

# Rajalakshmi Engineering College

Name: Saranya Vimalanathan

Email: 240701620@rajalakshmi.edu.in

Roll no: 240701620

Phone: 9789689339

Branch: REC

Department: CSE - Section 9

Batch: 2028

Degree: B.E - CSE

Scan to verify results



## 2024\_28\_III\_OOPS Using Java Lab

### 2028\_REC\_OOPS using Java\_Week 1\_CY

Attempt : 1

Total Mark : 40

Marks Obtained : 40

#### **Section 1 : Coding**

##### **1. PROBLEM STATEMENT:**

Jule a mathematician expert is given two integers to find if the second integer is above the average of the first and second integer. Write a program that achieves this using the ternary operator.

##### ***Input Format***

The first line of input represents the first integer.

The second line of input represents the second integer.

##### ***Output Format***

The output should be displayed as "Below Average" or "Above Average"

REFER THE SAMPLE TESTCASES FOR THE FORMAT SPECIFICATIONS.

***Sample Test Case***

Input: 1

1

Output: Below Average

***Answer***

```
// You are using Java
import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        int first = scanner.nextInt();
        int second = scanner.nextInt();

        double average = (first + second) / 2.0;

        if (second > average) {
            System.out.println("Above Average");
        }
        else {
            System.out.println("Below Average");
        }

    }
}
```

**Status : Correct**

**Marks : 10/10**

**2. Problem Statement:**

"Write a program that helps identify the type of a triangle based on the

lengths of its three sides. The program prompts the user to input the lengths of sides 'a,' 'b,' and 'c,' and then it classifies the triangle as 'Equilateral' if all sides are equal, 'Isosceles' if two sides are equal, or 'Scalene' if all sides are different. Can you provide the Java code for this task?"

#### ***Input Format***

The first line of the input is an integer 'a' representing the length of side 'a.'

The second line of the input is an integer 'b' representing the length of side 'b.'

The third line of the input is an integer 'c' representing the length of side 'c.'

#### ***Output Format***

The program outputs a single line that specifies the type of the triangle: "Equilateral," "Isosceles," or "Scalene."

#### ***Sample Test Case***

Input: 3  
4  
5

Output: The triangle is Scalene

#### ***Answer***

```
// You are using Java
import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        int a = scanner.nextInt();
        int b = scanner.nextInt();
        int c = scanner.nextInt();

        if (a == b && b == c) {
            System.out.println("The triangle is Equilateral");
        } else if (a == b || b == c || a == c) {
            System.out.println("The triangle is Isosceles");
        } else {
            System.out.println("The triangle is Scalene");
        }
    }
}
```

```
        } else {
            System.out.println("The triangle is Scalene");
        }

        scanner.close();
    }
}
```

**Status : Correct**

**Marks : 10/10**

### 3. Problem Statement:

Gilbert is tasked with writing a program that checks whether a given integer is an odd number. An odd number is one that cannot be exactly divided by 2. The program should take an integer as input and determine if it is an odd number or not. The task is to implement the logic to check if the provided integer is odd and return the result.

#### ***Input Format***

The first line of the input contains an integer, "input".

#### ***Output Format***

The output should display a boolean value, "result," which should be set to true if the input integer is an odd number and false if it is even.

Refer to the sample output for formatting specifications.

#### ***Sample Test Case***

Input: 0

Output: Is the integer odd? false

#### ***Answer***

```
import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
```

```
int input = scanner.nextInt();

boolean result = (input % 2 != 0);

System.out.println("Is the integer odd? " + result);

scanner.close();
}

}
```

Status : Correct

Marks : 10/10

#### 4. Problem Statement

In the faraway land of Arithmetica, there exists an ancient calculator that can only perform bitwise operations. The calculator is locked with a secret code that only works when the number is modified using a special operation called right shifting.

The ruler of Arithmetica, King Thales, needs your help to unlock the calculator. The lock on the calculator is encoded with a number, and the calculator will only open if you apply a right shift by 2 on the number. Your task is to help King Thales determine the magic number that will unlock the ancient calculator.

##### ***Input Format***

The first line of input represents an integer.

##### ***Output Format***

The output should display the right-shifted value by 2 bits.

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 16  
Output: 4

### **Answer**

```
// You are using Java
import java.util.Scanner;

public class Main{
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        int input = scanner.nextInt();

        int result = input >> 2;

        System.out.println(result);

        scanner.close();
    }
}
```

**Status : Correct**

**Marks : 10/10**