# Functional Requirement

# 1. Functional Requirements  
  
## 1.1 Customer Registration Function   
Function ID: FR-01   
Description: Customers can register a new account by providing their name, email, and password. The system validates the email and password and sends a confirmation email.   
Input: Name, email, password, and optional contact details.   
Output: A successfully registered customer account and a confirmation email sent to the customer.  
  
## 1.2 Customer Login Function   
Function ID: FR-02   
Description: Customers can log in using their registered email and password. The system validates the credentials and logs the login activity.   
Input: Email and password.   
Output: A successful login session and the customer's dashboard or homepage.  
  
## 1.3 Customer Logout Function   
Function ID: FR-03   
Description: Customers can end their current session by logging out. The system clears session data and redirects the customer to the login or homepage.   
Input: Logout request from the customer.   
Output: Session cleared and the customer redirected to the login or homepage.  
  
## 1.4 View Product Information Function   
Function ID: FR-04   
Description: Customers can view detailed information about a product, including name, description, price, and availability. The system logs the request.   
Input: Product ID or search criteria.   
Output: Displayed product details and a logged request.  
  
## 1.5 Search Products Function   
Function ID: FR-05   
Description: Customers can search for products using keywords, categories, or other relevant criteria. The system retrieves matching products and logs the search activity.   
Input: Search query (e.g., name, category, keyword).   
Output: A list of matching products and a logged search activity.  
  
## 1.6 Add Product to Cart Function   
Function ID: FR-06   
Description: Customers can add a product to their cart, specifying the quantity. The system checks stock availability and logs the addition.   
Input: Product ID, quantity, and customer ID.   
Output: Updated cart with the added product and a confirmation message.  
  
## 1.7 Create Order Function   
Function ID: FR-07   
Description: Customers can create an order from their cart. The system validates the order, processes the payment, and logs the order creation.   
Input: Cart contents, shipping address, and selected payment method.   
Output: A new order record, updated product inventory, and an order confirmation email sent to the customer.  
  
## 1.8 Checkout Function   
Function ID: FR-08   
Description: Customers can complete the checkout process by confirming the order and payment. The system processes the payment and creates the order.   
Input: Cart contents, shipping address, and payment information.   
Output: A completed order, updated inventory, and an order confirmation email.  
  
## 1.9 Receive Order Confirmation Email Function   
Function ID: FR-09   
Description: The system sends an order confirmation email to the customer after a successful checkout.   
Input: Order details, including customer name, order ID, and total amount.   
Output: A confirmation email sent to the customer and a logged email activity.  
  
## 1.10 Update Order Status Function   
Function ID: FR-10   
Description: Administrators can update the status of an existing order. The system logs the update and may send a notification to the customer.   
Input: Order ID and new status (e.g., Processing, Shipped, Delivered, Cancelled).   
Output: Updated order status and a logged activity with optional email notification.  
  
## 1.11 View Order History Function   
Function ID: FR-11   
Description: Customers can view their past orders, including order details and status. The system retrieves and displays the order history and logs the access.   
Input: Customer ID.   
Output: A list of past orders with details and a logged access activity.  
  
## 1.12 Delete Order Function   
Function ID: FR-12   
Description: Customers can delete an order if it is in a cancellable status. The system verifies the status, deletes the order, and updates inventory if necessary.   
Input: Order ID and confirmation of deletion.   
Output: Deleted order record, updated inventory, and an optional confirmation email sent to the customer.  
  
## 1.13 Manage Product Inventory Function   
Function ID: FR-13   
Description: Administrators can manage product inventory, including adding, updating, or deleting products. The system logs the changes and updates the product database.   
Input: Product details (e.g., name, price, stock, description) and action (add, update, delete).   
Output: Updated product inventory and a logged activity.  
  
## 1.14 Add New Product Function   
Function ID: FR-14   
Description: Administrators can add new products to the system by providing product details. The system validates the data and updates the product database.   
Input: Product name, description, price, stock, and category.   
Output: A new product record and a confirmation message to the administrator.  
  
## 1.15 Update Product Details Function   
Function ID: FR-15   
Description: Administrators can update product details such as name, price, stock, or category. The system validates the data and updates the product record.   
Input: Product ID and updated product details.   
Output: Updated product record and a confirmation message to the administrator.  
  
