

OBJECT ORIENTED PROGRAMMING

Inheritance

It is a mechanism that allows a class to inherit properties and behaviors from the parent class.

The "Car" class inherits from the "Vehicle" class.

Example Car class

-Brand
-NumberOfDoors

+Honk()

Example Vehicle class

-Speed
-FuelType

+Start()
+Stop()

Example Sub class

-AdditionalProperty 1
-AdditionalProperty 2

+AdditionalMethod()

Example Base class

-InheritedProperty 1
-InheritedProperty 2

+InheritedMethod 1()
+InheritedMethod 2()

Code

```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Runtime.ConstrainedExecution;
using System.Text;
using System.Threading.Tasks;

namespace Inheritance
{
    internal class Program
    {
        static void Main(string[] args)
        {
            // Creating an instance of Car
            Car myCar = new Car();
            myCar.Brand = "Toyota";
            myCar.NumberOfDoors = 4;
            myCar.Speed = 60;
            myCar.FuelType = "Petrol";

            // Using inherited methods
            myCar.Start();
            myCar.Stop();

            // Using specific method of Car
            myCar.Honk();

            // Outputting information
            Console.WriteLine($"Brand: {myCar.Brand}");
            Console.WriteLine($"Number of Doors: {myCar.NumberOfDoors}");
            Console.WriteLine($"Speed: {myCar.Speed} km/h");
            Console.WriteLine($"Fuel Type: {myCar.FuelType}");
            Console.ReadLine();
        }
    }
}
```

```
internal class Vehicle
{
    // Properties
    public int Speed { get; set; }
    public string FuelType { get; set; }

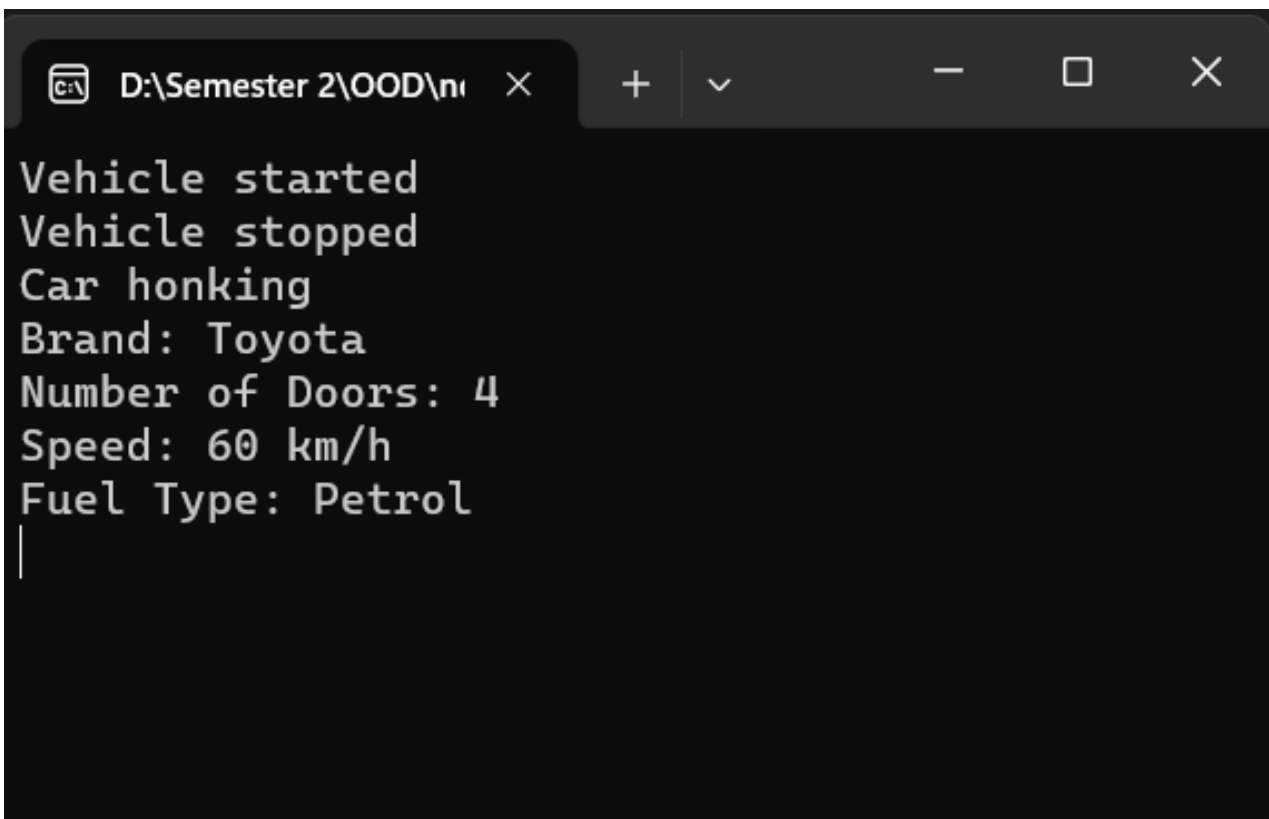
    // Methods
    public void Start()
    {
        Console.WriteLine("Vehicle started");
    }

    public void Stop()
    {
        Console.WriteLine("Vehicle stopped");
    }
}
```

```
internal class Car : Vehicle
{
    // Additional properties specific to Car
    public string Brand { get; set; }
    public int NumberOfDoors { get; set; }

    // Additional method specific to Car
    public void Honk()
    {
        Console.WriteLine("Car honking");
    }
}
```

Output



```
D:\Semester 2\OOD\nr
Vehicle started
Vehicle stopped
Car honking
Brand: Toyota
Number of Doors: 4
Speed: 60 km/h
Fuel Type: Petrol
```