

Vision

Provide skilled professionals in Computer Engineering to contribute towards the advancement of technology useful for society and industrial environment.

Mission

- M1. Impart need based and value based education by providing exposure of latest tools and technologies in the area of computer engineering to satisfy the stakeholders.
- **M2**. Upgrade and maintain facilities for quality technical education with continuous effort for excellence in Computer Engineering.
- M3. Train students with Computer Engineering knowledge to apply it in the general disciplines of design, deployment of software and integration of existing technologies for E-governance and for benefit of society.
- **M4**. Provide a learning ambience to enhance innovations, problem solving skills, leadership qualities, team spirit and ethical responsibilities.
- **M5.** Provide an academic environment and consultancy services to the industry and society in the area of Computer Engineering.

MICRO-PROJECT REPORT

ON

Supermarket Billing System in C++

In Partial fulfilment of Diploma in Computer Engineering

Third Semester

In the subject of

Object Oriented Programming using C++ (CM3405)

By

Mr. Ayush Bulbule (19CM007)

Submitted To



Government Polytechnic, Amravati

(An Autonomous Institute of Govt. of Maharashtra)

Under the guidance of

Mrs. Smita Patil Mam

Lecturer in Object Oriented Programing in C++

Department of Computer Science & Engg. Government Polytechnic, Amravati (2020-2021)



Government Polytechnic, Amravati.

(An Autonomous Institute of Govt. of Maharashtra)

Department of Computer Science & Engg.

Certificate

This is to certify that Mr. Ayush Bulbule Identity Code 19CM007 of Third Semester Diploma in Computer Engineering has satisfactorily completed the micro project entitled "Developing Supermarket

Billing System in C++ " in (CM3406) Object Oriented Programming in C++ the academic year 2020-21 as prescribed in curriculum.

Place: Amravati

Date: 05 /01 /2021 Lecturer in **Object Oriented**

Programming in C++

Mrs. Smita Patil

Annexure-I

Title of Micro-Project

To Develop Super-Market Billing System

1.0 Brief Introduction

The project entitled "Supermarket Billing System" is a mini project build in C++ programming Language. This project is basically a console app build with the help of C++ iostream, fstream and other C++ files. This project also have features like Adding, Deleting or Updating a Bill and Printing the Bill.

2.0 Aim of the Micro-Project

This Micro-Project aims at: <u>Developing Supermarket Billing System in C++</u>

- 1. Learn concepts of C++ programming Language.
- 2. Learn file handling in C++.

3.0 Action Plan (Sequence and time required for major activities for 8 weeks)

S.N.	Details of activity	Planned	Planned	I. Code &Name of
		start	Finish	Team Members
		date	date	
1	Gathering Information	5-12-	12-12-	Bhagyashree Tekade
		2020	2020	(19CM003)
2	Making report and file	27-12-	9-1-	Pratham Gaur
		2021	2021	(19CM020)
3	Preparing the Code of	10-1-	18-1-	Ayush Bulbule
	system in C++	2021	2021	(19CM007)
4	Planning proposal	13-12-	19-12-	Akanksha Shewatkar
	submission	2020	2020	(19CM057)
5	Gathering content	5-12-	12-12-	Malhar Joshi
		2020	2020	(19CM033)

4.0 Resources Required (major resources such as raw material, some machining facility, software etc.)

S.N.	Name of Resource/material	Specifications	Remarks
1	Computer System (System with basic configuration)	_	
2	Visual Studio Code		
3	GCC compiler		
4	M S Word		
5	Windows 10		

5.0 Names of Team Members with Identity Codes:

- i. Bhagyashree Tekade (19CM003)
- ii. Ayush Bulbule (19CM007)
- iii. Pratham Gaur (19CM020)
- iv. Malhar Joshi (19CM033)
- v. Akanksha Shewatkar (19CM057)

Guideline for Assessment of Micro-Project

Evaluation as per suggested Rubric for Assessment of Micro-Project

Assessment	Characteristic to be assessed	Average	Good	Excellent
Parameter		(1 mark)	(1.5	(2 mark)
			mark)	
Process	Relevance of the courses &			
Assessment	proposals			
(06)	Literature survey/market			
	survey/information collection			
	Analysis of data & completion of the			
	target as per proposal/			
Product	Report Preparation/Quality of			
Assessment	Prototype/model			
(04)				

Annexure-II

Title of Micro Project

To Develop Super-Market Billing System

1.0 Brief Introduction

The project entitled "Supermarket Billing System" is a mini project build in C++ programming Language. This project is basically a console app build with the help of C++ iostream, fstream and other C++ files. This project also have features like Adding, Deleting or Updating a Bill and Printing the Bill.

