**Task 01**

#include <iostream>

using namespace std;

#include <math.h>

class circle

{

public:

float radius;

circle()

{

cout << "Enter the radius of the circle (in centimeters)" << endl;

cin >> radius;

}

void getArea()

{

cout << "The area of the circle is " << 3.142 \* radius \* radius << " cm^2."<<endl;

}

void get\_Perimeter()

{

cout<<"The perimeter(circumference) of the circle is "<<radius\*2\*3.142<<" cm.";

}

};

int main()

{

circle cirlce\_01;

cirlce\_01.getArea();

cirlce\_01.get\_Perimeter();

}

**Task 02**

#include <iostream>

using namespace std;

#include <math.h>

class Account

{ public:

float account\_balance;

Account()

{

cout<<"Enter the account balance."<<endl;

cin>>account\_balance;

}

void Credit(int increment)

{

account\_balance+=increment;

cout<<"The updated account balance is "<<account\_balance<<".";

}

void Debit(int decrement)

{

cout<<"Account balance before withdrawl: "<<account\_balance<<"."<<endl;

account\_balance-=decrement;

cout<<"Account balance after withdrawl: "<<account\_balance<<"."<<endl;

}

float Balance()

{

return account\_balance;

}

};

int main()

{

Account Account\_01;

cout<<"The current balance in the bank account is "<<Account\_01.Balance()<<"."<<endl;

int increment;

cout<<"Enter the amount of money you want to add in your bank balance"<<endl;

cin>>increment;

Account\_01.Credit(increment);

int decrement;

cout<<"Enter the amount of money you want to withdraw\n";

cin>>decrement;

Account\_01.Debit(decrement);

}

**Task 03**

#include <iostream>

using namespace std;

#include <math.h>

class Invoice

{

public:

string part\_number;

string part\_description;

int quantity\_of\_items\_purchased;

double item\_price;

Invoice()

{

part\_number="abc";

part\_description="abc";

quantity\_of\_items\_purchased=0;

item\_price=0;

}

void invoice\_info()

{

cout<<"Enter the part number of the product."<<endl;

getline(cin,part\_number);

cout<<"Enter the part description."<<endl;

getline(cin,part\_description);

cout<<"Enter the quantity of items purchased."<<endl;

cin>>quantity\_of\_items\_purchased;

cout<<"Enter the price of a single piece."<<endl;

cin>>item\_price;

}

double getInvoiceAmount(double item\_price,int quantity\_of\_items\_purchased )

{ if ((item\_price\*quantity\_of\_items\_purchased)<0)

{

return 0.0;

}

return item\_price\*quantity\_of\_items\_purchased;

}

};

int main()

{

Invoice Invoice\_01;

Invoice\_01.invoice\_info();

cout<<"The total bill is Rs "<<Invoice\_01.getInvoiceAmount(Invoice\_01.item\_price,Invoice\_01.quantity\_of\_items\_purchased)<<" ."<<endl;

}

**Task 04**

#include <iostream>

using namespace std;

#include <math.h>

#include <string.h>

#include <windows.h>

class Books

{

public:

string author;

string title;

int price;

string publisher;

int stock\_position;

string book\_required;

Books()

{

cout << "Enter the author of the book" << endl;fflush(stdin);

getline(cin, author);

cout << "Enter the title of the book" << endl;fflush(stdin);

getline(cin, title);

cout << "Enter the price of the book" << endl;fflush(stdin);

cin >> price;

cout << "Enter the name of the publisher" << endl;fflush(stdin);

getline(cin, publisher);

cout << "Enter the stock position of the book" << endl;fflush(stdin);

cin >> stock\_position;

}

};

int main()

{

string book\_required;string required\_book\_author;

Books Book\_01;

cout << "Enter the name of the book you want?";fflush(stdin);

getline(cin, book\_required);

cout<<"Enter the name of the author of the book";fflush(stdin);

getline(cin,required\_book\_author);

if (book\_required == Book\_01.title)

{

int number\_of\_books\_required;

cout << "There are " << Book\_01.stock\_position << " pieces available of the book, How many do you require?" << endl;fflush(stdin);

cin >> number\_of\_books\_required;

if (number\_of\_books\_required > Book\_01.stock\_position)

{

cout << "Not enough books avaiable try again!" << endl;fflush(stdin);

Sleep(1000);

system("CLS");

main();

}

else

{

cout << "Your total bill is " << Book\_01.price \* number\_of\_books\_required << " rupees only." << endl;

}

}

else

{

cout<<"No such book exists in the database, kindly try agian and enter a valid title\n";

Sleep(1000);

system("CLS");

main();

}

}

**Task 05**

#include <stdio.h>

#include <iostream>

using namespace std;

class CoffeeShop

{

public:

string CoffeeShop\_name;

struct Menuitem

{

string name\_of\_item;

string type\_of\_item;

double price;

} Menu[10];

char addOrder(int item\_serial\_number, string item\_name, Menuitem Orders[])

{

char status;

int i;

for (i = 0; i < 10; i++)

{

if (item\_name == Menu[i].name\_of\_item)

{

status = 'Y';

cout << "Item added!" << endl;

