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CSE 3500 – Programming Assignment

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Programming Assignment Write-Up

**Settings:** For this assignment, I’m running the program on my MacBook Pro, with a 2.4Ghz i5 and 8GB 1600Mhz RAM.

**Results:**

|  |  |  |
| --- | --- | --- |
| FileName | BruteForce Runtime | BinarySearch Runetime |
| listNumbers-10.txt (1) |  |  |
| listNumbers-10.txt (2) |  |  |
| listNumbers-100.txt (1) |  |  |
| listNumbers.100.txt (2) |  |  |
| listNumbers-1000.txt (1) |  |  |
| listNumbers-1000.txt (2) |  |  |
| listNumbers-10000.txt (1) |  |  |
| listNumbers-10000.txt (2) |  |  |
| listNumbers-100000.txt (1) |  |  |
| listNumbers-100000.txt (2) |  |  |
| listNumbers-1000000.txt (1) |  |  |
| listNumbers-1000000.txt (2) |  |  |

**Conclusion:**

The choice of algorithm becomes painfully clear as the sample size for a given set of data becomes larger. Although the difference in time is apparent for smaller sample sets, the perceived time elapsed is not particularly large. However, when the program is run for the sets of 100,000 and 1,000,000 sized lists, the time difference between the bruteforce algorithm and the binarysearch algorithm become more apparent, and the faster algorithm becomes the only logical option.

**Code:** Source Code is included in submission as .java file. GitHub public repository for the project: https://github.com/gborges0727/CSE3500-ProgrammingAssignment