's name and publication date at the top of the blog post.  Step 5: User/Guest can see the list of latest blogs on the right-hand side, allowing them to navigate to other blog posts. | | |
| Alternative Flows: |  | | |
| Exceptions: |  | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | The blog detail page must display the blog's title, content, images, and author information. |  |
| BR02 | Only published blog posts should be displayed as part of the latest blogs list. |  |
| BR03 | The blog's publication date should be displayed in the correct format. |  |

### **1.4 Product List**

This screen allows user to view the shop of our website.

The main shop is shown to the user in one of below cases:

He/she enter our Shop link in header nav-bars

He/she clicks link on shop-now in slider

He/she clicks link back to shop in cart-detail

A screenshot of a website

Description automatically generated

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | View Product List | | |
| Created By: | AnhDH | Update by |  |
| Primary Actor: | User (Customer/Guest) | Secondary actors |  |
| Trigger: | User clicks on the Shop button on HomePage | | |
| Description: | Displays a list of products based on the selected category, filters, or search criteria. | | |
| Preconditions: | - The system must have product records available in the database.  - Filters and categories must be loaded and functional. | | |
| Postconditions: | - Successfully displays filtered or all product listings. | | |
| Normal Flow: | Step 1:User navigates to the Product List page  Step 2: System retrieves the list of products based on the selected criteria from the database.  Step 3:System displays the list of products, including thumbnails, names, prices, and ratings.  Step 4: User clicks on a product, and the system navigates to the product detail page for that item. | | |
| Alternative Flows: | Step 3.1: If no products are available for the selected criteria, the system displays an error message.  Step 3.2:If the user applies new filters, the system re-fetches and updates the displayed products.  Step 3.3: User clicks "Load More" to view more items. | | |
| Exceptions: | Step 6:If account creation fails due to system issues, the system displays a general error message. | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | Products must be filtered based on selected tags, categories, and price ranges. |  |
| BR02 | If no products match the selected filters, a message indicating should show. |  |
| BR03 | Product details displayed must include name, image, price, and rating if available. |  |

### **1.5 Product Detail**

A screenshot of a website

Description automatically generated

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | View Product Detail | | |
| Created By: | AnhDH | Update by |  |
| Primary Actor: | User (Customer/Guest) | Secondary actors |  |
| Trigger: | User clicks on a product from the product list page or a related product link. | | |
| Description: | Displays detailed information for a selected product, including images, description, size, color, etc. | | |
| Preconditions: | - The product must exist in the database.  - Product attributes (e.g., sizes, colors) are available for display. | | |
| Postconditions: | - Product details are displayed successfully.  - Customers can add the product to the cart or wishlist. | | |
| Normal Flow: | Step 1:User clicks on a product from a list or search result.  Step 2: System retrieves product details, including name, price, description, sizes, colors, tags, and feedback.  Step 3: System displays product details, image slideshow, and available sizes/colors on the Product Details page.  Step 4:  User selects size, color, and quantity, then clicks "Add to Cart."  Step 5 : System verifies availability, adds the product to the cart, and shows a confirmation message. | | |
| Alternative Flows: | Step 4.1: If the user selects an out-of-stock size or color, the system displays "Out of Stock" next to the selection.  Step 4.2:If the user clicks the heart button the system updates the wishlist and provides visual confirmation.  Step 5.1:If there is insufficient stock, the system displays an "Out of Stock" message next to the product quantity. | | |
| Exceptions: | Step 5:If an error occurs while adding the product to the cart, the system displays an error message. | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03,BR04 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | Only active products should be displayed with complete details. |  |
| BR02 | Users can only select available sizes and colors; out-of-stock options should be disabled or hidden. |  |
| BR03 | Product quantity must be available in the selected size/color before adding to the cart. |  |
| BR04 | If feedback is present, it should display the latest feedback and allow pagination if needed. |  |

## **2. Common Function**

### **2.1 User Login**

This screen allows users to be authenticated to the system screens/functionalities.

The main login screen is shown to the user in one of below cases:

He/she clicks the Login link in the pages’ header

He/she clicks the Login link in the [User Register](https://docs.google.com/document/d/1YidnnPEt_mD1sWiiglxWZLFzajFM8fjB75ofmNTW-N0/edit?tab=t.0#heading=h.1ksv4uv) screen

He/she is accessing one of the authenticated page while not logging-in yet

|  |  |
| --- | --- |
| ***S1\_User Login screen*** |  |
|  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Login | | |
| Created By: | ThanhNT | Update by |  |
| Primary Actor: | Customer | Secondary actors |  |
| Trigger: | User clicks on Login button from Home Page | | |
| Description: | The system allows users to login by an existed account to the system | | |
| Preconditions: | -Users must have an existing account.  - Users must be on the home page. | | |
| Postconditions: | -Successful login redirects to the home page.  -Unsuccessful login returns an error message. | | |
| Normal Flow: | Step 1: User clicks on the Login button on the home page.  Step 2: System displays the login page.  Step 3: User enters email and password.  Step 4: User clicks Login.  Step 5: System validates the email and password  Step 6: Valid credentials redirect the user to the home page. | | |
| Alternative Flows: |  | | |
| Exceptions: | Step 6: If the information is not valid, the system shows error message | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | Users must have a registered email and password to log in. |  |
| BR02 | The system should validate credentials securely before granting access. |  |

### **2.2 Register**

This screen allows user to be register account to the system screens/functionalities

The main login screen is shown to the user in one of below cases:

He/she clicks the Register link in the pages’ header

He/she clicks the Register link in the [Register](https://docs.google.com/document/d/1YidnnPEt_mD1sWiiglxWZLFzajFM8fjB75ofmNTW-N0/edit?tab=t.0#heading=h.fphhpn8jr88s) screen

