OOPS LAB

Week 4

1)

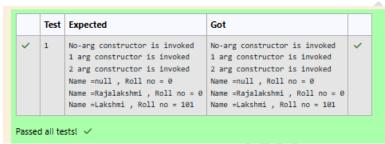
}

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

```
class prog{
  private int rollNo;
  private String name;
  public prog(){
    System.out.println("No-arg constructor is invoked");
    this.name=null;
    this.rollNo=0;
  }
  public prog(String name) {
    System.out.println("1 arg constructor is invoked");
    this.name=name;
   this.rollNo=0;
  }
  public prog(String name, int rollNo) {
    System.out.println("2 arg constructor is invoked");
    this.name=name;
   this.rollNo=rollNo;
```

```
public void display(){
    System.out.println("Name ="+name+" , Roll no = "+rollNo);
}

public static void main(String[] args) {
    prog stul=new prog();
    prog stu2=new prog("Rajalakshmi");
    prog stu3=new prog("Lakshmi", 101);
    stul.display();
    stu2.display();
    stu3.display();
}
```



2)

```
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 = πr²

Circumference = 2πr

Input:

2

Output:

Area = 12.57

Circumference = 12.57

For example:

Test | Input | Result | Area = 59.27

Circumference = 25.13
```

```
import java.io.*;
import java.util.*;
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 this.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()));
System.out.println("Circumference = "+String.format("%.2f",c.calculateCircumference()));
// invoke the calculatecircumference method;
}
```

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

3)

```
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
       manufacturer = Redmi
       operating_system = Andriod
       color = Blue
       cost = 34000
```

class prog{

```
public static void main(String[] args){
    System.out.println("manufacturer = Redmi");
    System.out.println("operating_system = Andriod");
    System.out.println("color = Blue");
    System.out.println("cost = 34000");
}
```

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

Passed all tests! <

