541. Reverse String II

👍 134   👎 359   ♡   ▾

Approach #1: Direct [Accepted]

Intuition and Algorithm

We will reverse each block of `2k` characters directly.

Each block starts at a multiple of `2k` : for example, `0, 2k, 4k, 6k, ...` . One thing to be careful about is we may not reverse each block if there aren't enough characters.
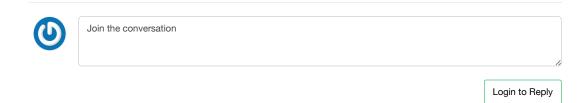
To reverse a block of characters from `i` to `j` , we can swap characters in positions `i++` and `j--` .

`Java` `Python`   📋 Copy

```java
class Solution {
    public String reverseStr(String s, int k) {
        char[] a = s.toCharArray();
        for (int start = 0; start < a.length; start += 2 * k) {
            int i = start, j = Math.min(start + k - 1, a.length - 1);
            while (i < j) {
                char tmp = a[i];
                a[i++] = a[j];
                a[j--] = tmp;
            }
        }
        return new String(a);
    }
}
```

Complexity Analysis

- Time Complexity: $O(N)$, where N is the size of `s` . We build a helper array, plus reverse about half the characters in `s` .

- Space Complexity: $O(N)$, the size of `a` .

Analysis written by: @awice (https://leetcode.com/awice).

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