A screenshot of a login form

Description automatically generated

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Register | | |
| Created By: | ThanhNT | Update by |  |
| Primary Actor: | Guest | Secondary actors |  |
| Trigger: | User clicks on the Sign-Up button to register on HomePage | | |
| Description: | Allows users to create a new account with their details. | | |
| Preconditions: | - Users must be on the registration page.  - User has not already registered with the same email. | | |
| Postconditions: | - Successful registration creates a new account and redirects the user to the login page.  - Unsuccessful registration displays error messages and prompts to correct input. | | |
| Normal Flow: | Step 1:User navigates to the registration page.  Step 2: System displays the registration form.  Step 3: User enters first name, last name, email, password, and confirms the password.  Step 4:  User submits the registration form by clicking the Sign-Up button.  Step 5:  System validates the input and checks if the email already exists.  Step 6: If all data is valid, the system creates a new account and confirms registration. | | |
| Alternative Flows: | Step 4.1If the email already exists, the system shows an error message (EM01).  Step 4.2:If the password and re-password do not match, the system shows an error message (EM02). | | |
| Exceptions: | Step 6:If account creation fails due to system issues, the system displays a general error message. | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | First name, last name,email are required fields and cannot be empty. |  |
| BR02 | Email must be unique and in a valid format. |  |
| BR03 | Passwords must meet complexity requirements (e.g., minimum length, contain a special character, etc.). |  |
| BR04 | Password and re-password fields must match. |  |

### **2.3 Reset Password**

A screenshot of a login screen

Description automatically generated

This screen allows user to be register account to the system screens/functionalities

The main login screen is shown to the user in one of below cases:

He/she clicks the Register link in the pages’ header

He/she clicks the Register link in the [Register](https://docs.google.com/document/d/1YidnnPEt_mD1sWiiglxWZLFzajFM8fjB75ofmNTW-N0/edit?tab=t.0#heading=h.fphhpn8jr88s) screen

A screenshot of a login screen

Description automatically generated

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Reset Password | | |
| Created By: | Guest, Customer | Update by |  |
| Primary Actor: | Customer | Secondary actors |  |
| Trigger: | User clicks on the "Reset Password" button from the Reset Password page after entering their email. | | |
| Description: | This use case allows users to reset their password by entering their email. The system sends a password reset link or OTP (One-Time Password) to the provided email. Users can follow the instructions to set a new password. | | |
| Preconditions: | The user’s email address must be registered in the system.  The email server must be operational. | | |
| Postconditions: | Successful Reset: An email with a password reset link or OTP is sent to the user's email address.  Unsuccessful Reset: The system displays an error message if the email is not found or the email service fails. | | |
| Normal Flow: | User accesses the Reset Password page.  User enters their registered email address into the input field.  User clicks the "Reset" button.  System validates the email address:  If valid, the system generates a password reset link or OTP and sends it to the user's email.  If invalid, the system displays an error message.  User receives the reset email and follows the instructions to set a new password (this is handled as a separate flow). | | |
| Alternative Flows: | 4.1: If the email is not registered, the system displays an error message indicating "Email not found" (EM01). 4.2: If the email server is down or fails to send the reset email, the system displays a general error message (EM02). | | |
| Exceptions: | Step 4: If the reset process fails due to unexpected system issues, the system logs the error and displays a general failure message. | | |
| Priority: | High | | |
| Frequency of Use: | Medium | | |
| Business Rules: | BR01, BR02,BR03 | | |
| Other Information: | none | | |
| Assumptions: | The user has access to the email account they provided.  The system's email service is configured and operational. | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | The email entered by the user must be registered in the system. |  |
| BR02 | |  | | --- | | The system must validate the format of the email address before proceeding. |  |  | | --- | |  | | E.g., must follow valid email format. |
| BR03 | |  | | --- | | The password reset link or OTP must expire after a predefined duration (e.g., 15 minutes, 24 hours). |  |  | | --- | |  | |  |

### **2.4 Change Password**

A screenshot of a website

Description automatically generated

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Change Password | | |
| Created By: | ThanhNT | Update by |  |
| Primary Actor: | Customer | Secondary actors |  |
| Trigger: | User clicks on Change Password button from User Profile | | |
| Description: | Allows users to change their current password to a new password. | | |
| Preconditions: | - Users must be logged in.- Users must know their current password. | | |
| Postconditions: | - Successful password change redirects to confirmation message or page- Unsuccessful password change displays an error message. | | |
| Normal Flow: | Step 1: User clicks on the "Change Password" buttonStep 2: System displays the Change Password form.Step 3:  User enters current password, new password, and confirms the new password.Step 4:  User submits the form.Step 5:  System validates the current password and checks the new password’s criteria.Step 6: If all data is valid, the system updates the password and confirms success. | | |
| Alternative Flows: | Step 4.1:If the current password does not match, the system displays an error message (EM01).Step 4.2:If the new password criteria are not met, the system displays an error message (EM02). | | |
| Exceptions: | Step 6: If the password change fails due to system issues, the system displays a general error message. | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03,BR04 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | The current password entered by the user must match the one in the system. |  |
| BR02 | The new password must meet complexity requirements (e.g., minimum length, containing special characters). |  |
| BR03 | The new password and confirm password fields must match. |  |
| BR04 | The new password must be different from the current password. |  |

### **2.5 User Profile**

A screenshot of a computer

Description automatically generated

This screen allows user to view their profile

The User Profile is shown to the user in one of below cases:

He/she clicks on user icon in header nav-bars then clicks My User Profile

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | View User Profile | | |
| Created By: | AnhDH | Update by |  |
| Primary Actor: | Customer | Secondary actors |  |
| Trigger: | User clicks on User Profile icon from Home Page | | |
| Description: | Allows users to view and update their profile information, such as name, avatar, and phone number, and provides options for changing password and logging out. | | |
| Preconditions: | -User must be logged in.  - User is on the profile page or initiates navigation to it. | | |
| Postconditions: | - Profile changes are successfully saved if updated.  - Password is successfully changed if requested.  - User is logged out if they select the logout option. | | |
| Normal Flow: | Step 1: User clicks on "User Profile" from the menu or profile icon.  Step 2: System displays the user's profile information.  Step 3:  Users can view profile details.  Step 4:  Users can choose to edit fields such as name, avatar, and phone number.  Step 5: : User clicks "Save" to update profile information.  Step 6:  System validates and saves updates, showing a success message. | | |
| Alternative Flows: | Step 4.1: User clicks "Change Password" to change account password.  Step 4.2: User clicks "Logout" to end the session. | | |
| Exceptions: | Step 5: If input validation fails (e.g., incorrect phone number format), the system displays an error message and prompts for correction. | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | The Email, Password, and Phone Number fields must be provided. |  |
| BR02 | Email and Phone Number must follow a valid format and should not already be associated with another user account. |  |
| BR03 | Passwords should contain 8-16 characters, with at least one uppercase letter, one lowercase letter, one number, and one symbol. |  |

### **2.6 Fast Login Google**

A screenshot of a login screen

Description automatically generated

The **Fast Login Google** feature allows users to quickly and securely log in or register using their Google account. This eliminates the need for manual registration or remembering passwords, enhancing user convenience and engagement.

