

Requirements Document for E-commerce Application

1. Introduction

The purpose of this document is to outline the requirements for developing an e-commerce application that allows users to login, view products, and make purchases. This application aims to provide a seamless and user-friendly shopping experience.

2. Objectives

- Allow users to register and login to the application.
- Enable users to browse and search for products.
- Facilitate the process of adding products to a shopping cart.
- Provide a secure checkout process for purchasing products.
- Ensure data security and user privacy.

3. User Requirements

3.1 User Registration and Login

- **User Registration:**
 - Users must be able to create an account by providing a username, email, and password.
 - The system should send a verification email upon registration.
- **User Login:**
 - Users must be able to log in using their registered email and password.
 - The system should support password recovery through email.

3.2 User Profile Management

- Users should be able to view and edit their profile information (name, email, password).
- Users should have the option to save multiple shipping addresses.

3.3 Product Browsing

- Users should be able to view a list of products categorized by type.

- Users should be able to search for products using keywords.
- Each product listing should display product details such as name, price, description, and images.
- Users should be able to filter products by price, category, brand, and rating.

3.4 Product Details

- Users should be able to view detailed information about a product, including:
 - Multiple product images.
 - Product specifications.
 - User reviews and ratings.

3.5 Shopping Cart

- Users should be able to add products to a shopping cart.
- Users should be able to view the contents of their shopping cart at any time.
- Users should be able to update the quantity of items in the cart.
- Users should be able to remove items from the cart.
- The shopping cart should display the total price of the items.

3.6 Checkout Process

- Users should be able to proceed to checkout from their shopping cart.
- The checkout process should include:
 - Shipping address selection or entry.
 - Payment method selection (credit card, PayPal, etc.).
 - Order summary review.
- Users should receive an order confirmation email after successful payment.

4. System Requirements

4.1 Functional Requirements

- **User Authentication:**
 - Implement secure authentication mechanisms (e.g., hashed passwords).
 - Enable session management for logged-in users.
- **Product Management:**

- Admin interface for adding, updating, and deleting products.
- Backend support for product categorization and search functionality.

- **Order Management:**

- Track orders from placement to delivery.
- Allow users to view their order history.

4.2 Non-Functional Requirements

- **Performance:**

- The system should handle high traffic and large numbers of simultaneous users.
- Ensure fast load times for product pages.

- **Security:**

- Implement SSL for secure data transmission.
- Protect against common web vulnerabilities (e.g., SQL injection, XSS).

- **Usability:**

- Ensure the user interface is intuitive and responsive.
- Provide support for mobile and desktop devices.

- **Scalability:**

- Design the system to scale horizontally to accommodate growing user base and product catalog.

- **Reliability:**

- Ensure high availability with minimal downtime.
- Implement data backups and recovery procedures.

5. Technical Requirements

5.1 Platform

- Web-based application compatible with modern browsers (Chrome, Firefox, Safari, Edge).

5.2 Development Framework

- Backend: Node.js, Express.js, or similar.
- Frontend: React.js, Angular, or similar.

- Database: MongoDB, MySQL, or PostgreSQL.

5.3 Payment Gateway Integration

- Integrate with popular payment gateways (e.g., Stripe, PayPal).

5.4 Email Service

- Integrate with an email service provider (e.g., SendGrid) for sending verification and notification emails.

6. Timeline and Milestones

- **Phase 1: Requirements Analysis and Design** (2 weeks)
- **Phase 2: User Registration and Authentication Module** (3 weeks)
- **Phase 3: Product Browsing and Search Module** (4 weeks)
- **Phase 4: Shopping Cart and Checkout Module** (4 weeks)
- **Phase 5: Testing and Bug Fixing** (3 weeks)
- **Phase 6: Deployment and Go Live** (2 weeks)

7. Conclusion

This document outlines the core requirements for developing an e-commerce application with features to allow users to register, login, view products, and make purchases. By adhering to these requirements, the development team can ensure the creation of a robust and user-friendly e-commerce platform.