
Space Cleaner

You are finally in orbit around the sun! From your scanner, you spot a lot of debris from old spacecraft that could jeopardize future exploration operations if the Kessler Syndrome threshold is reached.

On board your ship are two probes that can capture waste, and you want to perfectly balance the load between these two probes to optimize their performance.

The space debris in your orbit is spread around the sun, and is classified into several types. Each probe will be sent to one half of the orbit, and you must ensure that each probe catches the same number of objects of each type. It's up to you to find out where you can cut the orbit in half to make sure the objects are evenly distributed.

Data

Input

Line 1 : an even integer N between 2 and 500,000, the size of the orbit

Line 2: a string of N capital letters representing the debris in your orbit, in order. The debris corresponding to the last character is adjacent to that of the first character.

Output

The number of different ways you have to split the orbit into two **continuous** subparts containing the same debris. If no balanced split exists, display 0.

Examples

Example 1

For the following orbit:

8
ABCBCAAA

There are two ways to divide the orbit into two halves containing the same elements, so your code will need to display 2.

In each solution, 1 will be noted for a waste that will be absorbed by the first probe, and 2 for a waste absorbed by the other.

Orbit: ABCBCAAA

Solution 1: 22211112

Solution 2: 11122221

In each of the two proposed solutions, each half contains two pieces of Type A debris, one piece of Type B debris and one piece of Type C debris.

Example 2

For the following orbit:

14

ABACABBBBCBABBB

Your code should display 4, because there are 4 valid distributions containing the same amount of A, B and C on both sides:

Orbit: ABACABBBBCBABBB

Solution 1: 21111111222222

Solution 2: 22221111111222

Solution 3: 12222222111111

Solution 4: 11112222222111