

The Algorithm Design Canvas

Problem name: [Valid Anagram](#)

HIRED IN TECH

Constraints

1. Two Strings (s, t).
2. return true if t is anagram of s; false otherwise.
3. (string, string) --> bool
4. Are all characters small? if not, how should I treat them?

Ideas

- | | |
|--|--------------------|
| 1. return false if lengths do not match | $O(2n)$ |
| 2. Store one string in <code>HashMap<char, int></code> ($O(n)$) and search it using other string ($O(n)$). | $O(n)$ |
| 3. Decrease it each time it is fetched and if it returns 0 then fn returns false. | |
| 1. return false if lengths do not match | $O(3n)$ but faster |
| 2. Use Character Based Operation DS (convert char to int). | |
| 3. Store (s) chars as index and store their frequencies. | |
| 4. Same for t but subtract frequencies and return false if $f < 0$ | $O(n)$ |
| 5. Return false freq > 0 | |

Test Cases

```
assert v.isAnagram("anagram", "nagaram");
assert !v.isAnagram("rat", "car");
assert !v.isAnagram("aacc", "ccac");
```

Code

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