Leonardo and the Substring

locked

by raman_1729

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Leonardo loves puzzles involving strings, but he's just found a problem that has him stumped! Help him solve the following challenge:

Given a binary string, S, composed of only 0's and 1's, find and print the total number of substrings of S which *do not contain* a 00 or 11.

Input Format

The first line contains an integer, T (the number of test cases).
The T subsequent lines of test cases each contain a string, S, composed only of 0's and 1's.

Constraints

- $1 \leq T \leq 100$
- $1 \leq |S| \leq 10^5$

Output Format

For each test case, print the total number of substrings of S having no consecutive zeroes or ones (i.e.: not containing 00 or 11).

Sample Input

```
4
1010
100
0000
11111
```

Sample Output

```
10
4
4
5
```

Explanation

Test Case 0: $S_0 = 1010$
Our set of substrings $= \{\{1\}, \{0\}, \{1\}, \{0\}, \{10\}, \{01\}, \{10\}, \{101\}, \{010\}, \{1010\}\}$
There are 10 possible substrings, none of which have consecutive 0's or 1's. Thus, we print 10 on a new line.

Test Case 1: $S_1 = 100$
Our set of substrings $= \{\{1\}, \{0\}, \{0\}, \{10\}, \{00\}, \{100\}\}$
There are 6 possible substrings, but 2 of them ($\{00\}$ and $\{100\}$) have consecutive zeroes. Thus, we print the result of $6 - 2$, which is 4, on a new line.

Submissions: 597
Max Score: 20
Difficulty: Easy

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Current Buffer (saved locally, editable)

C++

```
#include <cmath>
#include <cstdio>
#include <vector>
#include <iostream>
#include <algorithm>
using namespace std;


int main() {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    return 0;
}

```

Line: 1 Col: 1

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