Course Title: Problem Solving with C Laboratory	
Course code: UE19CS152	
Semester : II sem	Section:
SRN:PES1UG19CS214	Name:Kartikey Vernekar
SRN:PES1UG19CS599	Name:Gaurav J
SRN:PES1UG19ME195	Name:Sumanth.R.Hegde
SRN:PES1UG19CV026	Name:Korikiran Warad

PROJECT REPORT

Problem Statement

Pos Simulator using command line interface

Description

This is supposed to simulate all the activities that occur at a POS terminal in a   superstore. The different activities are:

i) Scanning the code of all the items bought by the customer (This will identify the productand get the price)

ii) Generate the bill of all the items bought by the customer.

iii) The project has to store data about all the products being sold
(Name of the product, price, any discounts being offered, etc - No   database required,students should use flat files)

iv) Once the bill is generated, an option to pay (simulate cash   payment - Addition, Subtraction, etc)

v) The bill should be shown up in a format which displays the   name of the store, the items bought, quantity, price per item and the total.

vi) There could be items which are sold as a pack - Buy one get one free, or a number of items packed into one bunch and priced as one single item.

C-concepts used

1. Structures
2. Arrays
3. File handing
4. loops and counting

Learning Outcome

1. We learnt how to strategically develop a layout using functions to minimize lines of code,i.e reuse the function calls for different purposes

2. How to maintain flow of control in our program

3. How critical is type-casting as at the time of displaying as printf doesn't type cast on it's own .

4. File Handling with structures

5. __Date__,__TIME__ macros

6. Practical and runtime Error handling ,eg if same barcode is added for 2 products Customer cannot pay an amount less than the bill, while edit/deleting item if barcode doesn't exist, Deleting content such as a bill file to get ready for

Output Screenshots

Main Menu

Setup Menu

1.change shop option

2.Add Item

```
                    Setup
---------------------------------------------
      1.Change Shop Name
      2.Add Item
      3.Edit Item
      4.Delete Item
      5.Main Menu
---------------------------------------------
Enter option:2
---------------------------------------------
            Item List
---------------------------------------------

!Sl.no!   Barcode !    Name    ! Price !Qty/unit!Buy - Free!Discount!SoldQty!
---------------------------------------------------------------------------
1       G1R4FS0201 Toor Dal   120.00    1.00     0-0        0%    2.00
2       G1R4FS0202 Moong Dal  120.00    1.00     0-0        2%    0.00
3       G1R4FS0203 Raagi       35.00    0.50     0-0        2%    0.00
4       G1R4FS0204 Maize       70.00    1.00     0-0        2%    0.00
5       G1R4FS0205 Jowar       50.00    1.00     0-0        2%    0.00
6       G1R4FS0206 Bajra       70.00    1.00     0-0        2%    0.00
7       G1R4FS0207 Horse Gram  90.00    1.00     0-0        2%    0.00
8       P3F4FS1001 Chips      100.00   10.00     2-1       10%    0.00
9       P1F4FS0502 Cornflakes 160.00    1.00     3-1        5%    4.00
---------------------------------------------------------------------------
Enter Barcode:P1F4FS0503
Enter Item Name:Noodles
Price:20
default quantity(i.e sold in pack of/kgs of):1
Buy-free quantity:51
discount rate(%):0
item added
```

Error handled in add item menu

```
---------------------------------------------
                    Setup
---------------------------------------------
      1.Change Shop Name
      2.Add Item
      3.Edit Item
      4.Delete Item
      5.Main Menu
---------------------------------------------
Enter option:2
---------------------------------------------
            Item List
---------------------------------------------

!Sl.no!   Barcode !    Name    ! Price !Qty/unit!Buy - Free!Discount!SoldQty!
---------------------------------------------------------------------------
1       G1R4FS0201 Toor Dal   120.00    1.00     0-0        0%    5.00
2       G1R4FS0202 Moong Dal  120.00    1.00     0-0        2%    0.00
3       G1R4FS0203 Raagi       35.00    0.50     0-0        2%    0.00
4       G1R4FS0204 Maize       70.00    1.00     0-0        2%    0.00
5       G1R4FS0205 Jowar       50.00    1.00     0-0        2%    0.00
6       G1R4FS0206 Bajra       70.00    1.00     0-0        2%    0.00
7       G1R4FS0207 Horse Gram  90.00    1.00     0-0        2%    0.00
8       P3F4FS1001 Chips      100.00   10.00     2-1       10%    0.00
9       P1F4FS0502 Cornflakes 160.00    1.00     3-1        5%    4.00
10      P1F4FS0503 Noodles     15.00    1.00     6-1        0%   13.00
---------------------------------------------------------------------------
Enter Barcode:G1R4FS0201                        Item added
barcode aldready exists!
```

