F: Valid Parentheses

For your API exam at Politecnico di Milano, this year you're given the following problem. Given a string S consisting of lowercase letters 'a'-'z', we would like to convert each character to either '(' or ')', such that:

- It is a valid (or balanced) parenthesis string.
- For each pair of corresponding '(' and ')', they are both from the same lowercase letter.

For example, if $S =$ `aabaab`, then `(()(()))` is a valid conversion. However, neither `()()()` nor `((((` are valid conversions.

In this task, you have to **count** the number of substrings $S[i...j]$ of the given string S, such that for $S[i...j]$ there exists a valid conversion.

Input

The input consists of a single line, containing string S.

Output

Output a number indicating the number of substrings that have a valid conversion.

Constraints

- $1 \leq |S| \leq 10^6$, where $|S|$ is the length of string S.

Scoring

Your program will be tested against several testcases, and will be considered **correct** only if it will solve all of them correctly.

Examples

input	output
aabaab	4
abcabcabc	0
aabbcc	6