Problem Statement: Sorting Strings Lexicographically

Problem Description:

You are required to implement a program that sorts a list of strings lexicographically (alphabetically). Lexicographical order is the generalization of the way words are alphabetically ordered in dictionaries. In this task, your program should take an array of strings and arrange them in ascending lexicographical order, just like words are ordered in a dictionary.

Requirements:

1. **Input**:
    - An array of `N` strings, where each string is composed of lowercase and/or uppercase English letters.
    - The value of `N` (number of strings) can be a positive integer.
    - Example: `["apple", "Banana", "grape", "cherry", "Apricot"]`.
2. **Output**:
    - The program should return the array of strings sorted in lexicographical order.
    - Example Output: `["Apricot", "Banana", "apple", "cherry", "grape"]`.
3. **Case Sensitivity**:
    - The sorting should be case-insensitive. However, if two strings are identical except for their case (e.g., "apple" and "Apple"), they should maintain their original order.
4. **Constraints**:
    - The maximum length of each string is `100` characters.
    - The maximum number of strings `N` can be `10,000`.
5. **Performance Considerations**:
    - Implement an efficient sorting algorithm to handle large inputs.
    - Measure the time taken by the sorting function to ensure it performs within acceptable limits for large datasets.
6. **Test Cases**:
    - **Case 1**: Input: `["orange", "Apple", "banana", "Mango"]`
        - Output: `["Apple", "banana", "Mango", "orange"]`
    - **Case 2**: Input: `["Zebra", "apple", "apple", "zebra"]`
        - Output: `["apple", "apple", "Zebra", "zebra"]`
    - **Case 3**: Input: `["kiwi", "Kiwi", "KIWI", "kIwI"]`
        - Output: `["KIWI", "Kiwi", "kIwI", "kiwi"]`

Additional Instructions:

- Implement the solution in C.
- Ensure the program reads input strings, sorts them using a lexicographical sort, and then outputs the sorted list.
- Additionally, measure and display the time taken to perform the sorting operation.