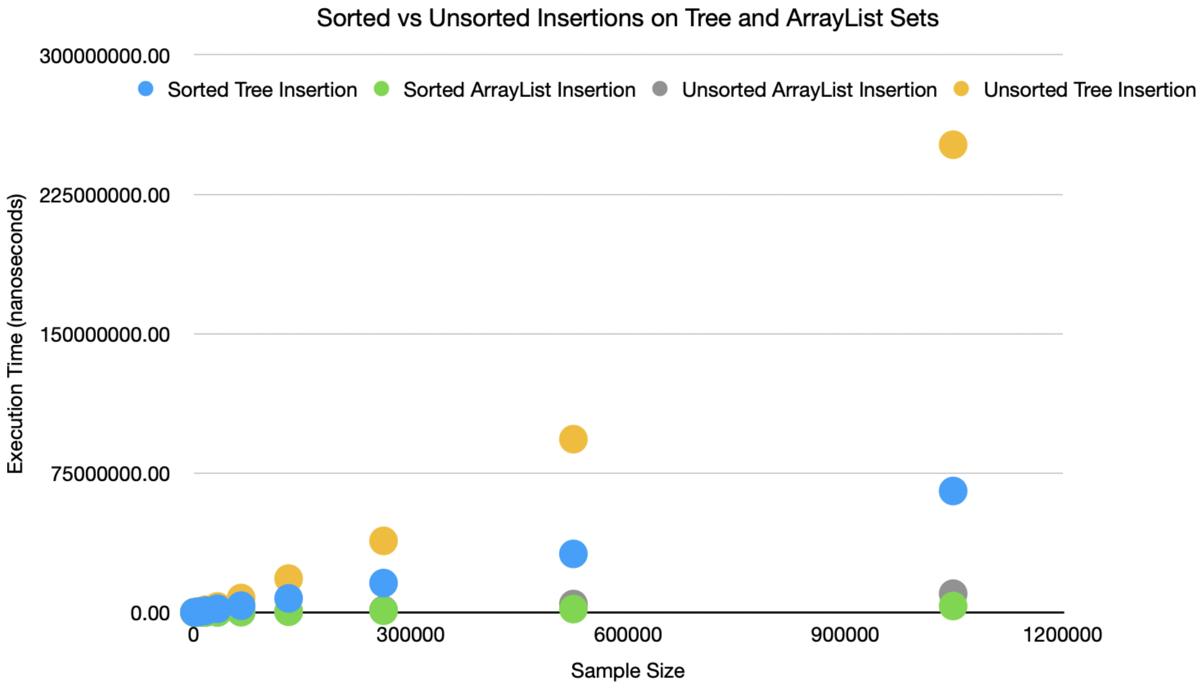
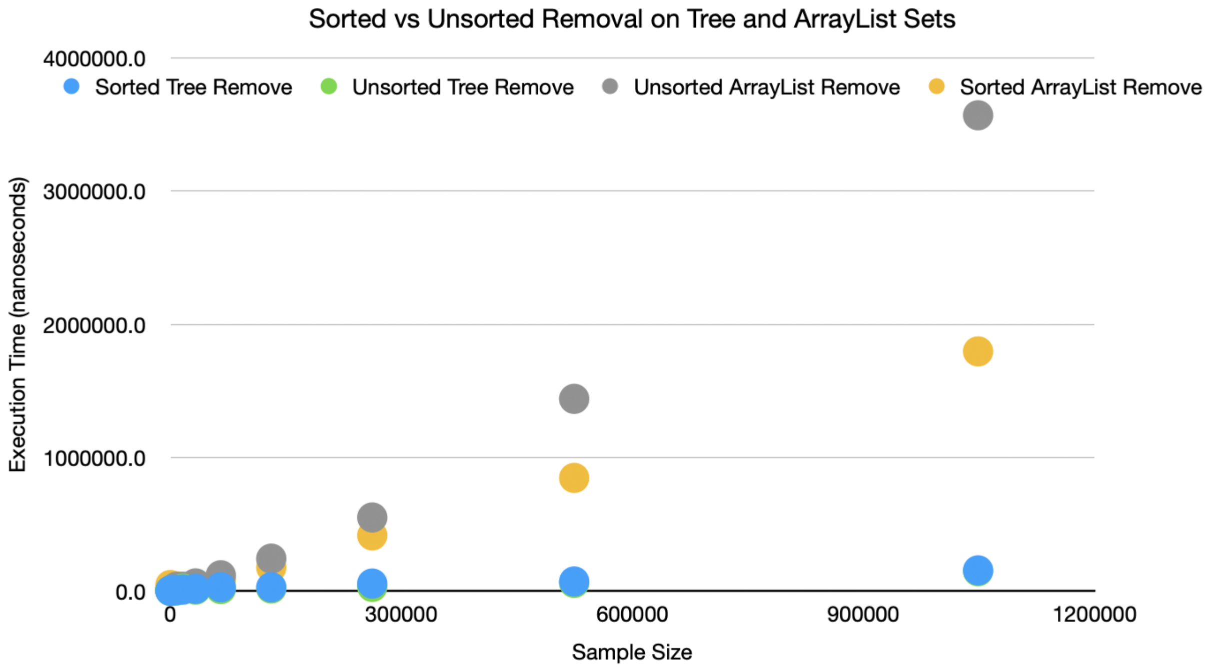
Priority Queue Lab



Creating a set from an ArrayList-backed heap was much faster than creating one from a TreeSet. Inserting, deleting, and searching through a TreeSet is still pretty quick, it should be O(log N) runtime. However, most of the operations for an ArrayList are O(1) (percolating up or down, and thus add, for example).



Like I said in the previous question, the big-O runtime of remove for a TreeSet should be O(log N). This is shown in the graph above. For an ArrayList-backed heap, though, it has to do two steps. First it needs to find the element to remove (which could be O(N) runtime) and then the heap needs to be restructured, which is O(Log N) runtime. Therefore, the total runtime should be O(N log N).