Rajalakshmi Engineering College

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 1_Q1

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Gloria is responsible for monitoring the performance of two machines in a factory. She needs to determine which of the two machines is operating closest to the optimal temperature of 100 degrees Celsius using the relational operator.

Assist Gloria in displaying the machine's temperature, which is closer to 100, and the difference from 100.

Input Format

The first line of input consists of an integer N, representing the temperature of the first machine.

The second line consists of an integer M, representing the temperature of the second machine.

Output Format

The output prints "The integer closer to 100 is X with a difference of Y" where X is the temperature of the closer machine and Y is the difference from 100.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 90
80
Output: The integer closer to 100 is 90 with a difference of 10

Answer

```
import java.util.Scanner;

class Main{
   void find_Optimal(int t1, int t2){
      int opt = 100;
      int opt1, opt2;
      opt1 = Math.abs(opt-t1);
      opt2 = Math.abs(opt-t2);
      if(opt1<opt2){
         System.out.println("The integer closer to "+opt+" is "+t1+" with a
difference of "+opt1);
      }
      else{
         System.out.println("The integer closer to "+ opt+" is "+ t2 +" with a
difference of "+ opt2);
      }
   }

   public static void main(String[] args){
      int t1, t2;
      Scanner ob1 = new Scanner(System.in);
      Main ob2 = new Main();
      t1 = ob1.nextInt();
      t2 = ob1.nextInt();
      ob2.find_Optimal(t1, t2);
   }
```

}

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

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 1_Q2

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. PROBLEM STATEMENT:

Dave got two students who wants help with their doubt. Each handouts an integer and wants to find if one Integer Positive While the Other is Not Divisible by 3. Write a program to achieve this and conclude for them.

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 display as "One of the integers is positive while the other is not divisible by 3." or "Neither of the integers meets the condition."

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 4
3
Output: One of the integers is positive while the other is not divisible by 3.

Answer

```
import java.util.Scanner;
class Main{
   void check(int n1, int n2){
      if((n1>0 && n2%3!=0) || (n2>0 && n1%3!=0)){
         System.out.println("One of the integers is positive while the other is not
divisible by 3.");
      }
      else{
         System.out.println("Neither of the integers meets the condition.");
      }
   }

   public static void main(String[] args){
      int n, m;
      Scanner sc = new Scanner(System.in);
      Main mn = new Main();
      n = sc.nextInt();
      m = sc.nextInt();
      mn.check(n, m);
   }
}
```

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

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 1_Q3

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem statement

Manoj, a developer at MoneyMatters Inc., is working on improving the company's financial system. He needs to create a program that takes an integer input, converts it into a double, and displays both the original integer and the converted double value.

Input Format

The input consists of a single integer representing a monetary amount.

Output Format

The first line of the output displays the "Original Integer: ", followed by an integer representation of the input value.

The second line displays the "Converted Double: ", followed by a double value representing the input as a decimal value.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 20

Output: Original Integer: 20
Converted Double: 20.0

Answer

```
import java.util.Scanner;

class Main{
   void convert(int n){
      double result;
      result = n;
      System.out.println("Original Integer: "+n+"\nConverted Double: "+result);
   }

   public static void main(String[] args){
      int num;
      Scanner sc = new Scanner(System.in);
      Main mn = new Main();
      num = sc.nextInt();
      mn.convert(num);
   }
}
```

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

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 1_Q4

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Vishal and Arun are discussing the properties of numbers. Vishal gives Arun two integers. He asks Arun to check if the sum of these two numbers is a multiple of their product.

Can you assist Arun and determine whether the sum is a multiple of the product?

Input Format

The input consists of two space-separated integers.

Output Format

The output prints:

1. "Sum is Multiple of Product" if the sum of the two numbers is divisible by their product.
2. "Sum is Not Multiple of Product" otherwise.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 1 2

Output: Sum is Not Multiple of Product

Answer

```
import java.util.Scanner;
class Main{
    void check(int n1, int n2){
        int sum = n1+n2;
        int prod = n1*n2;
        if(prod%sum == 0){
            System.out.println("Sum is Multiple of Product");
        }
        else{
            System.out.println("Sum is Not Multiple of Product");
        }
    }

    public static void main(String[] args){
        int n, m;
        Scanner sc = new Scanner(System.in);
        Main mn = new Main();
        n = sc.nextInt();
        m = sc.nextInt();
        mn.check(n, m);
    }
}
```

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

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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 Main{
   void find(double rad){
      double pi = 3.14159;
      double C = 2*pi*rad;
      double A = pi*(rad*rad);
      System.out.printf("Circumference: %.2f meters", C);
```

```
        System.out.printf("Area: %.2f square meters", A);
    }
    public static void main(String[] args){
        double r;
        Scanner sc = new Scanner(System.in);
        Main mn = new Main();
        r = sc.nextDouble();
        mn.find(r);
    }
}
```

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

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2024_28_III_OOPS Using Java Lab

2028_REC_OOPS using Java_Week 1_Q6

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Joey is learning about bitwise operations and is working on a project that involves extracting specific bits from integers. He needs to write a program that takes an integer and the number of bits N as input and outputs the value of the lowest N bits of the integer.

Help Joey in his project to understand and visualize how bitwise operations work in practical scenarios.

Input Format

The first line of input consists of an integer X, representing the given integer.

The second line consists of an integer N, representing the number of bits to extract.

Output Format

The output displays "Result: " followed by an integer representing the value of the lowest N bits of the given integer.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 85
2
Output: Result: 1

Answer

```
import java.util.Scanner;
class Main{
   public static void main(String[] args){
      int num, bit, r;
      Scanner sc = new Scanner(System.in);
      num = sc.nextInt();
      bit = sc.nextInt();
      r = (1<<bit)-1;
      System.out.println("Result: "+(num&r));

   }
}
```

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