



SCHOOL OF COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE

PROBLEM SOLVING WITH PROGRAMMING [R20]

(PSP-20ES104)

COURSE PROJECT on “GROCERY STORE MANAGEMENT”

(2022-23)

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PROBLEM STATEMENT:

Develop a C Application for Grocery Management System which is needed to automatic various tasks involved in the day-to-day operations of a grocery store. The system should be able to maintain a record of all items available in the store, their prices, and the current stock quantity. It should also allow the store owner to add new items, update the stock quantity and view the list of available items.

Provide the functionality for below mentioned:

1. Collect 'n' item details from end user.

2. Printing the details of items according to the following model

a. Printing item details in sorted order based on product id, product name, product cost

(or) number of items present in store order

- ☐ Product Id
- ☐ Product Name
- ☐ Product Cost
- ☐ Number of items present
- ☐ Product Discount
- ☐ Product CGST
- ☐ Product SGST

3. Search all product details according to :

- ☐ Product Id
- ☐ Product name

○ Product cost

4. Print all products details.

MODULES:

In this application all variables and structure are declared globally so that these variables and structure members can be accessed throughout the program at any function call. We can choose any function by using function calls which are declared in switch-case. In order to repeat the loop control statement (do-while) is used with condition. The memory allocation will be done in this program dynamically. The application asks the person who runs the program that how many products data he/she want to store.

In this application four modules are used.

1. Read/Input

In this module the application asks the person who runs the program to enter n passenger's details. To give n customers details for loop is used.

2. Sorting

In this module sorting of data is done according to the chosen wise.

In this module there is a sub menu which asks to select the sorting wise by using switch case. The sorting sub menu will be like press 1 to sort by Add item details wise press 2 to Get all item details wise press 3 to Get selected item details wise press 4 to Get item details according to price press 5 to Upload item details (cost) press 6 to Delete item according to item Id and item cost press 6 to sort item details press 7 to sort item discount according to CGST and SGST press 8 to sort item name wise press 9 for Exit.

In this module we used another control statement (do while) so that the application asks whether to continue sorting.

3.Searching

In this module searching of data is done according to the chosen wise.

In this module there is a sub menu which asks to select the sorting wise by using switch case. The sorting sub menu will be like press 1 to search by item Id wise press 2 to search item Name press 3 to search itemCost wise press 4 to search itemsCount wise press 5 to search itemDiscount wise press 6 to search by itemCGST wise press 6 to search itemSGST wise.

In this module we used another control statement (do while) so that the application asks whether to continue searching.

4.Print

In this module all the stored details of n items will be displayed on to the screen.

KNOWLEDGE REQUIRED TO DEVELOP THIS APPLICATION

- Control Statements (if, if-else, switch)
- Loop Statements (while/do while, for)
- Arrays (1D/2D-arrays)
- Strings (Strings and Table of strings) and its functions
(strcpy, strcmp)

- Functions (Any type of user defined functions)
- Structure (structures and nested structures)
- Pointers (pointer to strings and pointers to structures)
- Dynamic Memory Allocation (malloc/ calloc/ realloc)

