# Functional Requirement

#### 1.1 Customer Registration   
\*\*Function ID\*\*: FR-01   
\*\*Description\*\*: Enables new customers to create accounts by providing personal information and credentials. Validates input data and stores details in the Customer entity.   
\*\*Input\*\*: Customer details (Name, Email, Password, Address, PhoneNumber)   
\*\*Output\*\*: New record in Customer data entity; confirmation message.   
  
#### 1.2 Update Customer Information   
\*\*Function ID\*\*: FR-02   
\*\*Description\*\*: Allows authenticated customers to modify their stored personal details. Validates inputs before updating the Customer entity.   
\*\*Input\*\*: Edited details (Address, PhoneNumber, Email) from authenticated customer.   
\*\*Output\*\*: Updated Customer data entity record; confirmation message.   
  
#### 1.3 View Customer Profile   
\*\*Function ID\*\*: FR-03   
\*\*Description\*\*: Displays stored customer information (e.g., contact details, order history) to authenticated users.   
\*\*Input\*\*: Authenticated customer session.   
\*\*Output\*\*: Customer details (Name, Email, Address, PhoneNumber, Order history).   
  
#### 1.4 Add Product   
\*\*Function ID\*\*: FR-04   
\*\*Description\*\*: Allows administrators to create new product entries. Links products to categories and updates inventory.   
\*\*Input\*\*: Product details (ProductName, Description, Price, CategoryID, StockQuantity) from administrator.   
\*\*Output\*\*: New record in Product data entity; updated Inventory record; confirmation message.   
  
#### 1.5 Update Product Details   
\*\*Function ID\*\*: FR-05   
\*\*Description\*\*: Enables administrators to modify product information (e.g., price, stock). Syncs changes to Inventory entity.   
\*\*Input\*\*: Modified product details (Price, Description, StockQuantity, CategoryID).   
\*\*Output\*\*: Updated Product and Inventory records; confirmation message.   
  
#### 1.6 View Product Details   
\*\*Function ID\*\*: FR-06   
\*\*Description\*\*: Displays product information (e.g., name, price, description) to customers or administrators.   
\*\*Input\*\*: Product selection from catalog/search.   
\*\*Output\*\*: Product details (ProductName, Description, Price, Image, Category).   
  
#### 1.7 Remove Product   
\*\*Function ID\*\*: FR-07   
\*\*Description\*\*: Allows administrators to delete products not linked to active orders/carts. Removes associated inventory records.   
\*\*Input\*\*: ProductID selection from administrator.   
\*\*Output\*\*: Deleted Product and Inventory records; confirmation message.   
  
#### 1.8 Place Order   
\*\*Function ID\*\*: FR-08   
\*\*Description\*\*: Converts shopping cart items into a formal order. Validates stock, processes payment, and updates inventory.   
\*\*Input\*\*: Customer’s ShoppingCart items, shipping details, payment method.   
\*\*Output\*\*: New Order record; updated Inventory levels; cleared ShoppingCart; confirmation message.   
  
#### 1.9 View Order Details   
\*\*Function ID\*\*: FR-09   
\*\*Description\*\*: Displays order information (e.g., products, status, total cost) to authenticated customers.   
\*\*Input\*\*: OrderID selection from customer.   
\*\*Output\*\*: Order details (OrderDate, TotalAmount, Product list, Status).   
  
#### 1.10 Update Order Status   
\*\*Function ID\*\*: FR-10   
\*\*Description\*\*: Allows administrators to modify order status (e.g., "Shipped"). Triggers customer notifications if applicable.   
\*\*Input\*\*: New status (e.g., "Processing", "Cancelled") from administrator.   
\*\*Output\*\*: Updated Order status; notification to customer; confirmation message.   
  
#### 1.11 Cancel Order   
\*\*Function ID\*\*: FR-11   
\*\*Description\*\*: Enables customers to cancel eligible orders. Restores inventory stock and updates order status.   
\*\*Input\*\*: OrderID selection from authenticated customer.   
\*\*Output\*\*: Updated Order status ("Cancelled"); restored Inventory levels; confirmation message.   
  
#### 1.12 Add to Shopping Cart   
\*\*Function ID\*\*: FR-12   
\*\*Description\*\*: Adds selected products/quantities to the customer’s cart. Validates stock availability.   
\*\*Input\*\*: ProductID and Quantity from customer.   
\*\*Output\*\*: New CartProductItem record; updated Inventory; confirmation message.   
  
#### 1.13 View Shopping Cart   
\*\*Function ID\*\*: FR-13   
\*\*Description\*\*: Displays cart contents (products, quantities, total cost) to authenticated customers.   
\*\*Input\*\*: Authenticated customer session.   
\*\*Output\*\*: ShoppingCart items, quantities, prices, total cost.   
  
