# Functional Requirement

# 1. Functional Requirements  
  
## 1.1 Customer Registration Function   
Function ID: FR-01   
Description: Allow new customers to create an account by providing their personal information. The system must validate input data and send a confirmation email.   
Input: Name, Email, Password, Address, PhoneNumber   
Output: New Customer entity, Confirmation email, Login page redirect or confirmation page   
  
## 1.2 Customer Login Function   
Function ID: FR-02   
Description: Allow registered customers to log in using their email and password. The system must verify credentials and initiate a session.   
Input: Email, Password   
Output: Active session, Dashboard or intended page redirect, Login event log   
  
## 1.3 Customer Logout Function   
Function ID: FR-03   
Description: Allow customers to terminate their active session securely. The system must log the logout event.   
Input: Logout request   
Output: Session termination, Home page or login page redirect, Logout event log   
  
## 1.4 View Product Details Function   
Function ID: FR-04   
Description: Allow customers to view detailed information about a product, including name, description, price, availability, and images.   
Input: Product ID   
Output: Product details display, View event log, API-related data if configured   
  
## 1.5 Search Products Function   
Function ID: FR-05   
Description: Allow customers to search for products using keywords, categories, or other attributes. The system must return relevant results.   
Input: Search query (e.g., product name, keyword, category)   
Output: List of matching Product entities, Search event log, Plugin-enhanced results if configured   
  
## 1.6 Add Product to Cart Function   
Function ID: FR-06   
Description: Allow customers to add a product to their shopping cart. The system must update the cart and log the action.   
Input: Product ID, Quantity   
Output: Updated ShoppingCart entity, Cart display update, Add event log, Plugin trigger if configured   
  
## 1.7 Remove Product from Cart Function   
Function ID: FR-07   
Description: Allow customers to remove a product from their cart. The system must update the cart and log the action.   
Input: Product ID or CartItem ID   
Output: Updated ShoppingCart entity, Cart display update, Remove event log, Plugin trigger if configured   
  
## 1.8 Place Order Function   
Function ID: FR-08   
Description: Allow customers to complete the checkout process by selecting a payment method and confirming the order. The system must create an Order entity, process payment, and send a confirmation email.   
Input: Cart items, Payment method selection, Shipping address, Customer information   
Output: New Order entity, Updated Product inventory, Confirmation email, Order event log   
  
## 1.9 View Order History Function   
Function ID: FR-09   
Description: Allow customers to view a list of their previous orders with summary details. The system must retrieve Order entities and log the access.   
Input: Customer ID   
Output: List of Order entities, Order history access log, Order details if selected   
  
## 1.10 Cancel Order Function   
Function ID: FR-10   
Description: Allow customers to cancel eligible orders. The system must update the Order status and initiate a refund if necessary.   
Input: Order ID   
Output: Updated Order status to "Cancelled", Refund initiated if paid, Cancellation event log   
  
## 1.11 Update Order Information Function   
Function ID: FR-11   
Description: Allow customers to modify eligible order details such as product quantity or shipping address. The system must validate changes and update the Order entity.   
Input: Order ID, Updated information (e.g., quantity, address)   
Output: Updated Order entity, Order update event log, Plugin trigger if configured   
  
## 1.12 View Order Confirmation Email Function   
Function ID: FR-12   
Description: Allow customers to view the content of their order confirmation email. The system must retrieve and display the email content.   
Input: Order ID or Email ID   
Output: Email content display, Email view event log, Order details if linked   
  
## 1.13 Administrator Login Function   
Function ID: FR-13   
Description: Allow administrators to log in with their credentials. The system must verify the username and password and create an admin session.   
Input: Username, Password   
Output: Active admin session, Admin dashboard redirect, Login event log   
  
## 1.14 Administrator Logout Function   
Function ID: FR-14   
Description: Allow administrators to securely log out of the system. The system must terminate the admin session and log the event.   
Input: Logout request   
Output: Session termination, Admin login page or main site redirect, Logout event log   
  