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Fast Login Google | | |
| Created By: |  | Update by |  |
| Primary Actor: | Guest, Customer | Secondary actors |  |
| Trigger: | The user clicks the "Login with Google" button on the Login page or during the checkout process. | | |
| Description: | Allows users login fast by Google Services | | |
| Preconditions: | The user has an active Google account.  The system is configured with Google OAuth 2.0 API credentials. | | |
| Postconditions: | **Success:**  New users are automatically registered and logged in using their Google account information.  Existing users are logged in to their existing accounts if the Google email matches their registered email.  **Failure:**  An error message is displayed if authentication fails or the Google account is not accessible. | | |
| Normal Flow: | 1. The user navigates to the Login page. 2. The user clicks on the "Login with Google" button. 3. The system redirects the user to the Google Authentication Service. 4. The user grants permission to share their Google account information with the system. 5. The system retrieves the user's basic profile information (e.g., name, email) from Google. 6. The system checks if the email exists in the database:  * If yes, the user is logged in. * If no, a new account is created with the user's Google information, and the user is logged in.  1. The system redirects the user to the homepage or the page they attempted to access before login. | | |
| Alternative Flows: | * **Step 4.1**: If the user denies permission to share their account information, the system cancels the login process and redirects the user back to the Login page. *  **Step 6.1**: If the system cannot access Google services due to network or API issues, an error message is displayed, and the user is prompted to try again later. | | |
| Exceptions: | * **API Error**: If the Google OAuth API is not responding, the system displays a generic error message. * **Email Conflict**: If the Google email matches an existing user account with a different login method, the system prompts the user to manually log in or resolve the conflict. | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03, BR04, BR05 | | |
| Other Information: | none | | |
| Assumptions: | * Users are familiar with Google login processes. * The system backend is properly configured with Google OAuth API credentials. | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | |  | | --- | | Google OAuth 2.0 authentication must be implemented for secure communication. |  |  | | --- | |  | |  |
| BR02 | |  | | --- | | The system should retrieve only the necessary profile information (name, email). |  |  | | --- | |  | |  |
| BR03 | |  | | --- | | A new user account must not duplicate an existing account in the database. |  |  | | --- | |  | |  |
| BR4 | |  | | --- | | The "Login with Google" button must adhere to Google's branding and design guidelines. |  |  | | --- | |  | |  |
| BR5 | User data retrieved from Google must comply with privacy policies (e.g., GDPR, CCPA). |  |

## **3. Customer Function**

### **3.1 My Orders**

This screen allows the user to view the list of orders.

The orders list  is shown to the user in one of below cases:

He/she clicks on My Orders link in icon user in header nav-bars

A screenshot of a website

Description automatically generated

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | View My Orders | | |
| Created By: | AnhDH | Update by |  |
| Primary Actor: | Customer | Secondary actors |  |
| Trigger: | User navigates to "My Orders" from the user profile menu. | | |
| Description: | Allows the user to view their order history and take actions like viewing details, reordering, and canceling. | | |
| Preconditions: | Users must be logged in. | | |
| Postconditions: | Successfully displays content sections. | | |
| Normal Flow: | Step 1:User navigates to the My Orders page.  Step 2: System retrieves the list of Orders from the database.  Step 3: System displays a list of orders, if available.  Step 4: System displays detailed information for the selected order.  Step 5:System adds items from the previous order to the cart and redirects users to the cart page.  Step 6:System updates the order status to "Pending Cancellation" and displays an updated button state. | | |
| Alternative Flows: | Step 4.1If no products are available, the system displays a placeholder message for each product section.  Step 4.2:If there are no active sliders, the system does not display the slider section. | | |
| Exceptions: | Step 4:If a network or database issue occurs, the system displays a general error message. | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03,BR04,BR05 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | Only logged-in users can access the "My Orders" page. |  |
| BR02 | Orders can be canceled only if their status is "Pending" or a similar status that allows cancellation. |  |
| BR03 | Orders with a status of "OnDelivery" or "Received" cannot be canceled and should disable the "Cancel order" button. |  |
| BR04 | Orders marked as canceled are updated as "Pending Cancellation" if cancellation is not yet processed, with a message indicating the cancellation request is pending. |  |
| BR05 | Users should be able to "Re-buy" an order, which adds items to the cart as per the last order details. |  |

### **3.2 Cart Detail**

This screen allows users to view their cart.

The Cart Detail is shown to the user in one of below cases:

He/she clicks on cart icon in header nav-bars

He/she clicks on cart link when add new item to cart

A screenshot of a shopping cart

Description automatically generated

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | View Cart Detail | | |
| Created By: | MinhNN | Update by |  |
| Primary Actor: | Customer | Secondary actors |  |
| Trigger: | User clicks on Cart icon from Home Page | | |
| Description: | Allows customers to view their selected items in the cart, adjust quantities, apply filters and vouchers, and proceed to checkout. | | |
| Preconditions: | User is logged in and has items in the cart. | | |
| Postconditions: | Cart updates are saved, vouchers are applied, or the user proceeds to checkout. | | |
| Normal Flow: | Step 1: User clicks on the "Cart" icon  Step 2: System displays cart details, including items, quantities, categories, tags, and filters.  Step 3:  Users can view items, adjust quantities, and select items for purchase.  Step 4:  Users can apply category and tag filters to narrow item display.  Step 5:  System calculates the total and processes the selected items for checkout.  Step 6: User clicks "Buy" to proceed to checkout with selected items. | | |
| Alternative Flows: | Step 4.1:User clicks "Edit" to access additional options like delete and similar items.  Step 4.2:User clicks "Load More" to view more items. | | |
| Exceptions: | Step 7: If user input is invalid (e.g., quantity exceeding available stock), display an error message and prompt correction. | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | The user must select a valid category and tag for filtering purposes. |  |
| BR02 | The user cannot select more items than available stock. |  |
| BR03 | All selected items must have quantities specified before proceeding to checkout. |  |

### **3.3 Cart Contact**

A screenshot of a website

Description automatically generated

This screen allows users to fill out or edit their delivery information and show the item in their cart.

