Software Requirements Specification for E-Commerce System

1. Introduction

1.1 Purpose

The purpose of this document is to outline the requirements for the development of the E-Commerce system, which will be implemented using React.

1.2 Scope

The E-Commerce system is designed to provide an online platform for users to browse, search, and purchase products. The system will include features such as user authentication, product management, shopping cart functionality, order processing, and payment integration.

1.3 Definitions, Acronyms, and Abbreviations

E-Commerce: Electronic Commerce

React: A JavaScript library for building user interfaces

2. System Description

2.1 System Overview

The E-Commerce system is a web-based application built using React. It will allow users to register, browse products, add items to their cart, and complete the purchase through an integrated payment system.

2.2 System Features

User Authentication:

Users can register and log in to the system.

Password recovery functionality.

Product Management:

Admin can add, edit, and delete products.

Each product will have a name, description, price, and image.

Shopping Cart:

Users can add products to the shopping cart.

Users can view and modify the contents of their cart.

Order Processing:

Users can place orders.

Confirmation email sent to users upon successful order placement.

Payment Integration:

Integration with a third-party payment gateway (e.g., Stripe).

Secure handling of payment information.

3. Functional Requirements

3.1 User Authentication

The system shall provide a registration form with fields for username, email, and password.

The system shall allow users to log in using their credentials.

The system shall provide a password recovery mechanism.

3.2 Product Management

Admin users shall have access to a product management interface.

The system shall allow admins to add a new product with name, description, price, and image.

Admins shall be able to edit and delete existing products.

3.3 Shopping Cart

Users shall be able to add products to their shopping cart.

The system shall display the contents of the shopping cart.

Users shall be able to update the quantity or remove items from the cart.

3.4 Order Processing

Users shall be able to place an order.

The system shall generate a confirmation email upon successful order placement.

3.5 Payment Integration

The system shall integrate with a third-party payment gateway.

Payment information shall be securely processed.

4. Non-Functional Requirements

4.1 Performance

The system shall load pages within 3 seconds.

The system shall handle concurrent user sessions without performance degradation.

4.2 Security

User passwords shall be securely hashed and stored.

Payment information shall be encrypted during transmission.

The system shall implement measures to prevent SQL injection and cross-site scripting.

5. Constraints

The system shall be compatible with modern web browsers (Chrome, Firefox, Safari).

The system shall be responsive and accessible on various devices (desktop, tablet, mobile).

6. Assumptions and Dependencies

The development team assumes access to a reliable internet connection for third-party integrations.

The system depends on the availability and functionality of the chosen payment gateway.