

6033. 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`.

User Accepted:	0
User Tried:	0
Total Accepted:	0
Total Submissions:	0
Difficulty:	Easy

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:

- $0 \leq \text{start}, \text{goal} \leq 10^9$

JavaScript

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```
const minBitFlips = (start, goal) => {
  let s = start.toString(2), t = goal.toString(2), res = 0;
  s = '0'.repeat(32 - s.length) + s;
  t = '0'.repeat(32 - t.length) + t;
  for (let i = 0; i < 32; i++) {
    if (s[i] !== t[i]) res++;
  }
  return res;
};
```

☐ Custom Testcase

Use Example Testcases

 Run

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