#### 1.14 Modify Shopping Cart Item   
\*\*Function ID\*\*: FR-14   
\*\*Description\*\*: Allows customers to adjust quantities or remove items from their cart. Updates inventory accordingly.   
\*\*Input\*\*: Modified Quantity or removal request for CartProductItem.   
\*\*Output\*\*: Updated CartProductItem/Inventory records; recalculated cart total; confirmation message.   
  
#### 1.15 Process Payment   
\*\*Function ID\*\*: FR-15   
\*\*Description\*\*: Handles payment transactions for confirmed orders. Updates order status and payment history.   
\*\*Input\*\*: Payment details (e.g., card number, expiration date) and OrderID.   
\*\*Output\*\*: Payment record; updated Order status ("Paid"); confirmation message.   
  
#### 1.16 View Payment History   
\*\*Function ID\*\*: FR-16   
\*\*Description\*\*: Displays past payment records (e.g., date, amount, status) to authenticated customers.   
\*\*Input\*\*: Authenticated customer session.   
\*\*Output\*\*: Payment history details (PaymentDate, Amount, Status, OrderID).   
  
#### 1.17 Update Inventory Levels   
\*\*Function ID\*\*: FR-17   
\*\*Description\*\*: Allows administrators to manually adjust stock quantities for products.   
\*\*Input\*\*: ProductID and new StockQuantity from administrator.   
\*\*Output\*\*: Updated Inventory record; confirmation message.   
  
#### 1.18 View Inventory Levels   
\*\*Function ID\*\*: FR-18   
\*\*Description\*\*: Displays current stock levels for all products to administrators.   
\*\*Input\*\*: Administrator request.   
\*\*Output\*\*: Product list with StockLevels.   
  
#### 1.19 Manage Users   
\*\*Function ID\*\*: FR-19   
\*\*Description\*\*: Enables administrators to add, edit, or delete customer accounts.   
\*\*Input\*\*: Customer details (for add/edit) or CustomerID (for delete).   
\*\*Output\*\*: Added/updated/deleted Customer record; confirmation message.   
  
#### 1.20 Install Plugin   
\*\*Function ID\*\*: FR-20   
\*\*Description\*\*: Adds new plugins to the system after validating compatibility and dependencies.   
\*\*Input\*\*: Plugin file or repository selection from administrator.   
\*\*Output\*\*: New Plugin record; system integration; confirmation message.   
  
#### 1.21 Update Plugin   
\*\*Function ID\*\*: FR-21   
\*\*Description\*\*: Modifies existing plugins to new versions. Validates compatibility before updating.   
\*\*Input\*\*: Updated plugin file/version from administrator.   
\*\*Output\*\*: Updated Plugin record; confirmation message.   
  
#### 1.22 Uninstall Plugin   
\*\*Function ID\*\*: FR-22   
\*\*Description\*\*: Removes plugins not in use by active processes.   
\*\*Input\*\*: PluginID selection from administrator.   
\*\*Output\*\*: Removed Plugin record; confirmation message.   
  
#### 1.23 Create Product Category   
\*\*Function ID\*\*: FR-23   
\*\*Description\*\*: Allows administrators to define new product categories.   
\*\*Input\*\*: Category details (CategoryName, Description) from administrator.   
\*\*Output\*\*: New ProductCategory record; confirmation message.   
  
#### 1.24 Update Product Category   
\*\*Function ID\*\*: FR-24   
\*\*Description\*\*: Modifies existing product category details (e.g., name, description).   
\*\*Input\*\*: Modified category details (CategoryName, Description).   
\*\*Output\*\*: Updated ProductCategory record; confirmation message.   
  
#### 1.25 Delete Product Category   
\*\*Function ID\*\*: FR-25   
\*\*Description\*\*: Removes unused product categories not linked to active products.   
\*\*Input\*\*: CategoryID selection from administrator.   
\*\*Output\*\*: Deleted ProductCategory record; confirmation message.   
  
#### 1.26 Manage Payment History   
\*\*Function ID\*\*: FR-26   
\*\*Description\*\*: Allows administrators to filter, view, and export payment records.   
\*\*Input\*\*: Filters (e.g., date range, status); export format (e.g., CSV).   
\*\*Output\*\*: Filtered PaymentHistory data; exported file.   
  
#### 1.27 Manage Order Status History   
\*\*Function ID\*\*: FR-27   
\*\*Description\*\*: Enables administrators to view/export historical status changes for orders.   
\*\*Input\*\*: Filters (e.g., OrderID, date range); export format.   
\*\*Output\*\*: Filtered OrderStatusHistory data; exported file.