
Group Project

Subject: Basic Cross-Platform Application Programming With .NET

Grocery store

Prepared by Group 6

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I. Case Study

A. Background

E-commerce (electronic commerce or EC) is the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the internet. These business

transactions occur either as business-to-business, business-to-consumer, consumer-to-consumer, or consumer-to-business.

That where our Grocery store get started - an E-commerce website to selling essential commodities. This project is mainly divided into two main categories: The Administrators and the Customers/Users.

The store manager and the staff members operate as administrators. They can add, edit, update products or, delete products thus they are able to change the names of products, change prices and, add or remove products. And similar to the category.

The customer can search for products selection, update the cart, remove products from the cart and check out from the shop. The customer is also able to view and update their information such as names, addresses, and other data. They also can view their order history.

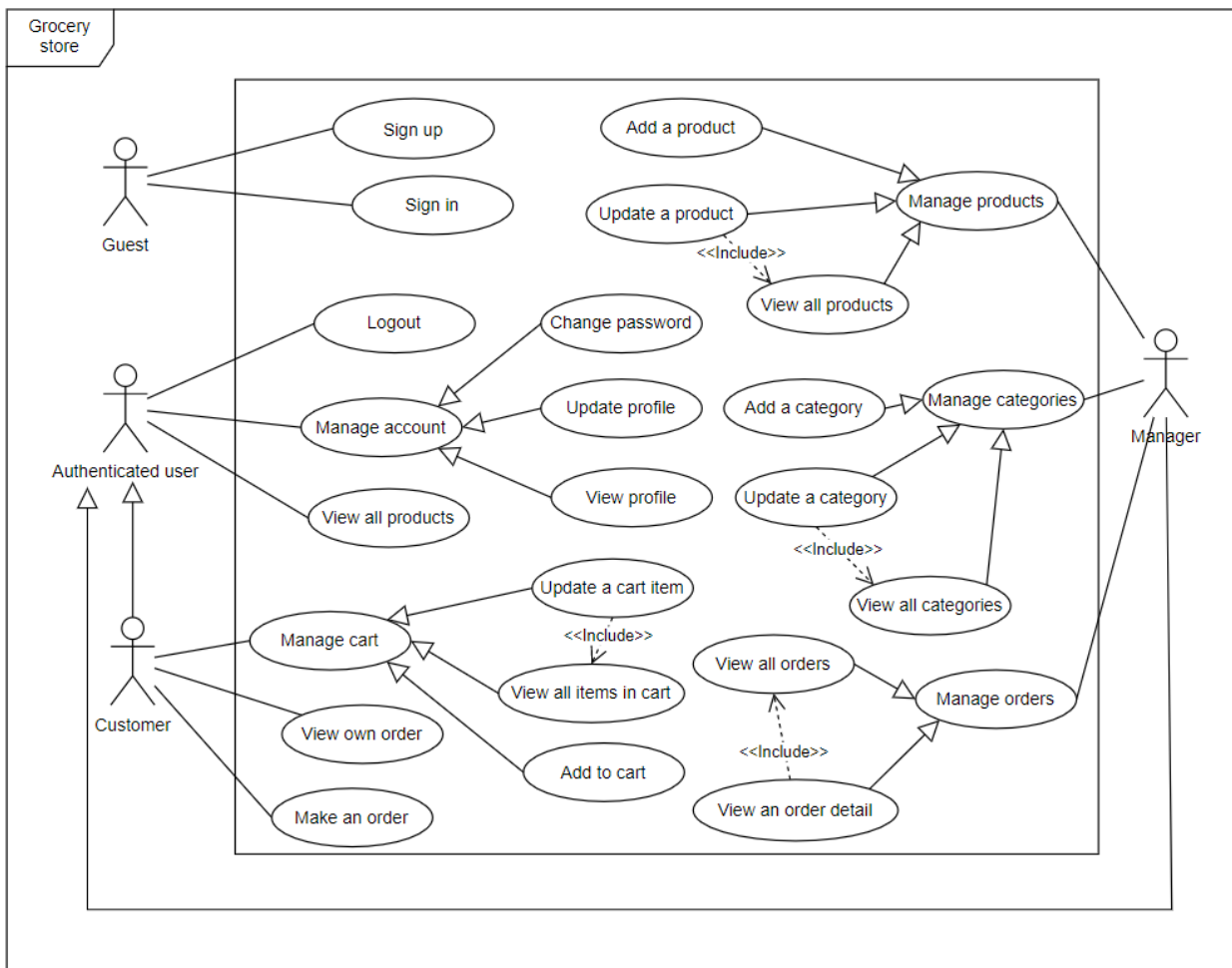
The User is only able to browse the online shop and add a product to the cart. The user is limited to the use of the shop.

B. Business Rules

ID	Rule Definition	Type of Rule	Static or Dynamic	Source
BR-1	Username must be between 5 and 50 characters	Constraint	Static	Grocery store policy
BR-2	User's Password must be at least 5 characters and encrypted with salt	Constraint	Static	Corporate security policy
BR-3	User's phone and email must be correct format	Constraint	Static	Grocery store policy
BR-4	User must have an account to start ordering product	Constraint	Static	Grocery store policy
BR-5	System will be open 24/24	Fact	Dynamic	Grocery store policy
BR-6	Manager can't order product by manager account, only customer account can make an order	Constraint	Static	Grocery store policy
BR-7	Managers can view profit of each customer's order	Constraint	Static	Grocery store policy

BR-8	Customer's order quantity must be enough	Constraint	Static	Grocery store policy
BR-8	Manager can view customer's order history by start date, end date and customer name	Constraint	Static	Grocery store policy

C. Use-case Diagram



II.1 Use case diagram

II. Database Design

A. Database requirement

The grocery store consists of **PRODUCTs**. Each product has room id, description, price, create day and image URL. The product price has 2 kinds: retail price and original price which represents the profit of each product in the grocery store. We also keep track of the status of each product. Those statuses include **AVAILABLE**, **DISABLE**.

