Bob had set an easy problem. The problem is as follows:

Given a string S, consisting of lowercase letters. (S is indexed from 1). Let $|S|$ denote the length of S, and $S[l, r]$ denote the substring of S from the l-th letter to r-th letter. For example, if $S = abaabab$, then $S[2, 3] = ba$. Let $c(T, S)$ denote the number of occurrences of T in S. Given n substrings of S : $S[l_1, r_1], S[l_2, r_2], S[l_3, r_3], \cdots, S[l_n, r_n]$, the ith one is $S[l_i, r_i].(1 \leqslant l_i \leqslant r_i \leqslant |S|)$.

You should answer q queries, The ith query $(1 \leqslant i \leqslant q)$ is represented by two positive integer L_i, R_i and a string s_i. In the i-th query, you are required to print the value of $\sum_{k=L_i}^{R_i} c(s_i, S[l_k, r_k])$?

Input

The first line contains two positive integer n, q, denoting the number of given substrings and the number of queries.

The second line contains a string S.

In the next n lines , the ith line contains two positive integers $l_i, r_i (1 \leqslant l_i \leqslant r_i \leqslant |S|)$, denoting the starting position and ending position of the ith given substring.

In the next q lines, the ith line contains two integers L_i, R_i, and a string s_i. The meaning was mentioned above.

Output

The output contains q lines. In ith line, you should output the answer of the ith query.

Samples

"'Input 1 3 1 aaa 1 1 2 2 3 3 1 3 a "'

"'Output 1 3 "'

Constraints

For all testcases, it is guaranteed that $1 \leqslant n, q \leqslant 10^5, |S| \leqslant 10^5, 1 \leqslant l_i \leqslant r_i \leqslant S, 1 \leqslant L_i \leqslant R_i \leqslant n, \sum |s_i| \leqslant 10^5$. s_i, S only consists of lowercase letters.

Subtask 1(5 pts):

$1 \leqslant n, q, |S| \leqslant 100$

Subtask 2(10 pts):

$1 \leqslant n, q, |S| \leqslant 2000$

Subtask 3(26 pts):

$\sum_{i=1}^{n} r_i - l_i + 1 \leqslant 200000$

Subtask 4(15 pts): $q = 1$

Subtask 5(44 pts):

No special constraints.