**239. Sliding Window Maximum**

Hard

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You are given an array of integers nums, there is a sliding window of size k which is moving from the very left of the array to the very right. You can only see the k numbers in the window. Each time the sliding window moves right by one position.

Return *the max sliding window*.

**Example 1:**

**Input:** nums = [1,3,-1,-3,5,3,6,7], k = 3

**Output:** [3,3,5,5,6,7]

**Explanation:**

Window position Max

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[1 3 -1] -3 5 3 6 7 **3**

1 [3 -1 -3] 5 3 6 7 **3**

1 3 [-1 -3 5] 3 6 7  **5**

1 3 -1 [-3 5 3] 6 7 **5**

1 3 -1 -3 [5 3 6] 7 **6**

1 3 -1 -3 5 [3 6 7] **7**

**Example 2:**

**Input:** nums = [1], k = 1

**Output:** [1]

**Example 3:**

**Input:** nums = [1,-1], k = 1

**Output:** [1,-1]

**Example 4:**

**Input:** nums = [9,11], k = 2

**Output:** [11]

**Example 5:**

**Input:** nums = [4,-2], k = 2

**Output:** [4]

**Constraints:**

* 1 <= nums.length <= 105
* -104 <= nums[i] <= 104
* 1 <= k <= nums.length