2.0 Aim of the Micro-Project

This Micro-Project aims at: <u>Developing Supermarket Billing System in C++</u>

- 1. Learn concepts of C++ programming Language.
- 2. Learn file handling in C++.

2.0 Course Outcomes Integrated

- 1. To Implement Basic Concepts of C++
- 2. Use Various concepts of Object Oriented Programming.
- 3. Implement Inheritance Related Concepts.
- 4. Make use of File Handling.

4.0 Actual Procedure Followed

- 1) Bhagyashree Tekade: Gathered information about the working of Supermarket Billing System.
- 2) Ayush Bulbule: Prepared the Code for the application in C++
- 3) Pratham Gaur: Prepared word file related the project with synopsis also.
- 4) Malhar Joshi: Tested the system and gathered other related info.
- 5) Akanksha Shewatkar: Planned about and managed submission.

5.0 Actual Resources used (Mention the actual resources used)

S.N.	Name of	Specifications	Remarks
	Resource/material		
1	Computer System		
	(System with basic		
	configuration)		
2	Visual Studio Code	version 1.52	
3	GCC compiler	Version - 10.2	
3	GCC compiler	version - 10.2	
4	M S Word	2019	
5	Windows 10		

6.0 Output of the Micro-Project

Output of this Micro-Project is attached to this file.

7.0 Skill Developed / Learning outcomes of this Micro-Project

- 1. To Implement Basic Concepts of C++
- 2. Use Various concepts of Object Oriented Programming.
- 3. Implement Inheritance Related Concepts.
- 4. Make use of File Handling.

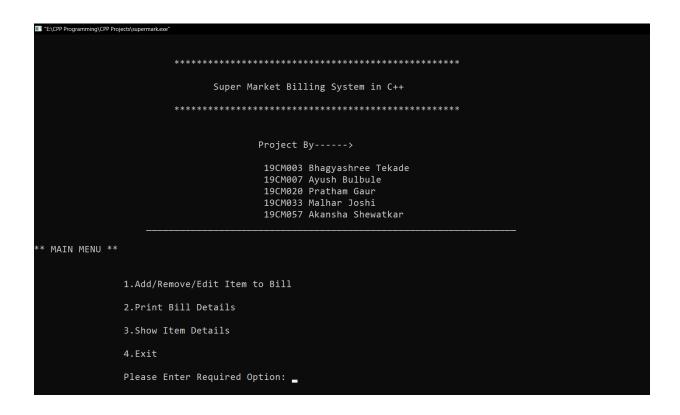
8.0 Assessment by Faculty as per Rubrics

Process Assessment	Product	Total Marks	Signature of Faculty
(06)	Assessment (04)	(10)	

Supermarket Billing in C++

What is Super Market Billing System?

Supermarket Billing System is a software which in now in this digital era used by most of the supermarkets, stores and mini-shops also. This software helps the client (shopkeeper/ manager) to mange Bills. This software calculates the tax and discount and prints the net amount to be paid. It helps in doing the billing in easier and efficient way. It also helps to hold all product details in it. This software reduces all that problem which occur in the traditional billing style i.e. the penpaper billing. Where it becomes very tricky to manage the bills and records and to calculate GST and the Discount.



Working Methodology:

Two classes, class amount, and the class item can be found in this project in which class amount is inherited from the class item. The project is simple to understand, and the source code has been presented in an understandable manner.

Supermarket billing system is a very simple mini project in C++, built as a console application without using graphics features. It's just a demonstration of the use of file handling and stream class in C++ language.

