SHERAL SIMON WASKAR

20BCE1182

1)Assume that there is a part in a machine having three side measurements s1, s2, s3. Its inner and outer volumes are found using the following formulae: inner volume = 1/3 π s1*s2*s3 outer volume = 4/3 π s1*s2*s3 Define an interface volume which has two methods innerVolume and outerVolume. Define a class Part which implements this interface, having required attributes and methods, with suitable constructor. The show() method is used to display all the attributes of the Part class.

Code :

```
import java.util.Scanner;


interface volume

{

public void innervolume();

public void outervolume();

}


class Part implements volume

{


double s1 ;

double s2;

double s3;

double v1;

double v2;


Part()

{

s1=0.0;

s2=0.0;

s3=0.0;

v1 = 0.0;

v2 = 0.0;
```

```
}
public void innervolume()
{


 v1 = 1/3.0*3.14*s1*s2*s3;
}

public void  outervolume()
{

v2 = 4/3.0 * 3.14 * s1 * s2 * s3;
}

public void display1()
{
System.out.println("innervolume is :" + v1 );
}
public void display2()
{
System.out.println(" outervolume is " + v2);
}
public void get()
{
System.out.println("Enter 3 sides :" );
Scanner sc = new Scanner(System.in);
s1 = sc.nextDouble();
s2 = sc.nextDouble();
s3 = sc.nextDouble();
}
}
```

```
public class TestPart
{

public static void main(String[] args)
{
Part p = new Part();
p.get();
p.innervolume();
p.display1();
p.get();
p.outervolume();
p.display2();
}
}
```

Output :

```
D:\SEM 4\CSE1007_LAB>javac TestPart.java

D:\SEM 4\CSE1007_LAB>java -classpath .;yourjar.jar TestPart
Enter 3 sides :
3.6
2.6
1.4
innervolume is :13.715519999999998
Enter 3 sides :
5.6
7.8
2.5
 outervolume is 457.18399999999997
```