SOURCE CODE [HEADER FILE]:

```
#include<stdio.h>

struct GroceryStore
{
    int itemId;
    char itemName[100];
    int itemCost;
    int itemsCount;
    int itemDiscount;
```

```
float itemCgst; // central gst percentage
```

```
float itemSgst; // state gst percentage
```

```
}s[1000],temp;
```

```
int counter=4;
```

```
void login()
```

```
{
```

```
int i;
```

```
char uname[100];
```

```
char password[100],ch;
```

```
printf("\n\n\n\n\n\t\t\t\t\tWELCOME");
```

```
sleep(1);
```

```
printf(" TO");
```

```
sleep(1);
```

```
printf(" VIGNESHWARA");
```

```
sleep(1);
```

```
printf(" GROCERY");
```

```
sleep(1);
```

```
printf(" STORE");
```

```
sleep(1);
```

```
printf("\n\t\t\t\t\t*****");
```

```
printf("\n\n\n\n\n\t\t\t\t\tEnter User Name : ");
```

```
scanf("%s",uname);

printf("\n\n\t\t\t\t\tEnter Password : ");

    while((ch=getch())!='r'){
if(ch=='b')
{
    printf("\b\b");

    i--;

    password[i]='\0';
}
else
{

password[i]=ch;

i++;

printf("*");
}
}

password[i]='\0';


if(strcmp(uname,"m")==0 && strcmp(password,"m123")==0)
{
```



```
printf("\n\t\t\t\t\t*****");
counter=counter+1;
printf("\n Enter item Id:");
scanf("%d",&s[counter].itemId);
printf("\n Enter item name:");
scanf("%s",s[counter].itemName);
strupr(s[counter].itemName);
printf("\n Enter item cost:");
scanf("%d",&s[counter].itemCost);
printf("\n Enter items count:");
scanf("%d",&s[counter].itemsCount);
printf("\n Enter item discount:");
scanf("%d",&s[counter].itemDiscount);
printf("\n Enter cgst:");
scanf("%f",&s[counter].itemCgst);
printf("\n Enter sgst:");
scanf("%f",&s[counter].itemSgst);
printf("\n Record inserted successfully");

printf("\n press anything to continue.....");
getch();

}
```

```

void getAllDetails()

{

int i,j;

for(i=0;i<=counter;i++)

    {

        for(j=i+1;j<=counter;j++)

            {

                if(s[i].itemId>s[j].itemId)

                    {

                        temp=s[i];

                        s[i]=s[j];

                        s[j]=temp;

                    }

            }

        system("cls");

        printf("\n\n\n\n\n\t\t\t\t\tWELCOME TO VIGNESHWARA GROCERY
STORE");

        printf("\n\t\t\t\t\t*****\n\n\n\n\n");

        printf("\n\n\t\t-----
-----");

        printf("\n\n\t\t ITEM ID\tITEM NAME\tITEM COST\tITEMS
COUNT\tITEMS DISCOUNT\tCGST\tSGST");

        printf("\n\n\t\t-----
-----");

```

```
for(i=0;i<=counter;i++)

{

    printf("\n\n\t\t %5d\t\t %-15s\t %5d\t\t %5d\t\t %-5d\t\t\t %5.2f\t\t
%5.2f",s[i].itemId,s[i].itemName,s[i].itemCost,s[i].itemsCount,s[i].itemDiscount,s[i].itemCgst,s[i].itemSgst);

}

printf("\n\n\t\t-----
-----");


printf("\n\n\n press anything to continue.....");

getch();

}

void getSelectedItemDetails()

{

int i_id;

int flag=0;

int i,j;

printf("\n Get selected item details:");

scanf("%d",&i_id);

system("cls");

printf("\n\n\n\n\n\t\t\t\t\tWELCOME TO VIGNESHWARA GROCERY
STORE");

printf("\n\t\t\t\t\t*****\n\n\n\n\n");
```

```
printf("\n\n\t-----");  
-----");  
  
printf("\n\n\t\t ITEM ID\tITEM NAME\t\tITEM COST\tITEMS  
COUNT\tITEMS DISCOUNT\t\tCGST\t\tSGST");  
  
printf("\n\n\t\t-----  
-----");  
  
flag=0;  
for(i=0;i<=counter;i++)  
{  
if(i_id==s[i].itemId)  
{  
flag=1;  
printf("\n\n\t\t %5d\t\t %-15s\t %5d\t\t %5d\t\t %-5d\t\t\t  
%5.2f\t\t%5.2f",s[i].itemId,s[i].itemName,s[i].itemCost,s[i].itemsCount,s[i].itemDiscount,s[i]  
.itemCgst,s[i].itemSgst);  
break;  
}  
}  
if(flag==0)  
{  
printf("\n\n\t\t\t\t\t\t\tNO RECORDS FOUND\n\n");  
}  
printf("\n\n\t\t-----  
-----");  
  
printf("\n\n press anything to continue.....");
```

```

        getch();

    }

void getItemDetailsAccToPrice()
{
    int i,j;
    for(i=0;i<=counter;i++)
    {
        for(j=i+1;j<=counter;j++)
        {
            if(s[i].itemCost>s[j].itemCost)
            {
                temp=s[i];
                s[i]=s[j];
                s[j]=temp;
            }
        }
    }

    system("cls");

    printf("\n\n\n\n\n\t\t\t\t\tWELCOME TO VIGNESHWARA GROCERY
STORE");

    printf("\n\t\t\t\t\t*****\n\n\n\n\n");

    printf("\n\n\t\t-----
-----");

