**DESIGN A JAVA INTERFACE**

**(ASSIGNMENT # 3 SEMESTER FALL-2023)**

**Submission Date (Dec 20, 2023)**

**By**

**MUHAMMAD IBTISAM AFZAL**

**Registration No.**

*FA22-BCS-073*

**Course Code (Course Title)**

*CSC241 (Object Oriented Programming) - Lab*

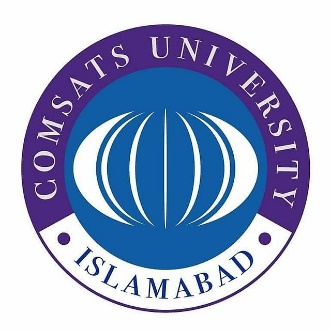
**Degree Program Title and Section**

*BCS-B*

**Submitted To**

*Mr. Shafqat*

**Department of Computer Science**



**COMSATS UNIVERSITY ISLAMABAD, SAHIWAL CAMPUS**

**Task:**

**Design a Java interface named "Employee" with methods like calculateSalary() and displayDetails(). Implement two classes, "SalariedEmployee" and "HourlyEmployee," both adhering to the "Employee" interface. In the "SalariedEmployee" class, structure attributes for a salaried employee and implement the calculateSalary() method accordingly. Similarly, in the "HourlyEmployee" class, define attributes and a calculateSalary() method suitable for an hourly employee. Utilize ArrayLists in both classes to manage collections of employees, ensuring proper initialization an maintenance. Display the details of each class using displayDetails() class.**

|  |  |
| --- | --- |
| **Source Code** | |
| package assignment3Package;  import java.util.\*;  interface Employee {  void calculateSalary();  void displayDetails();  }  class SalariedEmployee implements Employee {  private String name;  private double monthlySalary;  public SalariedEmployee(String name, double monthlySalary) {  this.name = name;  this.monthlySalary = monthlySalary;  }  @Override  public void calculateSalary() {  }  @Override  public void displayDetails() {  System.out.println("Salaried Employee Details:");  System.out.println("Name: " + name);  System.out.println("Monthly Salary: Rs." + monthlySalary);  System.out.println("-----------------------------");  } }  class HourlyEmployee implements Employee {  private String name;  private double hourlyRate;  private int hoursWorked;  public HourlyEmployee(String name, double hourlyRate, int hoursWorked) {  this.name = name;  this.hourlyRate = hourlyRate;  this.hoursWorked = hoursWorked;  } | @Override  public void calculateSalary() {  double salary = hourlyRate \* hoursWorked;  System.out.println("Hourly Employee Salary Calculated: Rs." + salary);  }  @Override  public void displayDetails() {  System.out.println("Hourly Employee Details:");  System.out.println("Name: " + name);  System.out.println("Hourly Rate: Rs." + hourlyRate);  System.out.println("Hours Worked: " + hoursWorked);  System.out.println("-----------------------------");  }  }  public class Main {  public static void main(String[] args) {    ArrayList<Employee> employees = new ArrayList<>();  employees.add(new SalariedEmployee("Ibtisam", 5000.0));  employees.add(new HourlyEmployee("Shafqat", 15.0, 40));  for (Employee employee : employees) {  employee.calculateSalary();  employee.displayDetails();  }  }  } |

**Output:**

