- **MEDIUM**
- **Max Score: 40 Points**

# Bitwise AND of Numbers Range

Given two integers `left` and `right` that represent the range `[left, right]`, return the bitwise AND of all numbers in this range, inclusive.

*Note: You just need to complete rangeBitwiseAnd() function and return the bitwise AND of all numbers in the range*

## Input Format

The first line contains two spaced integers `left` and `right`.

## Output Format

Print the bitwise AND of all the numbers from `left` to `right` both inclusive.

## Example 1

Input

8 13

Output

8

Explanation

8 & 9 & 10 & 11 & 12 & 13 = 8 (Here & reprsents bitwise AND)

## Example 2

Input

`4 4`

Output

`4`

Explanation

`4 & 4 = 4`

## Constraints

`0 <= left <= right <= 2^31 - 1`

# My code

```
// n java
import java.util.*;
class Solution{
    public static int msb(int x) {
        int p = -1;

        while(x > 0) {
            x = (x >> 1);
            p++;
```

```java
        }

        return p;
    }

    public static int rangeBitwiseAnd(int left, int right) {
        //write your code here
        int ans = 0;

        while(left > 0 && right > 0) {
            int pl = msb(left);
            int pr = msb(right);

            if(pl != pr) return ans;

            int val = 1 << pr;

            ans += val;
            left -= val;
            right -= val;
        }

        return ans;
    }
}

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

```java
        int right = sc.nextInt();
        System.out.print(Solution.rangeBitwiseAnd(left,right));
    }
}
```