



DAILY PROGRAMMING CHALLENGE



Reverse a String Word by Word

You are given a string s that consists of multiple words separated by spaces. Your task is to reverse the order of the words in the string. Words are defined as sequences of non-space characters. The output string should not contain leading or trailing spaces, and multiple spaces between words should be reduced to a single space.

Input:

A string s of length n ($1 \leq n \leq 10^4$) consisting of letters, digits, punctuation, and spaces.

Output:

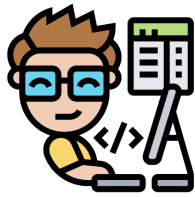
- A string where the words in s are reversed, with a single space separating the words, and no leading or trailing spaces.

Examples:

- Example 1
Input: "the sky is blue"
Output: "blue is sky the"
Explanation: The input string has leading and trailing spaces, which are removed in the output, and the words are reversed.
- Example 2
Input: " hello world "
Output: "world hello"
Explanation: The input string has leading and trailing spaces, which are removed in the output, and the words are reversed.
- Example 3
Input: "a good example"
Output: "example good a"
Explanation: The input string contains multiple spaces between the words. These are reduced to a single space, and the words are reversed in the output.

Constraints:

- $1 \leq s.length \leq 10^4$
- The string s may contain leading or trailing spaces.
- Words in s are separated by one or more spaces.



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- s contains printable ASCII characters.

Test Cases:

1. Input: "the sky is blue"
Output:
2. Input: " hello world "
Output: "world hello"
3. Input: "a good example"
Output: "example good a"
4. Input: " "
Output: ""
5. Input: "word"
Output: "word"

Edge Cases:

1. All spaces: If the string consists of only spaces, the output should be an empty string.
2. Single word: If the string contains only one word, the output should be the same word without any additional spaces.
3. Multiple spaces between words: All extra spaces between words should be reduced to a single space.