BITA-7-23-074-TZ

1. Employee and ProductionWorker Classes

Write an Employee class that keeps data attributes for the following pieces of information:

• Employee name
• Employee number

Next, write a class named ProductionWorker that is a subclass of the Employee class. The ProductionWorker class should keep data attributes for the following information:

• Shift number (an integer, such as 1, 2, or 3)
• Hourly pay rate

The workday is divided into two shifts: day and night. The shift attribute will hold an integer value representing the shift that the employee works. The day shift is shift 1 and the night shift is shift 2. Write the appropriate accessor and mutator methods for each class. Once you have written the classes, write a program that creates an object of the ProductionWorker class and prompts the user to enter data for each of the object's data attributes. Store the data in the object and then use the object's accessor methods to retrieve it and display it on the screen.

CODE:

Employee.java > ...

```java
public class Employee {
    private String name;
    private int number;

    public Employee(String name, int number){
        this.name = name;
        this.number = number;

    }
    public String getName(){
        return name;
    }
    public void setName(String name){
        this.name = name;
    }
    public int getNumber(){
        return number;
    }
    public void setNumber(int Number){
        this.number = number;
    }
}
```

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ProductionWorker.java > Language Support for Java(TM) by Red Hat > ProductionWorker > setHourlyPayRate(double)

```java
public class ProductionWorker extends Employee {
    private int shiftNumber;
    private double hourlyPayRate;

    public ProductionWorker(String name, int number, int shiftNumber, double hourlyPayRate ){
        super(name, number);
        this.shiftNumber = shiftNumber;
        this.hourlyPayRate = hourlyPayRate;
    }
    public int getShiftNumber(){
        return shiftNumber;
    }
    public void setShiftNumber(int shiftNumber){
        this.shiftNumber = shiftNumber;
    }
    public double getHourlyPayRate(){
        return hourlyPayRate;
    }
    public void setHourlyPayRate(double hourlyPayRate){
        this.hourlyPayRate = hourlyPayRate;
    }
}
```

EmployeeTest.java > Language Support for Java(TM) by Red Hat > EmployeeTest > main(String[])

```java
public class EmployeeTest {

    Run main | Debug main | Run | Debug
    public static void main(String[] args) {
        ProductionWorker worker = new
    ProductionWorker(name:"Rahma Salum", number:8241, shiftNumber:2, hourlyPayRate:19.5);
        System.out.println("Employee Name: " + worker.getName());
        System.out.println("Employee Number: " + worker.getNumber());
        System.out.println("Shift Number: " + worker.getShiftNumber());
        System.out.println("HourlyPayRate: " + worker.getHourlyPayRate());

    }
}
```

OUTPUT;

```
PS C:\Users\user\Desktop\INHERITANCE 2>  & 'C:\Program Files\Java\jdk-21\bin\java.exe' '-XX:+ShowCodeDetailsIn
s' '-cp' 'C:\Users\user\AppData\Roaming\Code\User\workspaceStorage\9269dedf3d1f9c9691367fb907165be2\redhat.jav
ANCE 2_a66b9164\bin' 'EmployeeTest'
Employee Name: Rahma Salum
Employee Number: 8241
Shift Number: 2
HourlyPayRate: 19.5
```

2. ShiftSupervisor Class

In a particular factory, a shift supervisor is a salaried employee who supervises a shift. In addition to a salary, the shift supervisor earns a yearly bonus when his or her shift meets production goals. Write a ShiftSupervisor class that is a subclass of the Employee class you created in Programming Exercise 1. The ShiftSupervisor class should keep a data attribute for the annual salary and a data attribute for the annual production bonus that a shift supervisor has earned. Demonstrate the class by writing a program that uses a ShiftSupervisor object.

