Antwalk Software Engineering Foundations

Inheritance, Overloading, Overriding

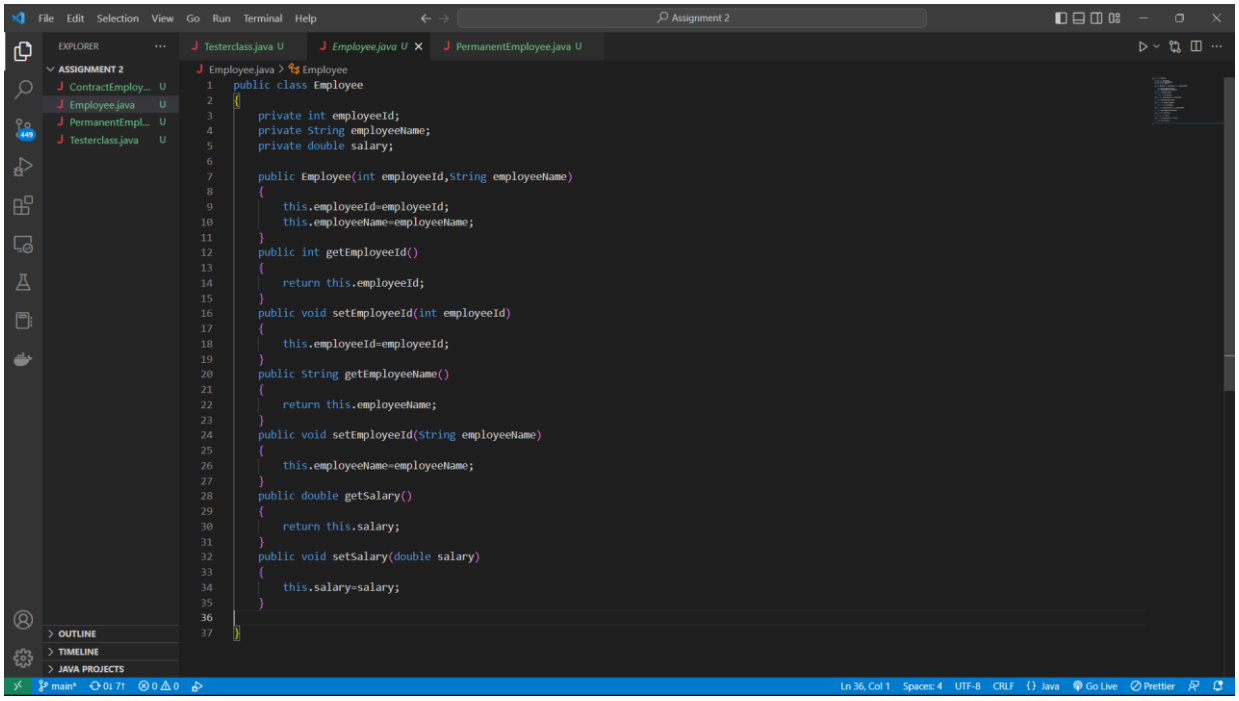
Assignment 2

Name : Arijit Saha , College : Future Institute of Engineering and Management , Employee Id : T23010330 , Mail Id: arijits@trainee.nrifintech.com