Listed below are the key features of this project:

Bill Report: It shows the bill report of all the items added in supermarket billing system.

Add, Remove or Edit items: With this feature, you can add, remove and modify item details. In, add items, you can add information or details.

Show item details: This feature allows users to see the items and the corresponding details given for the item while adding the item. Some rooms for improvements in this supermarket billing system project include the use of 'while' loop instead of the 'goto' label. Many programmers consider the use of 'goto' label to be not good or less efficient.

You can take the use of 'goto' label as the prime defect of this project. It has been used to jump from one menu to another within the program. Also, for editing and deleting the recorded items, separate functions have not been used.

C++ Code:

```
#include <iostream>
#include <windows.h>
#include <conio.h>
#include <fstream>
#include <string.h>
#include <cstring>
#include <cstdio>
#include <cstdlib>
#include <iomanip>
using namespace std;
//global variable declaration
int k = 7, r = 0, flag = 0;
COORD coord = \{0, 0\};
//Function to set Cursor to place
void gotoxy(int x, int y)
{
    COORD coord;
    coord.X = x;
    coord.Y = y;
    SetConsoleCursorPosition(GetStdHandle(STD_OUTPUT_HANDLE), coord);
//User Defined data Type Date
struct date
    int mm, dd, yy;
};
//Objects For File Handling
ofstream fout;
ifstream fin;
//Class Item holding Item no and Name
class item
{
    int itemno;
    char name[25];
```

```
date d;
public:
    void add()
    {
         cout << "\tItem No: ";</pre>
         cin >> itemno;
         cout << "\tName of the item: ";</pre>
         cin.ignore();
         cin.getline(name, 24);
         //gets(name);
         cout << "\n\tManufacturing Date(dd mm yy): ";</pre>
         cin >> d.dd >> d.mm >> d.yy;
    }
    void show()
    {
         cout << "\n\tItem No: ";</pre>
         cout << itemno;</pre>
         cout << "\n\tName of the item: ";</pre>
         cout << name;</pre>
         cout << "\n\tDate : ";</pre>
         cout << d.dd << "-" << d.mm << "-" << d.yy;</pre>
    }
    void report()
         gotoxy(3, k);
         cout << itemno;</pre>
         gotoxy(13, k);
         puts(name);
    }
    int retno()
    {
         return (itemno);
    }
};
//amount class Derived from item to hold
class amount : public item
{
```

```
float price, qty, gst, gross, dis, netamt;
public:
    void add();
    void show();
    void report();
    void calculate();
    void pay();
    float getnetamt()
    {
        return (netamt);
    }
    float getdis()
    {
        float discount = (qty * (price * (dis / 100)));
        return (discount);
    }
    float gettax()
        float tax = (qty * (price * (gst / 100)));
} amt;
void amount::add()
    item::add();
    cout << "\tPrice: ";</pre>
    cin >> price;
    cout << "\tQuantity: ";</pre>
    cin >> qty;
    cout << "\tGST %%: ";</pre>
    cin >> gst;
    cout << "\tDiscount %%: ";</pre>
    cin >> dis;
    calculate();
    fout.write((char *)&amt, sizeof(amt));
    fout.close();
void amount::calculate()
```

```
gross = price + (price * (gst / 100));
    netamt = qty * (gross - (gross * (dis / 100)));
void amount::show()
    fin.open("billitems.dat", ios::binary);
    fin.read((char *)&amt, sizeof(amt));
    item::show();
    cout << "\n\n\tNet amount: ";</pre>
    cout << netamt;</pre>
    fin.close();
}
void amount::report()
    item::report();
    gotoxy(23, k);
    cout << price;</pre>
    gotoxy(33, k);
    cout << qty;</pre>
    gotoxy(44, k);
    cout << gst;</pre>
    gotoxy(52, k);
    cout << (gst / 2);
    gotoxy(62, k);
    cout << (gst / 2);</pre>
    gotoxy(72, k);
    cout << dis;</pre>
    gotoxy(84, k);
    cout << netamt;</pre>
    k = k + 1;
    if (k == 50)
    {
        gotoxy(25, 50);
        cout << "PRESS ANY KEY TO CONTINUE...";</pre>
        getch();
        k = 7;
         system("cls");
```

```
gotoxy(30, 3);
       cout << " ITEM DETAILS ";</pre>
       gotoxy(3, 5);
       cout << "NUMBER";</pre>
       gotoxy(13, 5);
       cout << "NAME";</pre>
       gotoxy(23, 5);
