CPSC 350 Assignment 6

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For this assignment, I implemented quick sort, insertion sort, and gnome sort, with which I compared the times of these algorithms when running the same 40,000 values as well as the differences between them.

For the results, I have listed them below:

1. Quick Sort: This algorithm was by far the fastest in terms of running and sorting the values. It took 1028.92 milliseconds and this is because the algorithm partitions the data with pivot points, which allows it to sort very quickly.

2. Insertion Sort: This algorithm was not as fast as quick sort because the data was not partially presorted. It ran for 3602.27 milliseconds, but provided if the data was partially presorted, this algorithm would have been the better option to use because it reads all the values in the file before sorting it.

3. Gnome Sort: If you have all the time in the world, this algorithm does its job. It took 10238.01 milliseconds to sort some 40,000 values, but again, it is not the best algorithm because it compares two values and if it's not in the right place (i.e. not sorted), the algorithm will go back to put the value in its correct position.

In conclusion, between the 3 algorithms, they performed differently, but the results were as expected. The algorithms run faster with less data and so, with the 40,000 values in the text document, it takes more time to read and sort the data.