D. A and B and Interesting Substrings

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

A and B are preparing themselves for programming contests.

After several years of doing sports programming and solving many problems that require calculating all sorts of abstract objects, A and B also developed rather peculiar tastes.

A likes lowercase letters of the Latin alphabet. He has assigned to each letter a number that shows how much he likes that letter (he has assigned negative numbers to the letters he dislikes).

B likes substrings. He especially likes the ones that start and end with the same letter (their length must exceed one).

Also, A and B have a string s. Now they are trying to find out how many substrings t of a string s are interesting to B (that is, t starts and ends with the same letter and its length is larger than one), and also the sum of values of all letters (assigned by A), *except for the first and the last one* is equal to zero.

Naturally, A and B have quickly found the number of substrings t that are interesting to them. Can you do it?

Input

The first line contains 26 integers $x_a, x_b, ..., x_z$ ($-10^5 \le x_i \le 10^5$) — the value assigned to letters $a, b, c, ..., z$ respectively.

The second line contains string s of length between 1 and 10^5 characters, consisting of Lating lowercase letters— the string for which you need to calculate the answer.

Output

Print the answer to the problem.

Examples

input
1 1 -1 1 1 1 1 1 1 1 1 1 1 1 7 1 1 1 8 1 1 1 1 1 1 xabcab
output
2

input
1 1 -1 1 1 1 1 1 1 1 1 1 1 1 7 1 1 1 8 1 1 1 1 1 1 aaa
output
2

Note

In the first sample test strings satisfying the condition above are $abca$ and $bcab$.

In the second sample test strings satisfying the condition above are two occurences of aa.