1497. Check If Array Pairs Are Divisible by k

Given an array of integers `arr` of even length `n` and an integer `k`.

We want to divide the array into exactly `n / 2` pairs such that the sum of each pair is divisible by `k`.

Return `true` *If you can find a way to do that or* `false` *otherwise*.

Example 1:

```
Input: arr = [1,2,3,4,5,10,6,7,8,9], k = 5
Output: true
Explanation: Pairs are (1,9),(2,8),(3,7),(4,6) and (5,10).
```

Example 2:

```
Input: arr = [1,2,3,4,5,6], k = 7
Output: true
Explanation: Pairs are (1,6),(2,5) and(3,4).
```

Example 3:

```
Input: arr = [1,2,3,4,5,6], k = 10
Output: false
Explanation: You can try all possible pairs to see that there is no way to divide
arr into 3 pairs each with sum divisible by 10.
```

Constraints:

- `arr.length == n`
- `1 <= n <= 10^5`
- `n` is even.
- `-109 <= arr[i] <= 10^9`
- `1 <= k <= 10^5`

Check If Array Pairs Are Divisible by k

```
/*
    Counting
    Time complexity: O(2k+k/2)=O(k)
    Space complexity: O(k)
*/
class Solution{
    public:
        int mod(int a,int b){
            return ((a%b)+b)%b;
        }

        bool canArrange(std::vector<int>& arr, int k){
            std::vector<int>freq(k,0);
            for(auto& e: arr) freq[mod(e,k)]++;

            if(freq[0]%2) return false;

            int i=1,j=k-1;
            while(i<=j&&freq[i]==freq[j]){
                i++;
                j--;
            }

            return i>j;
        }
};
```