461 Hamming Distance (link)

Description

The Hamming distance between two integers is the number of positions at which the corresponding bits are different.

Given two integers `x` and `y`, return *the **Hamming distance** between them*.

Example 1:

```
Input: x = 1, y = 4
Output: 2
Explanation:
1   (0 0 0 1)
4   (0 1 0 0)
       ↑   ↑
The above arrows point to positions where the corresponding bits are different.
```

Example 2:

```
Input: x = 3, y = 1
Output: 1
```

Constraints:

- `0 <= x, y <= 2^31 - 1`

(scroll down for solution)

Solution

Language: cpp

Status: Accepted

```cpp
class Solution {
public:
    int hammingDistance(int x, int y) {
        int xorResult = x ^ y;
        int distance = 0;

        // Count the number of 1s in xorResult
        while (xorResult != 0) {
            distance++;
            xorResult &= (xorResult - 1); // Clears the lowest set bit
        }

        return distance;
    }
};
```