643. Maximum Average Subarray I

Solved

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You are given an integer array `nums` consisting of `n` elements, and an integer `k`.

Find a contiguous subarray whose **length is equal to** `k` that has the maximum average value and return *this value*. Any answer with a calculation error less than 10^{-5} will be accepted.

Example 1:

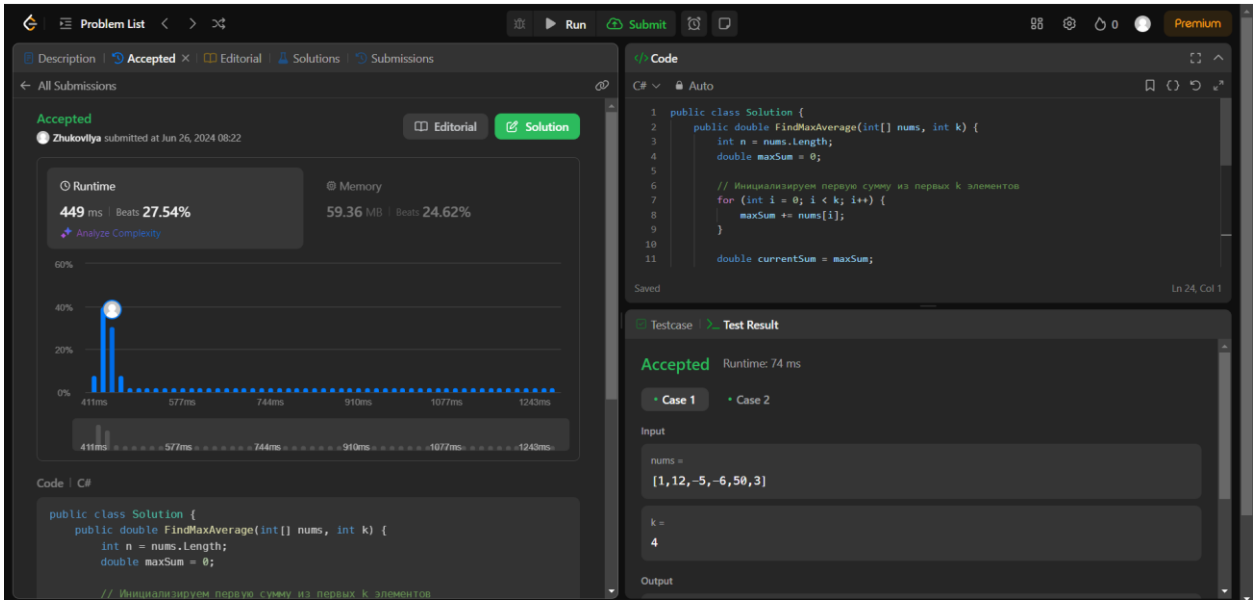
```
Input: nums = [1,12,-5,-6,50,3], k = 4
Output: 12.75000
Explanation: Maximum average is (12 - 5 - 6 + 50) / 4 = 51 / 4 = 12.75
```

Example 2:

```
Input: nums = [5], k = 1
Output: 5.00000
```

Constraints:

- `n == nums.length`
- `1 <= k <= n <= 10^5`
- `-10^4 <= nums[i] <= 10^4`



Код:

```
public class Solution
{
    public double FindMaxAverage(int[] nums, int k)
    {
        int n = nums.Length;
        double maxSum = 0;
```

```
        // Инициализируем первую сумму из первых k элементов
        for (int i = 0; i < k; i++)
        {
            maxSum += nums[i];
        }

        double currentSum = maxSum;

        // Применяем метод скользящего окна
        for (int i = k; i < n; i++)
        {
            currentSum += nums[i] - nums[i - k];
            if (currentSum > maxSum)
            {
                maxSum = currentSum;
            }
        }

        return maxSum / k;
    }
}
```