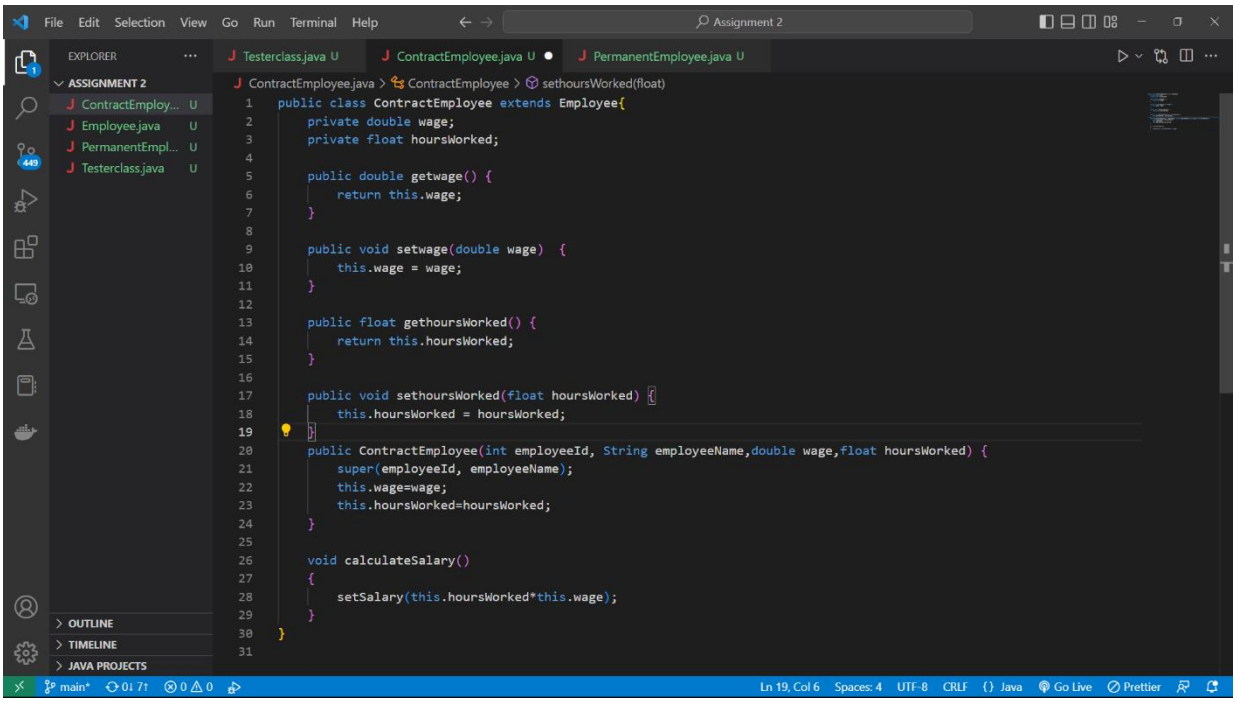
Q1. A construction company wants to keep a record of the employees working in it. There are permanent employees as well as contract employees. Contract employees work on an hourly basis whereas permanent employees are paid monthly salary. An application needs to be developed for the company for storing the employee details. Implement the classes based on the class diagram and description given below. Red Color -> indicates private Green Color-> indicates public

Method Description Employee Employee(int employeeId, String employeeName) Initialize the employeeId and employeeName instance variables appropriately with the values passed to the constructor. Implement the getter and setter methods appropriately. PermanentEmployee PermanentEmployee(int empId, String name, double basicPay, double hra, float experience) Initialize the employeeId, employeeName, basicPay, hra and experience instance variables appropriately with the values passed to the constructor. calculateMonthlySalary() Calculate and set the salary of the employee using the formula given below. salary = basic pay + hra + variable component

