Homework 4

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Data Structures and Algorithms –CSCE311

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**Analysis:**

I was surprised on how some of the sorting algorithms performed the comparisons of each word of n, especially quick and merge sort. Merge sort can go both ways in time complexity, n^2 or n\*log (n), I honestly thought it would perform n\*log (n) but as the data shows the merge sort leans more towards n^2. Quick sort on the other hand performed quicker than the ranges given with the comparisons of each word, the plausible reasoning of this is probably due to the how the words were sorted and unsorted. It is very fascinating on how you can see through the data that it is sometimes better to scramble your words. I can finally see how situational some of these algorithms are, although I would like to run the built in algorithms to see how to improve on what I have.

**Results:**





**Diagram(s):**

***SORTING ALGORITHM RESULTS OF COMPARISONS OF WORDS OF N***

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***SORTING ALGORITHM RESULTS OF COMPARISONS OF WORDS OF N***

***SORTING ALGORITHM RESULTS OF COMPARISONS OF WORDS OF N***

***TIME COMPLEXITY OF N***

***TIME COMPLEXITY OF N***