# Functional Requirement

1.1 Product Creation Function   
Function ID: FR-01   
Description: Administrators can create new products in the system by providing necessary details such as name, description, price, and inventory level.   
Input: Product details including Name, Description, Price, Inventory, and Status.   
Output: A new Product entry in the database with the provided details.  
  
1.2 Product Update Function   
Function ID: FR-02   
Description: Administrators can modify the details of an existing product, such as name, description, price, or inventory level.   
Input: ProductID and updated details including Name, Description, Price, Inventory, and Status.   
Output: Updated Product entry in the database with the modified details.  
  
1.3 Product Deletion Function   
Function ID: FR-03   
Description: Administrators can delete a product from the system. Deletion is only allowed if the product is not associated with any active order or payment.   
Input: ProductID.   
Output: The selected Product is removed from the database.  
  
1.4 Product View Function   
Function ID: FR-04   
Description: Users (Administrators and Customers) can view the details of a specific product, such as name, description, price, and inventory level.   
Input: ProductID.   
Output: Displayed Product information in a non-editable format.  
  
1.5 Inventory Management Function   
Function ID: FR-05   
Description: Administrators can adjust the inventory level of a product by adding or subtracting the quantity.   
Input: ProductID and quantity change (positive or negative).   
Output: Updated inventory level of the selected Product in the database.  
  
1.6 Product Search Function   
Function ID: FR-06   
Description: Users (Administrators and Customers) can search for products based on criteria such as name, category, or price range.   
Input: Search criteria including Name, Category, or Price Range.   
Output: A list of Products matching the search criteria.  
  
1.7 Customer Registration Function   
Function ID: FR-07   
Description: Administrators can create new customer accounts by providing personal information such as name, email, password, address, and phone number.   
Input: Customer details including Name, Email, Password, Address, and PhoneNumber.   
Output: A new Customer entry in the database with the provided details.  
  
1.8 Customer Information Update Function   
Function ID: FR-08   
Description: Administrators can update the information of an existing customer, such as name, email, address, or phone number.   
Input: CustomerID and updated details including Name, Email, Address, and PhoneNumber.   
Output: Updated Customer entry in the database with the modified details.  
  
1.9 Customer Account Deletion Function   
Function ID: FR-09   
Description: Administrators can delete a customer account from the system. Deletion is only allowed if the customer is not associated with any active order or payment.   
Input: CustomerID.   
Output: The selected Customer account is removed from the database.  
  
1.10 Customer Profile View Function   
Function ID: FR-10   
Description: Users (Administrators and Customers) can view the profile information of a specific customer, such as name, email, address, and phone number.   
Input: CustomerID.   
Output: Displayed Customer profile in a non-editable format.  
  
1.11 Order Placement Function   
Function ID: FR-11   
Description: Customers can place an order for selected products after confirming the order details and completing the payment process.   
Input: CustomerID, ProductID list, and quantity for each product.   
Output: A new Order entry in the database with associated OrderItems and updated inventory levels.  
  
1.12 Order Cancellation Function   
Function ID: FR-12   
Description: Customers or Administrators can cancel an order if it is in an eligible state (e.g., not yet shipped or processed).   
Input: OrderID.   
Output: The selected Order is updated to "Canceled" in the database, and inventory levels are adjusted accordingly.  
  
1.13 Order Details View Function   
Function ID: FR-13   
Description: Users (Administrators and Customers) can view the details of a specific order, including products, quantities, total price, and order status.   
Input: OrderID.   
Output: Displayed Order details in a non-editable format.  
  
1.14 Order Status Tracking Function   
Function ID: FR-14   
Description: Users (Administrators and Customers) can track the current status of an order, including shipping and payment status.   
Input: OrderID.   
Output: Displayed Order status and related tracking information in a non-editable format.  
  
1.15 Payment Processing Function   
Function ID: FR-15   
Description: The system processes a payment for a selected order through a configured Plugin.   
Input: OrderID and Payment details including PaymentMethod and Amount.   
Output: A new Payment entry in the database and an updated Order status to "Paid".  
  
1.16 Payment Confirmation Function   
Function ID: FR-16   
Description: The system confirms a payment after receiving a confirmation from a third-party payment gateway via the Plugin.   
Input: PaymentID and confirmation data from the Plugin.   
Output: Updated Payment status to "Confirmed" in the database and Order status to "Paid".  
  
1.17 Order Confirmation Email Sending Function   
Function ID: FR-17   
Description: The system sends an order confirmation email to the customer using the configured Email template and Plugin.   
Input: OrderID and Customer email address.   
Output: Email sent to the customer with order details, and the Order status updated to "Confirmation Email Sent".  
  
1.18 Email Template Management Function   
Function ID: FR-18   
Description: Administrators can create, update, or delete email templates used for system notifications (e.g., order confirmation).   
Input: EmailTemplate details including TemplateName, Subject, and Content.   
Output: Updated EmailTemplate entry in the database or deletion of the selected template.  
  
1.19 Administrator Registration Function   
Function ID: FR-19   
Description: Administrators can register a new administrator account with the system by providing personal and role-based information.   
Input: Administrator details including Name, Email, Password, and Role.   
Output: A new Admin entry in the database with the provided details.  
  
1.20 Administrator Information Update Function   
Function ID: FR-20   
Description: Administrators can update their own or other administrator accounts with new information such as name, email, or role.   
Input: AdminID and updated details including Name, Email, and Role.   
Output: Updated Admin entry in the database with the modified details.  
  
1.21 Administrator Account Deletion Function   
Function ID: FR-21   
Description: Administrators can delete an administrator account from the system if it is not associated with any active orders or payments.   
Input: AdminID.   
Output: The selected Admin account is removed from the database.  
  
1.22 Plugin Management Function   
Function ID: FR-22   
Description: Administrators can install, update, or uninstall plugins to extend system functionality.   
Input: Plugin details including Name, Version, Description, and Source (for installation).   
Output: Updated Plugin entry in the database or removal of the selected plugin.  
  
1.23 Plugin Configuration Function   
Function ID: FR-23   
Description: Administrators can configure settings for an installed plugin, such as API keys or endpoints.   
Input: PluginID and configuration details including API keys and endpoints.   
Output: Updated Plugin configuration in the database and the Plugin is reloaded to apply changes.  
  
1.24 Plugin Information View Function   
Function ID: FR-24   
Description: Administrators can view the details of an installed plugin, such as name, version, and status.   
Input: PluginID.   
Output: Displayed Plugin information in a non-editable format.  
  
1.25 Order Item Management Function   
Function ID: FR-25   
Description: Users (Administrators and Customers) can manage order items by adding, updating, or removing them from an order.   
Input: OrderID and OrderItem details including ProductID, Quantity, and Subtotal.   
Output: Updated OrderItem entry in the database and adjusted inventory levels for affected products.  
  
1.26 Email Management Function   
Function ID: FR-26   
Description: Administrators can update or delete email records associated with customer communications or system notifications.   
Input: EmailID and updated details including Email content or recipient information.   
Output: Updated or deleted Email entry in the database.