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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;

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

        // Read inputs
        int X = sc.nextInt();
        int N = sc.nextInt();

        // Create a mask with N lowest bits set to 1
        int mask = (1 << N) - 1;

        // Extract the lowest N bits using bitwise AND
        int result = X & mask;

        // Output the result
        System.out.println("Result: " + result);
    }
}
```

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