       cout << "PRICE";</pre>
       gotoxy(33, 5);
       cout << "QUANTITY";</pre>
       gotoxy(44, 5);
       cout << "GST";</pre>
       gotoxy(52, 5);
       cout << "SGST";</pre>
       gotoxy(62, 5);
       cout << "CGST";</pre>
       gotoxy(72, 5);
       cout << "DEDUCTION";</pre>
       gotoxy(84, 5);
       cout << "NET AMOUNT";</pre>
   }
}
void amount::pay()
   show();
   cout << "\n\t\t</pre>
                                DETAILS
   cout << "\n\t\tPRICE</pre>
                                       :" << price;
   cout << "\n\t\tQUANTITY</pre>
                                      :" << qty;
   cout << "\n\t\tGST PERCENTAGE</pre>
                                       :" << gst;
   cout << "\n\t\tDISCOUNT PERCENTAGE :" << dis;</pre>
   cout << "\n\n\t\tNET AMOUNT</pre>
                                           :Rs." << netamt;
   cout << "\n\t\tTAX</pre>
                                       :Rs." << gettax();
   cout << "\n\t\tDISCOUNT</pre>
                                        :Rs." << getdis();
```

```
//Driver Code
int main()
{
   cout.setf(ios::fixed);
   cout.setf(ios::showpoint);
   cout << setprecision(2);</pre>
   fstream tmp("temp.dat", ios::binary | ios::out);
menu:
    system("cls");
   gotoxy(25, 2);
    cout << "*********** << end
1;
   gotoxy(25, 4);
    cout << "\tSuper Market Billing System in C++" << endl;</pre>
    gotoxy(25, 6);
    cout << "*********** << end
1;
   gotoxy(25, 9);
    cout << "\t\tProject By---->" << endl;</pre>
    gotoxy(30, 11);
   cout << "\t\t 19CM003 Bhagyashree Tekade" << endl;</pre>
   gotoxy(30, 12);
    cout << "\t\t 19CM007 Ayush Bulbule" << endl;</pre>
   gotoxy(30, 13);
   cout << "\t\t 19CM020 Pratham Gaur" << endl;</pre>
    gotoxy(30, 14);
    cout << "\t\t 19CM033 Malhar Joshi" << endl;</pre>
    gotoxy(30, 15);
    cout << "\t\t 19CM057 Akansha Shewatkar\n"</pre>
         << endl;
    gotoxy(20, 16);
    cout << "
    \n\n";
    cout << "** MAIN MENU **" << endl;</pre>
    cout << "\n\n\t\t1.Add/Remove/Edit Item to Bill\n\n";</pre>
    cout << "\t\t2.Print Bill Details\n\n";</pre>
    cout << "\t\t3.Show Item Details\n\n";</pre>
    cout << "\t\t4.Exit\n\n";</pre>
    cout << "\t\tPlease Enter Required Option: ";</pre>
```

```
int ch, ff;
float gtotal, totaldis;
cin >> ch;
switch (ch)
{
case 1:
billedit:
    system("cls");
    gotoxy(25, 2);
    cout << "Bill Editor";</pre>
    gotoxy(25, 3);
    cout << "\n\t\t1.Add Item Details\n\n";</pre>
    cout << "\t\t2.Edit Item Details\n\n";</pre>
    cout << "\t\t3.Delete Item Details\n\n";</pre>
    cout << "\t\t4.Back to Main Menu " << endl;</pre>
    cout << "\t\t Please Enter Required Option: ";</pre>
    int ch2;
    cin >> ch2;
    switch (ch2)
    {
    case 1:
        fout.open("billitems.dat", ios::binary | ios::app);
        amt.add();
        cout << "\n\t\tItem Added Successfully!";</pre>
        getch();
        goto billedit;
    case 2:
        int ino;
        flag = 0;
        cout << "\n\n\tEnter Item Number to be Edited :";</pre>
        cin >> ino;
        fin.open("billitems.dat", ios::binary);
        fout.open("billitems.dat", ios::binary | ios::app);
        if (!fin)
        {
            cout << "\n\nFile Not Found...";</pre>
            goto menu;
        }
```

```
fin.seekg(0);
    r = 0;
    while (!fin.eof())
    {
        fin.read((char *)&amt, sizeof(amt));
        if (!fin.eof())
        {
             int x = amt.item::retno();
             if(x == ino)
             {
                 flag = 1;
                 fout.seekp(r * sizeof(amt));
                 system("cls");
                 cout << "\n\t\tCurrent Details are\n";</pre>
                 amt.show();
                 cout << "\n\n\t\tEnter New Details\n";</pre>
                 amt.add();
                 cout << "\n\t\tItem Details editted";</pre>
             }
        r++;
    if (flag == 0)
    {
        cout << "\n\t\tItem No does not exist...Please Retry!";</pre>
        getch();
        goto billedit;
    fin.close();
    getch();
    goto billedit;
case 3:
    flag = 0;
    cout << "\n\n\tEnter Item Number to be deleted :";</pre>
    cin >> ino;
    fin.open("billitems.dat", ios::binary);
