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Reverse String

Problem Statement:

Write a function that reverses a string. The input string is given as an array of characters `s` . You must do this by modifying the input array in-place with `O(1)` extra memory.

Examples:

Example 1:

Input:s = ["h","e","l","l","o"]

Output:["o","l","l","e","h"]

Example 2:

Input:s = ["H","a","n","n","a","h"]

Output:["h","a","n","n","a","H"]

Approach: Two Pointer Technique

Initialize two pointers, one at the start and one at the end of the array.

Swap the characters at both pointers.

Move the pointers towards the center until they meet.

Time Complexity:

•

Time Complexity = O(n)

Space Complexity:

•

Space Complexity = O(1)

Dry Run

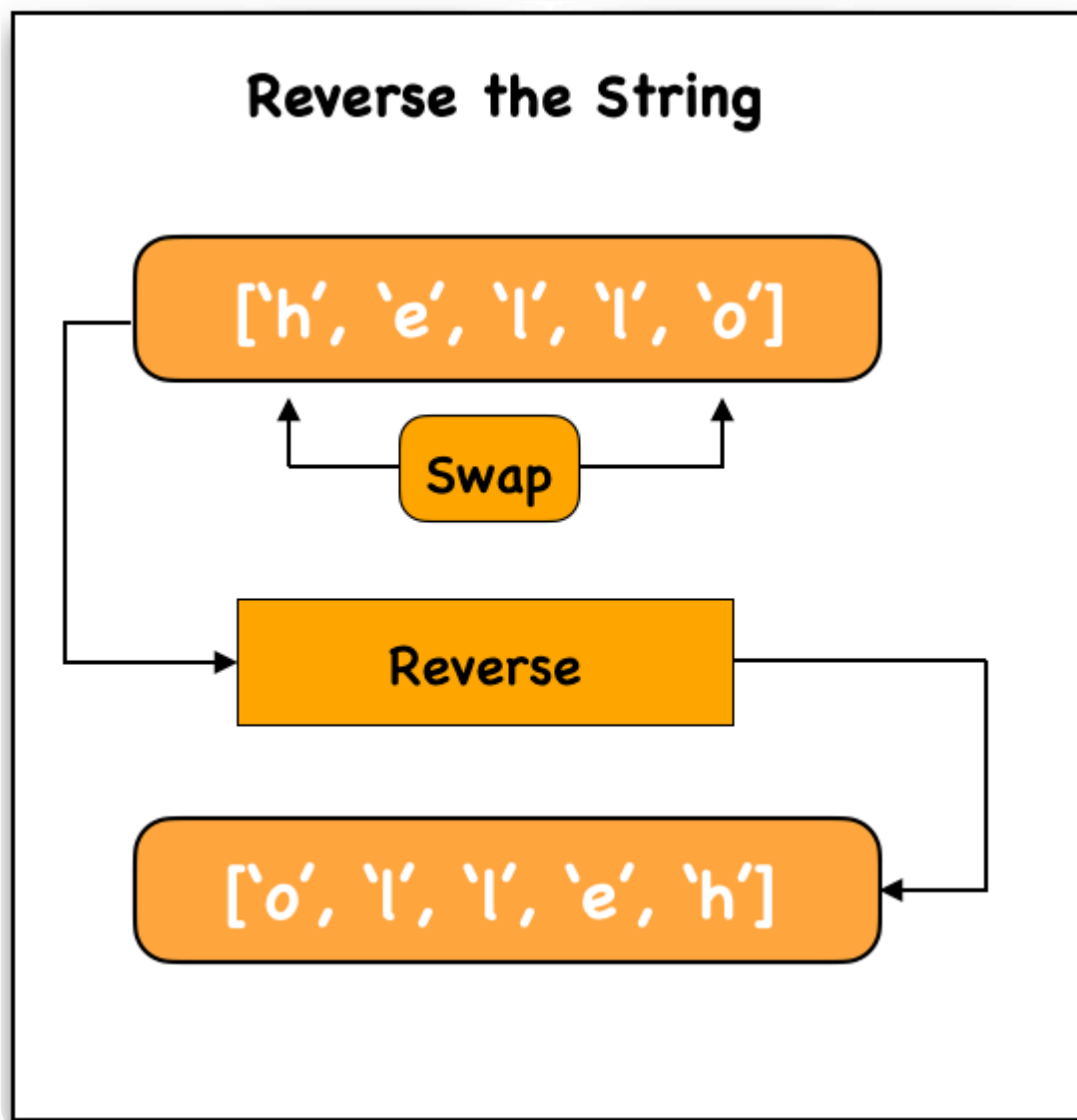**Input:** `s = ["h", "e", "l", "l", "o"]`

```
len = 5, halfLen = 2

i = 0 → swap s[0] and s[4] → ["o", "e", "l", "l", "h"]
i = 1 → swap s[1] and s[3] → ["o", "l", "l", "e", "h"]
```

Output: `Result: ["o", "l", "l", "e", "h"]`

Visualisation:

JavaScript   Python   Java   C++   C   C#

```
var reverseString = function(s) {
    let len = s.length;
    let halfLen = Math.floor(len / 2);

    for (let i = 0; i < halfLen; i++) {
        let temp = s[i];
        s[i] = s[len - i - 1];
        s[len - i - 1] = temp;
    }
};
```

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Reverse String - DSA Notes

Reverse String - DSA Notes

19 of 186 lessons   **10% complete**

Remove Duplicates </>

45m 5s   Resources 🗁   ✅

28m 16s

Merge Sorted Arrays </>

41m 33s   Resources 📂   ✅

Move Zeros </>

26m 31s   Resources 📂   ⬛

Max Consecutive Ones </>

16m 29s   Resources 📂   ⬛

Missing Number </>

16m 55s   Resources 📂   ⬛

Single Number </>

19m 22s   Resources 📂   ⬛

Recursion - Easy/Medium

Searching & Sorting - Easy/Medium