Cody Ngo
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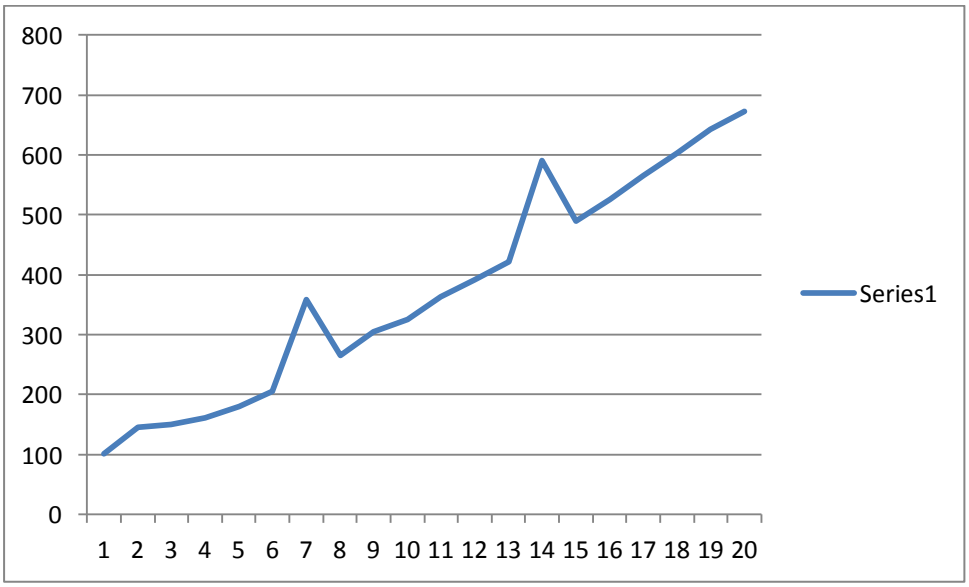
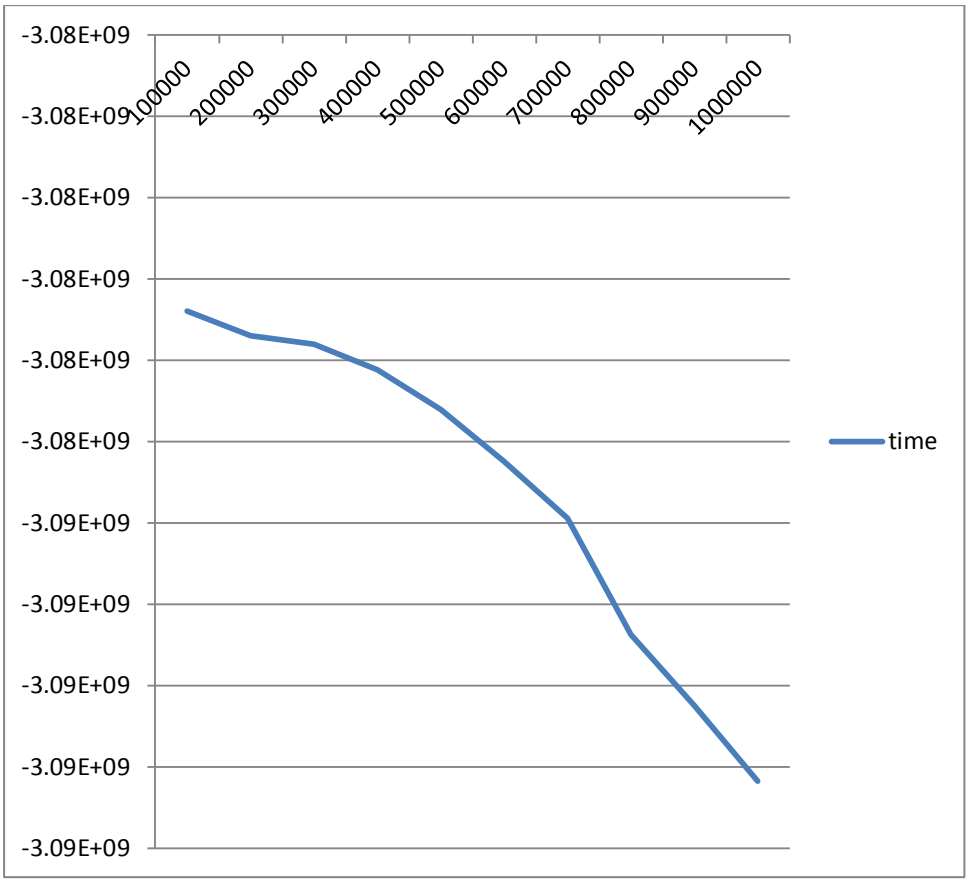
Analysis Assignment 3

1. Tianyu Wang
   I will submit the assignment
2. We switched roles very often. The moment one of us was puzzled with writing the code, a new look at it quickly solved the problem. The amount of switching we did was perfect as it allowed both of us to think and work equally.
3. Very good programming partner. Is very good with thinking through problems to find a solution. Would work with again.
4. Using a list instead of an array would be very beneficial in terms of adding and removing objects that were inserted. We would not need to implement some methods such as add/remove. I believe using the Java List would have been more efficient in coding due to many of the methods being asked being already being implemented. In terms of running time, our code took advantage of binary search in a few methods which would have cut down time due to the search sorting while adding.
5. The Big-O of MySortedSet's contains method would be log(N) due to the method using binary search. It cuts the time in half when being compared to searching the list starting from the beginning and moving one element at a time.
6. 

   Aside from a few outliers in the plot points, the graph is what I expected. It did not grow linearly like an N function since the time did not increase at the same rate as the set size otherwise the time would also be in the same number range as the set size.

7.



The worst-case scenario would be ON^2.

7. Around 10-12 hours.