418. Sentence Screen Fitting

Medium 639 311 Add to List Share

Given a `rows x cols` screen and a `sentence` represented as a list of strings, return *the number of times the given sentence can be fitted on the screen*.

The order of words in the sentence must remain unchanged, and a word cannot be split into two lines. A single space must separate two consecutive words in a line.

Example 1:

```
Input: sentence = ["hello","world"], rows = 2, cols = 8
Output: 1
Explanation:
hello---
world---
The character '-' signifies an empty space on the screen.
```

Example 2:

```
Input: sentence = ["a", "bcd", "e"], rows = 3, cols = 6
Output: 2
Explanation:
a-bcd-
e-a---
bcd-e-
The character '-' signifies an empty space on the screen.
```

Example 3:

```
Input: sentence = ["i","had","apple","pie"], rows = 4, cols = 5
Output: 1
Explanation:
i-had
apple
pie-i
had--
The character '-' signifies an empty space on the screen.
```

Constraints:

- `1 <= sentence.length <= 100`
- `1 <= sentence[i].length <= 10`
- `sentence[i]` consists of lowercase English letters.
- `1 <= rows, cols <= 2 * 10^4`

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```python
class Solution:
    def wordsTyping(self, sentence: List[str], rows: int, cols: int) -> int:
        sentence_with_spaces = ' '.join(sentence) + ' '
        sentence_len = len(sentence_with_spaces)
        sentence_ptr = 0
        for i in range(rows):
            # last char for this row
            sentence_ptr += cols-1
            if sentence_with_spaces[sentence_ptr % sentence_len] == ' ':
                # we ended on a space - move to next line with next char
                sentence_ptr += 1
            elif sentence_with_spaces[(sentence_ptr+1) % sentence_len] == ' ':
                # next char is a space, we ended on last letter of a word -
                # move to next line with first letter of next word skipping the space
                sentence_ptr += 2
            else:
                # ended in the middle of a word - need to go back to beginning of this word
                while sentence_ptr > 0 and sentence_with_spaces[(sentence_ptr-1) % sentence_len] != ' ':
                    sentence_ptr -= 1

        return sentence_ptr // sentence_len

```

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