

Problem I. Hello, Hello, and Hello

Input file: *standard input*
Output file: *standard output*
Time limit: 2 seconds
Memory limit: 256 mebibytes

A ternary string is a sequence of digits, where each digit is either 0, 1, or 2.

Chiaki has a nonempty ternary string s . Initially, the characters are sorted in non-decreasing order (all 0s appear before all 1s, and all 1s appear before all 2s). Chiaki would like to shuffle the characters such that no two consecutive characters have the same value. For that, she will be using the following operation: choose two integers l and r ($l \leq r$), take characters from position l to position r inclusively, and move them to the end of the string.

Chiaki would like to know the minimum number of operations needed.

Input

There are multiple test cases. The first line of input is an integer T indicating the number of test cases. For each test case:

The first line contains a ternary string s ($1 \leq |s| \leq 10^6$).

It is guaranteed that the sum of all $|s|$ does not exceed 10^6 .

Output

For each test case, output “-1” (without the quotes) if Chiaki can not shuffle the string using the operations described above. Otherwise, output an integer k in the first line: the minimum number of operations needed. On each of the next k lines, output two integers l and r denoting an operation. If there are several possible answers, output any one of them.

Example

standard input	standard output
2	2
001122	4 5
000022	1 1
	-1