Eerie Strings | CodeChef

All submissions for this problem are available.

Panda loves strings a lot. He has a kind of strange affinity with strings.
He has been trying to solve several problems of strings for quite a while, and got stuck at one of them.

The problem requires Panda to input two strings **A** and **B** each of length **N** and he needs to make set-A for all substrings of string **A**, and similarly set-B for all substrings of string **B**

His dilemma doesn't end here. To add the twist to the problem, a value **K** is also provided to Panda such that he needs to find the answer to four types of queries:-

- **Type 1:** The number of substrings of length **K** which are both in set-A and in set-B
- **Type 2:** The number of substrings of length **K** which are in set-A but not in set-B
- **Type 3:** The number of substrings of length **K** which are in set-B but not in set-A
- **Type 4:** The number of substrings of length **K** which are in either set-A or set-B but not in both

Since, Panda is a weak coder and he needs to solve large number of such queries, help him to solve this problem.

Note

The set will always have distinct substrings.

Input

The first and second lines of the input contain string **A** and string **B** respectively.
The third line contains an integer **Q** denoting the number of queries.
Thereafter, **Q** lines follow where each line is having two values as input in the form of query.

Each query can be represented as

X K

Where **X** denotes the type of query
and **K** denotes the length of the substrings.

Output

For each of the **Q** queries, you need to output answer on a separate line.

Constraints

- **1 <= |A|,|B| <= 5 * 10^4**
- **1 <= Q <= 10^5**

- **1 <= X <= 4**
- **1 <= K <= min(|A|,|B|)**

Example

```
Input:

abab
baba
4
1  2
2  4
3  2
4  4

Output:

2
1
0
2
```

Explanation

You are provided with strings abab and baba.

All possible substrings of A in set 1 are { a, b, ab, ba , aba, bab , abab }.

All possible substrings of B in set 2 are { a, b , ab , ba , aba , bab , baba }.

We have four queries.

1. First one requires to output the number of substrings of length 2 which are in both set-A and set-B. We have {ab,ba} as required substrings . The answer is 2.
2. Second one requires to output the number of substrings of length 4 which are in set-A but not in set-B. We have {abab} as required substring. The answer is 1.
3. Third one requires to output the number of substrings of length 2 which are in set-B but not in set-A. As, all of 2 length substrings in both the sets are same, the answer is 0.
4. Fourth one requires to output the number of substrings of length 4 which are in set-A or in set-B but not in both. We have {abab, baba} as required substrings. The answer is 2.

Author:	codaitya
Tags:	codaitya

Date Added:	5-03-2016
Time Limit:	1 sec
Source Limit:	50000 Bytes
Languages:	C, CPP 4.3.2, CPP 4.9.2, CPP14, JAVA

SUCCESSFUL SUBMISSIONS