analysis

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1. Who is your programming partner? Which of you submitted the source code of your program?

Yixiong Qin is my partner. His UID is u0900071. And I will submitted the source code.

2. What did you learn from your partner? What did your partner learn from you?

I think I learn the logic thought of the programing from my partner. And I thought he learn the basic java programing skill from me.

3. Evaluate your programming partner. Do you plan to work with this person again?

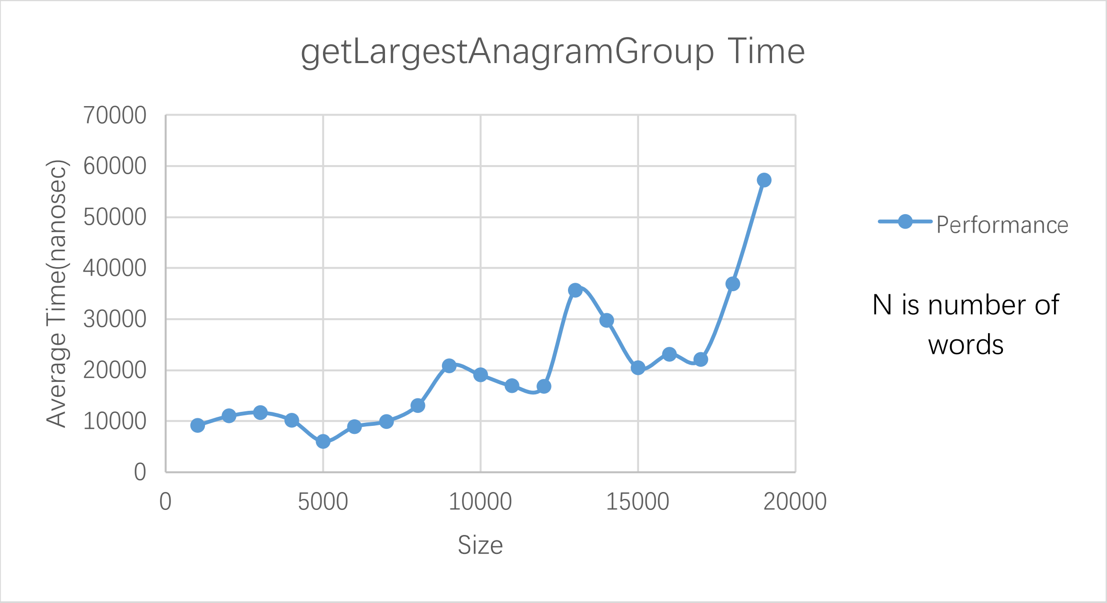
He is great and every times the program has problem, we would discuss and tried our best to solve the problem. I think I will work with him again.

4. Analyze the run-time performance of the areAnagrams method.

-What is the Big-O behavior and why? Be sure to define N.

-Plot the running time for various problem sizes (up to you to choose problem sizes that sufficiently analyze the problem). (NOTE: The provided AnagramTester.java contains a method for generating a random string of a certain length.)

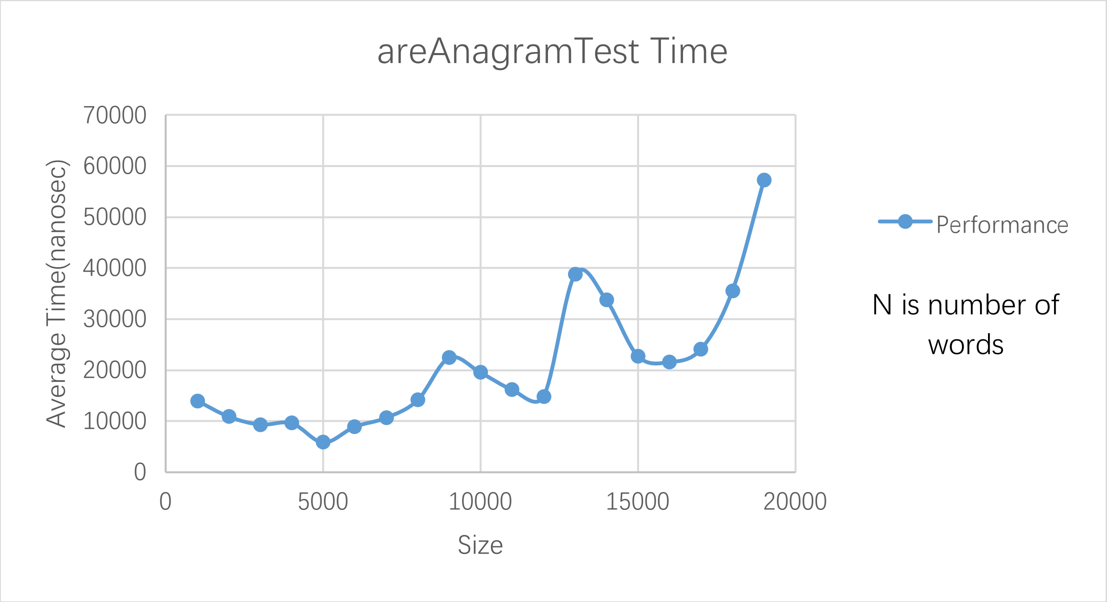
-Does the growth rate of the plotted running times match the Big-O behavior you predicted?



