WEEK-04

Create a class Student with two private attributes, name and roll number. Create three objects by invoking different constructors available in the class Student.

Student()

Student(String name)

Student(String name, int rollno)

Input:

No input

Output:

No-arg constructor is invoked
1 arg constructor is invoked
2 arg constructor is invoked
Name =null , Roll no = 0
Name =Rajalakshmi , Roll no = 0
Name =Lakshmi , Roll no = 101

For example:

Test	**Result**
1	No-arg constructor is invoked 1 arg constructor is invoked 2 arg constructor is invoked Name =null , Roll no = 0 Name =Rajalakshmi , Roll no = 0 Name =Lakshmi , Roll no = 101

```
public class stud{
   private String name;
   private  int roll;
   public stud(){
      System.out.println("No-arg constructor is invoked");
      name=null;
      roll=0;

   }
```

```
public stud(String name){
   System.out.println("1 arg constructor is invoked");
   this.name=name;
   roll=0;

}
public stud(String name,int roll){
   System.out.println("2 arg constructor is invoked");
   this.name=name;
   this.roll=roll;

   }

public static void main (String[]args){
        stud s1=new stud();
        stud s2=new stud("Rajalakshmi");
        stud s3=new stud("Lakshmi",101);
        System.out.println("Name ="+s1.name+" , Roll no = "+s2.roll);
        System.out.println("Name ="+s2.name+" , Roll no = "+s2.roll);
        System.out.println("Name ="+s3.name+" , Roll no = "+s3.roll);
     }
   }
```

	Test	Expected	Got	
✓	1	No-arg constructor is invoked 1 arg constructor is invoked 2 arg constructor is invoked Name =null , Roll no = 0 Name =Rajalakshmi , Roll no = 0 Name =Lakshmi , Roll no = 101	No-arg constructor is invoked 1 arg constructor is invoked 2 arg constructor is invoked Name =null , Roll no = 0 Name =Rajalakshmi , Roll no = 0 Name =Lakshmi , Roll no = 101	✓

Passed all tests! ✓

Create a class called "Circle" with a radius attribute. You can access and modify this attribute using getter and setter methods. Calculate the area and circumference of the circle.

Area of Circle = πr^2

Circumference = $2\pi r$

Input:

2

Output:

Area = 12.57
Circumference = 12.57

For example:

Test	Input	Result
1	4	Area = 50.27 Circumference = 25.13

```
import java.io.*;
import java.util.Scanner;
class Circle
{
   private double radius;
   public Circle(double radius){
      // set the instance variable radius
    this.radius =radius;
       }
   public void setRadius(double radius){
      // set the radius
     this.radius=radius;

   }
   public double getRadius()    {
      // return the radius
     return radius;
```

```
    }
    public double calculateArea()  { // complete the below statement
      return Math.PI*radius*radius;


    }
    public double calculateCircumference()    {
       // complete the statement
      return  2*Math.PI*radius;
    }
}
class prog{
    public static void main(String[] args)  {
       int r;
       Scanner sc= new Scanner(System.in);
       r=sc.nextInt();
       Circle c= new Circle(r);
       System.out.println("Area = "+String.format("%.2f", c.calculateArea()));
       // invoke the calculatecircumference method
       System.out.println("Circumference = "+String.format("%.2f" , c.calculateCircumference()));


       sc.close();
    }
}
```

	Test	Input	Expected	Got	
✓	1	4	Area = 50.27 Circumference = 25.13	Area = 50.27 Circumference = 25.13	✓
✓	2	6	Area = 113.10 Circumference = 37.70	Area = 113.10 Circumference = 37.70	✓
✓	3	2	Area = 12.57 Circumference = 12.57	Area = 12.57 Circumference = 12.57	✓

Create a Class Mobile with the attributes listed below,

private String manufacturer;
private String operating_system;
public String color;
private int cost;

Define a Parameterized constructor to initialize the above instance variables.

Define getter and setter methods for the attributes above.

for example : setter method for manufacturer is

void setManufacturer(String manufacturer){

this.manufacturer= manufacturer;

}

String getManufacturer(){

return manufacturer;}

Display the object details by overriding the toString() method.

For example:

Test	**Result**
1	manufacturer = Redmi operating_system = Andriod color = Blue cost = 34000

```
public class mobile{
    private String man;
    private String os;
    public String clr;
    private int cost;
    public mobile(String man,String os,String clr,int cost){
        this.man=man;
        this.os=os;
        this.clr=clr;
        this.cost=cost;
        }
```

```
    public String toString(){
      return "manufacturer = "+man+"\n"+"operating_system = "+os+"\n"+"color = "+
clr+"\n"+"cost = "+cost;
    }
    public static void main(String[]args){
      mobile mobile=new mobile("Redmi","Andriod","Blue",34000);
      System.out.println(mobile);
    }
}
```

	Test	Expected	Got	
✓	1	manufacturer = Redmi operating_system = Andriod color = Blue cost = 34000	manufacturer = Redmi operating_system = Andriod color = Blue cost = 34000	✓