

# J2 ==> Bullcode

As an excellent and maybe slightly paranoid programmer, Ivancho does everything possible to hide his passwords. He has made a program called Bullcode, with which he can generate a password with a given string  $P$  of length  $N$ . He does that with the help of another string made up of exactly 26 characters -  $C$ . Both strings contain only lowercase latin letters and  $C$  contains each letter only once.

In order to get the password, he transforms  $P$  by performing the following operation: each symbol in it turns into  $C[1]$  if it is "a", into  $C[2]$  if it is "b", into  $C[3]$  if it is "c", etc. (the indices start from 1 here, not from 0). **But since he is afraid of people finding his password, his program does that  $K$  times.**

Unfortunately a professional hacker under the name of peter\_pan7 managed to sabotage his computer. Now Ivancho can't find his program and asks you to make a program `bullcode`, which does exactly the same.

## Input

At the first line of the file `bullcode.in`, the two integers  $N$  and  $K$  - the length of  $P$  and how many times the operation will have to be executed - can be read. At the second line there is the string  $P$ . At the third line - the string  $C$ .

## Output

At the first and only line of the file `bullcode.out` the program must print a string - the resulting password.

## Constraints

$1 \leq N \leq 1000$

$1 \leq K \leq 1000000$  ( $10^6$ )

## Example

Input ( <code>bullcode.in</code> )	Output ( <code>bullcode.out</code> )
9 2 redpandas thefivboxngwzardsjumpqckly	nxvfmtvmp