IMPERIAL COLLEGE of ENGINEERING

(Affiliated by Rajshahi University Code: 385)

Course Code : CSE3212

Course Name : Software Engineering Lab

Year : 3rd Semester: Even

Report:

Online Shopping Management System

Submitted by-

1838520119 Aminul Islam (Niloy)
1938520108 Nadim Mir
1938520113 Teresa Jency Bala
1938520124 Kulsum Akter
1938520133 Tanzin Tamanna Nishi
1938520142 Prema Das

Submitted to –

Mritunjoy Gain

Lecturer
Department of CSE

TABLE OF CONTENTS

1 INTRODUCTION

The online shopping management system is a web application project with all the basic implementations needed for users starting with interaction on the website, and viewing the web application for purchasing products. The user will select products from the website and then purchase them. The product will be sent to the customer at their doorstep.

1.1 Project Overview

The project is an online shopping system for a specific category of products or companies where the administrator adds products of different categories. The customers will select the products for purchase or put those items in their cart for future purchases. After selection, they will create an account or log in to an existing account and proceed to payment. After purchasing they will find the list of orders they previously created in their account and will be able to see where the products are shipped and within how many days they may receive the product.

1.2 Project purpose

The project is being conducted for learning the basic and easy process of creating a web application with

1. HTML, CSS, and JavaScript for front-end development
2. PHP, Python, or Node.js for server-side development
3. SQL (such as MySQL or MSSQL Server) for database management
4. Python or C# for back-end development.

1.2.1 Project Background

There will be many categories of products. Customer may choose products from the online system easily by staying in the comfort of their own home. They will not need to go shopping to buy from there. The same product which they selected will be shipped to their doorstep.

1.2.2 Project Benefits and Beneficiaries

The main benefit of this online shopping system is that it is less time-consuming and more convenient. The user will be easily being able to get what they wanted from the store without the need of leaving their house. Also due to the shipping service at the doorstep of customers, there is a new job opportunity for people to work as riders.

1.2.3 Project Goals

The goal of this project is to lessen the customer's inconvenience and give them a better shopping experience. And to bring more customers to the shop which might be challenging for the only physical location of the shop. There will be a product return policy and a money return policy.

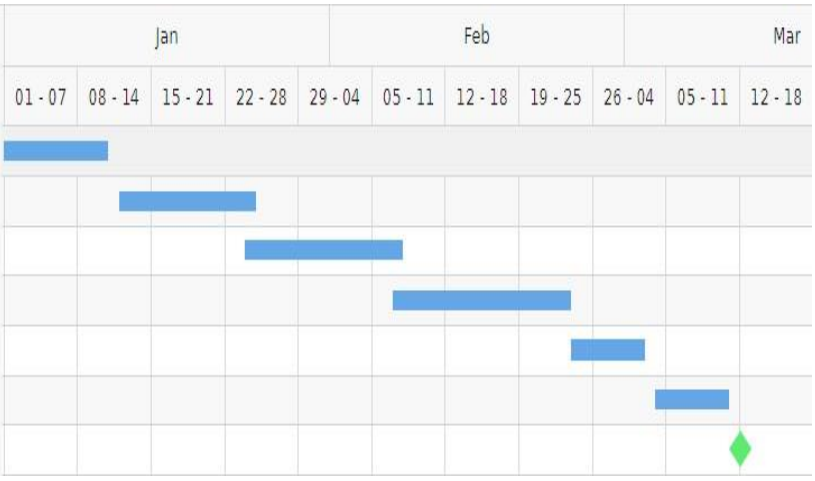
1.3 Stakeholders

Internal: Company's board of directors. External: Shareholders

1.4 Project Schedule

1.4.1 Gantt Chart

ID	Title	Start Time	End Time
1	Plan And Proposal	01/01/2023	01/11/2023
2	Requirement Analysis	01/12/2023	01/25/2023
3	System Design	01/24/2023	02/08/2023
4	Implementation	02/07/2023	02/24/2023
5	Testing	02/24/2023	03/03/2023
6	Documentation	03/04/2023	03/11/2023
7	Delivery	03/12/2023	03/12/2023



