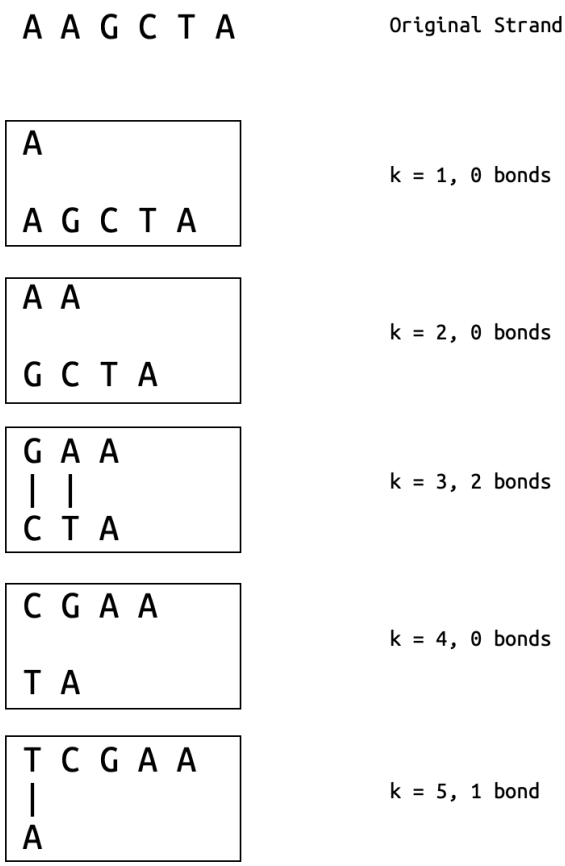
DNA Dream
Problem ID: dna

Giannis is in an introductory biology class. Today he's learning about DNA bonding. He knows the basics: DNA is composed of nucleotides, and each nucleotide is composed of one of four nucleobases: adenine [A], thymine [T], cytosine [C], or guanine [G]. Additionally, he knows there are some base pairing rules for hydrogen bonding: A bonds with T, and C with G.

Unfortunately, Giannis didn't pay attention to the rest of class, and moreover has fallen asleep. In his dream, he found a sequence of a single strand of DNA, represented as a string s consisting of uppercase English characters 'A', 'T', 'C', or 'G', and he also noticed that in this dream world he could fold the single strand of DNA onto itself, with some folds leading to more bonds than others[1]. There are $n-1$ possible folds for a strand of length n.

For example, take the sequence AAGCTA.



The 5 possible folds are shown above, along with the number of bonds for that fold. You can uniquely describe a fold by the number of bases on the left side of the fold, denoted as k in the diagram above. Note that $1 \leq k \leq n-1$.

Giannis thinks he has to find the best fold of the DNA strand that maximizes the number of self-bonds in order to wake up from his dream. Help him find the best fold possible!

[1] This isn't really how DNA works in real life, but it is a dream, after all.

Input

Your program will receive input from standard input.

The first line of the input contains a single integer n.

The second line of the input contains s, the string consisting of n characters 'A', 'T', 'C', or 'G', representing the sequence of the single strand of DNA.

Output

Your program should write to standard output.

Print exactly one line containing two integers, k and m. m is the maximum number of bonds that can be achieved, and k is the number of bases on the left side of the fold that achieves that maximum number of bonds. Recall that $1 \leq k \leq n-1$. If there are multiple folds with the same maximum number of bonds, output the fold with the smallest k.

Constraints

- $2 \leq n \leq 3 \cdot 10^5$

Subtasks

You will get points for each subtask when you pass all of the testcases of the subtask.

1. $n \leq 10^3$ (33 points)
2. No additional constraints (67 points)

Sample Explanation

Sample Input 1 is the sequence described in the statement above. The optimal fold is $k = 3$, achieving 2 bonds.

Sample Input 1	Sample Output 1
6 AAGCTA	3 2

Sample Input 2	Sample Output 2
7 GGGGGAT	6 1