

**1. Have you worked with more than one partner yet?**

Not yet.

**2. In the LinkedListStack class, the stack data structure is implemented using a doubly-linked list. Would it be better to use a singly-linked list instead? Defend your answer.**

If this assignment didn't have the requirement of using a doubly-linked list, I would've intuitively used a singly-linked list. This is because this assignment called for a representation of a stack. It doesn't require access to the data previous of the top of itself, due to its first-in-last-out premise.

**3. Would it be possible to replace the instance of DoublyLinkedList in the LinkedListStack class with an instance of Java's LinkedList? Why or why not?**

Yes, it would be possible. According to the API for a LinkedList, it has a push, pop, and peek method just like the DoublyLinkedList.

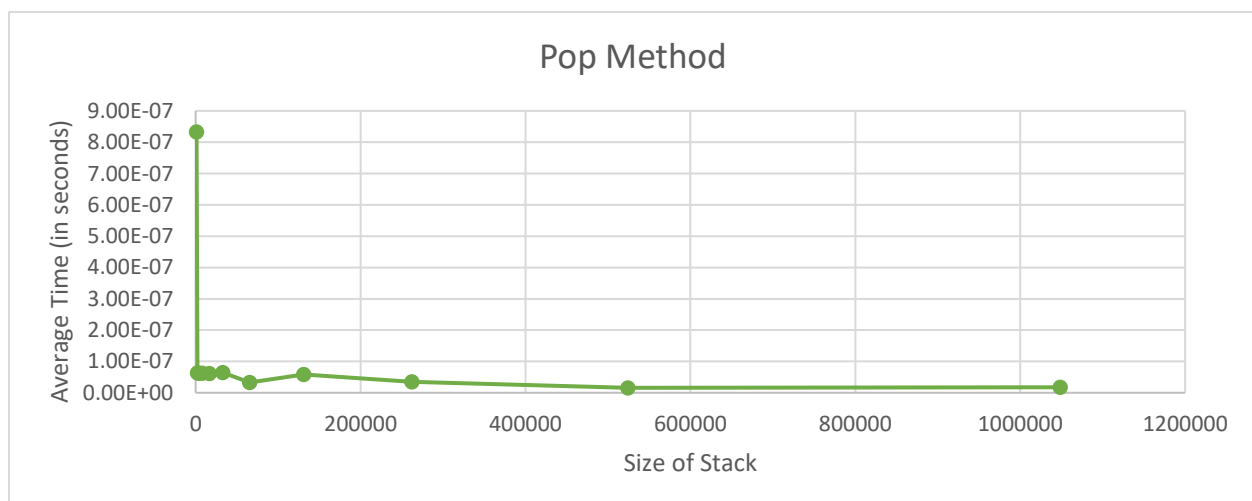
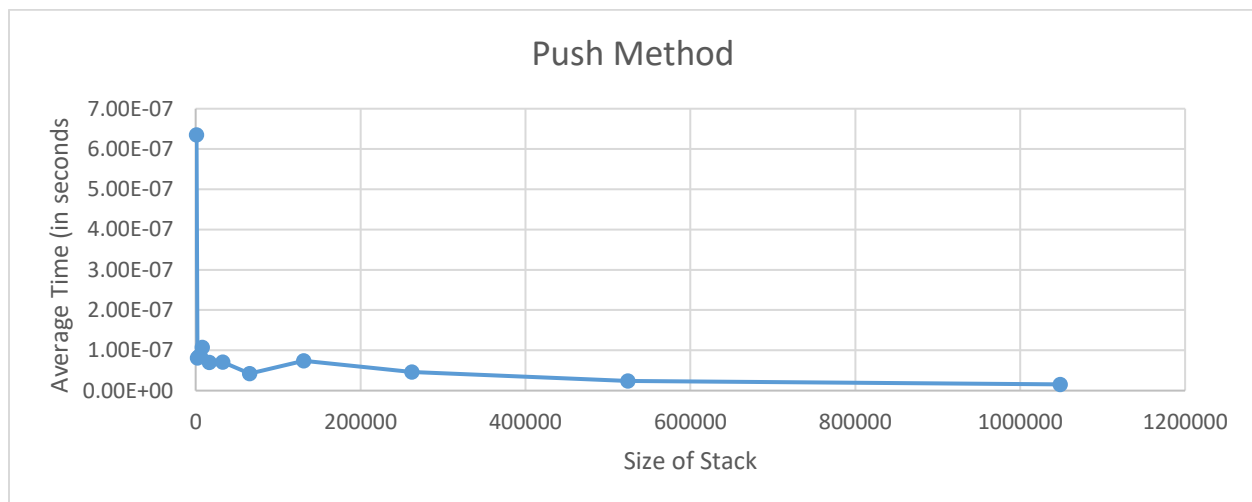
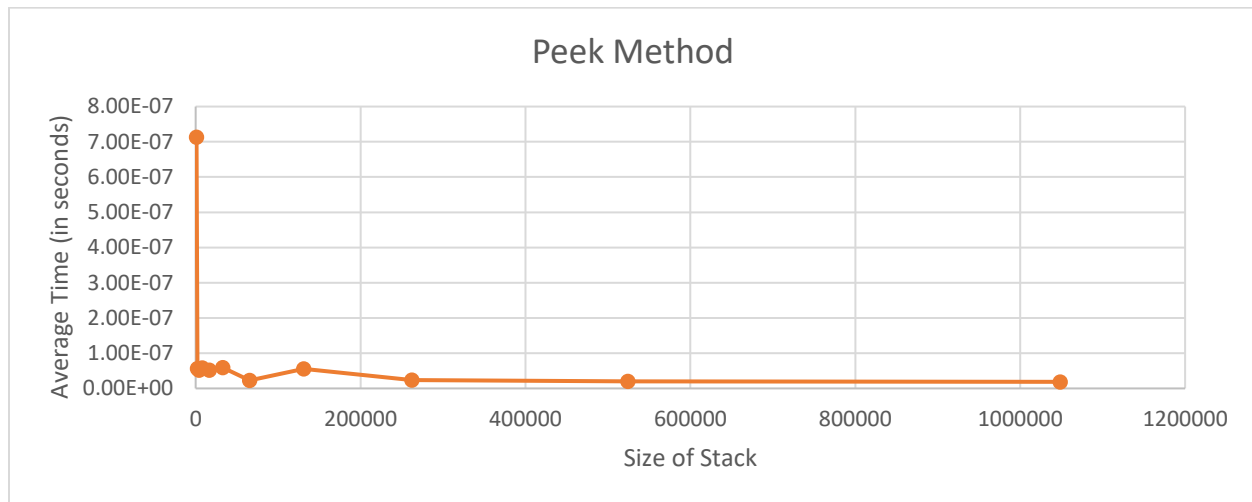
**4. Comment on the efficiency of your time spent developing the LinkedListStack class.**

I can confidently say that I didn't waste any time when developing the LinkedListStack class. Writing it was simple and intuitive and took minutes to write.

**5. Note that the line and column number given by BalancedSymbolChecker indicate the location in a file where an unmatched symbol is detected (i.e., where the closing symbol is expected). Explain how you would also keep track of the line and column number of the unmatched opening symbol. For example, in Class1.java, the unmatched symbol is detected at line 6 and column 1, but the original '(' is located at line 2 and column 24.**

I would write a class that creates a custom object stack instead of a char. This would include the symbol, line, and column when it is pushed. This would make it so the line and column number of every opening symbol is available, if needed.

6. Collect and plot running times in order to determine if the running times of the `LinkedListStack` methods `push`, `pop`, and `peek` are  $O(1)$  as expected.



All three methods look to have an  $O(1)$  complexity.

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

About 10 hours.