Chapter 2: Software Requirements Specification

2.1 Functional Requirements

The system contains a user-friendly interface that allows customers to easily navigate and use the system. Users can perform actions like creating an account, logging in, and managing their personal information. There is a comprehensive product catalog that includes product details such as name, description, price, and images. Users will be able to add, remove, and view the products in their shopping cart. The system provides a secure and reliable payment gateway for customers to make payments using different payment methods such as credit and debit cards. There is functionality for customers to place an order, view order history, and track the order status. The system provides an admin panel for administrators to manage the product catalog, user accounts, and order details.

2.2 Data Requirements

The online shopping system requires the following data:

Customer Information: Basic information such as name, address, email, phone number, and payment details.

Product Information: This includes details such as product name, description, image, price, and availability.

Order Information: This includes information about the items ordered, the total amount, the shipping address, and the delivery status.

Payment Information: About the payment method used and the payment status.

Inventory Information: The stock levels of each product and the need to reorder.

Shipping Information: This includes information about the shipping method, shipping address, and delivery status.

2.3 Performance requirements

2.3.1 Speed and Latency Requirements

Websites will load quickly and efficiently, so the system will be designed with optimized code, efficient database queries, and effective caching mechanisms to ensure fast page load times. As users expect fast response times when they interact with the system, such as when adding items to their shopping cart or completing a purchase. The system will be designed with low-latency database queries and efficient communication protocols to ensure fast response times.

2.3.2 Capacity Requirements

The system involves determining the system's ability to handle a large number of users and transactions without degrading its performance. The system will be able to scale up or down as needed to accommodate changes in traffic and user activity. Capacity planning is crucial to ensure that the system can handle future growth and expansion while maintaining optimal performance.

2.4 Dependability Requirements

2.4.1 Reliability and Availability Requirements

The system is designed to handle large volumes of transactions and users without any performance issues or system crashes. The online shopping system should also be available to users 24/7 to ensure uninterrupted service.

2.4.2 Robustness and Fault-Tolerance Requirements

The system will have adequate error handling and recovery mechanisms to handle unexpected errors and ensure that the system returns to a stable state quickly. It has mechanisms in place to automatically recover from system failures, such as backing up data, restoring lost data, or redirecting traffic to alternative servers. These mechanisms help to ensure the system is always available, even in the face of unexpected events or errors.

2.5 Maintainability and Supportability Requirements

2.5.1 Supportability Requirements

The system has an efficient and reliable technical support team that can promptly address any technical issues, provide system maintenance, and keep the system up to date with the latest patches and upgrades.

2.5.2 Scalability and Extensibility Requirements

The system can scale horizontally by adding more servers to handle the increased load. The system is designed in a modular and flexible way so that new functionalities can be added without affecting the existing system. The system is also well-documented and has a well-defined interface for external systems to integrate with it.

2.6 Security Requirements

2.6.1 Access Requirements

The system has a secure and reliable access control mechanism that allows authorized users to access only the necessary features and data. The system also supports various types of users, such as customers, and administrators, with different levels of access rights. Access requirements also include support for multi-factor authentication, password policies, and user activity logging to ensure the security of the system.

2.6.2 Privacy Requirements

The system encrypts sensitive data such as customer names, addresses, payment information, and login credentials, both in transit and at rest. Access to sensitive data is restricted to authorized users only. The system has mechanisms for authentication, authorization, and identity management. The system has robust measures in place to prevent data breaches and a clear plan for responding to and mitigating the impact of any breaches that do occur.

2.7 Usability and Human-Interaction Requirements

2.7.1 Ease of Use Requirement

The system is easy to use and intuitive and requires minimal training for customers and administrators to understand and navigate. This includes clear and concise instructions, error messages, and help features. Additionally, the system should be consistent across all pages and provide quick access to frequently used features to improve the user experience.

2.7.2 Personalization and Internationalization Requirement

The system will allow its users to personalize the information as per needed for easy access.

