

# LeetCode 242 - Valid Anagram

Problem link : [🔗 Problem Link](#)

## Objective:

Determine if two strings are anagrams of each other.

An **anagram** is formed by rearranging all characters of one string to form another, using each character exactly once.

## Approach: Sorting-based Comparison

```
class Solution {
public:
    bool isAnagram(string s, string t) {
        sort(s.begin(), s.end()); // Sort string s alphabetically
        sort(t.begin(), t.end()); // Sort string t alphabetically
        return s == t;           // Compare both sorted strings
    }
};
```

## Explanation:

### 1. Sorting Step:

- Sort both input strings `s` and `t`.
- If both strings are anagrams, their sorted versions will be exactly the same.

### 2. Comparison Step:

- If sorted `s` is equal to sorted `t`, return `true`.

- Otherwise, return `false`.

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### Time & Space Complexity:

| Complexity        | Value                        |
|-------------------|------------------------------|
| Time              | $O(n \log n)$                |
| Space (Auxiliary) | $O(1)$ (ignoring sort space) |

| Where  $n$  is the length of the input strings.

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### Sample Input/Output:

| Input                                     | Output             |
|---|--------------------|
| <code>s = "anagram", t = "nagaram"</code> | <code>true</code>  |
| <code>s = "rat", t = "car"</code>         | <code>false</code> |

### Notes:

- Works perfectly for lowercase alphabets.
  - Can be optimized further using frequency count ( $O(n)$  approach).
  - This version is clean, readable, and great for interviews or learning!
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