The Cart Contact is shown to the user in one of below cases:

He/she completes adding products to the cart.

He/she clicks on the button Buy in the cart detail page.

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | View Cart Contact | | |
| Created By: | HaiDD | Update by |  |
| Primary Actor: | Customer | Secondary actors |  |
| Trigger: | User clicks on Buy button from Cart Detail page | | |
| Description: | Displays a list of selected products in the cart, including options to view details and manage address information for the order and allow users choose payment methods. | | |
| Preconditions: | - User is logged in.  - Cart is populated with selected products.  - Address information for the user is available in the system, if previously saved. | | |
| Postconditions: | - User reviews selected items and proceeds with payment or order submission.  - Users can select or update their address from saved addresses. | | |
| Normal Flow: | Step 1: User accesses the Cart Contact page.  Step 2: System retrieves and displays selected products from the cart with basic information (image, name, price, quantity, size, color,cart total).  Step 3:  System retrieves and displays the user’s default address, if available.  Step 4:  User can review the selected products and address information.  Step 5:  Users can click "Add Address" to open an address modal where they can select an existing address or enter a new one.  Step 6: Users can select an address by clicking on a saved address or inputting new address details.  Step 7:User clicks "Select Address" to save their chosen address, which updates the main address field on the Cart Contact page.  Step 8:User clicks to choose one payment method availiable.  Step 9:User clicks "Submit" to proceed with the selected items and address for the checkout or payment process. | | |
| Alternative Flows: |  | | |
| Exceptions: |  | | |
| Priority: | High | | |
| Frequency of Use: | Mid Frequency | | |
| Business Rules: | BR01, BR02,BR03,BR04 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | Each product in the cart must have unique product details (ID, size, color). |  |
| BR02 | User’s selected address should be displayed for confirmation before order submission. |  |
| BR03 | Users should only be able to select addresses associated with their user account. |  |
| BR04 | User can edit the address directly in the modal or select an existing address from saved addresses. |  |

### **3.4 Manage Wishlist**

A screenshot of a website

Description automatically generated

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Manage Wishlist | | |
| Created By: |  | Update by |  |
| Primary Actor: | Customer | Secondary actors |  |
| Trigger: | The user interacts with the "Add to Wishlist" button on a product page or accesses the Wishlist page. | | |
| Description: | The **Manage Wishlist** feature allows registered customers to add, view, and remove products they are interested in but not ready to purchase yet. This feature helps customers save products for future reference and improves the overall shopping experience. | | |
| Preconditions: | * The user must be logged in to access and manage their Wishlist. * Products must exist in the database. | | |
| Postconditions: | **Success**:   * Products are successfully added to or removed from the Wishlist. * The Wishlist reflects the updated state (add/remove).   **Failure**:   * An error message is displayed if the product does not exist or the database operation fails. | | |
| Normal Flow: | **Add to Wishlist**:   * The user clicks the "Add to Wishlist" button on a product page. * The system sends a request to save the product to the user's Wishlist in the database. * The system confirms the addition and updates the UI to indicate the product is in the Wishlist.   **View Wishlist**:   * The user navigates to the "Wishlist" page. * The system retrieves the list of products saved in the user's Wishlist from the database. * The system displays the products with options to view product details or remove items.   **Remove from Wishlist**:   * The user clicks the "Remove" button next to a product in the Wishlist. * The system sends a request to remove the product from the user's Wishlist in the database. * The system confirms the removal and updates the UI. | | |
| Alternative Flows: | **Step 1.1**: If the user is not logged in, the system displays a login prompt when the user tries to add a product to the Wishlist.  **Step 2.1**: If the Wishlist is empty, the system displays a message: "Your Wishlist is empty" and suggests browsing products. | | |
| Exceptions: | Database Error: If the database operation (add/remove/retrieve) fails, the system logs the error and displays a general error message: "Unable to update your Wishlist. Please try again later." | | |
| Priority: | Medium | | |
| Frequency of Use: | Medium | | |
| Business Rules: | BR01, BR02,BR03,BR04 | | |
| Other Information: | None | | |
| Assumptions: | Users frequently save products to Wishlist for future purchases.  The system has sufficient database infrastructure to support Wishlist operations. | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | |  | | --- | | A user can only add a product to their Wishlist once. |  |  | | --- | |  | |  |
| BR02 | |  | | --- | | A user must be logged in to access their Wishlist. |  |  | | --- | |  | |  |
| BR03 | |  | | --- | | The Wishlist must be persisted in the database and accessible from multiple devices. |  |  | | --- | |  | |  |
| BR04 | Products that are no longer available (e.g., out of stock) must be marked accordingly in the Wishlist. |  |

### **3.5 Provide Feedback**

A screenshot of a website

Description automatically generated

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Provide Feedback | | |
| Created By: |  | Update by |  |
| Primary Actor: | Customer | Secondary actors |  |
| Trigger: | * The user navigates to the **My Orders** section, selects a completed order, and clicks the "Provide Feedback" button. | | |
| Description: | The **Provide Feedback** feature allows customers to leave reviews and ratings for products or the overall shopping experience after completing an order. This feature enhances customer engagement and helps other users make informed decisions while shopping. | | |
| Preconditions: | * The user must be logged in. * The order must have a status of "Completed" or "Delivered". * The products associated with the order must exist in the system. | | |
| Postconditions: | **• Success:**  The feedback is saved in the system and associated with the specific product or order.  Feedback is displayed on the product details page or in the admin feedback management system.  **• Failure:**  An error message is displayed if feedback submission fails due to a system or database issue. | | |
| Normal Flow: | 1. The user navigates to the My Orders section. 2. The user selects an order with the status "Completed" or "Delivered." 3. The system displays the list of products in the order. 4. The user clicks the "Provide Feedback" button next to a product. 5. The system displays a feedback form with fields for:  * Comments or review text.  1. The user fills in the feedback form and submits it. 2. The system validates the input:  * Ensures the star rating is within the valid range. * Ensures comments meet any minimum or maximum length requirements.  1. If valid, the system saves the feedback in the database. 2. The system confirms the submission and displays a success message. | | |
| Alternative Flows: | Step 2.1: If the order is not eligible for feedback (e.g., status is "Pending" or "Canceled"), the "Provide Feedback" button is disabled or hidden.  Step 7.1: If validation fails (e.g., star rating is missing), the system displays an error message and prompts the user to correct the input.  Step 8.1: If the system encounters a database error, the system logs the issue and displays a general error message: "Unable to submit feedback. Please try again later." | | |
| Exceptions: | **Product Removed**: If a product from the order is no longer available in the system, the system displays a message: "This product is no longer available for feedback."  **Multiple Submissions**: The system prevents duplicate feedback for the same product within the same order. | | |
| Priority: | Medium | | |
| Frequency of Use: | Medium | | |
| Business Rules: | BR01, BR02,BR03,BR04 | | |
| Other Information: | None | | |
| Assumptions: | * Users will provide genuine feedback after receiving their orders. * The system has functionality to display feedback on product detail pages. | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | |  |  |  | | --- | --- | --- | | |  | | --- | | Feedback can only be submitted for products in completed or delivered orders. |  |  | | --- | |  | |  |  | | --- | |  | |  |
| BR02 | |  |  |  | | --- | --- | --- | | |  | | --- | | A user can submit feedback for each product in the order only once. |  |  | | --- | |  | |  |  | | --- | |  | |  |
| BR03 | |  | | --- | | Star ratings must be between 1 and 5. |  |  | | --- | |  | |  |
| BR04 | |  | | --- | | Feedback must be linked to the corresponding product and order in the database. |  |  | | --- | |  | |  |

