

Contents

1.	The Final UI Design.....	3
2.	Database:	8
3.	Functions:	9
3.1	Login and Admin Info Management:	9
3.1.1	UI and Functions	9
3.1.2	Flow Chart	13
3.2	Category Management:	13
3.2.1	UI and Functions	13
3.2.2	Flow Chart and Database.....	16
3.3	Product Management:	17
3.3.1	UI and Functions	17
3.3.2	Flow Chart	20
3.4	Coupon Management:	21
3.4.1	UI and Functions	21
3.4.2	Flow Chart	24
3.5	User Management:	25
3.5.1	UI and Functions	25
3.5.2	Flow Chart and Database.....	31
3.6	Order Management Function:	32
3.6.1	UI and Functions	32
3.6.2	Flow Chart and Database.....	34
4.	Test case:	35
4.1	Test case for login and Admin Info:	35
4.2	Test case for category:	36
4.2	Test case for product management:	39
4.3	Test case for coupon management:.....	41
4.4	Test case for user management:.....	42
4.5	Test case for order management:	45

1. The Final UI Design

In this project, our group realize a web-based e-commerce store for administrators. It has below functions: login function, category management function, product management function, user management function, order management function and coupon management function.

Below is the use case diagram of the whole website:

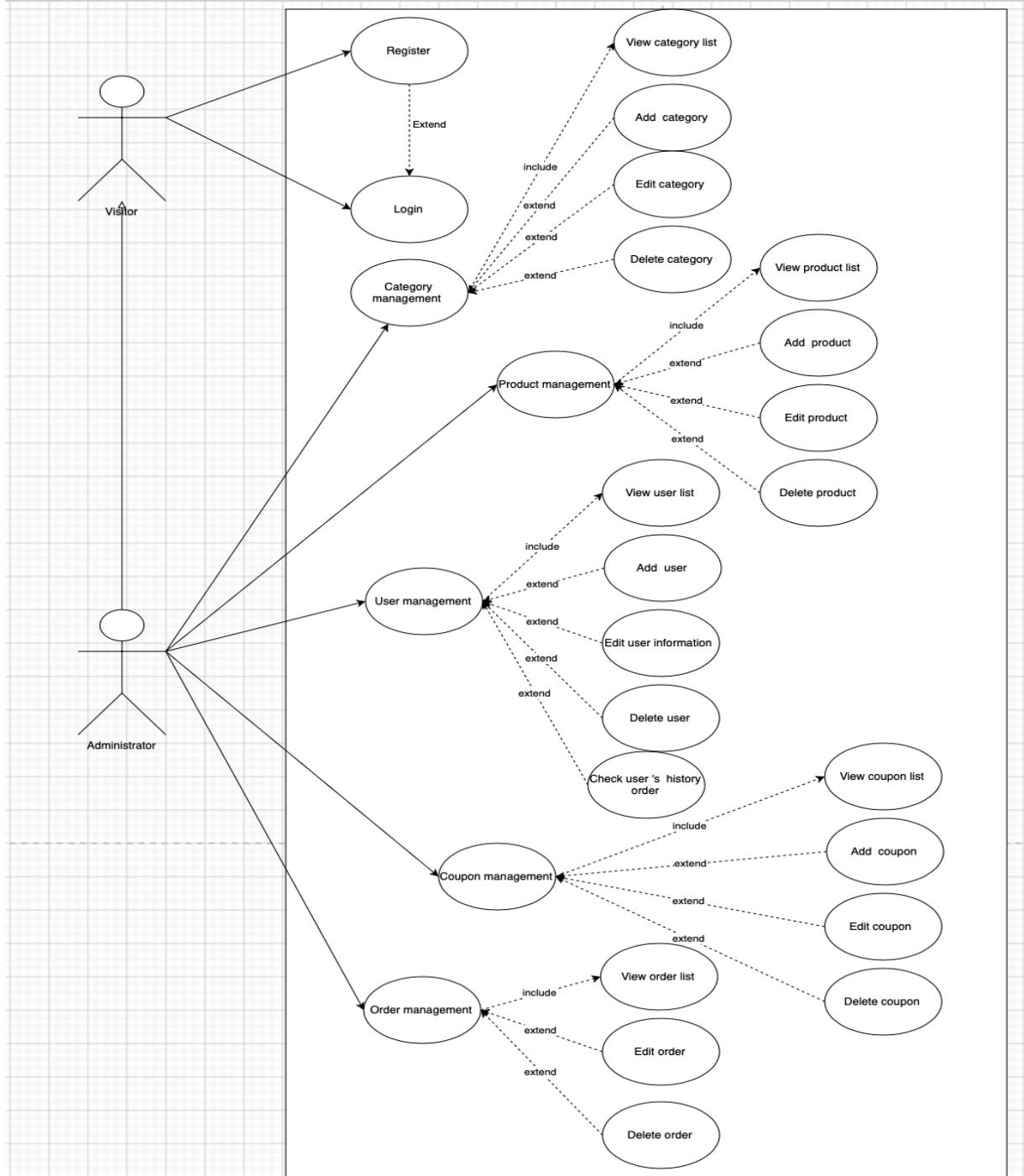
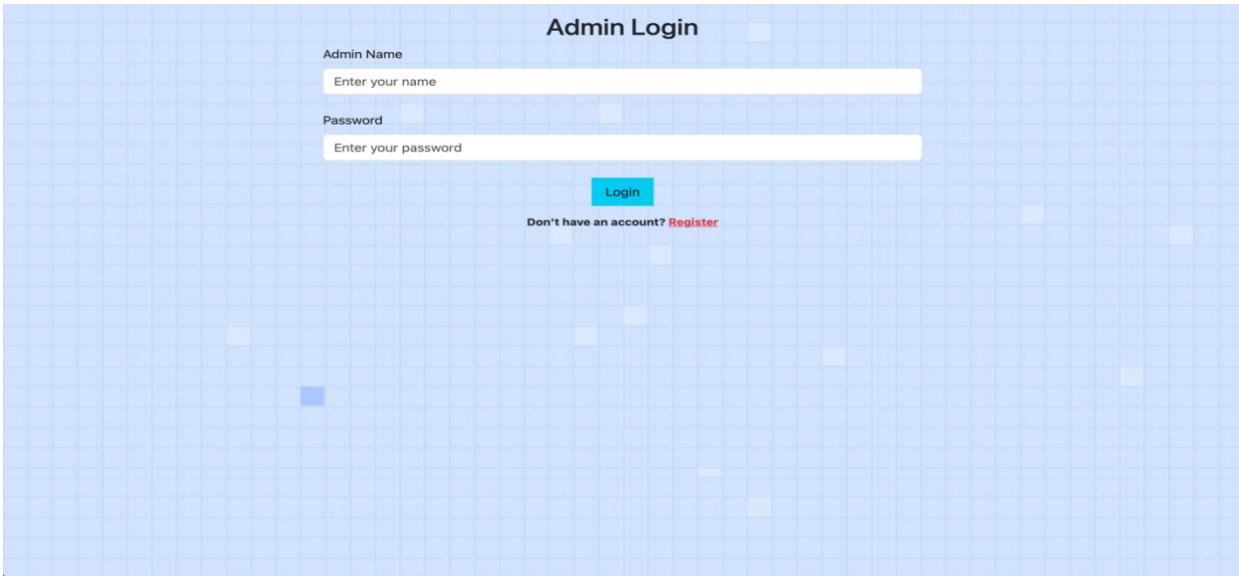


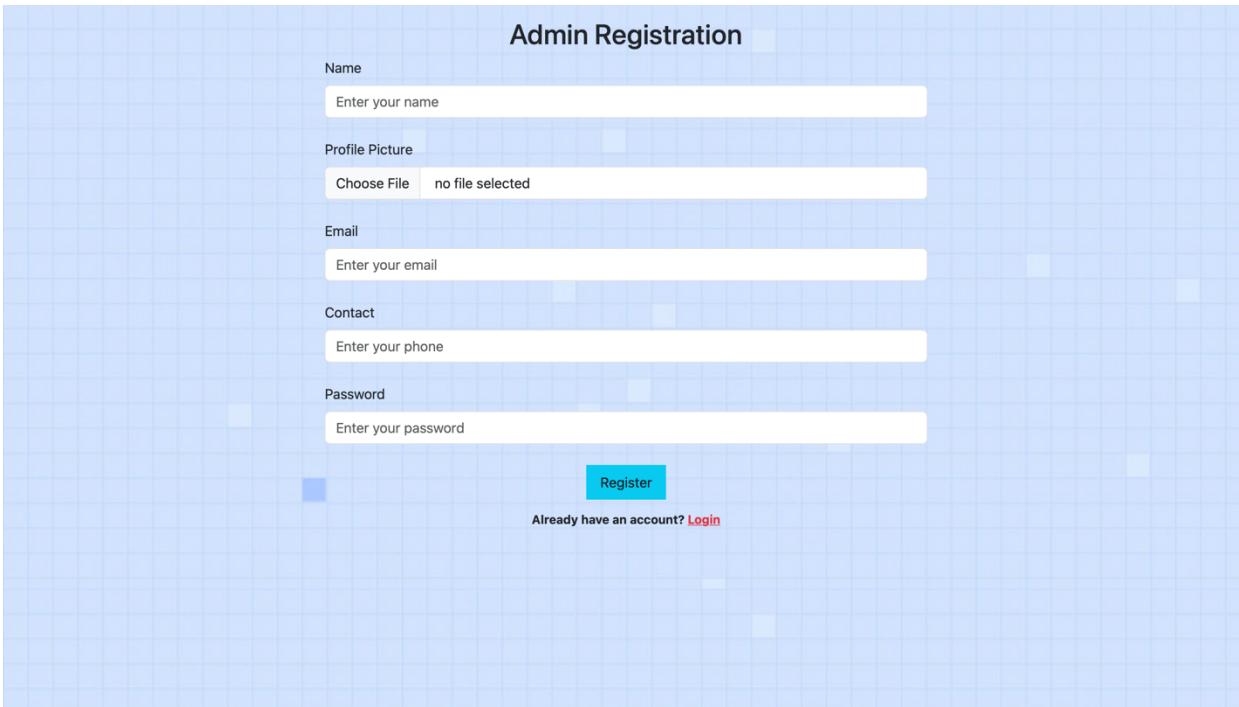
Figure 1.1 Use case diagram

Below is the final UI of the whole website:



The Admin Login interface features a light blue grid background. At the top center is a header labeled "Admin Login". Below it are two input fields: "Admin Name" with placeholder text "Enter your name" and "Password" with placeholder text "Enter your password". A central "Login" button is positioned between the fields. Below the button is a link "Don't have an account? [Register](#)".

Figure 1.2 Login



The Admin Registration interface features a light blue grid background. It includes five input fields: "Name" (placeholder: "Enter your name"), "Profile Picture" (with a "Choose File" button showing "no file selected"), "Email" (placeholder: "Enter your email"), "Contact" (placeholder: "Enter your phone"), and "Password" (placeholder: "Enter your password"). A central "Register" button is located below the fields. A link "Already have an account? [Login](#)" is positioned at the bottom.

Figure 1.3 Register

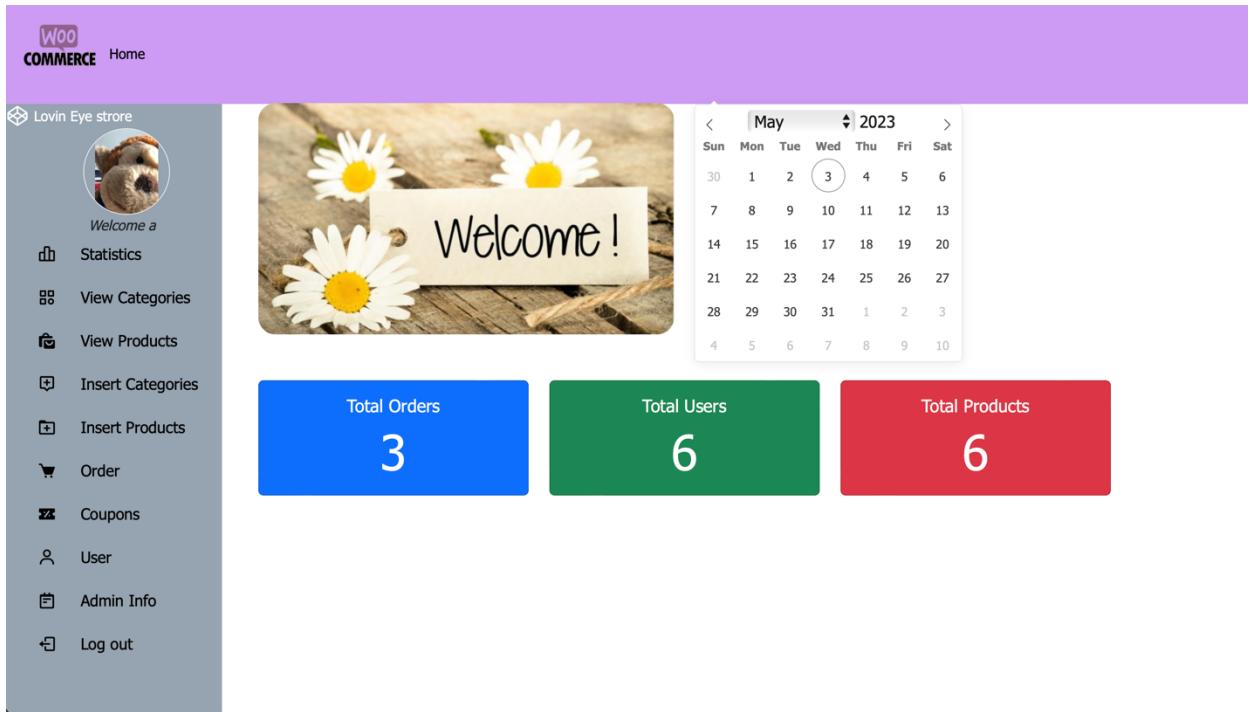


Figure 1.4 The main page (After login)

The screenshot shows the 'All Categories' interface. The top navigation bar has 'WooCommerce Home'. The sidebar menu is identical to Figure 1.4. The main content area displays a table titled 'All Categories' with the following data:

