# Functional Requirement

# 1. Functional Requirements   
  
## 1.1 Customer Account Creation   
\*\*Function ID\*\*: FR-01   
\*\*Description\*\*: The system allows a customer to register an account by providing valid email, password, and other required information.   
\*\*Input\*\*: Customer's email, password, full name, and other optional registration fields.   
\*\*Output\*\*: A new customer account stored in the system with a confirmation email sent.   
  
## 1.2 Customer Login   
\*\*Function ID\*\*: FR-02   
\*\*Description\*\*: The system authenticates a customer’s login request using their email and password.   
\*\*Input\*\*: Email and password.   
\*\*Output\*\*: A successful login with a session established.   
  
## 1.3 Customer Logout   
\*\*Function ID\*\*: FR-03   
\*\*Description\*\*: The system allows a logged-in customer to end their session and log out securely.   
\*\*Input\*\*: Customer session ID or authentication token.   
\*\*Output\*\*: Session data cleared and customer redirected to login/homepage.   
  
## 1.4 Manage Customer Profile   
\*\*Function ID\*\*: FR-04   
\*\*Description\*\*: The system allows a customer to update or delete their profile information, such as email, password, and addresses.   
\*\*Input\*\*: Customer session, new profile data (e.g., updated email, password, address).   
\*\*Output\*\*: Updated or deleted customer profile in the system.   
  
## 1.5 View Purchase History   
\*\*Function ID\*\*: FR-05   
\*\*Description\*\*: The system allows a customer to view a list of their previous orders with detailed information.   
\*\*Input\*\*: Customer session and query parameters (e.g., date range, order status).   
\*\*Output\*\*: A list of order details (e.g., order number, date, total amount, items).   
  
## 1.6 Add Payment Information   
\*\*Function ID\*\*: FR-06   
\*\*Description\*\*: The system allows a customer to add a new payment method, such as credit card details and billing address.   
\*\*Input\*\*: Customer session, payment type, card number (last four digits), expiration date, CVV, billing address ID.   
\*\*Output\*\*: New payment information stored securely in the system.   
  
## 1.7 Update Payment Information   
\*\*Function ID\*\*: FR-07   
\*\*Description\*\*: The system allows a customer to modify an existing payment method.   
\*\*Input\*\*: Customer session, payment ID, updated payment details.   
\*\*Output\*\*: Updated payment information stored in the system.   
  
## 1.8 Delete Payment Information   
\*\*Function ID\*\*: FR-08   
\*\*Description\*\*: The system allows a customer to remove a payment method from their profile.   
\*\*Input\*\*: Customer session, payment ID, and identity verification (e.g., password).   
\*\*Output\*\*: Payment information removed from the system.   
  
## 1.9 Add Product to Shopping Cart   
\*\*Function ID\*\*: FR-09   
\*\*Description\*\*: The system allows a customer to add a product to their shopping cart with a specified quantity.   
\*\*Input\*\*: Customer session (or guest cart ID), product ID, and quantity.   
\*\*Output\*\*: Updated shopping cart with the new item and quantity.   
  
## 1.10 View Shopping Cart   
\*\*Function ID\*\*: FR-10   
\*\*Description\*\*: The system allows a customer to view the current contents of their shopping cart, including product details, quantity, and total cost.   
\*\*Input\*\*: Customer session (or guest cart ID).   
\*\*Output\*\*: Cart contents with total items and total price displayed.   
  
## 1.11 Modify Cart Item Quantity   
\*\*Function ID\*\*: FR-11   
\*\*Description\*\*: The system allows a customer to change the quantity of an item in the shopping cart.   
\*\*Input\*\*: Customer session (or guest cart ID), cart item ID, and new quantity.   
\*\*Output\*\*: Updated cart item with the new quantity and updated total price.   
  
## 1.12 Remove Cart Item   
\*\*Function ID\*\*: FR-12   
\*\*Description\*\*: The system allows a customer to remove a specific item from their shopping cart.   
\*\*Input\*\*: Customer session (or guest cart ID), cart item ID.   
\*\*Output\*\*: Cart item removed and updated cart summary displayed.   
  
## 1.13 Proceed to Checkout   
\*\*Function ID\*\*: FR-13   
\*\*Description\*\*: The system allows a customer to proceed from the shopping cart to the checkout process, where payment and shipping information is collected.   
\*\*Input\*\*: Customer session (or guest cart ID), selected payment method, shipping address.   
\*\*Output\*\*: A checkout page with all cart items, selected payment, and shipping address.   
  
## 1.14 Confirm Order Placement   
\*\*Function ID\*\*: FR-14   
\*\*Description\*\*: The system allows a customer to confirm and finalize their order after completing the checkout process.   
\*\*Input\*\*: Customer session, confirmed cart items, payment method, and shipping address.   
\*\*Output\*\*: A new order record created in the system with updated inventory and a confirmation email sent.   
  
## 1.15 Send Order Confirmation Email   
\*\*Function ID\*\*: FR-15   
\*\*Description\*\*: The system sends a confirmation email to the customer after an order is successfully placed.   
\*\*Input\*\*: Order ID, customer email, and order details.   
\*\*Output\*\*: Email notification sent to the customer with the order summary.   
  
## 1.16 Manage Inventory   
\*\*Function ID\*\*: FR-16   
\*\*Description\*\*: The system allows an administrator to add, update, or delete product inventory records.   
\*\*Input\*\*: Admin session, product ID, stock quantity, restock threshold, and restock date.   
\*\*Output\*\*: Updated inventory records in the system.   
  
