Rajalakshmi Engineering College

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 1_Q5

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement:

Emily has a beautiful circular garden in her backyard. She's interested in calculating two important measurements for her garden: the circumference and the area. To do this, she needs a program that can take the radius of her circular garden as input and provide the calculated circumference and area as output. The formulas she should use are as follows:

To calculate the circumference (C) of a circle, you can use the formula:

C = 2 * π * r

A = π * r^2

Where:

C represents the circumference.

A represents the area.

π (pi) is approximately 3.14159.

r is the radius of the circle.

Emily is not a programmer, and she needs your help to create a program that will make these calculations for her garden.

Input Format

The first line of input contains a single double-point number radius, representing the radius of the circle.

Output Format

The output should consist of two lines:

The first line should print the circumference of the circle rounded to 2 decimal places, followed by the unit "meters".

The second line should print the area of the circle rounded to 2 decimal places, followed by the unit "square meters".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 3.0

Output: Circumference: 18.85 meters
Area: 28.27 square meters

Answer

```
import java.util.Scanner;

class GardenCalculator {
   public static void main(String[] args) {
      Scanner scanner = new Scanner(System.in);
      double radius = scanner.nextDouble();
      if (radius < 0 || radius > 1000) {
```

```
            System.out.println("Radius must be between 0 and 1000.");
            return;
        }
        final double PI = 3.14159;
        double circumference = 2 * PI * radius;
        double area = PI * radius * radius;
        System.out.printf("Circumference: %.2f meters%n", circumference);
        System.out.printf("Area: %.2f square meters%n", area);

        scanner.close();
    }
}
```

Status : Correct **Marks : 10/10**