Software Requirements Specification (SRS) for eCommerce Application

1. Introduction

   1.1 Purpose

   The purpose of this document is to provide a comprehensive overview of the requirements for the development of an eCommerce application. This document will serve as a guide for developers, testers, and other stakeholders involved in the project.

   1.2 Scope

   The eCommerce application is intended to facilitate online buying and selling of products and services. It will include features such as user registration, product catlog, shopping cart, order management, and user account management.

   1.3 Definitions, Acronyms, and Abbreviations

   eCommerce: Electronic Commerce

   SRS: Software Requirements Specification

   UI: User Interface

   API: Application Programming Interface

2. System Overview

   2.1 System Description

   The eCommerce application will be a web-based platform accessible through standard web browsers. It will provide a user-friendly interface for both customers and administrators.

   2.2 System Features

   The key features of the eCommerce application include:

   User Registration and Authentication

   Product CatLog Management

   Shopping Cart and Checkout

   Order Management

   User Account Management

   Search and Filter Functionality

3. Functional Requirements

3.1 User Registration and Authentication

3.1.1 Users shall be able to register for an account using a valid email address and password.

3.2 Product CatLog Management

3.2.1 The application shall display a categorized product catalog with images, descriptions, and prices.

3.2.2 Admins shall be able to add, edit, or remove products from the catalog.

3.3 Shopping Cart and Checkout

3.3.1 Users shall be able to add products to a shopping cart.

3.3.2 The application shall calculate the total cost and provide a secure checkout process.

3.4 Order Management

3.4.1 Users shall be able to view and track their order status.

3.4.2 Admins shall have access to an order management system for processing and updating orders.

3.5 User Account Management

3.5.1 Users shall be able to update their profiles and change account settings.

3.5.2 Admins shall have the ability to manage user accounts and permissions.

3.6 Search and Filter Functionality

3.6.1 The application shall provide a search bar for users to find products efficiently.

3.6.2 Users shall have the option to filter products based on various criteria.

4. Non-Functional Requirements

4.1 Performance

4.1.1 The application shall perform well without any bug .

4.2 Security

4.2.1 User data shall be stored securely using encryption techniques.

4.2.2 The application shall comply with industry-standard security practices to prevent unauthorized access.

4.3 Reliability

4.3.1 The system shall have a backup and recovery mechanism to ensure data integrity.

4.4 Usability

4.4.1 The user interface shall be intuitive and user-friendly.

5. Constraints

5.1 Technology

5.1.1 The application shall be developed using [PHP,MySQL,Html,Css,Javascript,JQuery,Bootstrap].

5.2 Legal

5.2.1 The system shall comply with all relevant data protection and privacy laws.

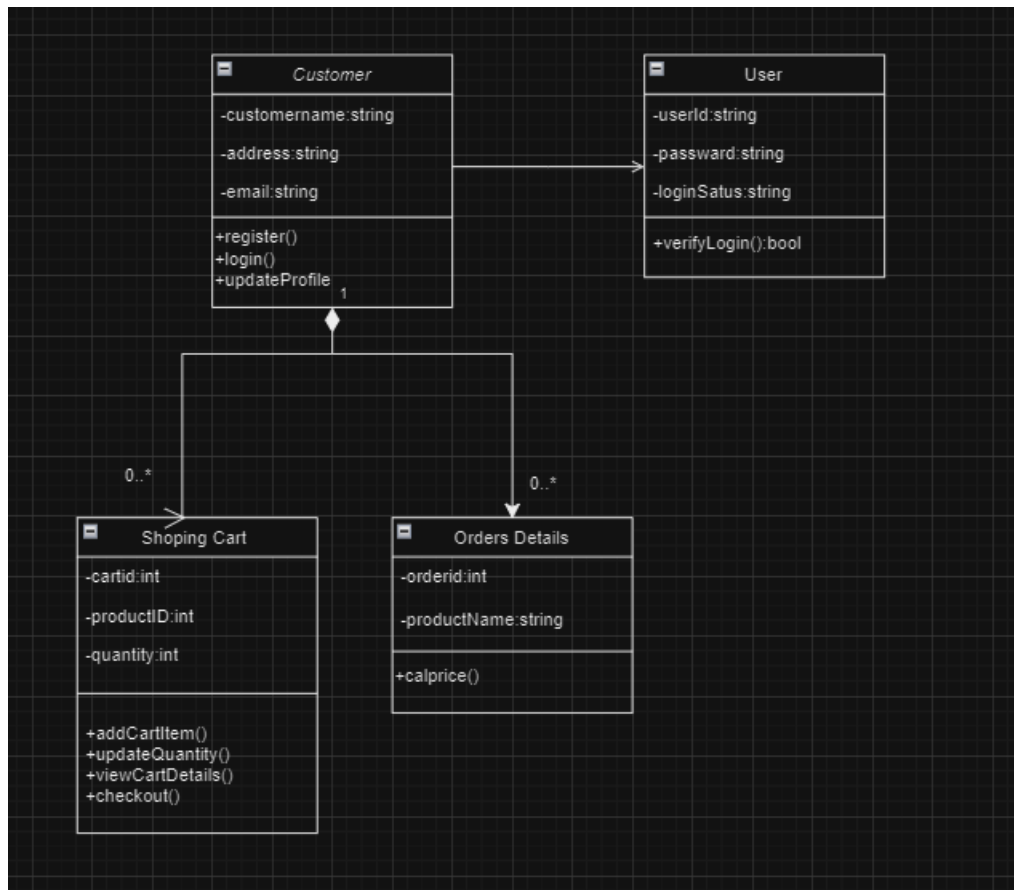## 6. Unified Modeling Language (UML) Diagrams