```

```

        printf("\n\n\t\t ITEM ID\tITEM NAME\t\tITEM COST\tITEMS
COUNT\tITEMS DISCOUNT\t\tCGST\t\tSGST");

        printf("\n\n\t\t-----
-----");

        for(i=0;i<=counter;i++)

        {

                printf("\n\n\t\t %5d\t\t %-15s\t %5d\t\t %5d\t\t %5d\t\t %5.2f\t\t
%5.2f",s[i].itemId,s[i].itemName,s[i].itemCost,s[i].itemsCount,s[i].itemDiscount,s[i].itemCgs
t,s[i].itemSgst);

        }

        printf("\n\n\t\t-----
-----");

        printf("\n\n\n press anything to continue.....");

        getch();

}

```

```

void UpdateItemCost()

{

int i_id,i;

int flag=0;

        printf("\n Get selected item details:");

```

```

scanf("%d",&i_id);

for(i=0;i<=counter;i++)

{

    if(s[i].itemId==i_id)

    {

        flag=1;

        printf("\n Enter new cost");

        scanf("%d",&s[i].itemCost);

    }

}

if(flag==0)

{

    printf("\n Item not found");

}


system("cls");

printf("\n\n\n\n\n\t\t\t\t\tWELCOME TO VIGNESHWARA GROCERY
STORE");

printf("\n\t\t\t\t\t*****\n\n\n\n\n");

printf("\n\n\t\t-----
-----");

printf("\n\n\t\t ITEM ID\tITEM NAME\t\tITEM COST\tITEMS
COUNT\tITEMS DISCOUNT\t\tCGST\t\tSGST");

```

```
printf("\n\n\t-----  
-----");
```

```
flag=0;

for(i=0;i<=counter;i++)

{

    if(i_id==s[i].itemId)

    {

        flag=1;
```

[illegible]
$$\left. \begin{array}{l} \{ \\ \} \end{array} \right\}$$

```
if(flag==0)
{
    printf("\n\n\t\t\t\t\t\t\t\t\t\t\tNO RECORDS FOUND\n\n");
}
```

```
printf("\n\n\t\t-----  
-----");
```

```
printf("\n\n press anything to continue.....");

getch();
```



```
}
```

```
void deleteItem()
```

```
{
```

```
int flag=0;
```

```
int i,i_id;
```

```
    printf("\n Get selected item details:");
```

```
    scanf("%d",&i_id);
```

```
    for(i=0;i<=counter;i++)
```

```
    {
```

```
        if(s[i].itemId==i_id)
```

```
        {
```

```
            flag=1;
```

```
            printf("\n Enter new cost");
```

```
            scanf("%d",&s[i].itemCost);
```

```
        }
```

```
    }
```

```
    if(flag==0)
```

```
    {
```

```
        printf("\n Item not found");
```

```
    }
```

```
    system("cls");
```

```
printf("\n\n\n\n\t\t\t\t\tWELCOME TO VIGNESHWARA GROCERY  
STORE");  
  
printf("\n\t\t\t\t\t*****\n\n\n\n\n");  
  
printf("\n\n\t\t-----  
-----");  
  
printf("\n\n\t\t ITEM ID\tITEM NAME\t\tITEM COST\tITEMS  
COUNT\tITEMS DISCOUNT\t\tCGST\t\tSGST");  
  
printf("\n\n\t\t-----  
-----");  
  
flag=0;  
for(i=0;i<=counter;i++)  
{  
    if(i_id==s[i].itemId)  
    {  
        flag=1;  
  
        s[i]=s[counter];  
        counter--;  
        break;  
    }  
}  
  
if(flag==0)  
{  
    printf("\n\n\n\t\t\t\t\t\t\tNO RECORDS FOUND\n\n\n");  
}
```

```

        printf("\n\n\n press anything to continue.....");

        getch();

    }

void sortItemDiscount()

{
    int i,j;
    for(i=0;i<=counter;i++)
        {
            for(j=i+1;j<=counter;j++)
                {
                    if(s[i].itemDiscount<s[j].itemDiscount)
                        {
                            temp=s[i];
                            s[i]=s[j];
                            s[j]=temp;
                        }
                }
        }

    system("cls");

    printf("\n\n\n\n\n\t\t\t\t\tWELCOME TO VIGNESHWARA GROCERY
STORE");

    printf("\n\t\t\t\t\t*****\n\n\n\n\n");

