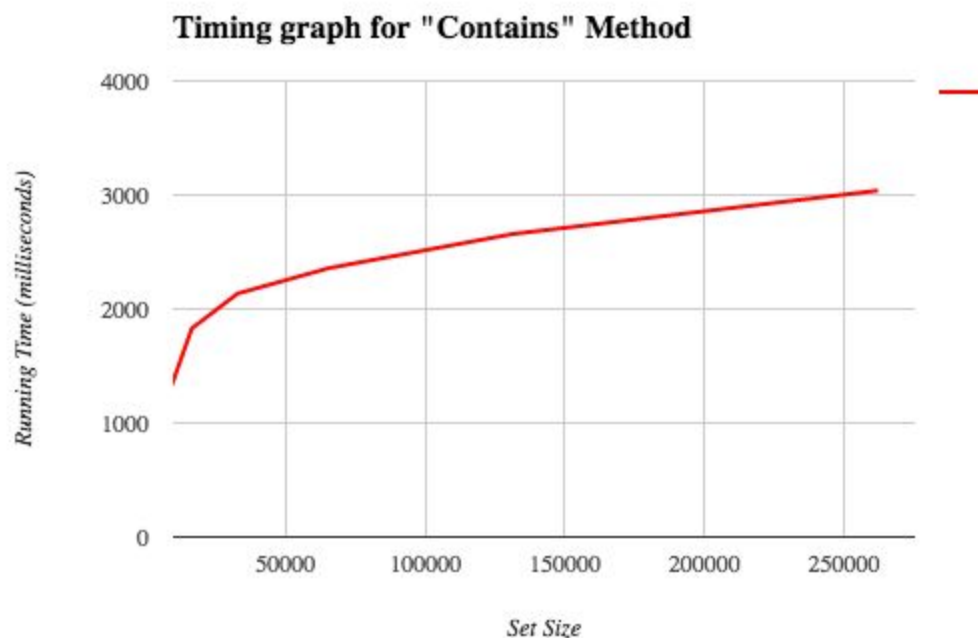
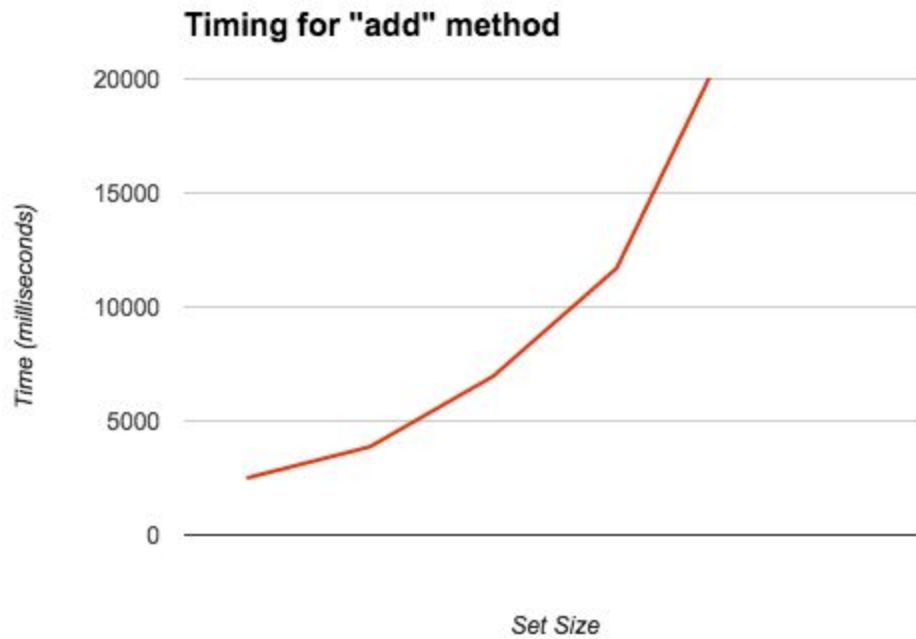


1. My programming partner was Dax Wilson and I submitted the source code of our program.
2. We switched roles moderately often, maybe about once every 30 minutes. I actually enjoyed this because we both were comfortable with the roles we were commanding and we both were able to get into a good mindset and workflow.
3. Dax was a good partner to work with. Our skill sets complemented each other very well, and he was very reliable and hardworking. I would definitely work with him again.
4. There would be a lot of differences between the two sets. First off, a default Java List would have several methods that wouldn't have to be manually written for a basic array. Inputting data and resizing the list as it grows is also build in and getter and setter methods also help for implementation. Efficiency would be greater in regards to development time, but speed of the program wouldn't be significantly different because the algorithms are basically the same.
5. The BigO notation for BinarySearch is expected to be  $O(\log N)$  because as the search method goes through its loops, it is halving the set that we are searching.
- 6.



Yes, this graph matches  $O(\log N)$  behavior. I cut off the beginning part of the graph because of the lag of starting the program up.



7. In the worst case, our add method's bigO notation is  $O(N \log N)$  because of the binarySearch and the loop to add. In the best case it is  $O(\log N)$  if the element is just added to the end of the array each time.

8. 15 hours