# Functional Requirement

# 1. Functional Requirements  
  
## 1.1 Product Management Function   
\*\*Function ID\*\*: FR-01   
\*\*Description\*\*: Administrators can add, modify, delete, or view products in the system.   
\*\*Input\*\*: Product details such as name, description, price, stock quantity, category, and image URL.   
\*\*Output\*\*: Updated product list or confirmation message for success or failure.  
  
## 1.2 Add Product Function   
\*\*Function ID\*\*: FR-02   
\*\*Description\*\*: Enables the administrator to add a new product to the system, including validation and saving to the database.   
\*\*Input\*\*: Product details including name, description, price, stock quantity, and category.   
\*\*Output\*\*: New product added to the database, with confirmation message and updated product list.  
  
## 1.3 Modify Product Information Function   
\*\*Function ID\*\*: FR-03   
\*\*Description\*\*: Allows the administrator to modify existing product details in the system.   
\*\*Input\*\*: Updated product information such as name, description, price, stock quantity, and category.   
\*\*Output\*\*: Modified product information saved in the database, with confirmation message and updated product list.  
  
## 1.4 Delete Product Function   
\*\*Function ID\*\*: FR-04   
\*\*Description\*\*: Enables the administrator to delete a product from the system after confirmation.   
\*\*Input\*\*: Product ID or product name selected for deletion.   
\*\*Output\*\*: Product removed from the database, with confirmation message and updated product list.  
  
## 1.5 View Product Details Function   
\*\*Function ID\*\*: FR-05   
\*\*Description\*\*: Displays detailed information of a specific product to the customer or administrator.   
\*\*Input\*\*: Product ID or product name selected for viewing.   
\*\*Output\*\*: Display of product details such as name, description, price, stock quantity, and associated images.  
  
## 1.6 Customer Registration Function   
\*\*Function ID\*\*: FR-06   
\*\*Description\*\*: Enables new customers to register in the system and receive a confirmation email.   
\*\*Input\*\*: Customer information including first name, last name, email, password, and contact number.   
\*\*Output\*\*: Registered customer account in the database, confirmation email sent, and success message displayed.  
  
## 1.7 Customer Login Function   
\*\*Function ID\*\*: FR-07   
\*\*Description\*\*: Allows a registered customer to log in using their verified email and password.   
\*\*Input\*\*: Customer's registered email and password.   
\*\*Output\*\*: Successful login and display of the account dashboard; or error message if login fails.  
  
## 1.8 View Product Catalog Function   
\*\*Function ID\*\*: FR-08   
\*\*Description\*\*: Displays the product catalog to customers and administrators, with options for filtering and searching.   
\*\*Input\*\*: Filter criteria such as category, price range, and keywords.   
\*\*Output\*\*: Displayed product catalog with relevant items based on the input criteria.  
  
## 1.9 Place Order Function   
\*\*Function ID\*\*: FR-09   
\*\*Description\*\*: Enables the customer to place an order after selecting products and completing the payment.   
\*\*Input\*\*: Selected product IDs and quantities, customer's chosen payment method, and validated customer session.   
\*\*Output\*\*: A new order created in the database, inventory updated, and a confirmation email sent to the customer.  
  
## 1.10 View Order History Function   
\*\*Function ID\*\*: FR-10   
\*\*Description\*\*: Displays a list of past orders for the customer or administrator, including detailed order information.   
\*\*Input\*\*: User's login session.   
\*\*Output\*\*: Displayed order history with order IDs, dates, total amounts, and statuses; optional detailed view of selected orders.  
  
## 1.11 Order Confirmation Function   
\*\*Function ID\*\*: FR-11   
\*\*Description\*\*: Sends a confirmation email to the customer after a successful order is placed.   
\*\*Input\*\*: Order details including product list, total amount, and estimated delivery time.   
\*\*Output\*\*: Confirmation email sent to the customer and order status updated to "confirmed".  
  
## 1.12 Payment Processing Function   
\*\*Function ID\*\*: FR-12   
\*\*Description\*\*: Handles the customer's payment transaction using the selected payment method.   
\*\*Input\*\*: Customer's payment details such as card number, expiration date, and CVV.   
\*\*Output\*\*: Updated order status (e.g., "paid") and confirmation message to the customer.  
  
## 1.13 Payment Verification Function   
\*\*Function ID\*\*: FR-13   
\*\*Description\*\*: Verifies the validity and success of a payment transaction through the associated payment plugin.   
\*\*Input\*\*: Transaction details from the payment plugin or gateway.   
\*\*Output\*\*: Updated order and payment statuses (e.g., "verified" or "unverified") and notification to the customer and administrator.  
  
## 1.14 Email Notification Configuration Function   
\*\*Function ID\*\*: FR-14   
\*\*Description\*\*: Allows the administrator to configure email notification settings, such as enabled/disabled status and recipient lists.   
\*\*Input\*\*: Email notification settings including notification types and recipient details.   
\*\*Output\*\*: Updated email notification configuration in the database and confirmation message.  
  