CODE:

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ShiftSupervisor.java > Language Support for Java(TM) by Red Hat > ShiftSupervisor > setAnnualBonus(double)

```java
public class ShiftSupervisor extends Employee {
    private double annualSalary;
    private double annualBonus;

    public ShiftSupervisor(String name, int number, double annualSalary, double annualBonus){
        super(name, number);
        this.annualSalary = annualSalary;
        this.annualBonus = annualBonus;
    }
    public double getAnnualSalary(){
        return annualSalary;
    }
    public void setAnnualSalary(double annualSalary){
        this.annualSalary = annualSalary;
    }
    public double getAnnualBonus(){
        return annualBonus;
    }
    public void setAnnualBonus(double annualBonus){
        this.annualBonus = annualBonus;
    }

}

```

ShiftSupervisorTest.java > Language Support for Java(TM) by Red Hat > ShiftSupervisorTest > main(String[])

```java
public class ShiftSupervisorTest {
    Run main | Debug main | Run | Debug
    public static void main(String[] args) {
        ShiftSupervisor supervisor = new
    ShiftSupervisor(name:"Thurayya Amran", number:665392, annualSalary:800000, annualBonus:3000);
        System.out.println("Supervisor Name: " + supervisor.getName());
        System.out.println("Supervisor Number: " + supervisor.getNumber());
        System.out.println("Annual Salary: " + supervisor.getAnnualSalary());
        System.out.println("Annual Bonus: " + supervisor.getAnnualBonus());

    }


}

```

OUTPUT:

```
PROBLEMS 2   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS

PS C:\Users\user\Desktop\INHERITANCE 2>  & 'C:\Program Files\Java\jdk-21\bin\java.exe' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\user\AppData\Roaming\Code\User\workspaceStorage\9269dedf3d1f9c9691367fb907165be2\redhat.java\jdt_ws\INHERITANCE 2_a66b9164\bin' 'ShiftSupervisorTest'
Supervisor Name: Thurayya Amran
Supervisor Number: 665392
Annual Salary: 800000.0
Annual Bonus: 3000.0
PS C:\Users\user\Desktop\INHERITANCE 2>
```

3. Person and Customer Classes

Write a class named Person with data attributes for a person's name, address, and telephone number. Next, write a class named Customer that is a subclass of the Person class. The Customer class should have a data attribute for a customer number and a Boolean data attribute indicating whether the customer wishes to be on a mailing list. Demonstrate an instance of the Customer class in a simple program.

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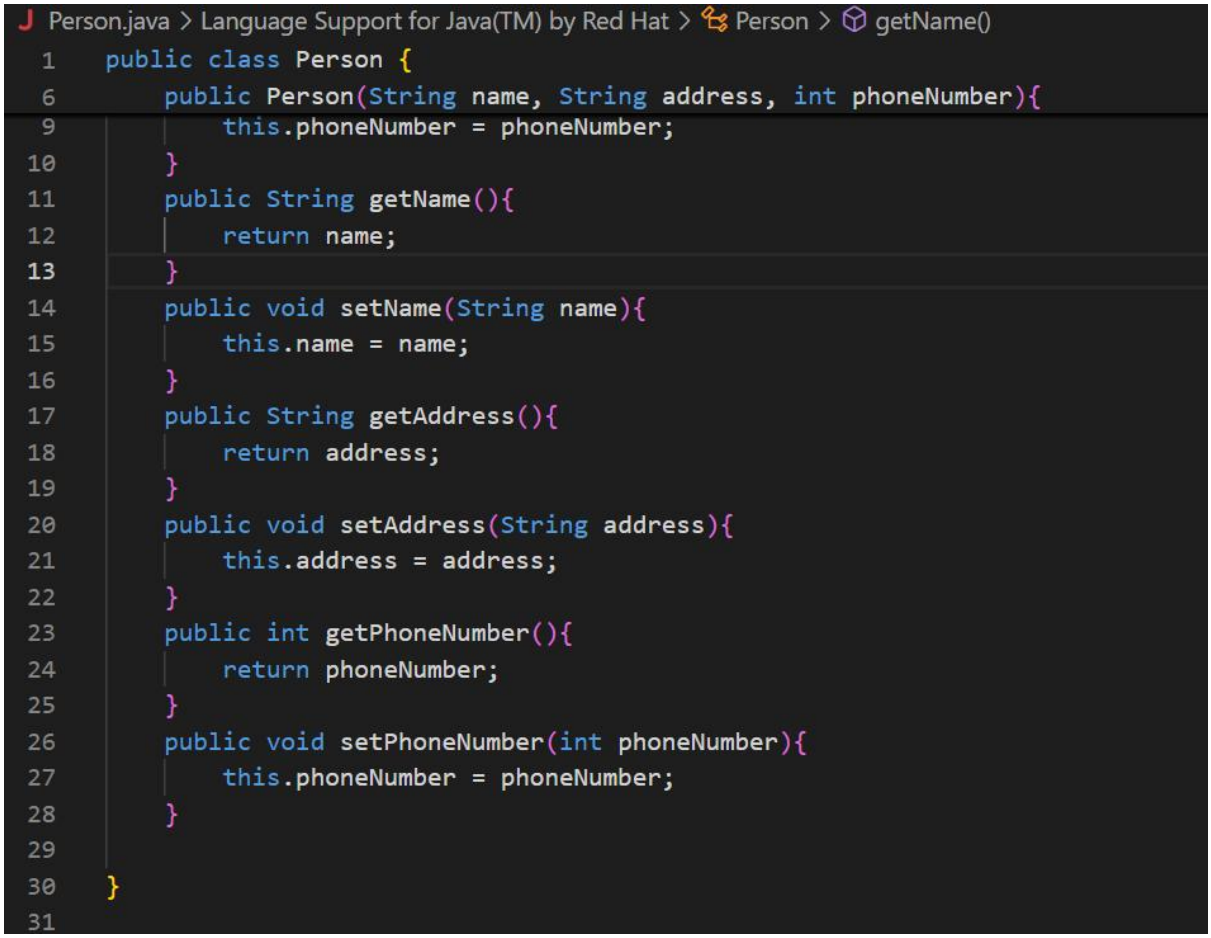
CODE:



