Lab #2 Assignment

Problem AP1:
Define a class Student, which contains the following information about students: full name, course,
subject, university, e-mail and phone number.

Problem AP2:
Add a method in the class Student, which displays complete information about the student.

```
using System;

namespace LAB2_24_7
{
   class Student
   {
      public string full_name;
      public string course;
      public string subject;
      public string university;
      public string email;
      public string phone_number;
      public void getDetails(){
         Console.WriteLine("**********************");
         Console.WriteLine("Student Details");
         Console.WriteLine("Name :"+full_name);
         Console.WriteLine("Course :"+course);
         Console.WriteLine("Subject :"+subject);
         Console.WriteLine("University :"+university);
         Console.WriteLine("Email :"+email);
         Console.WriteLine("Phone Number :"+phone_number);
      }
      public void setDetails(){
         Console.WriteLine("Enter Name");
         full_name = Console.ReadLine();
         Console.WriteLine("Enter Course");
         course = Console.ReadLine();
         Console.WriteLine("Enter Subject");
         subject = Console.ReadLine();
         Console.WriteLine("Enter University");
         university = Console.ReadLine();
         Console.WriteLine("Enter Email");
         email = Console.ReadLine();
         Console.WriteLine("Enter Phone Number");
         phone_number = Console.ReadLine();

      }
```

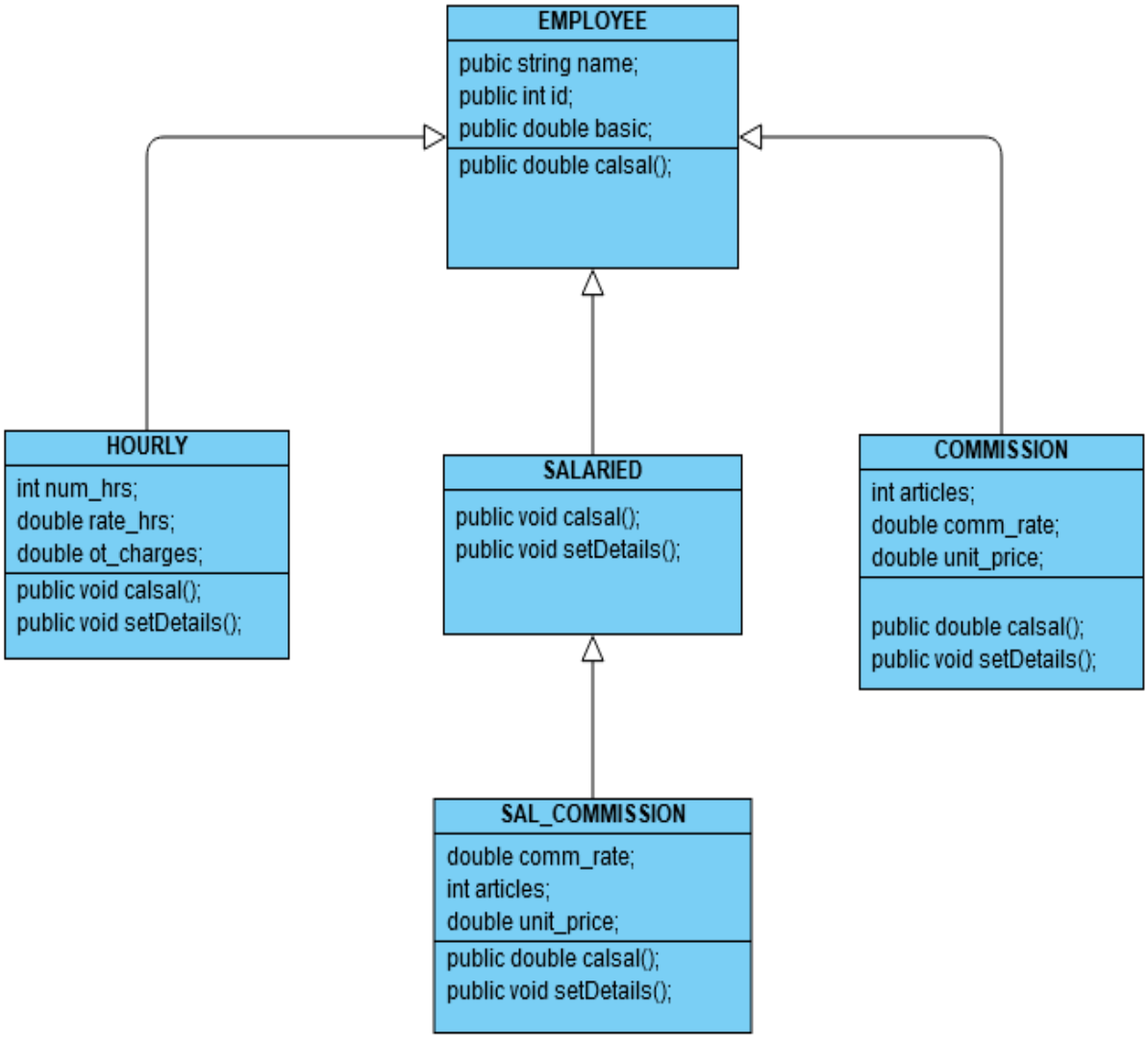
```
  }
  class Program
  {
     static void Main(string[] args)
     {
        Student s=new Student();
        s.setDetails();
        s.getDetails();

     }
  }
}
```

