VIT - Vellore

Name: RONIT MEXSON .
Email: ronit.mexson2024@vitstudent.ac.in
Roll no: 24BAI0036
Phone: 9999999999
Branch: ARUMUGA ARUN R_OOPS
Department: admin
Batch: VL2024250502365
Degree: admin

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BCSE102P_Structured and Object Oriented Programming Lab_VL2024250502365

VIT V_Structured and OOP_Lab 6_COD_Medium_Single inheritance

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Rahul is assigned with implementing a program to calculate the rental cost for a car and a motorcycle based on their daily rental rates and the number of days they are rented.

Create a base class Vehicle and derived classes Car and Motorcycle.

The rental cost is calculated differently for each vehicle type.

Car rental cost = daily rental rate * number of daysMotorcycle rental cost = daily rental rate * number of days * 0.8 (Applying the 20% discount for motorcycles)

Answer

```
// You are using GCC
#include<iostream>
#include<iomanip>
#include<cmath>
using namespace std;

class Vehicle{
   public:
      double daily_rate;
      Vehicle(double rate)
      {
         daily_rate = rate;
      }
};

class Car : public Vehicle
{
   public:
      Car(double rate) : Vehicle(rate){}

      double calculateCar_cost(int days){
         return daily_rate * days;
      }
};
class Motorcycle : public Vehicle{
   public:
      Motorcycle(double rate) : Vehicle(rate){}

      double calculateBike_cost(int days){
         return daily_rate * days * 0.8;
      }
};

int main(){

   double car_rate;
   double bike_rate;
   int car_days;
   int bike_days;

   cin >> car_rate;
   cin >> bike_rate;
```

```
    cin >> car_days;
    cin >> bike_days;

    Car car(car_rate);
    Motorcycle bike(bike_rate);

    cout<< fixed << setprecision(2);
    cout<< "Total rental cost for the car: "<<
car.calculateCar_cost(car_days)<<endl;
    cout<< "Total rental cost for the motorcycle: "<<
bike.calculateBike_cost(bike_days)<<endl;
}
```

Status : Correct **Marks : 10/10**