## 1.17 Add New Product   
\*\*Function ID\*\*: FR-17   
\*\*Description\*\*: The system allows an administrator to add a new product, including name, price, description, category, and image.   
\*\*Input\*\*: Admin session, product name, price, description, category ID, stock quantity, and image file (optional).   
\*\*Output\*\*: A new product record stored in the database and associated with a category.   
  
## 1.18 Update Product Details   
\*\*Function ID\*\*: FR-18   
\*\*Description\*\*: The system allows an administrator to update an existing product's details, such as name, price, description, category, and image.   
\*\*Input\*\*: Admin session, product ID, updated product details.   
\*\*Output\*\*: Updated product record in the database.   
  
## 1.19 Delete Product   
\*\*Function ID\*\*: FR-19   
\*\*Description\*\*: The system allows an administrator to delete a product from the system, ensuring it is not part of any active orders.   
\*\*Input\*\*: Admin session, product ID.   
\*\*Output\*\*: Product record removed from the system and associated inventory updated.   
  
## 1.20 Assign Product to Category   
\*\*Function ID\*\*: FR-20   
\*\*Description\*\*: The system allows an administrator to assign a product to a specific category.   
\*\*Input\*\*: Admin session, product ID, category ID.   
\*\*Output\*\*: Updated product-category association stored in the database.   
  
## 1.21 Create Product Category   
\*\*Function ID\*\*: FR-21   
\*\*Description\*\*: The system allows an administrator to create a new product category with a name and description.   
\*\*Input\*\*: Admin session, category name, description, and parent category ID (optional).   
\*\*Output\*\*: A new category record stored in the database.   
  
## 1.22 Update Product Category   
\*\*Function ID\*\*: FR-22   
\*\*Description\*\*: The system allows an administrator to modify an existing product category’s name or description.   
\*\*Input\*\*: Admin session, category ID, updated category name and description.   
\*\*Output\*\*: Updated category record in the database.   
  
## 1.23 Delete Product Category   
\*\*Function ID\*\*: FR-23   
\*\*Description\*\*: The system allows an administrator to delete a product category after ensuring no products are associated with it.   
\*\*Input\*\*: Admin session, category ID.   
\*\*Output\*\*: Category record removed from the database.   
  
## 1.24 Process Payment   
\*\*Function ID\*\*: FR-24   
\*\*Description\*\*: The system processes the customer's selected payment method during checkout and confirms the transaction.   
\*\*Input\*\*: Order ID, payment method details (e.g., card number, expiration, billing address).   
\*\*Output\*\*: Payment processed, order status updated to "Paid", and transaction recorded.   
  
## 1.25 Manage Order Detail   
\*\*Function ID\*\*: FR-25   
\*\*Description\*\*: The system allows an administrator to modify order details such as product quantity or item status.   
\*\*Input\*\*: Admin session, order detail ID, updated product quantity or status.   
\*\*Output\*\*: Updated order detail stored in the database.   
  
## 1.26 View Order Details   
\*\*Function ID\*\*: FR-26   
\*\*Description\*\*: The system allows a customer or administrator to view the detailed information of a specific order.   
\*\*Input\*\*: Order ID and user session.   
\*\*Output\*\*: Display of order items, total amount, payment method, and status.   
  
## 1.27 Cancel Order   
\*\*Function ID\*\*: FR-28   
\*\*Description\*\*: The system allows a customer to cancel an order before it is shipped and updates inventory accordingly.   
\*\*Input\*\*: Customer session, order ID.   
\*\*Output\*\*: Order status updated to "Canceled", inventory updated, and cancellation email sent.   
  
## 1.28 Manage Address   
\*\*Function ID\*\*: FR-29   
\*\*Description\*\*: The system allows a customer to add, update, or delete shipping and billing addresses.   
\*\*Input\*\*: Customer session, address ID (for update/delete), address details (for add/update).   
\*\*Output\*\*: Updated or deleted address record stored in the system.   
  
## 1.29 Manage Session   
\*\*Function ID\*\*: FR-30   
\*\*Description\*\*: The system manages customer login sessions, including session creation, expiration, and invalidation.   
\*\*Input\*\*: Customer login credentials, session ID, or logout request.   
\*\*Output\*\*: Session created, updated, or destroyed.   
  
## 1.30 Manage Notification Preference   
\*\*Function ID\*\*: FR-31   
\*\*Description\*\*: The system allows a customer to set their notification preferences (e.g., enable/disable email, SMS, push notifications).   
\*\*Input\*\*: Customer session, notification preference ID, and updated preferences.   
\*\*Output\*\*: Updated notification preference stored in the system.   
  
## 1.31 Manage Plugin   
\*\*Function ID\*\*: FR-32   
\*\*Description\*\*: The system allows an administrator to install, uninstall, or configure plugins to extend system functionality.   
\*\*Input\*\*: Admin session, plugin ID, plugin file (for install), configuration parameters (for update).   
\*\*Output\*\*: Plugin installed, uninstalled, or configured, and system functionality updated accordingly.   
  
## 1.32 View Order History   
\*\*Function ID\*\*: FR-33   
\*\*Description\*\*: The system allows a customer to view a summary of all their previous orders.   
\*\*Input\*\*: Customer session.   
\*\*Output\*\*: A list of orders with order numbers, dates, total prices, and statuses.   
  
## 1.33 Send Email Notification   
\*\*Function ID\*\*: FR-34   
\*\*Description\*\*: The system sends email notifications to customers for various events, such as account confirmation, order updates, or reminders.   
\*\*Input\*\*: Notification type, recipient email, and content.   
\*\*Output\*\*: Email sent to the customer and notification status updated in the system.