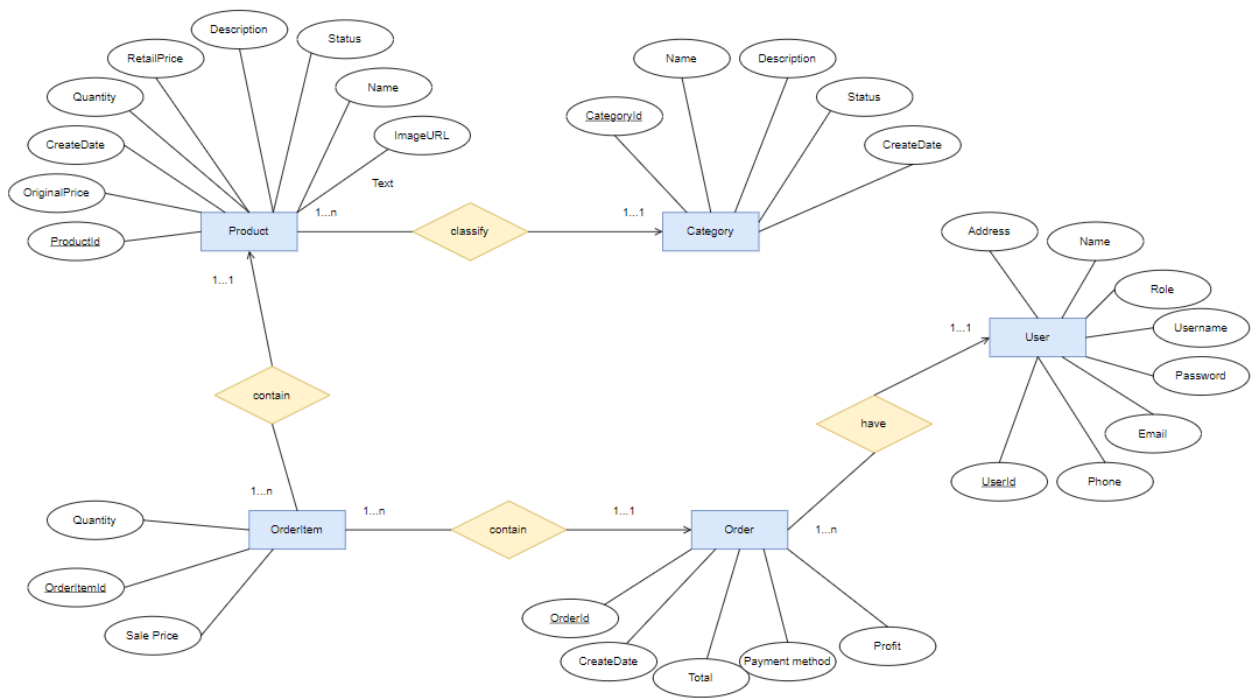
Each product is classified into **CATEGORYs**. Each category has category id, name, description and create day. We also keep track of the status of each category. Those statuses include **AVAILABLE**, **DISABLE**.

Each **USER** registered in our store system, we manage user id, username, password, full name, email, phone, address and role of them. The role is either customer or manager.

Users can shop products and order them by **ORDER**. Each order has order id, create day, total, profit and payment method. We have 2 payment method for you to choose: **CASH** and **CREDIT**. We also add to each order a customer id - knows as user id with role is customer - to check which user it belongs to

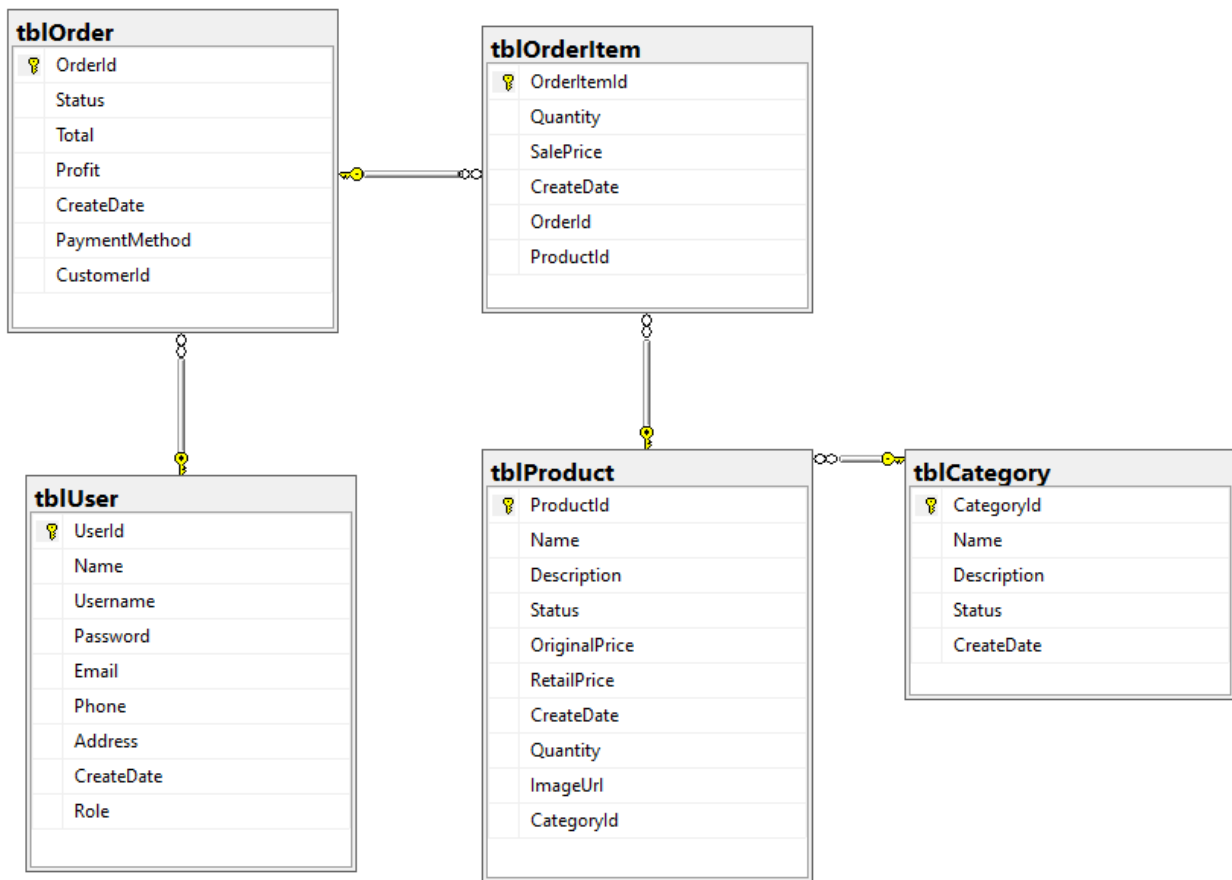
To connect order to products we have **ORDER ITEMs**. It likely the product but we just get product id, sale price and quantity. We also add to each order item a order id to check which order it belong to

