

String Game

Given, an initial string **s** and a final string **t**. A game played with strings which lasts for **k** seconds has the following rules to be followed.

1. For each **i** from 1 to **k**, any index from string **s** is picked and character at that index is shifted **i** units to the right. The shift is circular, that is if **z** is shifted 1 unit, it becomes **a**.
2. Any index can be picked at most once.

Write a program to identify if string **t** can be achieved string **s** using the rules.

Input format:

The first line of input consists of string **s**.

The second line consists of string **t** (having the same length as **s**).

The last line consists of an integer **k**.

Output format:

Print "Yes" if string **t** can be achieved from string **s** using the given rules else print "No".

Constraints:

$1 \leq \text{len} \leq 10^3$; where **len** refers to the length of string **s** and **t**.

$1 \leq k \leq \text{len}$

Sample input:

abc

ddd

3

Sample output:

Yes

Explanation:

'a' is shifted 3 units to become 'd'

'b' is shifted 2 units to become 'd'

'c' is shifted 1 units to become 'd'

Hence "ddd" can be achieved from "abc" using given rules.