

Online E-commerce Store

<https://github.com/crf2222/OOPFinalProject>

Group#8

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1. System Analysis:

Terminology Glossary: N/A

1.1. Project Description:

1.1.1. General description, goals, and benefits:

General Description: Our product is an online shopping center. Our online shopping center involves multiple components and interactions between our shopping center customers and administrator, with functionality that includes user account creation, user login and authentication, shopping for products, payment processing, addition and removal of products, and more. This complexity has allowed us to create comprehensive UML diagrams (use cases, sequence diagrams, and class diagrams) to capture all the interactions and relationships accurately. Some examples of our use cases include: "Customer" and "Admin." The "Customer" can perform actions like "Browsing Products," "Adding Items to Cart," and "Placing Order." The "Admin" can "Manage Products", including adding them to inventory and including details regarding their price, description and the inclusion of a unique identifier for each product. " The system itself allows quick account creation, searching for products, placing orders, and transparency regarding the status of an order. It also has enough administrative privileges and built-in authentication to provide for a few errors in processing.

Goals and Benefits: Our goal was to create a system that is easy to use. Each one of our goals was designed as a clear benefit to both the user/consumer and also administrator. Our online shopping center allows users to shop for products, find what they want and quickly place an order. This would in time create more users and client retention which would be profitable for a business, a clear benefit. Also, a user must create an account to shop which is beneficial to both the user in the long run (storing payment methods) and also the administrator (keeping client data and encouraging repeat business because the information has already been stored). The user name authentication was a goal and is beneficial because it provides clear guidelines on how to create an account that are easy to follow. Also, we programmed the ability to search a product by id, name, and price and also search the product's description. It's easy for the client to find products and purchase them, which benefits the company operating the system and decreases the responsibility of the administrator to return products because the descriptions are transparent.

1.1.2. System inputs and outputs:

Customer inputs include a user name, password, email payment information, and product search input (id, name, price). The output includes account creation, a list of products, calculated amounts for the products, a generated order number, and also the placement of the order itself. The admin inputs include product information (description, price, ID, and product name) and the output is the addition of the product to the inventory.

1.1.3. Special requirements:

The user must create an account before using the system. They can then login as a customer.

