

Problem E. Ilya and Queries

Time limit 2000 ms
Mem limit 262144 kB

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.

Sample 1

Input	Output
..... 4 3 4 2 3 1 6 2 6	1 1 5 4

Sample 2

Input	Output
#.### 5 1 3 5 6 1 5 3 6 3 4	1 1 2 2 0