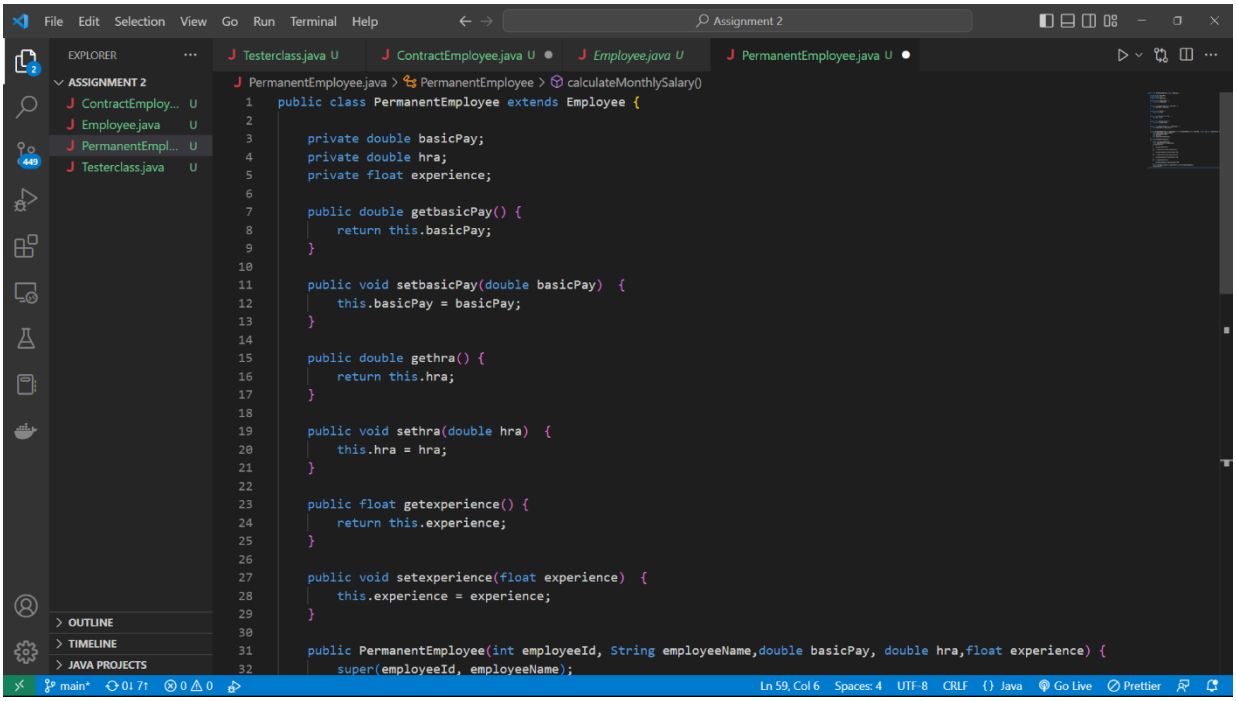
Employee.java

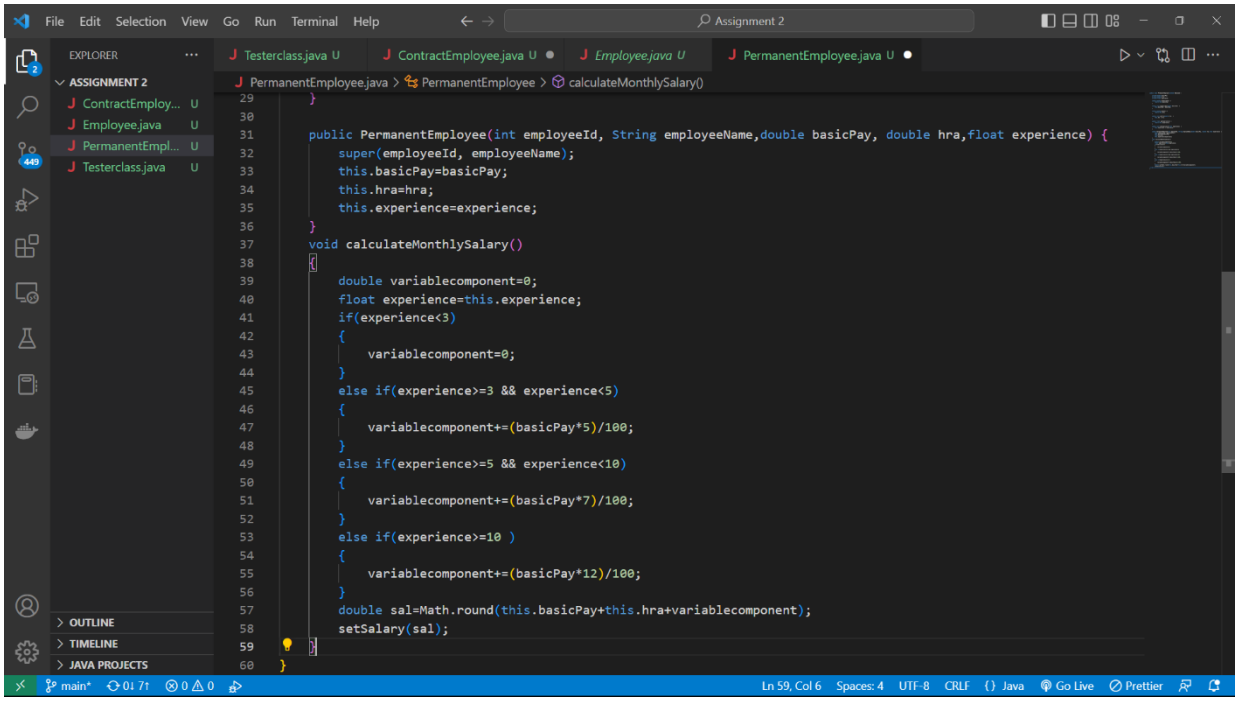


ContractEmployee.java



PermanentEmployee.java

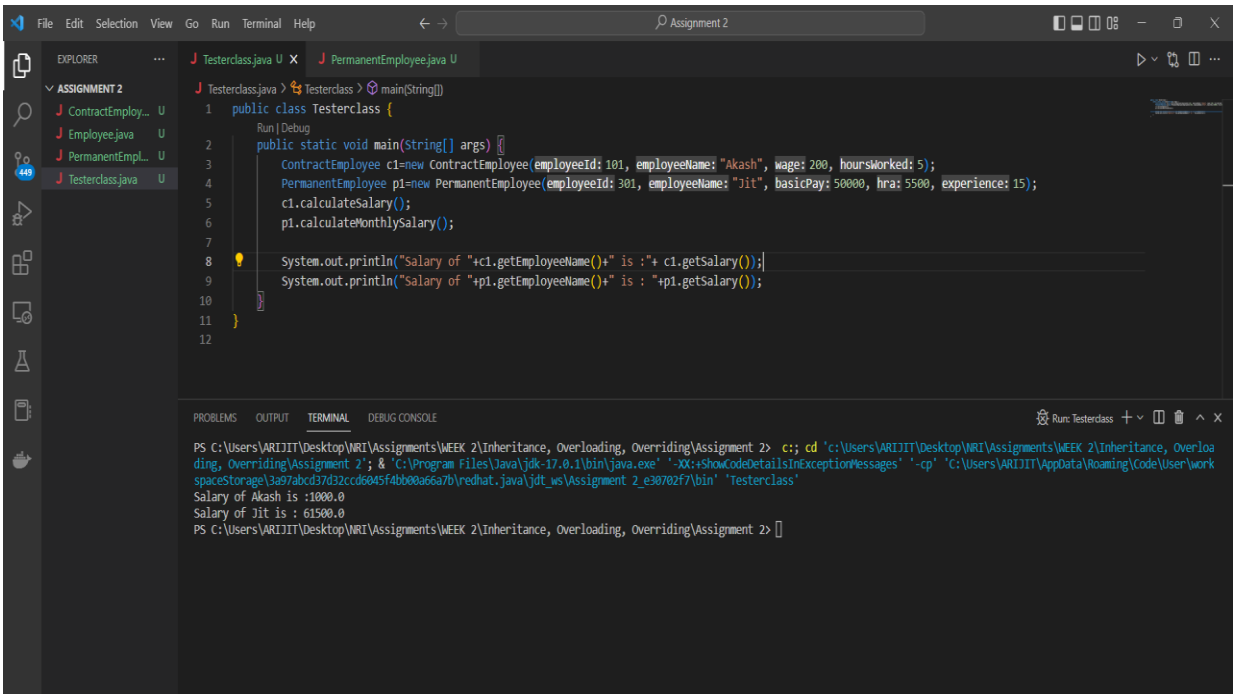




```
    }

    public PermanentEmployee(int employeeId, String employeeName,double basicPay, double hra,float experience) {
        super(employeeId, employeeName);
        this.basicPay=basicPay;
        this.hra=hra;
        this.experience=experience;
    }
    void calculateMonthlySalary()
    {
        double variablecomponent=0;
        float experience=this.experience;
        if(experience<3)
        {
            variablecomponent=0;
        }
        else if(experience>=3 && experience<5)
        {
            variablecomponent+=(basicPay*5)/100;
        }
        else if(experience>=5 && experience<10)
        {
            variablecomponent+=(basicPay*7)/100;
        }
        else if(experience>=10 )
        {
            variablecomponent+=(basicPay*12)/100;
        }
        double sal=Math.round(this.basicPay+this.hra+variablecomponent);
        setSalary(sal);
    }
}
```

Testerclass.java Along with Output



```
public class Testerclass {