1.2. Use case diagram:

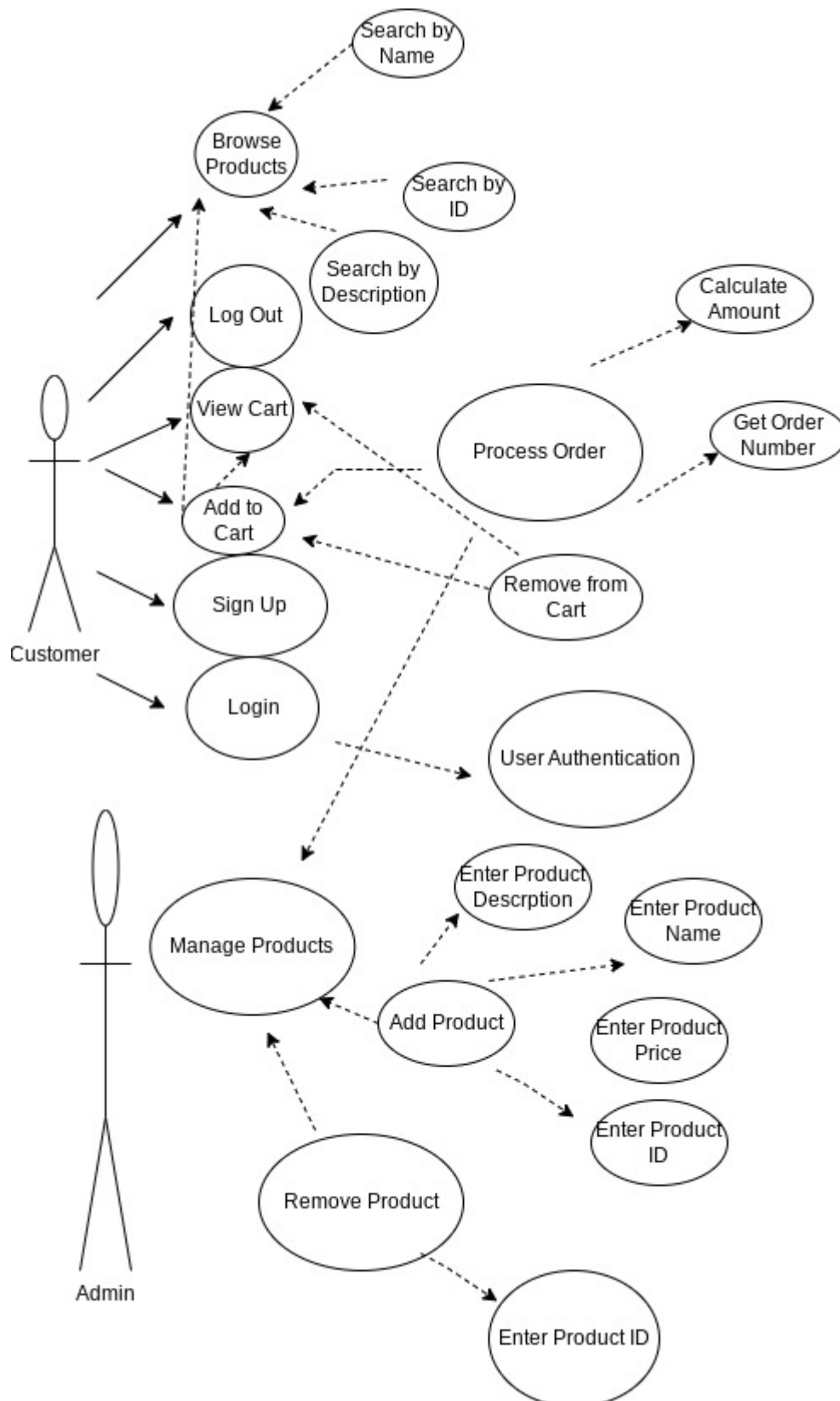


Figure 1: Use Case Diagram

1.3. Use cases descriptions:

Name/Reference	Login
Overview	The customer logs in to the system using their username and password
Related Use Cases	User Authentication
Actors	Customer
Pre-Condition	The customer has previously signed up and has an account.
Post-Condition	The customer is logged in.

Name/Reference	Logout
Overview	The customer logs out of the system.
Related Use Cases	
Actors	Customer
Pre-Condition	The customer is logged into the system.
Post-Condition	The customer is logged out of the system.

Name/Reference	User Authentication
Overview	The customer credentials are authenticated
Related Use Cases	Login
Actors	Customer
Pre-Condition	User attempts login
Post-Condition	Customer is logged in if credentials are valid or advised to try again

Name/Reference	Sign Up
Overview	The customer enters a username, password, and email address to sign up for an account
Related Use Cases	N/A
Actors	Customer
Pre-Condition	Customer opts to create an account.
Post-Condition	Customer account is created.

Name/Reference	Manage Products
Overview	Admin has option to add or remove products.
Related Use Cases	Add Products, Remove Products
Actors	Admin
Pre-Condition	Admin option is selected
Post-Condition	Admin can choose to add or remove products

Name/Reference	Add Products
Overview	Admin can add products by selection add products option and then entering production description, name, price, and ID
Related Use Cases	Manage Products, Enter Product Description, Enter Product Name, Enter Product Price, Enter Product ID
Actors	Admin
Pre-Condition	Admin is logged in and selects manage products to access add product option.
Post-Condition	Product is added

Name/Reference	Remove Product
Overview	Admin can remove product by selecting the remove product option and entering the product ID
Related Use Cases	Manage Products
Actors	Customer
Pre-Condition	Admin is logged in and selects manage products to access add product option. Product exists in the system.
Post-Condition	Product is Removed

Name/Reference	Browse Products
Overview	This use case explains how a customer can search for products.
Related Use Cases	
Actors	Customer
Pre-Condition	Customer is logged in
Post-Condition	System displays list of products to customer.