6.1 Use Case Diagram

6.1.1 A use case diagram shall illustrate the interactions between actors and the system, depicting major functionalities from the user's perspective.
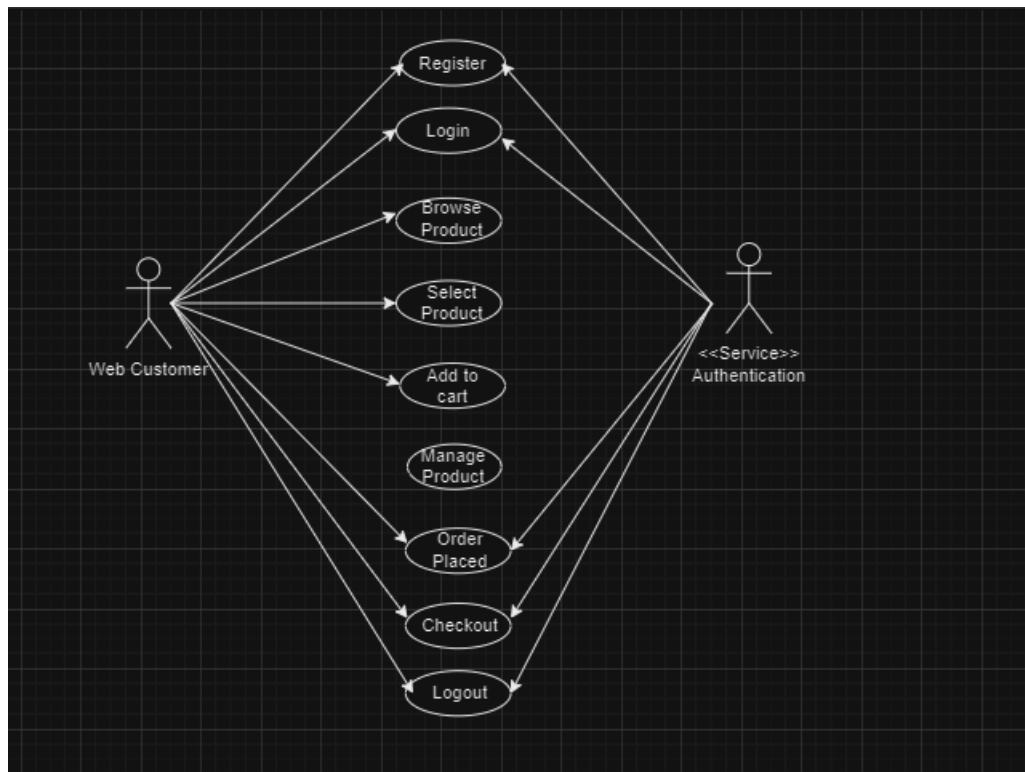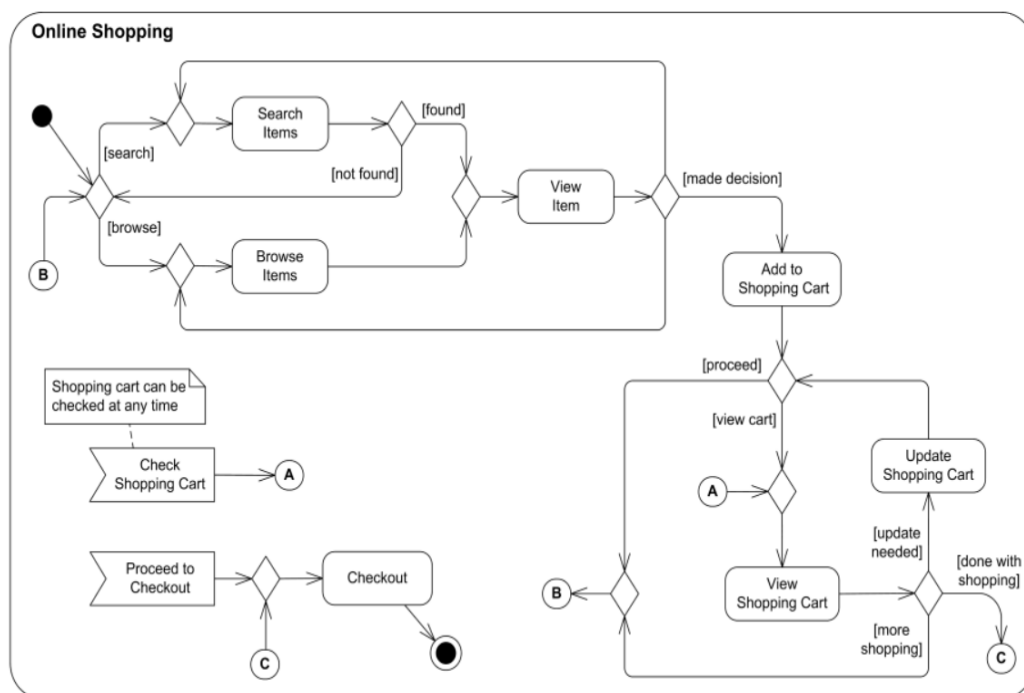
6.2 Class Diagram