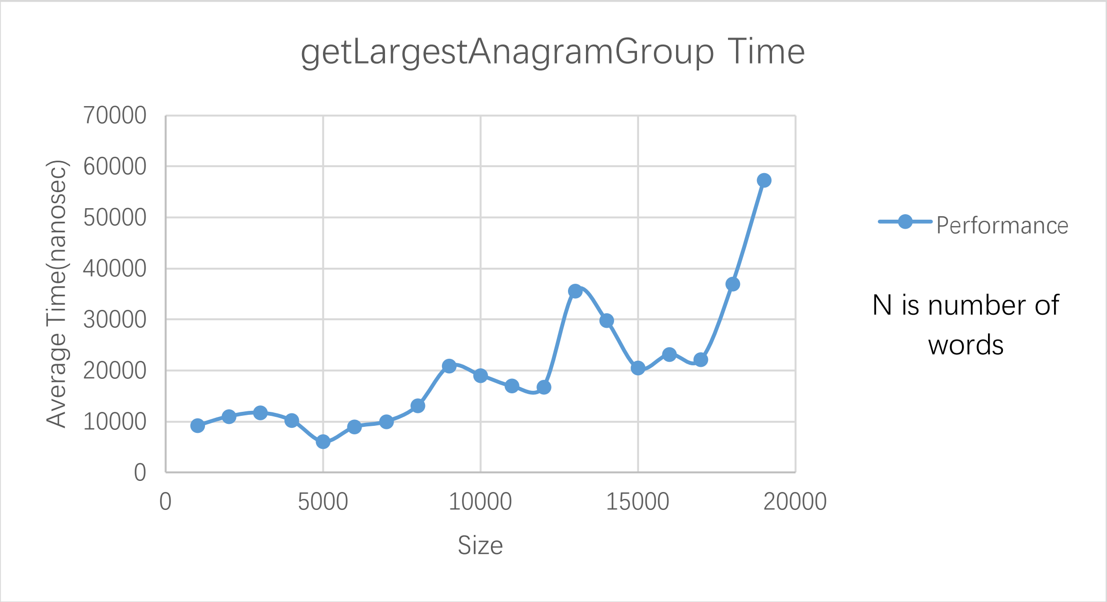
Its performance is O(n log n), because I used two for loop and while loop inside of a for loop. It grow as my predicted.

5.Analyze the run-time performance of the getLargestAnagramGroup method using your insertion sort algorithm. (Use the same list of guiding questions as in #4.) Note that in this case, N is the number of words, not the length of words. Finding the largest group of anagrams involves sorting the entire list of words based on some criteria (not the natural ordering). To get varying input size, consider using the very large list of words linked on the assignment page, save it as a file, and take out words as necessary to get different problem sizes, or use a random word generator, provided in AnagramTester.java. If you use the random word generator, use a modest word length, such as 5-15 characters.

I used 10 as the length of word.



6. What is the run-time performance of the getLargestAnagramGroup method if we use Java's sort method instead (http://docs.oracle.com/javase/6/docs/api/java/util/Arrays.html)? How does it compare to using insertion sort? (Use the same list of guiding questions as in #4.)



7. How many hours did you spend on this assignment?

Maybe 5 hours.