B. Entity Relationship Diagram



III.1 Entity relationship diagram

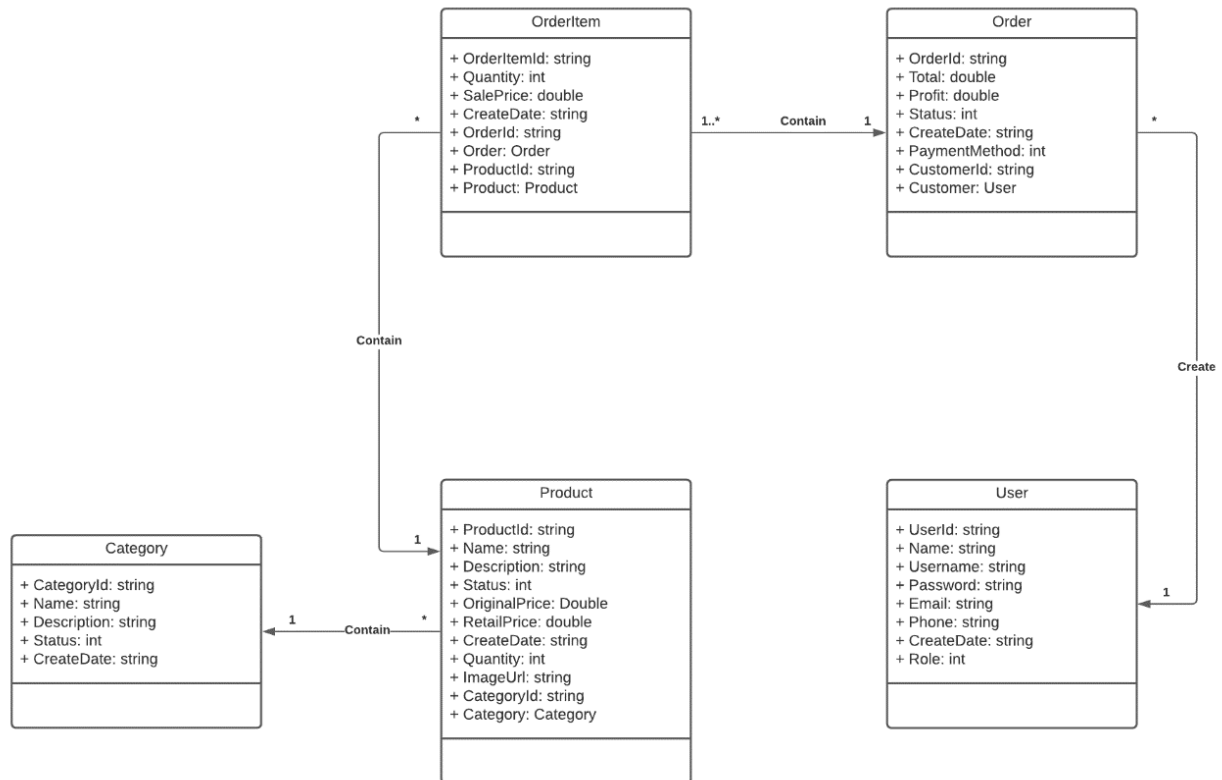
C. Relational Diagram



III.2 Relational diagram

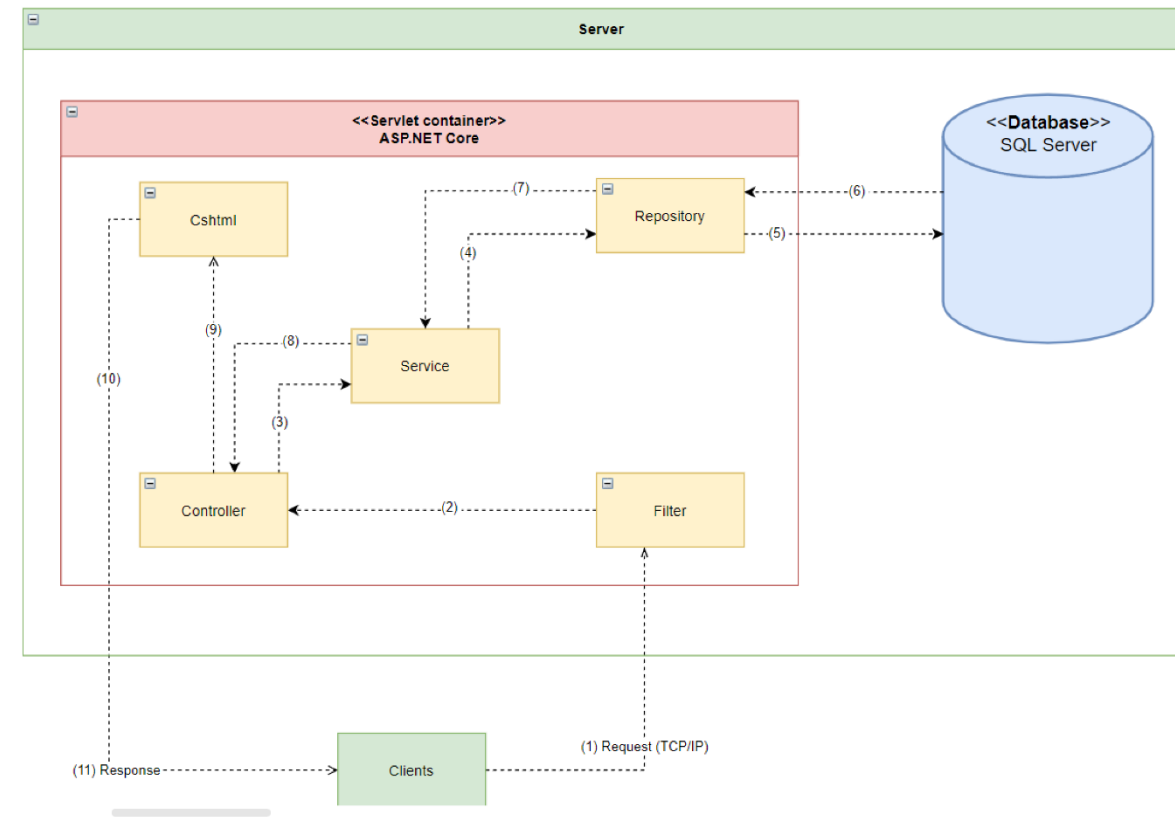
III. System Architecture

A. Class Diagram



IV.1 Class diagram

B. Deployment Diagram



IV.2 Deployment diagram

C. New Technology

Tailwindcss (atomic CSS): atomic CSS is a technique for CSS by breaking down every property into many micro classes, which holds a pair of property and value. The developer can apply the CSS by combining multiple classes together such as h-4 (height: 1rem), p-2 (padding: 0.5rem). Moreover, we also compressed