**Program Code [Main.java]**

**Overriding method:** printSalary()

**Overloading method:** printSalary(bonus)

**Code**

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Java class with two subclasses

We would take Employee as parent class

Subclasses are:

1. FullTimeEmployee

2. HourlyEmployee

Updated: Adding One Overriding method & One Overloading method

Overriding method: printSalaryInfo() - It would calculate salary by calling calculateSalary method & then print it

Overloading method: printSalaryInfo(bonus) - It would also call calculateSalary method & also add bonus in that & then print it with bonus

For further info, there is already a method named 'calculateSalary' which is overriding method & implemented by both sub classes

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abstract class Employee {

// Required attributes

protected String name;

protected int age;

protected String address;

protected String phone;

// Constructor

public Employee(String name, int age, String address, String phone) {

this.name = name;

this.age = age;

this.address = address;

this.phone = phone;

}

// Setters & Getters

public String getName() {

return name;

}

public void setName(String name) {

this.name = name;

}

public int getAge() {

return age;

}

public void setAge(int age) {

this.age = age;

}

public String getAddress() {

return address;

}

public void setAddress(String address) {

this.address = address;

}

public String getPhone() {

return phone;

}

public void setPhone(String phone) {

this.phone = phone;

}

// A toString method which returns string representation of Employee

public String toString() {

return "Name: " + name + "\nAge = " + age + "\nAddress: " + address + "\nPhone Number: " + phone;

}

// An abstract method which would be implemented by child classes which returns salary of employee

abstract double calculateSalary();

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Overriding method

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public void printSalary() {

System.out.println("Salary: $" + calculateSalary());

}

/\*

Overloading method

\*/

public void printSalary(double bonus) {

double salary = calculateSalary();

double totalSalary = salary + bonus;

System.out.println("Salary: $" + calculateSalary());

System.out.println("Bonus: $" + bonus);

System.out.println("---------------------");

System.out.println("Total Salary: $" + totalSalary);

System.out.println("---------------------");

}

}

// Child classes

// FullTimeEmployee class

class FullTimeEmployee extends Employee {

// A unique attribute of FullTimeEmployee

private double annualSalary;

// Constructor

public FullTimeEmployee(String name, int age, String address, String phone, double annualSalary) {

super(name, age, address, phone);

this.annualSalary = annualSalary;

}

// Setter & Getter

public double getAnnualSalary() {

return annualSalary;

}

public void setAnnualSalary(double annualSalary) {

this.annualSalary = annualSalary;

}

// Implementing calculateSalary method for this class

@Override

double calculateSalary() {

return annualSalary;

}

/\*

Overriding method

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@Override

public void printSalary() {

System.out.println("Full Time Employee");

super.printSalary();

}

}

// HourlyEmployee class

class HourlyEmployee extends Employee {

// Unique attributes which has hourly salary & number of hours worked

private int numHours;

private double hourlySalary;

// Constructor, Setter & Getter

public HourlyEmployee(String name, int age, String address, String phone, int numHours, double hourlySalary) {

super(name, age, address, phone);

this.numHours = numHours;

this.hourlySalary = hourlySalary;

}

public int getNumHours() {

return numHours;

}

public void setNumHours(int numHours) {

this.numHours = numHours;

}

public double getHourlySalary() {

return hourlySalary;

}

public void setHourlySalary(double hourlySalary) {

this.hourlySalary = hourlySalary;

}

// Implementing calculateSalary method

@Override

double calculateSalary() {

return hourlySalary \* numHours;

}

/\*

overriding method

\*/

@Override

public void printSalary() {

System.out.println("Hourly Employee");

System.out.println("Number of hours: " + numHours);

System.out.println("Hourly Salary: $" + hourlySalary);

super.printSalary();

}

}

public class Main {

// Testing classes

public static void main(String[] args) {

// Create an instance of Employee class & call these methods

Employee employee = new HourlyEmployee("Peg", 25, "California", "12345", 40, 100);

// Calling overriding method

System.out.println("Calling Overriding method \'printSalary()\'");

employee.printSalary();

// Calling overloading method

System.out.println("\nCalling Overloading method \'printSalary(bonus)\'");

employee.printSalary(1000);

}

}

**Output Screen Shot:**

