

# 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 `i`th element.

Return an array `answer`, where `answer[i]` is the answer for `i`th element. If removing the `i`th 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]:
```