CSS, minify CSS that make our CSS code combine into one line, and the size of all CSS code is 12KBs (one line), which will make our CSS load instantly without any downtime, or shaking.

Webpack: is a module bundler. Its main purpose is to bundle JavaScript files for usage in a browser, yet it is also capable of transforming, bundling, or packaging just about any resource or asset.

IV. Implementation

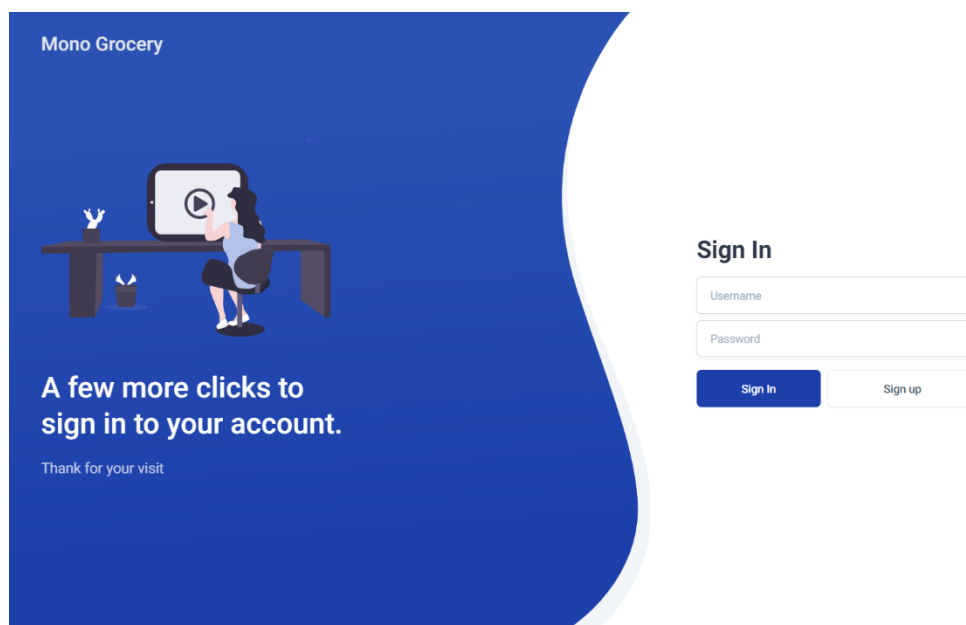
1. Login page

a. Description

This is the website's default page, and users have to log in before doing any action. If you don't have an account, you have to register by the link at the navigation.

