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Caesar Cipher

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Problem

Submissions

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Editorial

Julius Caesar protected his confidential information by encrypting it in a cipher. Caesar's cipher rotated every letter in a string by a fixed number, **K**, making it unreadable by his enemies. Given a string, **S**, and a number, **K**, encrypt **S** and print the resulting string.

Note: The cipher *only* encrypts letters; symbols, such as `-`, remain unencrypted.

Input Format

The first line contains an integer, **N**, which is the length of the unencrypted string.
The second line contains the unencrypted string, **S**.
The third line contains the integer encryption key, **K**, which is the number of letters to rotate.

Constraints

- $1 \leq N \leq 100$
- $0 \leq K \leq 100$
- S** is a valid ASCII string and doesn't contain any spaces.

Output Format

For each test case, print the encoded string.

Sample Input

```
11
middle-outz
2
```

Sample Output

```
okffng-Qwvb
```

Explanation

Each unencrypted letter is replaced with the letter occurring **K** spaces after it when listed alphabetically. Think of the alphabet as being both case-sensitive and circular; if **K** rotates past the end of the alphabet, it loops back to the beginning (i.e.: the letter after **z** is **a**, and the letter after **Z** is **A**).

Selected Examples:

- m** (ASCII 109) becomes **o** (ASCII 111).
- i** (ASCII 105) becomes **k** (ASCII 107).
- `-` remains the same, as symbols are not encoded.
- O** (ASCII 79) becomes **Q** (ASCII 81).
- z** (ASCII 122) becomes **b** (ASCII 98); because **z** is the last letter of the alphabet, **a** (ASCII 97) is the next letter after it in lower-case rotation.

[f](#) [t](#) [in](#)

Submissions: 42945

Max Score: 15

Difficulty: Easy

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Current Buffer (saved locally, editable)  

C++ 

 

```
1 #include <cmath>
2 #include <cstdio>
3 #include <vector>
4 #include <iostream>
5 #include <algorithm>
6 using namespace std;
7
8 int main(){
9     int n;
10    cin >> n;
11    string s;
12    cin >> s;
13    int k;
14    cin >> k;
15    k %= 26;
16
17    for (int i = 0; i < n; i++) {
18        if (!isalpha(s[i])) {
19            continue;
20        }
21
22        if ((isupper(s[i]) && s[i] + k > 'Z') || (islower(s[i]) && s[i] + k > 'z')) {
23            s[i] -= 26;
24        }
25
26        s[i] += k;
27    }
28    cout << s << "\n";
29    return 0;
30 }
31
```

Line: 1 Col: 1

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