### **3.6 Create an Order**

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Create an Order | | |
| Created By: |  | Update by |  |
| Primary Actor: | Customer | Secondary actors |  |
| Trigger: | * The customer clicks the "Place Order" or "Confirm Order" button during the checkout process. | | |
| Description: | The **Create an Order** feature allows a customer to finalize their purchase by confirming the products in their cart, providing shipping details, and selecting a payment method. Once the order is created, the system saves it with all relevant details and updates product inventory. | | |
| Preconditions: | * The customer must be logged in. * The cart must contain at least one product. * Products in the cart must be in stock. * The customer must provide valid shipping and payment information. | | |
| Postconditions: | **Success:**   * A new order is created in the system with a unique order ID. * The order is associated with the customer and stored in the database. * Product stock levels are updated to reflect the purchase. * An order confirmation page is displayed.   **Failure:**   * An error message is displayed if the order cannot be created due to validation or system errors. | | |
| Normal Flow: | 1. The customer selects the products they wish to purchase from their cart. 2. The customer proceeds to the Checkout page. 3. The customer enters or selects shipping details and payment method. 4. The customer reviews the order details (products, quantity, price, shipping, taxes) and clicks "Place Order." 5. The system validates the order details:  * Checks product availability. * Verifies shipping and payment information. * Calculates the total amount.  1. If validation passes:  * The system generates a unique order ID. * The system saves the order in the database, including:   + Customer information.   + Product details (IDs, quantity, prices).   + Shipping details.   + Payment status (e.g., Pending, Paid).   + Order timestamp. * Updates product stock levels in the database.  1. The system redirects the customer to the Order Confirmation page with a summary of their order and estimated delivery date. | | |
| Alternative Flows: | Step 4.1: If the cart is empty, the "Place Order" button is disabled, and the system displays a message: "Your cart is empty. Please add products to proceed."  Step 5.1: If validation fails due to insufficient stock, the system notifies the customer and adjusts the cart to reflect the available quantities.  Step 5.2: If shipping information is incomplete, the system highlights the missing fields and prompts the customer to correct them.  Step 5.3: If payment processing fails, the system allows the customer to retry or choose another payment method. | | |
| Exceptions: | System Error: If the system encounters an issue while saving the order, it logs the error and displays a message: "Unable to process your order at this time. Please try again later."  Stock Conflict: If another customer purchases the same product simultaneously, the system adjusts stock levels dynamically and updates the customer’s cart. | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03,BR04,BR05 | | |
| Other Information: | None | | |
| Assumptions: | * Customers typically review their cart and proceed to checkout after adding items. * The system supports dynamic stock updates to prevent overselling. * The payment process (if applicable) complies with security standards. | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | |  |  |  |  |  | | --- | --- | --- | --- | --- | | |  |  |  | | --- | --- | --- | | |  | | --- | | Orders can only be created by logged-in customers. |  |  | | --- | |  | |  |  | | --- | |  | |  |  | | --- | |  | |  |
| BR02 | |  |  |  |  |  | | --- | --- | --- | --- | --- | | |  |  |  | | --- | --- | --- | | |  | | --- | | Products in the cart must have sufficient stock at the time of order creation. |  |  | | --- | |  | |  |  | | --- | |  | |  |  | | --- | |  | |  |
| BR03 | |  |  |  | | --- | --- | --- | | |  | | --- | | Each order must have a unique order ID. |  |  | | --- | |  | |  |  | | --- | |  | |  |
| BR04 | |  |  |  | | --- | --- | --- | | |  | | --- | | Shipping and payment details must be complete and valid. |  |  | | --- | |  | |  |  | | --- | |  | |  |

## **4. Marketing Function**

### **4.1 Slider List**

A screenshot of a computer

Description automatically generated

This screen allows the user to view the list of sliders.

The slider list  is shown to the user in one of below cases:

He/she clicks the link on the Dashboard button then Slider when logged in with an Admin or Marketing staff account.

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Manage Slider | | |
| Created By: | HaiDD | Update by |  |
| Primary Actor: | Admin, Marketing staff | Secondary actors |  |
| Trigger: | User clicks on the DashBoard button then click Slider | | |
| Description: | Displays a list of sliders, allowing the admin to filter by status, search for specific sliders, and perform actions such as editing, viewing, or deleting. | | |
| Preconditions: | - User is logged in.  - The slider data exists in the database. | | |
| Postconditions: | -The list of sliders is displayed according to the selected filters and search terms.  - Admin can interact with the slider list (add,edit, view, delete). | | |
| Normal Flow: | Step 1:User navigates to the Slider List page.  Step 2: System retrieves the list of sliders from the database.  Step 3: Admin can filter the sliders by status (All, Active, Inactive).  Step 4:  Admin can search the sliders by content or backlink.  Step 5 : The system displays the slider list according to the selected filter and search criteria.  Step 6:Admin can click on Add,Edit,View, or Delete for any slider in the list.  Step 7:If the admin clicks Edit, they are directed to the slider edit page. If View is clicked, they are directed to the slider detail page. If Delete is clicked, the system asks for confirmation before deletion. | | |
| Alternative Flows: |  | | |
| Exceptions: | Step 3:If the filter retrieval fails, the system displays: "Unable to apply the selected filter." | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03,BR04 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | Only active and non-deleted sliders should be listed, and inactive ones should be clearly marked. |  |
| BR02 | The slider status (Active/Inactive) must be updated accordingly when filtered. |  |
| BR03 | The Delete action should require confirmation before proceeding. |  |
| BR04 | If feedback is present, it should display the latest feedback and allow pagination if needed. |  |

### **4.2 Slider Details**

A screenshot of a website

Description automatically generated

This screen allows the user to view the details of sliders.