    Run | Debug
    public static void main(String[] args) {
        ContractEmployee c1=new ContractEmployee(employeeId: 101, employeeName: "Akash", wage: 200, hoursWorked: 5);
        PermanentEmployee p1=new PermanentEmployee(employeeId: 301, employeeName: "Jit", basicPay: 50000, hra: 5500, experience: 15);
        c1.calculateSalary();
        p1.calculateMonthlySalary();

        System.out.println("Salary of "+c1.getEmployeeName()+" is :"+ c1.getSalary());
        System.out.println("Salary of "+p1.getEmployeeName()+" is : "+p1.getSalary());
    }
}
```

```
PS C:\Users\ARIJIT\Desktop\NRI\Assignments\WEEK 2\Inheritance, Overloading, Overriding\Assignment 2> c:; cd 'c:\Users\ARIJIT\Desktop\NRI\Assignments\WEEK 2\Inheritance, Overloading, Overriding\Assignment 2'; & 'C:\Program Files\Java\jdk-17.0.1\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\ARIJIT\AppData\Roaming\Code\User\workspaceStorage\3a97abcd37d32ccd6045f4bb00a66a7b\redhat.java\jdt_ws\Assignment 2_e30702f7\bin' 'Testerclass'
Salary of Akash is :1000.0
Salary of Jit is : 61500.0
PS C:\Users\ARIJIT\Desktop\NRI\Assignments\WEEK 2\Inheritance, Overloading, Overriding\Assignment 2>
```