239. Sliding Window Maximum

Hint

- 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:

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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]

Constraints:

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