No.	Category Name	Edit	Delete
1	Fruit		
2	Cars		
3	Clothes		
4	Cosmetics		
5	tool		
6	Shoes		
7	furniture		

Figure 1.5 Category interface

Woo
COMMERCE Home

Lovin Eye store

Welcome a

-  Statistics
-  View Categories
-  View Products
-  Insert Categories
-  Insert Products
-  Order
-  Coupons
-  User
-  Admin Info
-  Log out

All Products

No.	Product Name	Product Image	Product Price	Product Stock	Category	Edit	Remove
1	Grapes		20	50	Fruit	 	
2	sofa		200	100	furniture	 	
3	lipstick		100	2	Cosmetics	 	
4	Nike		700	100	Shoes	 	
5	converse		379	40	Shoes	 	

Figure 1.6 Product interface

Woo
COMMERCE Home

Lovin Eye store

Welcome a

-  Statistics
-  View Categories
-  View Products
-  Insert Categories
-  Insert Products
-  Order
-  Coupons
-  User
-  Admin Info
-  Log out

Order information

Show 10 entries								Search: <input type="text"/>
No.	ID	User	Product name	Quantities	Coupon code	Order date	Order status	Operation
1	1	ddd	Grapes	1	a123	2023-05-01 03:40:11	finished	 
2	1	ddd	Nike	1	a123	2023-05-01 03:40:11	finished	 
3	2	ddd	Clothes	1	b123	2023-04-24 12:44:13	shipping	 
4	5	user3	Nike	5	123	2023-05-01 06:32:03	unshipped	 
5	2	ddd	Clothes	1	123	2023-04-24 12:44:13	shipping	 
6	5	user3	Nike	5	aabbccdd	2023-05-01 06:32:03	unshipped	 

Showing 1 to 6 of 6 entries

Previous  Next

Figure 1.7 Order interface

Coupon

No.	Code	Discount	Type	Start Time	End Time	Status	Action
1	a123	-0.50	Percentage-off	2023-05-01	2023-05-03	unused	Edit Delete
2	b123	-0.20	Percentage-off	2023-01-01	2023-02-05	used	Edit Delete
3	12345678	-0.09	FreeShipping	2023-04-01	2023-04-02	used	Edit Delete
4	123	-0.07	FreeShipping	2021-12-1	2023-12-1	unused	Edit Delete
5	aabbccdd	-0.60	BigSale	2023-2-1	2023-2-5	used	Edit Delete
6	001	-0.01	hh	2023-5-5	2023-5-20	unused	Edit Delete

Showing 1 to 6 of 6 entries

Figure 1.8 Coupon interface

User management

No.	Username	Email	Payment Method	Shipping Address	Action
1	ddd	can302	can302	can302 building	Order history Edit Delete
2	can	123231	213	123	Order history Edit Delete
3	user1	user1@qq.com	wechat	user1 road	Order history Edit Delete
4	user2	user2@qq.com	Alipay	user2 house	Order history Edit Delete
5	user3	user3@163.com	ApplePay	user3 bulding	Order history Edit Delete
6	user4	user4@qq.com	wechat	user4 road	Order history Edit Delete

Showing 1 to 6 of 6 entries

Figure 1.9 User interface

The screenshot shows the WooCommerce Admin Profile edit page. The left sidebar has a purple header with the Woo Commerce logo and a 'Home' link. Below it is a sidebar menu with icons and text: Lovin Eye store, Welcome a, Statistics, View Categories, View Products, Insert Categories, Insert Products, Order, Coupons, User, Admin Info, and Log out. The main content area has a title 'Edit Admin Profile'. It contains several input fields: 'Name' with value 'a', 'Profile Picture' with a 'Choose File' button and 'no file selected' message, 'Email' with value 'a@com', 'Contact' with value '123', 'Password' (empty), and 'Password Again' (empty). At the bottom is a purple 'Update' button.

Figure 1.10 Admin info

2. Database:

In this project, we have designed 8 tables: admin, users, categories, products, coupons, orders, order_product and order_coupon.

(1) admin: It stores the administrators' personal information including their unique ID, username, password, email, mobile phone, and profile image. This information is very important, so, to keep this table from being affected by other tables operations, the admin table does not have any links with other tables. (2) users: It records the basic information of the users including username, email, password, payment method, shipping address and unique ID. (3) categories: It records unique ID and category name. (4) products: It records the basic information of the products like unique product ID, product name, product price, product description, category ID which is the foreign key referenced from the categories table, product stock, and three images of the product. (5) coupons: It records the basic information of the coupons like id, code, discount, type, start time, end time, and status. (6) orders: It records the basic information of the orders, like id, user id which is the foreign key referenced from the users, order date and order status. However, to show the all the information about the orders, we add two tables: order_product table to show the product information in an order and order_coupon table to show the coupon information in an order. These two tables can solve the N-to-1 problem like several products in one order and several coupons in one order. (7) order_product: It records id, id in order which is the foreign key referenced from the orders table, product id which is the foreign key referenced from the products table, and quantities. (8) order_coupon: It records id, id in order which is the foreign key referenced from the orders table and the coupon id which is the foreign key referenced from the coupon table.

Below is the ER diagram of the whole database for our project:

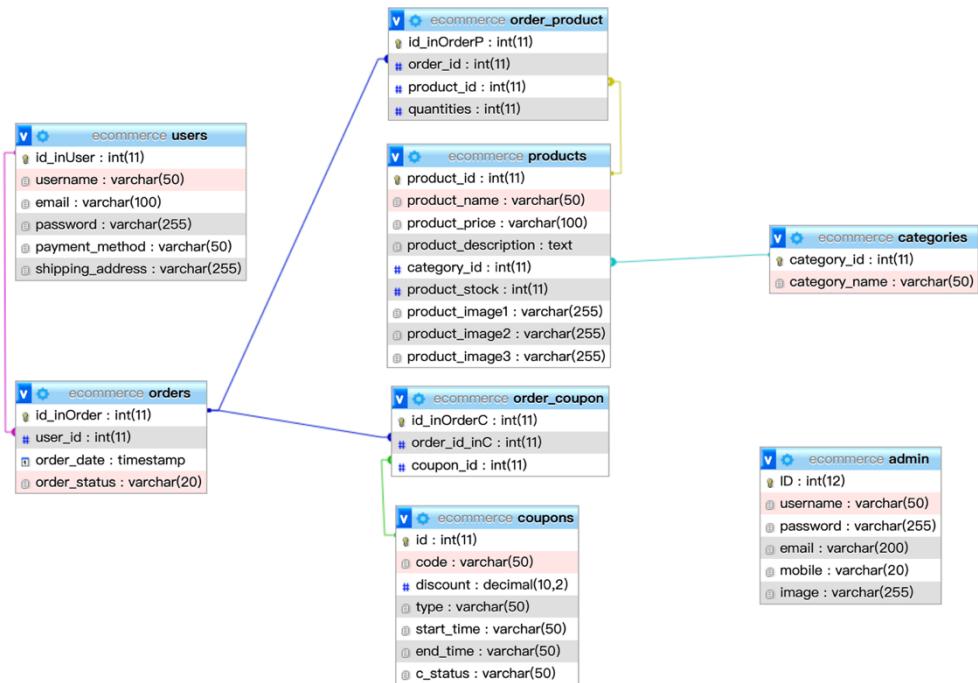


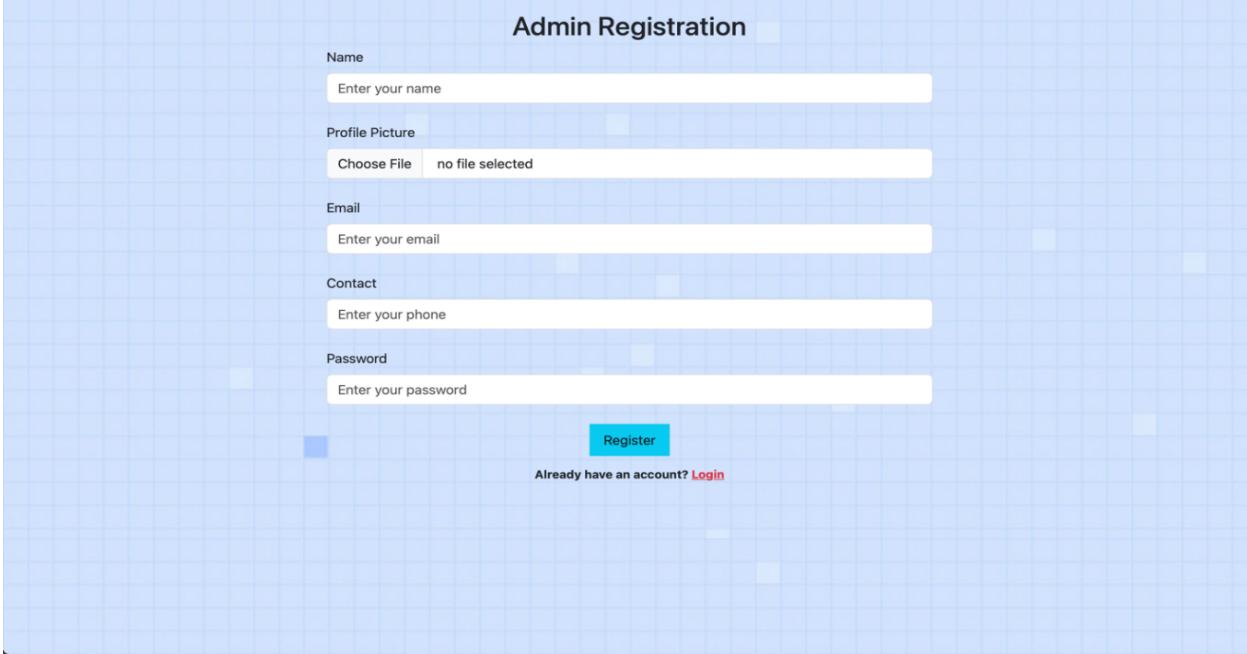
Figure 2.1 ER diagram

3. Functions:

3.1 Login and Admin Info Management:

3.1.1 UI and Functions

Administrators can register for the system by submitting their name, avatar, email, phone number and password. Note that a username that has already been used will be rejected for secondary registration. The register page is shown in Figure 3.1.1.1.



The image shows the 'Admin Registration' form. It consists of several input fields: 'Name' (text input with placeholder 'Enter your name'), 'Profile Picture' (file upload input showing 'Choose File' and 'no file selected'), 'Email' (text input with placeholder 'Enter your email'), 'Contact' (text input with placeholder 'Enter your phone'), and 'Password' (text input with placeholder 'Enter your password'). Below these fields is a blue button labeled 'Register'. At the bottom of the form, there is a link 'Already have an account? [Login](#)'.

Figure 3.1.1.1 The UI of Register

If the name or email entered is already in use, the system will remind the administrator to change the username to complete the registration. The notification message is shown in Figure 3.1.1.2.



Figure 3.1.1.2 Register failed

When the administrator clicks on “register” and is prompted with data successfully insert, the administrator has been successfully registered and will then be brought to the system login page. The login page is shown in Figure 3.1.1.3, and the notification message is shown in Figure 3.1.1.4.

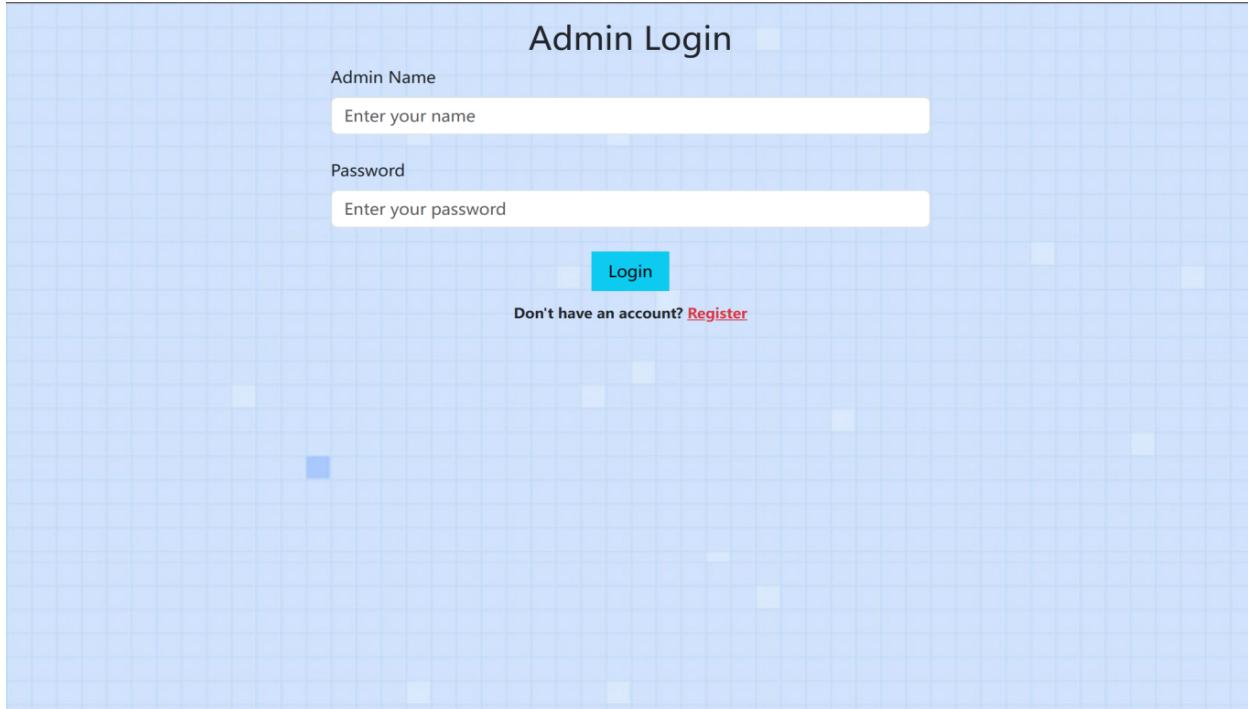


Figure 3.1.1.3 Login page

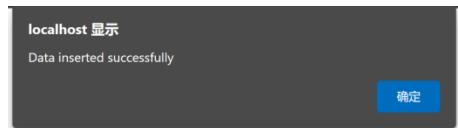


Figure 3.1.1.4 Register success

Authorized administrators will need to log in to the E-commerce Administrator back office system by submitting the correct username and password. When the username and password are correct, the system will prompt “login successful” and jump to the back office management system home page. If the password is wrong, the system will notice “Password is wrong”; If the name is not exist, the system will notice “Invalid Access”. The notification message is shown in Figure 3.1.1.5.

