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914. X of a Kind in a Deck of Cards

Solved

Easy | Topics | Companies

You are given an integer array `deck` where `deck[i]` represents the number written on the i^{th} card.

Partition the cards into **one or more groups** such that:

- Each group has **exactly** `x` cards where `x > 1`, and
- All the cards in one group have the same integer written on them.

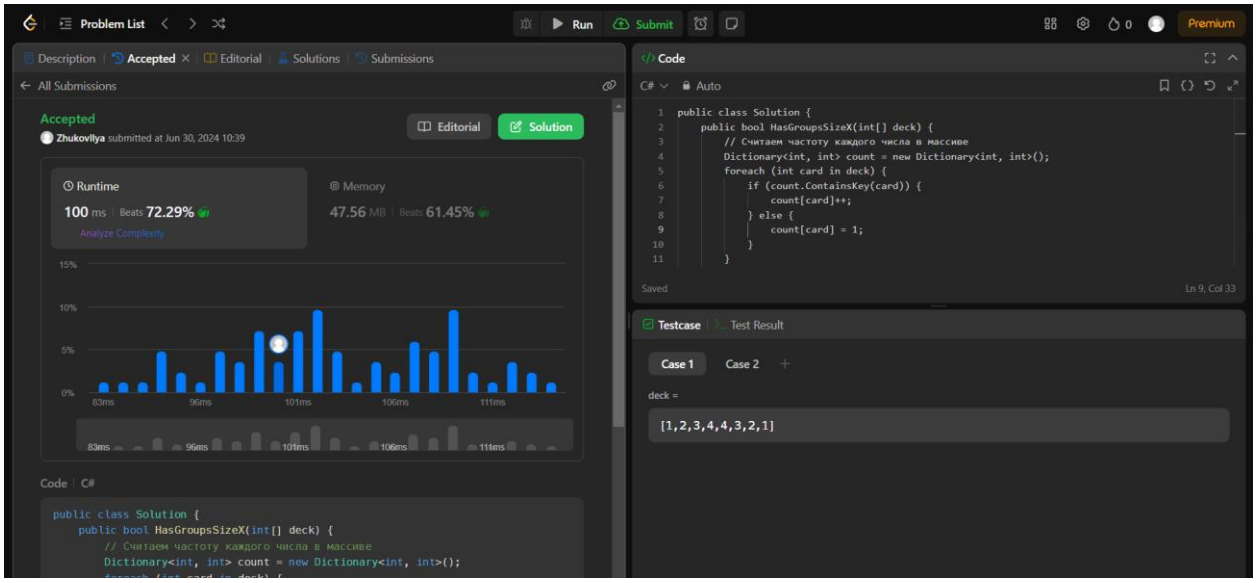
Return `true` *if such partition is possible, or* `false` *otherwise.*

Example 1:

> **Input:** deck = [1,2,3,4,4,3,2,1]
> **Output:** true
> **Explanation:** Possible partition [1,1],[2,2],[3,3],[4,4].

Example 2:

> **Input:** deck = [1,1,1,2,2,2,3,3]
> **Output:** false
> **Explanation:** No possible partition.



Код:

```
public class Solution
{
    public bool HasGroupsSizeX(int[] deck)
    {
        // Считаем частоту каждого числа в массиве
        Dictionary<int, int> count = new Dictionary<int, int>();
        foreach (int card in deck)
```

```
        {
            if (count.ContainsKey(card))
            {
                count[card]++;
            }
            else
            {
                count[card] = 1;
            }
        }

        // Находим наименьший общий делитель для всех частот
        int gcd = count.Values.First();
        foreach (int val in count.Values)
        {
            gcd = GCD(gcd, val);
            if (gcd == 1)
            {
                return false; // если НОД равен 1, то невозможно разделить карты на
группы > 1
            }
        }

        return gcd > 1;
    }

    // Метод для нахождения НОД (Алгоритм Евклида)
    private int GCD(int a, int b)
    {
        while (b != 0)
        {
            int temp = b;
            b = a % b;
            a = temp;
        }
        return a;
    }
}
```