Name/Reference	Browse Products
Overview	Browse Products by searching by name, ID and description
Related Use Cases	Search by Name, Search by ID, Search by Description, Add to Cart
Actors	Customer
Pre-Condition	Customer is logged in
Post-Condition	System adds or removes a product from cart

Name/Reference	Add to Cart
Overview	This use case explains how a customer can add a product in the cart.
Related Use Cases	Browse Products, Remove from cart, Process Order
Actors	Customer
Pre-Condition	Customer is logged in
Post-Condition	Item is added to the car

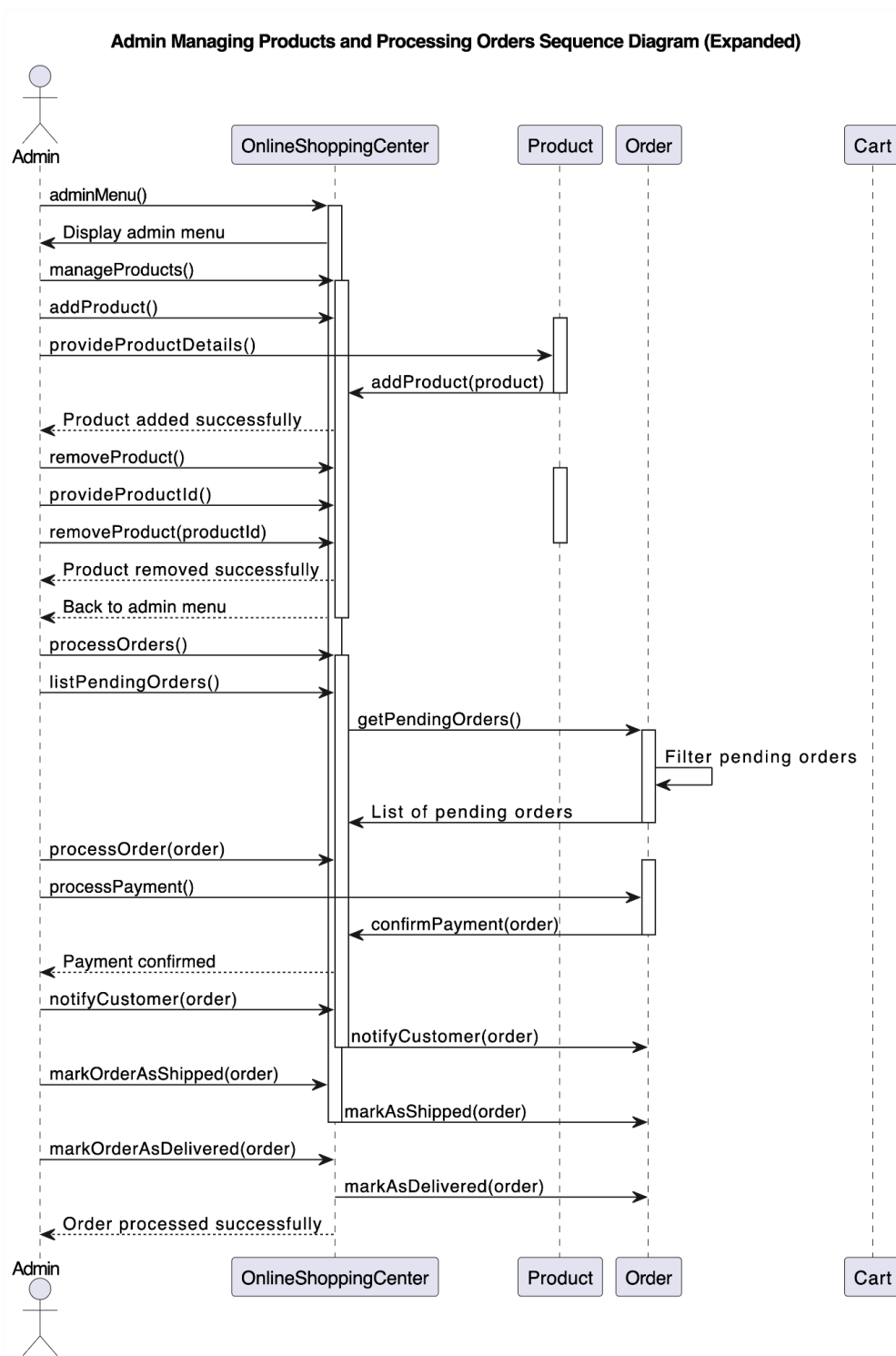
Name/Reference	Remove from Cart
Overview	This use case explains how a customer can remove a product from the cart.
Related Use Cases	Browse Products, Add to Cart, View Cart
Actors	Customer
Pre-Condition	Customer is logged in
Post-Condition	System removes a product from the cart

