# Functional Requirement

1. Functional Requirements  
  
1.1 Customer Account Creation Function   
Function ID: FR-01   
Description: The system allows a customer to create a new user account by providing personal information such as name, email, password, and contact details. The system must validate the email format and password strength, send a confirmation email, and activate the account after confirmation.   
Input: Name, Email, Password, Address, PhoneNumber   
Output: New UserAccount with status "Pending" or "Active", Confirmation Email sent to the provided email address   
  
1.2 User Login Function   
Function ID: FR-02   
Description: The system authenticates a user by verifying their email and password against the UserAccount database. Upon successful login, a UserSession is created and logged.   
Input: Email, Password   
Output: Active UserSession, User redirected to appropriate dashboard   
  
1.3 User Logout Function   
Function ID: FR-03   
Description: The system terminates the current UserSession and logs the logout event.   
Input: Current UserSession   
Output: Inactive UserSession, User redirected to login or home page   
  
1.4 View Personal Information Function   
Function ID: FR-04   
Description: The system retrieves and displays the personal information of the logged-in user from the UserAccount entity.   
Input: UserID (from UserSession)   
Output: Displayed Name, Email, Address, PhoneNumber, Role, Account Status   
  
1.5 Update Payment Information Function   
Function ID: FR-05   
Description: The system allows the user to edit their PaymentInformation, such as card number, expiration date, and billing address. Validation of the card and expiration date is required.   
Input: PaymentID, CardNumber, ExpiryDate, CVV, BillingAddress   
Output: Updated PaymentInformation, System logs the update   
  
1.6 View Purchase History Function   
Function ID: FR-06   
Description: The system retrieves and displays the user's Order records from the Order database, including product details, total price, and order status.   
Input: UserID (from UserSession)   
Output: List of Orders with associated Product, TotalAmount, OrderDate, Status, and PaymentInformation   
  
1.7 Add Product to Cart Function   
Function ID: FR-07   
Description: The system allows a customer to add a selected product to their ShoppingCart. The system checks product availability from the Inventory and updates the CartItem and CartSummary.   
Input: ProductID, CartID, Quantity   
Output: Updated ShoppingCart, Updated CartItem, Updated CartSummary   
  
1.8 Modify Cart Contents Function   
Function ID: FR-08   
Description: The system allows a customer to update the quantity of a CartItem or remove it from the ShoppingCart. The system recalculates the CartSummary and updates the Inventory if necessary.   
Input: CartItemID, NewQuantity, Action (update/remove)   
Output: Updated CartItem, Updated CartSummary, Updated InventoryQuantityUpdateLog if applicable   
  
1.9 View Cart Summary Function   
Function ID: FR-09   
Description: The system retrieves and displays the total price, total quantity, and list of CartItems for the current ShoppingCart.   
Input: CartID   
Output: Displayed CartSummary including TotalItems and TotalPrice, List of CartItems   
  
1.10 Checkout Order Function   
Function ID: FR-10   
Description: The system processes the customer’s ShoppingCart by validating payment information, reducing inventory, creating an Order, and sending an OrderConfirmationEmail.   
Input: CartID, PaymentID, ShippingMethod   
Output: Created Order, Updated Inventory, Sent OrderConfirmationEmail, Cleared ShoppingCart   
  
1.11 Confirm Order Function   
Function ID: FR-11   
Description: The system confirms the customer’s Order after payment validation. Inventory is updated, and an OrderConfirmationEmail is sent.   
Input: OrderID, PaymentID   
Output: Confirmed Order, Updated Inventory, Sent OrderConfirmationEmail   
  
1.12 Receive Order Confirmation Email Function   
Function ID: FR-12   
Description: The system sends an OrderConfirmationEmail to the customer’s registered email address after an order is confirmed.   
Input: OrderID, CustomerEmail   
Output: Sent OrderConfirmationEmail with Order details, Log of email delivery   
  