## 1.15 Add Product Function   
Function ID: FR-15   
Description: Allow administrators to add new products to the system. The system must validate input data and store the new Product entity.   
Input: Product name, Description, Price, Category, Image, Stock quantity   
Output: New Product entity, Updated product list, Product addition event log   
  
## 1.16 Update Product Information Function   
Function ID: FR-16   
Description: Allow administrators to modify existing product details. The system must validate the input and update the Product entity in the database.   
Input: Product ID, Updated product details (e.g., name, price, description)   
Output: Updated Product entity, Updated product list, Product update event log   
  
## 1.17 Delete Product Function   
Function ID: FR-17   
Description: Allow administrators to delete an existing product. The system must confirm the deletion and update the inventory accordingly.   
Input: Product ID   
Output: Deleted Product entity, Updated inventory, Product deletion event log   
  
## 1.18 View Product Inventory Function   
Function ID: FR-18   
Description: Allow administrators to view the current inventory levels of all products. The system must retrieve and display the inventory data.   
Input: Inventory filter/sort criteria (e.g., category, status)   
Output: Product inventory list, Inventory view event log, Plugin sync if configured   
  
## 1.19 View Order Details Function   
Function ID: FR-19   
Description: Allow customers and administrators to view detailed information about a specific order. The system must retrieve the Order entity and associated data.   
Input: Order ID   
Output: Order details display, Order view event log, Plugin-related data if available   
  
## 1.20 Plugin Registration Function   
Function ID: FR-20   
Description: Allow administrators to register new plugins. The system must validate the plugin and store the Plugin entity.   
Input: Plugin name, Version, Description, Author, Plugin file or API endpoint   
Output: New Plugin entity, Updated plugin list, Plugin registration event log   
  
## 1.21 Plugin Configuration Function   
Function ID: FR-21   
Description: Allow administrators to configure plugin settings. The system must update the PluginConfiguration entity and log the action.   
Input: Plugin ID, Configuration name, Configuration value   
Output: Updated PluginConfiguration entity, Plugin update if applicable, Configuration event log   
  
## 1.22 Plugin Deletion Function   
Function ID: FR-22   
Description: Allow administrators to delete an existing plugin. The system must confirm the deletion and log the event.   
Input: Plugin ID   
Output: Deleted Plugin entity, Updated plugin list, Plugin deletion event log   
  
## 1.23 Manage Payment Methods Function   
Function ID: FR-23   
Description: Allow customers to view, add, update, or delete their saved payment methods. The system must manage the Payment entity and synchronize with payment gateways if configured.   
Input: Customer ID, Payment method details (e.g., card info, gateway settings)   
Output: Updated Payment entity, Payment method list, Payment method event log   
  
## 1.24 View Payment Details Function   
Function ID: FR-24   
Description: Allow customers to view detailed information about their payment transactions. The system must retrieve and display the Payment entity.   
Input: Payment ID or Order ID   
Output: Payment details display, Payment view event log, Plugin-related data if available   
  
## 1.25 View Order Status Function   
Function ID: FR-25   
Description: Allow customers to view the current status of their orders. The system must retrieve the OrderStatus entity and display it along with any related tracking information.   
Input: Order ID   
Output: Order status display, Status event log, Plugin-related data if available   
  
## 1.26 Access API Documentation Function   
Function ID: FR-26   
Description: Allow administrators and developers to access the API documentation for plugins. The system must retrieve and display the documentation from the Documentation module.   
Input: Plugin ID or Documentation ID   
Output: API documentation display, Access event log, Plugin-related data if configured   
  
## 1.27 Update Plugin Documentation Function   
Function ID: FR-27   
Description: Allow administrators or developers to update the API documentation for a plugin. The system must validate the updated content and store it in the Documentation module.   
Input: Plugin ID, Updated documentation content   
Output: Updated Documentation entity, Documentation update event log, Plugin update if required   
  
## 1.28 Manage Payment Method Function   
Function ID: FR-28   
Description: Allow administrators to add, update, or delete payment methods available in the system. The system must manage the PaymentMethod entity and synchronize with payment gateways if configured.   
Input: Payment method ID or configuration details   
Output: Updated PaymentMethod entity, Payment method list, Plugin sync if configured, Event log