# Functional Requirement

### 1. Functional Requirements   
#### 1.1 Customer Registration Function   
\*\*Function ID:\*\* FR-01   
\*\*Description:\*\* Allows new customers to register by submitting personal information. Validates input, creates a customer record, and sends a confirmation email.   
\*\*Input:\*\* Registration form data (Name, Email, Password, Address, Phone).   
\*\*Output:\*\* New record in Customer entity; confirmation email sent.   
  
#### 1.2 Customer Login Function   
\*\*Function ID:\*\* FR-02   
\*\*Description:\*\* Authenticates registered customers using credentials. Grants access upon successful verification.   
\*\*Input:\*\* Email and Password from login form.   
\*\*Output:\*\* Active customer session; session status update in Customer entity.   
  
#### 1.3 Customer Logout Function   
\*\*Function ID:\*\* FR-03   
\*\*Description:\*\* Terminates an active customer session and clears session data.   
\*\*Input:\*\* Logout request from authenticated session.   
\*\*Output:\*\* Session termination; logout activity logged.   
  
#### 1.4 Update Customer Information Function   
\*\*Function ID:\*\* FR-04   
\*\*Description:\*\* Allows customers to modify personal details (e.g., address, phone). Validates inputs before updating records.   
\*\*Input:\*\* Updated fields (Name, Address, Phone, etc.) via editable form.   
\*\*Output:\*\* Modified Customer entity record; confirmation message.   
  
#### 1.5 View Customer Profile Function   
\*\*Function ID:\*\* FR-05   
\*\*Description:\*\* Displays a customer’s profile information and order history.   
\*\*Input:\*\* Customer ID from active session.   
\*\*Output:\*\* Customer profile data (Name, Email, Address, Order History) displayed.   
  
#### 1.6 Delete Customer Function   
\*\*Function ID:\*\* FR-06   
\*\*Description:\*\* Allows administrators to permanently remove customer accounts and associated data.   
\*\*Input:\*\* Administrator selection of Customer ID to delete.   
\*\*Output:\*\* Removal of Customer entity record and linked Shopping Cart/Order data; activity logged.   
  
#### 1.7 Create Product Function   
\*\*Function ID:\*\* FR-07   
\*\*Description:\*\* Enables administrators to add new products with details (name, price, stock).   
\*\*Input:\*\* Product details (Name, Description, Price, StockQuantity, Category) via form.   
\*\*Output:\*\* New Product and Inventory entity records.   
  
#### 1.8 Update Product Details Function   
\*\*Function ID:\*\* FR-08   
\*\*Description:\*\* Allows administrators to edit product attributes and inventory levels.   
\*\*Input:\*\* Modified product fields (e.g., Price, StockQuantity).   
\*\*Output:\*\* Updated Product and Inventory entity records.   
  
#### 1.9 View Product Details Function   
\*\*Function ID:\*\* FR-09   
\*\*Description:\*\* Displays product information to customers or administrators.   
\*\*Input:\*\* Product ID from selection.   
\*\*Output:\*\* Product details (Name, Description, Price, StockStatus) displayed.   
  
#### 1.10 Delete Product Function   
\*\*Function ID:\*\* FR-10   
\*\*Description:\*\* Allows administrators to remove products and adjust inventory.   
\*\*Input:\*\* Administrator selection of Product ID to delete.   
\*\*Output:\*\* Removal of Product and linked Inventory records.   
  
#### 1.11 Create Administrator Function   
\*\*Function ID:\*\* FR-11   
\*\*Description:\*\* Allows privileged administrators to create new admin accounts.   
\*\*Input:\*\* Admin details (Name, Email, Password, Role) via form.   
\*\*Output:\*\* New Administrator entity record; confirmation email sent.   
  
#### 1.12 Update Administrator Information Function   
\*\*Function ID:\*\* FR-12   
\*\*Description:\*\* Enables administrators to modify their account details.   
\*\*Input:\*\* Updated fields (e.g., Password, Contact) via form.   
\*\*Output:\*\* Modified Administrator entity record; confirmation message.   
  
#### 1.13 Delete Administrator Function   
\*\*Function ID:\*\* FR-13   
\*\*Description:\*\* Allows authorized administrators to remove other admin accounts.   
\*\*Input:\*\* Administrator selection of Admin ID to delete.   
\*\*Output:\*\* Removal of Administrator entity record.   
  
#### 1.14 Administrator Login Function   
\*\*Function ID:\*\* FR-14   
\*\*Description:\*\* Authenticates administrators using credentials. Grants dashboard access upon success.   
\*\*Input:\*\* Email and Password from login form.   
\*\*Output:\*\* Active administrator session; session status update.   
  
#### 1.15 Administrator Logout Function   
\*\*Function ID:\*\* FR-15   
\*\*Description:\*\* Terminates an active administrator session.   
\*\*Input:\*\* Logout request from authenticated session.   
\*\*Output:\*\* Session termination; activity logged.   
  
#### 1.16 Create Inventory Function   
\*\*Function ID:\*\* FR-16   
\*\*Description:\*\* Allows administrators to create inventory records linked to products.   
\*\*Input:\*\* Product ID and inventory details (StockLevel, ReorderThreshold).   
\*\*Output:\*\* New Inventory entity record linked to Product.   
  
#### 1.17 Update Inventory Levels Function   
\*\*Function ID:\*\* FR-17   
\*\*Description:\*\* Enables administrators to adjust stock quantities or thresholds.   
\*\*Input:\*\* Inventory ID and updated fields (e.g., StockLevel).   
\*\*Output:\*\* Modified Inventory entity record.   
  