1.13 Manage Inventory Function   
Function ID: FR-13   
Description: The system allows the administrator to view, update, and log changes to the Inventory. Product availability is updated accordingly.   
Input: ProductID, NewQuantity, InventoryID   
Output: Updated Inventory, Updated Product availability status, InventoryQuantityUpdateLog   
  
1.14 Add Product Function   
Function ID: FR-14   
Description: The system allows the administrator to add a new Product to the database, including name, price, description, category, and inventory quantity.   
Input: Name, Description, Price, CategoryID, InventoryQuantity, ImageURL   
Output: New Product record, Updated Inventory, Confirmation message   
  
1.15 Update Product Details Function   
Function ID: FR-15   
Description: The system allows the administrator to modify Product details such as name, price, description, or category. Inventory is updated if necessary.   
Input: ProductID, NewName, NewDescription, NewPrice, NewCategoryID, NewInventoryQuantity   
Output: Updated Product record, Updated Inventory, Log of the update   
  
1.16 Delete Product Function   
Function ID: FR-16   
Description: The system allows the administrator to delete a Product and its associated Inventory entry. Products in ShoppingCarts or Orders must be handled before deletion.   
Input: ProductID   
Output: Deleted Product, Updated or deleted Inventory entry, Log of the deletion   
  
1.17 Create Category Function   
Function ID: FR-17   
Description: The system allows the administrator to create a new Category with a name and description.   
Input: Name, Description   
Output: New Category record, Updated product catalog display   
  
1.18 Update Category Function   
Function ID: FR-18   
Description: The system allows the administrator to update the name or description of an existing Category.   
Input: CategoryID, NewName, NewDescription   
Output: Updated Category record, Updated product catalog display   
  
1.19 Delete Category Function   
Function ID: FR-19   
Description: The system allows the administrator to delete a Category, and optionally reassign or mark products as uncategorized.   
Input: CategoryID   
Output: Deleted Category, Updated Product records, Log of the deletion   
  
1.20 View Product List Function   
Function ID: FR-20   
Description: The system retrieves and displays a list of available Products with details such as name, price, description, category, and availability.   
Input: Optional filters (e.g., category, price range, availability)   
Output: Displayed list of Products, User can select to view or add to cart   
  
1.21 Manage Orders Function   
Function ID: FR-21   
Description: The system allows the user to view, update, or cancel their Orders. The system logs the activity and updates the Order status.   
Input: OrderID, Action (update/cancel), NewStatus   
Output: Updated Order record, Log of the action, Confirmation message   
  
1.22 View Order Details Function   
Function ID: FR-22   
Description: The system retrieves and displays detailed information about a specific Order, including product list, total price, and payment and shipping status.   
Input: OrderID   
Output: Displayed Order details, Log of access   
  
1.23 Process Payment Function   
Function ID: FR-23   
Description: The system processes the customer’s payment using the selected PaymentInformation and updates the Order and Inventory accordingly.   
Input: OrderID, PaymentID   
Output: Updated Order status (Paid), Updated Inventory, Sent OrderConfirmationEmail, Log of payment processing   
  
1.24 View Payment Information Function   
Function ID: FR-24   
Description: The system retrieves and displays the PaymentInformation for the logged-in user.   
Input: UserID (from UserSession)   
Output: Displayed Payment details including CardNumber, ExpiryDate, BillingAddress   
  
1.25 Install Plugin Function   
Function ID: FR-25   
Description: The system allows the administrator to install a new Plugin, validate it, and activate it.   
Input: Plugin file or PluginID   
Output: Installed Plugin, Updated system configuration, Log of installation   
  
1.26 View Plugin Documentation Function   
Function ID: FR-26   
Description: The system allows the administrator to view documentation related to a Plugin.   
Input: PluginID   
Output: Displayed Plugin documentation, Log of access   
  
1.27 Manage Cart Item Function   
Function ID: FR-28   
Description: The system allows the customer to manage individual CartItems, including updating quantity or removing them.   
Input: CartItemID, NewQuantity, Action (update/remove)   
Output: Updated CartItem, Updated CartSummary, Log of modification if applicable