CS137
Data Structure

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Part I – Valid Parentheses（商汤科技 2020 面试）

Given a string containing just the characters '(', ')', '{', '}', '[' and ']', determine if the input string is valid.
An input string is valid if:
1. Open brackets must be closed by the same type of brackets.
2. Open brackets must be closed in the correct order.

Note that an empty string is also considered valid.

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Example 1:
Input: "()"
Output: true
Example 2:
Input: "()[]{}"
Output: true
Example 3:
Input: "(]"
Output: false
```

Partie II – Sliding Window（美团算法岗考点）

Given an array *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 of the sliding window.

```
Input: nums = [1,3,-1,-3,5,3,6,7], and 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
```

Note:
You may assume *k* is always valid, 1 ≤ k ≤ input array's size for non-empty array.