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Assignment 6 Report

This assignment was quite interesting to see the different implementations and routes of sorting algorithms that can be used. We used 5 different sorting algorithms: quick sort, merge sort, selection sort , insertion sort , and bubble sort. We read values from a text file with the first line stating the size of the array and the next lives having its respective values. The text file was unsorted and each of the algorithms had to sort the data while also having indicators for start time and end time of the sorting process. My time was under epoch as you can see the time differences by seconds and milliseconds even.

The text file I used was quite small for testing purposes and each of the algorithms sorted the data perfectly so I found my assignment to be a success. Though the size of the data was optimal for testing purposes unfortunately I could not get an accurate representation of the time differences as the data was so small that each algorithm sorted the data in the same amount of time. I did expect the sorting times to be more drastic than they were as I learnt in class and through resources that there were quite different sorting times for each algorithm.

In terms of programming languages, object oriented programming languages such as C++ and Java are faster and more efficient than interpreted languages such as Python. It is known that Java is the fastest language however C++ is not far behind. The reason for this is OOP languages require less memory stores which allows for faster calculations.

Empirical analysis allows for deep understanding and analysis of the results as well as it can be quite flexible. However potential shortcomings are that empirical analysis can be quite time consuming as well as unpredictable as there are a lot of variables involved.