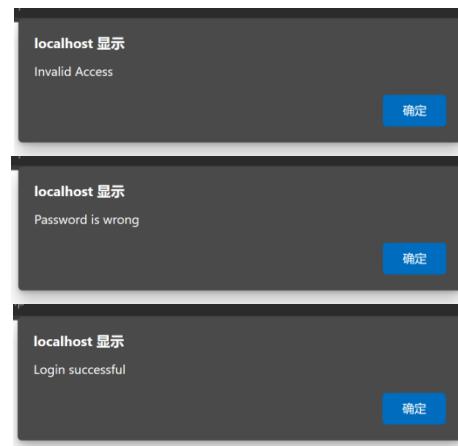


Figure 3.1.1.5 Login message (different situation)

Then, the administrator will see his or her avatar and username in the top left corner of the main page.

If the administrator wants to view or change their user information, they can click on "admin info" to jump to the admin information screen, which is shown in Figure 3.1.1.6.

The screenshot shows the 'Edit Admin Profile' page. On the left is a sidebar with a purple header 'WOO COMMERCE Home' and a logo for 'Lovin Eye store'. The sidebar contains links: Statistics, View Categories, View Products, Insert Categories, Insert Products, Order, Coupons, User, Admin Info (which is highlighted), and Log out. The main area has a light gray background with a title 'Edit Admin Profile'. It includes fields for Name (containing 'a'), Profile Picture (with a placeholder 'Choose File no file selected'), Email (containing 'a@com'), Contact (containing '123'), Password (empty), and Password Again (empty). A purple 'Update' button is at the bottom right.

Figure 3.1.1.6 Admin Edit Page

In this page, the administrator can see the information they have registered with (passwords are not displayed). The administrator can then select the information to change and click on update to save it (Note: Password changes need to be verified twice to ensure the changes are correct. If the two password input is not the same, the system will prompt “The two password is different, please input the same password”, which is shown in Figure 3.1.1.7).

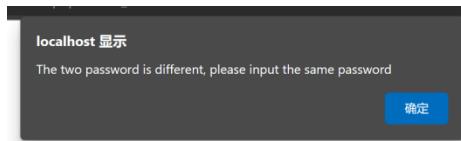


Figure 3.1.1.7 Edit Wrong Password

After the administrator has changed their personal information, the system will prompt that “Info updated successfully (include the password)” which is shown in Figure 3.1.1.8, and jump back to the login screen, requiring the administrator to log in to the system with the new information for subsequent operations.

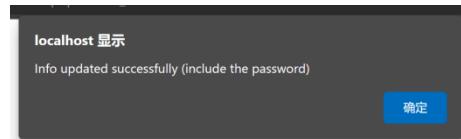


Figure 3.1.1.8 Edit Info Success

3.1.2 Flow Chart

Below is the flow chart of the login and admin information function:

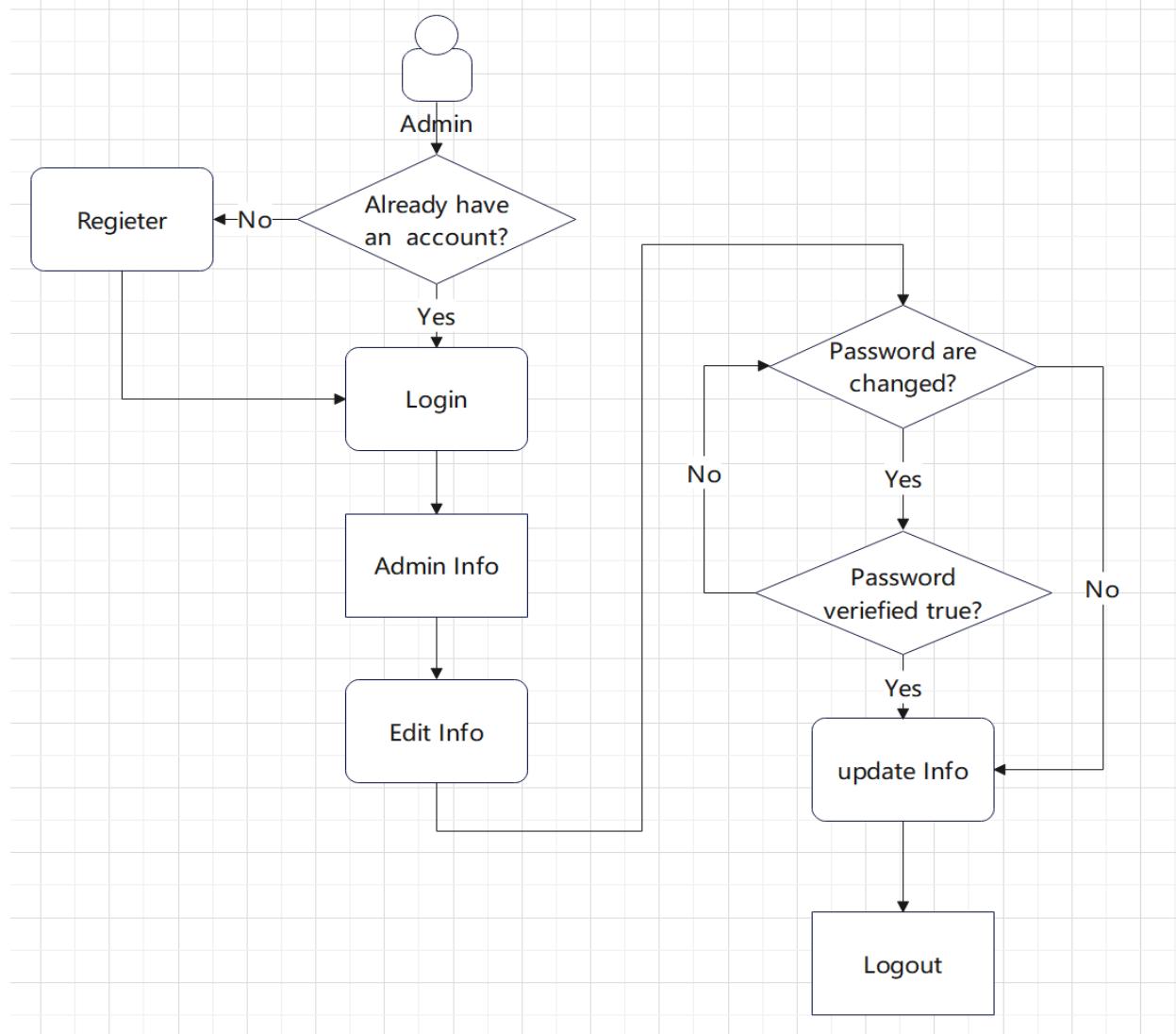


Figure 3.1.2.1 The flow chart of Login and Information Edit

3.2 Category Management:

3.2.1 UI and Functions

Administrators can manage categories in several ways, including adding new categories, updating existing category names, and deleting categories. To add new categories, the administrator simply needs to click "Insert Categories" in the navigation bar, as illustrated in Figure 3.2.1.1. They can then enter the desired category names and click the Insert button. If the category is successfully added, a message will appear confirming the insertion. However, if the administrator accidentally adds a category that already exists, a message will appear, as shown in Figure 3.2.1.2, notifying them that the category already exists.

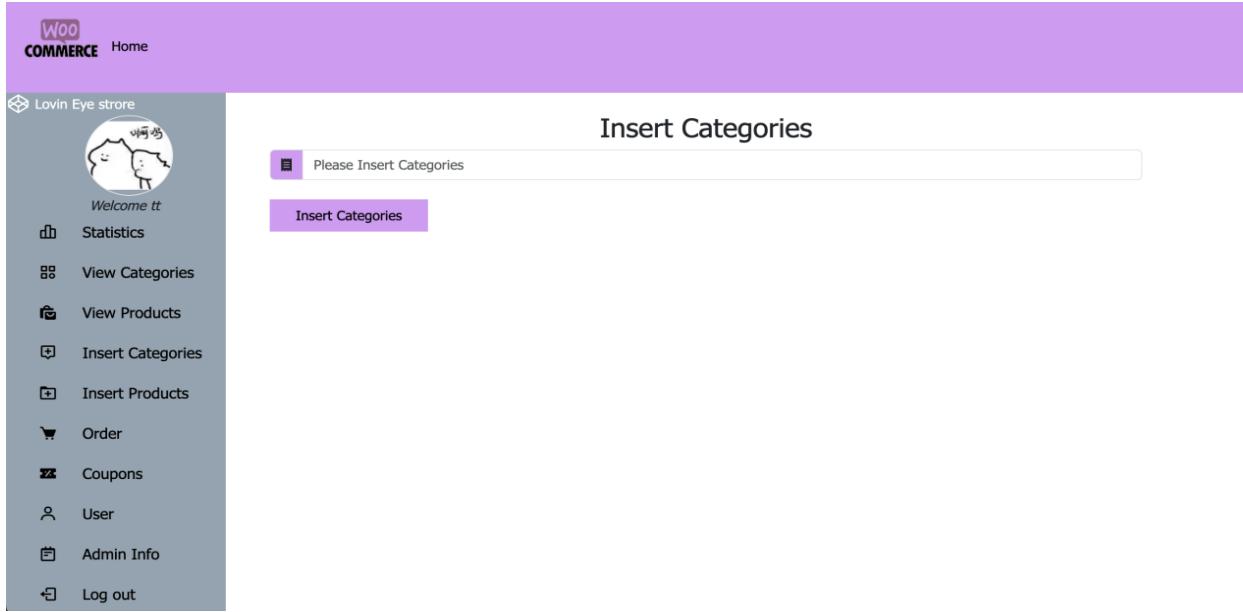


Figure 3.2.1.1 The UI of Insert Categories

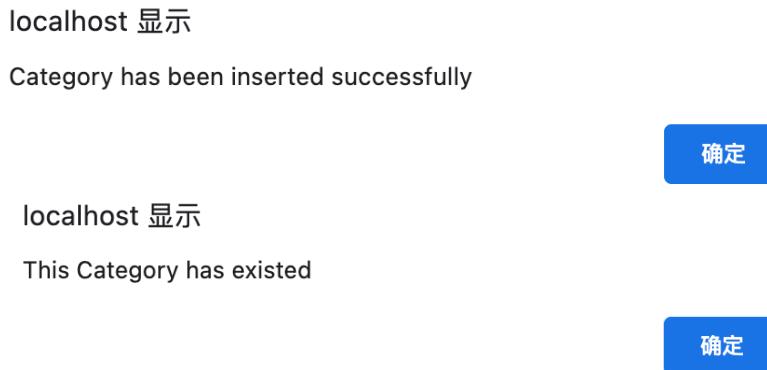


Figure 3.2.1.2 Insertion successfully and insertion failure

To view all existing categories, administrators can simply click on "View Categories" in the navigation bar, as illustrated in Figure 3.2.1.3. The categories are displayed in a tabular form. To change the name of a category, administrators can click on the icon located below "Edit", which is shown in Figure 3.2.1.4. Once the new name is entered, all items under that category are automatically grouped under the new name. If the desired name already exists, the page will indicate that the category already exists. To delete a category, administrators can click on the button located under "Delete". As shown in Figure 3.2.1.5, if there are products associated with the category, the page will ask for confirmation before deletion. If confirmed, all products under the category will be removed. Upon successful deletion, the page will automatically return to the "View Categories" page.

The screenshot shows the 'All Categories' section of the WooCommerce admin interface. On the left, there's a sidebar with various menu items: Statistics, View Categories, View Products, Insert Categories, Insert Products, Order, Coupons, User, Admin Info, and Log out. The main area displays a table titled 'All Categories' with the following data:

No.	Category Name	Edit	Delete
1	Fruits	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Cars	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Clothes	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Cosmetics	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Shoes	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Furniture	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Figure 3.2.1.3 The UI of View Categories

The screenshot shows the 'Edit Category' page for the 'Fruits' category. The sidebar on the left is identical to Figure 3.2.1.3. The main area has a title 'Edit Category' and a 'Category Name' input field containing 'Fruits'. Below the input field is a purple 'Update Category' button.

Figure 3.2.1.4 The UI of Edit Categories

localhost 显示

Are you sure you want to delete this category?

Figure 3.2.1.5 The UI of View Categories

3.2.2 Flow Chart and Database

The products table in the database of this page is connected to the category table through a foreign key. As a result, any changes made to the categories table will affect the products table. Specifically, when an administrator changes the name of a category, the existing products under it are automatically transferred to the new category. On the other hand, if a category is deleted directly, all products under it will also be deleted. It is important to note that the order associated with the deleted product is also automatically removed. The flow diagram for the Categories function is illustrated in Figure 3.2.2.1.

