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JAVA PROGRAMMING

Assignment:7

Using getter and setter

Empolyee.java

Source code:

```
public class Empolyee {
    private String FirstName,LastName,Gender,DateOfBirth;
    private float
HouseRentAllowence,TravelAllowence,DearlyAllowence,ProvidentFund;
    private int  BasicPay;

    public void setterFirstName(String FirstName){
            this.FirstName=FirstName;
    }
     public void setterLastName(String LastName){
            this.LastName=LastName;
    }
     public void setterGender(String Gender){
            this.Gender=Gender;
    }
public void setterDateOfBirth(String DateOfBirth){
            this.DateOfBirth=DateOfBirth;
    }
public void setterHouseRentAllowence(float HouseRentAllowence){
            this.HouseRentAllowence=HouseRentAllowence;
    }
    public void setterTravelAllowence(float TravelAllowence){
            this.TravelAllowence=TravelAllowence;
    }
    public void setterDearlyAllowence(float DearlyAllowence){
            this.DearlyAllowence=DearlyAllowence;
    }
     public void setterProvidentFund(float ProvidentFund){
            this.ProvidentFund=ProvidentFund;
    }
```

```
    public void setterBasicPay(int BasicPay){
            this.BasicPay=BasicPay;
    }

    public String getterFirstName(){
        return FirstName;
    }
    public String getterLastName(){
        return LastName;
    }
    public String getterGender(){
        return Gender;
    }
     public String  getterDateOfBirth(){
        return DateOfBirth;
    }
     public float getterHouseRentAllowence(){
        return HouseRentAllowence;
    }
    public float getterTravelAllowence(){
        return TravelAllowence;
    }
    public float getterDearlyAllowence(){
        return DearlyAllowence;
    }
    public float getterProvidentFund(){
        return ProvidentFund;
    }
    public int getterBasicPay(){
        return BasicPay;
    }
    public double calculate(){
        double NetPay;
        float amount1,amount2,amount3,amount4;
        amount1=(HouseRentAllowence/100)*BasicPay;
        amount2=(TravelAllowence/100)*BasicPay;
        amount3=(DearlyAllowence/100)*BasicPay;
        amount4=(ProvidentFund/100)*BasicPay;
        NetPay=(amount1+amount2+amount3)-(amount4);

        return NetPay;
        }
    }
```

Solution.java

Source code

```java
public class Solution{
public static void main(String arg[])
 {
 Empolyee empolyee=new Empolyee();
 empolyee.setterFirstName("kavitha");
 empolyee.setterLastName("Muthuvel");
 empolyee.setterGender("female");
 empolyee.setterDateOfBirth("14-4-1997");
 empolyee.setterHouseRentAllowence(4);
 empolyee.setterTravelAllowence(1.5f);
 empolyee.setterDearlyAllowence(2.1f);
 empolyee.setterProvidentFund(4);
 empolyee.setterBasicPay(2000);


 System.out.println("FirstName          :"+empolyee.getterFirstName());
 System.out.println("LastName           :"+empolyee.getterLastName());
 System.out.println("Gender             :"+empolyee.getterGender());
 System.out.println("DateOfBirth        :"+empolyee.getterDateOfBirth());
 System.out.println("HouseRentAllowence :"+empolyee.getterHouseRentAllowence());
 System.out.println("TravelAllowence    :"+empolyee.getterTravelAllowence());
 System.out.println("DearlyAllowence    :"+empolyee.getterDearlyAllowence());
 System.out.println("ProvidentFund      :"+empolyee.getterProvidentFund());
 System.out.println("BasicPay           :"+empolyee.getterBasicPay());
 System.out.println("NetPay             :"+"RS"+empolyee.calculate());
 }
}
```

Output:

```
C:\Users\students\Documents\kavitha>javac Empolyee.java

C:\Users\students\Documents\kavitha>javac Solution.java

C:\Users\students\Documents\kavitha>java Solution
FirstName          :kavitha
LastName           :Muthuvel
Gender             :female
DateOfBirth        :14-4-1997
HouseRentAllowence :4.0
TravelAllowence    :1.5
DearlyAllowence    :2.1
ProvidentFund      :4.0
BasicPay           :2000
NetPay             :RS72.0
```

.

