SHOP++: A Multi-Functional Retail Management System

Developing a CRUD (Create, Read, Update, and Delete) Console Program

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In Fulfillment
of the Requirements for
CS 111 - Computer Programming

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I. Overview of the Project

This project, SHOP++, is a C++ console-based application designed to simulate the operations of a small retail management system. The program allows users to manage inventory, process customer orders, track sales, handle debtor accounts, and perform simple calculations. It offers a user-friendly interface and facilitates key business functionalities like item management, order placement, and sales tracking.

II. Features and CRUD Operations

The program includes the following features:

1. Inventory Management

1.1. Add Item

Allows the user to add new items to the inventory by entering the item ID, name, stock, and price.

1.2. Edit Item:

Enables editing the details of existing items, such as ID, name, stock, and price.

1.3. Delete Item

Removes items from the inventory.

1.4. Display Items

Provides a formatted view of all items in the inventory, including their IDs, names, stock levels, and prices.

2. Order Management

2.1. Add Order

Allows customers to place orders for available items by specifying the item ID and quantity.

2.2 Edit Order

Facilitates modifying existing orders by changing the item quantity.

2.3 Delete Order

Enables the removal of specific orders.

2.4. Place Order

Processes the order by calculating the total cost, handling payment, and updating inventory.

3. Debtor Management

3.1 Track Debts

Maintains a list of customers with unpaid balances, including their names and outstanding amounts.

3.2 Edit Debtor Name

Allows editing debtor information.

3.3 Process Payments

Updates debt records when customers make payments.

4. Sales Management

4.1 View Sales Summary

Displays total earnings and transaction counts.

4.2 Edit Earnings

Allows manual adjustments to the total earnings.

5. Additional Features

5.1 Calculator

Provides a basic calculator for performing arithmetic operations.

5.2 Login System

Includes a basic authentication mechanism requiring a username and password to access the system.

III. Instructions for Using the Program

1. Login

- 1.1. Run the program.
- 1.2. Log in with the default credentials:
 - 1.2.1. Username: admin 1.2.2. Password: 123

```
SHOP++
[1] Login
[0] Exit
```

Figure 1. Startup Screen

```
SHOP++
Username: admin
Password: 123
Authentication Succesful!
Press any key to continue . . . |
```

Figure 2. Login Screen

2. Navigating the Menu

The main menu provides the following options:

- 2.1. Inventory Manage inventory items.
- 2.2. Shop Manage orders.
- 2.3. Sales View and edit sales records.
- 2.4. Debtor List Handle debtors and payments.
- 2.5. Calculator Access the built-in calculator.
- 2.6. Exit Exit the application.

```
SHOP++

[1] Inventory
[2] Shop
[3] Sales
[4] Debtor List
[5] Calculator
[0] Exit
```

Figure 3. Main Menu

3. Managing Items

- 3.1. Select "Inventory" from the main menu.
- 3.2. Choose to add, edit, or delete items or return to the main menu.

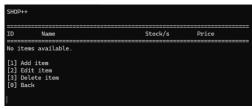


Figure 4. Inventory Options

4. Processing Orders

- 4.1. Select "Shop" from the main menu.
- 4.2. Add, edit, or delete orders. Once complete, use the "Place Order" option to finalize.

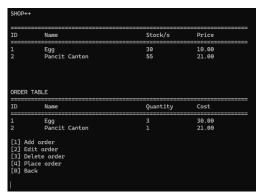


Figure 5. Ordering Item



Figure 6. Placing Order

5. Tracking Sales

- 5.1. Select "Sales" from the main menu.
- 5.2. View sales summary or adjust earnings using the "Force Edit" option.

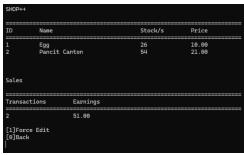


Figure 7. Sales Section

- 6. Managing Debtors
 - 6.1. Select "Debtor List" from the main menu.
 - 6.2. Process payments or edit debtor names.

```
# Name Credit 10.00

[1] Payment [2] Edit Name [0] Back
```

Figure 8. Debtor List Section

- 7. Using the Calculator
 - 7.1. Select "Calculator" from the main menu.
 - 7.2. Perform arithmetic operations by following the prompts.

```
CALCULATOR

Enter number (Enter any character to EXIT): 7
Enter operation (+, - , /, *, =): +
Enter number: 4
Enter operation (+, - , /, *, =): +
Enter number: 77
Enter operation (+, - , /, *, =): -
Enter number: 34
Enter operation (+, - , /, *, =): =
Answer: 54

Press any key to continue . . .
```

Figure 9. Calculator

- 8. Exiting the Program
 - 8.1 Select "Exit" from the main menu or terminate the console window.

```
SHOP++

[1] Inventory
[2] Shop
[3] Sales
[4] Debtor List
[5] Calculator
[0] Exit

0

Process returned 0 (0x0) execution time: 102.961 s
Press any key to continue.
```

Figure 10. Exiting