# Functional Requirement

1. Functional Requirements   
 1.1 Customer Account Creation Function   
 Function ID: FR-01   
 Description: Customers can register and create an account with the system by providing personal information such as name, email, and password.   
 Input: Customer's name, email, password, and address.   
 Output: A new customer account with associated information stored in the database.   
  
 1.2 Customer Login Function   
 Function ID: FR-02   
 Description: Registered customers can log in to their account using their email and password.   
 Input: Email and password provided by the customer.   
 Output: A successful login session with the system, and the login event recorded in the activity log.   
  
 1.3 Customer Logout Function   
 Function ID: FR-03   
 Description: Customers can log out of their account to end their session.   
 Input: Customer selects the "Logout" option from the user interface.   
 Output: The session is terminated, and the logout event is recorded in the activity log.   
  
 1.4 Product Catalog Display Function   
 Function ID: FR-04   
 Description: The system displays a categorized and searchable product catalog for customers to browse available products.   
 Input: Customer navigates to the product catalog section.   
 Output: A dynamically updated list of products with their names, descriptions, prices, and availability.   
  
 1.5 Product Addition to Cart Function   
 Function ID: FR-05   
 Description: Customers can add selected products to their shopping cart with a specified quantity.   
 Input: Product ID, quantity, and the customer's cart.   
 Output: Updated shopping cart with the newly added product and quantity.   
  
 1.6 Cart Quantity Update Function   
 Function ID: FR-06   
 Description: Customers can modify the quantity of products in their shopping cart.   
 Input: Cart item ID and new quantity.   
 Output: Updated cart with adjusted quantity and recalculated total cost.   
  
 1.7 Cart Total Cost Calculation Function   
 Function ID: FR-07   
 Description: The system calculates and displays the total cost of all items in the shopping cart.   
 Input: Product prices and quantities in the customer's cart.   
 Output: Total cost displayed on the cart page for the customer to review.   
  
 1.8 Order Confirmation Function   
 Function ID: FR-08   
 Description: Customers can confirm their orders after reviewing the cart contents and selected payment method.   
 Input: Cart contents, payment method, and customer confirmation.   
 Output: A confirmed order stored in the system, and inventory updated to reflect the reduction in stock.   
  
 1.9 Order Confirmation Email Function   
 Function ID: FR-09   
 Description: After an order is confirmed, the system sends an email confirmation to the customer.   
 Input: Customer's email address, order details, and confirmation number.   
 Output: An email notification with order details sent to the customer's email address.   
  
 1.10 Inventory Management Function   
 Function ID: FR-10   
 Description: Administrators can manage the inventory by adding, updating, or removing products.   
 Input: Product details such as name, description, price, and quantity.   
 Output: Updated inventory with the latest product information stored in the database.   
  
 1.11 Product Categorization Function   
 Function ID: FR-11   
 Description: Administrators can assign products to specific categories to improve navigation and organization.   
 Input: Product ID and category ID or name.   
 Output: Updated product database with the correct category assignment.   
  
 1.12 Product Details Update Function   
 Function ID: FR-12   
 Description: Administrators can update product information such as price, description, or stock quantity.   
 Input: Product ID and updated information (e.g., new price, updated description).   
 Output: Updated product details stored in the database.   
  
 1.13 Administrator Login Function   
 Function ID: FR-13   
 Description: Administrators can log in to the system using their email and password to access the control panel.   
 Input: Email and password provided by the administrator.   
 Output: A successful admin login session, and the login event recorded in the activity log.   
  
 1.14 Administrator Logout Function   
 Function ID: FR-14   
 Description: Administrators can log out of their account to end their session securely.   
 Input: Administrator selects the "Logout" option from the admin interface.   
 Output: The admin session is terminated, and the logout event is recorded in the activity log.   
  
 1.15 Purchase History Display Function   
 Function ID: FR-15   
 Description: Customers can view their purchase history, including previous orders and details.   
 Input: Customer ID and filter criteria (e.g., date range, product).   
 Output: A list of past orders with details such as product names, quantities, and total cost.   
  
 1.16 Payment Information Management Function   
 Function ID: FR-16   
 Description: Customers can manage their payment information by adding, editing, or deleting payment methods.   
 Input: Payment details (e.g., card number, expiration date, billing address) and action (add/edit/delete).   
 Output: Updated customer account with stored payment information, and validation results displayed.   
  
 1.17 Plugin Installation Function   
 Function ID: FR-17   
 Description: Administrators can install plugins from the system’s plugin repository to extend system functionality.   
 Input: Plugin ID and confirmation to install.   
 Output: Plugin installed and activated, and the system updated to reflect the new functionality.   
  
 1.18 Plugin API Documentation Access Function   
 Function ID: FR-18   
 Description: Administrators can access the API documentation for installed plugins to understand their integration and usage.   
 Input: Plugin ID and search/filter criteria.   
 Output: Displayed API documentation with endpoints, methods, and usage examples.   
  
 1.19 Transaction Processing Function   
 Function ID: FR-19   
 Description: The system processes transactions during checkout, including payment execution and inventory updates.   
 Input: Cart contents, selected payment method, and customer confirmation.   
 Output: A processed transaction with quantity and cost recorded, and inventory updated accordingly.   
  
 1.20 Email Notification Sending Function   
 Function ID: FR-20   
 Description: The system can send email notifications to customers for events such as order confirmations or password resets.   
 Input: Recipient email address, message content, and subject.   
 Output: Email notification sent to the customer, and the event recorded in the system logs.   
  
 1.21 User Activity Log Display Function   
 Function ID: FR-21   
 Description: Administrators can view and filter user activity logs to track user actions such as login, logout, and cart updates.   
 Input: Filter criteria such as user ID, action type, or date range.   
 Output: A structured log of user activities displayed for review by the administrator.