

Task 5: Object Oriented Programming

Scope : Entity classes/Models/POJO, Abstraction/Encapsulation

Create the following model/entity classes within package entities with variables declared private, constructors(default and parametrized, getters, setters and toString())

1. User Class:

Variables:

userID , userName , email , password , contactNumber , address

2. Courier Class

Variables: courierID , senderName , senderAddress , receiverName , receiverAddress , weight , status, trackingNumber , deliveryDate ,userId

3. Employee Class:

Variables employeeID , employeeName , email , contactNumber , role String, salary

4. Location Class

Variables LocationID , LocationName , Address

5. CourierCompany Class

Variables companyName , courierDetails -collection of Courier Objects, employeeDetails- collection of Employee Objects, locationDetails - collection of Location Objects.

6. Payment Class:

Variables PaymentID long, CourierID long, Amount double, PaymentDate Date

Code:

Users.cs

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

```
namespace CMS
```

```
{
```

```
    public class User
```

```
    {
```

```
        public int UserID { get; set; }
```

```

    public string UserName { get; set; }

    public string Email { get; set; }

    public string Password { get; set; }

    public string ContactNumber { get; set; }

    public string Address { get; set; }


    public User() { }


    public User(int userID, string userName, string email, string password, string contactNumber,
string address)
    {
        UserID = userID;
        UserName = userName;
        Email = email;
        Password = password;
        ContactNumber = contactNumber;
        Address = address;
    }


    public override string ToString()
    {
        return $"UserID: {UserID}, Name: {UserName}, Email: {Email}, Contact: {ContactNumber},
Address: {Address}";
    }
}

```

Courier.cs

```

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

```

```
using System.Threading.Tasks;
```

```
namespace CMS
```

```
{
```

```
    public class Courier
```

```
    {
```

```
        public int CourierID { get; set; }
```

```
        public string SenderName { get; set; }
```

```
        public string SenderAddress { get; set; }
```

```
        public string ReceiverName { get; set; }
```

```
        public string ReceiverAddress { get; set; }
```

```
        public double Weight { get; set; }
```

```
        public string Status { get; set; }
```

```
        public string TrackingNumber { get; set; }
```

```
        public DateTime DeliveryDate { get; set; }
```

```
        public int UserId { get; set; }
```

```
        public Courier() { }
```

```
        public Courier(int courierID, string senderName, string senderAddress, string receiverName,  
            string receiverAddress, double weight, string status,  
            string trackingNumber, DateTime deliveryDate, int userId)
```

```
        {
```

```
            CourierID = courierID;
```

```
            SenderName = senderName;
```

```
            SenderAddress = senderAddress;
```

```
            ReceiverName = receiverName;
```

```
            ReceiverAddress = receiverAddress;
```

```
            Weight = weight;
```

```
            Status = status;
```

```
            TrackingNumber = trackingNumber;
```

```
            DeliveryDate = deliveryDate;
```

```

        UserId = userId;
    }

    public override string ToString()
    {
        return $"CourierID: {CourierID}, From: {SenderName}, To: {ReceiverName}, Status:
{Status}, Tracking#: {TrackingNumber}";
    }
}

```

Employee.cs

```

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace CMS
{
    public class Employee
    {
        public int EmployeeID { get; set; }
        public string EmployeeName { get; set; }
        public string Email { get; set; }
        public string ContactNumber { get; set; }
        public string Role { get; set; }
        public double Salary { get; set; }

        public Employee() { }

        public Employee(int employeeID, string employeeName, string email, string contactNumber,
string role, double salary)

```

```

    {
        EmployeeID = employeeID;
        EmployeeName = employeeName;
        Email = email;
        ContactNumber = contactNumber;
        Role = role;
        Salary = salary;
    }

    public override string ToString()
    {
        return $"EmployeeID: {EmployeeID}, Name: {EmployeeName}, Role: {Role}, Salary:
{Salary}";
    }

}
}

```

Location.cs

```

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace CMS
{
    public class Location
    {
        public int LocationID { get; set; }
        public string LocationName { get; set; }
        public string Address { get; set; }
    }
}

```

```

public Location() { }

public Location(int locationID, string locationName, string address)
{
    LocationID = locationID;
    LocationName = locationName;
    Address = address;
}

public override string ToString()
{
    return $"LocationID: {LocationID}, Name: {LocationName}, Address: {Address}";
}
}
}

```

CourierCompany.cs

```

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace CMS
{
    public class CourierCompany
    {
        public string CompanyName { get; set; }
        public List<Courier> CourierDetails { get; set; }
        public List<Employee> EmployeeDetails { get; set; }
        public List<Location> LocationDetails { get; set; }
    }
}

```

```

public CourierCompany()
{
    CourierDetails = new List<Courier>();
    EmployeeDetails = new List<Employee>();
    LocationDetails = new List<Location>();
}

public CourierCompany(string companyName)
{
    CompanyName = companyName;
    CourierDetails = new List<Courier>();
    EmployeeDetails = new List<Employee>();
    LocationDetails = new List<Location>();
}

public override string ToString()
{
    return $"Company: {CompanyName}, Couriers: {CourierDetails.Count}, Employees:
{EmployeeDetails.Count}, Locations: {LocationDetails.Count}";
}
}
}

```

Payment.cs

```

using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace CMS
{

```

```
public class Payment
{
    public long PaymentID { get; set; }
    public long CourierID { get; set; }
    public double Amount { get; set; }
    public DateTime PaymentDate { get; set; }

    public Payment() { }

    public Payment(long paymentID, long courierID, double amount, DateTime paymentDate)
    {
        PaymentID = paymentID;
        CourierID = courierID;
        Amount = amount;
        PaymentDate = paymentDate;
    }

    public override string ToString()
    {
        return $"PaymentID: {PaymentID}, CourierID: {CourierID}, Amount: ₹{Amount}, Date:
{PaymentDate.ToShortDateString()}";
    }
}
```