Geometric Trick

locked

by philipsweng

Problem Submissions Leaderboard Discussions Editorial

Submissions will no longer be placed on the leaderboard. You may still attempt this problem for practice.

Consider a string, s, of length n consisting of characters in the set $\{a, b, c\}$. We want to know the number of different (i, j, k) triples (where $0 \leq i, j, k < n$) satisfying the following two conditions:

- $s[i] = \texttt{"a"}$, $s[j] = \texttt{"b"}$ and $s[k] = \texttt{"c"}$
- $(j+1)^2 = (i+1)(k+1)$

We consider two triples, (i, j, k) and (x, y, z), to be *different* if and only if $i \neq x$ or $j \neq y$, or $k \neq z$.

Given n and s, find and print the number of different (i, j, k) triples.

Input Format

The first line contains an integer denoting n (the length of string s).
The second line contains a string of n characters denoting s.

Constraints

- $1 \leq n \leq 5 \times 10^5$
- Each character in s is in the set $\{a, b, c\}$.

Output Format

Print an integer denoting the number of triples in string s.

Sample Input 0

```
15
ccaccbbbacccccа
```

Sample Output 0

```
2
```

Explanation 0

String $s = \texttt{"ccaccbbbacccccа"}$ has two triples:

1. $\{2, 5, 11\}$ satisfies both our constraints:
   - $s[2] = \texttt{"a"}$, $s[5] = \texttt{"b"}$, and $s[11] = \texttt{"c"}$
   - $(5+1)^2 = (2+1) \times (11+1)$
2. $\{8, 5, 3\}$ satisfies both our constraints:

- $s[8] =$ **"a"**, $s[5] =$ **"b"**, and $s[3] =$ **"c"**
- $(5+1)^2 = (8+1) \times (3+1)$

Thus, we print **2** as our answer

Submissions: 3308
Max Score: 36.45
Difficulty: Hard

Rate This Challenge:

More

Current Buffer (saved locally, editable) C#

```
using System;
using System.Collections.Generic;
using System.IO;
using System.Linq;
class Solution {

    static int geometricTrick(string s){
        // Complete this function
    }

    static void Main(String[] args) {
        int n = Convert.ToInt32(Console.ReadLine());
        string s = Console.ReadLine();
        int result = geometricTrick(s);
        Console.WriteLine(result);
    }
}

```

Line: 1 Col: 1

Upload Code as File Test against custom input Run Code Submit Code