

ECE368 Project2 Report

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	I/O	Sorting
1000	0	0
10000	0.000000e+00	9.400000e-01
100000	4.000000e-02	1.084200e+02
1000000	\	\

The I/O time and sorting time grows 100 times when the number of data grows 10 times. So the time complexity of my sorting algorithm is $O(n^2)$.

The space complexity of my program is $O(n * (\log n)^2)$. The space is the k sequence, the pyramid has the height and the width of $\log n$. So the space complexity is $O(n * (\log n)^2)$.

The project1 use array. However for project2, we use linked lists, which requires to traverse the node when locating the nodes. So, for project 2, it requires more time complexity.