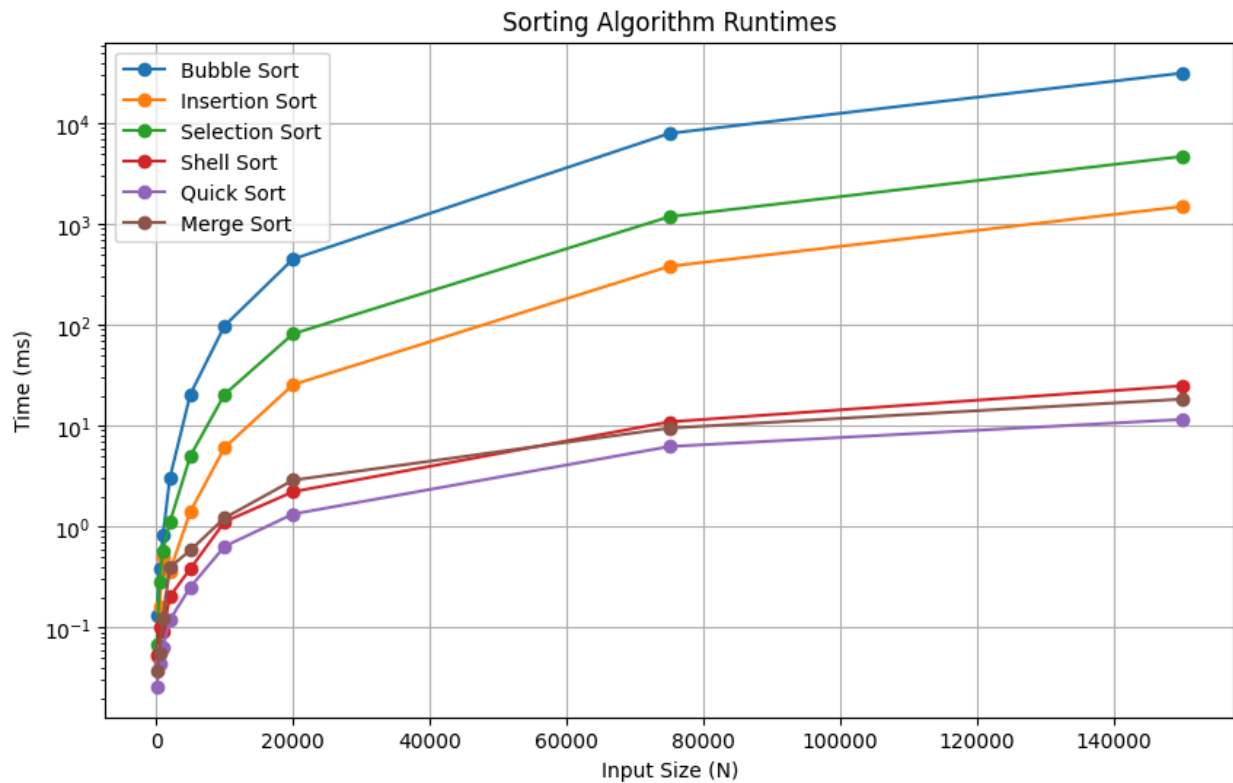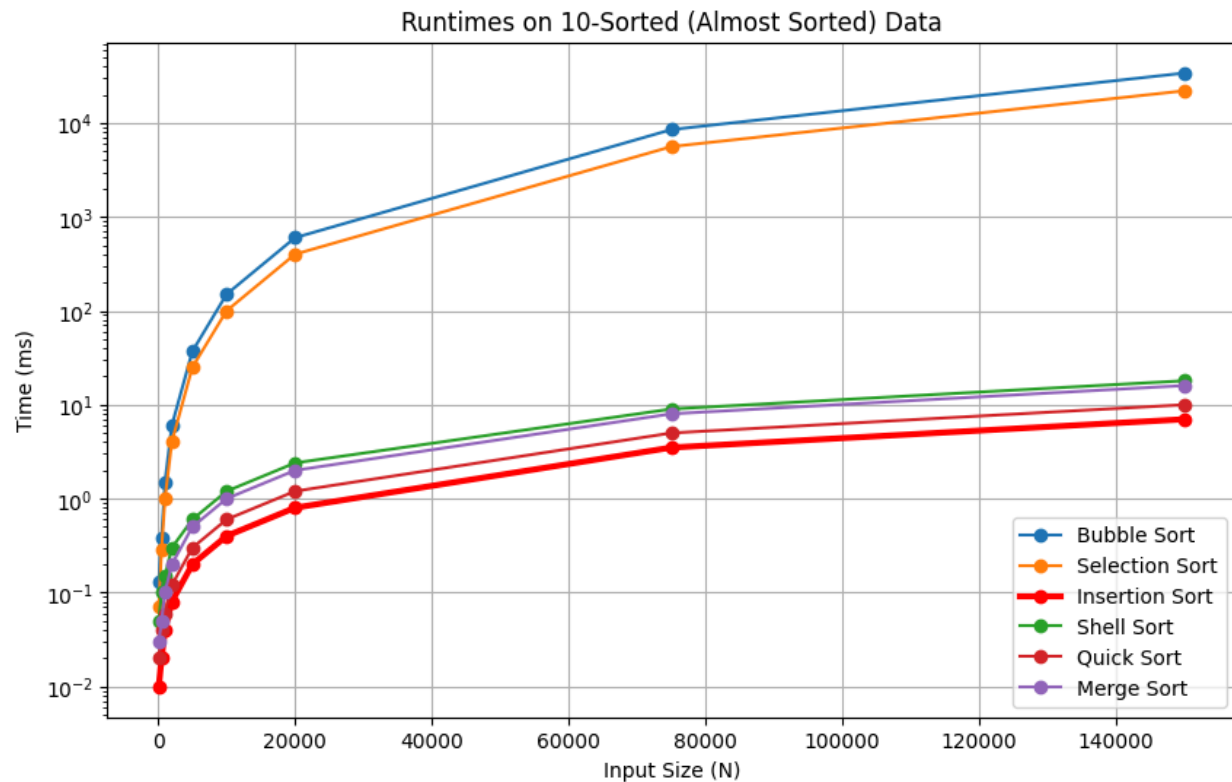Elijah Konkle Questions 9, 10, 12

9) - Graph

I ran into the problem of bubble sort taking so long that it squished everything else in my graph to the bottom of the graph. It was hard to see what was better and things like that. In order to fix this, I simply applied a log scale to my y-axis so that everything would be shown in powers of 10. This was happening because bubble sort is O(N^2), so it was just taking so long.

10) In my experiment, I saw that the divide and conquer algorithms were definitely fast, which was as expected. I said that those would be the fastest (quick sort and merge sort). This is because, since it splits everything up, it should complete the problem faster. I also thought that shell sort would be better than insertion since it is like insertion except numbers get to move much farther spaces in less time. Insertion, selection, and bubble sort were the worst as expected, as well. That is what I ranked them as, too, since they are all very slo,w since they are nested for loops.

12) Graph -

Runtimes on 10-Sorted (Almost Sorted) Data

The ranking did change when using 10 sorted data. This time, insertion sort did very well, and this is because all the elements are close to each other, so it runs close to just N times. The same problem happened, though with bubble sort. I had to apply a log scale to the Y axis so that I could fit everything and make it readable.