PracticeCompeteJobsRankLeaderboard

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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.

Current Buffer (saved locally, editable)  

C++

[f](#) [t](#) [in](#)Submissions: [61876](#)

Max Score: 30

Difficulty: Easy

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☆☆☆☆☆

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

```
20 #include <map>
21 #include <set>
22 #include <list>
23 #include <cmath>
24 #include <ctime>
25 #include <deque>
26 #include <queue>
27 #include <stack>
28 #include <bitset>
29 #include <cstdio>
30 #include <limits>
31 #include <vector>
32 #include <cstdlib>
33 #include <numeric>
34 #include <sstream>
35 #include <iostream>
36 #include <algorithm>
37 using namespace std;
38 /*
39  * Complete the function below.
40  */
41 int maxXor(int l, int r) {
42     int max = 0;
43
44     for (int i = l; i <= r; i++) {
45         for (int j = i; j <= r; j++) {
46             if ((i ^ j) > max) max = i ^ j;
47         }
48     }
49
50     return max;
51 }
52
53 int main() {
54     int res;
55     int _l;
56     cin >> _l;
57
58     int _r;
59     cin >> _r;
60
61     res = maxXor(_l, _r);
62     cout << res;
63
64     return 0;
65 }
66
```

Line: 1 Col: 1

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

Run Code

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