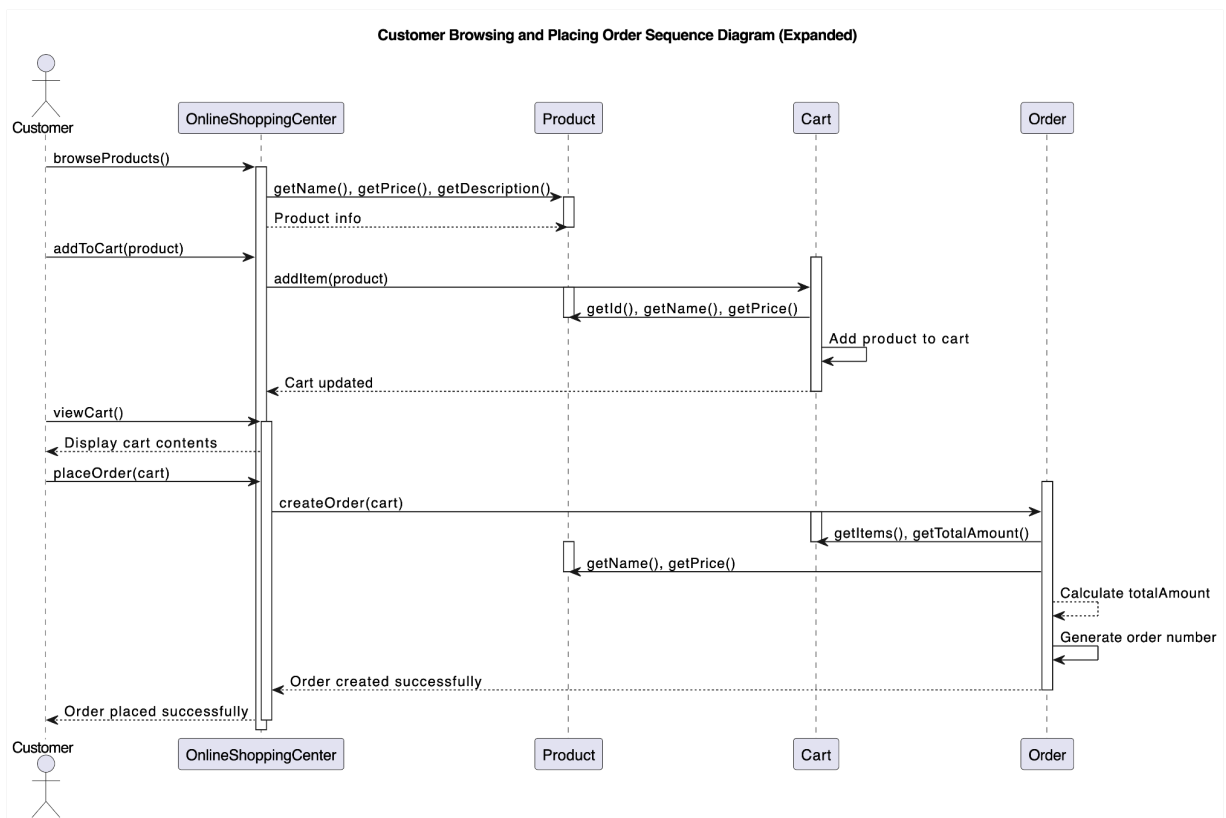
Name/Reference	View Cart
Overview	This allows the customer to viewq the cart
Related Use Cases	Remove from Cart, Add to Cart Cancel Order
Actors	Customer
Pre-Condition	Customer is logged in and has items in the cart
Post-Condition	All items in the cart are displayed

