- Please use Python 3.8 to complete this task

You are given a string S consisting of N lowercase English letters. In how many ways can we split S into two non-empty parts, such that in at least one part the letter ‘x’ and the letter ‘y’ occur the same number of times?

Write a function:

```
def solution(S):
```

That, given a string `S` of length `N`, returns the number of splits `S` satisfying the condition above.

Example:

1. Given S = `ayxbx`, the function should return 3. There are four possible splits of S: `a/yxbx`, ay/xbx`, `ayx/bx` and `ayxb/x`. Only `ay/xbx` does not meet this condition therefore the answer is 3. Note that in ‘a/yxbx` the left part has 0 occurences of ‘x’ and ‘y’, so it counts as a correct split.
2. Given S = `xzzzy`, the function should return 0.
3. Given `toyxmy`, the function should return 5.
4. Given S = `apple`, the function should return 4.

Write an efficient algorithm for the following assumptions:

- N is an integer with the range [2 – 200,000]
- String S consists of only lowercase letters (a-z)