# Functional Requirement

# 1. Functional Requirements  
  
## 1.1 Customer Registration Function   
\*\*Function ID\*\*: FR-01   
\*\*Description\*\*: Customers can create new accounts by providing their personal information, including name, email, and password. The system validates the email and password, stores the account information, and sends a confirmation email.   
\*\*Input\*\*: Full name, email address, password   
\*\*Output\*\*: Registered customer account, confirmation email sent to customer, success message displayed to customer   
  
## 1.2 Customer Login Function   
\*\*Function ID\*\*: FR-02   
\*\*Description\*\*: Registered customers can log in using their email and password. The system validates the credentials, checks account status, and initiates a session.   
\*\*Input\*\*: Email address, password   
\*\*Output\*\*: Active customer session, redirect to dashboard or homepage, success message displayed to customer   
  
## 1.3 Customer Logout Function   
\*\*Function ID\*\*: FR-03   
\*\*Description\*\*: Customers can log out of their account. The system terminates the session and redirects the customer to the homepage or login page.   
\*\*Input\*\*: Logout request from customer   
\*\*Output\*\*: Terminated customer session, redirect to homepage or login page, success message displayed to customer   
  
## 1.4 Create Product Function   
\*\*Function ID\*\*: FR-04   
\*\*Description\*\*: Administrators can create new products by entering product details such as name, description, price, category, and inventory quantity. The system validates the input and stores the product information.   
\*\*Input\*\*: Product name, description, price, category, inventory quantity, product images   
\*\*Output\*\*: New product record in the database, unique product ID assigned, product displayed in inventory   
  
## 1.5 Manage Inventory Function   
\*\*Function ID\*\*: FR-05   
\*\*Description\*\*: Administrators can update the inventory quantity of existing products. The system ensures the quantity is non-negative and updates the inventory record accordingly.   
\*\*Input\*\*: Product ID, updated inventory quantity   
\*\*Output\*\*: Updated inventory record in the database, inventory status reflected in product listing   
  
## 1.6 View Product Details Function   
\*\*Function ID\*\*: FR-06   
\*\*Description\*\*: Customers can view detailed information about a product, including name, description, price, category, and inventory status.   
\*\*Input\*\*: Product ID or name   
\*\*Output\*\*: Product details displayed to customer, including price, description, and availability   
  
## 1.7 Add to Cart Function   
\*\*Function ID\*\*: FR-07   
\*\*Description\*\*: Customers can add products to their shopping cart by selecting a product and specifying the quantity. The system checks inventory and updates the cart.   
\*\*Input\*\*: Product ID, quantity   
\*\*Output\*\*: Updated shopping cart with added product, updated total cost, confirmation message displayed to customer   
  
## 1.8 Modify Cart Item Function   
\*\*Function ID\*\*: FR-08   
\*\*Description\*\*: Customers can modify the quantity of an item in their cart or remove it. The system recalculates the total cost after modification.   
\*\*Input\*\*: Cart item ID, new quantity or remove request   
\*\*Output\*\*: Updated cart contents, recalculated total cost, confirmation message displayed to customer   
  
## 1.9 Checkout Order Function   
\*\*Function ID\*\*: FR-09   
\*\*Description\*\*: Customers can proceed to checkout, enter shipping details, select a payment method, and complete the transaction. The system processes the payment, updates the inventory, and clears the cart.   
\*\*Input\*\*: Cart contents, shipping address, shipping method, payment method, payment details   
\*\*Output\*\*: Confirmed order in database, updated inventory, cleared cart, order confirmation email sent, success message displayed to customer   
  
## 1.10 Confirm Order Function   
\*\*Function ID\*\*: FR-10   
\*\*Description\*\*: The system confirms the order after successful payment and updates the order status. It also reduces inventory and sends a confirmation email to the customer.   
\*\*Input\*\*: Payment confirmation, order details   
\*\*Output\*\*: Confirmed order status in database, updated inventory, order confirmation email sent to customer, administrator notified of new order   
  