If username does not exist or the password is not correct with the username in the database, the error message will display "Username or password is not correct"

b. Screenshot



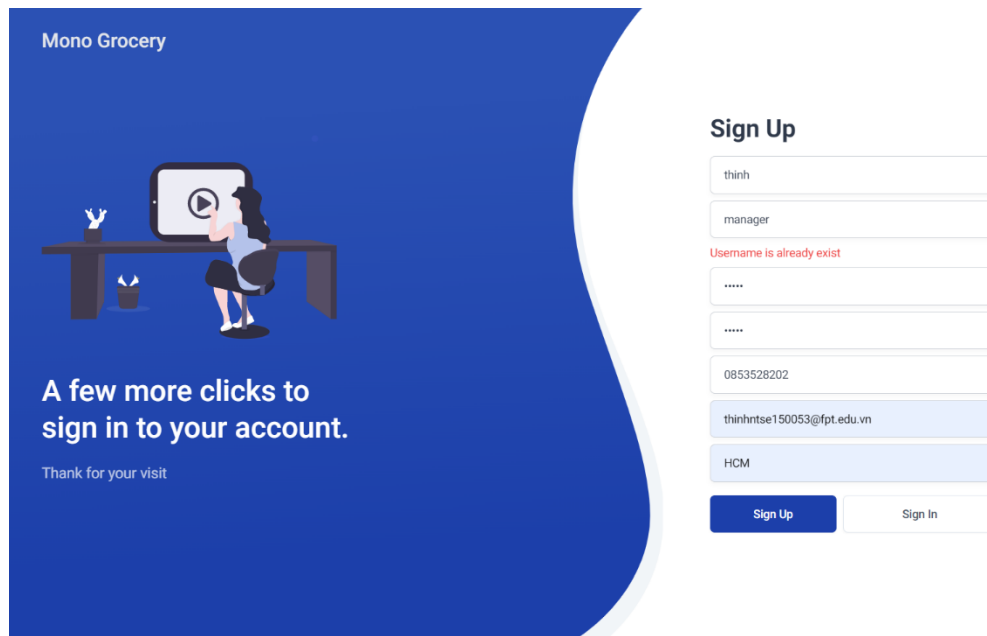
V.1 Login page

2. Register Page

a. Description

This page allows the customer to create a new account; they cannot assign their role. To increase security, we will hash the password and store it into our database, so even admins do not know the password.

b. Screenshot



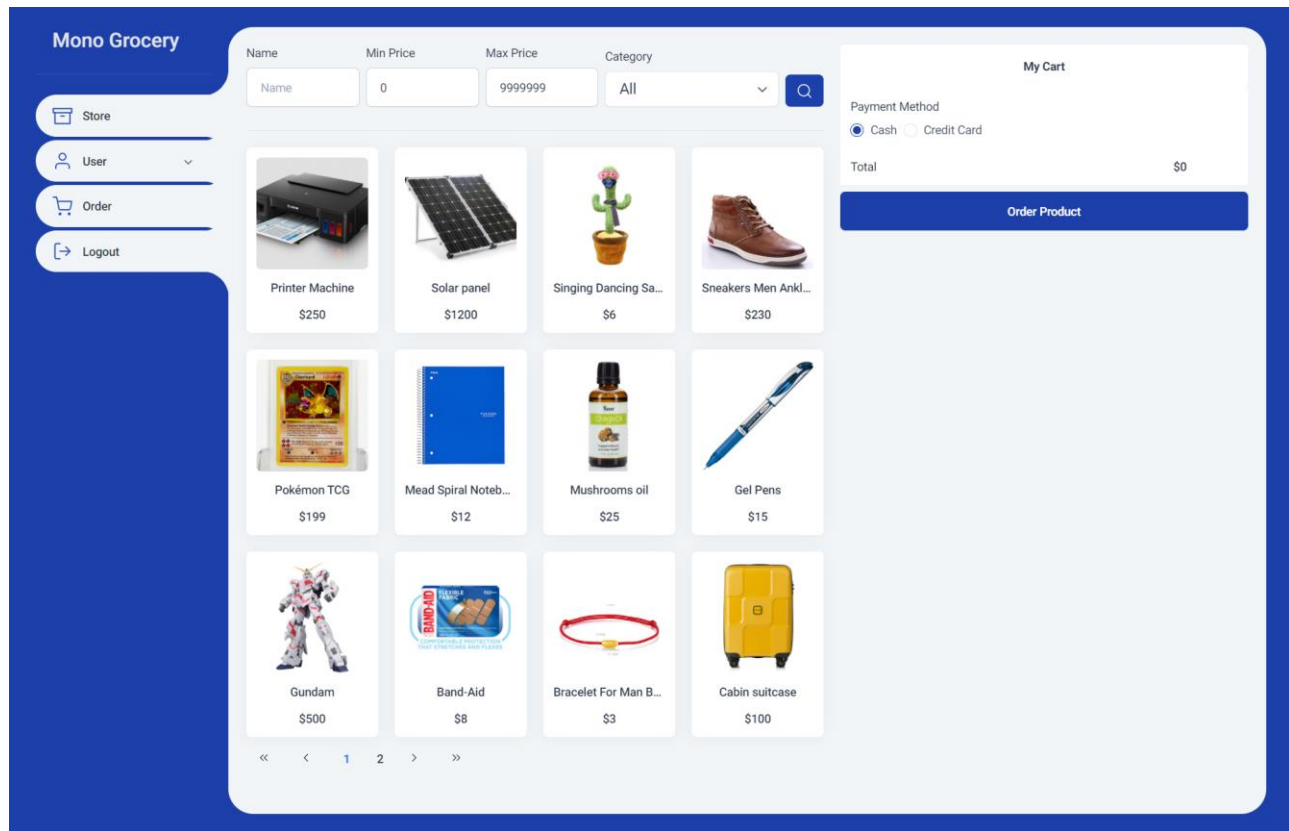
V.2 Register page

3. Home Page

a. Description

This home page is a landing page for everyone; they can use the top filter form to select the product they want to buy.

b. Screenshot



V.3 Home page

4. Update Information Page

a. Description

This page allows the user to change some primary user's information include name, email, phone number and Address

b. Screenshot

V.4 User's information update page

5. User Profile Page

a. Description

This page shows some user information such as name, username, email, role, etc. And hide sensitive information like passwords. We carry out a password base on hash function, so even the administration doesn't know the user's password.

