Samuel is going to participate in an international chess competition. Two days before the match, he met the world-famous Magnus Carlsen for a few tips regarding the competition. He was concerned that somebody might steal those tips, so he thought to encrypt the text with the help of **Straddle Checkerboard Algorithm** without the addition of a secret key number at the end.

Given the key permutation of the alphabet and two digits, decrypt the given cipher text and return the plain text form.

Input Format

The input is of 3 lines:

1. The first line is a string - a permutation of the english alphabet
2. The second line has two integers seperated by a space. These denote the numbers to setup the encryption matrix
3. The thrid line is a string - the cipher text to decrypt

Constraints

1. Input string will consist of only A-Z characters i.e.., english alphabets in upper case only.
2. The numbers in the second line of input will range between [0-9]
3. You are not allowed to use libraries like cryptography available in python

Output Format

Plain text - String

Sample Input 0

```
FKMCPDYEHBIGQROSAZLUTJNWVX

3 7

690974672309938377275387070360723094383772709
```

Sample Output 0

```
DEFENDTHEEASTWALLOFTHECASTLE
```

Explanation 0

Refer to this link for a comprehensive explanation of this example.

Note: Remember we **stop** the algorithm after encoding it with the initial matrix setup. We **do not** proceed to add a new secret key number **nor we will convert** the cipher numbers to letters again using the same setup during encryption