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Two pointers pattern-based problem that are mostly asked 10 interview question give input and output of problem.

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The two-pointer technique is a popular pattern used in algorithmic problems. It involves using two pointers to traverse data structures, often arrays or linked lists, to solve problems more efficiently. Here are 10 common two-pointer pattern-based problems along with their inputs and outputs:

1. Two Sum II - Input Array Is Sorted

- Problem: Given a sorted array and a target sum, find the indices of the two numbers that add up to the target.

 Get citation
- Input: `numbers = [2, 7, 11, 15] target = 9
- Output: `[1, 2]` (1-based index of the numbers `2` and `7`)

2. Container With Most Water

- Problem: Given an array representing the height of bars, find the maximum area of water that can be trapped between any two bars.
- Input: height = [1,8,6,2,5,4,8,3,7]
- Output: `49`

3. **3Sum**

- Problem: Find all unique triplets in the array that add up to zero.
- Input: `nums = [-1, 0, 1, 2, -1, -4]`
- Output: `[[-1, -1, 2], [-1, 0, 1]]`

4. Remove Duplicates from Sorted Array

- Problem: Remove duplicates from a sorted array and return the new length.
- Input: `nums = [1, 1, 2]`
- Output: `2` (The array after removing duplicates is `[1, 2]`)

5. Valid Palindrome

- Problem: Check if a given string is a palindrome considering only alphanumeric characters and ignoring case.
- Input: `s = "A man, a plan, a canal: Panama"`
- Output: `true`

6. Longest Substring Without Repeating Characters

- Problem: Given a string, find the length of the longest substring without repeating characters.
- Input: `s = "abcabcbb"`
- Output: `3` (The substring is `"abc"`)

7. Find the Duplicate Number

- Problem: Given an array of `n+1` ir \(\psi\) jers where each integer is between `1` and `n`, find the duplicate number.
- Input: `nums = [1, 3, 4, 2, 2]`
- Output: `2`

8. Pair with Target Sum

Problem: Given a sorted array and a target sum, find the indices of the two numbers that
add up to the target.

- Input: `arr = [1, 2, 3, 4, 6]`, `target = 6`
- Output: `[2, 4]` (The numbers are `2` and `4`)

9. Squares of a Sorted Array

- **Problem:** Given a sorted array, return an array of the squares of each number sorted in non-decreasing order.
- Input: `nums = [-4, -1, 0, 3, 10]`
- Output: `[0, 1, 9, 16, 100]`

10. Trapping Rain Water

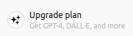


 Problem: Given an array representing the height of bars in a histogram, calculate the total amount of water that can be trapped.

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- Input: height = [0,1,0,2,1,0,1,3,2,1,2,1]
- Output: `6`

These problems can be solved efficiently using the two-pointer technique, which often reduces the time complexity compared to naive approaches.









ChatGPT can make mistakes. Check important info.