

1.5 Write a method to replace all spaces in a string with '%20'.

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SOLUTION

The algorithm is as follows:

1. Count the number of spaces during the first scan of the string.
2. Parse the string again from the end and for each character:
 - » If a space is encountered, store "%20".
 - » Else, store the character as it is in the newly shifted location.

```
1 public static void ReplaceFun(char[] str, int length) {
2     int spaceCount = 0, newLength, i = 0;
3     for (i = 0; i < length; i++) {
4         if (str[i] == ' ') {
5             spaceCount++;
6         }
7     }
8     newLength = length + spaceCount * 2;
9     str[newLength] = '\0';
10    for (i = length - 1; i >= 0; i--) {
11        if (str[i] == ' ') {
12            str[newLength - 1] = '0';
13            str[newLength - 2] = '2';
14            str[newLength - 3] = '%';
15            newLength = newLength - 3;
16        } else {
17            str[newLength - 1] = str[i];
18            newLength = newLength - 1;
19        }
20    }
21 }
```