

B. Ilya and Queries

time limit per test: 2 seconds
 memory limit per test: 256 megabytes
 input: standard input
 output: standard output

Ilya the Lion wants to help all his friends with passing exams. They need to solve the following problem to pass the IT exam.

You've got string $S = S_1S_2...S_n$ (n is the length of the string), consisting only of characters "." and "#" and m queries. Each query is described by a pair of integers l_i, r_i ($1 \leq l_i < r_i \leq n$). The answer to the query l_i, r_i is the number of such integers i ($l_i \leq i < r_i$), that $S_i = S_{i+1}$.

Ilya the Lion wants to help his friends but is there anyone to help him? Help Ilya, solve the problem.

Input

The first line contains string S of length n ($2 \leq n \leq 10^5$). It is guaranteed that the given string only consists of characters "." and "#".

The next line contains integer m ($1 \leq m \leq 10^5$) — the number of queries. Each of the next m lines contains the description of the corresponding query. The i -th line contains integers l_i, r_i ($1 \leq l_i < r_i \leq n$).

Output

Print m integers — the answers to the queries in the order in which they are given in the input.

Examples

input	
.....	
4	
3 4	
2 3	
1 6	
2 6	
output	
1	
1	
5	
4	

input	
#.###	
5	
1 3	
5 6	
1 5	
3 6	
3 4	
output	
1	
1	
2	
2	
0	

→ 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 #186 (Div. 2)

Finished

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.



Start virtual contest

→ Problem tags

dp implementation

No tag edit access

→ Contest materials

- Announcement 
- Tutorial 

Server time: Nov/30/2016 19:20:58^{UTC+8} (c4).
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