



Maximizing XOR

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Problem

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Given two integers, L and R , find the maximal value of $A \text{ xor } B$, where A and B satisfy the following condition:

$$L \leq A \leq B \leq R$$

Input Format

The input contains two lines; L is present in the first line and R in the second line.

Constraints

$$1 \leq L \leq R \leq 10^3$$

Output Format

The maximal value as mentioned in the problem statement.

Sample Input

```
10
15
```

Sample Output

```
7
```

Explanation

The input tells us that $L = 10$ and $R = 15$. All the pairs which comply to above condition are the following:

```
10 ⊕ 10 = 0
10 ⊕ 11 = 1
10 ⊕ 12 = 6
10 ⊕ 13 = 7
10 ⊕ 14 = 4
10 ⊕ 15 = 5
11 ⊕ 11 = 0
11 ⊕ 12 = 7
11 ⊕ 13 = 6
11 ⊕ 14 = 5
11 ⊕ 15 = 4
12 ⊕ 12 = 0
12 ⊕ 13 = 1
12 ⊕ 14 = 2
12 ⊕ 15 = 3
13 ⊕ 13 = 0
13 ⊕ 14 = 3
13 ⊕ 15 = 2
14 ⊕ 14 = 0
```

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Max Score: 30

Difficulty: Easy

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$$14 \oplus 15 = 1$$

$$15 \oplus 15 = 0$$

Here two pairs (10, 13) and (11, 12) have maximum xor value 7, and this is the answer.

Current Buffer (saved locally, editable)  

Java 7   

```
9 import java.io.*;
10 import java.util.*;
11 import java.text.*;
12 import java.math.*;
13 import java.util.regex.*;
14
15 public class Solution {
16     /*
17      * Complete the function below.
18      */
19
20     static int maxXor(int l, int r) {
21
22     }
23
24
25     public static void main(String[] args) {
26         Scanner in = new Scanner(System.in);
27         int res;
28         int _l;
29         _l = Integer.parseInt(in.nextLine());
30
31         int _r;
32         _r = Integer.parseInt(in.nextLine());
33
34         res = maxXor(_l, _r);
35         System.out.println(res);
36     }
37 }
38
39
```

Line: 1 Col: 1

 [Upload Code as File](#) ☐ Test against custom input

Run Code

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