



How Many Substrings?



by SkyDec

Problem

Submissions

Leaderboard

Discussions

Editorial

Consider a string of n characters, s , of where each character is indexed from 0 to $n - 1$.

You are given q queries in the form of two integer indices: *left* and *right*. For each query, count and print the number of different substrings of s in the inclusive range between *left* and *right*.

Note: Two substrings are *different* if their sequence of characters differs by at least one. For example, given the string $s = \text{aab}$, substrings $s_{[0,0]} = \text{a}$ and $s_{[1,1]} = \text{a}$ are the same but substrings $s_{[0,1]} = \text{aa}$ and $s_{[1,2]} = \text{ab}$ are different.

Input Format

The first line contains two space-separated integers describing the respective values of n and q .

The second line contains a single string denoting s .

Each of the q subsequent lines contains two space-separated integers describing the respective values of *left* and *right* for a query.

Constraints

- $0 \leq \text{left} \leq \text{right} \leq n - 1$
- String s consists of lowercase English alphabetic letters (i.e., a to z) only.

Subtasks

- For **30%** of the test cases, $1 \leq n, q \leq 100$
- For **50%** of the test cases, $1 \leq n, q \leq 3000$
- For **100%** of the test cases, $1 \leq n, q \leq 10^5$

Output Format

For each query, print the number of different substrings in the inclusive range between index *left* and index *right* on a new line.

Sample Input 0

```
5 5
aabaa
1 1
1 4
1 1
1 4
0 2
```

Sample Output 0

```
1
8
1
8
5
```

Explanation 0

Given $s = \text{aabaa}$, we perform the following $q = 5$ queries:

- 1 1: The only substring of a is itself, so we print **1** on a new line.
- 1 4: The substrings of $abaa$ are $a, b, ab, ba, aa, aba, baa,$ and $abaa$, so we print **8** on a new line.
- 1 1: The only substring of a is itself, so we print **1** on a new line.
- 1 4: The substrings of $abaa$ are $a, b, ab, ba, aa, aba, baa,$ and $abaa$, so we print **8** on a new line.
- 0 2: The substrings of aab are $a, b, aa, ab,$ and aab , so we print **5** on a new line.

Expert

Submitted 849 times
Max Score 100**Need Help?**[View Discussions](#)[View Editorial Solution](#)[View Top Submissions](#)**Rate This Challenge:**[Download problem statement](#)[Download sample test cases](#)[Suggest Edits](#)

Current Buffer (saved locally, editable)

Python 3



```
1 #!/bin/python3
2
3 import sys
4
5
6 n,q = input().strip().split(' ')
7 n,q = [int(n),int(q)]
8 s = input().strip()
9 for a0 in range(q):
10     left,right = input().strip().split(' ')
11     left,right = [int(left),int(right)]
12     # your code goes here
13
```

Line: 1 Col: 1

[Upload Code as File](#)☐ Test against custom input

Run Code

Submit Code

Join us on IRC at [#hackerrank](#) on freenode for hugs or bugs.

[Contest Calendar](#) | [Interview Prep](#) | [Blog](#) | [Scoring](#) | [Environment](#) | [FAQ](#) | [About Us](#) | [Support](#) | [Careers](#) | [Terms Of Service](#) | [Privacy Policy](#) | [Request a Feature](#)