

CS23333-Object Oriented Programming Using Java-2023

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Status	Finished
Started	Tuesday, 1 October 2024, 8:23 AM
Completed	Tuesday, 1 October 2024, 9:24 AM
Duration	1 hour

Question 1

Correct

Marked out of 5.00

Flag question

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

Answer: (penalty regime: 0 %)

Reset answer

```
1 import java.io.*;
2 import java.util.*;
3
4 class Circle
5 {
6     private double radius;
7     public Circle(double radius){
8         setRadius(radius);
9         getRadius();
10    }
11    public void setRadius(double radius){
12        this.radius=radius;
13    }
14    public double getRadius() {
15        return radius;
16    }
17    public double calculateArea() {
18        return Math.PI*radius*radius;
19    }
20    public double calculateCircumference() {
21        return 2*Math.PI*radius;
22    }
23 }
24 class prog{
25     public static void main(String[] args) {
26         int r;
27         Scanner sc= new Scanner(System.in);
28         r=sc.nextInt();
29         Circle c= new Circle(r);
30         System.out.println("Area = "+String.format("%.2f", c.calculateArea()));
31         System.out.println("Circumference = "+String.format("%.2f",c.calculateCircumference()));
32         // invoke the calculateCircumference method
33     }
34 }
35
36
37
```

	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	✓

Passed all tests! ✓

Question 2

Correct

Marked out of 5.00

Flag question

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

Answer: (penalty regime: 0 %)

```
1 import java.util.*;
2 public class Mobile{
3     private String manufacturer;
4     private String operating_system;
5     public String color;
6     private int cost;
7     Mobile(String manufacturer,String operating_system,String color,int cost){
8         this.manufacturer=manufacturer;
9         this.operating_system=operating_system;
10        this.color=color;
11        this.cost=cost;
12    }
13    public String getManufacturer(){
14        return manufacturer;
15    }
16    public void setManufacturer(String manufacturer){
17        this.manufacturer=manufacturer;
```

```

18     }
19     public String getOperatingSystem(){
20         return operating_system;
21     }
22     public void setOperatingSystem(String operating_system){
23         this.operating_system=operating_system;
24     }
25     public int getCost(){
26         return cost;
27     }
28     public void setCost(){
29         this.cost=cost;
30     }
31     @Override
32     public String toString(){
33         return "manufacturer = "+manufacturer+"\n"+
34             "operating_system = "+operating_system+"\n"+
35             "color = "+color+"\n"+
36             "cost = "+cost;
37     }
38     public static void main(String args[]){
39         Mobile m=new Mobile("Redmi","Andriod","Blue",34000);
40         System.out.println(m.toString());
41     }
42 }

```

	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! ✓

Question 3
Correct
Marked out of 5.00
Flag question

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

Answer: (penalty regime: 0 %)

```

1 public class Student{
2     private String name;
3     private int rollno;
4     public Student(){
5         this.name=null;
6         this.rollno=0;
7         System.out.println("No-arg constructor is invoked");
8     }
9     public Student(String name){
10        this.name=name;
11        this.rollno=0;
12        System.out.println("1 arg constructor is invoked");
13    }
14    public Student(String name,int rollno){
15        this.name=name;
16        this.rollno=rollno;
17        System.out.println("2 arg constructor is invoked");
18    }
19    public String getName(){
20        return name;
21    }
22    public void setName(String name){
23        this.name=name;
24    }
25    public int getRollno(){
26        return rollno;
27    }
28    public void setRollno(int rollno){
29        this.rollno=rollno;
30    }
31    @Override
32    public String toString(){
33        return "Name =" +name+ " , Roll no = "+rollno;
34    }
35    public static void main(String args[]){
36        Student s1=new Student();
37        Student s2=new Student("Rajalakshmi");
38        Student s3=new Student("Lakshmi",101);
39        System.out.println(s1+"\n"+s2+"\n"+s3);
40    }
41 }

```

	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! ✓

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