

Problem 1

Encryption

Input file: data1.txt

Say you are the founder and sole employee of your own e-business start-up. Hours before delivering an e-commerce solution to your very first client, you realize to your horror that you have forgotten to include encryption features for sensitive information.

Face with a very tight schedule, you decide to incorporate a simple encryption routine and later sell a security upgrade to your client at a tidy sum. After looking through possible methods that you can implement quickly, you finally settle on the following scheme known as Vigenere cipher.

First, you determine a small repeated *key* that is the length of your plaintext (unencrypted) message. Next, you align the plaintext message such that the first letter of the message is aligned to the first letter of the key. Finally, each key letter index is added to its corresponding plaintext letter index to produce the *ciphertext* (encrypted) letter index. These combined ciphertext letter indices will form the final encrypted message. Your task is to write such a program.

Input

The input file consists of pairs of lines. The first line of each pair will contain the key while the second line will contain the plaintext message. Only letters of the alphabet (A-Z) plus a space will be used. These may be in upper- or lower-case and you will have to convert them into upper-case if necessary.

Output

The output file consists of one line of upper-case text for each pair of lines in the input file. Each line will contain the encrypted message.

Sample Input

```
ABCABCABCABCAB
Attack at dawn
Shineshines
How are you
```

Sample Output

```
BVWBENACWAFDXP
AWFNFKMIMTN
```