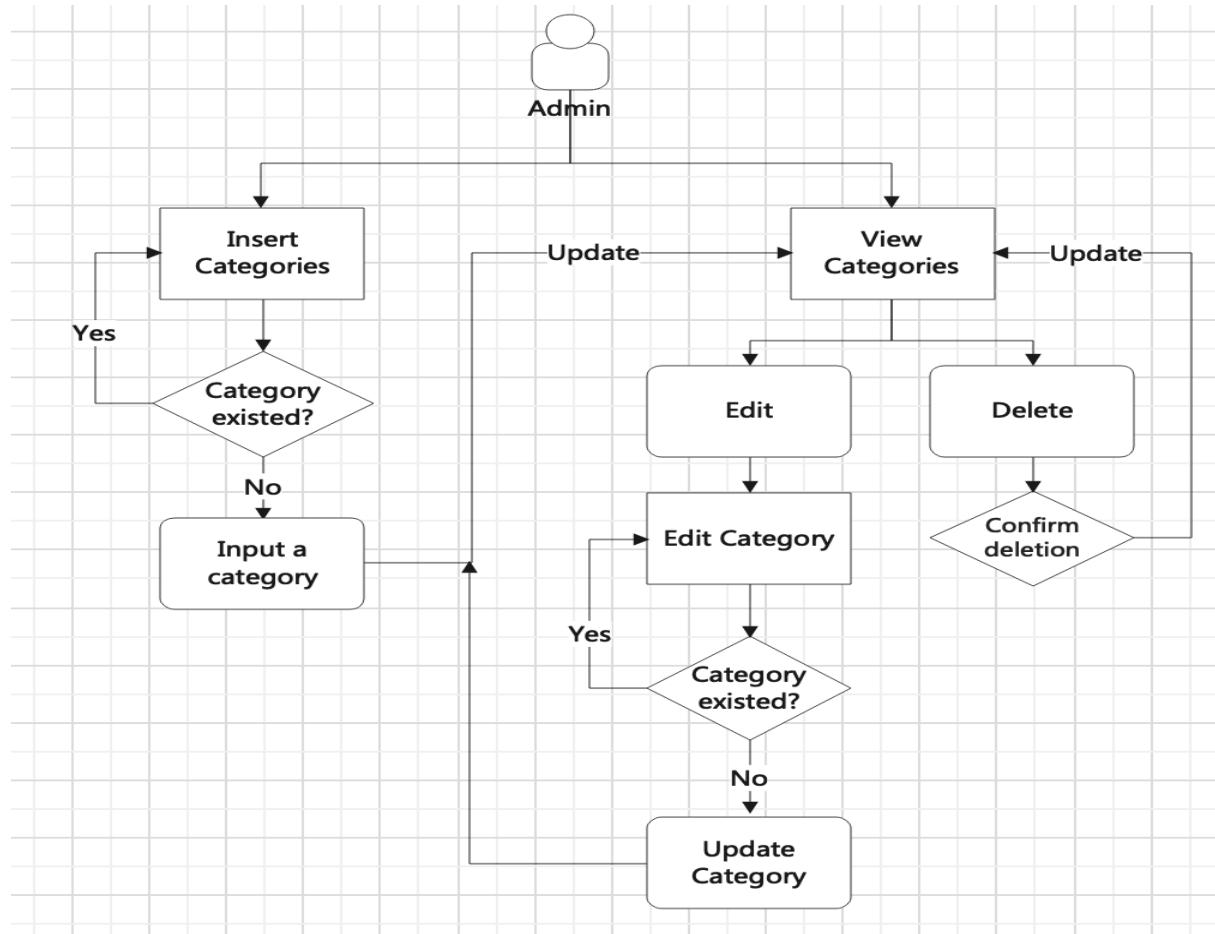


Figure 3.2.2.1 The flow chart of Categories

3.3 Product Management:

3.3.1 UI and Functions

Administrators can add products in the "Insert Product" screen of the management system. In this interface, the administrator can enter a detailed description of the product, such as product name, price, stock, category, picture and other basic information, as shown in Figure 3.3.1.1. Figure 3.3.1.2 shows that when the administrator adds a product, the selection of the category is based on the changes in the database. When the information is saved in the database, figure 3.3.1.3 displays that the system will prompt the administrator that the modification is successful.

The screenshot shows the 'Details of Products' form within the WooCommerce Admin interface. The left sidebar lists various management options: Home, Lovin Eye store (with a logo), Statistics, View Categories, View Products, Insert Categories, Insert Products, Order, Coupons, User, Admin Info, and Log out. The main form has the following fields:

- Product Name: Please Type the Name
- Product Description: Please Type the Description
- Product Stock: Please Type the Stock
- Product Categories: Please Choose a Category (dropdown menu)
- Product Display Image: 选择文件 未选择任何文件 (File input field)
- Product Detail Image 1: 选择文件 未选择任何文件 (File input field)
- Product Detail Image 2: 选择文件 未选择任何文件 (File input field)
- Product Prices: Please Type the Prices

A purple 'Insert Products' button is located at the bottom right of the form.

Figure 3.3.1.1 The UI of Insert Products

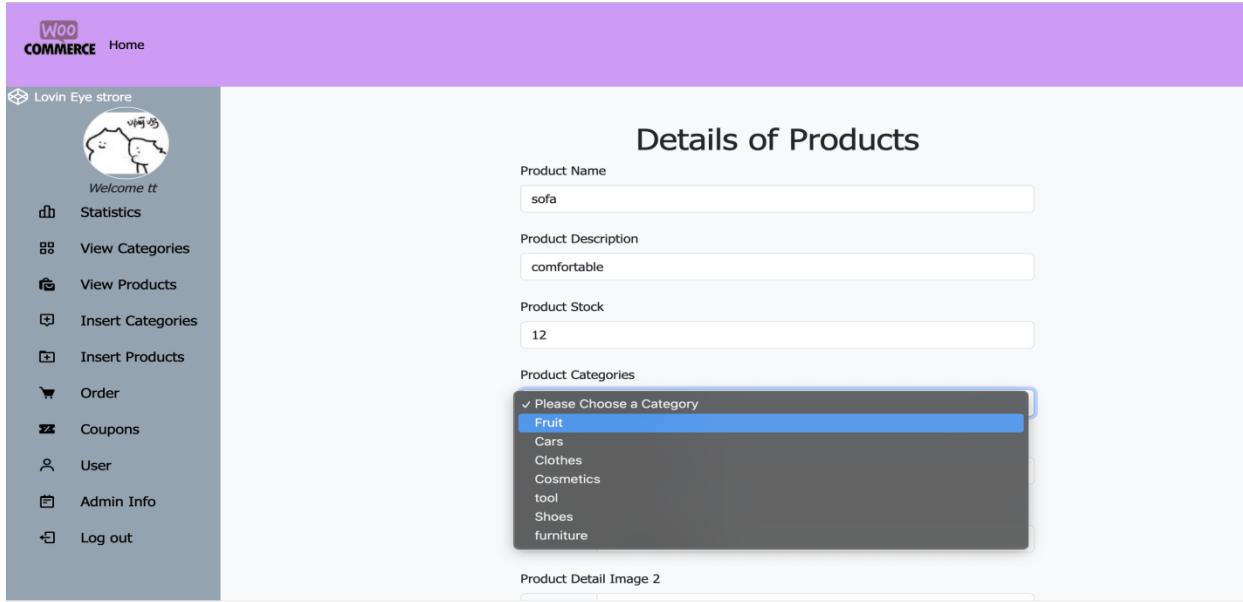


Figure 3.3.1.2 The categories changed according to database

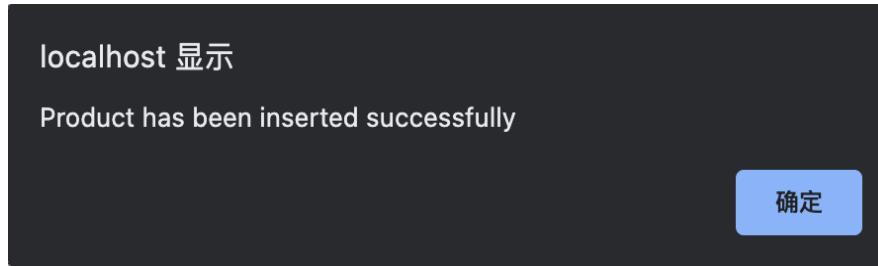


Figure 3.3.1.3 The information about inserting successfully

After adding the products, the administrator can view all the products in the "View Products" interface of the management system. In Figure 3.3.1.4, the administrator can view basic information such as product name, price, stock, category, picture, etc. If the administrator needs to modify the product information, they can find the product to be modified in the product list and click to enter the product's detail page, as illustrated in Figure 3.3.1.5. On this page, the system will display the relevant information that has been saved in the database and the administrator can modify it. When the information is saved in the database, the system will prompt the administrator that the modification is successful, according to Figure 3.3.1.6. If the administrator needs to delete a product, they can find the product to be deleted from the product list and perform the deletion operation. Figure 3.3.1.7 shows when the information saved in the database is deleted and the system will prompt the administrator whether the deletion is successful or not.

Woo COMMERCE Home

Lovin Eye store

- Statistics
- View Categories
- View Products
- Insert Categories
- Insert Products
- Order
- Coupons
- User
- Admin Info
- Log out

All Products

No.	Product Name	Product Image	Product Price	Product Stock	Category	Edit	Remove
1	Grapes		20	50	Fruit		
2	lipstick		100	2	Cosmetics		
3	Nike		700	100	Shoes		
4	converse		379	40	Shoes		
5	Clothes		12.3	100	Clothes		

Figure 3.3.1.4 The UI of View Products

Woo COMMERCE Home

Lovin Eye store

- Statistics
- View Categories
- View Products
- Insert Categories
- Insert Products
- Order
- Coupons
- User
- Admin Info
- Log out

Edit Products

Product Name

Product Description

Product Stock

Product Categories

Product Display Image
 未选择任何文件 

Product Detail Image 1
 未选择任何文件 

Product Detail Image 2
 未选择任何文件 

Product Prices



Figure 3.3.1.5 The UI of Edit Products

localhost 显示

Product has been modified successfully

确定

Figure 3.3.1.6 The information about modifying successfully

localhost 显示

Product has been removed successfully

确定

Figure 3.3.1.7 The information about removing successfully

3.3.2 Flow Chart

The flow chart of the products function is shown in Figure 3.3.2.1

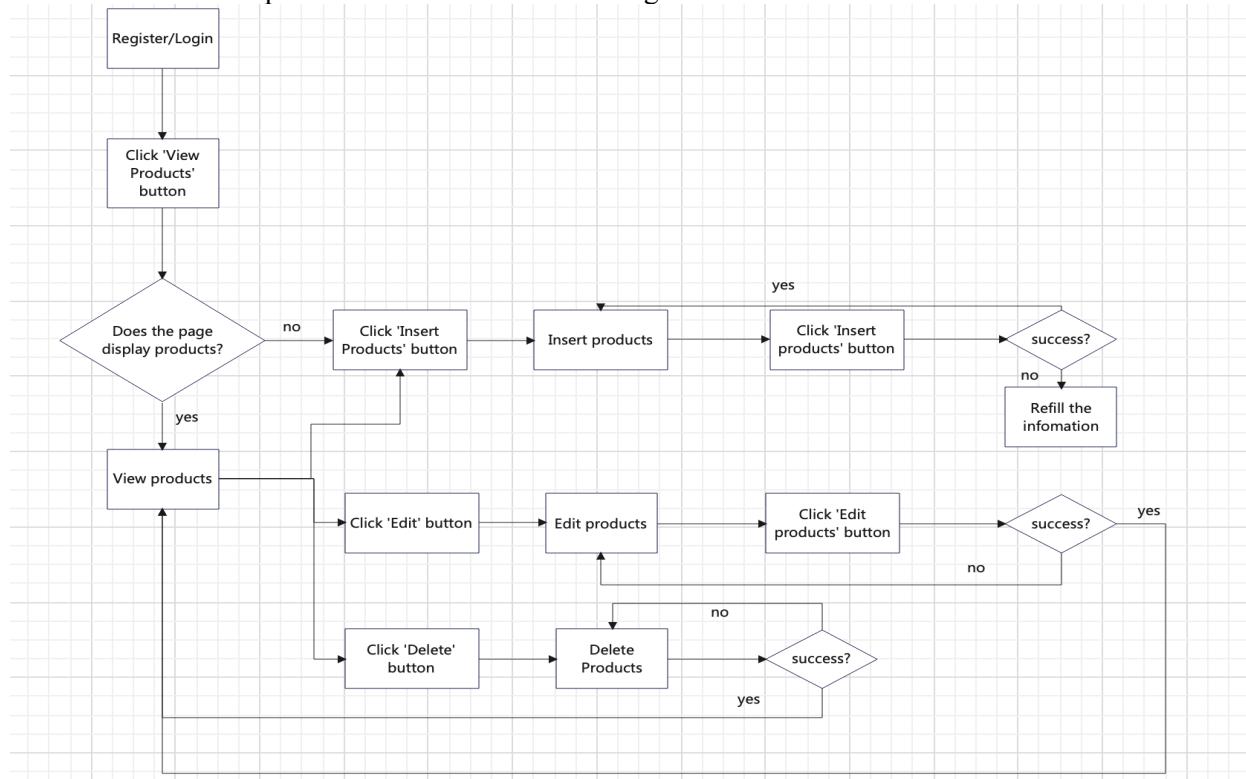
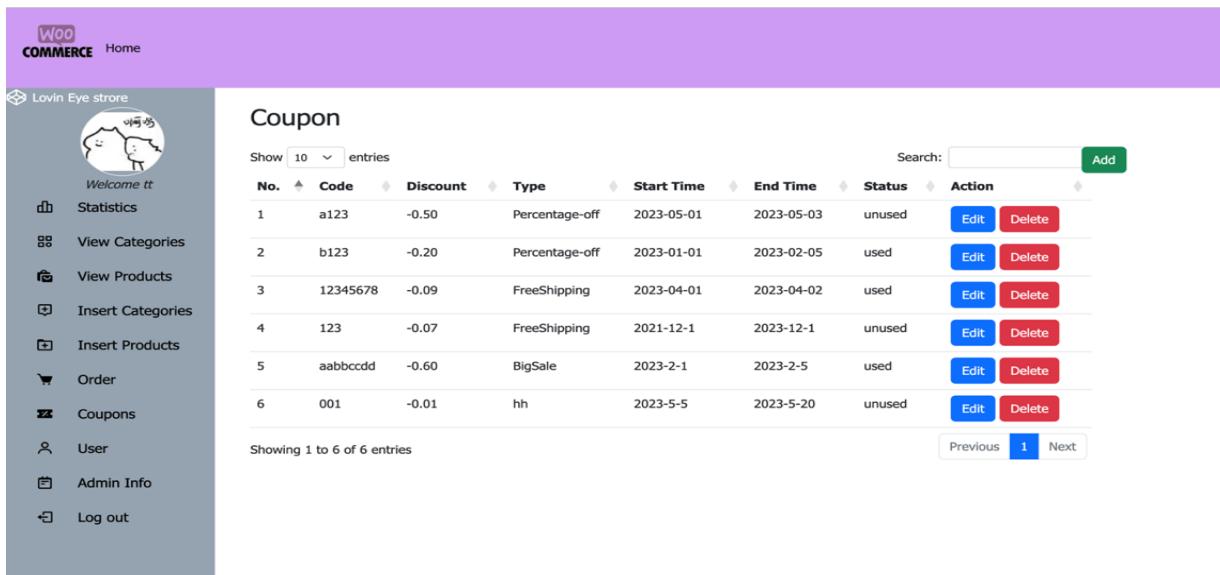


Figure 3.3.2.1 The flow chart of products

3.4 Coupon Management:

3.4.1 UI and Functions

Figure 3.4.1.1 displays a list of all coupons that have been created in the system. Each coupon is displayed with its unique coupon code, discount amount, type, and any other relevant details. This allows the store admin to easily view and manage all coupons in one place. It also provides filter and sorting options to help the store admin quickly find the coupons they are looking for. For example, they could sort the list by expiration date or filter by the type of discount offered. This helps the store admin to organize the coupon list and find specific coupons more easily.



