Chapter 02 Assignments (Medium difficulty)

Here's a list of assignments for implementing different sort algorithms on a list of integers using structural programming:

1. **Bubble Sort:** Implement the bubble sort algorithm to sort a list of integers in ascending order. Print the sorted list.
2. **Selection Sort:** Implement the selection sort algorithm to sort a list of integers in ascending order. Print the sorted list.
3. **Insertion Sort:** Implement the insertion sort algorithm to sort a list of integers in ascending order. Print the sorted list.
4. **Merge Sort:** Implement the merge sort algorithm to sort a list of integers in ascending order. Print the sorted list.
5. **Quick Sort:** Implement the quick sort algorithm to sort a list of integers in ascending order. Print the sorted list.
6. **Heap Sort:** Implement the heap sort algorithm to sort a list of integers in ascending order. Print the sorted list.
7. **Counting Sort:** Implement the counting sort algorithm to sort a list of integers in ascending order. Print the sorted list.
8. **Radix Sort:** Implement the radix sort algorithm to sort a list of integers in ascending order. Print the sorted list.
9. **Bucket Sort:** Implement the bucket sort algorithm to sort a list of integers in ascending order. Print the sorted list.
10. **Shell Sort:** Implement the shell sort algorithm to sort a list of integers in ascending order. Print the sorted list.

For each of the above assignments, you can provide a list of integers as the input for the sorting algorithm in your main function. Please implement the algorithm without using any OOP concepts. Please measure the time complexity of each algorithm using different input sizes and compare their performance.