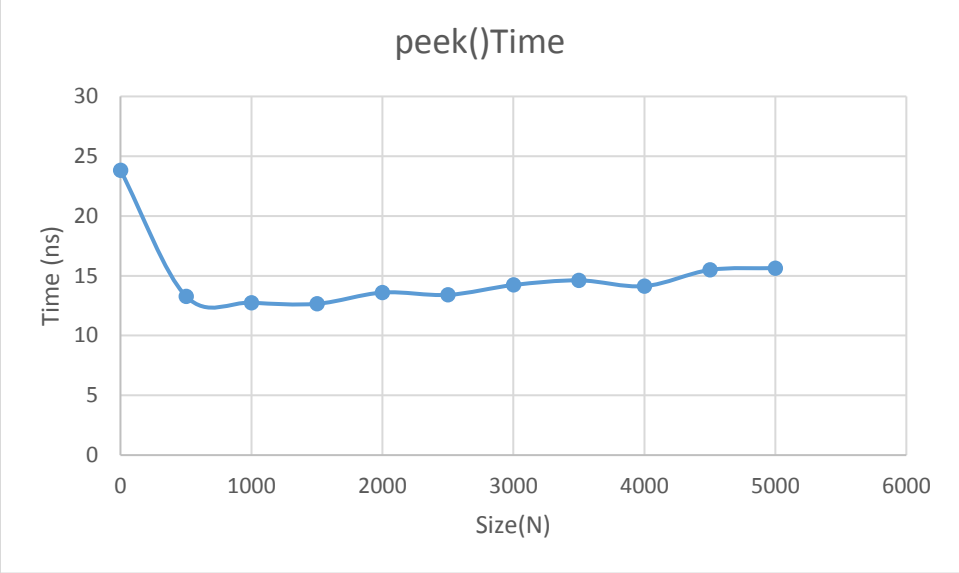
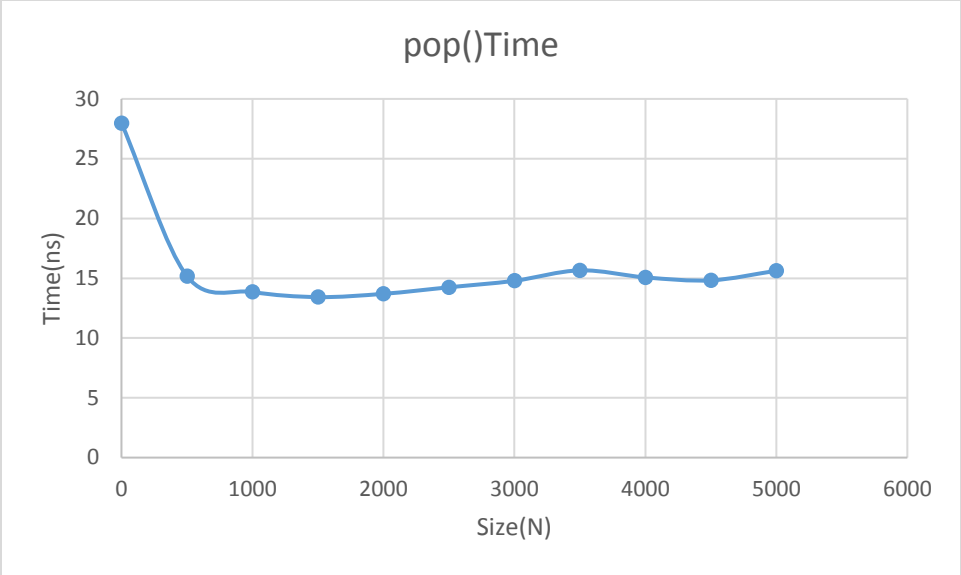
Assignment 07

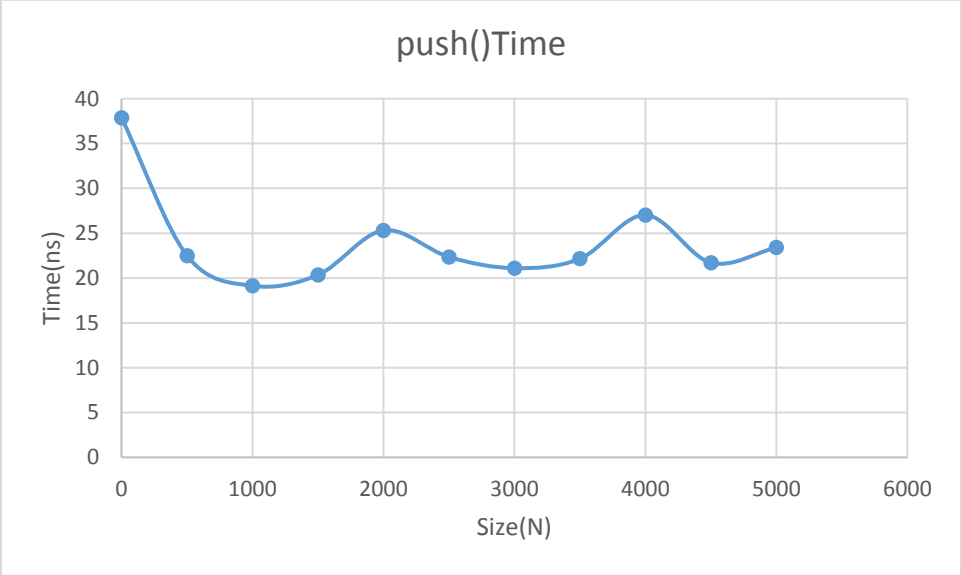
1. I have not worked with another partner yet, but I intend to on the next assignment
2. It would be the same if you used a singly linked list. As long as we are adding only to one end and only removing the most recent node, it doesn't matter if we add to the tail or to the head. Either way we only use one set of pointers by removing first or last. Both would have O(c) complexity for push, pop and peek.
3. To replace the DoublyLinkedList with Java's LinkedList would be possible and may be easier to implement. Java's LinkedList has the functions of addFirst, getFirst and removeFirst, as well as addLast, getLast and removeLast. This means it can replace either structure of DoublyLinkedList stack structure. The LinkedList also has the functions of pop, push and peek which could be re-returned by our LinkedListStack, by rewriting the methods.
4. I feel like I spent my time efficiently. The only thing that was difficult to be time efficient on was the JUnit testing, and Class.java file testing.
5. To account for position of the original opening symbol, I would add more information to my nodes. Instead of building nodes of (E element), I would build custom nodes of (E element, int line_number, int col_number). Then when they are popped off the stack, the relevant information is packaged with the data called.
6. The peek() function is expected to perform in O(c) time. The results below show O(c) time. There is an anomaly for the first data point, most likely attributable to the spin up time.



The pop() function is expected to perform in O(c) time. The results below show O(c) time. There is an anomaly for the first data point, most likely attributable to the spin up time.



The push() function is expected to perform in O(c) time. The results below show O(c) time. There is an anomaly for the first data point, most likely attributable to the spin up time. The data also has a significant deviation, this can be resolved with a higher iteration count.



7. I spent about 5-7 hours on the assignment.