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PROBLEMS SUBMIT STATUS STANDINGS CUSTOM TEST

# E. Antichain

time limit per test: 1 second memory limit per test: 256 megabytes input: standard input output: standard output

You have a directed acyclic graph G, consisting of n vertexes, numbered from 0 to n-1. The graph contains n edges numbered from 0 to n-1. An edge with number i connects vertexes i and  $(i+1) \mod n$ , and it can be directed in either direction (from i to  $(i+1) \mod n$ , or vise versa).

Operation  $x \mod y$  means taking the remainder after dividing number x by number y.

Let's call two vertexes u and v in graph G comparable if the graph contains a path either from u to v or from v to u. We'll assume that an antichain is a set of vertexes of graph G, where any two distinct vertexes are not comparable. The size of an antichain is the number of vertexes in the corresponding set. An antichain is maximum if the graph doesn't have antichains of a larger size.

Your task is to find the size of the maximum antichain in graph G.

#### Input

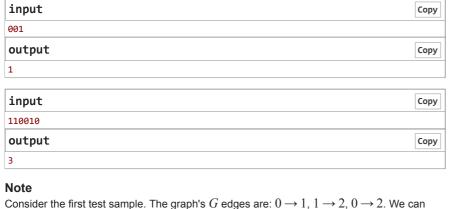
The first line contains the sequence of characters  $s_0s_1...s_{n-1}$   $(2 \le n \le 10^6)$ , consisting of numbers zero and one. The length of the line (number n) corresponds to the number of vertexes and edges in graph G. If character  $s_i$   $(i \ge 0)$  equals 0, then the edge between vertexes i and  $(i+1) \mod n$  is directed from the i-th vertex to the  $(i+1) \mod n$ -th one, otherwise — to the opposite point.

It is guaranteed that the given graph is acyclic.

## Output

Print a single integer — the size of the maximum antichain of graph G.

## **Examples**



Consider the first test sample. The graph's G edges are:  $0 \to 1$ ,  $1 \to 2$ ,  $0 \to 2$ . We can choose the set of vertexes [0] as the maximum antichain. We cannot choose an antichain of larger size.

## → Attention

Package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then value 800 ms will be displayed and used to determine the verdict.

### Codeforces Round #205 (Div. 2)

#### **Finished**

**Practice** 



## → Virtual participation

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Start virtual contest

# → Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

# → Submit?

Language: GNU G++11 5.1.0

Choose

选择文件 未选择任何文件

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

Submit

## → Problem tags

dp graph matchings greedy

No tag edit access



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