Shopping and Stock Management System

CS 101 Autumn Semester 2011 Course Project

Professor: Dr. Deepak B Phatak

Final Project Report

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Lab Batch : 551

Introduction to Project

In this project, we have made a Shopping system with Stock management system. The customer will be able to browse through a list of products that he can purchase. The Employee will manage the Product details besides monitoring the sales.

We have used C++ to design our program. All the seven members of our team will be working on the project and have divided the work into modules and each member is working on the modules separately.

Design of the Project

The Project consists of four modules as mentioned below:
1. Customers
2. Employee
   *Managing Dept.
   *Sales Dept.
   *Inventory Dept.
3. Products
4. Orders

We have used Structures ,File handling with other basic concepts of C++.

- The entire program is based on Terminal as this type of program requires keyboard input which cannot be handled easily by EzWindows.

Program

The Program would start with a Welcome screen showing the options,

1:Customer 2:Employee   3:Exit

along with the discount rate and margin price and waits for a valid user input.

Customer :

In this there are two parts:-
*Selecting the item(s) and
*Payment

Selecting the Item(s)

After this 7 catagories of products along with an exit option get displayed, namely
* Laptops
* Cameras
* Televisions
* Mobiles
* Watches
* Glasses
* Footwear and
* Exit to main menu

If he/she enters wrong input then user will be asked to enter the correct option till user enters correct option.

Depending on category that the user chooses the following details of the various products get displayed:
*Product ID
*Brand
*Description
*Price

After this a confirmation (whether user want to buy any of the product displayed under chosen category) will appear. If he/she wants to buy he/she will be asked to enter the Product ID of the product he wants to buy.

In case of wrong input user is asked to enter the one of Product ID which is displayed. If the entered ID matches with one of the displayed product then again user is asked if he surely wants to buy the selected item. If No, Now user would be

asked if wants to buy something more or not. If Yes, then the categories of product is again displayed to the user and user can buy till at this stage user does not want to buy anything more. After the selection of items user is taken to the payment section by displaying the purchase summary. After this user cannot cancel the order which has been placed. After this user can go the WelcomeScreen or can exit the program. We have taken care of all the invalid input by the user(except spaces). Also the user is informed about the discount rate.Now user will be shown the items he has chosen along with MRP, Discount (if provided or not) and Final Amount (MRP-Discount).

Payment

After the selection of items user is taken to the payment section. Here he will be asked to enter following details:

*Name
*Mobile No.
*Credit Card no.
*Credit Card PIN(not stored in our database)

If the user enters an invalid contact no (or) Credit Card no (or) PIN for consecutively three times, he/she will be redirected to the WelcomeScreen displaying "Sorry !".

** This can be extended to a banking application which checks for the genuinity of the Credit Card and corresponding PIN details **

After this,the quantities of that particular product(s) will be reduced by a quantity 1 in the product database and the purchase details will be added to the sales datafile.

Care has been taken about the invalid input like if card no. is not 16 digit, mobile number is not between 10 & 15 digits. After the filling of the information by the user order is placed and user is shown "Delivery section will contact you for address details.Your goods will be delivered at an earliest date possible". Then user would be asked to return to the main menu or he wants to exit the system.

Employee

When the user enters as an Employee,the system asks for a login ID and password, then validates them with the data stored in data file which stores the necessary information of all the employees.

If the user enters ID and password correctly,then the system displays the options according to the department of the employee other wise it shows "Authentication Failed" and if this happens for three times user will be redirected to the Welcome Screen.

All employees have

1.Reset Password

Can reset the password by entering his correct existing password and his new passwords twice. Failing this would lead the system to ask again the details.
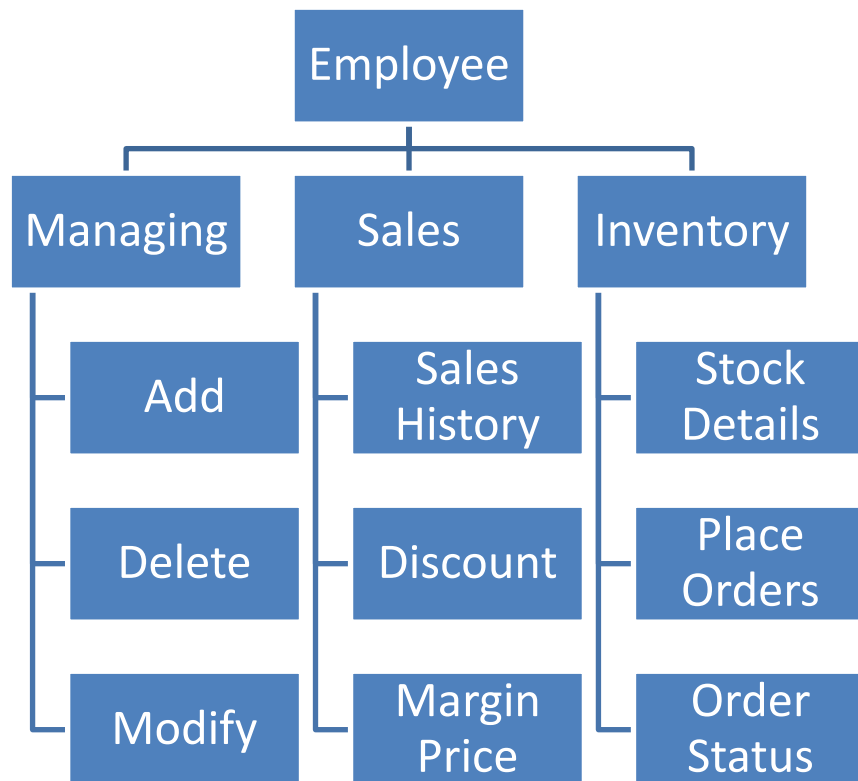
2.Search Product