    if (!fin)
    {
        cout << "\n\nFile Not Found...";</pre>
```

```
goto menu;
    //fstream tmp("temp.dat",ios::binary|ios::out);
    fin.seekg(0);
    while (fin.read((char *)&amt, sizeof(amt)))
    {
        int x = amt.item::retno();
        if (x != ino)
            tmp.write((char *)&amt, sizeof(amt));
        else
        {
            flag = 1;
        }
    }
    fin.close();
    tmp.close();
    fout.open("billitems.dat", ios::trunc | ios::binary);
    fout.seekp(0);
    tmp.open("temp.dat", ios::binary | ios::in);
    if (!tmp)
    {
        cout << "Error in File";</pre>
        goto billedit;
    while (tmp.read((char *)&amt, sizeof(amt)))
        fout.write((char *)&amt, sizeof(amt));
    tmp.close();
    fout.close();
    if (flag == 1)
        cout << "\n\t\tItem Succesfully Deleted";</pre>
    else if (flag == 0)
        cout << "\n\t\tItem does not Exist! Please Retry";</pre>
    getch();
    goto billedit;
case 4:
    goto menu;
default:
    cout << "\n\n\t\tWrong Choice!!! Retry";</pre>
    getch();
```

```
goto billedit;
    }
case 2:
billdetail:
    system("cls");
    gotoxy(25, 2);
    cout << "Bill Details";</pre>
    gotoxy(25, 3);
    cout << "======\n\n";</pre>
    cout << "\n\t\t1.All Items\n\n";</pre>
    cout << "\t\t2.Back to Main menu\n\n";</pre>
    cout << "\t\tPlease Enter Required Option: ";</pre>
    int ch3;
    cin >> ch3;
    if (ch3 == 1)
    {
         system("cls");
         gotoxy(30, 3);
         cout << " BILL DETAILS ";</pre>
         gotoxy(3, 5);
         cout << "ITEM NO";</pre>
         gotoxy(13, 5);
         cout << "NAME";</pre>
         gotoxy(23, 5);
         cout << "PRICE";</pre>
         gotoxy(33, 5);
         cout << "QUANTITY";</pre>
         gotoxy(44, 5);
         cout << "GST %";</pre>
         gotoxy(52, 5);
         cout << "SGST %";</pre>
         gotoxy(62, 5);
         cout << "CGST %";</pre>
         gotoxy(72, 5);
         cout << "DISCOUNT %";</pre>
         gotoxy(84, 5);
         cout << "NET AMOUNT";</pre>
         fin.open("billitems.dat", ios::binary);
```

```
if (!fin)
             {
                 cout << "\n\nFile Not Found...";</pre>
                 goto menu;
            fin.seekg(0);
            gtotal = 0;
            while (!fin.eof())
            {
                 fin.read((char *)&amt, sizeof(amt));
                 if (!fin.eof())
                 {
                     amt.report();
                     gtotal += amt.getnetamt();
                     totaldis += amt.getdis();
                     ff = 0;
                 }
                 if (ff != 0)
                     gtotal = 0;
             gotoxy(17, k);
             cout << "\n\n\t\t\tGrand Total = " << gtotal;</pre>
            cout << "\n\n\t\t Congratulations You Saved Total: Rs. " <<</pre>
totaldis << " !!";</pre>
            getch();
            fin.close();
        }
        if (ch3 == 2)
        {
            goto menu;
        }
        goto billdetail;
    case 3:
        system("cls");
        flag = 0;
        int ino;
        cout << "\n\n\t\tEnter Item Number :";</pre>
        cin >> ino;
```

```
fin.open("billitems.dat", ios::binary);
    if (!fin)
    {
        cout << "\n\nFile Not Found...\nProgram Terminated!";</pre>
        goto menu;
    }
    fin.seekg(0);
    while (fin.read((char *)&amt, sizeof(amt)))
    {
        int x = amt.item::retno();
        if(x == ino)
        {
            amt.pay();
            flag = 1;
            break;
        }
    }
    if (flag == 0)
        cout << "\n\t\tItem does not exist....Please Retry!";</pre>
    getch();
    fin.close();
    goto menu;
case 4:
    system("cls");
    gotoxy(20, 20);
    cout << "ARE YOU SURE, YOU WANT TO EXIT (Y/N)?";</pre>
    char yn;
    cin >> yn;
   if ((yn == 'Y') || (yn == 'y'))
        gotoxy(12, 20);
        system("cls");
        cout << "*************** THANKS ***********
        getch();
        exit(0);
    }
    else if ((yn == 'N') || (yn == 'n'))
        goto menu;
```

```
else
{
     goto menu;
}
default:
     cout << "\n\n\t\tWrong Choice....Please Retry!";
     getch();
     goto menu;
}
return 0;
}</pre>
```

