Given an input string, reverse the string word by word.

**Example 1:**

**Input:** "the sky is blue"

**Output:**"blue is sky the"

**Example 2:**

**Input:** "  hello world!  "

**Output:**"world! hello"

**Explanation:** Your reversed string should not contain leading or trailing spaces.

**Example 3:**

**Input:** "a good   example"

**Output:**"example good a"

**Explanation:** You need to reduce multiple spaces between two words to a single space in the reversed string.

**Note:**

* A word is defined as a sequence of non-space characters.
* Input string may contain leading or trailing spaces. However, your reversed string should not contain leading or trailing spaces.
* You need to reduce multiple spaces between two words to a single space in the reversed string.

**Follow up:**

For C programmers, try to solve it *in-place* in *O*(1) extra space.