**1.ALGORITHM**

//Shopping Cart

//The program uses the pointer to function concept

1. Initialise the functions for Add\_Item, Delete\_Item,

Display\_Cart, Bill\_Info.

2. In main function

1. Declare the pointers for accessing the functions.

2. Ask user for number of elements in the stock.

3. Get the elements in stock from user.

4. Once the stock is filled the user is asked for the element

to be added to the cart.

5. Based on the choices made by the user th pointer is

assigned with the relative function name by a switch

statement.

3. The functions for operations on the cart include the 2D array

index and pointer management logic.

**2.CODE**

#include<stdio.h>

#include<stdlib.h>

void additem();//function declaration of add item

void deleteitem();//function declaration of delete item

void bill\_info();//declaration of bill\_info

void display();//

int stock[5][3]={{0,0,0},{1,10,100},{2,12,200},{3,14,150},{4,21,250}};//array of

stocks present

typedef struct{

int code;

int quantity;

float cost;

}cart; //structure cart

cart c[10];

int inum=0;

float total=0;

int main()

{

int i,j,n,choice;

printf("\*\*\*\*\*\*\*\*\*SHOPING CART\*\*\*\*\*\*\*\*\*");

do{

printf("\n\nItem code\tQuantity\tPrice\n");//cart menu display

for(i=1;i<5;i++)

{

for(j=0;j<3;j++)

printf("%d\t\t",stock[i][j]);

printf("\n");

}

printf("\nPlease enter your choice:");

printf("\n\n 1: add item \n 2:delete item\n 3:display info\n 4:leave cart:\n");

//get choice from user

scanf("%d",&choice);

switch(choice)//switch of choice

{

case 1:additem();

break;

case 2:deleteitem();

break;

case 3:display();

break;

case 4: exit(0);

break;

default:printf("INCORRECT CHOICE\nPlease enter the correct choice\n");

};

}while(1);

return 0;

}

void additem() //definition of additem

{

printf("\nEnter the code and quantity of the item to be added to your cart:");

scanf("%d %d",&c[inum].code,&c[inum].quantity);

if(c[inum].quantity<stock[c[inum].code][1])//check for quantity availability

{

c[inum].cost=c[inum].quantity\*stock[c[inum].code][2];//calculate cost

printf("\n the item with code%d is added to the cart\n", c[inum].code);

printf("\n item code\t quantity\tcost\n");

printf("%d\t\t%d\t\t%0.2f",c[inum].code,c[inum].quantity,c[inum].cost);

stock[c[inum].code][1]=stock[c[inum].code][1]-c[inum].quantity;//update

quantity

inum++;

bill\_info();//update stock array

}

else//executes when quantity is not sufficient

{

printf("\nStock does not has sufficient quantity\n");

}

return;

}

void deleteitem() //definition of deleteitem

{

if(inum>0)//check for item in stock is purchased or not

{

printf("\n last item from your cart deleted\n");

inum--;

stock[c[inum].code][1]=stock[c[inum].code][1]+c[inum].quantity;//delete

item

bill\_info();

}

else

printf("\nItem is not added to cart for deletion\n");

return;

}

void bill\_info() //definition of bill\_info

{

int i;

total=0;

printf("\n there are %d items in your cart...\n\n",inum);

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

total=total+c[i].cost;

return;

}

void display() //definition of display

{

int i;

printf("\n there are %d items in your cart...\n\n",inum);

printf("\n item code\tquantity\tamount\n");

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

printf("\n%d\t\t%d\t\t%5.2f",c[i].code,c[i].quantity,c[i].cost);

printf("\n\n\n\t\t\tGrand total is:%5.2f\n",total);

return;

}

3.**SAMPLE INPUT OUTPUT:**

\*\*\*\*\*\*\*\*\*SHOPING CART\*\*\*\*\*\*\*\*\*

Item code Quantity Price

1 10 100

2 12 200

3 14 150

4 21 250

Please enter your choice:

1: add item

2:delete item

3:display info

4:leave cart:

1

Enter the code and quantity of the item to be added to your cart:1 5

the item with code1 is added to the cart

item code quantity cost

1 5 500.00

there are 1 items in your cart...

Item code Quantity Price

1 5 100

2 12 200

3 14 150

4 21 250

Please enter your choice:

1: add item

2:delete item

3:display info

4:leave cart:

1

Enter the code and quantity of the item to be added to your cart:3 4

the item with code3 is added to the cart

item code quantity cost

3 4 600.00

there are 2 items in your cart...

Item code Quantity Price

1 5 100

2 12 200

3 10 150

4 21 250

Please enter your choice:

1: add item

2:delete item

3:display info

4:leave cart:

2

last item from your cart deleted

there are 1 items in your cart...

Item code Quantity Price

1 5 100

2 12 200

3 14 150

4 21 250

Please enter your choice:

1: add item

2:delete item

3:display info

4:leave cart:

3

there are 1 items in your cart...

item code quantity amount

1 5 500.00

Grand total is:500.00

Item code Quantity Price

1 5 100

2 12 200

3 14 150

4 21 250

Please enter your choice:

1: add item

2:delete item

3:display info

4:leave cart:

4

Process returned 0 (0x0) execution time : 36.607 s