The screenshot shows the WooCommerce admin dashboard for 'Lovin Eye store'. On the left, there's a sidebar with various menu items: Statistics, View Categories, View Products, Insert Categories, Insert Products, Order, Coupons (which is currently selected), User, Admin Info, and Log out. The main area is titled 'Coupon' and contains a table with the following data:

No.	Code	Discount	Type	Start Time	End Time	Status	Action
1	a123	-0.50	Percentage-off	2023-05-01	2023-05-03	unused	Edit Delete
2	b123	-0.20	Percentage-off	2023-01-01	2023-02-05	used	Edit Delete
3	12345678	-0.09	FreeShipping	2023-04-01	2023-04-02	used	Edit Delete
4	123	-0.07	FreeShipping	2021-12-1	2023-12-1	unused	Edit Delete
5	aabbccdd	-0.60	BigSale	2023-2-1	2023-2-5	used	Edit Delete
6	001	-0.01	hh	2023-5-5	2023-5-20	unused	Edit Delete

Below the table, it says 'Showing 1 to 6 of 6 entries' and has navigation buttons for Previous, Next, and a page number '1'.

Figure 3.4.1.1 Dashboard of Coupon

Figure 3.4.1.2 provides a button to add a new coupon. Clicking on this button takes the store admin to a form where they can enter the details of the new coupon, such as the coupon code, discount amount, and type. This allows the store admin to easily create new coupons as needed.

Add Coupon

Coupon Code:

Discount:

Type:

- Percentage-off
- FreeShipping
- First-timecustomer

End Time:

Status:

Add Coupon

Figure 3.4.1.2 Add Coupon

Figure 3.4.1.3 provides a button to edit an existing coupon. Clicking on this button takes the store admin to a form pre-populated with the current details of the selected coupon. This allows the store admin to make changes to the coupon details, such as changing the discount amount or type.

Edit Coupon

Coupon Code:

Discount:

Type:

Start Time:

End Time:

Status:

Edit Coupon

Figure 3.4.1.3 Edit Coupon

Figure 3.4.1.4 provides a button to delete an existing coupon. Clicking on this button displays a confirmation dialog to ensure that the store admin wants to delete the coupon. This helps prevent accidental deletion of coupons and provides an additional layer of security.

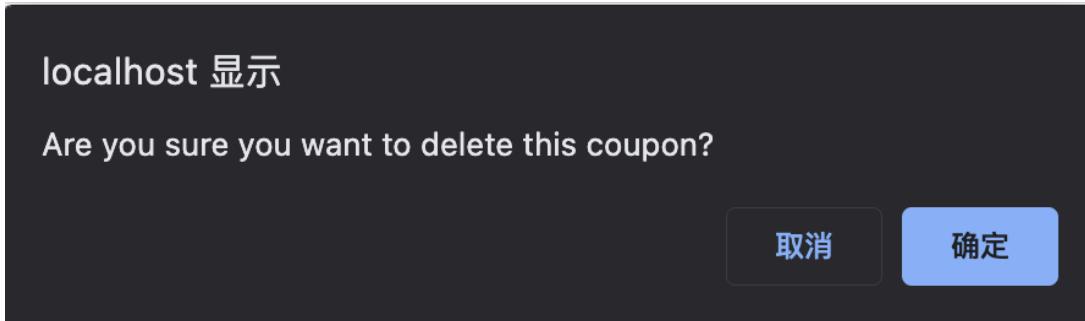


Figure 3.4.1.4 Confirmation of delete

Figure 4.1.5 shows the interface for successfully deleting coupons.



Figure 3.4.1.5 successfully deleting

3.4.2 Flow Chart

Below is the flow chart of the coupon management function:

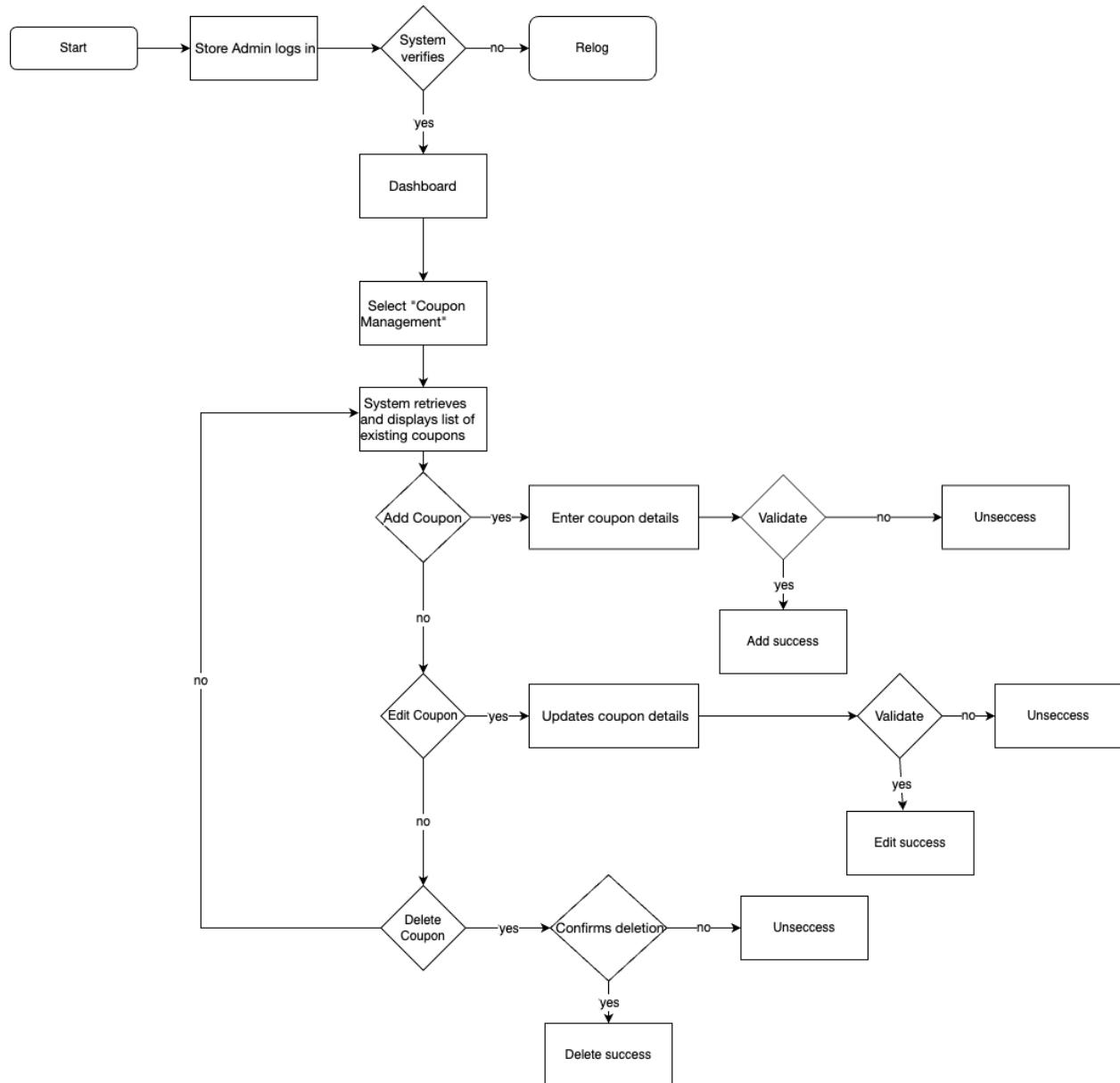


Figure 4.2.1 Flow Chart of Coupon Management

Start: This is the starting point of the flowchart. It represents the beginning of the process.

Store Admin logs in: This step represents the store admin logging into the system by providing their login credentials.

System verifies: This step represents the system verifying the store admin's credentials to ensure that they have permission to access the coupon management feature. If they don't have permission, they need to log in again.

Dashboard: This step represents the store admin accessing the dashboard after logging in, which displays the coupon management feature.

Select "Coupon Management": This step represents the store admin selecting the coupon management feature from the dashboard.

System retrieves and displays list of existing coupons: This step represents the system retrieving and displaying the list of existing coupons from the database.

Add Coupon: This step indicates that the system displays a form for adding the selected coupon, which is pre-filled with the current details of the coupon. If the administrator chooses to add, he needs to enter details, otherwise he needs to select other functions.

Enter coupon details: This step represents the store administrator's coupon details in the "Add Coupon" form.

Validate: This step means that the system verifies the added coupon details to ensure that they are in the correct format and meet any requirements. If the verification is successful, the new coupon is successfully added, otherwise the addition fails.

Edit Coupon: This step represents the system displaying the form for editing the selected coupon, pre-populated with the current details of the coupon. If the administrator chooses to edit, he needs to update details, otherwise he needs to select other functions.

Update coupon details: This step represents the store admin modifying the coupon details in the "Edit Coupon" form.

Validate: This step means that the system verifies the edited coupon details to ensure that they are in the correct format and meet any requirements. If the verification is successful, the new coupon is successfully edited, otherwise it fails.

Delete Coupon: This step indicates that the system displays a form for removing the selected coupon, which is pre-filled with the current details of the coupon. If the administrator chooses to delete, he needs to confirm deletion, otherwise he needs to select other functions.

Confirm deletion: This step represents the system displaying a confirmation dialog to confirm if the store admin wants to delete the selected coupon. If he clicks Yes, the deletion will be successful, otherwise the deletion will fail.

3.5 User Management:

3.5.1 UI and Functions

In this part, the functions of user management will be introduced. When an administrator wants to view and manage the user information, they can click a user in the left navigation bar before the webpage jumps to the user management page, shown in Figure 3.5.1.1. On this page, the administrator can select how many entries are shown, and some buttons for different operations are also located in distinct areas.

No.	Username	Email	Payment Method	Shipping Address	Action
1	ddd	can302	can302	can302 building	<button>Order history</button> <button>Edit</button> <button>Delete</button>
2	can	123231	213	123	<button>Order history</button> <button>Edit</button> <button>Delete</button>
3	user1	user1@qq.com	wechat	user1 road	<button>Order history</button> <button>Edit</button> <button>Delete</button>
4	user2	user2@qq.com	Alipay	user2 house	<button>Order history</button> <button>Edit</button> <button>Delete</button>
5	user3	user3@163.com	ApplePay	user3 building	<button>Order history</button> <button>Edit</button> <button>Delete</button>
6	user4	user4@qq.com	wechat	user4 road	<button>Order history</button> <button>Edit</button> <button>Delete</button>

Figure 3.5.1.1 The UI of user management

When they want to add a new user, a 'Add' button is in the upper right corner, used for the addition function. After clicking it, this page will jump into the 'add user' page, shown in Figure 3.5.1.2. They can fill in basic information about a new user before clicking the 'Add' button. When all information filled in the boxes is legal, a notification indicates that the addition is successful, shown in Figure 3.5.1.3. Otherwise, a notification indicating an error will alert the administrator, shown in Figure 3.5.1.4. After clicking the confirmation button, the webpage will jump to the user management page.

Figure 3.5.1.2 The UI of add user

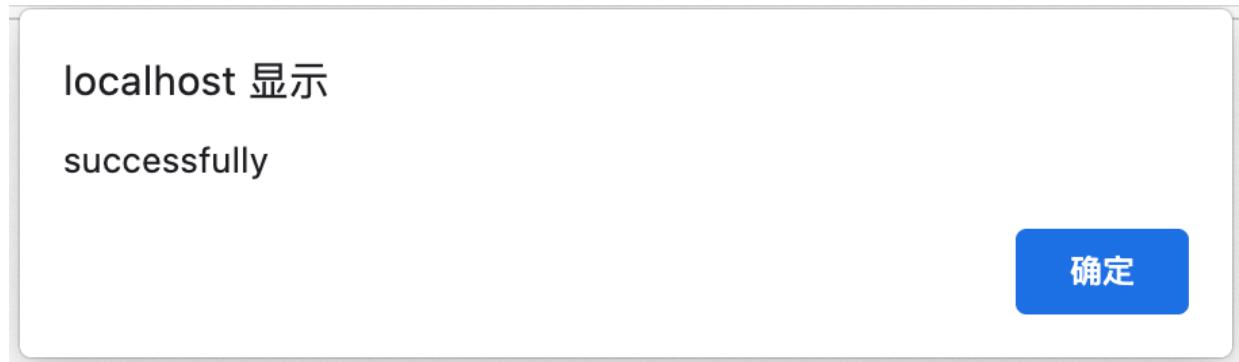


Figure 3.5.1.3 The notification of adding a new user successfully



Figure 3.5.1.4 The notification of adding a new user error

If the administrator hopes to delete an existing user, they can click the 'delete' button. Then a notification pops up indicating that you are sure you want to delete this user, shown in Figure 3.5.1.5. If the administrator clicks ok, this user will be removed from the database, and their detailed information will be deleted from the user management page. If the administrator clicks the 'cancel' button, this user's information will remain.

A screenshot of the WooCommerce User management page. The sidebar shows navigation options like Statistics, View Categories, Insert Categories, Insert Products, Order, Coupons, User, Admin Info, and Log out. The main area shows a table of users with columns: No., Username, Email, Payment Method, Shipping Address, and Action. The table contains 7 entries. A modal dialog box is overlaid on the page, asking "Are you sure you want to delete this user?" with "取消" (Cancel) and "确定" (Confirm) buttons. The URL in the browser bar is "localhost 显示".