The slider details  is shown to the user in one of below cases:

He/she clicks the link on the View button the Slider List page

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | View Slider Details | | |
| Created By: | HaiDD | Update by |  |
| Primary Actor: | Admin, Marketing staff | Secondary actors |  |
| Trigger: | Admin clicks on the View button from the Slider List | | |
| Description: | Displays detailed information for a specific slider, including its ID, content, image, status, and backlink. | | |
| Preconditions: | - User is logged in.  - The slider data exists in the database. | | |
| Postconditions: | -The details of the slider are displayed.  - Users can  return to the slider list. | | |
| Normal Flow: | Step 1:User clicks on the View button in the Slider List.  Step 2: System retrieves the slider details from the database.  Step 3: If the slider exists, the system displays the details: Slider ID, Content, Image, Status, and BackLink.  Step 4:  Admin can click on Back to Slider List to return to the Slider List  page. | | |
| Alternative Flows: |  | | |
| Exceptions: |  | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03,BR04 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | Slider ID must be unique and properly linked to the content for accurate retrieval. |  |
| BR02 | The BackLink field should contain a valid URL, and should be displayed properly if present. |  |
| BR03 | Admin should be able to return to the Slider List page using the "Back to Slider List" button. |  |

### **4.3 Products List**

A screenshot of a website

Description automatically generated

This screen allows the user to view the list of products.

The products list  is shown to the user in one of below cases:

He/she clicks the link on the Dashboard button then Product List when logged in with an Admin or Marketing staff account.

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | View Product List | | |
| Created By: | AnhDH | Update by |  |
| Primary Actor: | Admin, Marketing staff | Secondary actors |  |
| Trigger: | User navigates to the Product List page to view or manage the list of products. | | |
| Description: | Displays a list of products with their details, including options to filter by category, search by name, update product status, and access product details. | | |
| Preconditions: | - User is logged in.  - The Product List  is populated with product data from the database. | | |
| Postconditions: | -Users can view the products and make necessary updates. | | |
| Normal Flow: |  | | |
| Alternative Flows: |  | | |
| Exceptions: |  | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03,BR04 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | Slider ID must be unique and properly linked to the content for accurate retrieval. |  |
| BR02 | The BackLink field should contain a valid URL, and should be displayed properly if present. |  |
| BR03 | Admin should be able to return to the Slider List page using the "Back to Slider List" button. |  |

### **4.4 Feedback List**

A screenshot of a computer

Description automatically generated

This screen allows the user to view the list of feedback.

The feedback list  is shown to the user in one of below cases:

He/she clicks the link on the Dashboard button then Feedback when logged in with an Admin or Marketing staff account.

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Manage Feedback | | |
| Created By: | HaiDD | Update by |  |
| Primary Actor: | Admin, Marketing staff | Secondary actors |  |
| Trigger: | User clicks on the View button from the Feedback List page. | | |
| Description: | Display detailed information on individual feedback entries, including user details, product rating, comments, and media associated with the feedback. | | |
| Preconditions: | User is logged in and has access to view feedback details. | | |
| Postconditions: | The feedback status is updated if the user changes it. Feedback details are displayed accurately. | | |
| Normal Flow: | Step 1:Admin navigates to the Feedback Details page.  Step 2: System displays the feedback information  Step 3:Admin selects a new status (Show or Hide) for the feedback from the dropdown.  Step 4:Admin clicks "Update Status" to save changes.  Step 5:System confirms the status update and returns to the Feedback Manager. | | |
| Alternative Flows: |  | | |
| Exceptions: |  | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03,BR04 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | Only Admin and Marketing staff can view and update feedback details. |  |
| BR02 | Feedback details displayed must include feedback ID, user name, product name, rating, comment, and image. |  |
| BR03 | Feedback status change options are limited to "Show" or "Hide". |  |
| BR04 | When status is updated, the system must confirm the change and refresh the feedback details. |  |

### **4.5 Feedback Detail**

A screenshot of a computer

Description automatically generated

This screen allows the user to view the details of feedback.

The feedback details  is shown to the user in one of below cases:

He/she clicks the link on the View button the Feedback List page

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | View Feedback Detail | | |
| Created By: | HaiDD | Update by |  |
| Primary Actor: | Admin, Marketing staff | Secondary actors |  |
| Trigger: | Admin clicks on the Dashboard button then clicks Feedback | | |
| Description: | Displays a list of feedback, allows the user to manage user feedback by viewing, filtering, and sorting feedback entries. | | |
| Preconditions: | User is logged in and has access to the feedback management page.  Feedback data is available in the system for display. | | |
| Postconditions: | Feedback list is displayed, filtered, sorted, or updated. | | |
| Normal Flow: | Step 1:User navigates to the feedback management page.  Step 2: User enters filter criteria or sorts feedbacks  Step 3: User clicks “Search” to apply filters**,** and the system displays the filtered feedback.  Step 4:  User views feedback details and actions available for each entry. | | |
| Alternative Flows: |  | | |
| Exceptions: |  | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03,BR04 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | Only users with Admin, Marketing staff roles can access the Feedback Management page. |  |
| BR02 | Full name search should only display feedback entries where the user’s full name matches or contains the keyword. |  |
| BR03 | Star rating filter must only display feedback entries that match the selected rating value (e.g., 5 stars). |  |
| BR04 | Admin can sort feedback entries by columns (Full Name, Product Name, Rated Star) for better data management. |  |

## **5.Sale Function**

### **5.1 Order List**

A screenshot of a computer

Description automatically generated

This screen allows the user to view the Order List page.

