CCC '20 S4 - Swapping Seats

Time limit: 1.0s **Memory limit:** 512M

Canadian Computing Competition: 2020 Stage 1, Senior #4

There are N people sitting at a circular table for a long session of negotiations. Each person belongs to one of the three groups: `A`, `B`, or `C`. A group is *happy* if all of its members are sitting contiguously in a block of consecutive seats. You would like to make all groups happy by some sequence of *swap* operations. In each swap operation, two people exchange seats with each other. What is the minimum number of swaps required to make all groups happy?

Input Specification

The input consists of a single line containing N $(1 \leq N \leq 1\,000\,000)$ characters, where each character is `A`, `B`, or `C`. The i-th character denotes the group of the person initially sitting at the i-th seat at the table, where seats are numbered in clockwise order.

For 4 of the 15 available marks, the input has no C characters and $N \leq 5\,000$.

For an additional 4 of the 15 available marks, the input has no C characters.

For an additional 4 of the 15 available marks, $N \leq 5\,000$.

Output Specification

Output a single integer, the minimum possible number of swaps.

Sample Input

```
BABCBCACCA
```

Output for Sample Input

```
2
```

Explanation of Output for Sample Input

In one possible sequence, the first swap results in the seating layout `AABCBCBCCA`. After the second swap, the layout is `AABBBCCCCA`.