## 1.15 Send Order Confirmation Email Function   
\*\*Function ID\*\*: FR-15   
\*\*Description\*\*: Automatically sends a confirmation email to the customer after an order is successfully placed.   
\*\*Input\*\*: Valid order ID and customer email address.   
\*\*Output\*\*: Confirmation email sent to the customer and email sending status logged in the system.  
  
## 1.16 Plugin Installation Function   
\*\*Function ID\*\*: FR-16   
\*\*Description\*\*: Enables the administrator to install new plugins to extend system functionality.   
\*\*Input\*\*: Plugin file or plugin metadata (name, version, description).   
\*\*Output\*\*: Plugin installed and added to the plugin list in the database.  
  
## 1.17 Plugin Activation Function   
\*\*Function ID\*\*: FR-17   
\*\*Description\*\*: Activates a plugin after it has been installed, ensuring it is functional within the system.   
\*\*Input\*\*: Plugin ID and administrator confirmation for activation.   
\*\*Output\*\*: Plugin status updated to "active" in the database and displayed in the plugin list.  
  
## 1.18 Plugin Deactivation Function   
\*\*Function ID\*\*: FR-18   
\*\*Description\*\*: Deactivates a plugin without uninstalling it, making it no longer functional.   
\*\*Input\*\*: Plugin ID and administrator confirmation for deactivation.   
\*\*Output\*\*: Plugin status updated to "inactive" in the database and displayed in the plugin list.  
  
## 1.19 Plugin Uninstallation Function   
\*\*Function ID\*\*: FR-19   
\*\*Description\*\*: Removes a plugin from the system after deactivation and cleans up related configurations.   
\*\*Input\*\*: Plugin ID and administrator confirmation for uninstallation.   
\*\*Output\*\*: Plugin removed from the system and configuration data deleted from the database.  
  
## 1.20 Administrator Login Function   
\*\*Function ID\*\*: FR-20   
\*\*Description\*\*: Authenticates the administrator by validating their login credentials and role.   
\*\*Input\*\*: Administrator's username (email) and password.   
\*\*Output\*\*: Administrator redirected to the admin dashboard or shown an error message if login fails.  
  
## 1.21 Administrator Dashboard Access Function   
\*\*Function ID\*\*: FR-21   
\*\*Description\*\*: Provides the administrator with access to the dashboard containing system metrics and plugin statuses.   
\*\*Input\*\*: Administrator login session.   
\*\*Output\*\*: Displayed dashboard with system status, plugin statuses, and access to various management functions.  
  
## 1.22 Manage Customers Function   
\*\*Function ID\*\*: FR-22   
\*\*Description\*\*: Enables the administrator to add, modify, or delete customer records in the system.   
\*\*Input\*\*: Customer details such as name, email, contact number, and account status.   
\*\*Output\*\*: Updated customer list in the system with success or failure notification.  
  
## 1.23 Manage Orders Function   
\*\*Function ID\*\*: FR-23   
\*\*Description\*\*: Allows the administrator to add, modify, or delete orders, and update inventory and payment status accordingly.   
\*\*Input\*\*: Order details such as customer, product list, quantities, and payment method.   
\*\*Output\*\*: Updated order list in the system, inventory and payment status adjusted, and success or failure notification.  
  
## 1.24 Manage Payments Function   
\*\*Function ID\*\*: FR-24   
\*\*Description\*\*: Enables the administrator to manage payment records, including adding, modifying, or deleting payments.   
\*\*Input\*\*: Payment details such as order ID, amount, method, and transaction ID.   
\*\*Output\*\*: Updated payment list and corresponding order status, with success or failure notification.  
  
## 1.25 Manage Product Category Function   
\*\*Function ID\*\*: FR-25   
\*\*Description\*\*: Allows the administrator to add, modify, or delete product categories and reassign products if needed.   
\*\*Input\*\*: Category details such as name, description, and parent category.   
\*\*Output\*\*: Updated product category list in the database and success or failure notification.  
  
## 1.26 Manage Email Template Function   
\*\*Function ID\*\*: FR-26   
\*\*Description\*\*: Enables the administrator to create, modify, or delete email templates used for notifications.   
\*\*Input\*\*: Email template details such as name, subject, content, and placeholders for dynamic data.   
\*\*Output\*\*: Updated email template list in the database and success or failure notification.  
  
## 1.27 Manage Payment Method Function   
\*\*Function ID\*\*: FR-27   
\*\*Description\*\*: Allows the administrator to add, modify, or delete supported payment methods and their configurations.   
\*\*Input\*\*: Payment method configuration such as method name, description, and plugin-specific parameters.   
\*\*Output\*\*: Updated payment method list and configuration saved in the database, with success or failure notification.  
  
## 1.28 Manage Administrators Function   
\*\*Function ID\*\*: FR-28   
\*\*Description\*\*: Enables the administrator to add, modify, or delete other administrator accounts and update access control.   
\*\*Input\*\*: Administrator details such as first name, last name, email, password, and role.   
\*\*Output\*\*: Updated administrator list in the database, with success or failure notification.