The Order List is shown to the user in one of below cases:

He/she clicks the link on the Dashboard button then clicks Bills when logged in with an Admin, Sale staff account.

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | Manage Order | | |
| Created By: | AnhDH | Update by |  |
| Primary Actor: | Admin, Sale staff | Secondary actors |  |
| Trigger: | User navigates to the Product List page to view or manage the list of products. | | |
| Description: | This use case allows authorized users (Admin, Saler) to manage order-related tasks. | | |
| Preconditions: | The user is logged in with the appropriate role (Admin,  Saler). | | |
| Postconditions: | The order information is successfully filtered, displayed, or updated as per user actions. | | |
| Normal Flow: | Step 1:User navigates to the Order List page.  Step 2: User applies filters (status, date) and sorts orders as needed.  Step 3:  User selects an order to view details.  Step 4:  User updates order status, assigns saler, or cancels order.  Step 5:User saves updates. | | |
| Alternative Flows: |  | | |
| Exceptions: |  | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03,BR04 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | Only users with specific roles (Admin, Saler) can access the Order List page. |  |
| BR02 | Only Admin and Saler can update order status, assign Saler, and modify orders. |  |
| BR03 | Date range filters must have a valid start and end date, with start date earlier than end date. |  |
| BR04 | If the order status is "Received," updating options for Saler and status are disabled. |  |

## **6. Admin Function**

### **6.1 Admin Dashboard**

A screenshot of a computer

Description automatically generated

This screen allows the user to view statistics.

The Admin Dashboard is shown to the user in one of below cases:

He/she clicks the link on the Dashboard button when logged in with an Admin account.

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | View Admin Dashboard | | |
| Created By: | MinhNN | Update by |  |
| Primary Actor: | Admin | Secondary actors |  |
| Trigger: | User clicks on the Dashboard button then Dashboard. | | |
| Description: | Allows users to filter statistics data based on predefined time ranges, custom date selection, or a date range. | | |
| Preconditions: | Users must be logged in. | | |
| Postconditions: | - Successfully displays content sections. | | |
| Normal Flow: | Step 1:User navigates to the Admin Dashboard.  Step 2: System filters and displays data for the selected time range.  Step 3: System filters and displays data for the chosen day or month.  Step 4: System filters and displays data for the selected date range, if valid. | | |
| Alternative Flows: |  | | |
| Exceptions: |  | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03,BR04 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | Default filter option ("All Time") is selected when the page loads, showing all data by default. |  |
| BR02 | "7 day" and "30 day" filters load data for the past 7 or 30 days relative to the current date. |  |
| BR03 | Date pickers limit future dates based on the current date. |  |
| BR04 | The "From" date sets the minimum allowable date for the "To" date in a custom date range selection. |  |
| BR05 | Filters should only apply if valid dates are selected. Invalid ranges or dates outside allowed limits are not processed. |  |
| BR06 | The "Check" button submits the selected custom date range only if both "From" and "To" dates are valid. |  |

### **6.2 Users List**

A screenshot of a computer

Description automatically generated

This screen allows the user to view the list of users.

The users list  is shown to the user in one of below cases:

He/she clicks the link on the Dashboard button then Users when logged in with an Admin account.

|  |  |  |  |
| --- | --- | --- | --- |
| UC ID and Name: | View Users List | | |
| Created By: | MinhNN | Update by |  |
| Primary Actor: | Admin | Secondary actors |  |
| Trigger: | Admin click on the Dashboard button then click Users to go to Users List  page | | |
| Description: | Displays a list of users with options to filter by role and status, search by name or other attributes, and perform actions such as viewing details or editing user information. | | |
| Preconditions: | - Admin must be logged in.  - User data must exist in the database. | | |
| Postconditions: | - Users list is displayed based on applied filters or search criteria.  - Admin can view or edit user details successfully. | | |
| Normal Flow: | Step 1:Admin navigates to the User List page.  Step 2: System retrieves and displays the list of users from the database.  Admin applies filters by selecting a specific Role and/or Status from the dropdown menus.  Step 4: Admin enters a search term in the search box to find users based on name, email, or other attributes.  Step 5:System displays the filtered and/or searched list of users based on the applied criteria.  Step 6:Admin clicks the Detail button to view more information about a specific user.  Step 7:Admin clicks the Edit button to modify user information, which opens an edit modal.  Step 8:Admin updates user details in the edit modal and clicks Save Changes to apply updates.  Step 9:System validates and saves the updated user information, then displays a confirmation message.  Step 10:Admin can click the Load More button to load additional users into the list. | | |
| Alternative Flows: |  | | |
| Exceptions: |  | | |
| Priority: | High | | |
| Frequency of Use: | High | | |
| Business Rules: | BR01, BR02,BR03,BR04 | | |
| Other Information: |  | | |
| Assumptions: |  | | |

Business rule

|  |  |  |
| --- | --- | --- |
| Rule ID | Rule Description | Note |
| BR01 | Only users with the selected Role should be displayed when filtered. |  |
| BR02 | Only users with the selected Status should be displayed when filtered. |  |
| BR03 | The search functionality must match against user attributes such as First Name, Last Name, Email, etc. |  |
| BR04 | User details displayed in the Detail view must include accurate and up-to-date information. |  |