Orders[item\_serial\_number].name\_of\_item = Menu[i].name\_of\_item;

Orders[item\_serial\_number].type\_of\_item = Menu[i].type\_of\_item;

Orders[item\_serial\_number].price = Menu[i].price;

}

}

if (i == 10 && status != 'Y')

{

status = 'N';

cout << "Item does not exist" << endl;

return status;

}

}

void ListOrder(Menuitem Orders[], int number\_of\_items)

{

cout << endl

<< "Following is the list of your orders" << endl;

for (int i = 0; i < number\_of\_items; i++)

{

cout << "Name: " << Orders[i].name\_of\_item << endl;

cout << "Type: " << Orders[i].type\_of\_item << endl;

cout << "Price: " << Orders[i].price << endl;

cout << "Status: ";

fulfillOrder();cout<<endl;

}

}

void fulfillOrder()

{

cout << "Order Completed" << endl;

}

double dueAmount(Menuitem Orders[], int number\_of\_items)

{

double total;

for (int i = 0; i < number\_of\_items; i++)

{

total += Orders[i].price;

}

return total;

}

string cheapestItem(Menuitem Orders[], int number\_of\_items)

{

string cheap\_item;

double min = 99999;

for (int i = 0; i < number\_of\_items; i++)

{

if (Orders[i].price < min)

{

min = Orders[i].price;

cheap\_item = Orders[i].name\_of\_item;

}

}

return cheap\_item;

}

void drinksOnly(Menuitem Orders[], int number\_of\_items)

{

for (int i = 0; i < number\_of\_items; i++)

{

if (Orders[i].type\_of\_item == "Drink")

{

cout << "Name: " << Orders[i].name\_of\_item << endl;

//cout << "Type: " << Orders[i].type\_of\_item << endl;

cout << "Price: " << Orders[i].price << endl;

}

}

cout<<endl;

}

void foodOnly(Menuitem Orders[], int number\_of\_items)

{

for (int i = 0; i < number\_of\_items; i++)

{

if (Orders[i].type\_of\_item == "Food")

{

cout << "Name: " << Orders[i].name\_of\_item << endl;

//cout << "Type: " << Orders[i].type\_of\_item << endl;

cout << "Price: " << Orders[i].price << endl;

}

}

cout<<endl;

}

CoffeeShop()

{

Menu[0].name\_of\_item = "Tea";

Menu[0].type\_of\_item = "Drink";

Menu[0].price = 30;

Menu[1].name\_of\_item = "Coffee";

Menu[1].type\_of\_item = "Drink";

Menu[1].price = 50;

Menu[2].name\_of\_item = "Sandwich";

Menu[2].type\_of\_item = "Food";

Menu[2].price = 100;

Menu[3].name\_of\_item = "Mayo-Roll";

Menu[3].type\_of\_item = "Food";

Menu[3].price = 80;

Menu[4].name\_of\_item = "Pizza (small)";

Menu[4].type\_of\_item = "Food";

Menu[4].price = 80;

Menu[5].name\_of\_item = "Cake";

Menu[5].type\_of\_item = "Food";

Menu[5].price = 60;

Menu[6].name\_of\_item = "Cold Drink";

Menu[6].type\_of\_item = "Drink";

Menu[6].price = 50;

Menu[7].name\_of\_item = "Biscuits";

Menu[7].type\_of\_item = "Food";

Menu[7].price = 20;

Menu[8].name\_of\_item = "Samosa";

Menu[8].type\_of\_item = "Food";

Menu[8].price = 20;

Menu[9].name\_of\_item = "Garlic Roll";

Menu[9].type\_of\_item = "Food";

Menu[9].price = 70;

cout << "Enter the name of the shop" << endl;

getline(cin, CoffeeShop\_name);

cout << endl

<< endl

<< "Welcome to " << CoffeeShop\_name << endl

<< "Following items are available at our cafe!." << endl;

for (int i = 0; i < 10; i++)

{

cout << endl;

cout << "Name: " << Menu[i].name\_of\_item << endl;

cout << "Type: " << Menu[i].type\_of\_item << endl;

cout << "Price: " << Menu[i].price << endl;

}

}

};

int main()

{

CoffeeShop Shop\_01;

int items;

cout << "How many items you want to buy?" << endl;

cin >> items;

string item\_name;

CoffeeShop::Menuitem Orders[items];

for (int i = 0; i < items; i++)

{

cout << "Enter the name of Product " << i + 1 << endl;

fflush(stdin);

getline(cin, item\_name);

if (Shop\_01.addOrder(i, item\_name, Orders) == 'N')

{

i--;

}

}

Shop\_01.ListOrder(Orders, items);

cout << "You total bill is " << Shop\_01.dueAmount(Orders, items) << "/- Rupees only" << endl<<endl;

cout << "The cheapest item you bought is " << Shop\_01.cheapestItem(Orders, items) << "." << endl<<endl;

cout << "The items in your order which are Drinks are as follows" << endl;

Shop\_01.drinksOnly(Orders, items);

cout << "The items in your order which are Foods are as follows" << endl;

Shop\_01.foodOnly(Orders, items);

}