#### 1.18 View Inventory Levels Function   
\*\*Function ID:\*\* FR-18   
\*\*Description:\*\* Displays current inventory data for administrators.   
\*\*Input:\*\* Inventory ID or Product ID.   
\*\*Output:\*\* Inventory details (StockLevel, Location) displayed.   
  
#### 1.19 Delete Inventory Function   
\*\*Function ID:\*\* FR-19   
\*\*Description:\*\* Allows administrators to remove inventory records.   
\*\*Input:\*\* Administrator selection of Inventory ID to delete.   
\*\*Output:\*\* Removal of Inventory entity record.   
  
#### 1.20 Add Product to Shopping Cart Function   
\*\*Function ID:\*\* FR-20   
\*\*Description:\*\* Adds a product to the customer’s shopping cart with specified quantity.   
\*\*Input:\*\* Product ID and Quantity from product page.   
\*\*Output:\*\* Product added/updated in Shopping Cart entity; cart total recalculated.   
  
#### 1.21 View Shopping Cart Function   
\*\*Function ID:\*\* FR-21   
\*\*Description:\*\* Displays contents of the customer’s shopping cart.   
\*\*Input:\*\* Shopping Cart ID from session.   
\*\*Output:\*\* Cart items (Product ID, Quantity, Price) and total cost displayed.   
  
#### 1.22 Update Shopping Cart Function   
\*\*Function ID:\*\* FR-22   
\*\*Description:\*\* Modifies product quantities or removes items from the cart.   
\*\*Input:\*\* Cart Item ID and new Quantity (or removal request).   
\*\*Output:\*\* Updated/removed item in Shopping Cart entity; cart total recalculated.   
  
#### 1.23 Place Order Function   
\*\*Function ID:\*\* FR-23   
\*\*Description:\*\* Converts shopping cart items into an order, updates inventory, and sends confirmation.   
\*\*Input:\*\* Shipping address, Payment method, and Cart ID.   
\*\*Output:\*\* New Order and Order Item records; Inventory updated; confirmation email sent.   
  
#### 1.24 View Order History Function   
\*\*Function ID:\*\* FR-24   
\*\*Description:\*\* Displays a customer’s past orders.   
\*\*Input:\*\* Customer ID from session.   
\*\*Output:\*\* List of orders (Order ID, Date, Total, Status) displayed.   
  
#### 1.25 Confirm Order Function   
\*\*Function ID:\*\* FR-25   
\*\*Description:\*\* Finalizes a pending order after customer review, reducing inventory stock.   
\*\*Input:\*\* Order ID and customer confirmation.   
\*\*Output:\*\* Order status updated to "confirmed"; Inventory levels adjusted.   
  
#### 1.26 Delete Order Function   
\*\*Function ID:\*\* FR-26   
\*\*Description:\*\* Allows administrators to remove orders and optionally restore inventory.   
\*\*Input:\*\* Administrator selection of Order ID to delete.   
\*\*Output:\*\* Removal of Order and Order Item records; Inventory optionally restored.   
  
#### 1.27 Install Plugin Function   
\*\*Function ID:\*\* FR-27   
\*\*Description:\*\* Integrates new plugins into the system after validation.   
\*\*Input:\*\* Plugin file or configuration.   
\*\*Output:\*\* New Plugin entity record; plugin activated.   
  
#### 1.28 Update Plugin Function   
\*\*Function ID:\*\* FR-28   
\*\*Description:\*\* Upgrades existing plugins to new versions.   
\*\*Input:\*\* Updated plugin file or configuration.   
\*\*Output:\*\* Modified Plugin entity record; plugin reactivated.   
  
#### 1.29 View Available Plugins Function   
\*\*Function ID:\*\* FR-29   
\*\*Description:\*\* Lists installed and available plugins for administrators.   
\*\*Input:\*\* None (requires admin session).   
\*\*Output:\*\* Plugin details (Name, Version, Status) displayed.   
  
#### 1.30 Uninstall Plugin Function   
\*\*Function ID:\*\* FR-30   
\*\*Description:\*\* Removes plugins and deactivates their functionality.   
\*\*Input:\*\* Administrator selection of Plugin ID to uninstall.   
\*\*Output:\*\* Removal of Plugin entity record; plugin deactivated.   
  
#### 1.31 Manage Order Item Function   
\*\*Function ID:\*\* FR-31   
\*\*Description:\*\* Allows administrators to modify order items (e.g., quantity, status).   
\*\*Input:\*\* Order Item ID and updated fields (e.g., Status, Quantity).   
\*\*Output:\*\* Modified Order Item record; Inventory adjusted if needed.   
  
#### 1.32 View Administrator Profile Function   
\*\*Function ID:\*\* FR-32   
\*\*Description:\*\* Displays an administrator’s profile information.   
\*\*Input:\*\* Admin ID from session.   
\*\*Output:\*\* Administrator profile data (Name, Email, Role) displayed.   
  
#### 1.33 Create Shopping Cart Function   
\*\*Function ID:\*\* FR-33   
\*\*Description:\*\* Initializes a new shopping cart for a customer or guest.   
\*\*Input:\*\* Customer ID (or guest session token).   
\*\*Output:\*\* New Shopping Cart entity record.   
  
#### 1.34 Delete Shopping Cart Function   
\*\*Function ID:\*\* FR-34   
\*\*Description:\*\* Allows administrators to remove inactive shopping carts.   
\*\*Input:\*\* Administrator selection of Cart ID to delete.   
\*\*Output:\*\* Removal of Shopping Cart entity record.   
  
#### 1.35 Login Administrator Function   
\*\*Function ID:\*\* FR-35   
\*\*Description:\*\* Authenticates administrators to access the admin dashboard.   
\*\*Input:\*\* Email and Password via login form.   
\*\*Output:\*\* Active administrator session; session status updated.