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CS 5070

Term Project

For this project I used a MacBook air, with an Intel Core i5 processor. The processor speed is 1.4 GHz and the machine has 4GB of memory.

Complexity analysis, which consists of time efficiency and space efficiency, allows us to make an informed decision when choosing an algorithm to use. Time efficiency refers to how long it takes an algorithm to run, and space efficiency refers to the amount of space that an algorithm uses. This project allowed me to compare the running times of the Bubble Sort and the Selection Sort.

Both algorithms used in this project have a These algorithms have a nested loop, which results in a complexity of O(n2). This means that the performance time is the size of the input data set, squared. It’s easy to see in the graphs as the running time exponentially grows as the array size and number of iterations grow.

Because both algorithms have a complexity of O(n2), they will have similar running times. That was proven by the tests, and can be seen in the tables and graphs below.