OUTPUT

```
PS C:\Users\user\Desktop\SEM-3\C#\C-sharp programs\A> dotnet run
Enter Name
Nikita Kapoor
Enter Course
MCA
Enter Subject
C#
Enter University
GGSIPU
Enter Email
nikita@gmail.com
Enter Phone Number
9873347001
**********************
Student Details
Name :Nikita Kapoor
Course :MCA
Subject :C#
University :GGSIPU
Email :nikita@gmail.com
Phone Number :9873347001
PS C:\Users\user\Desktop\SEM-3\C#\C-sharp programs\A>
```

Problem AA1:
A company pays its employees on a weekly basis. The employees are of four types:
1. Salaried employees are paid a fixed weekly salary regardless of the number of hours worked
2. . Hourly employees are paid by the hour and receive overtime pay for all hours worked in
excess of 40 hours
3. Commission employees are paid a percentage of their sales
4. Salaried-Commission employees receive a base salary plus a percentage of their sales.
For the current pay period, the company has decided to reward salaried-commission employees by
adding 10% to their base salaries. The company wants to implement a C# application that performs
its payroll calculations polymorphic way.
a. Design the class Diagram.
b. Implement the code to fulfil the requirement.
c. Calculation must be done with polymorphic way.



```
using System;

namespace AA1
{
 class Employee
   {
      public string name;
      public double basic;
      public int id;
      public double calsal(){

         return basic*2+basic*0.30; //basic+DA(100%)+HRA(30%)
      }
   }

   class Hourly:Employee
   {
      int num_hrs;
      double rate_hrs;
      double ot_charges;
      public void setDetails(){
         Console.WriteLine("Enter Name");
         name=(Console.ReadLine());
         Console.WriteLine("Enter Id");
         id=Convert.ToInt32(Console.ReadLine());
         Console.WriteLine("Enter Number of Hours");
         num_hrs=Convert.ToInt32(Console.ReadLine());
         Console.WriteLine("Enter Rate per Hour");
         rate_hrs=Convert.ToDouble(Console.ReadLine());
         Console.WriteLine("Enter OT charges");
         ot_charges=Convert.ToDouble(Console.ReadLine());
      }
      public double calsal()
      {
         if(num_hrs>40)
         {
            return (40*rate_hrs)+(num_hrs-40)*(rate_hrs*ot_charges);
         }
            return num_hrs*rate_hrs;
      }
   }

   class Salaried:Employee{
       public void setDetails(){
         Console.WriteLine("Enter Name");
         name=(Console.ReadLine());
         Console.WriteLine("Enter Id");
         id=Convert.ToInt32(Console.ReadLine());
```

```
        Console.WriteLine("Enter Basic Pay");
        basic=Convert.ToInt32(Console.ReadLine());
    }
    public double calsal()
    {
        return basic+basic*1.0+basic*0.30;
    }
}

class Commission:Employee
{
    int articles;
    double comm_rate;
    double unit_price;
      public void setDetails(){
        Console.WriteLine("Enter Name");
        name=(Console.ReadLine());
        Console.WriteLine("Enter Id");
        id=Convert.ToInt32(Console.ReadLine());
        Console.WriteLine("Enter Articles");
        articles=Convert.ToInt32(Console.ReadLine());
        Console.WriteLine("Enter Commision Rate %");
        comm_rate=Convert.ToDouble(Console.ReadLine());
        Console.WriteLine("Enter Unit Price");
        unit_price=Convert.ToDouble(Console.ReadLine());
    }
    public double calsal(){