Output:

Screen 1:

```
*** MAIN MENU **

1.Add/Remove/Edit Item to Bill
2.Print Bill Details
3.Show Item Details
4.Exit
Please Enter Required Option:
```

1.2. Main Screen

Main Screen on Start of Application shows the Main Menu.

```
Bill Editor

_____

1.Add Item Details

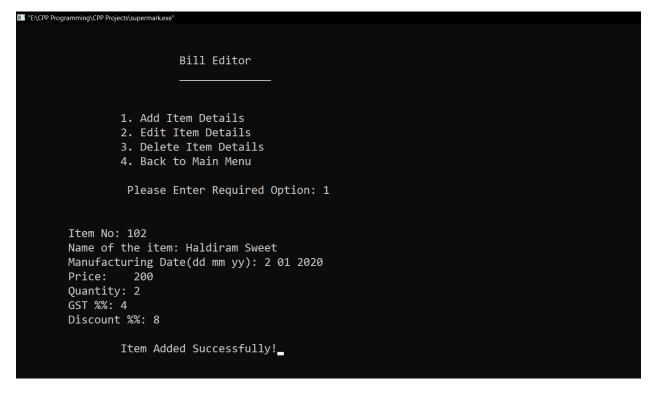
2.Edit Item Details

3.Delete Item Details

4.Back to Main Menu
Please Enter Required Option: ____
```

1.3 Bill Editing Screen

Screen after selecting Option 1 from main menu. Bill Editing Screen with functionality to edit, add or delete the bill.



