6052. Minimum Average Difference

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Difficulty:	Medium

You are given a **0-indexed** integer array `nums` of length `n`.

The **average difference** of the index `i` is the **absolute difference** between the average of the **first** `i + 1` elements of `nums` and the average of the **last** `n - i - 1` elements. Both averages should be **rounded down** to the nearest integer.

Return *the index with the **minimum average difference***. If there are multiple such indices, return the **smallest** one.

Note:

- The **absolute difference** of two numbers is the absolute value of their difference.
- The **average** of `n` elements is the **sum** of the `n` elements divided (**integer division**) by `n`.
- The average of `0` elements is considered to be `0`.

Example 1:

```
Input: nums = [2,5,3,9,5,3]
Output: 3
Explanation:
- The average difference of index 0 is: |2 / 1 - (5 + 3 + 9 + 5 + 3) / 5| = |2 / 1 - 25 / 5| = |2 - 5| = 3.
- The average difference of index 1 is: |(2 + 5) / 2 - (3 + 9 + 5 + 3) / 4| = |7 / 2 - 20 / 4| = |3 - 5| = 2.
- The average difference of index 2 is: |(2 + 5 + 3) / 3 - (9 + 5 + 3) / 3| = |10 / 3 - 17 / 3| = |3 - 5| = 2.
- The average difference of index 3 is: |(2 + 5 + 3 + 9) / 4 - (5 + 3) / 2| = |19 / 4 - 8 / 2| = |4 - 4| = 0.
- The average difference of index 4 is: |(2 + 5 + 3 + 9 + 5) / 5 - 3 / 1| = |24 / 5 - 3 / 1| = |4 - 3| = 1.
- The average difference of index 5 is: |(2 + 5 + 3 + 9 + 5 + 3) / 6 - 0| = |27 / 6 - 0| = |4 - 0| = 4.
The average difference of index 3 is the minimum average difference so return 3.
```

Example 2:

```
Input: nums = [0]
Output: 0
Explanation:
The only index is 0 so return 0.
The average difference of index 0 is: |0 / 1 - 0| = |0 - 0| = 0.
```

Constraints:

- `1 <= nums.length <= 10^5`
- `0 <= nums[i] <= 10^5`

JavaScript

```
const sm = (a) => a.reduce(((x, y) => x + y), 0);
const int = parseInt;

const minimumAverageDifference = (a) => {
    let sum = sm(a), lsum = 0, n = a.length;
    let d = [];
    for (let i = 0; i < n; i++) {
        lsum += a[i];
        rsum = sum - lsum;
        let ld = int(lsum / (i + 1)), rd = int(rsum / (n - i - 1)) || 0, diff = Math.abs(ld - rd);
        d.push([diff, i]);
    }
    d.sort((x, y) => {
        if (x[0] != y[0]) return x[0] - y[0];
        return x[1] - y[1];
    });
    return d[0][1];
};
```

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