2.7.3 Understandability and Politeness Requirements

The system is designed as simply as possible and contains clear language, providing helpful and easy-to-understand error messages, and ensuring that the system is responsive and reliable. Additionally, the system is designed to respect the user's privacy to provide a positive user experience.

2.7.4 Accessibility Requirements

Refer to the system's ability to be accessed by users with disabilities. The system includes features such as support for screen readers and keyboard navigation. In an online shopping management system, accessibility is important to ensure that all users can use the system without discrimination or disadvantage.

2.8 Operational and Environmental Requirements

2.8.1 Expected Physical Environment

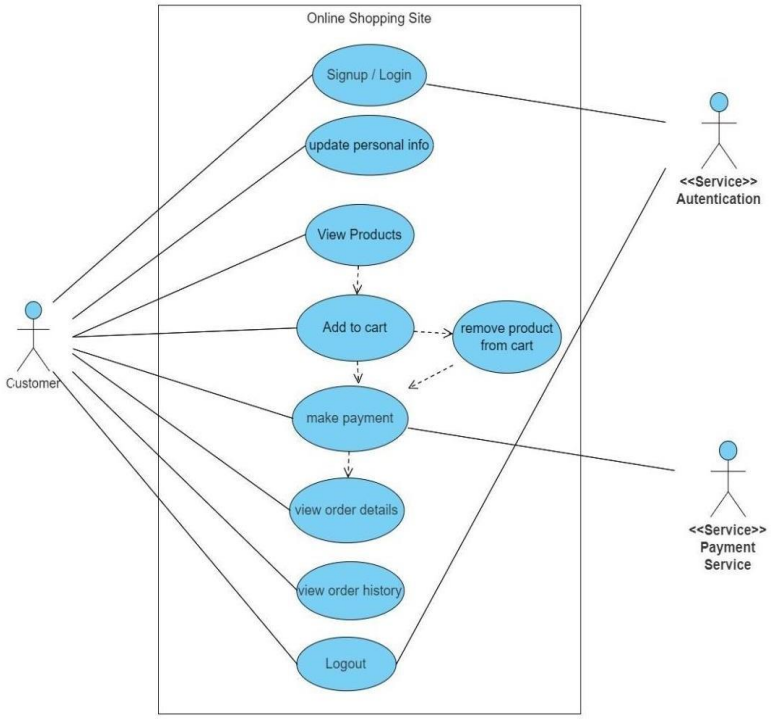
The system has a reliable and stable internet connection that can handle the expected traffic volume. The system is designed to work across a variety of devices and platforms, including desktops, laptops, tablets, and smartphones. The system is responsive and able to adapt to different screen sizes, as well as comply with any relevant accessibility standards. Additionally, the system will function in a secure environment, protecting user data and preventing unauthorized access or cyber-attacks.