No.	Username	Email	Payment Method	Shipping Address	Action
1	ddd	can302	can302	can302 building	Order history Edit Delete
2	can	123231	213	123	Order history Edit Delete
3	user1	user1@qq.com	wechat	user1 road	Order history Edit Delete
4	user2	user2@qq.com	Alipay	user2 house	Order history Edit Delete
5	user3	user3@163.com	ApplePay	user3 buliding	Order history Edit Delete
6	user4	user4@qq.com	wechat	user4 road	Order history Edit Delete
7	1234	asdf	asdf	asdf	Order history Edit Delete

Figure 3.5.1.5 the notification of deleting a user

When the administrator wants to update the user's details, they can click the 'Edit' button. After that, detailed information about this user will appear on the 'edit user' page, shown in Figure 3.5.1.6. The administrator can edit the user's information on this page and click the 'Edit User' button when finished. Then the algorithm will check whether all contents filled in the boxes are legal before showing a notification indicating a successful edition and jumping to the user management page, shown in Figure 3.5.1.3. If some input contents are illegal, a notification indicating an error will alert the administrator, shown in Figure 3.5.1.4.

Figure 3.5.1.6 The UI of editing user

The order history for each existing user is also shown on this page. If the administrator wants to view history orders for these users, they can click the 'order history' button when history orders exist. Otherwise, a notification indicating that the order is not found will alert the administrator, shown in Figure 3.5.1.7. If it exists, they can view detailed information about this user's history of orders, such as id number, username, product name, quantities, order data, and order status, shown in Figure 3.5.1.8.

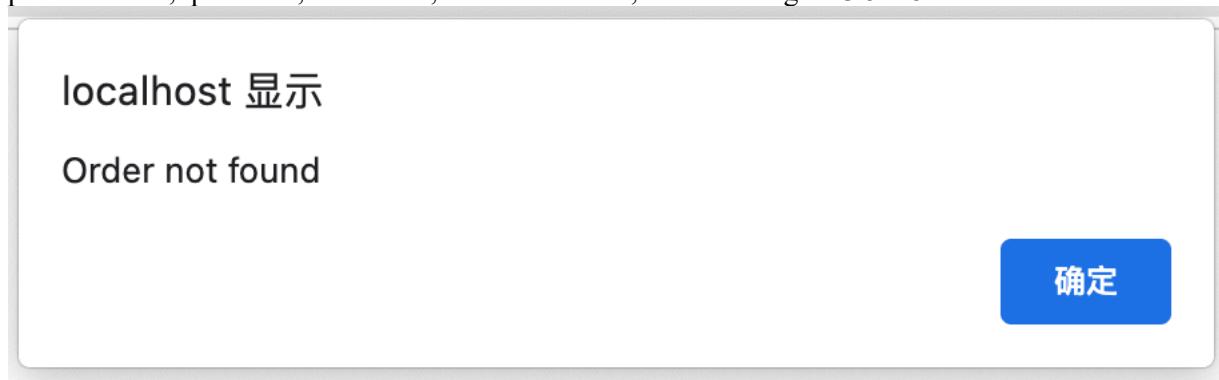


Figure 3.5.1.7 The error notification when order history is not existed

ID	User	Product name	Quantities	Coupon code	Order date	Order status	Operation
1	aaaaaaaa	Grapes	1	a123	2023-05-01 03:40:11	finished	<button>Update</button> <button>Delete</button>
1	aaaaaaaa	Nike	1	a123	2023-05-01 03:40:11	finished	<button>Update</button> <button>Delete</button>
2	aaaaaaaa	Clothes	1	b123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
2	aaaaaaaa	Clothes	1	123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>

Showing 1 to 4 of 4 entries

Figure 3.5.1.8 The UI of order history

When the administrator hopes to update this information, they can click the 'update' button and change the order status on the page popping up, shown in Figure 3.5.1.9. This webpage will jump to the 'order information' page when this order is successfully updated, shown in Figure 3.5.1.10. The administrator can delete these history orders by clicking the 'Delete' button. After clicking this button, a notification indicating that you are sure you want to delete this order will pop up to alert the administrator, shown in Figure 3.5.1.11. When this order is successfully deleted, this page will jump to the 'order information' page, shown in Figure 3.5.1.8.

Figure 3.5.1.9 The UI of changing order status

The screenshot shows the 'Order information' page of a WooCommerce store named 'Lovin Eye store'. The left sidebar includes links for Statistics, View Categories, View Products, Insert Categories, Insert Products, Order, Coupons, User, Admin Info, and Log out. The main content area displays a table of 7 orders. The columns are: No., ID, User, Product name, Quantities, Coupon code, Order date, Order status, and Operation (Update, Delete). The data in the table is as follows:

No.	ID	User	Product name	Quantities	Coupon code	Order date	Order status	Operation
1	1	aaaaaaaa	Grapes	1	a123	2023-05-01 03:40:11	shipping	<button>Update</button> <button>Delete</button>
2	1	aaaaaaaa	Nike	1	a123	2023-05-01 03:40:11	shipping	<button>Update</button> <button>Delete</button>
3	2	aaaaaaaa	Clothes	1	b123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
4	5	user3	Nike	5	123	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>
5	6	user4	converse	6	001	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>
6	2	aaaaaaaa	Clothes	1	123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
7	5	user3	Nike	5	aabbccdd	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>

Showing 1 to 7 of 7 entries

Figure 3.5.1.10 The UI of order information

The screenshot shows the 'Order history' page of the same WooCommerce store. The left sidebar is identical to Figure 3.5.1.10. The main content area displays a table of 4 orders. A delete confirmation dialog box is overlaid on the page, asking 'Are you sure you want to delete this order?'. The dialog has '取消' (Cancel) and '确定' (Confirm) buttons. The data in the table is as follows:

ID	User	Product name	Quantities	Coupon code	Order date	Order status	Operation
1	aaaaaaaa	Grapes	1	a123	2023-05-01 03:40:11	shipping	<button>Update</button> <button>Delete</button>
1	aaaaaaaa	Nike	1	a123	2023-05-01 03:40:11	shipping	<button>Update</button> <button>Delete</button>
2	aaaaaaaa	Clothes	1	b123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
2	aaaaaaaa	Clothes	1	123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>

Showing 1 to 4 of 4 entries

localhost/a2/admin/order_delete.php?id=1

Figure 3.5.1.11 The notification of deleting

There is also a search function on the 'user management' page, shown in 3.5.1.12. Administrators can type keywords in this area to search for relevant data.

The screenshot shows the WooCommerce User management interface. At the top left is the store logo 'Lovin Eye store' and the text 'Welcome a'. On the left, a sidebar menu lists various admin functions: Statistics, View Categories, View Products, Insert Categories, Insert Products, Order, Coupons, User, Admin Info, and Log out. The main content area is titled 'User management'. It features a search bar with placeholder 'user' and a green 'Add' button. Below the search is a table with columns: No., Username, Email, Payment Method, Shipping Address, and Action. The table contains six entries (rows 3 to 8). Each row has three buttons in the 'Action' column: 'Order history' (blue), 'Edit' (blue), and 'Delete' (red). The table footer indicates 'Showing 1 to 4 of 4 entries (filtered from 8 total entries)' and includes 'Previous', '1', and 'Next' buttons.

No.	Username	Email	Payment Method	Shipping Address	Action
3	user1	user1@qq.com	wechat	user1 road	<button>Order history</button> <button>Edit</button> <button>Delete</button>
4	user2	user2@qq.com	Alipay	user2 house	<button>Order history</button> <button>Edit</button> <button>Delete</button>
5	user3	user3@163.com	ApplePay	user3 buliding	<button>Order history</button> <button>Edit</button> <button>Delete</button>
6	user4	user4@qq.com	wechat	user4 road	<button>Order history</button> <button>Edit</button> <button>Delete</button>

Figure 3.5.1.12 The function of searching

3.5.2 Flow Chart and Database

The user table in database is connected with the order table through a foreign key `user_id`. As a result, any changes made to the user table will affect the order table. To be specific, when the username is changed in the user management page, the username in order table will change automatically. In addition, if a user is deleted, all orders relating to him will be deleted automatically. Additionally, an administrator can change the order status through accessing the order history. When the order status is changed, the order will automatically update order status. Finally, if an administrator delete a order in order history, this order in order information will be deleted automatically. The flow chart for user is shown below.

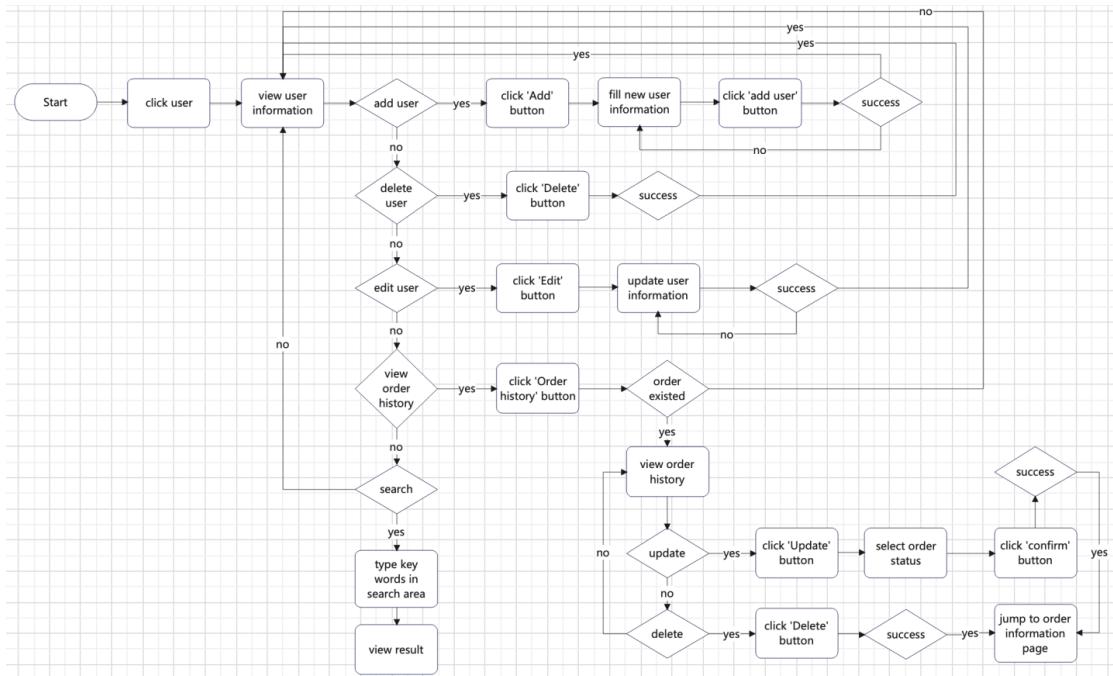


Figure 3.5.2.1 The flow chart of user management

3.6 Order Management Function:

3.6.1 UI and Functions

For the order management function, according to the Figure 3.6.1.1, it has deleting function and updating function and it does not have the adding function because we think the administrators cannot add an order for a user compulsory and it should be created by users to realize the trading. For the order management interface, it shows the username, product name, quantities for each product, coupon code, order date and order status. The whole association with the database is below: It will search the order table to get the user ID and order ID. The user ID can help to get the user information by the foreign key in users table. It will also associate the order_product table and order_coupon table with the orders table by the order id, and then we can get the coupons information and product information by the corresponded coupon id and product id separately.

No.	ID	User	Product name	Quantities	Coupon code	Order date	Order status	Operation
1	1	ddd	Grapes	1	a123	2023-05-01 03:40:11	finished	<button>Update</button> <button>Delete</button>
2	2	ddd	Clothes	1	b123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
3	5	user3	Nike	5	123	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>
4	6	user4	converse	6	001	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>
5	2	ddd	Clothes	1	123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
6	5	user3	Nike	5	aabbccdd	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>

Showing 1 to 6 of 6 entries

Figure 3.6.1.1 Order information

For the updating function, according to the Figure 3.6.1.2, we only set the updating for the order status. The other information about orders will influence the interest of the buyers, so the administrators cannot update that information. When administrators perform update operations, in order to ensure the status will not go wrong, we provide three choices for the administrators. When administrators click the confirm button, the same operations are synchronized with the corresponding entry in the database.

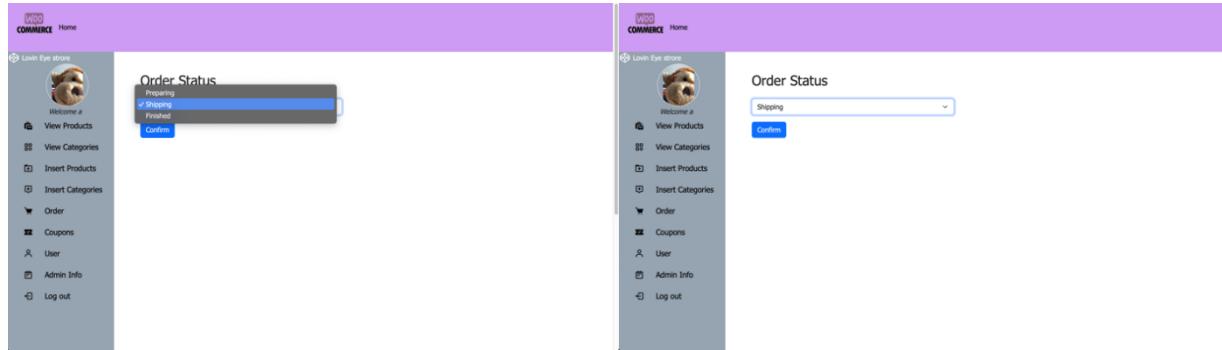


Figure 3.6.1.2 Updating functions

For the deleting function, according to the Figure 3.6.1.3, administrators will delete the order by the order ID. When administrators click the delete button, it will pop up a window to warn your operation. The deleting operations are synchronized with the corresponding entry in the database.

