Problem A. Just Change a Word

Input file:	stdin
Output file:	stdout
Time limit:	2 seconds
Memory limit:	256 megabytes

This problem tells about one of the methods of inventing new programming problems. One more method can be discovered reading the problem J.

There is one well-known problem, many times occured on very different sites and contests:

You are given a string of lowercase Latin letters. If two neighbour positions contain the same letters, this pair of letters can be removed. Can you get an empty string using such operations?

But you shouldn't solve this problem because, as we already said, it occured many times on different contests. The matter is that Pavel recently demonstrated Alex the easiest way of inventing new programming problems. One should just take a known problem and change one word in its statement. Now you have to solve the problem created just in this way. Here is the problem itself:

You are given a string of lowercase Latin letters. If two neighbour positions contain the *different* letters, this pair of letters can be removed. Can you get an empty string using such operations?

Input

The input contains the only non-empty string of lowercase Latin letters. Its length does not exceed $4 \cdot 10^5$.

Output

Output «YES», if you can get an empty string from the given one using only operation of removing two neighbour different letters. If it's impossible, output «NO».

Examples

stdin	stdout
aabccaba	YES
zzzzzzz	NO

Note

In the first sample, for example, such sequence of operations can be done: "aabccaba" → "accaba" → "acba" → "ac" → "".