```
/*S Harshini-185001058
1.Write a java program with a class named ‘Box’ with following parameters name of the parcel,
 length, width and height and a function to calculate volume of box.
*/
import java.util.Scanner;
class Box
{
	String parcel;
	double length,width,height,vol;
	Box(double l,double b,double h)
	{
		length=l;
		width=b;
		height=h;
	}
	void volume()
	{
		//double vol;
		vol=length*width*height;
	}
}
class Boxweight extends Box
{
	double weight;
	String nameop;
	Boxweight(String namep,double l,double b,double h,double w)
	{
		super(l,b,h);
		nameop=namep;
		volume();
		weight=w/1000;
	}
}
class Boxshipment extends Boxweight
{
	double cost;
	Boxshipment(String namep,double l,double b,double h,double w,double c)
	{
		super(namep,l,b,h,w);
		cost=c*weight;
	}
	void display()
	{
```

```
                System.out.println("Name of the parcel:"+nameop);
                System.out.println("Volume:"+vol);
                System.out.println("Cost:"+cost);
        }
}
class Voln
{
        public static void main(String arg[])
        {
                Scanner in=new Scanner(System.in);
                System.out.println("enter no of boxes");
                int n=in.nextInt();
                int temp=n,i=0;
                Boxshipment []bs=new Boxshipment[n];
                while(n!=0)
                {
                        String t=in.nextLine();
                        System.out.println("enter the name of parcel");
                        String namep=in.nextLine();
                        System.out.println("enter length,breadth,height,weight and cost");
                        double l=in.nextDouble();
                        double b=in.nextDouble();
                        double h=in.nextDouble();
                        double w=in.nextDouble();
                        double c=in.nextDouble();
                        bs[i]=new Boxshipment(namep,l,b,h,w,c);
                        i++;
                        n--;
                }
                for(int j=0;j<temp;j++)
                {
                        bs[j].display();
                }
        }
}
/*Sample input/output

C:\Users\Harshini\Desktop>java Voln
enter no of boxes
3
enter the name of parcel
box1
enter length,breadth,height,weight and cost
```

```
2 3 4 5000 50
enter the name of parcel
box2
enter length,breadth,height,weight and cost
1 2 3 6000 30
enter the name of parcel
box3
enter length,breadth,height,weight and cost
3 4 5 4000 40
Name of the parcel:box1
Volume:24.0
Cost:250.0
Name of the parcel:box2
Volume:6.0
Cost:180.0
Name of the parcel:box3
Volume:60.0
Cost:160.0

*/



 /*2.Develop a java application with Employee class with Emp_name, Emp_id, Address, Mail_id, Mobile_no as members.
 Inherit the classes, Programmer, Assistant Professor, Associate Professor and Professor from employee class. */
 import java.util.Scanner;
 import java.lang.*;
 class Employee
 {
        String emp_name,address,mail_id,mobile_no;
        int emp_id;
        double gross_sal,netsal,deductions;
        Scanner in=new Scanner(System.in);
        Employee()
        {
                System.out.println("enter employee name,address,mail id,mobile number and employee id ");
                emp_name=in.nextLine();
                address=in.nextLine();
                mail_id=in.nextLine();
```

```
            mobile_no=in.nextLine();
            emp_id=in.nextInt();
            //des=in.nextLine();
        }
        void calculatenet(String des)
        {
                    double bp,allowance;
                    System.out.println("enter basic pay");
                    bp=in.nextDouble();
                    double da=0.17*bp;
                    double hra=0.1*bp;
                    double pf=0.12*bp;
                    double fund=0.001*bp;
                    if(des.compareTo("Programmer")==0)
                            allowance=2000;
                    else if(des.compareTo("Assistantprofessor")==0)
                            allowance=5000;
                    else if(des.compareTo("Associateprofessor")==0)
                            allowance=10000;
                    else
                            allowance=15000;
                    gross_sal=bp+da+hra;
                    deductions=pf+fund;
                    netsal=gross_sal-deductions+allowance;

        }
        void display()
        {
                 System.out.println("Employee name:"+emp_name);
                    System.out.println("Employee id:"+emp_id);
                    System.out.println("Adress:"+address);
                    System.out.println("Mail_id:"+mail_id);
                    System.out.println("Moile number:"+mobile_no);
                    System.out.println("Gross salary:"+gross_sal);
                    System.out.println("Net salary:"+netsal);
        }

}
        class Programmer extends Employee
        {
            Programmer(String des)
            {
                  calculatenet(des);
```

```
	}
}
 class Assistantprofessor extends Employee
{
	Assistantprofessor(String des)
	{
		calculatenet(des);
	}
}
 class Associateprofessor extends Employee
{
	Associateprofessor(String des)
	{
		calculatenet(des);
	}
}
 class Professor extends Employee
{
	Professor(String des)
	{
		calculatenet(des);
	}

}
class Pay
{
	public static void main(String arg[])
	{
		Scanner in=new Scanner(System.in);
