**Understanding Class and Object with Real-Life Example**

In programming, a **class** is a blueprint or template for creating objects, while an **object** is an instance of a class. For example, consider a **Car** class. Every specific car, such as a **Tesla Model S** or a **Toyota Corolla**, would be an object of the **Car** class.

**Real-Life Example: A Car Rental System**

In a car rental system:

* **Class**: Defines the properties and behaviours of a car (e.g., make, model, price per day, rent status).
* **Object**: Represents a specific car (e.g., a red 2022 Tesla Model S available for rent).

**Step 1: Define the Car Class**

public class Car

{

// Properties

public string Make { get; set; }

public string Model { get; set; }

public string Color { get; set; }

public decimal PricePerDay { get; set; }

public bool IsRented { get; private set; }

// Constructor

public Car(string make, string model, string color, decimal pricePerDay)

{

Make = make;

Model = model;

Color = color;

PricePerDay = pricePerDay;

IsRented = false; // Default is not rented

}

// Methods

public void RentCar()

{

if (!IsRented)

{

IsRented = true;

Console.WriteLine($"The car {Make} {Model} has been rented.");

}

else

{

Console.WriteLine($"The car {Make} {Model} is already rented.");

}

}

public void ReturnCar()

{

if (IsRented)

{

IsRented = false;

Console.WriteLine($"The car {Make} {Model} has been returned.");

}

else

{

Console.WriteLine($"The car {Make} {Model} was not rented.");

}

}

}

**Step 2: Create Objects**

class Program

{

static void Main(string[] args)

{

// Create objects (instances of the Car class)

Car car1 = new Car("Tesla", "Model S", "Red", 100.00m);

Car car2 = new Car("Toyota", "Corolla", "Blue", 50.00m);

// Display details of the cars

Console.WriteLine($"Car 1: {car1.Make} {car1.Model}, Color: {car1.Color}, Price per day: ${car1.PricePerDay}");

Console.WriteLine($"Car 2: {car2.Make} {car2.Model}, Color: {car2.Color}, Price per day: ${car2.PricePerDay}");

// Rent and return cars

car1.RentCar(); // Rent Tesla

car1.RentCar(); // Try renting Tesla again

car1.ReturnCar(); // Return Tesla

car2.RentCar(); // Rent Toyota

car2.ReturnCar(); // Return Toyota

}

}

**Expected Output**

Car 1: Tesla Model S, Color: Red, Price per day: $100

Car 2: Toyota Corolla, Color: Blue, Price per day: $50

The car Tesla Model S has been rented.

The car Tesla Model S is already rented.

The car Tesla Model S has been returned.

The car Toyota Corolla has been rented.

The car Toyota Corolla has been returned.