Complex.java

Source code:

```
public class Complex{
    private double real = 1.0;
    private double imaginary = 1.0;
   public Complex(){
       real=0.0;
       imaginary=0.0;

   }
   public void setterReal(double real){
       this.real=real;
       }
   public void setterImaginary(double imaginary){
       this.imaginary=imaginary;


   }
   public double getterReal(){
       return this.real;


   }
   public double getterImaginary(){
```

```
        return this.imaginary;

    }


    public String add(double real,double imaginary){

        double real1=this.real+real;
        double imaginary1=this.imaginary+imaginary;
        return real1+((imaginary1>0)?"+":"")+imaginary1+"j";

    }
    public  String  subtract(double real,double imaginary){
        double real1 = real-this.real;
        double imaginary1 = imaginary-this.imaginary;
         return real1+((imaginary1>0)?"+":"")+imaginary1+"j";
    }
    public String  multiplyWith(double real,double imaginary){
        double real1=(real*this.real) - (imaginary*this.imaginary);
        double imaginary1=(real*this.imaginary) + (imaginary*this.real);
         return real1+((imaginary1>0)?"+":"")+imaginary1+"j";
    }
    public  String  divideBy(double real,double imaginary){

         double spl = (real*real)+(imaginary*imaginary);

         double real1 =Math.round(((real*this.real)+(imaginary*this.imaginary)) /
spl);
         double imaginary1 = Math.round(((-
imaginary*this.real)+(real*this.imaginary))/spl);
          return real1+((imaginary1>0)?"+":"")+imaginary1+"j";
    }
    public boolean isReal(){

         if(this.real !=0 && this.imaginary==0){
             return true;
     }
     else{
         return false;
     }
 }
    public boolean isImaginary(){
         if(this.real==0 && this.imaginary!=0){

             return true;
```

```
        }
        else{
            return false;
        }
    }
}
```

Solution.java

Source code

```
public class Solution{
  public static void main(String arg[]){
        Complex complex = new Complex();
        Complex complex1 = new Complex();
         complex1.setterReal(4);
         complex1.setterImaginary(7);
         complex1.getterReal();
         complex1.getterImaginary();


    System.out.println("Addtion               :"+complex1.add(4,2));
    System.out.println("Subtraction           :"+complex1.subtract(5,2));
    System.out.println("Multiplication        :"+ complex1.multiplyWith(1,2));
    System.out.println("Divition              :"+ complex1.divideBy(1,1));
    System.out.println("COMPLEX NUMBER ISREAL :"+complex1.isReal());
    System.out.println("COMPLEX NUMBER ISREAL :"+complex1.isImaginary());



    }
}
```

Output:

```
C:\Users\students\Documents\kavitha>javac Complex.java

C:\Users\students\Documents\kavitha>javac Solution.java

C:\Users\students\Documents\kavitha>java Solution
Addtion               :8.0+9.0j
Subtraction           :1.0-5.0j
Multiplication        :-10.0+15.0j
Divition              :6.0+2.0j
COMPLEX NUMBER ISREAL :false
COMPLEX NUMBER ISREAL :false
```

Pointer.java

Source code:

```
public class Pointer{
    private int xaxis=0;
    private int yaxis=0;
    Pointer(){
        xaxis=0;
        yaxis=0;
    }
    public void setterXaxis(int xaxis){
        this.xaxis=xaxis;
    }
     public void setterYaxis(int yaxis){
        this.yaxis=yaxis;
    }
    public int getterXaxis(){
        return this.xaxis;
    }
    public int getterYaxis(){
        return this.yaxis;
    }
    public double distance(int x,int y){
        double value=Math.sqrt(Math.pow((x-this.xaxis),2)+Math.pow((y-yaxis),2));
        return value;
    }
}
```

Solution.java

Source code

```
public class Solution{
    public static void main(String arg[]){

         Pointer pointer1 = new Pointer();
          pointer1.setterXaxis(3);
          pointer1.setterYaxis(4);
         int x=2;
         int y=3;
        System.out.println("XAXIS1:"+x+" "+"XAXIS2:"+pointer1.getterXaxis());
        System.out.println("YAXIS1:"+y+" "+"YAXIS2:"+pointer1.getterYaxis());
        System.out.println("DISTANCE:"+pointer1.distance(x,y));
    }
}
```

Output:

```
C:\Users\students\Documents\kavitha>javac Pointer.java

C:\Users\students\Documents\kavitha>javac Solution.java

C:\Users\students\Documents\kavitha>java Solution
XAXIS1:2 XAXIS2:3
YAXIS1:3 YAXIS2:4
DISTANCE:1.4142135623730951

C:\Users\students\Documents\kavitha>
```