项目文档

# Functional Requirement

2.1 User Account Management  
FR1.01: The system shall allow customers to create a new account using a valid email address and password.  
  
Input: Email, password, optional name.  
Output: Confirmation message or error if invalid input.  
Description: Validates email uniqueness and enforces password strength.  
FR1.02: The system shall allow users to log in using their registered email and password.  
  
Input: Email, password.  
Output: Redirect to user dashboard or error if credentials are incorrect.  
FR1.03: The system shall allow users to log out securely.  
  
Input: None.  
Output: Session termination and redirect to home page.  
FR1.04: The system shall store encrypted user passwords and session tokens.  
  
2.2 Product Management  
FR2.01: The system shall display products by category.  
  
Input: Category filter.  
Output: List of products in selected category.  
FR2.02: The system shall allow customers to add products to their cart.  
  
Input: Product ID and quantity.  
Output: Updated cart total and item count.  
FR2.03: The system shall allow administrators to add, edit, or remove products.  
  
Input: Product details (name, price, description, image, category).  
Output: Updated product list.  
FR2.04: The system shall allow administrators to update inventory levels.  
  
Input: Product ID and new stock quantity.  
Output: Updated inventory status.  
2.3 Checkout and Payment  
FR3.01: The system shall allow customers to proceed to checkout after selecting items.  
  
Input: Cart contents, billing/shipping information.  
Output: Order summary and payment screen.  
FR3.02: The system shall process payments through a secure payment gateway.  
  
Input: Payment method (e.g., credit card, PayPal).  
Output: Transaction result (success/failure).  
FR3.03: The system shall send an order confirmation email to the customer.  
  
Input: Order details.  
Output: Email sent to customer's registered email address.  
2.4 Admin Dashboard  
FR4.01: The system shall provide an admin dashboard with access to inventory, sales reports, and user activity logs.  
  
Input: Admin login.  
Output: Access to administrative tools.  
FR4.02: The system shall allow administrators to manage user accounts (e.g., disable or delete).  
  
Input: User ID and action (disable/delete).  
Output: Updated user status.  
2.5 Plugin System  
FR5.01: The system shall provide an API for plugin development.  
  
Input: Developer-defined plugins following API specifications.  
Output: Plugin functionality integrated into the system.  
FR5.02: The system shall provide documentation and examples for developers to build and test plugins.  
  
Input: None.  
Output: Access to plugin SDK and API reference.

# External Description

3.1 Hardware Interfaces  
None required.  
3.2 Software Interfaces  
Web Browser Compatibility:  
Supported browsers: Chrome, Firefox, Safari, Edge (latest versions).  
Payment Gateway Integration:  
Secure API connections to third-party payment processors (e.g., Stripe, PayPal).  
Email Service Provider:  
SMTP integration for sending order confirmation emails (e.g., SendGrid, Mailgun).  
3.3 Communication Interfaces  
RESTful APIs for internal service communication.  
HTTPS protocol for all external communications.  
3.4 Memory Constraints  
Minimum 2GB RAM recommended for smooth operation under normal load.