1.4 Bill Add Item Screen

Screen after selecting Option NO: 1 from Bill Editing Screen Enable the user to add details of particular product to the bill. This adds the item to the bill.

```
Current Details are

Item No: 102
Name of the item: Haldiram Sweet
Date: 2-1-2020

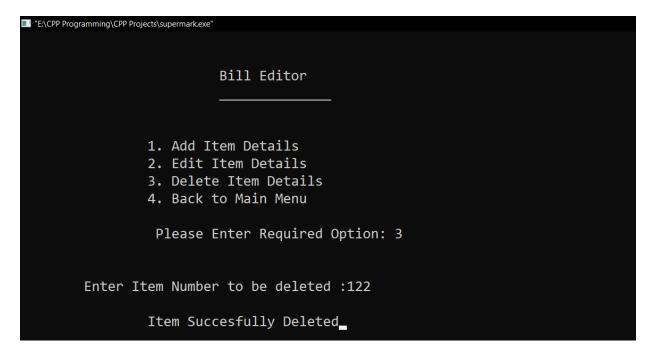
Net amount: 382.72

Enter New Details

Item No: 122
Name of the item: Haldiram Petha
Manufacturing Date(dd mm yy): 2 1 2020
Price: 210
Quantity: 2
GST %%: 4
Discount %%: 6_
```

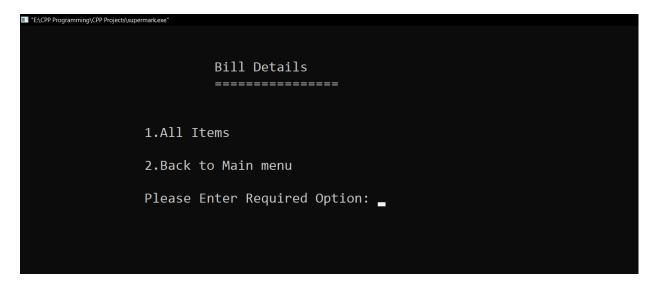
1.5 Bill Add Item Screen

Screen after selecting Option NO: 2 from Bill Editing Screen Enable the user to edit details of previously added product to the bill. It will show current details of item from bill and takes input of new details.



1.6 Bill Add Item Screen

Screen after selecting Option NO: 3 from Bill Editing Screen Enable the user to delete an item from bill. It asks user to enter item no to delete it.



1.7 Bill Details section

Screen 2: Bill Details Option from Main Menu. This gives you option to Get Bill details.

```
BILL DETAILS
ITEM NO
         NAME
                   PRTCE
                            QUANTITY
                                       GST % SGST %
                                                        CGST %
                                                                  DISCOUNT % NET AMOUNT
102
         Haldiram S200.00
                            2.00
                                       4.00
                                               2.00
                                                        2.00
                                                                  8.00
                                                                             382.72
         Balaji Sna55.00
                            2.00
                                       4.00
102
                                               2.00
                                                        2.00
                                                                  10.00
                                                                             102.96
102
         Balaji Waf80.00
                            2.00
                                       4.00
                                              2.00
                                                        2.00
                                                                  8.00
                                                                             153.09
402
         NoteBook 18.00
                            12.00
                                       8.00
                                              4.00
                                                        4.00
                                                                  10.00
                                                                             209.95
                    Grand Total = 848.72
             Congratulations You Saved Total: Rs. 77.40 !!_
```

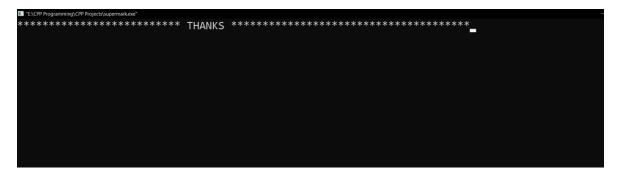
1.8 Prints Bill

This screen prints all the bill details on the screen. With each and every Info such as Bill Tax, Discount, Price, SGST, CGST, Net Amount and Grand Total to Pay!!

```
Get Item Detais
      Enter Item Number :402
Item No: 402
Name of the item: NoteBook
Date : 2-1-2020
Net amount: 209.95
      ************
                  DETAILS
      ************
      PRICE
                         :18.00
      QUANTITY
                         :12.00
      GST PERCENTAGE
                         :8.00
      DISCOUNT PERCENTAGE
                         :10.00
      NET AMOUNT
                         :Rs.209.95
      TAX
                         :Rs.17.28
      DISCOUNT
                         :Rs.21.60
      *************
```

1.8 Prints Bill

Option 3 From main menu. Asks for Item no and show all the details of that particular item.



1.9 Program Exit

Option 4: From main menu exit Screen....... Terminates the Program
