

Sorting The Array

When you receive an unsorted array and decide to sort it before applying the two-pointer technique, the overall time complexity is dominated by the sorting step.

- **Sorting:** This typically takes $O(n \log n)$ time.
- **Two Pointer Traversal:** Once sorted, scanning the array with two pointers takes $O(n)$ time.

Thus, the overall time complexity becomes:

$$O(n \log n) + O(n) = O(n \log n)$$

If the array is already sorted, then you only pay the $O(n)$ cost for the two-pointer traversal, without the additional $O(n \log n)$ sorting cost.

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