        return (articles*unit_price)*(comm_rate)/100;
    }
}

class Sal_Commission:Salaried{
    int articles;
    double comm_rate; //10
    double unit_price;
    public void setDetails(){
        Console.WriteLine("Enter Name");
        name=(Console.ReadLine());
        Console.WriteLine("Enter Id");
        id=Convert.ToInt32(Console.ReadLine());
        Console.WriteLine("Enter Basic Pay");
        basic=Convert.ToInt32(Console.ReadLine());
        Console.WriteLine("Enter Articles");
        articles=Convert.ToInt32(Console.ReadLine());
        Console.WriteLine("Enter Commision Rate %");
        comm_rate=Convert.ToDouble(Console.ReadLine());
        Console.WriteLine("Enter Unit Price");
        unit_price=Convert.ToDouble(Console.ReadLine());
```

```
    }
    public double calsal(){
        return ((articles*unit_price)*(comm_rate)/100)+(basic+basic*1.0+basic*0.30);
    }
}
class Program
{
    static void Main(string[] args)
    {
        int choice;
        Salaried salaried=new Salaried();
        Sal_Commission sal_Commission=new Sal_Commission();
        Commission commission=new Commission();
        Hourly hourly=new Hourly();

        do{
            Console.WriteLine("Enter choice:");
            Console.WriteLine("1.Salaried Employee");
            Console.WriteLine("2.Hourly Employee");
            Console.WriteLine("3.Commission Employee");
            Console.WriteLine("4.Salaried Commission Employee");
            Console.WriteLine("5.Exit");
            choice=Convert.ToInt32(Console.ReadLine());
            switch(choice){
                case 1:salaried.setDetails();
                       Console.WriteLine("Salary:"+salaried.calsal().ToString());
                       break;
                case 2: hourly.setDetails();
                       Console.WriteLine("Salary:"+hourly.calsal().ToString());
                       break;
                case 3: commission.setDetails();
                       Console.WriteLine("Salary:"+commission.calsal().ToString());
                       break;
                case 4:sal_Commission.setDetails();
                       Console.WriteLine("Salary:"+sal_Commission.calsal().ToString());
                       break;
            }

        }while(choice!=5);
    }
}
}
```

OUTPUT

```
Enter choice:
1.Salaried Employee
2.Hourly Employee
3.Commission Employee
4.Salaried Commission Employee
5.Exit
1
Enter Name
Nikita
Enter Id
1
Enter Basic Pay
10000
Salary:23000
Enter choice:
1.Salaried Employee
2.Hourly Employee
3.Commission Employee
4.Salaried Commission Employee
5.Exit
2
Enter Name
Mohit
Enter Id
2
Enter Number of Hours
7
Enter Rate per Hour
2000
Enter OT charges
30
Salary:14000
Enter choice:
```

```
Enter choice:
1.Salaried Employee
2.Hourly Employee
3.Commission Employee
4.Salaried Commission Employee
5.Exit
3
Enter Name
Swati
Enter Id
3
Enter Articles
40
Enter Commision Rate %
60
Enter Unit Price
6000
Salary:144000
Enter choice:
```

```
1.Salaried Employee
2.Hourly Employee
3.Commission Employee
4.Salaried Commission Employee
5.Exit
4
Enter Name
Shalvi
Enter Id
4
Enter Basic Pay
20000
Enter Articles
30
Enter Commision Rate %
20
Enter Unit Price
4000
Salary:70000
Enter choice:
1.Salaried Employee
2.Hourly Employee
3.Commission Employee
4.Salaried Commission Employee
5.Exit
5
PS C:\Users\user\Desktop\SEM-3\C#\C-sharp programs\AA1>
```