

[每日 LeetCode] 888. Fair Candy Swap

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原文链接: <https://ld246.com/article/1554558312423>

来源网站: [链滴](#)

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Description:

Alice and Bob have candy bars of different sizes: $A[i]$ is the size of the i -th bar of candy that Alice has, and $B[j]$ is the size of the j -th bar of candy that Bob has.

Since they are friends, they would like to exchange one candy bar each so that after the exchange, they both have the same total amount of candy. (The total amount of candy a person has is the sum of the sizes of candy bars they have.)

Return an integer array `ans` where `ans[0]` is the size of the candy bar that Alice must exchange, and `ans[1]` is the size of the candy bar that Bob must exchange.

If there are multiple answers, you may return any one of them. It is guaranteed an answer exists.

Example 1:

Input: $A = [1,1]$, $B = [2,2]$
Output: $[1,2]$

Example 2:

Input: $A = [1,2]$, $B = [2,3]$
Output: $[1,2]$

Example 3:

Input: $A = [2]$, $B = [1,3]$
Output: $[2,3]$

Example 4:

Input: $A = [1,2,5]$, $B = [2,4]$
Output: $[5,4]$

本题要求交换两个数组中的某个元素，使得交换后的两个数组元素之和相等。

思路一：采用暴力解法，依次遍历两个数组，判断是否满足题意。

思路二：采用网友lee215的思路，使用`unordered_set`结构查找时间为常数，方法为：先求出 $diff = (sum(A) - sum(B)) / 2$ ，再返回 (a,b) 其中 $a = b + diff$ 。

C++代码 (思路一)

```
class Solution {
public:
    vector<int> fairCandySwap(vector<int>& A, vector<int>& B) {
        int sumA = 0, sumB = 0;
        for(int a : A) sumA += a;
```

```
for(int b : B) sumB += b;
for(size_t i = 0; i < A.size(); ++i)
{
    for(size_t j = 0; j < B.size(); ++j)
    {
        if(sumA + B[j] - A[i] == sumB + A[i] - B[j])
        {
            return {A[i], B[j]};
        }
    }
}
return {-1, -1};
};
```

运行时间: 956ms

运行内存: 12.2M

C++代码 (思路二)

```
class Solution {
public:
    vector<int> fairCandySwap(vector<int>& A, vector<int>& B) {
        int dif = (accumulate(A.begin(), A.end(), 0) - accumulate(B.begin(), B.end(), 0)) / 2;
        std::unordered_set<int> s(A.begin(), A.end());
        for (int b: B)
            if (s.count(b + dif))
                return {b + dif, b};
        return {-1,-1};
    }
};
```

运行时间: 120ms

运行内存: 21.1M