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Customer.java > Language Support for Java(TM) by Red Hat > Customer > setMailingList(boolean)

```java
public class Customer extends Person {
    private int customerNumber;
    private boolean mailingList;

    public Customer(String name, String address,
int phoneNumber, int customerNumber, boolean mailingList){
    super(name, address, phoneNumber);
    this.customerNumber = customerNumber;
    this.mailingList = mailingList;
}
    public int getCustomerNumber(){
        return customerNumber;
    }
    public void setCustomerNumber(int customerNumber){
        this.customerNumber = customerNumber;
    }
    public boolean isMailingList(){
        return mailingList;
    }
    public void setMailingList(boolean mailingList){
        this.mailingList = mailingList;
    }

}
```

PersonTest.java > Language Support for Java(TM) by Red Hat > PersonTest > main(String[])

```java
public class PersonTest {
    Run main | Debug main | Run | Debug
    public static void main(String[] args) {
        Customer customer = new Customer(name:"Khadija Salum",
        address:"100 Magomeni Street", phoneNumber:766539241, customerNumber:502, mailingL…false);
        System.out.println("Customer Name: " + customer.getName());
        System.out.println("Address: " + customer.getAddress());
        System.out.println("Phone Number: " + customer.getPhoneNumber());
        System.out.println("Customer Number: " + customer.getCustomerNumber());
        System.out.println("On Mailing List: " + customer.isMailingList());
    }

}

```

OUTPUT:

```
PS C:\Users\user\Desktop\INHERITANCE 2>  & 'C:\Program Files\Java\jdk-21\bin\java.exe' '-XX:+ShowCodeDetailsI
nExceptionMessages' '-cp' 'C:\Users\user\AppData\Roaming\Code\User\workspaceStorage\9269dedf3d1f9c9691367fb90
7165be2\redhat.java\jdt_ws\INHERITANCE 2_a66b9164\bin' 'PersonTest'
Customer Name: Khadija Salum
Address: 100 Magomeni Street
Phone Number: 766539241
Customer Number: 502
On Mailing List: false
PS C:\Users\user\Desktop\INHERITANCE 2>
```

Run: Emplo...
Run: ShiftSu...
Run: Person...