822. Card Flipping Game

DescriptionHintsSubmissionsDiscussSolution

On a table are `N` cards, with a positive integer printed on the front and back of each card (possibly different).

We flip any number of cards, and after we choose one card.

If the number `X` on the back of the chosen card is not on the front of any card, then this number X is good.

What is the smallest number that is good? If no number is good, output `0`.

Here, `fronts[i]` and `backs[i]` represent the number on the front and back of card `i`.

A flip swaps the front and back numbers, so the value on the front is now on the back and vice versa.

Example:

```
Input: fronts = [1,2,4,4,7], backs = [1,3,4,1,3]
Output: 2
Explanation: If we flip the second card, the fronts are [1,3,4,4,7] and the backs are [1,2,4,1,3].
We choose the second card, which has number 2 on the back, and it isn't on the front of any card, so 2 is good.
```

Note:

1. `1 <= fronts.length == backs.length <= 1000.`
2. `1 <= fronts[i] <= 2000.`
3. `1 <= backs[i] <= 2000.`

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If `fronts[i] == backs[i]`, it means that `fronts[i]` is sure to appear on the table, no matter how we flap this card.
In case that `fronts[i]` and `backs[i]` are same, `fronts[i]` become impossible to be good number, so I add it to a set `same`.

If `fronts[i] != backs[i]`, we can always hide either number by flapping it to back.

Then loop on all numbers and return the minimum.

```
class Solution {
public:

    bool isOk(vector<int>& a, vector<int>& b, int idx)
    {
        int k = a[idx];
        for(int i=0;i<a.size();++i)
        {
            if(a[i]==k && b[i]==k) return false;
        }
        return true;
    }

    int flipgame(vector<int>& fronts, vector<int>& backs) {
        int ans = 2001;
        for(int i=0;i<fronts.size();++i)
        {
            if(isOk(fronts,backs,i)) ans = min(ans,fronts[i]);
            if(isOk(backs,fronts,i)) ans = min(ans,backs[i]);
        }
        return(ans==2001?0:ans);
    }
};
```