2114. Maximum Number of Words Found in Sentences

Question

A **sentence** is a list of words separated by a single space with no leading or trailing spaces.

You are given an array of strings sentences, where each sentences[i] represents a single sentence.

Return the maximum number of words that appear in a single sentence.

Constraints:

- 1 <= sentences.length <= 100
- 1 <= sentences[i].length <= 100
- sentences[i] consists only of lowercase English letters and ' ' only.
- sentences[i] does not have leading or trailing spaces.
- All the words in sentences[i] are separated by a single space.

Inputs

- sentences: An array of strings representing sentences.

Outputs

- An integer representing the maximum number of words in a single sentence.

Example 1

Input:
sentences = ["alice and bob love leetcode", "i think so too", "this is great thanks very much"]

Output:
6

Explanation:

- Sentence 1: "alice and bob love leetcode" → 5 words.
- Sentence 2: "i think so too" → 4 words.
- Sentence 3: "this is great thanks very much" → 6 words.

Maximum: max(5,4,6)=6\text{max}(5, 4, 6) = 6max(5,4,6)=6.

Example 2

Input:
sentences = ["please wait", "continue to fight", "continue to win"]

Output:
3

Algorithm

1. Initialize a variable maxWords to 0.
2. Loop through each sentence in sentences.
   - Count the number of spaces in the sentence.
   - The number of words in a sentence is spaces + 1.
   - Update maxWords if the current count exceeds its value.
3. Return maxWords.

Code

```
#include <string.h>

int mostWordsFound(char** sentences, int sentencesSize) {
    int maxWords = 0;

    for (int i = 0; i < sentencesSize; i++) {
        int curWords = 0;
        for (int j = 0; sentences[i][j] != '\0'; j++) {
            if (sentences[i][j] == ' ') {
                curWords++;
            }
        }
        // Add 1 to account for the last word
        curWords += 1;
        if (curWords > maxWords) {
            maxWords = curWords;
        }
    }

    return maxWords;
}
```

Time Complexity

- **O(n × m):**
    - n: Number of sentences.
    - m: Average length of a sentence.

Space Complexity

- **O(1):** No additional space is used.