****

**III Semester**

**Mini Project**

**Report On**

**(Supermarket billing calculation system with C++)**

**(2021-2022)**

**B. Tech(CSE)**

**Submitted by:**

Vipul Chauhan

University Roll. No. : 2018855

Class Roll. No./Section:62/A

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**GRAPHIC ERA HILL UNIVERSITY, DEHRADUN**

**DECLARATION**

I, **Vipul Chauhan** student of **B-tech, Semester 3,** Department of Computer Science and Engineering, Graphic Era Hill University, Dehradun, declare that the technical project work entitled “ **Supermarket Billing Calculation System** ” has been carried out by me and submitted at the beginning of 4th semester for the award of degree in B- tech of **Graphic Era Hill University** during the academic year **2021-2022**. The matter embodied in this synopsis has not been submitted to any other university or institution for the award of any other degree or diploma.

Date: 24/02/22

****

**CERTIFICATE**

This is to certify that the project report entitled “**Supermarket Billing Calculation System** ” is a bonafide project work carried out by Vipul Chauhan , Roll no- 2018855. in partial fulfilment of award of degree of B- tech of Graphic Era Hill University, Dehradun during the academic year 2021-2022. It is certified that all corrections/suggestions indicated for internal assessment have been incorporated. The project has been approved as it satisfies the academic requirements associated with the degree mentioned.

**ACKNOWLEDGEMENT**

Here by I am submitting the project report on **“Supermarket Billing Calculation System ”** as per the scheme of Graphic Era Hill University, Dehradun.

I would like to express my sincere thanks to my project Co-Ordinator Mr. Rahul Chauhan, and my project guide Mrs. Manisha Aeri for their patience, support and encouragement throughout the completion of this project and having faith in me.

Finally, I am very much thankful to all the faculty members of the Department of Computer Science and Engineering, friends and my parents for their constant guidance and immense support for completing project within limited time frame.

Vipul Chauhan

Roll no. 2018855

**SUPERMARKET BILLING CALCULATION SYSTEM**

**PROBLEM STATEMENT**

Supermarket is the self-service shop where the customers come to purchase their daily using products and pay for that.

It is very difficult for the Supermarket team to manage the record of each and every item in the store and keep track of all the sales records and there is also a need to calculate how many products are sold and to generate the bill for the customer.

So all these tasks are not simple and easier so what I did is keeping these points in my mind I build this project using C++ objects and classes concepts.

**INTRODUCTION**

The project is on **Supermarket Billing Calculation System**.

In my project I have 2 users. First one is the Manager who has the rights to change the login details of himself and the cashier or to add the new manager or new cashier. The manager also has the rights to change the stock and price of the items of the supermarket and add new item to the supermarket in short we can say that the manager has the rights to update the stock of items in supermarket.

Second one is the cashier who only has the rights to generate the bill by accepting the items and the quantity of the item purchased by the customer and generate the bill according to the item list made by the manager and then finally print the bill and generate the text file of the bill and at last collect the cash.

**A BRIEF MOTIVATION FOR DOING THE PROJECT**

The motivation for doing this project was primarily an interest in undertaking a challenging project in an interesting area of Computer Science that is OOPs.

As I was studying the subject OOPs with C++ in my third semester I found the subject very interesting and I want to explore the language more so I selected this Supermarket Billing Calculation System as my 3rd Semester mini Project as in it there was an option to either choose C/C++ to write the code.

**WORK FLOW**

Work in the Supermarket will be done in the following ways:

* The item will come in the store.
* Manager will enter the name, stock, and price of the item in the database.
* The customer will come and take the basket with him/her and choose the items and put them in the basket and took the basket to the counter.
* The cashier will take the item one by one and using barcode make the entry in the database and then the bill will be calculated and generated and then the total payment is shown.
* Customer will pay for the items.
* All the items will be packed by the cashier and then he will hand over it to the customer along with the bill.

**TOOLS USED**

Programming language which is used is **C++** .

Operating System which is used is **macOS BIG SUR** Version: 11.6.4 .

Software which is used is **Visual Studio Code** Version: 1.64.2(Universal) .

