Artificium

Some Vigenère

Runtime Limit - 3s

Problem Statement

You are given a string *plaintext* (only contains uppercase letters and spaces) and another one called *key* (only contains uppercase letters).

Your task is to encrypt the plaintext with the key by encrypting the first letter of the plaintext with the first letter of the key, the second with the second and so on.

The key will always be shorter or equal in length to the plain text, so make sure to take again the key's first letter to encrypt if the key "runs out".

A key letter of K would mean A --> K, B --> L, C --> M and so on, wrapping around at the end of the alphabet as necessary.

However: Spaces shouldn't be encrypted, just delete them. Also, they don't "consume" key letters.

If there would be nothing to output, print NOTHING.

Format

Input

Line 1: The text *plaintext* to encrypt

Line 2: The keyword key

Output

Line 1: The encrypted text or NOTHING

Constraints

length of key ≤ length of plaintext

Sample

Input

HELLO WORLD

KEY

Output

RIJVSUYVJN