**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 ≤ n ≤ 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 ≤ s.length ≤ 10^4
* The string s may contain leading or trailing spaces.
* Words in s are separated by one or more spaces.
* s contains printable ASCII characters.

**Test Cases:**

1. Input: "the sky is blue"

Output:

1. Input: " hello world "

Output: "world hello"

1. Input: "a good example"

Output: "example good a"

1. Input: " "

Output: “”

1. 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.