		String emp_name,address,mail_id,mobile_no,des,t;
		int emp_id,n,i=0,temp;
		System.out.println("enter number of employees");
		n=in.nextInt();
		t=in.nextLine();
		temp=n;
		Employee []e=new Employee[n];
		while(n!=0)
		{
			System.out.println("\n");
			System.out.println("enter designation of employee");
			des=in.nextLine();
			if(des.compareTo("Programmer")==0)
				e[i]=new Programmer(des);
```

```
                        else if(des.compareTo("Assistantprofessor")==0)
                                e[i]=new Assistantprofessor(des);
                        else if(des.compareTo("Associateprofessor")==0)
                                e[i]=new Associateprofessor(des);
                        else
                                e[i]=new Professor(des);
                        n--;
                        i++;
                }
                for(int j=0;j<temp;j++)
                {
                        System.out.println("\n");
                        e[j].display();
                }
        }
}
```

```
/* Sample input/output
C:\Users\Harshini\Desktop>java Pay
enter number of employees
3


enter designation of employee
Professor
enter employee name,address,mail id,mobile number and employee id
Hema
Adambakkam
hema@gmail.com
9876543210
33
enter basic pay
40000


enter designation of employee
Programmer
enter employee name,address,mail id,mobile number and employee id
Yami
Velacheri
yami@yahoo.com
9876598765
```

```
44
enter basic pay
50000


enter designation of employee
Assistantprofessor
enter employee name,address,mail id,mobile number and employee id
Varuna
Villivakkam
varuna@yahoo.com
6778899600
55
enter basic pay
35000


Employee name:Hema
Employee id:33
Adress:Adambakkam
Mail_id:hema@gmail.com
Moile number:9876543210
Gross salary:50800.0
Net salary:60960.0


Employee name:Yami
Employee id:44
Adress:Velacheri
Mail_id:yami@yahoo.com
Moile number:9876598765
Gross salary:63500.0
Net salary:59450.0


Employee name:Varuna
Employee id:55
Adress:Villivakkam
Mail_id:varuna@yahoo.com
Moile number:6778899600
Gross salary:44450.0
Net salary:45215.0
*/
```

/*3.Write a java program with a class named ‘Person’ which consists of name, age, DOB and address. Have functions to get input and calculate_performance.*/

```
import java.util.Scanner;
class Person
{
	Scanner in=new Scanner(System.in);
	String name,address,dob,perf;
	int age;
	void input()
	{
		System.out.println("Enter name , address , date of birth and age");
		name=in.nextLine();
		address=in.nextLine();
		dob=in.nextLine();
		age=in.nextInt();
	}
	void perform(int g)
	{
		if(g>12)
			perf="outstanding";
		else if(g>10)
			perf="excellent";
		else if(g>8)
			perf="good";
		else
			perf="fair";
	}
	void display()
	{
		System.out.println("Name:"+name);
		System.out.println("Address:"+address);
		System.out.println("D.O.B:"+dob);
		System.out.println("Age:"+age);
		System.out.println("Performance:"+perf);
	}

}
class Student extends Person
{
	Student()
	{
		input();
```

```
        String dept,perf;
        int marks,extra;
        String temp=in.nextLine();
        System.out.println("enter department");
        dept=in.nextLine();
        System.out.println("enter average mark");
        marks=in.nextInt();
        marks=marks/10;
        System.out.println("enter no of extracurricuar activities");
        extra=in.nextInt();
        int g=marks+extra;
        perform(g);
        }

}
class Professor extends Person
{
        Professor()
        {
                input();
        String dept;
        int funded,publications;
        String temp=in.nextLine();
        System.out.println("enter department");
        dept=in.nextLine();
        System.out.println("enter no of funded projects and publications");
        funded=in.nextInt();
        publications=in.nextInt();
        int g=funded+publications;
        perform(g);
        }
}
class Main
{
        public static void main(String arg[])
        {
                Scanner in=new Scanner(System.in);
                int n,ch,i=0;
                System.out.println("enter no of person");
                n=in.nextInt();
                int te=n;
                Person []p=new Person[n];
                while(n!=0)
```

```
                {
                        System.out.println("enter choice 1.Student 2.Professor");
                        ch=in.nextInt();
                        if(ch==1)
                        {
                                p[i]=new Student();
                        }
                        else
                                p[i]=new Professor();
                        n--;
                        i++;
                }
                for(int j=0;j<te;j++)
                        p[j].display();
        }
}


/*Sample input/output
enter no of person
2
enter choice 1.Student 2.Professor
1
Enter name , address , date of birth and age
Harshini
Adambakkam
11/05/2001
18
enter department
CSE
enter average mark
90
enter no of extracurricuar activities
4
enter choice 1.Student 2.Professor
2
Enter name , address , date of birth and age
Taruna
Villivakkam
20/05/1979
40
enter department
ECE
```

```
enter no of funded projects and publications
5
7
Name:Harshini
Address:Adambakkam
D.O.B:11/05/2001
Age:18
Performance:outstanding
Name:Taruna
Address:Villivakkam
D.O.B:20/05/1979
Age:40
Performance:excellent
*/
```