```

```
printf("\n\n\t\t-----  
-----");
```

```
printf("\n\n\t\tITEM ID\tITEM NAME\tITEM COST\tITEMS  
COUNT\tITEMS DISCOUNT\tCGST\tSGST");
```

```
printf("\n\n\t\t-----  
-----");
```

```
for(i=0;i<=counter;i++)  
{  
    printf("\n\n\t\t %5d\t\t %-15s\t %5d\t\t %5d\t\t %-5d\t\t %5.2f\t\t  
%5.2f",s[i].itemId,s[i].itemName,s[i].itemCost,s[i].itemsCount,s[i].itemDiscount,s[i].itemCgst,s[i].itemSgst);
```

```
    }  
    printf("\n\n\t\t-----  
-----");
```

```
printf("\n\n\n press anything to continue.....");
```

```
getch();
```

```
}
```

```
void sortItemName()
```

```
{
```

```
int i,j;
```

```
for(i=0;i<=counter;i++)
```

```

        {
            for(j=i+1;j<=counter;j++)
            {
                if(strcmp(s[i].itemName,s[j].itemName)>0)
                {
                    temp=s[i];
                    s[i]=s[j];
                    s[j]=temp;
                }
            }
        }

        system("cls");

        printf("\n\n\n\n\n\t\t\t\t\tWELCOME TO VIGNESHWARA GROCERY
STORE");

        printf("\n\t\t\t\t\t*****\n\n\n\n\n");

        printf("\n\n\t\t\t-----
-----");

        printf("\n\n\t\t\tITEM ID\tITEM NAME\t\tITEM COST\tITEMS
COUNT\tITEMS DISCOUNT\t\tCGST\t\tSGST");

        printf("\n\n\t\t\t-----
-----");

        for(i=0;i<=counter;i++)
        {

```



```
printf("\n Select your choice: ");

scanf("%d",&choice);

system("cls");

switch(choice)

{

case 1:printf("\n *****Add item:*****");

        add_item();


        break;

case 2:printf("\n *****Get All Item Details:*****");

        getAllDetails();


        break;

case 3:

        getSelectedItemDetails();


        break;

case 4:printf("\n Get item details according to price:");

        getItemDetailsAccToPrice();


        break;

case 5:

        UpdateItemCost();


        break;
```



```
#include<stdlib.h>

#include<string.h>

#include "store.h"

int main()
{
system("color F4");

login();

return 0;
}
```

OUT PUT :

WELCOME TO VIGNESHWARA GROCERY STORE

Enter User Name : m

Enter Password : ****

WELCOME TO VIGNESHWARA GROCERY STORE

1.Add item

- 2.Get all item details
 - 3.Get selected item details
 - 4.Get item details according to price
 - 5.Updating item details(cost)
 - 6.Delete item
 - 7.Sort item discount
 - 8.Sort item name
 - 9.exit
- Select your choice:1

WELCOME TO VIGNESHWARA GROCERY STORE

Enter item Id:700

Enter item name:parachute

Enter item cost:34

Enter items count:35

Enter item discount:6

Enter cgst:8

Enter sgst:9

Record inserted successfully

press anything to continue.....

WELCOME TO VIGNESHWARA GROCERY STORE

- 1.Add item
 - 2.Get all item details
 - 3.Get selected item details
 - 4.Get item details according to price
 - 5.Updating item details(cost)
 - 6.Delete item
 - 7.Sort item discount
 - 8.Sort item name
 - 9.exit
- Select your choice: 2

ITEM ID	ITEM NAME	ITEM COST	ITEMS COUNT	DISCOUNT	CGST	SGST
---------	-----------	-----------	-------------	----------	------	------

111	SANTOOR	34	100	1	15.00	12.00
-----	---------	----	-----	---	-------	-------

112	DIAMOND	23	100	9	23.00	12.00
-----	---------	----	-----	---	-------	-------

113	ALOVERA	45	100	3	13.00	14.00
-----	---------	----	-----	---	-------	-------

114	DOVE	56	100	5	18.00	20.00
115	LIRIL	67	100	2	28.00	34.00
700	PARACHUTE	34	35	6	8.00	9.00

press anything to continue.....

WELCOME TO VIGNESHWARA GROCERY STORE

- 1.Add item
- 2.Get all item details
- 3.Get selected item details
- 4.Get item details according to price
- 5.Updating item details(cost)
- 6.Delete item
- 7.Sort item discount
- 8.Sort item name
- 9.exit

Select your choice: 3

Get selected item details:112

WELCOME TO VIGNESHWARA GROCERY STORE

ITEM ID	ITEM NAME	ITEM COST	ITEMS COUNT	DISCOUNT	CGST	SGST
---------	-----------	-----------	-------------	----------	------	------

112	DIAMOND	23	100	9	23.00	12.00
-----	---------	----	-----	---	-------	-------

press anything to continue.....

