Reverse Words in a String LeetCode

Given a string containing multiple words separated by spaces, the task is to reverse the order of the words in the string.

Example: Input: " Hello World "

Output: “World Hello”

Approach 1: Reverses the words in the input string using a vector

- The function iterates over the input string character by character and builds each word.
- The words are stored in a vector in the order they appear in the input string.
- Finally, the function constructs the reversed string by appending the words in reverse order.
- **Time Complexity: O(n), where n is the length of the input string. It involves iterating over the string once and appending words to the vector.**
- **Space Complexity: O(m), where m is the number of words in the input string. The function uses additional space to store the words in the vector.**

Approach 2: Reverses the words in the input string using a stack

- The function follows a similar approach to the vector approach.
- Instead of storing words in a vector, it uses a stack to reverse the order of the words.
- Words are pushed onto the stack while iterating over the input string and then popped from the stack to construct the reversed string.
- **Time Complexity: O(n), where n is the length of the input string. It involves iterating over the string once and pushing/popping words onto/from the stack.**
- **Space Complexity: O(m), where m is the number of words in the input string. The function uses additional space to store the words in the stack.**

Approach 3: Reverses the words in the input string using another string

- The function uses two pointers to traverse the input string from right to left.
- It extracts each word from the string while skipping trailing spaces.
- The reversed string is constructed by appending each word in reverse order with spaces in between.

- **Time Complexity: O(n), where n is the length of the input string. It involves iterating over the string once and constructing the reversed string.**
- **Space Complexity: O(n), where n is the length of the input string. The function uses additional space to store the reversed string.**