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### **Assignment 3 Analysis**

1. My programming partner was Riley Jacobson and we submitted the java source code under his name.
2. We had a very equal role in this assignment where we both had about 50% as driver and navigator. I liked this amount going back and forth because we were able to communicate with each other whenever we would get stuck on a problem in order to talk it through.
3. I think Riley and I have a very good working relationship. He is knowledgeable in things I might not be and vice versa. We do plan on working on future assignments together.
4. I feel that using a Java List instead of an Array would have made our code more efficient for program development because all of the methods that we created are already methods for a List except for first() and last() but those could be called by the get() method in List. One of the biggest benefits is that the List grows and shrinks automatically when elements are added or removed unlike Arrays. However, writing a binary search method makes searching much faster in the Array than it would have with the methods already written for Lists.
5. I would expect MySortedSet's contains method to run at  $O(\log n)$  because the binary search function divides the array by 2 each time it is run thus making it more efficient.
6. Yes, the behavior is a log. I tested the worst case scenario and looped it 100 times. Using my home computer made it much slower to test as well.
7. If I were to use the test to check it would be 17664 nanoseconds.
8. My guess is that we spent around 15 hours on this assignment. We did not keep track so I don't have a definite value but it was less than 20.