

6069. Substring With Largest Variance

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The **variance** of a string is defined as the largest difference between the number of occurrences of **any** 2 characters present in the string. Note the two characters may or may not be the same.

Given a string *s* consisting of lowercase English letters only, return *the largest variance possible among all substrings of s*.

A **substring** is a contiguous sequence of characters within a string.

User Accepted: 0

User Tried: 2

Total Accepted: 0

Total Submissions: 2

Difficulty: Hard

Example 1:

Input: s = "aababbb"

Output: 3

Explanation:

All possible variances along with their respective substrings are listed below:

- Variance 0 for substrings "a", "aa", "ab", "abab", "aababb", "ba", "b", "bb", and "bbb".
- Variance 1 for substrings "aab", "aba", "abb", "aabab", "ababb", "aababbb", and "bab".
- Variance 2 for substrings "aaba", "ababbb", "abbb", and "babb".
- Variance 3 for substring "babbb".

Since the largest possible variance is 3, we return it.

Example 2:

Input: s = "abcde"

Output: 0




Explanation:

No letter occurs more than once in *s*, so the variance of every substring is 0.

Constraints:

- 1 <= s.length <= 10<sup>4</sup>
- s consists of lowercase English letters.

JavaScript



```
1 const largestVariance = (s) => {
2   let se = new Set(s), n = s.length, res = 0;
3   for (const x of se) { // max
4     for (const y of se) { // min
5       if (x !== y) {
6         let pre = Array(n + 1).fill(0), preX, preY, diff = 0;
7         for (let i = 0; i < n; i++) {
8           if (s[i] === x) {
9             preX = i + 1;
10            diff++;
11          }
12          if (s[i] === y) {
13            preY = i + 1;
14            diff--;
15          }
16          pre[i + 1] = Math.min(pre[i], diff);
17          if (preX === undefined || preY === undefined) continue;
18          res = Math.max(res, diff - pre[Math.min(preX, preY) - 1]);
19        }
20      }
21    }
22  }
23  return res;
24 }
```


☐ Custom Testcase

Use Example Testcases

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