No.	ID	User	Product name	Quantities	Coupon code	Order date	Order status	Operation
1	1	ddd	Grapes	1	a123	2023-05-01 03:40:11	shipping	<button>Update</button> <button>Delete</button>
2	2	ddd	C	1		2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
3	5	user3	N	1	123	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>
4	6	user4	converse	6	001	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>
5	2	ddd	Clothes	1		2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
6	5	user3	Nike	5	aabbccdd	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>

Figure 3.6.1.3 Delete functions

3.6.2 Flow Chart and Database

Below is the flow chart of the order management function:

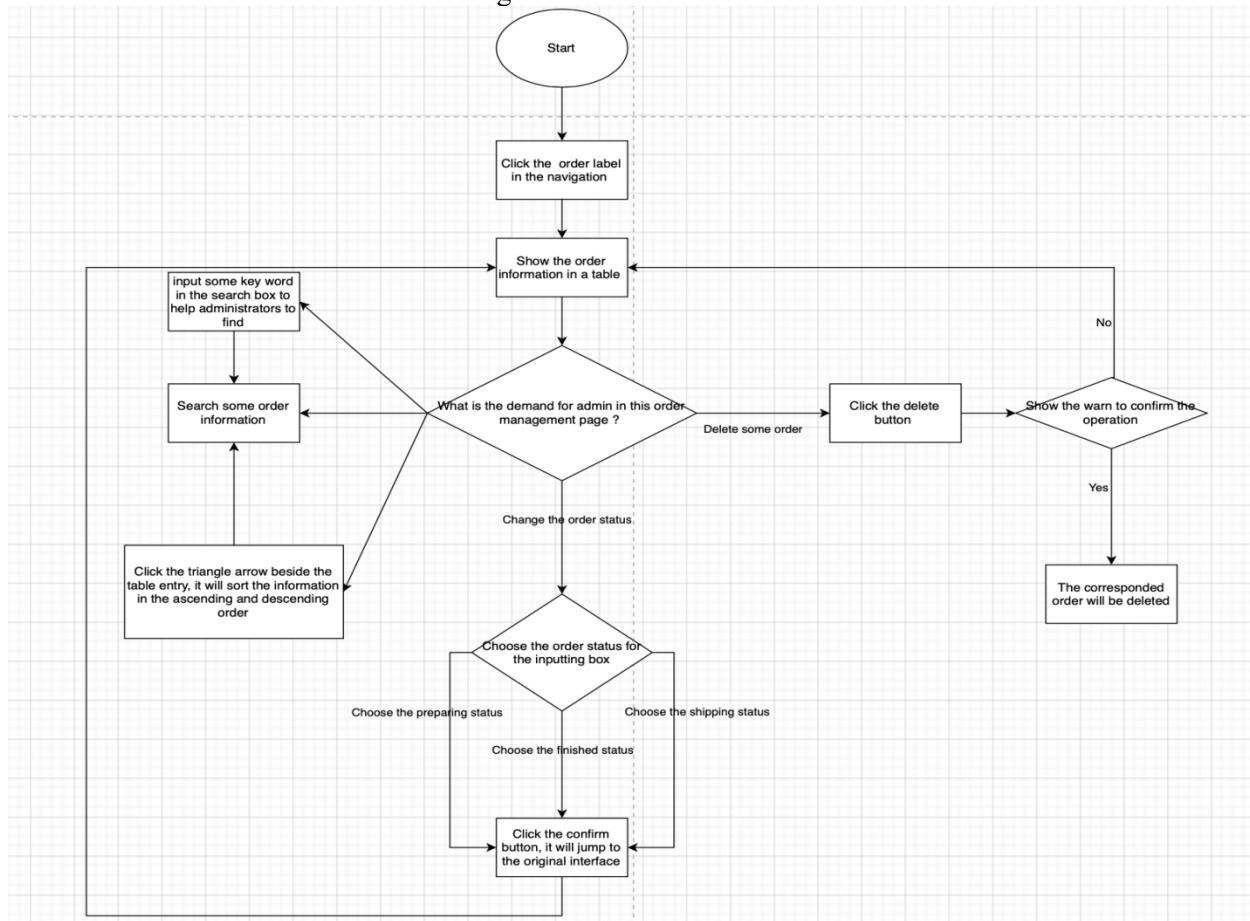


Figure 3.6.2.1 Flow chart

4. Test case:

4.1 Test case for login and Admin Info:

Test Case ID:	1
Test Case Name:	Register
Actors:	Admin
Description:	Administrators need to register an account to login the system.
Preconditions:	None
Postconditions:	A new account has been registered successfully.
Normal Flows:	The administrator register successfully and try to login.
Alternative Flows:	The name or email have already been registered, the system prompt “Name and email already exist”.
Exceptions:	None
Notes:	If you use the mac system, there might be a picture restrictions. You need to set the admin image folder be readable and writable manually.

Test Case ID:	2
Test Case Name:	Login
Actors:	Admin
Description:	Administrators input the right name and password to login the system.
Preconditions:	Admin has already register an account.
Postconditions:	The right name and password have been input and login.
Normal Flows:	The administrator login successfully and view the main page of system.
Alternative Flows:	1. The admin name is not exist, the system prompt “Invalid Access”. 2. The password is wrong, the system prompt “Password is wrong”.
Exceptions:	None
Notes:	None

Test Case ID:	3
Test Case Name:	View Admin Info
Actors:	Admin
Description:	Administrators can see his/her account information (except the password).

Preconditions:	Admin has already login, and information has been stored in admin table in database.
Postconditions:	The data stored in database has been shown in page successfully.
Normal Flows:	The administrator login successfully and click on “Admin Info” in the left navigation bar.
Alternative Flows:	None
Exceptions:	None
Notes:	None

Test Case ID:	4
Test Case Name:	Edit Admin Info
Actors:	Admin
Description:	Administrators can edit the account information in <i>Admin Info</i> page, and update the data in database.
Preconditions:	Admin has already login, and information has been stored in admin table in database and shown in the <i>Admin Info</i> page.
Postconditions:	The data stored in database has been update after being edited.
Normal Flows:	<p>1. The administrator input the new information (include password) and click on “update”, then the data update and restored in database. The administrator has been logged out, who need to use the new information to login the system.</p> <p>2. The administrator input the new information (not include password) and click on “update”, then the data update and restored in database, and shown in the <i>Admin Info</i> page.</p>
Alternative Flows:	The administrators write twice password which are not the same, that cannot pass the password verification. The system prompt “The two password is different, please input the same password”.
Exceptions:	None
Notes:	None

4.2 Test case for category:

Test Case ID:	1
Test Case Name:	View Categories
Actors:	Admin
Description:	Administrators can see a table of categories after logging in.
Preconditions:	<p>1. The administrator registered and logged into the web page.</p> <p>2. Some categories have been added from the database.</p>
Postconditions:	A list of test categories is displayed on the page.

Normal Flows:	<ol style="list-style-type: none"> 1. The administrator logs in to the website. 2. Administrators click on “View Categories” in the left navigation bar. 3. The page displays a list of all categories, containing the category data that has been added to the database in advance.
Alternative Flows:	None
Exceptions:	None
Notes:	None

Test Case ID:	2
Test Case Name:	Insert Categories
Actors:	Admin
Description:	Administrators can create new categories and insert them into the list of categories in order.
Preconditions:	The administrator logs in to the website.
Postconditions:	<ol style="list-style-type: none"> 1. The page indicates that the category has been inserted successfully. 2. The new category is successfully stored in the database. 3. The new category is displayed in the “View Categories” list.
Normal Flows:	<ol style="list-style-type: none"> 1. The administrator clicked on “Insert Categories” in the navigation bar. 2. Enters the name of the category that wanted to create, eg., “Juice”, and click button to insert. 3. “Category has been inserted successfully” is displayed. 4. “Juice” is displayed in the “View Categories” list.
Alternative Flows:	<ol style="list-style-type: none"> 1. The administrator clicked on “Insert Categories” in the navigation bar. 2. Enters the name of the category that has already existed in the list, eg., “Fruits”, and click button to insert. 3. “This Category has existed” is displayed. 4. Return to the "Insert Categories" page.
Exceptions:	None
Notes:	None

Test Case ID:	3
Test Case Name:	Edit Category
Actors:	Admin
Description:	The administrator can change the name of the category.
Preconditions:	<ol style="list-style-type: none"> 1. The administrator registered and logged into the web page. 2. Some categories have been added from the database.
Postconditions:	<ol style="list-style-type: none"> 1. The page indicates that the category has been inserted successfully. 2. The new name of the category is successfully updated and stored in the database. 3. The new name of the category is updated in the “View Categories” list.

Normal Flows:	<ol style="list-style-type: none"> The administrator chooses a category and clicks the Edit button, eg., "Fruits". Then it jumps to the Edit Category page. Enters the new name of the category, eg., "Fruit tea", and click button to insert. "Category has been modified successfully" is displayed. "Fruit tea" is updated and displayed in the "View Categories" list.
Alternative Flows:	<ol style="list-style-type: none"> The administrator chooses a category and clicks the Edit button, eg., "Fruits". Then it jumps to the Edit Category page. Enter a new category name that already exists in the list, eg., "Clothes", and click button to insert. "This Category has existed" is displayed. Return to the "View Categories" page.
Exceptions:	None
Notes:	<ol style="list-style-type: none"> It is not case sensitive. For example, "fruits" and "FRUITS" will be considered as one category. When the category is updated, the place where the category is selected will also be updated when a new product is added.

Test Case ID:	4
Test Case Name:	Delete Category
Actors:	Admin
Description:	The administrator can delete an existing category.
Preconditions:	<ol style="list-style-type: none"> The administrator registered and logged into the web page. Some categories have been added from the database.
Postconditions:	<ol style="list-style-type: none"> The page indicates that the category has been deleted successfully. The category is deleted from the database. This category is no longer available in the "View Categories" list.
Normal Flows:	<ol style="list-style-type: none"> The administrator chooses a category and clicks the Delete button, eg., "Fruits". The webpage prompts "There are still some products in this category, are you sure you want to delete this category?", then click confirm button. "Category has been deleted successfully" is displayed. Return to the "View Categories" page, and "Fruits" has no longer on the list.
Alternative Flows:	<ol style="list-style-type: none"> The administrator chooses a category and clicks the Delete button, eg., "Cars". The webpage prompts "Are you sure you want to delete this category?", then click confirm button. "Category has been deleted successfully" is displayed. Return to the "View Categories" page, and "Cars" has no longer on the list.
Exceptions:	None

Notes:	If there are products under the category, all of them will be deleted after the category is deleted. This will also affect orders. When a product is deleted, the order associated with it is also deleted.
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4.2 Test case for product management:

Test Case ID:	1
Test Case Name:	View Products
Actors:	Admin
Description:	The administrator can view the information of the products after entering the system.
Preconditions:	<ol style="list-style-type: none"> 1. Administrator register and login to the webpage. 2. Products already have been added to the database.
Postconditions:	Product information will be presented on the web page.
Normal Flow:	<ol style="list-style-type: none"> 1. The administrator enters the e-commerce system. 2. The administrator clicks on view products in the left navigation bar. 3. the web page displays the available products and related details (such as pictures, categories, stock and price).
Alternative Flow:	None
Exceptions:	None
Notes:	None

Test Case ID:	2
Test Case Name:	Add products
Actors:	admin
Description:	Administrators can add products after entering the system
Preconditions:	1. Administrator registration and login to the webpage
Postconditions:	<ol style="list-style-type: none"> 1. The webpage prompts the administrator that the product has been added successfully 2. Product information is stored in the database 3. The product is displayed on the “view products”
Normal Flow:	<ol style="list-style-type: none"> 1. The administrator enters the e-commerce system. 2. The administrator clicks “Insert products” in the left navigation bar 3. The web page displays a new add products form, the administrator needs to fill in the details about the product (such as picture, type, stock and price) 4. The administrator completes the form and clicks the “Insert Products” button. 5. The web page saves the product information to the database and notifies the administrator that the addition was successful. 6. The web page adds the new products to the product list and sorts them by category for other administrators to view.

Alternative Flow:	<p>1. Cancel adding products Users can click on the left navigation bar to jump to other pages</p> <p>2. Complete information If the administrator does not add all the required information about the product, the webpage will prompt the administrator with incomplete information and ask the administrator to re-enter it.</p>
Exceptions:	<p>1. Uploading images When uploading images, MAC OS users need to change the read/write permissions of the relevant folder to ensure that the images can be used and placed in the specified folder.</p>
Notes:	1. When adding a product with choosing to add a picture, the first picture of the administrator must be added, while the next two can be added optionally

Test Case ID:	3
Test Case Name:	Modify and delete products
Actors:	admin
Description:	The administrator can modify and delete the products already displayed on the web page after entering the system
Preconditions:	<p>1. Administrator registration and login to the webpage</p> <p>2. Products already have been added to the database</p>
Postconditions:	<p>1. The web page prompts the administrator that the product has been modified or deleted successfully</p> <p>2. The product information in the database has been modified or deleted</p> <p>3. The modified product is re-displayed on the view product screen</p>
Normal Flow:	<p>1. The administrator enters the e-commerce system.</p> <p>2. The administrator clicks on view products in the left navigation bar.</p> <p>3. The web page displays the available products and related details (e.g. pictures, categories, stock and prices).</p> <p>For edition:</p> <p>4. The administrator clicks on the modify button</p> <p>5. The web page displays a form with the existing information about the product and the details about the product that the administrator needs to modify (e.g. picture, type, stock and price)</p> <p>6. The administrator fills in the form and clicks the “Edit Products” button.</p> <p>7. The web page saves the information to the database and notifies the administrator of the successful modification of the product information.</p> <p>8. The web page will display the modified products in the product list and sort them by category for other administrators to view.</p> <p>For deletion:</p> <p>4. The administrator clicks the delete button</p> <p>5. The web page will delete the information saved in the database and notify the administrator of the successful deletion of the product.</p> <p>6. The web page will update the product list for other administrators to see.</p>

Alternative Flow:	<p>1. Cancel modification of products Users can click on the left navigation bar to jump to other pages</p> <p>2. Complete information If the administrator does not add all the required information about the product, the webpage will prompt the administrator with incomplete information and ask the administrator to re-enter it.</p>
Exceptions:	<p>1. Uploading images When uploading images, MAC OS users need to change the read/write permissions of the relevant folder to ensure that the images can be used and placed in the specified folder.</p>
Notes:	1. When modifying a product with choosing to add a picture, the first picture of the administrator must be added, while the next two can be added optionally

4.3 Test case for coupon management:

Test Case ID:	1
Test Case Name:	Coupon Management Test
Actors:	Store Admin
Description:	Test the functionality of the coupon management feature in the store admin interface.
Preconditions:	<p>1. The store admin is logged in to the system.</p> <p>2. The coupon management feature is accessible from the store admin dashboard.</p>
Postconditions:	<p>1. The coupon management feature should display a list of existing coupons.</p> <p>2. The store admin should be able to add, edit, and delete coupons.</p>
Normal Flows:	<p>1. The store admin navigates to the coupon management feature from the store admin dashboard.</p> <p>2. The coupon management feature displays a list of existing coupons.</p> <p>3. The store admin clicks the "Add Coupon" button.</p> <p>4. The system opens a form for adding a new coupon.</p> <p>5. The store admin fills in the form with the coupon details, including the coupon code, discount amount, expiration date, etc.</p> <p>6. The store admin clicks the "Save" button.</p> <p>7. The system saves the new coupon and adds it to the list of existing coupons.</p> <p>8. The store admin clicks on an existing coupon in the list.</p> <p>9. The system opens a form for editing the coupon details.</p> <p>10. The store admin updates the coupon details and clicks the "Save" button.</p> <p>11. The system updates the coupon details and displays the updated coupon in the list of existing coupons.</p> <p>12. The store admin clicks the "Delete" button next to an existing coupon in the list.</p> <p>13. The system prompts the store admin to confirm the deletion.</p> <p>14. The store admin clicks the "Confirm" button.</p> <p>15. The system deletes the coupon and removes it from the list of existing coupons.</p>
Alternative Flows:	1. If there are no existing coupons, the coupon management feature displays a message indicating that there are no coupons to display.

