**OBJECT ORIENTED CONCEPT & PROGRAMMING**

**(SE-201) LAB-6**

**TAQI HAIDER\_CSIT\_SECTION:B\_ROLL#CT-22092**

**Exercise:-**

**Q1:-**

#include <iostream>

using namespace std;

class rectangle {

    float length, width, area, parameter;

public:

    rectangle() : length(0), width(0) {}

    void setData(float len, float wid) {

        length = len;

        width = wid;

    }

    void calculateArea() {

        area = length \* width;

    }

    void calculateParameter() {

        parameter = 2 \* (length + width);

    }

    float getArea() const {

        return area;

    }

    float getParameter() const {

        return parameter;

    }

    void display() {

        cout << "Area Of Rectangle is: " << getArea() << endl;

        cout << "Parameter of Rectangle is: " << getParameter() << endl;

    }

};

class dormRoom {

    int room\_no;

    int capacity;

    bool isOccupied;

public:

    dormRoom(int x, int y) : room\_no(x), capacity(y), isOccupied(false) {}

    int getRoomNumber() const {

        return room\_no;

    }

    int getRoomCapacity() const {

        return capacity;

    }

    void occupy() {

        isOccupied = true;

        cout << "Room is occupied: " << isOccupied << endl;

    }

    void vacate() {

        isOccupied = false;

        cout << "Room is occupied: " << isOccupied << endl;

    }

};

int main() {

    rectangle r1;

    float len, wid;

    cout << "Enter Length Of Rectangle: ";

    cin >> len;

    cout << "Enter Width Of Rectangle: ";

    cin >> wid;

    r1.setData(len, wid);

    r1.calculateArea();

    r1.calculateParameter();

    r1.display();

    cout << endl;

    cout << "Dorm Room Information:" << endl;

    dormRoom d1(5, 3);

    cout << "Room Number:  " << d1.getRoomNumber() << endl;

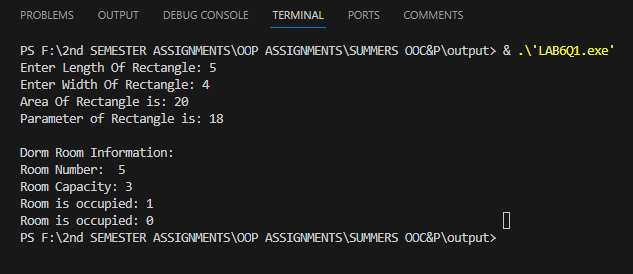
    cout << "Room Capacity: " << d1.getRoomCapacity() << endl;

    d1.occupy();

    d1.vacate();

    return 0;

}



**Q2:-**

#include <iostream>

using namespace std;

class car{

private:

    string brandName;

    float price\_new;

    string color;

    float odometer;

    float temp;

public:

    car(){

        cout << "Enter Brand Name: ";

        cin >> brandName;

        cout << "Enter Price When The Car Was New: ";

        cin >> price\_new;

        cout << "Enter Color: ";

        cin >> color;

        cout << "Enter Current Odometer Reading: ";

        cin >> odometer;

    }

    float getPrice\_afterUse(){

        temp = price\_new \* (1 - (odometer / 600000));

        return temp;

    }

    void updateMilage(double traveled\_distance){

        double milage = traveled\_distance + odometer;

        odometer = milage;

    }

    void display(){

        cout << "Brand Name: " << brandName << endl;

        cout << "New Price: " << price\_new << endl;

        cout << "Price After Used: " << temp << endl;

        cout << "Odometer: " << odometer << endl;

    }

};

int main(){

    car A;

    A.getPrice\_afterUse();

    cout << endl;

    A.display();

    cout << endl;

    for (int i = 0; i < 2; i++){

        double distance[2];

        cout << "Enter Distance Travelled: ";

        cin >> distance[i];

        A.updateMilage(distance[i]);

        A.getPrice\_afterUse();

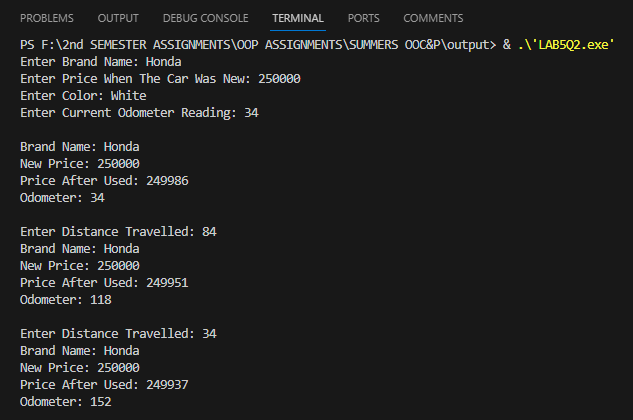
        A.display();

        cout << endl;

    }

    return 0;

}



**Q3 :-**

#include <iostream>

using namespace std;

class coffee\_outlet

{

private:

    int no\_of\_bags;

    float cost\_of\_order;

    int largeBoxes;

    int mediumBoxes;

    int smallBoxes;

    float const bag\_price = 5.50;

    float largeB;

    float mediumB;

    float smallB;

    float total\_cost;

public:

    coffee\_outlet()

    {

        cout << "Enter Number Of Bags Orderd:  ";

        cin >> no\_of\_bags;

    }

    void costOf\_order()

    {

        cost\_of\_order = bag\_price \* no\_of\_bags;

    }

    void no\_of\_boxes()

    {

        largeBoxes = no\_of\_bags / 20;

        mediumBoxes = (no\_of\_bags % 20) / 10;

        smallBoxes = ((no\_of\_bags % 20) % 10) / 5;

    }

    void priceForboxes()

    {

        largeB = largeBoxes \* 1.80;

        mediumB = mediumBoxes \* 1.00;

        smallB = smallBoxes \* 0.60;

        total\_cost = cost\_of\_order + largeB + mediumB + smallB;

    }

    void display()

    {

        cout << "The Cost Of Order: $ " << cost\_of\_order << endl;

        cout << endl;

        cout << "BOX Used: " << endl;

        cout << "\t" << largeBoxes << " Large"

             << "- $ " << largeB << endl;

        cout << "\t" << mediumBoxes << " Medium"

             << "- $ " << mediumB << endl;

        cout << "\t" << smallBoxes << " Small"

             << "- $ " << smallB << endl;

        cout << endl;

        cout << "Your total cost is: $  " << total\_cost << endl;

    }

};

int main()

{

    coffee\_outlet c1;

    c1.costOf\_order();

    c1.no\_of\_boxes();

    c1.priceForboxes();

    c1.display();

    return 0;

}

