001. Valid Anagram (LC242)

Given two strings s and t, return true if t is an anagram of s, and false otherwise.

Example 1:

Input: s = "anagram", t = "nagaram"

Output: true

Example 2:

Input: s = "rat", t = "car"

Output: false

Constraints:

- $1 \le \text{len(s)}, \text{len(t)} \le 5 * 10^4$
- s and t consist of lowercase English letters.

002. Group Anagrams (LC49)

Given an array of strings **strs**, group the anagrams together. You can return the answer in **any order**.

Example 1:

```
Input: strs = ["eat","tea","tan","ate","nat","bat"]
Output: [["bat"],["nat","tan"],["ate","eat","tea"]]
```

Explanation:

- There is no string in strs that can be rearranged to form "bat".
- The strings "nat" and "tan" are anagrams as they can be rearranged to form each other.
- The strings "ate", "eat", and "tea" are anagrams as they can be rearranged to form each other.

Example 2:

```
Input: strs = [""]
Output: [[""]]
```

Example 3:

Input: strs = ["a"] **Output:** [["a"]]

Constraints:

- $1 \le len(strs) \le 10^4$
- $0 \le len(strs[i]) \le 100$
- strs[i] consists of lowercase English letters.

003. Contains Duplicate (LC217)

Given an integer array **nums**, return true if any value appears **at least twice** in the array, and return false if every element is distinct.

Example 1:

Input: nums = [1,2,3,1]

Output: true

Explanation:

The element 1 occurs at the indices 0 and 3.

Example 2:

Input: nums = [1,2,3,4]

Output: false

Explanation:

All elements are distinct.

Example 3:

Input: nums = [1,1,1,3,3,4,3,2,4,2]

Output: true

Constraints:

- $1 \le \text{len(nums)} \le 10^5$
- $-10^9 \le \text{nums[i]} \le 10^9$

004. Longest Substring Without Repeating Characters (LC3)

Given a string s, find the length of the longest substring without repeating characters.

Example 1:

Input: s = "abcabcbb"

Output: 3

Explanation: The answer is "abc", with the length of 3.

Example 2:

Input: s = "bbbbb"

Output: 1

Explanation: The answer is "b", with the length of 1.

Example 3:

Input: s = "pwwkew"

Output: 3

Explanation: The answer is "wke", with the length of 3.

Notice that the answer must be a substring, "pwke" is a subsequence and not a substring.

Constraints:

- $0 \le len(s) \le 5 * 10^4$
- s consists of English letters, digits, symbols and spaces.

005. Find the Index of the First Occurrence in a String (LC28)

Given two strings **needle** and **haystack**, return the index of the first occurrence of **needle** in **haystack**, or -1 if **needle** is not part of **haystack**.

Example 1:

Input: haystack = "sadbutsad", needle = "sad"

Output: 0

Explanation: "sad" occurs at index 0 and 6. The first occurrence is at index 0, so we return 0.

Example 2:

Input: haystack = "leetcode", needle = "leeto"

Output: -1

Explanation: "leeto" did not occur in "leetcode", so we return -1.

Constraints:

- $1 \le \text{len(haystack)}, \text{len(needle)} \le 10^4$
- haystack and needle consist of only lowercase English characters.

006. Move Zeroes (LC283)

Given an integer array **nums**, move all 0's to the end of it while maintaining the relative order of the non-zero elements.

Note that you must do this in-place without making a copy of the array.

Example 1:

Input: nums = [0,1,0,3,12]**Output:** [1,3,12,0,0]

Example 2:

Input: nums = [0]

Output: [0]

Constraints:

- $1 \le \text{len(nums)} \le 10^4$
- $-2^{31} \le \text{nums}[i] \le 2^{31} 1$

007. Missing Number (LC268)

Given an array **nums** containing **n** distinct numbers in the range [0, n], return the only number in the range that is missing from the array.

Example 1:

Input: nums = [3, 0, 1]

Output: 2

Explanation: n = 3 since there are 3 numbers, so all numbers are in the range [0,3]. 2 is the missing number in the range since it does not appear in **nums**.

Example 2:

Input: nums = [0, 1]

Output: 2

Explanation: n = 2 since there are 2 numbers, so all numbers are in the range [0,2], 2 is the missing number in the range since it does not appear in **nums**.

Example 3:

Input: nums = [9, 6, 4, 2, 3, 5, 7, 0, 1]

Output: 8

Explanation: n = 9 since there are 9 numbers, so all numbers are in the range [0,9]. 8 is the missing number in the range since it does not appear in **nums**.

Constraints:

- n == len(nums)
- $1 \le n \le 10^4$
- $0 \le nums[i] \le n$
- All the numbers of nums are **unique**.

008. Two Maximum Numbers

Given an integer array **nums**, return 2(two) maximum numbers in this array.

Example 1:

Input: nums = [3, 0, 1]

Output: The first maximum: 3 The second maximum: 1

Example 2:

Input: nums = [0, 1, 2, 3, 4, 5, 6]Output: The first maximum: 6 The second maximum: 5

Example 3:

Input: nums = [9, 6, 4, 2, 3, 5, 7, 0, 1]

Output: The first maximum: 9 The second maximum: 7

Constraints:

• $2 \le \text{len(nums)} \le 10^4$

009. Consecutive Characters (LC1446)

Given a string s, return the power of s. The power of the string is the maximum length of a nonempty substring that contains only one unique character.

Example 1:

Input: s = "abc"

Output: 1

Example 2:

Input: s = "abbbcc"

Output: 3

Example 3:

Input: s = "aabbbccdddde"

Output: 4

Constraints:

- $1 \le len(s) \le 500$
- s consists of only lowercase English letters.