

Appleby Contest '19 P2 - The Love Letter

Time limit: 2.0s **Memory limit:** 256M

Plasmatic is sending a super special love letter, and because it is so special he doesn't want anyone (except his crush obviously) to see it.

To stop it from getting into the wrong hands, he has decided to encrypt the letter with a [Caeser Cipher](#) (don't worry his crush will get it).

Unfortunately, he isn't very skilled at programming and finds it difficult to apply the cipher to his letter. Can you help him do it?

Constraints

$$1 \leq N \leq 10^4$$

$$0 \leq L \leq 10^6$$

Input Specification

The first line will contain the integer N , the length of the love letter.

The second line will contain the integer L , the shift he wants to apply.

The third line will contain the string S , the love letter itself. It will consist only of lowercase letters and spaces.

Output Specification

Output the love letter with the cipher applied.

Sample Input

```
56
2
roses are red violets are blue sugar is sweet so are you
```

Sample Output

```
tqugu ctg tgf xkqngvu ctg dnwg uwict ku uyygv uq ctg aqw
```

Explanation

Every letter in the input has been shifted two places forward as specified in the input. Note that the letter `y` was looped back to `a`.