File handling is used for the Database which makes the project Standalone project so that full access of the project is given to the user that is the manager and cashier of supermarket without any requirement of the network.

**METHODOLOGY**

1. **HEADER FILES USED**

* **#include<iostream>**

To use cin , cout that are basic input output streams.

* **#include<iomanip>**

To use the input output manipulators and one which is used in my code is setprecision().

* **#include<fstream>**

To do file handling as it has ofstream and ifstream in it.

* **#include<stdlib.h>**

To use clear screen function that is system(“clear”) .

* **#include<chrono>**
* **#include<thread>**

Chrono and thread both are used to add time delay in my code.

sleep\_for(nanosecond())

sleep\_until(system\_clock::now()+seconds())

* **#include<vector>**

It is used to use the vectors of STL.

* **#include<sstream>**

To create string object that is treated as the stream.

* **#include<ctime>**

To print the date and time .

* **#include<unistid.h>**

To create the loading animation.

1. **CLASSES CREATED**
   * **User-** I have created an abstract class of the user by declaring the pass\_check() function as the pure virtual function in this class so that no object of this class can me created. And approximately my whole main components are written in this class only.

**Member Function of this class User**

**1-initially()-** Used to initialize the grand total and GST to 0 .

**2-set\_id\_pass()-** Used to read the id pass of manager and cashier from the file password.txt and set them as the value in the variables .

**3-set\_manager()-** To set the updated id pass of manager to the file password.txt.

**4-set\_cashier()-** To set the updated id pass of cashier to the file password.txt.

**5-check\_manager()-** To check the login details of manager and return true if the details are matched .

**6-check\_pass()-** To check the password of both the manager and the cashier and return 1 if it matches the manager’s id/pass and if it matches the cashier’s id/pass return 2 else if it doesn’t matches with any one return 0 .

**7-items()-** To check for the item present in the stock and update the stock and price of the item if found and reflect the change back to the file items.txt

**8-Cashier\_items()-** To check if the item present in the file items.txt and if present then check its stock and price and then update it by asking user how many he wants to buy and then update the new reduced stock in the file items.txt and then keep the track of the item purchased for the generation of the bill.

**9-items\_stock()-** To update the stock of the item in items.txt.

**10-add\_item()-** To add the new item in the file items.txt.

**11-Bill\_generate()-** To take the list of purchased item and help in generating bill.

**12-load()-** To create the loading animation().

**13-Bill\_printing()-** To print the bill in the terminal window and make the text file of the bill for the future reference.

* **login-** I have created this class by inheriting the class User in it in public mode so that I can access all the member functions of class User.

**Member Function of this class login**

**1-login()-** To call the function initially of the class User.

**2-manager\_check()-** To call the check\_manager() function of the class User.

**3-pass\_check()-** To call the function check\_pass() of the class User.

**4-set\_id\_password()-** To call the function set\_id\_pass() of t the class User.

**5-sign\_up()-** To set the id password for the manager and the cashier by calling the functions set\_manager() and set\_cashier() functions of the class User.

**6-manager()-** Functions that gives the access to the manager to change the stock and price of the item by calling the function item\_stock() and to add new items by calling the function add\_item() of the class User.

**7-cashier()-** Function that gives the access to the cashier to generate and print the bill by calling the function Bill\_generate() of the class User.

And then there is the main program that is just the menu from where the control is transferred to the functions.

**CONCLUSION**

At last I am able to complete the project and my project is fully functional and can be easily used by the supermarket to make their work fast and simple.

**REFERENCE**

Some reference to complete this project is taken from google and youtube.

Standalone project so that full access of the project is given to the user that is the manager and cashier of In our project we have 2 users. First one is the

administrator who will decide the taxes and

commissions on the products and can see the report

of any product. He is the one who will decide the

products available for customers. The second one is

the customer or the billing manager who can

purchase the items available or can make the bill for

the customers.

This project can also be used for online purchasing

as the customer can access it easily

In our project we have 2 users. First one is the

administrator who will decide the taxes and

commissions on the products and can see the report

of any product. He is the one who will decide the

products available for customers. The second one is

the customer or the billing manager who can

purchase the items available or can make the bill for

the customers.

This project can also be used for online purchasing

as the customer can access it easil