## 1.16 Delete Product Function   
Function ID: FR-16   
Description: Administrators can delete a product if it is not part of any active or pending orders. The system verifies the deletion eligibility and logs the action.   
Input: Product ID and confirmation of deletion.   
Output: Deleted product record and a confirmation message to the administrator.  
  
## 1.17 Administrator Registration Function   
Function ID: FR-17   
Description: Administrators can register a new account by providing name, email, password, and role. The system validates the data and sends a confirmation email.   
Input: Name, email, password, and role.   
Output: A new administrator record and a confirmation email sent to the administrator.  
  
## 1.18 Administrator Login Function   
Function ID: FR-18   
Description: Administrators can log in using their registered email and password. The system validates the credentials and logs the login activity.   
Input: Email and password.   
Output: A successful login session and the administrator's dashboard or homepage.  
  
## 1.19 Manage Customer Accounts Function   
Function ID: FR-19   
Description: Administrators can view, update, or delete customer accounts. The system logs all actions and may send notifications to customers.   
Input: Customer ID and action (view, update, delete).   
Output: Updated or deleted customer record and a logged activity with optional email notification.  
  
## 1.20 Manage Orders Function   
Function ID: FR-20   
Description: Administrators can view, update, or delete orders. The system logs the changes and may send notifications to customers.   
Input: Order ID and action (view, update, delete).   
Output: Updated or deleted order record and a logged activity with optional email notification.  
  
## 1.21 View Payment Information Function   
Function ID: FR-21   
Description: Customers can view their payment history, including method, amount, and transaction date. The system retrieves and displays the information and logs the access.   
Input: Customer ID.   
Output: A list of payment records and a logged access activity.  
  
## 1.22 Manage Cart Function   
Function ID: FR-22   
Description: Customers can manage their shopping cart by adding, updating, or removing items. The system logs the cart modifications and updates the total.   
Input: Product ID, quantity, and action (add, update, remove).   
Output: Updated cart contents and a confirmation message.  
  
## 1.23 Manage Order Status Function   
Function ID: FR-23   
Description: Administrators can update the status of an order. The system logs the status change and may send a notification to the customer.   
Input: Order ID and new status.   
Output: Updated order status and a logged activity with optional email notification.  
  
## 1.24 Manage Payment Method Function   
Function ID: FR-24   
Description: Administrators can manage available payment methods, including adding, updating, or deleting a method. The system validates and logs the changes.   
Input: Payment method details (e.g., method name, description, configuration) and action (add, update, delete).   
Output: Updated payment method configuration and a confirmation message.  
  
## 1.25 Manage Email Settings Function   
Function ID: FR-25   
Description: Administrators can manage the email configuration, including server settings and templates. The system validates the input and logs the changes.   
Input: Email server settings (e.g., host, port, username, password) and action (update, edit, enable/disable).   
Output: Updated email configuration and a confirmation message.  
  
## 1.26 Add Plugin Function   
Function ID: FR-26   
Description: Administrators can add new plugins to the system. The system validates the plugin and logs the addition.   
Input: Plugin details (e.g., name, version, description) and plugin file or API configuration.   
Output: A new plugin record and a confirmation message to the administrator.  
  
## 1.27 Update Plugin Function   
Function ID: FR-27   
Description: Administrators can update plugin configurations. The system validates the changes and logs the update.   
Input: Plugin ID and updated configuration details.   
Output: Updated plugin configuration and a confirmation message.  
  
## 1.28 Delete Plugin Function   
Function ID: FR-28   
Description: Administrators can delete a plugin if it is not in use. The system verifies the deletion eligibility and logs the action.   
Input: Plugin ID and confirmation of deletion.   
Output: Deleted plugin record and a confirmation message.  
  
## 1.29 View Plugin Documentation Function   
Function ID: FR-29   
Description: Administrators can view documentation for a specific plugin. The system retrieves the documentation and logs the access.   
Input: Plugin ID.   
Output: Displayed plugin documentation and a logged access activity.  
  
## 1.30 Access API Specifications Function   
Function ID: FR-30   
Description: Administrators can view API specifications for plugins or system components. The system retrieves the documentation and logs the access.   
Input: API ID.   
Output: Displayed API documentation and a logged access activity.  
  
## 1.31 View Order Status Function   
Function ID: FR-31   
Description: Customers can view the current status of their orders. The system retrieves the status and logs the request.   
Input: Order ID.   
Output: Displayed order status and a logged access activity.