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BATCH: B2

Q2:

Give the definition of four classes, Person, Doctor, Patient and Billing, whose objects are records for a clinic.

Class Doctor will be derived from the class Person. A doctor have name and Date (inherited from the class Person), it's speciality; fees and income;

Patient will be derived from the class Person. A Patient record has the patient's name and Date (inherited from the class Person) and a Doctor object.

A Billing object will contain a Patient object, a Doctor object, Date of bill using date object and an amount due of type double. Be sure your classes have a reasonable complement of constructors, copy constructor, override equals(check equality of object) and toString methods and member functions. First write a driver program to test all your member functions, and then write a test program that creates at least two patients, at least two doctors, and at least two Billing records, then prints out the total income from the Billing records.

At the time of Billing the Patient name and doctor name equality should be checked.

Total bill generated will be no of days the patient admitted (admitted date + current date) * 2000+ doctor fees * no of days from the date of billing .

Update the Doctors income also simultaneously.

CODE:

```java
import java.util.*;
class Person{
    String name;
    int date;
    Person(String name,int date){
        this.name=name;


    }
}
class Doctor extends Person{
    String speciality;
    float fees,income;
    Doctor(String name,int date,String speciality,float
fees) {
        super(name,date);
        this.speciality=speciality;
        this.fees= fees;
        this.income=0;
```

```java
        }
        Doctor(Doctor dp)
        {
            super(dp.name,dp.date);
            this.speciality= dp.speciality;
            this.fees= dp.fees;


        }

}
class Patient extends Person{
        int datep;
        Doctor dp;
        Patient(String name,int date,Doctor dp) {
            super(name,date);
            this.dp=dp;


        }
        Patient(Patient p,int datep){
            super(p.name,p.date);
            this.datep=datep;
        }


}
class Billing {
        Doctor dp;
        Patient p;
        float amount;
        Billing(Doctor dp,Patient p) {

            this.dp=dp;
            this.p=p;
            this.amount=0;
        }
        void amt_cal(Doctor dp,Patient p){
            int day;
            Scanner sc= new Scanner(System.in);
            System.out.println("Enter the current date");
            day= sc.nextInt();
            int pu=day -p.datep;
            amount = (pu)*2000 + pu*dp.fees;
            System.out.println("The bill of patient is "+
amount);
            dp.income+=pu*dp.fees;
            System.out.println("The income of the doctor is
```

```java
"+dp.income);
    }


}

public class exper {
    public static void main(String[] args) {
        Scanner sc= new Scanner(System.in);
        System.out.println("Enter the number of
patients:");
        int n=sc.nextInt();
        Doctor dp[]= new Doctor [n];
        Patient p []= new Patient[n];

        String speciality,name;
        float fees,income;
        for(int i=0;i<n;i++){
            System.out.println("Enter the name of
Doctor:");
            name=sc.next();
            System.out.println("Enter the date of
admittance of doctor:");
            int date1= sc.nextInt();
            System.out.println("Enter the speciality of
Doctor");
            speciality = sc.next();
            System.out.println("Enter the fees of
doctor");
            fees= sc.nextInt();
            dp[i]= new
Doctor(name,date1,speciality,fees);
        }
        for(int j=0;j<n;j++){
            System.out.println("Enter the name of
patient:");
            String p_name=sc.next();
            System.out.println("Enter the date of
admittance of patient");
            int date2= sc.nextInt();
            int ind=0;
            System.out.println("Enter the speciality of
the Doctor");
            String doc_spec= sc.next();
            for(int k=0;k<n;k++){
```

```java
if((doc_spec.equals(dp[k].speciality))){
                ind =k;
            }
        }
        p[j]= new Patient(p_name,date2,dp[ind]);
        Billing b= new Billing(dp[ind],p[j]);
        b.amt_cal(dp[ind], p[j]);
    }

    }
}
```

OUTPUT:

```
"C:\Program Files\Java\jdk-18.0.1\bin\java.exe" "-javaag
Enter the number of patients:
2
Enter the name of Doctor:
a
Enter the date of admittance of doctor:
09092000
Enter the speciality of Doctor
ent
Enter the fees of doctor
2000
Enter the name of Doctor:
b
Enter the date of admittance of doctor:
07072003
Enter the speciality of Doctor
ortho
```

```
Enter the fees of doctor
3400
Enter the name of patient:
r
Enter the date of admittance of patient
20
Enter the speciality of the Doctor
ortho
Enter the current date
24
The bill of patient is 129600.0
The income of the doctor is 81600.0
Enter the name of patient:
s
Enter the date of admittance of patient
17
```

```
Enter the current date
24
The bill of patient is 129600.0
The income of the doctor is 81600.0
Enter the name of patient:
s
Enter the date of admittance of patient
17
Enter the speciality of the Doctor
ent
Enter the current date
24
The bill of patient is 96000.0
The income of the doctor is 48000.0


Process finished with exit code 0
```