# Functional Requirement

# 1. Functional Requirements  
  
## 1.1 Customer Management Function   
Function ID: FR-01   
Description: Administrators can create, manage, view, and delete customer records. This includes editing customer information and checking for existing records.   
Input: Customer details (name, email, address, phone number), customer ID for management operations, confirmation inputs for deletion.   
Output: Updated or newly created customer records in the database, confirmation messages, error messages for invalid operations.  
  
## 1.2 Product Management Function   
Function ID: FR-02   
Description: Administrators can add, update, and delete product records. The system ensures product details are valid and checks for existing products.   
Input: Product details (name, description, price, stock, category), product ID for update and deletion, confirmation inputs for deletion.   
Output: Updated or newly added product records in the database, confirmation messages, error messages for invalid operations.  
  
## 1.3 Product Catalog Display Function   
Function ID: FR-03   
Description: The system displays a list of available products to users, with the ability to search and filter using built-in or plugin-based functionality.   
Input: User search or filter criteria, product data from the database.   
Output: Displayed product catalog with filtered or full product list, error messages for invalid input, warning for plugin unavailability.  
  
## 1.4 Order Placement Function   
Function ID: FR-04   
Description: Customers can place orders by submitting products in their cart, selecting a payment method, and confirming the order. The system validates cart data and processes payments.   
Input: Customer-selected products, payment method, confirmation to place order.   
Output: A new order record in the database, updated product stock, a new payment record, a notification to the customer, and a confirmation message.  
  
## 1.5 Order Management Function   
Function ID: FR-05   
Description: Administrators or customers can modify existing orders, including product quantities or shipping details. The system recalculates totals and updates payment and notification status as needed.   
Input: Selected order, modified order details (product quantities, shipping address), confirmation for modifications.   
Output: Updated order record in the database, updated payment status, a notification to the customer, and a confirmation message.  
  
## 1.6 Order Cancellation Function   
Function ID: FR-06   
Description: Customers or administrators can cancel an order if it is in a cancellable state. The system updates the order status and initiates a refund if a payment has been made.   
Input: Selected order, confirmation for cancellation.   
Output: Updated order status (canceled), refund or voided payment if applicable, a notification to the customer, and a confirmation message.  
  
## 1.7 Payment Processing Function   
Function ID: FR-07   
Description: The system processes payments for orders using available payment methods. It validates the payment method, calculates fees, and updates the order and payment status accordingly.   
Input: Selected order, selected payment method, plugin-based validation and calculation data.   
Output: Updated payment status in the database, updated order status, a notification to the customer, and a confirmation message.  
  
## 1.8 Payment Status View Function   
Function ID: FR-08   
Description: Customers or administrators can view the status of a payment associated with an order. The system retrieves and displays the current payment status.   
Input: Selected order or payment, user authentication status.   
Output: Displayed payment status (e.g., pending, completed, failed), a notification if the status has changed, and error messages for technical failures.  
  
## 1.9 Payment Record Deletion Function   
Function ID: FR-09   
Description: Administrators can delete a payment record from the system. The system checks for dependencies and confirms the deletion.   
Input: Selected payment record, confirmation for deletion.   
Output: Deleted payment record from the database, confirmation message, and error messages for invalid deletions.  
  
## 1.10 Order Detail Management Function   
Function ID: FR-10   
Description: Administrators or customers can add, edit, or remove order details (itemized product information) for an order. The system recalculates totals if needed and sends notifications for changes.   
Input: Selected order, modified or new order detail information (product ID, quantity, unit price), confirmation for modifications.   
Output: Updated order detail records in the database, updated order total, a notification to the customer if needed, and a confirmation message.  
  
## 1.11 Plugin Management Function   
Function ID: FR-11   
Description: Administrators can install, update, and uninstall plugins. The system validates plugin compatibility and manages configurations.   
Input: Plugin file or identifier, confirmation for uninstallation or update.   
Output: Installed, updated, or uninstalled plugin in the system, a notification to the administrator, and a confirmation message.  
  
## 1.12 Notification Management Function   
Function ID: FR-12   
Description: Administrators can send, view, and delete notifications. The system ensures notifications are delivered to the correct recipients and logs the activity.   
Input: Notification content, recipient information, notification ID for viewing or deletion, confirmation for deletion.   
Output: Sent or deleted notification, displayed notification list, a log of notification attempts, and a confirmation message.  
  
## 1.13 Administrator Management Function   
Function ID: FR-13   
Description: Administrators can manage other administrator accounts, including editing roles and permissions or removing accounts. The system ensures at least one administrator remains active.   
Input: Selected administrator, modified administrator details (role, username), confirmation for removal.   
Output: Updated or deleted administrator records, confirmation messages, and error messages for invalid operations.  
  
## 1.14 Administrator Log Viewing Function   
Function ID: FR-14   
Description: Administrators can view logs of previous administrative actions. The system retrieves and displays logs in a structured format with filtering options.   
Input: Log filter or search criteria, request to view logs.   
Output: Displayed administrator log entries, error messages for invalid input, and a prompt if no logs are selected.  
  
## 1.15 Order History Viewing Function   
Function ID: FR-15   
Description: Customers or administrators can view the history of orders placed by a customer. The system retrieves and displays the order details without making any changes.   
Input: Selected customer or order, request to view order history.   
Output: Displayed order history with details, error messages if the order is not found, and a prompt if no order is selected.