 Practice   Compete   Jobs   Rank   Leaderboard

Dashboard > Algorithms > Strings > How Many Substrings?

Badge Progress (Details)

Points: 126 Rank: 270087

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 $s =$ aab , substrings $s_{[0,0]} =$ a and $s_{[1,1]} =$ a are the same but substrings $s_{[0,1]} =$ aa and $s_{[1,2]} =$ 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

- $0 \le left \le right \le n-1$

- String s consists of lowercase English alphabetic letters (i.e., a to z) only.

Subtasks

- For 30% of the test cases, $1 \le n, q \le 100$

- For 50% of the test cases, $1 \le n, q \le 3000$

- For 100% of the test cases, $1 \le n, q \le 10^5$

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 $s =$ aabaa , we perform the following $q = 5$ queries:

1. `1 1`: The only substring of a is itself, so we print 1 on a new line.

2. `1 4`: The substrings of abaa are a , b , ab , ba , aa , aba , baa , and abaa , so we print 8 on a new line.

3. `1 1`: The only substring of a is itself, so we print 1 on a new line.

4. `1 4`: The substrings of abaa are a , b , ab , ba , aa , aba , baa , and abaa , so we print 8 on a new line.

5. `0 2`: The substrings of aab are a , b , aa , ab , and aab , so we print 5 on a new line.

f   🐦   in

Submissions: 1086

Max Score: 100
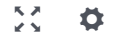Difficulty: Expert

Rate This Challenge:
☆ ☆ ☆ ☆ ☆

More

| Current Buffer (saved locally, editable)   ⑂ 🕚 | | Java 7 ⌄ | ⤢ ⚙ |

```java
1  import java.io.*;
2  import java.util.*;
3  import java.text.*;
4  import java.math.*;
5  import java.util.regex.*;
6
7  public class Solution {
8
9      public static void main(String[] args) {
10         Scanner in = new Scanner(System.in);
11         int n = in.nextInt();
12         int q = in.nextInt();
13         String s = in.next();
14         for(int a0 = 0; a0 < q; a0++){
15             int left = in.nextInt();
16             int right = in.nextInt();
17             // your code goes here
18         }
19     }
20 }
21
```

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 | Blog | Scoring | Environment | FAQ | About Us | Support | Careers | Terms Of Service | Privacy Policy | Request a Feature