Charles Shoup
Assignment Three Analysis Document

1. My programming partner was Jiwon Nam and he is submitting our source code.

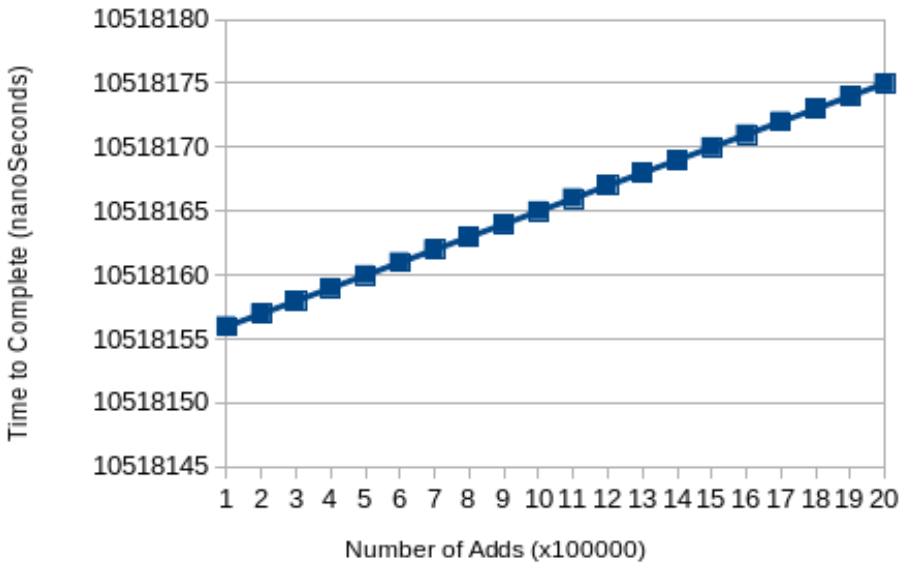
2. We switched roles twice however we did not officially mark the occasions. I was fine with the number of times which we switched however it would have been easier if we confined our work to one computer instead of two.

3. My programming partner was a decent enough fellow however I would like to program with someone slightly more motivated on future assignments.

4. The java list would have made the programming component much less of a challenge, however I am not completely sure how the running time of the program would have been effected. I think that the java list requires that the whole list be traversed to add or remove an element which would take quite allot of time as N goes to infinity. That said, there would be no need to perform array copies for re-sizing.

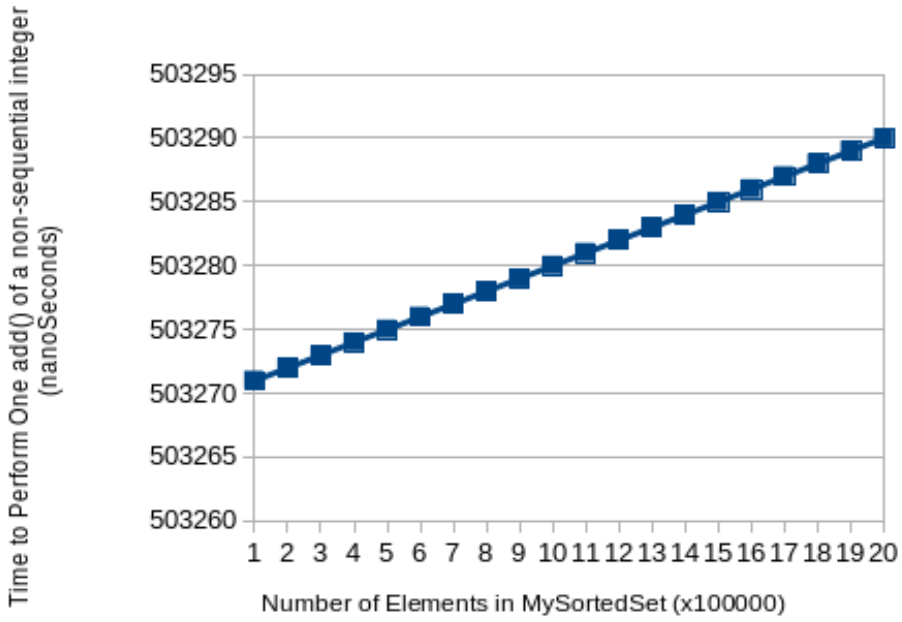
5. I expected the Big-O behavior of MySortedSet to be somewhere around N*Log(N) due to the problem of re-sizing the array and copying the data from the old array to the new.

6.



I am not completely sure whether or not this graph is Nlog(N) behavior but it is certainly better than N or N^2. I tried loop sizes of 1-1000 however I noticed that the accuracy seemed to plateau at about 100. This graph was created using a loop repeat of 100. Also of note, I was adding in order members to MySortedSet.

7. Here is a graph of the times taken by the add() method to repeatedly add an out of order member to MySortedSet. The behavior is a bit strange however I was running out of time and was not able to set up a good method for adding random values into the set. Due to this problematic behavior I have uploaded my testing code as well.



8. We spent about 10 hours on this assignment however I would liked to have spent more.