

String Compression

Joseph and Javran are making a contest for the apes. During the process they have to communicate frequently with each other. Since they are not fully evolved as humans, they cannot speak properly. So they have to transfer messages using postcards of small sizes.

To save space on the small postcards, they devise a not-so-uncommon string compression algorithm:

- If a character, ch , occurs $n(> 1)$ times in a row, then it will be represented by $\{ch\}\{n\}$, where $\{x\}$ is the value of x . For example, if the substring is a sequence of 4 'a' ("aaaa"), it will be represented as "a4".
- If a character, ch , occurs exactly one time in a row, then it will be simply represented as $\{ch\}$. For example, if the substring is "a", then it will be represented as "a".

Help Joseph to compress a message, msg , which will be sent to Javran.

Input

First, and only, line contains a string, msg , representing the message.

Output

Print the compressed message.

Constraints

- $1 \leq length(msg) \leq 10^5$
- msg consists of lowercase Latin characters ('a'-'z') only.

Sample Input #00

abcaaabbb

Sample Output #00

abca3b3

Sample Input #01

abcd

Sample Output #01

abcd

Sample Input #02

aaabaaaaccaaaba

Sample Output #02

a3ba4c2a4ba

Explanation

Sample Case #00: $msg = "abcaaabbb"$. Here first 3 characters occurs exactly once, and rest of them occur 3 times in a sequence.

Sample Case #01: $msg = "abcd"$. As there is no multiple consecutive occurrence of any character, compressed message will be same as original one.

Sample Case #02: $msg = "aaabaaaaccaaaba"$. In first 3 occurrence 'a' is repeated 4 times, while in last occurrence only one a is there. While 'c' occurs two times, and 'b' occurs one time in both occurrence.