b. Screenshot

Name	thinh
Username	thinh
Role	CUSTOMER
Email	thinh@gmail.com
Phone	0853528202
Address	default address

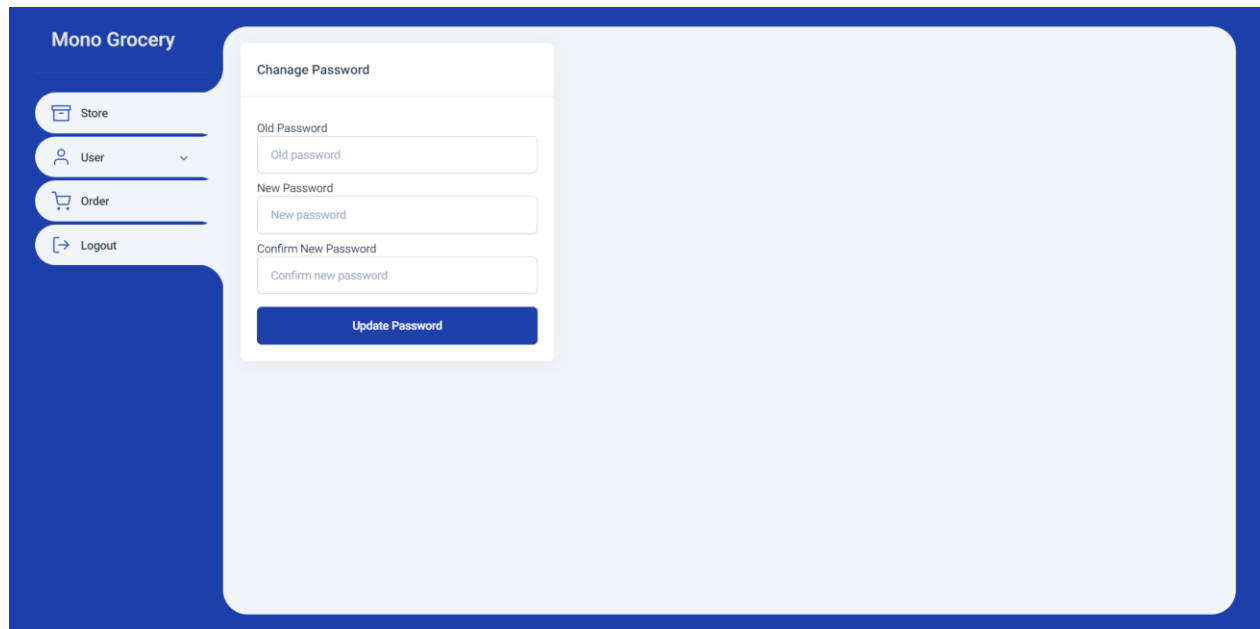
V.5 User profile page

6. Update Password Page

a. Description

This page allows the user to change user's password, which users have to remember their old password to change the new password.

b. Screenshot



The screenshot displays the 'Change Password' interface within the 'Mono Grocery' application. On the left, a dark blue sidebar contains navigation links: 'Store' (with a shopping cart icon), 'User' (with a person icon and a dropdown arrow), 'Order' (with a shopping cart icon), and 'Logout' (with a door icon). The main content area is light blue and features a white 'Change Password' form. The form includes three input fields: 'Old Password' (with placeholder text 'Old password'), 'New Password' (with placeholder text 'New password'), and 'Confirm New Password' (with placeholder text 'Confirm new password'). A blue 'Update Password' button is positioned at the bottom of the form.

V.6 Update user's password page

7. Category Manager Page for Manager

a. Description

This page shows the manager all the exist categories.

b. Screenshot

Mono Grocery

- Category
- Product
- User
- Order Manager
- Logout

Category Manager

#	Name	Description	Status	Edit
1	Test	test	Inactive	
2	Consumer Electronics	Consumer Electronics	Active	
3	Furniture	Furniture	Active	
4	Health & Medical	Health & Medical	Active	
5	new category	sdfsdf	Inactive	
6	Office & School Supplies	Office & School Supplies	Active	
7	Electrical Equipment & Supplies	Electrical Equipment & Supplies	Active	
8	Toys & Hobbies	Toys & Hobbies	Active	
9	Shoes & Accessories	Shoes & Accessories	Active	
10	Food & Beverage	Food & Beverage	Active	
11	Gifts & Crafts	Gifts & Crafts	Active	
12	Luggage, Bags & Cases	Luggage, Bags & Cases	Active	

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V.7 Categories management page

8. Create Category Page for Admin

a. Description

This page allows the manager to create new category.

b. Screenshot

The screenshot shows the 'Create Category' page within the Mono Grocery admin dashboard. On the left is a dark blue sidebar with the 'Mono Grocery' logo at the top. Below the logo are five menu items: 'Category' (with a folder icon), 'Product' (with a box icon), 'User' (with a person icon), 'Order Manager' (with a shopping cart icon), and 'Logout' (with a door icon). Each menu item has a small downward arrow. The main content area is light blue and contains a white 'Create Category' form. The form has three input fields: 'Name' (containing 'Category Name'), 'Description' (containing 'Description'), and 'Status' (with radio buttons for 'Active' and 'Inactive', where 'Active' is selected). At the bottom of the form is a blue button labeled 'Create Category'.

V.8 Create a category page

9. Update Category Page for Admin

a. Description

This page allows the manager to edit exist category such as Name, Description, Status.

b. Screenshot

The screenshot shows the 'Update Category' page within the Mono Grocery admin dashboard. The layout is identical to the 'Create Category' page, but the form is titled 'Update Category'. The 'Name' field contains 'Consumer Electronics', and the 'Description' field also contains 'Consumer Electronics'. The 'Status' section shows 'Active' selected with a radio button. At the bottom of the form is a blue button labeled 'Update Category'.