## 1.11 Send Order Confirmation Email Function   
\*\*Function ID\*\*: FR-11   
\*\*Description\*\*: The system generates and sends an email to the customer confirming the order. The email includes order details and delivery information.   
\*\*Input\*\*: Customer email address, order details   
\*\*Output\*\*: Order confirmation email sent to customer, updated order status to "Email Sent", administrator notified of email sent   
  
## 1.12 View Purchase History Function   
\*\*Function ID\*\*: FR-12   
\*\*Description\*\*: Customers can view their past orders in the purchase history section. The system displays order details, including date, total cost, and items.   
\*\*Input\*\*: Customer login status, request to view purchase history   
\*\*Output\*\*: List of past orders displayed to customer, including order details and status   
  
## 1.13 Update Personal Information Function   
\*\*Function ID\*\*: FR-13   
\*\*Description\*\*: Customers can update their personal information, such as address, phone number, and date of birth. The system validates the input and updates the stored information.   
\*\*Input\*\*: Updated personal information (e.g., address, phone number)   
\*\*Output\*\*: Updated customer record in the database, success message displayed to customer   
  
## 1.14 Admin Login Function   
\*\*Function ID\*\*: FR-14   
\*\*Description\*\*: Administrators can log in to the system using their email and password. The system validates the credentials, checks account status, and initiates a session.   
\*\*Input\*\*: Email address, password   
\*\*Output\*\*: Active admin session, redirect to admin dashboard, success message displayed to administrator   
  
## 1.15 Manage Categories Function   
\*\*Function ID\*\*: FR-15   
\*\*Description\*\*: Administrators can create, update, or delete product categories. The system validates the input and updates the category list accordingly.   
\*\*Input\*\*: Category name, description, action (create, update, delete)   
\*\*Output\*\*: Updated category list in the database, changes reflected in product listings and navigation   
  
## 1.16 Update Product Details Function   
\*\*Function ID\*\*: FR-16   
\*\*Description\*\*: Administrators can update product details such as name, description, price, and category. The system validates the input and reflects the changes in the database.   
\*\*Input\*\*: Product ID, updated product details (e.g., name, description, price, category, images)   
\*\*Output\*\*: Updated product record in the database, changes reflected in product listing   
  
## 1.17 Install Plugin Function   
\*\*Function ID\*\*: FR-17   
\*\*Description\*\*: Administrators can install new plugins to extend the system's functionality. The system checks plugin compatibility and installs it if valid.   
\*\*Input\*\*: Plugin name or identifier, installation request   
\*\*Output\*\*: Installed plugin in the system, updated plugin list, success message displayed to administrator   
  
## 1.18 Access Plugin API Documentation Function   
\*\*Function ID\*\*: FR-18   
\*\*Description\*\*: Administrators can access the documentation for the Plugin API. The system retrieves and displays the documentation in a user-friendly format.   
\*\*Input\*\*: Plugin name or identifier, request to view documentation   
\*\*Output\*\*: Plugin API documentation displayed to administrator, including endpoints and usage examples   
  
## 1.19 Manage User Accounts Function   
\*\*Function ID\*\*: FR-19   
\*\*Description\*\*: Administrators can view, update, or delete user accounts. The system validates the input and updates the account status or removes the account if valid.   
\*\*Input\*\*: User account ID or email, action (view, update, delete), updated user details   
\*\*Output\*\*: Updated or deleted user account in the database, confirmation message displayed to administrator, affected user notified via email if needed   
  
## 1.20 Manage Payment Method Function   
\*\*Function ID\*\*: FR-20   
\*\*Description\*\*: Customers can view, add, update, or delete their saved payment methods. The system validates the input and updates the payment method records accordingly.   
\*\*Input\*\*: Payment method details (e.g., card number, expiration date), action (add, update, delete)   
\*\*Output\*\*: Updated payment method records in the database, confirmation message displayed to customer, updated payment method list shown   
  
## 1.21 Calculate Total Cost Function   
\*\*Function ID\*\*: FR-21   
\*\*Description\*\*: The system calculates the total cost of items in the shopping cart based on item prices and quantities. It also applies any configured discounts or taxes.   
\*\*Input\*\*: Cart item IDs and quantities   
\*\*Output\*\*: Total cost displayed to customer, including discounts and taxes if applicable