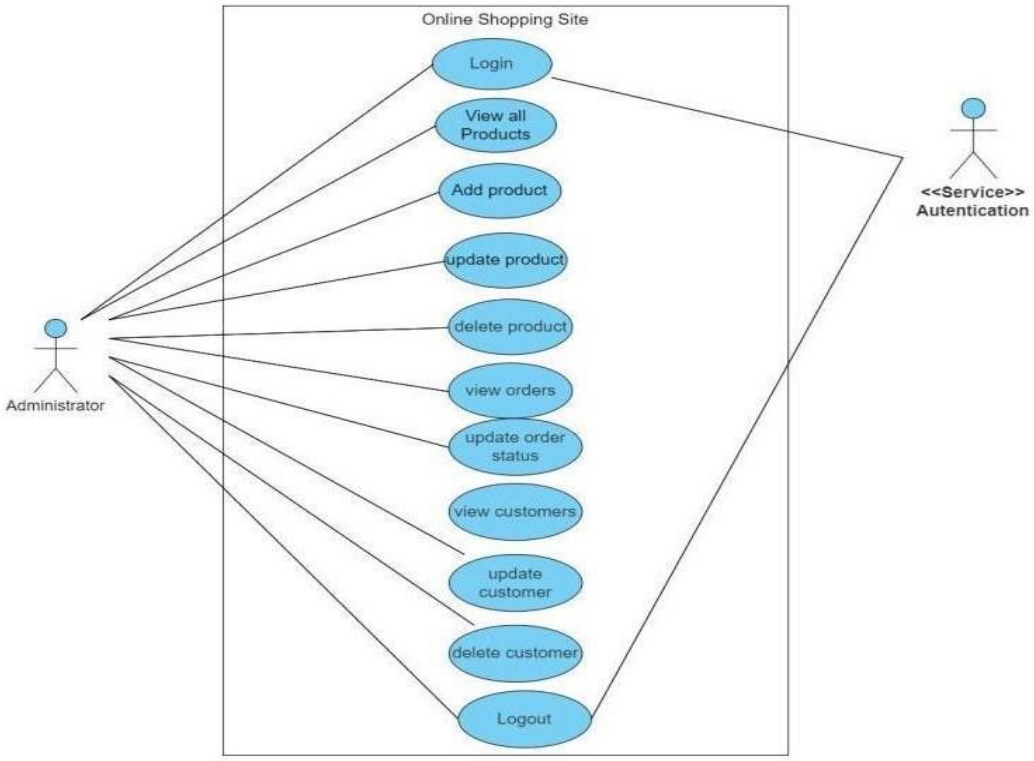
2.8.2 Release Requirements

This includes the deployment schedule, necessary documentation, version control, and any testing and quality assurance procedures. The release requirements also include any legal or regulatory compliance requirements and required user training or support to ensure a smooth transition to the new system.