V.9 Update a category page

10. Create Product Page for Admin

a. Description

This page allows the manager to create new Product with image

b. Screenshot

The screenshot shows the 'Create Product' page in the Mono Grocery admin interface. The page has a blue sidebar with navigation links: Category, Product, User, Order Manager, and Logout. The main content area is titled 'Create Product' and contains a form with the following fields:

- Image Upload:** A button with a plus icon and the text 'Chọn tệp' (Choose file) and 'Không có tệp nào được chọn' (No file selected).
- Name:** A text input field with the placeholder 'Name'.
- Description:** A text input field with the placeholder 'Description'.
- Original Price:** A text input field with the placeholder 'Original Price'.
- Retail Price:** A text input field with the placeholder 'Retail Price'.
- Quantity:** A text input field with the placeholder 'Quantity'.
- Status:** Radio buttons for 'Active' (selected) and 'Inactive'.
- Category:** A dropdown menu with 'Test' selected.
- Create Product:** A blue button at the bottom of the form.

V.10 Create a product page

11. Update Product Page for Admin

a. Description


This page allows the manager to update already exist Product with image

b. Screenshot

Mono Grocery

- Category
- Product
- User
- Order Manager
- Logout

Create Product



Chọn tệp Không có tệp nào được chọn

Name

Description

Original Price

Retail Price

Quantity

Status
☒ Active
 ☐ Inactive

Category

Create Product

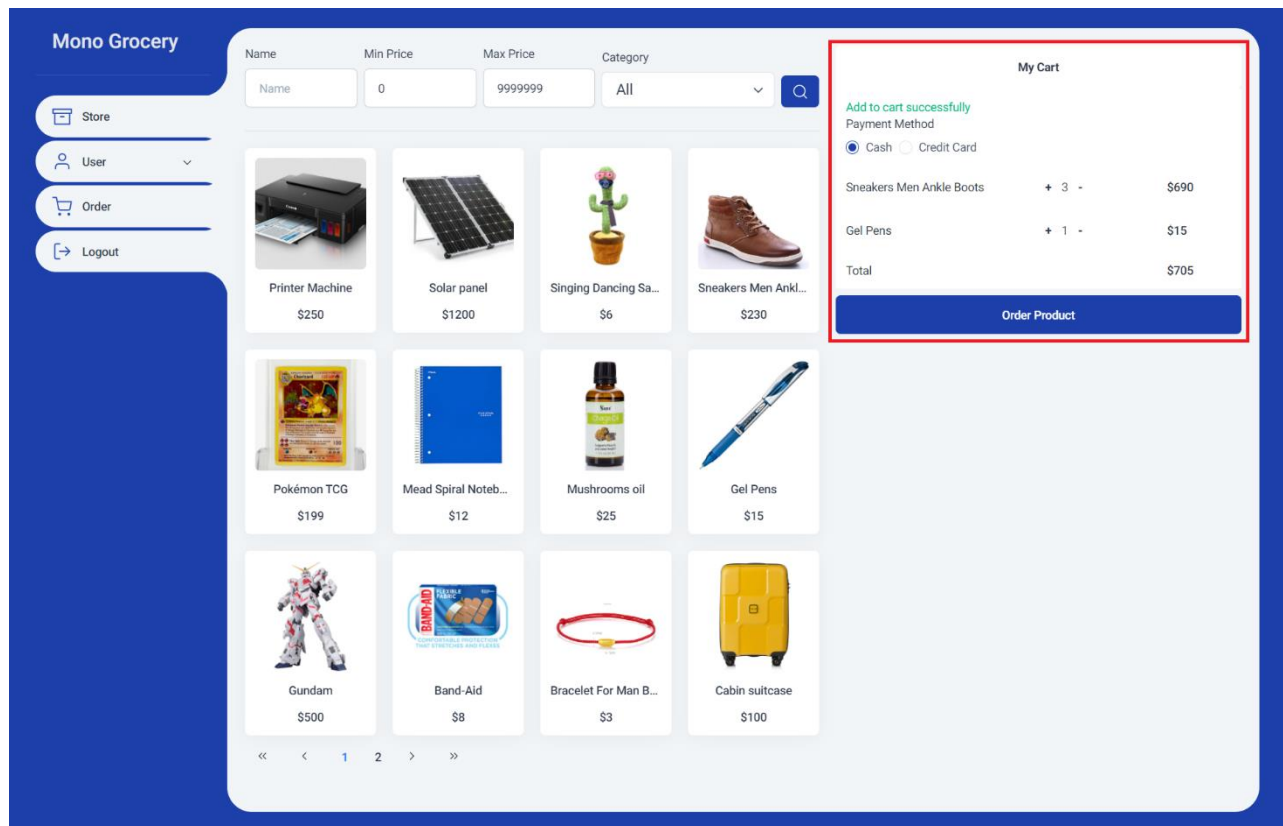
V.11 Update a product page

12. Add to Card

a. Description

Allow user to add new Product to their cart by simple click on the Product and also can adjust quantity

