

Minimum X (xor) A

Given two integers **A** and **B**, the task is to find an integer **X** such that **(X XOR A)** is minimum possible and the count of set bit in **X** is equal to the count of set bits in **B**.

Example 1:

Input:

A = 3, B = 5

Output: 3

Explanation:

Binary(A) = Binary(3) = 011

Binary(B) = Binary(5) = 101

The XOR will be minimum when $x = 3$

i.e. $(3 \text{ XOR } 3) = 0$ and the number

of set bits in 3 is equal

to the number of set bits in 5.

Example 2:

Input:

A = 7, B = 12

Output: 6

Explanation:

$(7)_2 = 111$

$(12)_2 = 1100$

The XOR will be minimum when $x = 6$

i.e. $(6 \text{ XOR } 7) = 1$ and the number

of set bits in 6 is equal to the

number of set bits in 12.

Your task :

You don't need to read input or print anything. Your task is to complete the function **minVal()** that takes integer A and B as input and returns the value of X according to the question.

Expected Time Complexity : $O(\log \text{MAX}(A,B))$

Expected Auxiliary Space : $O(1)$

Constraints :

$1 \leq A, B \leq 10^9$