Name/Reference	Process Order
Overview	The user places an order and it is processed
Related Use Cases	Add to cart, Calculate Amount, Get Order Number
Actors	Customer
Pre-Condition	Customer is logged in
Post-Condition	System displays order details

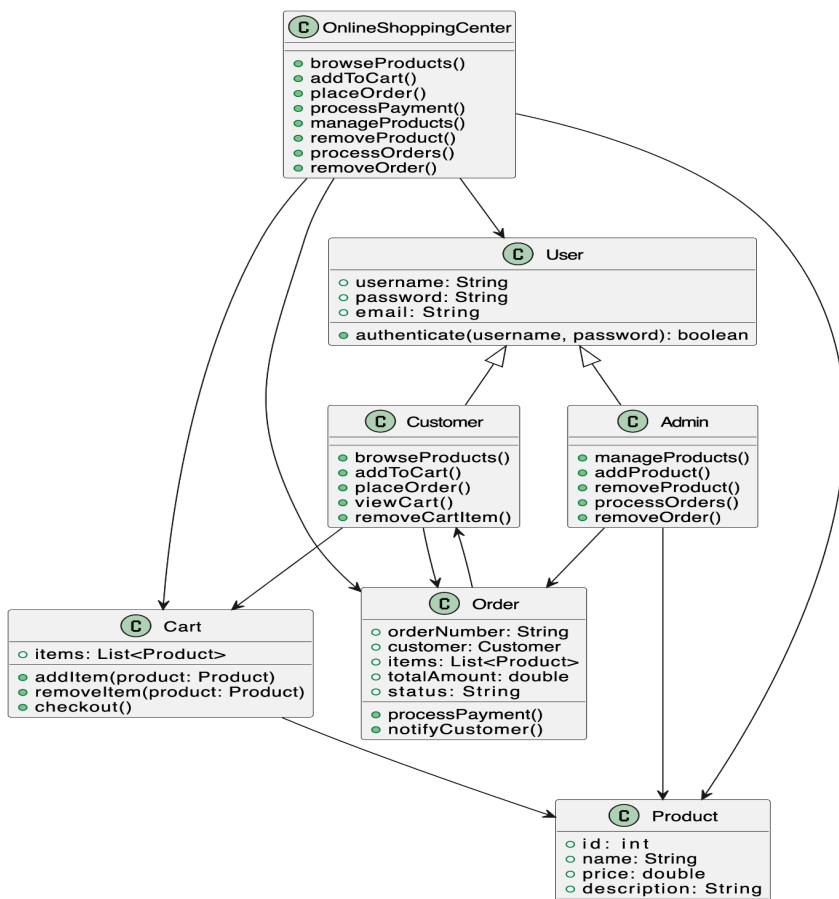
2. System Design:

2.1. Sequence Diagram:





2.2. Class Diagram:



3. Conclusion:

Overall, this was a great exercise in the creation of a program that will help us all prepare for our future careers. Being able to translate our initial ideas simulating the role of a client to also modeling the behavior of an analyst and designer helped improve every aspect of the assignment. As we continued to work on the project our use cases became clearer, the lifeline of the shopping center in the sequence diagram was improved, and the final design of our product was far greater than what we started with. We are confident that the final product delivers on the initial intention and is modeled clearly for future clients, analysts, and designers to build on it and improve it.

As a customer, the ease of use would encourage me to continue the system. As an administrator the product management would allow me to fulfill my responsibilities and the build of the program would allow me to improve functionality in the future.

4. Appendix

N/A