The Pirate of Kalyanpur

ZPRAC-16-17-Lab6

[40 points]

Excellent work! Bhuvesh and Rohan are mighty impressed with you! They rope you in to help dig some dirt on their fellow tutor Kriti.

Oh no! Kriti, being so studious, is downloading pirated ebook copies of popular books by American authors. If the FBI found out, both will lose their internship positions. They need to hide Kriti's activity from them. But for that they need to know which books she is going to fetch, so they can remove all records of her download. But Kriti is pretty smart, Bhuvesh and Rohan are unable to hack into her system. However, they have managed to find a pattern in the names of the books she is downloading, which they can use to their advantage.

Suppose you have a string of lowercase letters X. You are allowed two operations, namely STRETCH and SQUASH. In a STRETCH operation, you can pick any letter, and replace it by a string of letters of the same kind. For example, if we pick letter 'a' in 'abcd', after a STRETCH operation, we can construct the strings 'abcd', 'aabcd', 'aaabcd', and so on.

Similarly in a SQUASH operation, you can replace any consecutive string of the same letters by a string of equal or less number of letters (atleast 1) of the same kind. For example, if we pick the string 'aaaa' in 'aaaabcd', after a SQUASH operation, we can get the strings 'aaaabcd', 'aaabcd', 'aabcd', 'abcd'. Now we see how it helps in finding a pattern in Kriti's downloads.

Say Kriti downloads two books with names A and B, then it so happens that, after a certain number of STRETCH and SQUASH operations, B can be reduced or modified to be equal to A.

Bhuvesh and Rohan have asked you to write a program which would automate this. Can you help them?

The input consists of two lines. The first line contains the string A. The second line contains the string B. Both the strings do not have spaces. First string is terminated by a "\n" and second by EOF.

The output should consist of a single line, consisting of a "YES" if B can be reduced to A after a certain number of STRETCH and SQUASH operations, and a "NO" otherwise.

Constraints :

Length of both strings ≤ 10000

Example:
Input:
MAAAATHS
MATHHHHS

Output:
YES

Input:
COMPUUUTERSCCIENCE
COMPUUTERENGG

Output:
NO