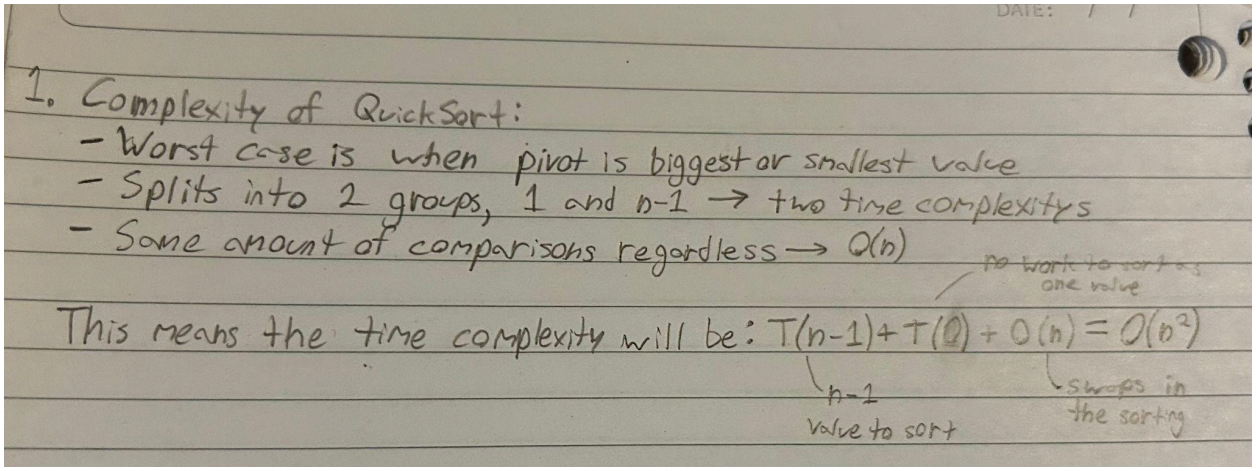
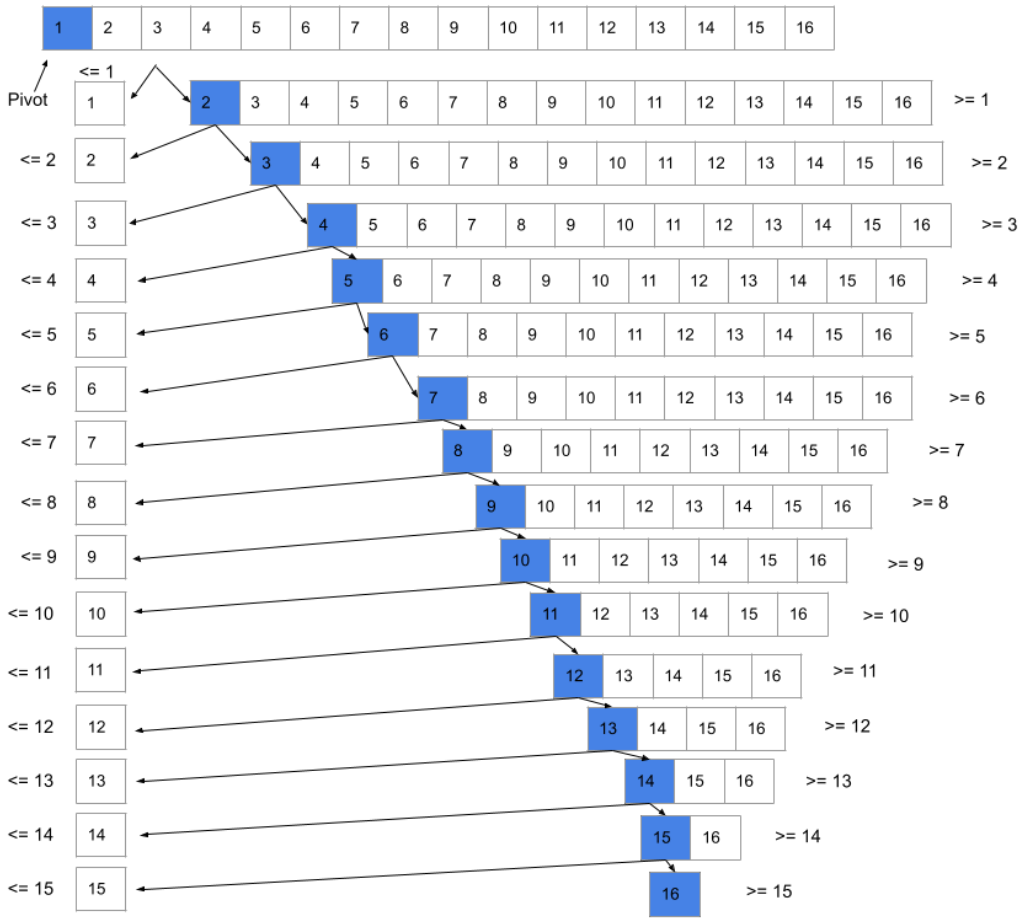
1.



2.



4. The chart did follow my complexity analysis, as it matched a quadratic increase over the amount of elements n. This means that the complexity in the worst case of quicksort is $O(n^2)$ as expected from the derivation.