

Rajalakshmi Engineering College

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Branch: REC

Department: CSE - Section 5

Batch: 2028

Degree: B.E - CSE

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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

```
import java.util.Scanner;
public class Main{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        int a = sc.nextInt();
        int b = sc.nextInt();
        int avg = (a+b)/2;
        String s = (b > avg)? "Above Average" : "Below Average";
        System.out.print(s);
    }
}
```

Status : Correct

Marks : 10/10

2. 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

```
import java.util.Scanner;
public class Main{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        int a = sc.nextInt();
        int r = a >> 2;
        System.out.print(r);
        sc.close();
    }
}
```

Status : Correct

Marks : 10/10

3. Problem Statement

Mandy is a software engineer working on a program to analyze two integers based on specific conditions using a logical operator. She needs to determine if both integers are odd or if at least one of them is divisible by 7.

Depending on the result, she wants to print different messages.

If the condition is met, the program should identify and print the first number that is divisible by 7 or indicate that both numbers are odd. If the condition is not met, the program should print a message indicating the condition was not met, along with the input numbers.

Input Format

The first line of input consists of an integer representing the first input number.

The second line consists of an integer representing the second input number.

Output Format

The output displays "Condition met: " followed by an integer representing the first number divisible by 7, or prints "Both numbers are odd" if the two inputs are odd.

If the condition is not met, it displays "Conditions not met: " followed by the two input integers, separated by a space.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 7

14

Output: Condition met: 7

Answer

```
import java.util.Scanner;
public class Main{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        int a = sc.nextInt();
        int b = sc.nextInt();
        if( ((a%2 != 0)&(b%2 != 0)) | ((a%7 == 0)|(b%7 == 0)) ){
            if(a%7 == 0){
                System.out.println("Condition met: "+a);
            }
            else if(b%7 == 0){
                System.out.println("Condition met: "+b);
            }
            else{
                System.out.println("Condition met: Both numbers are odd");
            }
        }
    }
}
```

```
        }
    else{
        System.out.printf("Conditions not met: %d %d",a,b);
    }
    sc.close();
}
}
```

Status : Correct

Marks : 10/10

4. 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 sc = new Scanner(System.in);
```

```
int a = sc.nextInt();
if(a % 2 != 0){
    System.out.println("Is the integer odd? true");
}
else{
    System.out.println("Is the integer odd? false");
}

sc.close();

}
```

Status : Correct

Marks : 10/10