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# 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
14 ⊕ 15 = 1
15 ⊕ 15 = 0
```

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



Submissions: 58517

Max Score: 30

Difficulty: Easy

Rate This Challenge:

★★★★★ Thanks!

Need Help?

[Bitwise XOR](#)[Finding Max Min](#)[More](#)

Current Buffer (saved locally, editable)

C#



6 | using System;

```
7 using System.Collections.Generic;
8 using System.IO;
9 class Solution {
10     /*
11     * Complete the function below.
12     */
13     static int maxXor(int l, int r) {
14         int max_xor = 0;
15         for (int a = l; a <= r; a++)
16         {
17             for (int b = l; b <= r; b++)
18             {
19                 max_xor = Math.Max(max_xor, a ^ b);
20             }
21         }
22         return max_xor;
23     }
24 }
25
26 static void Main(String[] args) {
27     int res;
28     int _l;
29     _l = Convert.ToInt32(Console.ReadLine());
30
31     int _r;
32     _r = Convert.ToInt32(Console.ReadLine());
33
34     res = maxXor(_l, _r);
35     Console.WriteLine(res);
36 }
37 }
38
39 }
```

Line: 22 Col: 28

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

Run Code

Submit Code

Congrats, you solved this challenge!

✓ Test Case #0  
✓ Test Case #3  
✓ Test Case #6  
✓ Test Case #9  
✓ Test Case #12

✓ Test Case #1  
✓ Test Case #4  
✓ Test Case #7  
✓ Test Case #10

✓ Test Case #2  
✓ Test Case #5  
✓ Test Case #8  
✓ Test Case #11

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