This function allows the employee to view details of a particular existing product. If it does not exist it would display options again showing "Product does not exist."

3.LogOut

This redirects the user to Welcome screen.

as common options besides specific functions of that particular Department as mentioned below.

```
                        Employee
           ┌───────────────┼───────────────┐
       Managing          Sales          Inventory
         ├─ Add            ├─ Sales         ├─ Stock
         │                 │   History      │   Details
         ├─ Delete         ├─ Discount      ├─ Place
         │                 │                │   Orders
         └─ Modify         └─ Margin        └─ Order
                               Price            Status
```

The Managing Department employees can add a product, delete or modify the details of existing product. Entering any invalid Data will lead to display of "Data Invalid"with the options again. If the actions are successful, respective information is displayed on the screen regarding that particular action done with options again. Zero quantity and Zero price are not accepted.

The Sales department employees can view Sales history along with the total revenue till date.They can also set the discount rate that is to be allowed when the total purchase is above a certain margin price.

The Inventory department employees can see the stock details along with the Item codes of those items whose quantity is less than 10. They can also place orders for a company from which goods will be imported. Initially the status of order would be Not Received and if the employee sets it to received that particular quantity gets added to the specific product in the product database.

Database Files :

1. Products Data file consists of Item Code, Item Category ,Item Name, Quantity,MRP and the data can be accessed through Item Code and can be modified.
2. Sales Data file consists of details regarding the Customer purchases which will get updated with a new purchase with Customer Name,Contact No,Credit Card Number(** PIN is not stored),Item Details,Selling Price.
3. Employee Data file consists of Employee Department,Login ID, Password, Employee First Name and Last Name.
4. Orders Data file consists of the order details the employee is placing with order number,Item Code,quantity ordered,Date and time of placing the order,Order status.
5. Discount file consists the discount rate and the margin price above which discount is allowed.

Division of Work:

Customers   :   SagarAgarwal
                           Sachin Garg

Employee   :   * S.V.Praneeth Naidu
                           S.KranthiKiran
                           SanchitGarg

DataBase Files   :   Saikat Mondal
(with some other   R.Suryanarayana
Functions)

Restrictions:

- The Categories of the items displayed are fixed. Even though if employee adds a new category it will not be displayed.
- The password of the employee is visible while typing.
- "Spaces" are not handled by the program correctly .Avoid using spaces as this may lead to disturbance of database.

Ideas of Future Work:

- The categories can be as wished by the employee. If he adds a new category ,the code can be extended to display all the available categories to the customer despite fixed categories .
- As mentioned earlier at the stage of validating Credit Card and PIN,this can be extended to a banking application which checks the genuinity of card details. Also there can be option like Net Banking available for the customers
- And also contact number can be validated by linking this to a communication application which generates and sends some verification code to that number so that purchase is made only when the user enters that particular verification code correctly.
- This can be extended to Customer Record keeping system which handles the operation of registering new customer and availing special offers to these privileged customers.

Few Sample Screenshots are shown below.

```
praneeth@praneeth-pc: ~/Desktop/551_corrected

                    WELCOME TO OUR SHOP


        Today's offer : 1% of discount on or above a purchase of Rs. 115.5

1:Customer                      2:Employee                      3:Exit


Please Enter Your Option : 1

Choose a Category:

1 : Laptops
2 : Cameras
3 : Television
4 : Mobile
5 : Watch
6 : Glasses
7 : FootWear
8 : Exit
Enter your option : █
```

```
praneeth@praneeth-pc: ~/Desktop/551_corrected

1:Customer                      2:Employee                      3:Exit


Please Enter Your Option : 2

Login ID : dbp

Password : 789

Login Successful

            Welcome Deepak Phatak  ::  Inventory Dept

        1 : Reset your Password
        2 : Search Product
        3 : Order a product from a company
        4 : View Orders
        5 : Set Order Status
        6 : View Stock Details
        7 : LogOut

Enter your option : █
```

```
            Your Purchase Summary

    Apple                  MacbookPro_i7_8gb_500gb        124600.00
    Reebok                                    sports        3200.00

            Your purchase Amount is: Rs. 127800
            Discount                 : Rs. 1278
            DiscountedPrice          : Rs. 126522


Please enter your Personal Details
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Please Enter your Name (use_ for spaces) : cs_101


Please Enter your Contact no. :  2581473698
Please Enter your credit card number :  1234567

Please Enter 16 digit Valid Credit Card no.: █
```

* * *