Chapter 3: System Analysis

3.1 Use Case Diagram

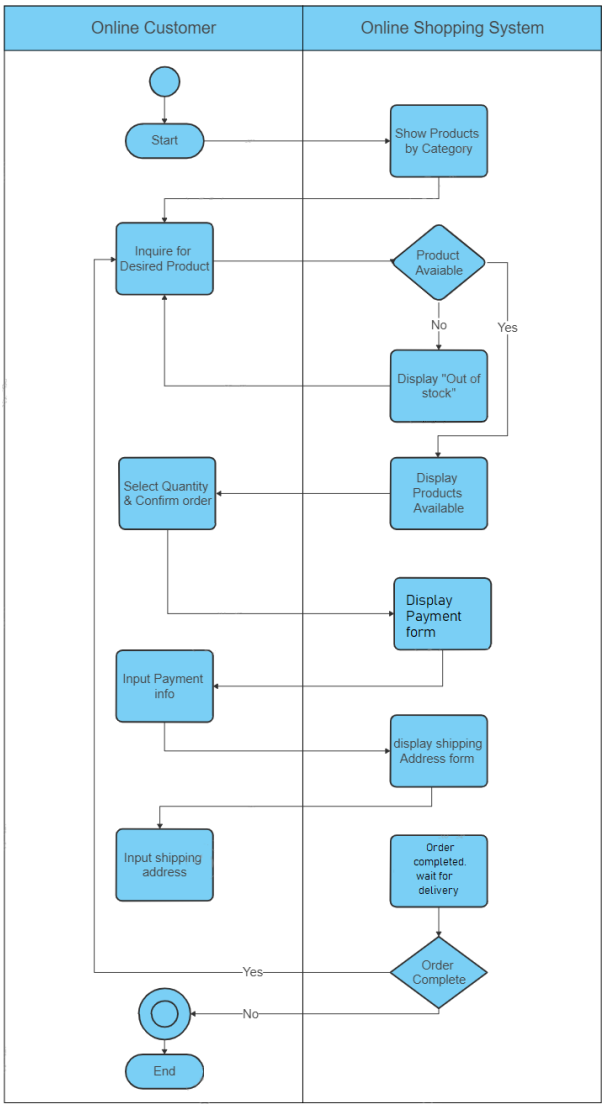




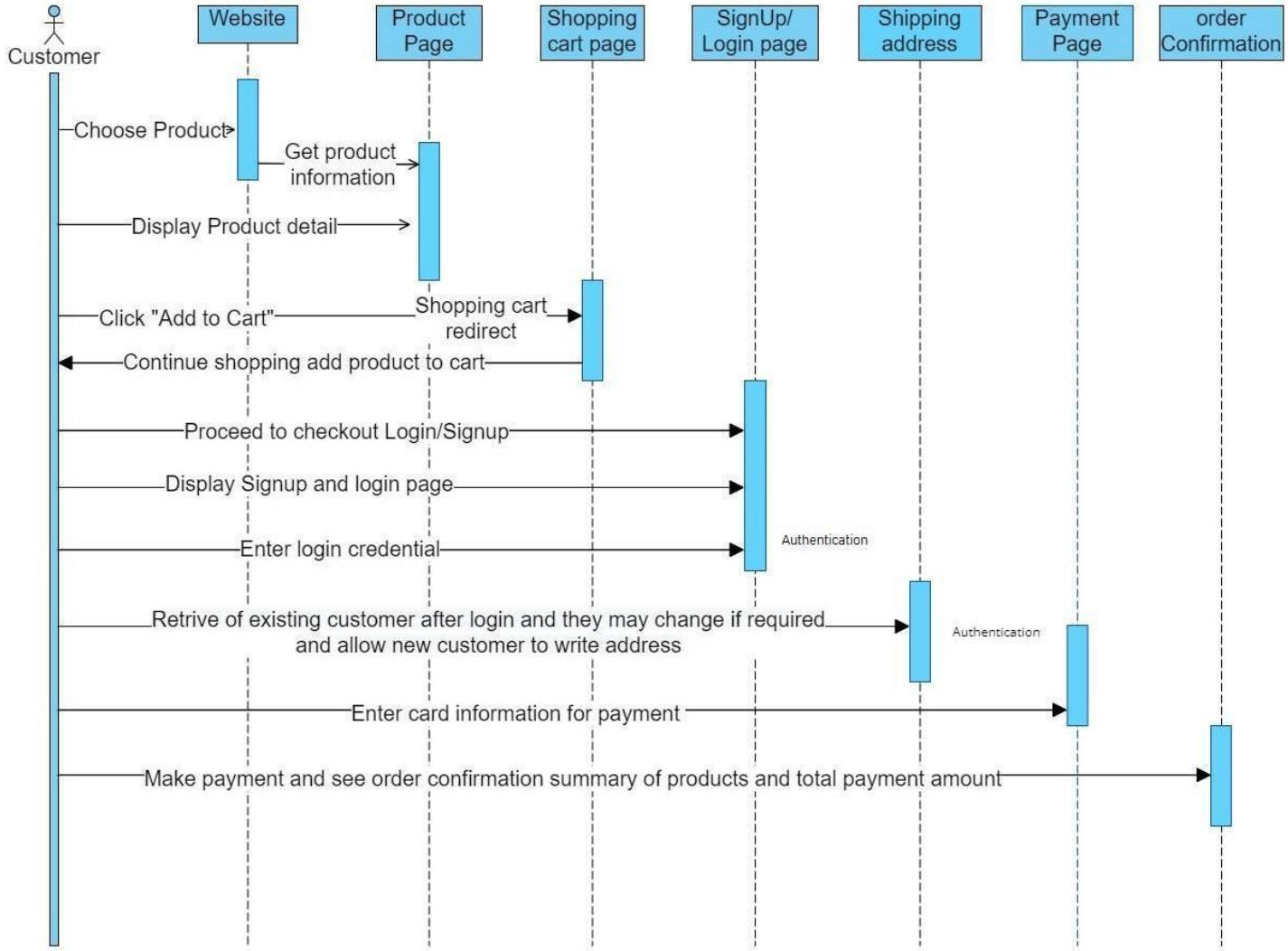
3.2 Use Case Description

There will be a web application user who will access our website through a browser. After entering the website the user will select the category of the product and then select any individual product. After adding the interested products to the cart the user will need to do registration on our website with some information. And if the user is already a customer then the user will need to log in to the system. For a new user after registration, the user will be taken to a page to proceed by selecting a payment method and including card information. After that order summary will be shown and the user will be able to see all the orders he has done from the website.

