# SuperMarket Management Application - Test Cases

## User Management

TC01: Verify that admin can successfully log in with valid credentials.

TC02: Verify that seller can successfully log in with valid credentials.

TC03: Verify login failure with invalid credentials for both admin and seller.

TC04: Verify that the admin can create new admin accounts.

TC05: Verify that the admin can add new sellers and assign credentials.

TC06: Verify that the admin can modify seller information.

TC07: Ensure that deleted sellers can no longer access the application.

TC08: Verify role-based access restrictions between admin and seller functionalities.

TC09: Verify that sellers can view products but cannot add, modify, or delete them.

TC10: Verify secure password storage in the database.

## Product Management

TC01: Verify that the admin can add new products with details (price, category, availability).

TC02: Verify that the admin can edit existing product details.

TC03: Verify that the admin can delete products from the product list.

TC04: Verify that changes in product details are saved to the database.

TC05: Ensure that sellers can view product details but cannot modify them.

TC06: Verify that each product displays price, availability, and category in the list.

TC07: Verify product search functionality by name or category.

TC08: Verify error handling when attempting to add a product with incomplete information.

## Category Management

TC01: Verify that the admin can create new categories.

TC02: Verify that the admin can modify existing categories.

TC03: Verify that the admin can delete categories.

TC04: Ensure that products are correctly assigned to their respective categories.

TC05: Verify that deleted categories are removed from the product list view.

## Sales and Billing

TC01: Verify that a seller can add products to a cart for billing.

TC02: Verify that the system calculates the bill accurately based on product prices and quantity.

TC03: Verify that sales transactions are stored in the database.

TC04: Verify that the application handles discount calculations on the bill.

TC05: Verify that the seller can view the complete bill before confirming the sale.

TC06: Verify that a generated bill includes itemized products, total, tax, and discount.

TC07: Ensure that only authorized sellers can complete sales transactions.

TC08: Verify that once a bill is generated, the product quantities update accordingly in the inventory.

TC09: Verify that the seller cannot finalize the bill if inventory is insufficient.

## Exception Handling

TC01: Verify that login errors are handled gracefully and user receives informative error messages.

TC02: Test the application’s response when an SQL connection fails.

TC03: Test response for invalid product information input (e.g., negative price).

TC04: Verify that the system does not allow empty fields during user and product creation.

TC05: Ensure graceful handling when attempting to delete a non-existent record.

TC06: Verify error handling if a category is deleted while products are still assigned to it.

## Database Connectivity

TC01: Verify that the application successfully connects to both Microsoft SQL and MySQL databases.

TC02: Ensure that all CRUD operations (Create, Read, Update, Delete) perform correctly on each database table.

TC03: Test that data consistency is maintained between UI and database after every transaction.

TC04: Verify that multiple users can perform transactions simultaneously without database conflict.

## Application Security

TC01: Verify secure storage of user credentials with encryption in the database.

TC02: Verify access control to ensure only admin can perform sensitive operations.

TC03: Verify that SQL Injection attempts are properly handled.

TC04: Ensure that session management properly expires inactive sessions.

## UI and Usability

TC01: Verify the user interface is intuitive and displays all features according to user role (admin/seller).

TC02: Check that all navigation links work correctly across the application.

TC03: Verify that mandatory fields are visually marked for clarity.

TC04: Test application responsiveness and performance when handling large product catalogs or multiple concurrent users.