6.2.1 The class diagram shall model the relationships and attributes of major system classes, such as User, Product, Order, etc.

6.3 Activity Diagram

6.3.1 An activity diagram shall outline the workflow of key processes within the application, such as the shopping cart management and order fulfillment process.

10.3 Sequence Diagrams

10.3.1 Sequence diagrams shall represent the flow of interactions between system components, focusing on specific scenarios like user registration, product purchase, and order processing.
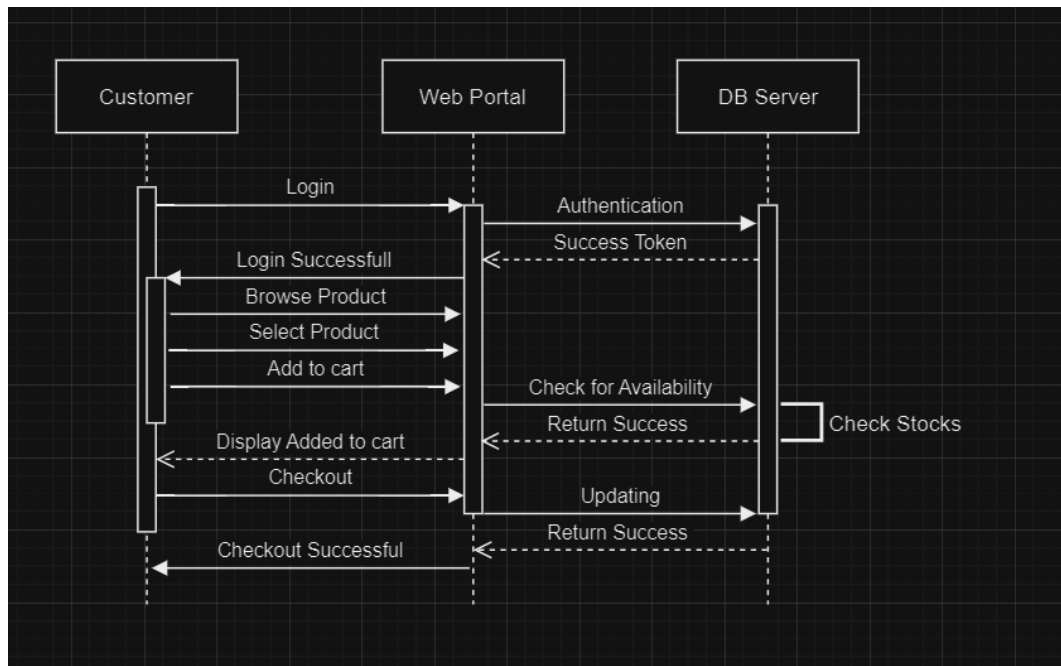
7. External Interface Specification

7.1 User Interfaces

7.1.1 The application shall have a responsive and visually appealing user interface accessible through standard web browsers.

7.1.2 Users shall interact with the system through intuitive navigation menus and forms.

7.2 Hardware Interfaces

7.2.1 The application shall be hosted on servers meeting the following specifications: [Server specifications].

7.2.2 The system shall be compatible with devices running standard web browsers.

7.3 Software Interfaces

7.3.1 Database Management System

7.4 Communication Interfaces

7.4.1 The system shall use HTTPS for secure communication between the client and server.

8. Technical Specification

8.1 Operating System

8.1.1 The server-side of the application shall be deployed on an operating system that supports the selected backend framework and database management system.

8.1.2 Recommended Operating System: Linux (e.g., Ubuntu Server, CentOS) for its stability, security, and compatibility with common web server software.

8.1.3 The client-side of the application shall be platform-independent and accessible through standard web browsers, ensuring compatibility with popular operating systems such as Windows, macOS, and Linux.

8.2 Database Design

8.2.1 The system shall use a relational database (e.g., MySQL) for storing user data, product information, and order details.

8.2.2 Database schema and relationships are outlined in the Database Design document

8.3 Programming Language

8.3.1 The application shall be primarily developed using [PHP].

8.4 Security Measures

8.4.1 Data transmission shall be encrypted using HTTPS.

8.4.2 Passwords shall be securely hashed before storage.

8.5 Performance Optimization

8.5.1 Caching mechanisms shall be implemented to enhance system performance.

8.5.2 Images and static resources shall be optimized for quick loading.