3.3 Activity Diagram

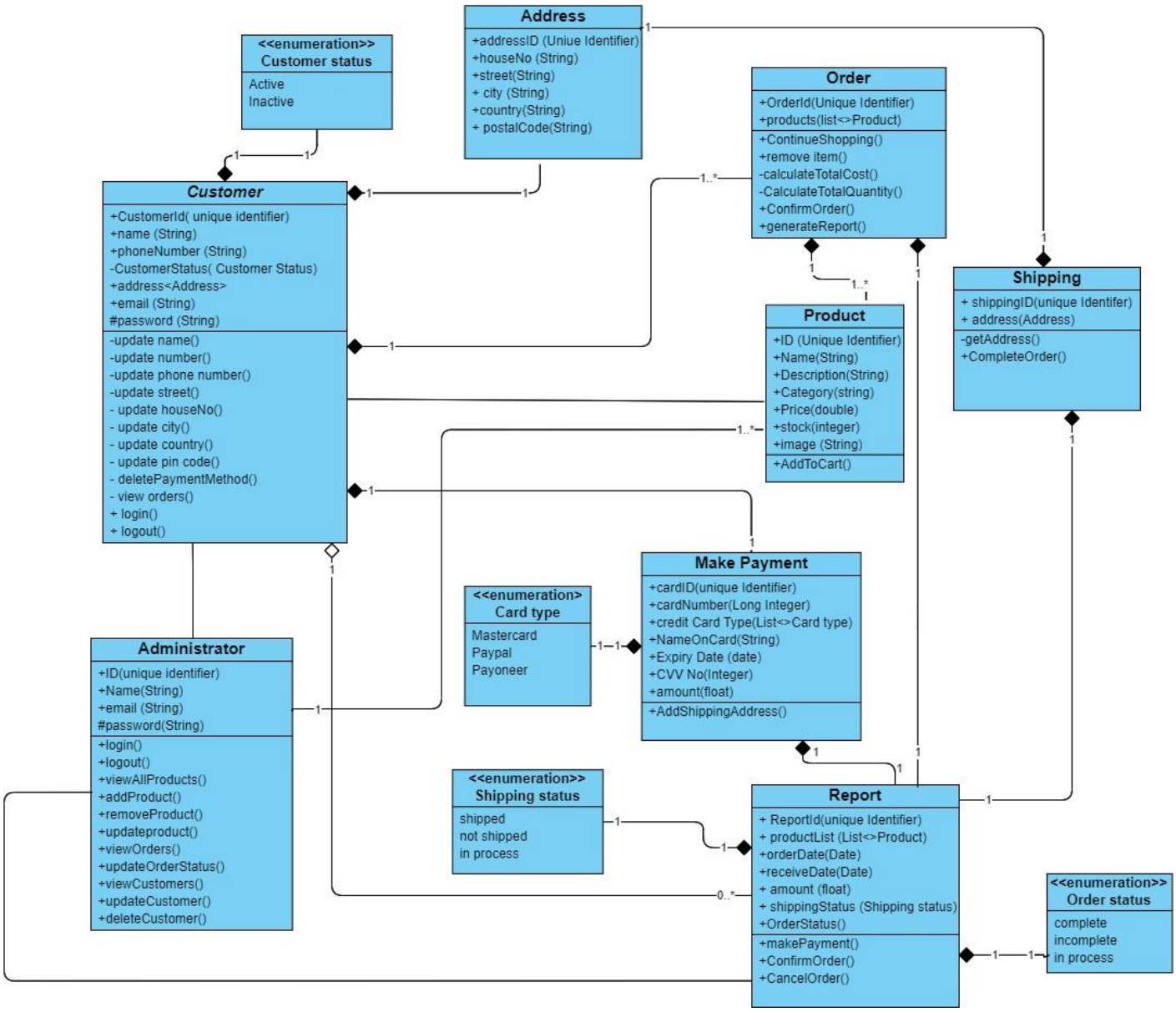


3.4 Sequence Diagram



Chapter 4: System Design Specification

4.1 Class Diagram



4.2 Database Design Diagram