项目文档

# Functional Requirement

2. Functional Requirements  
2.1 User Account Management  
Requirement ID Description  
FR-001 Users can create an account by providing a valid email address, password, and personal information.  
FR-002 Users can securely log in using their registered email and password.  
FR-003 Users can log out of their session at any time.  
FR-004 The system stores user account details, including contact information, payment preferences, and purchase history.  
Inputs:  
Email, password, first name, last name, phone number, billing/shipping address  
Outputs:  
Confirmation messages, error messages, updated account data  
2.2 Product Catalog and Inventory Management  
Requirement ID Description  
FR-005 Products are displayed with title, price, description, category, image, and availability status.  
FR-006 Administrators can add, edit, or remove products from the inventory.  
FR-007 Products are categorized into predefined categories.  
FR-008 Inventory levels are tracked and automatically updated when items are added/removed from the cart or ordered.  
Inputs:  
Product name, price, description, image, category, quantity  
Outputs:  
Updated product listings, inventory reports, error messages  
2.3 Shopping Cart Functionality  
Requirement ID Description  
FR-009 Users can add items to their shopping cart.  
FR-010 Users can view the contents of their cart, including item quantity, price, and total cost.  
FR-011 Users can modify quantities or remove items from the cart.  
FR-012 Cart contents are saved between sessions for authenticated users.  
Inputs:  
Product ID, quantity, modification commands  
Outputs:  
Updated cart display, error messages, confirmation messages  
2.4 Order Processing and Checkout  
Requirement ID Description  
FR-013 Users can proceed to checkout after adding items to the cart.  
FR-014 Users must select a shipping address and payment method before completing the order.  
FR-015 The system generates a unique order ID and confirms the order via email.  
FR-016 After payment is processed, the system updates inventory and records the transaction.  
Inputs:  
Shipping address, payment method, payment confirmation  
Outputs:  
Order confirmation, receipt, email notification  
2.5 Plugin Extensibility  
Requirement ID Description  
FR-017 The system provides an API for developers to extend its functionality through plugins.  
FR-018 Plugin documentation and specifications are provided for third-party development.  
FR-019 Plugins can be installed, configured, and managed by administrators.  
Inputs:  
Plugin files, configuration settings  
Outputs:  
Extended features, logs, error messages

# External Description

3. External Interfaces  
3.1 User Interface (UI)  
Web-based interface compatible with modern browsers (Chrome, Firefox, Safari, Edge).  
Responsive design for desktop and mobile devices.  
Intuitive layout with clear navigation and visual feedback.  
3.2 Payment Gateway Integration  
Integration with external payment gateways (e.g., Stripe, PayPal).  
Secure transmission of payment data using HTTPS.  
3.3 Email Service  
Integration with an email service provider (e.g., SendGrid) for sending order confirmations and notifications.  
3.4 Database System  
Relational database (e.g., MySQL, PostgreSQL) for storing user data, product information, orders, and inventory.  
3.5 Plugin API  
RESTful API for plugin developers to interact with core system functions.  
Authentication and authorization required for API access.