2090. K Radius Subarray Averages   Hint ⋯

Medium   ⊘   👍 1.7K   👎 78   ☆   ↗

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You are given a **0-indexed** array `nums` of `n` integers, and an integer `k`.

The **k-radius average** for a subarray of `nums` **centered** at some index `i` with the **radius** `k` is the average of **all** elements in `nums` between the indices `i - k` and `i + k` (**inclusive**). If there are less than `k` elements before **or** after the index `i`, then the **k-radius average** is `-1`.

Build and return *an array* `avgs` *of length* `n` *where* `avgs[i]` *is the **k-radius average** for the subarray centered at index* `i`.

The **average** of `x` elements is the sum of the `x` elements divided by `x`, using **integer division**. The integer division truncates toward zero, which means losing its fractional part.

- For example, the average of four elements `2`, `3`, `1`, and `5` is `(2 + 3 + 1 + 5) / 4 = 11 / 4 = 2.75`, which truncates to `2`.

Example 1:
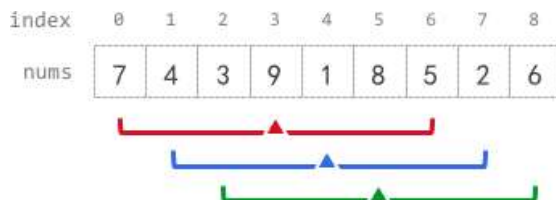
Input: nums = [7,4,3,9,1,8,5,2,6], k = 3
Output: [-1,-1,-1,5,4,4,-1,-1,-1]
Explanation:
- avg[0], avg[1], and avg[2] are -1 because there are less than k elements **before** each index.
- The sum of the subarray centered at index 3 with radius 3 is: 7 + 4 + 3 + 9 + 1 + 8 + 5 = 37.
  Using **integer division**, avg[3] = 37 / 7 = 5.
- For the subarray centered at index 4, avg[4] = (4 + 3 + 9 + 1 + 8 + 5 + 2) / 7 = 4.
- For the subarray centered at index 5, avg[5] = (3 + 9 + 1 + 8 + 5 + 2 + 6) / 7 = 4.
- avg[6], avg[7], and avg[8] are -1 because there are less than k elements **after** each index.

Example 2:

Input: nums = [100000], k = 0
Output: [100000]
Explanation:
- The sum of the subarray centered at index 0 with radius 0 is: 100000.
  avg[0] = 100000 / 1 = 100000.

Example 3:

Input: nums = [8], k = 100000
Output: [-1]
Explanation:
- avg[0] is -1 because there are less than k elements before and after index 0.

Constraints:

- `n == nums.length`

- $1 <= n <= 10^5$

- $0 <= nums[i], k <= 10^5$

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