3.Edit item

```
                Setup
----------------------------------------
   1.Change Shop Name
   2.Add Item
   3.Edit Item
   4.Delete Item
   5.Main Menu
----------------------------------------
Enter option:3
----------------------------------------
            Item List
----------------------------------------

¦Sl.no¦  Barcode ¦   Name    ¦ Price ¦Qty/unit¦Buy - Free¦Discount¦SoldQty¦

 1      G1R4FS0201 Toor Dal   120.00     1.00    0-0           0%   5.00
 2      G1R4FS0202 Moong Dal  120.00     1.00    0-0           2%   0.00
 3      G1R4FS0203 Raagi       35.00     0.50    0-0           2%   0.00
 4      G1R4FS0204 Maize       70.00     1.00    0-0           2%   0.00
 5      G1R4FS0205 Jowar       50.00     1.00    0-0           2%   0.00
 6      G1R4FS0206 Bajra       70.00     1.00    0-0           2%   0.00
 7      G1R4FS0207 Horse Gram  90.00     1.00    0-0           2%   0.00
 8      P3F4FS1001 Chips      100.00    10.00    2-1          10%   0.00
 9      P1F4FS0502 Cornflakes 160.00     1.00    3-1           5%   4.00
10      P1F4FS0503 Noodles     15.00     1.00    6-1           0%  13.00
----------------------------------------

Enter barcode:P1F4FS0503
enter new attributes
Enter Barcode:G1R4FS0207
Enter Item Name:Chocolates
Price:20
default quantity(i.e sold in pack of/kgs of):3
discount quantity:51
discount rate():2
item edited
```

Edited Item

4.Delete item

```
                Setup
----------------------------------------
   1.Change Shop Name
   2.Add Item
   3.Edit Item
   4.Delete Item
   5.Main Menu
----------------------------------------
Enter option:4
----------------------------------------
            Item List
----------------------------------------

¦Sl.no¦  Barcode ¦   Name    ¦ Price ¦Qty/unit¦Buy - Free¦Discount¦SoldQty¦

 1      G1R4FS0201 Toor Dal   120.00     1.00    0-0           0%   5.00
 2      G1R4FS0202 Moong Dal  120.00     1.00    0-0           2%   0.00
 3      G1R4FS0203 Raagi       35.00     0.50    0-0           2%   0.00
 4      G1R4FS0204 Maize       70.00     1.00    0-0           2%   0.00
 5      G1R4FS0205 Jowar       50.00     1.00    0-0           2%   0.00
 6      G1R4FS0206 Bajra       70.00     1.00    0-0           2%   0.00
 7      G1R4FS0207 Horse Gram  90.00     1.00    0-0           2%   0.00
 8      P3F4FS1001 Chips      100.00    10.00    2-1          10%   0.00
 9      P1F4FS0502 Cornflakes 160.00     1.00    3-1           5%   4.00
10      G1R4FS0207 Chocolates  20.00     3.00    5-1           2%  13.00
----------------------------------------
Enter barcode to delete:G1R4FS0207
item deleted
```