b. Screenshot



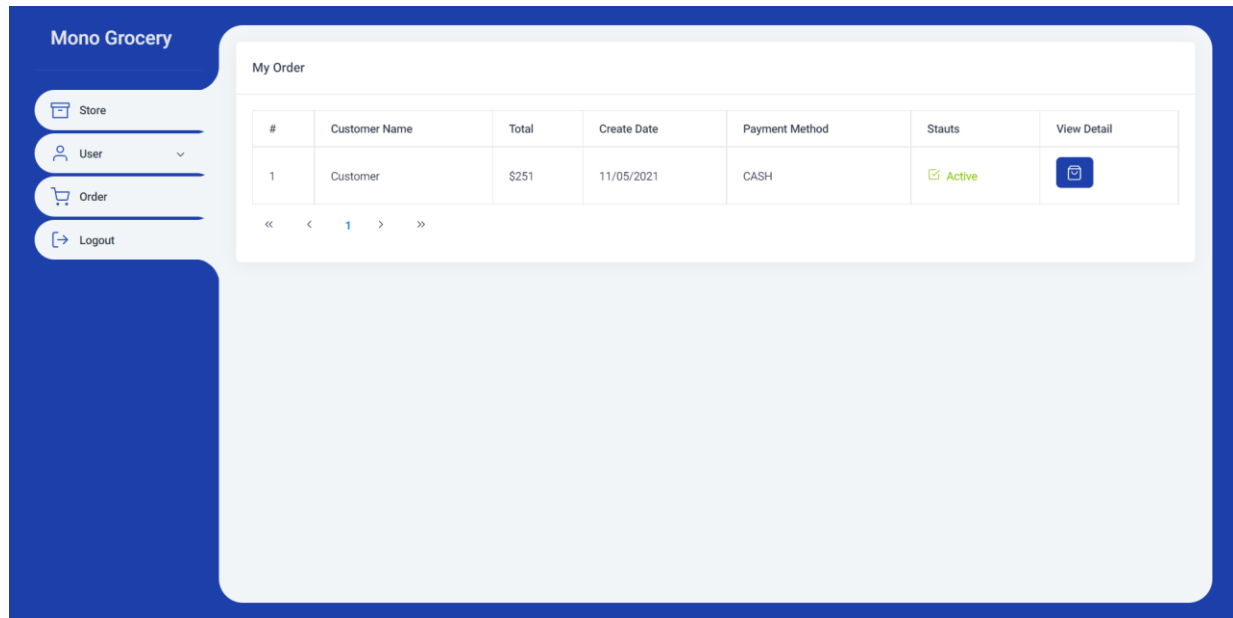
V.12 Add to cart page

13. View Order History for User

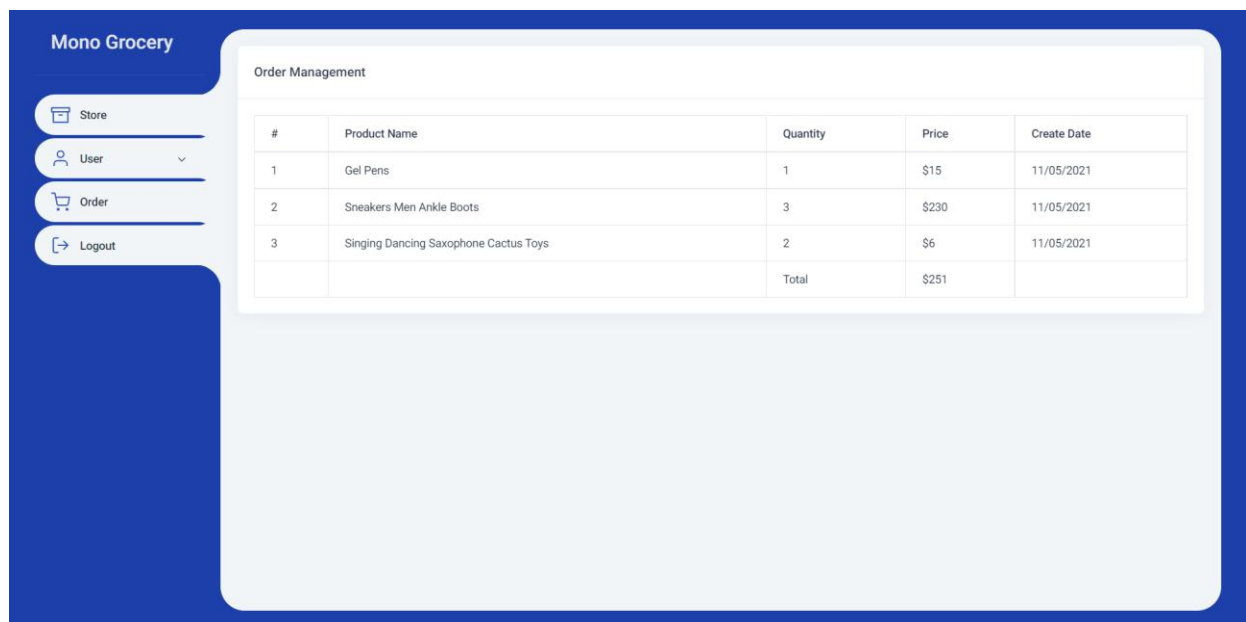
a. Description

Allow user to view all Order they made, user also can view detail of one Order such as Product they buy in this order and Quantity of each Product,

b. Screenshot



V.13 View all order



V.14 View an order's detail

14. View Order History for Manager

a. Description

Manager can view all the orders of all users and search with Date and Customer Name

b. Screenshot

Mono Grocery

Category

Product

User

Order Manager

Logout

Order Management

Name

Start Date

End Date

#	Customer Name	Total	Profit	Create Date	Payment Method	Stauts	View Detail
1	Customer	\$251	\$34	11/05/2021	CASH	Active	
2	thinh	\$236	\$32	10/02/2021	CASH	Active	
3	Guest	\$245	\$32	10/09/2021	CREDIT_CARDS	Active	
4	Guest	\$230	\$30	10/09/2021	CASH	Active	
5	thinh	\$230	\$30	10/02/2021	CASH	Active	
6	Guest	\$31	\$7	10/09/2021	CASH	Active	
7	Guest	\$256	\$52	10/09/2021	CREDIT_CARDS	Active	
8	Trần Minh Thuận	\$1436	\$232	10/16/2021	CASH	Active	
9	1111111	\$1885	\$321	10/11/2021	CASH	Active	
	Total	\$4800	\$770				

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V.15 Order management page