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:

- $1 \le$ s.length, **t**.length $\le 5 * 10^4$
- 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:

- $1 \le \text{strs.length} \le 10^4$
- $0 \le strs[i].length \le 100$
- 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:

- $1 \le \text{nums.length} \le 10^5$
- $-10^9 \le nums[i] \le 10^9$

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:

- $0 \le \text{s.length} \le 5 * 10^4$
- 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 <= haystack.length, needle.length <= 104
- 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:

- $1 \le \text{nums.length} \le 10^4$
- $-2^{31} \le nums[i] \le 2^{31} 1$