Edited Item

Item to be deletd

Item List option (main menu)

```
========================================
                POS SYSTEM
========================================

    1.Setup
    2.Display Item list
    3.Bill
    4.Exit
========================================
Enter option:2
----------------------------------------
            Item List
----------------------------------------

!Sl.no!  Barcode !    Name   ! Price !Qty/unit!Buy - Free!Discount!SoldQty!

1      G1R4FS0201 Toor Dal   120.00    1.00    0-0          0%   5.00
2      G1R4FS0202 Moong Dal  120.00    1.00    0-0          2%   0.00
3      G1R4FS0203 Raagi       35.00    0.50    0-0          2%   0.00
4      G1R4FS0204 Maize       70.00    1.00    0-0          2%   0.00
5      G1R4FS0205 Jowar       50.00    1.00    0-0          2%   0.00
6      G1R4FS0206 Bajra       70.00    1.00    0-0          2%   0.00
7      P3F4FS1001 Chips      100.00   10.00    2-1         10%   0.00
8      P1F4FS0502 Cornflakes 160.00    1.00    3-1          5%   4.00

        Chocolates has been
        deleted
```

Bill(main menu option)

```
----------------------------------------
            Item List
----------------------------------------

!Sl.no!  Barcode !    Name   ! Price !Qty/unit!Buy - Free!Discount!SoldQty!

1      G1R4FS0201 Toor Dal   120.00    1.00    0-0          0%   5.00
2      G1R4FS0202 Moong Dal  120.00    1.00    0-0          2%   0.00
3      G1R4FS0203 Raagi       35.00    0.50    0-0          2%   0.00
4      G1R4FS0204 Maize       70.00    1.00    0-0          2%   0.00
5      G1R4FS0205 Jowar       50.00    1.00    0-0          2%   0.00
6      G1R4FS0206 Bajra       70.00    1.00    0-0          2%   0.00
7      P3F4FS1001 Chips      100.00   10.00    2-1         10%  30.00
8      P1F4FS0502 Cornflakes 160.00    1.00    3-1          5%  14.00

----------------------------------------
            Bill
----------------------------------------
Enter barcode:P1F4FS0502
Enter no. of units:6
Do you want to add more items to the bill(y/n):_
```

Notice sold qty is at 14 and we are buying 6 +
Free qty 6/2=2*free offer(1)
soldqty should become 14+8=22

```
----------------------------------------
            Item List
----------------------------------------

!Sl.no!  Barcode !    Name   ! Price !Qty/unit!Buy - Free!Discount!SoldQty!

1      G1R4FS0201 Toor Dal   120.00    1.00    0-0          0%   5.00
2      G1R4FS0202 Moong Dal  120.00    1.00    0-0          2%   0.00
3      G1R4FS0203 Raagi       35.00    0.50    0-0          2%   0.00
4      G1R4FS0204 Maize       70.00    1.00    0-0          2%   0.00
5      G1R4FS0205 Jowar       50.00    1.00    0-0          2%   0.00
6      G1R4FS0206 Bajra       70.00    1.00    0-0          2%   0.00
7      P3F4FS1001 Chips      100.00   10.00    2-1         10%  30.00
8      P1F4FS0502 Cornflakes 160.00    1.00    3-1          5%  22.00

----------------------------------------
            Bill
----------------------------------------
Enter barcode:P3F4FS1001
Enter no. of units:2
Do you want to add more items to the bill(y/n):
```

As expected becomes 22

Pre bill

```
            << G Enterprises >>
|Sl.no|   Barcode  |    Name    | Price |Qty/unit|Freeoff|Discount|

     1 P1F4FS0502 Cornflakes 160.00      6.00       2   48.00
     2 P3F4FS1001 Chips      100.00      2.00       1   20.00

press1. to proceed with transaction
```

Bill

```
            << G Enterprises >>
|Sl.no|   Barcode  |    Name    | Price |Qty/unit|Freeoff|Discount|

     1 P1F4FS0502 Cornflakes 160.00      6.00       2   48.00
     2 P3F4FS1001 Chips      100.00      2.00       1   20.00
                                            Total = 1092.00
         Enter cash provided by customer:1500
         Change = 408.00
         Thank you for shopping
         with G Enterprises
```

Bill Reciept

```
Bill - Notepad
File  Edit  Format  View  Help
         {{ Abc }}              14:41:40
Bill no:1                                 Apr  7 2020

|Sl.no|   Barcode  |    Name    | Price |Qty/unit|Freeoff|Discount|

     1 P1F4FS0503 Noodles      15.00     7.00      1   0.00
     2 G1R4FS0201 Toor Dal    120.00     2.00      0   0.00

                                      Total = 345.00
```

Name and Signature of the Faculty