

Description

Solution

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2220. Minimum Bit Flips to Convert Number

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A **bit flip** of a number x is choosing a bit in the binary representation of x and **flipping** it from either 0 to 1 or 1 to 0.

- For example, for $x = 7$, the binary representation is `111` and we may choose any bit (including any leading zeros not shown) and flip it. We can flip the first bit from the right to get `110`, flip the second bit from the right to get `101`, flip the fifth bit from the right (a leading zero) to get `10111`, etc.

Given two integers `start` and `goal`, return the *minimum number of bit flips* to convert `start` to `goal`.

Example 1:

Input: `start = 10, goal = 7`

Output: `3`

Explanation: The binary representation of 10 and 7 are `1010` and `0111` respectively. We can convert 10 to 7 in 3 steps:

- Flip the first bit from the right: `1010` -> `1011`.
- Flip the third bit from the right: `1011` -> `1111`.
- Flip the fourth bit from the right: `1111` -> `0111`.

It can be shown we cannot convert 10 to 7 in less than 3 steps. Hence, we return 3.

Example 2:

Input: `start = 3, goal = 4`

Output: `3`

Explanation: The binary representation of 3 and 4 are `011` and `100` respectively. We can convert 3 to 4 in 3 steps:

- Flip the first bit from the right: `011` -> `010`.
- Flip the second bit from the right: `010` -> `000`.
- Flip the third bit from the right: `000` -> `100`.

It can be shown we cannot convert 3 to 4 in less than 3 steps. Hence, we return 3.

Constraints:

- $0 \leq start, goal \leq 10^9$

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Seen this question in a real interview before?

Yes

No

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1

class Solution {

2

public int minBitFlips(int start, int goal) {

3

4

}

5

}

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Console

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