**Practical-2**

**Aim: Write a Program explaining the use of Overloading and Overriding, constructor, and Destructor in Class using methods and properties in C#.**

Code:

using System;

// Base Class: Car

class Car

{

// Properties

public string Brand { get; set; }

public string Model { get; set; }

public int Year { get; set; }

// Constructor: Initializes the Car object

public Car(string brand, string model, int year)

{

Brand = brand;

Model = model;

Year = year;

Console.WriteLine("Car Constructor: A new car has been created.");

}

// Method Overloading: Same method name, different parameters

public void Rent(int days)

{

Console.WriteLine($"Car rented for {days} days.");

}

public void Rent(int days, bool insurance)

{

Console.WriteLine($"Car rented for {days} days with insurance: {insurance}");

}

// Virtual method to demonstrate Overriding

public virtual void DisplayInfo()

{

Console.WriteLine($"Car: {Brand} {Model} ({Year})");

}

// Destructor: Called when the object is destroyed

~Car()

{

Console.WriteLine("Car Destructor: A car object is being destroyed.");

}

}

// Derived Class: ElectricCar (inherits from Car)

class ElectricCar : Car

{

// Additional Property

public int BatteryCapacity { get; set; }

// Constructor: Uses base class constructor and adds extra functionality

public ElectricCar(string brand, string model, int year, int batteryCapacity)

: base(brand, model, year) // Calling base class constructor

{

BatteryCapacity = batteryCapacity;

Console.WriteLine("ElectricCar Constructor: A new electric car has been created.");

}

// Overriding the DisplayInfo method

public override void DisplayInfo()

{

Console.WriteLine($"Electric Car: {Brand} {Model} ({Year}), Battery Capacity: {BatteryCapacity} kWh");

}

// Destructor: Called when the ElectricCar object is destroyed

~ElectricCar()

{

Console.WriteLine("ElectricCar Destructor: An electric car object is being destroyed.");

}

}

// Main Program

class Program

{

static void Main(string[] args)

{

Console.WriteLine("Car Rental System\n");

// Creating an object of Car class

Car car1 = new Car("Toyota", "Camry", 2021);

car1.DisplayInfo();

car1.Rent(3);

car1.Rent(3, true);

Console.WriteLine()

// Creating an object of ElectricCar class

ElectricCar eCar1 = new ElectricCar("Tesla", "Model S", 2022, 100);

eCar1.DisplayInfo();

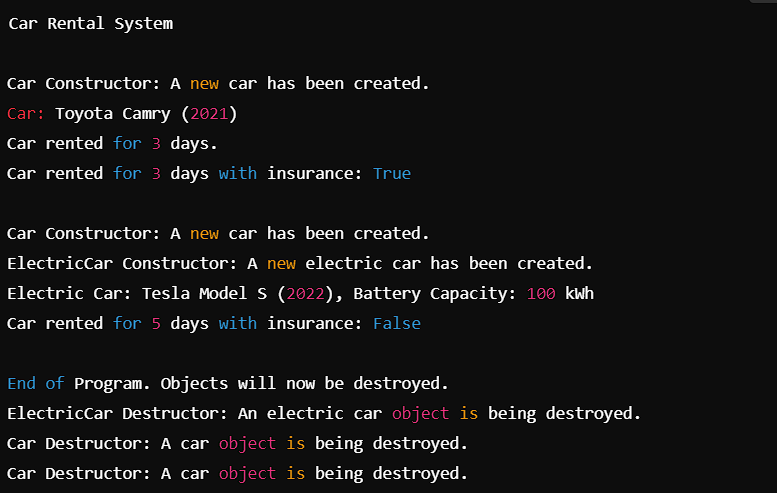
eCar1.Rent(5, false);

Console.WriteLine("\nEnd of Program. Objects will now be destroyed.");

}

}

**Output:**

****