# **III. System Design**

## **1. Database Design**

### **1.1 Database Schema**

A computer screen shot of a computer network

Description automatically generated

### **1.2 Table Descriptions**

|  |  |  |
| --- | --- | --- |
| **No** | **Table** | **Description** |
| 01 | user | Table hold attribute of User:         - Primary keys: ID         - Foreign keys: ChangeLogID, RoleID         - Unique keys: FirstName, LastName, Email, PhoneNumber, EncodedPassword, Description, AvatarImage, Status |
| 02 | role | Table hold attribute of user role:   * Primary keys: ID * Foreign keys: none * Unique keys: Name, Weight |
| 03 | permission | Table hold attribute of role permission:   * Primary keys: ID * Foreign keys: none * Unique keys: Name, Code, Description |
| 04 | role permission | Sub-Table for role and permission:   * Primary keys: RoleID, PermissionID * Foreign keys: RoleID, PermissionID * Unique keys: none |
| 05 | Product | Table hold Product attribute:   * Primary keys: ID * Foreign keys: SubCategoryID * Unique keys: Name, Description, ThumbnailImage, Price, Star, status. |
| 06 | subcategory | Table hold attribute of Subcategory:   * Primary keys: ID * Foreign keys: none * Unique keys: Name, OriginalType |
| 07 | changelog | Table hold attribute of User Change Logs:   * Primary keys: ID * Foreign keys: None * Unique keys: CreateAt, UpdateAt, DeleteAt |
| 08 | address | Table hold attribute of Customer Address:   * Primary keys: ID * Foreign keys: UserID * Unique keys: Country, TinhThanhPho, QuanHuyen, PhuongXa, Details, Note |
| 09 | blog | Table hold attribute of Marketing Role Blog:   * Primary keys: ID * Foreign keys: UserID * Unique keys: Title, Content |
| 10 | blogmedia | Table hold links to media of blog:   * Primary keys: ID * Foreign keys: BlogID * Unique keys: Link |
| 11 | feedback | Table hold attribute of Customer Feedback:   * Primary keys: ID * Foreign keys: UserID, OrderID, ProductID * Unique keys: Star, Comment |
| 12 | feedbackmedia | Table hold links to media of feedback:   * Primary keys: ID * Foreign keys: FeedbackID * Unique keys: Link |
| 13 | slider | Table hold Marketing uploaded Slider include link to media:   * Primary keys: ID * Foreign keys: UserID * Unique keys: Content, Link |
| 14 | order | Table hold Order of customer:   * Primary keys: ID * Foreign keys: CustomerID, SaleID, ShipID, ProductID, AddressID * Unique keys: Orderdate, Quantity, Price, Satus, PaymentMethod |
| 15 | tag | Table hold tag for product:   * Primary keys: ID * Foreign keys: None * Unique keys: Name, Color |
| 16 | tagproduct | Sub-table for tag and product:   * Primary keys: tagID, productID * Foreign keys: tagID, productID * Unique keys: none |
| 17 | cart | Table hold cart attribute:   * Primary keys: ID * Foreign keys: UserID * Unique keys: none |
| 18 | cartproduct | Table show product in which cart:   * Primary keys: cartID, productID * Foreign keys: cartID, productID * Unique keys: none |
| 19 | Voucher | Table show voucher attribute for user:   * Primary keys: ID * Foreign keys: UserID * Unique keys: code, percent |
| 20 | color | Table show full color that maybe product have:   * Primary keys: ID * Foreign keys: None * Unique keys: Name, ColorCode |
| 21 | size | Table show size of product:   * Primary keys: ID * Foreign keys: None * Unique keys: Size |
| 22 | product\_color\_size | Sub-table show Size,Color of product and quantity of that product:   * Primary keys: SizeID, ColorID, ProductID * Foreign keys: SizeID, ColorID, ProductID * Unique keys: Quantity |
| 23 | productimage | Table hold links image of product:   * Primary keys: ID * Foreign keys: ProductID * Unique keys: Link |
| 24 | shipbrand | Table hold ship brand:   * Primary keys: ID * Foreign keys: None * Unique keys: Name |
| 25 | shipmethod | Table hold ship method:   * Primary keys: ID * Foreign keys: None * Unique keys: Name |
| 26 | blogsubattribute | Table hold sub-attribute of blog:   * Primary keys: ID * Foreign keys: None   Unique keys: Name |
| 27 | billfeedback | Table hold feedback for bill:   * Primary keys: ID * Foreign keys: BlogId * Unique keys: SubTitle, SubContent, Type |
| 28 | status | Table hold status for everythings:   * Primary keys: ID * Foreign keys: None * Unique keys: Name, Type |
| 30 | paymentmethod | Table hold methods of payment:   * Primary keys: ID * Foreign keys: None * Unique keys: Name |
| 31 | billfeedbackmedia | Table hold media for bill feedback:   * Primary keys: ID * Foreign keys: BillId * Unique keys: Link |
| 32 | Ship\_brand\_method | Sub-table show ship brand and ship method:   * Primary keys: ShipBrandId, ShipMethodId * Foreign keys: ShipBrandId, ShipMethodId * Unique keys: None |
| 33 | bills | Table hold bills information:   * Primary keys: ID * Foreign keys: CustomerID,SalerID, ShipperID, AddressID, ShipMethodID, PaymentMethodID * Unique keys: TotalPrice, PublishDate, Status, isFeedbacked, isCanceledPending |
| 34 | wishlistuserproduct | Sub-table hold wish list product for user:   * Primary keys: UserID, ProductID * Foreign keys: UserID, ProductID * Unique keys: None |

## **2. Code Packages**

### **2.1 Package Diagram**

A diagram of a process

Description automatically generated

### **2.2 Package Descriptions**

|  |  |  |
| --- | --- | --- |
| **No** | **Package** | **Description** |
| 01 | member\_authority | |  | | --- | | Contains functions and classes related to user authority, including authentication, role-based access control, and role management. |  |  | | --- | |  | |
| 02 | registration | |  | | --- | | Contains functions for handling user account registration, including email verification and user data creation. |  |  | | --- | |  | |
| 03 | |  | | --- | | JSP Views |  |  | | --- | |  | | |  | | --- | | Contains JSP pages for displaying user interfaces, designed to interact with Servlets. |  |  | | --- | |  | |
| 04 | Servlets | |  | | --- | | Contains Servlets responsible for handling user requests, processing them, and forwarding them to the service layer (Services). |  |  | | --- | |  | |
| 05 | |  | | --- | | Business Services |  |  | | --- | |  | | |  | | --- | | Contains classes that implement business logic, process data, and enforce business rules before interacting with the Domain Layer. |  |  | | --- | |  | |
| 06 | Entities | |  | | --- | | Contains classes that map database records (ORM), representing tables such as User, Product, Order. |  |  | | --- | |  | |
| 07 | |  | | --- | | Repositories |  |  | | --- | |  | | |  | | --- | | Contains data access classes (DAO) that perform CRUD operations on the MySQL database. |  |  | | --- | |  | |
| 08 | |  | | --- | | MySQL Database |  |  | | --- | |  | | |  |  |  | | --- | --- | --- | | |  | | --- | | Represents the MySQL database that stores all system information, such as users, orders, and products. |  |  | | --- | |  | |  |  | | --- | |  | |
| 09 | Utilities | Contains utility classes for supporting tasks such as database connections, sending emails, error handling, or logging. |