WELCOME TO VIGNESHWARA GROCERY STORE

- 1.Add item
- 2.Get all item details
- 3.Get selected item details
- 4.Get item details according to price
- 5.Updating item details(cost)
- 6.Delete item
- 7.Sort item discount
- 8.Sort item name
- 9.exit

Select your choice: 4

WELCOME TO VIGNESHWARA GROCERY STORE

ITEM ID	ITEM NAME	ITEM COST	ITEMS COUNT	DISCOUNT	CGST	SGST
---------	-----------	-----------	-------------	----------	------	------

112	DIAMOND	23	100	9	23.00	12.00
-----	---------	----	-----	---	-------	-------

111	SANTOOR	34	100	1	15.00	12.00
-----	---------	----	-----	---	-------	-------

700	PARACHUTE	34	35	6	8.00	9.00
-----	-----------	----	----	---	------	------

113	ALOVERA	45	100	3	13.00	14.00
-----	---------	----	-----	---	-------	-------

114	DOVE	56	100	5	18.00	20.00
-----	------	----	-----	---	-------	-------

115	LIRIL	67	100	2	28.00	34.00
-----	-------	----	-----	---	-------	-------

press anything to continue.....

WELCOME TO VIGNESHWARA GROCERY STORE

- 1.Add item
- 2.Get all item details
- 3.Get selected item details
- 4.Get item details according to price
- 5.Updating item details(cost)
- 6.Delete item
- 7.Sort item discount
- 8.Sort item name
- 9.exit

Select your choice: 5

WELCOME TO VIGNESHWARA GROCERY STORE

ITEM ID	ITEM NAME	ITEM COST	ITEMS COUNT	DISCOUNT	CGST	SGST
---------	-----------	-----------	-------------	----------	------	------

700	PARACHUTE	56	35	6	8.00	9.00
-----	-----------	----	----	---	------	------

press anything to continue.....

WELCOME TO VIGNESHWARA GROCERY STORE

- 1.Add item
- 2.Get all item details
- 3.Get selected item details
- 4.Get item details according to price
- 5.Updating item details(cost)
- 6.Delete item
- 7.Sort item discount
- 8.Sort item name
- 9.exit

Select your choice: 6

Get selected item details:700

WELCOME TO VIGNESHWARA GROCERY STORE

ITEM ID	ITEM NAME	ITEM COST	ITEMS COUNT	DISCOUNT	CGST	SGST
---------	-----------	-----------	-------------	----------	------	------

press anything to continue.....

WELCOME TO VIGNESHWARA GROCERY STORE

- 1.Add item
- 2.Get all item details
- 3.Get selected item details
- 4.Get item details according to price
- 5.Updating item details(cost)
- 6.Delete item
- 7.Sort item discount
- 8.Sort item name
- 9.exit

Select your choice: 7

WELCOME TO VIGNESHWARA GROCERY STORE

ITEM ID	ITEM NAME	ITEM COST	ITEMS COUNT	DISCOUNT	CGST	SGST
112	DIAMOND	23	100	9	23.00	12.00
114	DOVE	56	100	5	18.00	20.00
113	ALOVERA	45	100	3	13.00	14.00
115	LIRIL	67	100	2	28.00	34.00
111	SANTOOR	34	100	1	15.00	12.00

press anything to continue.....

WELCOME TO VIGNESHWARA GROCERY STORE

- 1.Add item
- 2.Get all item details
- 3.Get selected item details
- 4.Get item details according to price
- 5.Updating item details(cost)
- 6.Delete item

7.Sort item discount

8.Sort item name

9.exit

Select your choice: 8

WELCOME TO VIGNESHWARA GROCERY STORE

ITEM ID	ITEM NAME	ITEM COST	ITEMS COUNT	DISCOUNT	CGST	SGST
113	ALOVERA	45	100	3	13.00	14.00
112	DIAMOND	23	100	9	23.00	12.00
114	DOVE	56	100	5	18.00	20.00
115	LIRIL	67	100	2	28.00	34.00
111	SANTOOR	34	100	1	15.00	12.00

press anything to continue.....

WELCOME TO VIGNESHWARA GROCERY STORE

- 1.Add item
- 2.Get all item details
- 3.Get selected item details
- 4.Get item details according to price
- 5.Updating item details(cost)
- 6.Delete item
- 7.Sort item discount
- 8.Sort item name
- 9.exit

Select your choice: 9

THANK YOU FOR USING SERVICES