

Problem 3485: Longest Common Prefix of K Strings After Removal

Problem Information

Difficulty: Hard

Acceptance Rate: 22.72%

Paid Only: No

Tags: Array, String, Trie

Problem Description

You are given an array of strings `words` and an integer `k`.

For each index `i` in the range `[0, words.length - 1]`, find the **length** of the **longest common prefix** among any `k` strings (selected at **distinct indices**) from the remaining array after removing the `ith` element.

Return an array `answer`, where `answer[i]` is the answer for `ith` element. If removing the `ith` element leaves the array with fewer than `k` strings, `answer[i]` is 0.

Example 1:

Input: words = ["jump", "run", "run", "jump", "run"], k = 2

Output: [3,4,4,3,4]

Explanation:

* Removing index 0 ("jump"): * `words` becomes: `["run", "run", "jump", "run"]`. `"run"` occurs 3 times. Choosing any two gives the longest common prefix `"run"` (length 3). * Removing index 1 ("run"): * `words` becomes: `["jump", "run", "jump", "run"]`. `"jump"` occurs twice. Choosing these two gives the longest common prefix `"jump"` (length 4). * Removing index 2 ("run"): * `words` becomes: `["jump", "run", "jump", "run"]`. `"jump"` occurs twice. Choosing these two gives the longest common prefix `"jump"` (length 4). * Removing index 3 ("jump"): * `words` becomes: `["jump", "run", "run", "run"]`. `"run"` occurs 3 times. Choosing any two gives the longest common prefix `"run"` (length 3). * Removing index 4 ("run"): * `words`

becomes: `["jump", "run", "run", "jump"]`. ``jump`` occurs twice. Choosing these two gives the longest common prefix ``jump`` (length 4).

Example 2:

Input: words = ["dog", "racer", "car"], k = 2

Output: [0,0,0]

Explanation:

* Removing any index results in an answer of 0.

Constraints:

* `1 <= k <= words.length <= 105` * `1 <= words[i].length <= 104` * `words[i]` consists of lowercase English letters. * The sum of `words[i].length` is smaller than or equal `105`.

Code Snippets

C++:

```
class Solution {
public:
vector<int> longestCommonPrefix(vector<string>& words, int k) {
    }
};
```

Java:

```
class Solution {
public int[] longestCommonPrefix(String[] words, int k) {
    }
}
```

Python3:

```
class Solution:  
    def longestCommonPrefix(self, words: List[str], k: int) -> List[int]:
```