	<p>2. If the store admin has no permission to access the coupon management feature, the system displays an error message and denies access.</p> <p>3. If the store admin enters invalid data in the coupon form, the system displays error messages and prevents the store admin from saving the coupon until the errors are corrected.</p> <p>4. If the store admin clicks on an inactive or expired coupon, the system displays a message indicating that the coupon is no longer valid and prevents the store admin from editing or deleting it.</p> <p>5. If the store admin clicks the "Cancel" button instead of the "Confirm" button when prompted to delete a coupon, the system does not delete the coupon and returns to the list of existing coupons.</p>
Exceptions:	1. If there is a system error while adding, editing, or deleting a coupon, the system should display an error message and prevent the store admin from proceeding until the error is resolved.
Notes:	None

4.4 Test case for user management:

Test Case ID:	1
Test Case Name:	View user management information
Actors:	Admin
Description:	Administrators can see a table of user information after logging in.
Preconditions:	<p>1. The administrator registered and logged into the web page.</p> <p>2. Some users have been added through adding function</p>
Postconditions:	1. A list of virtual users is displayed on the page.
Normal Flows:	<p>1. The administrator logs in to the website.</p> <p>2. Administrators click on “User” in the left navigation bar.</p> <p>3. The page displays a list of all users, containing their personal data, such as number, username, email, payment method, and shipping address, that has been added through adding function.</p>
Alternative Flows:	None
Exceptions:	None
Notes:	None

Test Case ID:	2
Test Case Name:	Add user
Actors:	Admin
Description:	Administrator can create new users and insert them into the list of user in user management.

Preconditions:	<ol style="list-style-type: none"> 1. The administrator logs in to the website. 2. Administrator clicks ‘Add’ button. 3. Administrator fill in detailed information. 4. Administrator clicks ‘Add User’ button for submitting the user information
Postconditions:	The new users are listed on the page
Normal Flows:	<ol style="list-style-type: none"> 1. The administrator clicked on “User” in the navigation bar. 2. The administrator clicked on ‘Add’ button. 3. The administrator filled the contents. 4. The administrator clicked ‘Add User’ button to submit these information.
Alternative Flows:	<ol style="list-style-type: none"> 1. The administrator clicked on “User” in the navigation bar. 2. The administrator clicked on ‘Add’ button. 3. The administrator filled the contents with illegal characters. 4. The administrator clicked ‘Add User’ button to submit these information. 5. Return to add user page.
Exceptions:	<ol style="list-style-type: none"> 1. The administrator clicked on “User” in the navigation bar. 2. Enters the information of the user that has already existed in the list, and click button to insert. 3. This user is still inserted successfully with different id.
Notes:	None

Test Case ID:	3
Test Case Name:	Delete user
Actors:	Admin
Description:	The administrator can delete users
Preconditions:	<ol style="list-style-type: none"> 1. The administrator registered and logged into the web page. 2. Some users have existed in this page. 3. The administrator clicked ‘Delete’ button.
Postconditions:	<ol style="list-style-type: none"> 1. This user is deleted successfully. 2. The orders with this user are also deleted.
Normal Flows:	<ol style="list-style-type: none"> 1. The administrator clicked ‘Delete’ button 2. This user is deleted successfully. 3. The relevant orders in order information are also deleted. 4. Return to user management page.
Alternative Flows:	None
Exceptions:	During deletion, some unexpected things happen, such as network outage, will influence the result of deletion and cause error.
Notes:	None

Test Case ID:	4
Test Case Name:	Edit user
Actors:	Admin
Description:	The administrator can edit an existing user's information.
Preconditions:	<ol style="list-style-type: none"> 1. The administrator registered and logged into the web page. 2. Some existed users are stored in the database. 3. The administrator clicked the 'Edit' button. 4. The administrator updated this user's information, and clicked 'Edit User' button.
Postconditions:	<ol style="list-style-type: none"> 1. This user's information is updated and shown in user management page. 2. The user information in orders is also updated. 3. Return to user management page
Normal Flows:	<ol style="list-style-type: none"> 1. The administrator clicks 'Edit' button. 2. The administrator updates this user's information 3. The administrator clicks 'Edit User' button to submit the updated data. 4. The user information in orders is also updated. 5. Return to the user management page.
Alternative Flows:	<ol style="list-style-type: none"> 1. The administrator clicks 'Edit' button. 2. The administrator updates this user's information with illegal characters. 3. The administrator clicks 'Edit User' button to submit the updated data. 4. Return to the edit page.
Exceptions:	None
Notes:	None

Test Case ID:	5
Test Case Name:	Order history
Actors:	Admin
Description:	The administrator can view history orders for each existed user.
Preconditions:	<ol style="list-style-type: none"> 1. The administrator registered and logged into the web page. 2. The administrator click 'Order history' button.
Postconditions:	<ol style="list-style-type: none"> 1. The administrator can view history orders for each existed user. 2. The administrator can update and delete these history orders. 3. These updated information is also synchronized to orders in order information.
Normal Flows:	<ol style="list-style-type: none"> 1. The administrator clicks 'Order history' button. 2. The administrator can view, delete and update these history order. 3. The orders in order information are also updated.

Alternative Flows:	<ol style="list-style-type: none"> 1. The administrator clicks ‘Order history’ button. 2. These are not history orders for this user. 3. A notification will pop up for alerting the administrator. 4. Return to user management page.
Exceptions:	None
Notes:	None

4.5 Test case for order management:

Test Case ID:	1
Test Case Name:	Order management
Actors:	Administrators (the username is a)
Description:	Administrators can manage the orders. The functions are below: (1). view order list (2). search the order (3) update order status (4). delete the orders.
Preconditions:	<p>The overall preconditions: The administrator has logged into the website, and click the order label in the navigation, the website URL is below: http://127.0.0.1/CW/admin/account.php?order There are some order information in the database. There is a table in the order interface containing the ID number, users, product name, quantities, coupon code, order date, order status and operations in the table header.</p> <p>For viewing order list: Database has the data like Figure C.1.</p> <p>For searching function in order list: In order to search the orders about one product, like clothes, input the key word clothes in the box.</p> <p>For updating order status: Change the order status of any order.</p> <p>For deleting order: Delete any order.</p>
Postconditions:	<p>For viewing order list: It can show all the orders information according to the table headers. like Figure C.2</p> <p>It can show all the products in the same order, which means one order can have several products. It can show all the coupons in the same order, which means one order can have several coupons. In Figure C.3, you can see the order ID 1 has two products; order ID 2 and order ID 5 have two coupons in each order.</p> <p>For searching function in order list:</p>

	<p>It can show the corresponded results, like Figure C.4</p> <p>For updating order status: It can update the order status into another status, like Figure C.5 (change the first order status from shipping to finished), we can find the same order ID will have the same operations.</p> <p>For deleting order: It can delete the specified order, like Figure C.6 (delete the order ID 6), it is the same for delete the order ID 1 which has several products.</p>
Normal Flows:	<p>1. The administrator logs into the website using the account a, password 12 2. Click the order label in the navigation</p> <p>For viewing order list: 3. There is a table showing all the information about the orders according to the table headers. The small triangle arrows in each column can sort the data in ascending order or descending order.</p> <p>For searching in the order list: 4. Click the search box on the top of the order table. 5. Input the keyword, the table below will change synchronously.</p> <p>For updating order status: 6. Find the order the administrator want to change and there is an update button in that row. If there are too many entries in the table, you can use the searching function to find the specified order. 7. Click the button, it will jump to the update interface 8. There are three choices for administrators: preparing, shipping, finished. 9. Administrators can choose one and click the confirm button. 10. There will pop up a window to inform that the administrator has changed the order status successfully.</p> <p>For deleting order: 11. Find the order the administrator want to delete and there is a delete button in that row. If there are too many entries in the table, you can use the searching function to find the specified order. 12. Click the delete button, it will pop up a window to warn the administrators' operation. 13. Click OK, and then the order will be deleted.</p>
Alternative Flows:	For step 12, if the administrators click the cancel button, the order will not be deleted.
Exceptions:	None
Notes:	None

+ 选项				
	id_inOrder	user_id	order_date	order_status
<input type="checkbox"/>	1	1	2023-05-01 03:40:11	shipping
<input type="checkbox"/>	2	1	2023-04-24 12:44:13	shipping
<input type="checkbox"/>	5	5	2023-05-01 06:32:03	unshipped
<input type="checkbox"/>	6	6	2023-05-01 06:32:03	unshipped

Figure C.1 Database

The screenshot shows the 'Order information' section of the WooCommerce Admin. The left sidebar includes links for Statistics, View Categories, View Products, Insert Categories, Insert Products, Order, Coupons, User, Admin Info, and Log out. The main area displays a table of 7 entries:

No.	ID	User	Product name	Quantities	Coupon code	Order date	Order status	Operation
1	1	ddd	Grapes	1	a123	2023-05-01 03:40:11	shipping	<button>Update</button> <button>Delete</button>
2	1	ddd	Nike	1	a123	2023-05-01 03:40:11	shipping	<button>Update</button> <button>Delete</button>
3	2	ddd	Clothes	1	b123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
4	5	user3	Nike	5	123	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>
5	6	user4	converse	6	001	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>
6	2	ddd	Clothes	1	123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
7	5	user3	Nike	5	aabbccdd	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>

Showing 1 to 7 of 7 entries

Figure C.2 Show all the orders according to the table headers

The screenshot shows the 'Order information' section of the WooCommerce Admin. The left sidebar includes links for Statistics, View Categories, View Products, Insert Categories, Insert Products, Order, Coupons, User, Admin Info, and Log out. The main area displays a table of 7 entries:

No.	ID	User	Product name	Quantities	Coupon code	Order date	Order status	Operation
1	1	ddd	Grapes	1	a123	2023-05-01 03:40:11	shipping	<button>Update</button> <button>Delete</button>
2	1	ddd	Nike	1	a123	2023-05-01 03:40:11	shipping	<button>Update</button> <button>Delete</button>
3	2	ddd	Clothes	1	b123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
6	2	ddd	Clothes	1	123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
4	5	user3	Nike	5	123	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>
7	5	user3	Nike	5	aabbccdd	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>
5	6	user4	converse	6	001	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>

Showing 1 to 7 of 7 entries

Figure C.3 Order ID

The screenshot shows the 'Order information' page in the WooCommerce Admin. The left sidebar includes links for Statistics, View Categories, View Products, Insert Categories, Insert Products, Order, Coupons, User, Admin Info, and Log out. The main content area has a search bar with 'Cloth' typed in. A table lists two orders:

No.	ID	User	Product name	Quantities	Coupon code	Order date	Order status	Operation
3	2	ddd	Clothes	1	b123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
6	2	ddd	Clothes	1	123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>

Showing 1 to 2 of 2 entries (filtered from 7 total entries)

Figure C.4 Corresponded results

The screenshot shows the 'Order information' page in the WooCommerce Admin. The left sidebar includes links for Statistics, View Categories, View Products, Insert Categories, Insert Products, Order, Coupons, User, Admin Info, and Log out. The main content area has an empty search bar. A table lists seven orders with various statuses:

No.	ID	User	Product name	Quantities	Coupon code	Order date	Order status	Operation
1	1	ddd	Grapes	1	a123	2023-05-01 03:40:11	finished	<button>Update</button> <button>Delete</button>
2	1	ddd	Nike	1	a123	2023-05-01 03:40:11	finished	<button>Update</button> <button>Delete</button>
3	2	ddd	Clothes	1	b123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
4	5	user3	Nike	5	123	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>
5	6	user4	converse	6	001	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>
6	2	ddd	Clothes	1	123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
7	5	user3	Nike	5	aabbccdd	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>

Showing 1 to 7 of 7 entries

Figure C.5 Update the order status

Woo
COMMERCE Home

Lovin Eye store

Welcome a

Statistics

View Categories

View Products

Insert Categories

Insert Products

Order

Coupons

User

Admin Info

Log out

Order information

Show 10 entries

No.	ID	User	Product name	Quantities	Coupon code	Order date	Order status	Operation
1	1	ddd	Grapes	1	a123	2023-05-01 03:40:11	finished	<button>Update</button> <button>Delete</button>
2	1	ddd	Nike	1	a123	2023-05-01 03:40:11	finished	<button>Update</button> <button>Delete</button>
3	2	ddd	Clothes	1	b123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
4	5	user3	Nike	5	123	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>
5	2	ddd	Clothes	1	123	2023-04-24 12:44:13	shipping	<button>Update</button> <button>Delete</button>
6	5	user3	Nike	5	aabbccdd	2023-05-01 06:32:03	unshipped	<button>Update</button> <button>Delete</button>

Showing 1 to 6 of 6 entries

Search:

Previous 1 Next

Figure C.6 Delete Orders