Problem 1754: Largest Merge Of Two Strings

Problem Information

Difficulty: Medium
Acceptance Rate: 52.82%
Paid Only: No
Tags: Two Pointers, String, Greedy

Problem Description

You are given two strings `word1` and `word2`. You want to construct a string `merge` in the following way: while either `word1` or `word2` are non-empty, choose **one** of the following options:

* If `word1` is non-empty, append the **first** character in `word1` to `merge` and delete it from `word1`. * For example, if `word1 = "abc" `and `merge = "dv"`, then after choosing this operation, `word1 = "bc"` and `merge = "dva"`. * If `word2` is non-empty, append the **first** character in `word2` to `merge` and delete it from `word2`. * For example, if `word2 = "abc" `and `merge = ""`, then after choosing this operation, `word2 = "bc"` and `merge = "a"`.

Return _the lexicographically**largest** _`merge` _you can construct_.

A string `a` is lexicographically larger than a string `b` (of the same length) if in the first position where `a` and `b` differ, `a` has a character strictly larger than the corresponding character in `b`. For example, `"abcd"` is lexicographically larger than `"abcc"` because the first position they differ is at the fourth character, and `d` is greater than `c`.

Example 1:

Input: word1 = "cabaa", word2 = "bcaaa" **Output:** "cbcabaaaaa" **Explanation:** One way to get the lexicographically largest merge is: - Take from word1: merge = "c", word1 = "abaa", word2 = "bcaaa" - Take from word2: merge = "cb", word1 = "abaa", word2 = "caaa" - Take from word2: merge = "cbc", word1 = "abaa", word2 = "aaa" - Take from word1: merge = "cbca", word1 = "baa", word2 = "aaa" - Take from word1: merge = "cbcab", word1 = "aa", word2 = "aaa" - Append the remaining 5 a's from word1 and word2 at the end of merge.

Example 2:

Input: word1 = "abcabc", word2 = "abdcaba" **Output:** "abdcabcabcaba"

Constraints:

* `1 <= word1.length, word2.length <= 3000` * `word1` and `word2` consist only of lowercase English letters.

Code Snippets

C++:

```
class Solution {
public:
string largestMerge(string word1, string word2) {

}
};
```

Java:

```
class Solution {
public String largestMerge(String word1, String word2) {

}
}
```

Python3:

```
class Solution:
def largestMerge(self, word1: str, word2: str) -> str:
```