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Course: CS 2420

Assignment 07 Analysis

Question 1

I've not worked with more than one partner this semester.

Question 2

If a programmer implements a stack using a linked list, the type (doubly or singly linked) used is irrelevant because the user is limited to the most recent item added to the stack and the same methods would be used for both types of linked lists (addFirst and removeFirst). Both methods have Big-O behavior $O(c)$, so the Big-O behavior for the stack's methods should be the same.

Question 3 (Ask TA during class)

It would be possible to implement Java's linked list in assignment 07 because Java's linked list contains the same methods called in this assignment (addFirst and removeFirst).

Question 4

I think writing the code for LinkedListStack class was straight forward, and it wasn't time consuming. I did have to modify the code while I was testing my checkFile method, and it took me awhile to sort out all of the bugs.

Question 5 (Ask a TA)

To keep track of the unmatched opening symbol, I would create a sub class, OpeningSymbols, which contains three fields: line number, column number, and character. For each opening symbol object added to the stack, I would keep track of its line and column number and retrieve them later if the program detects an unmatched symbol.

Question 6

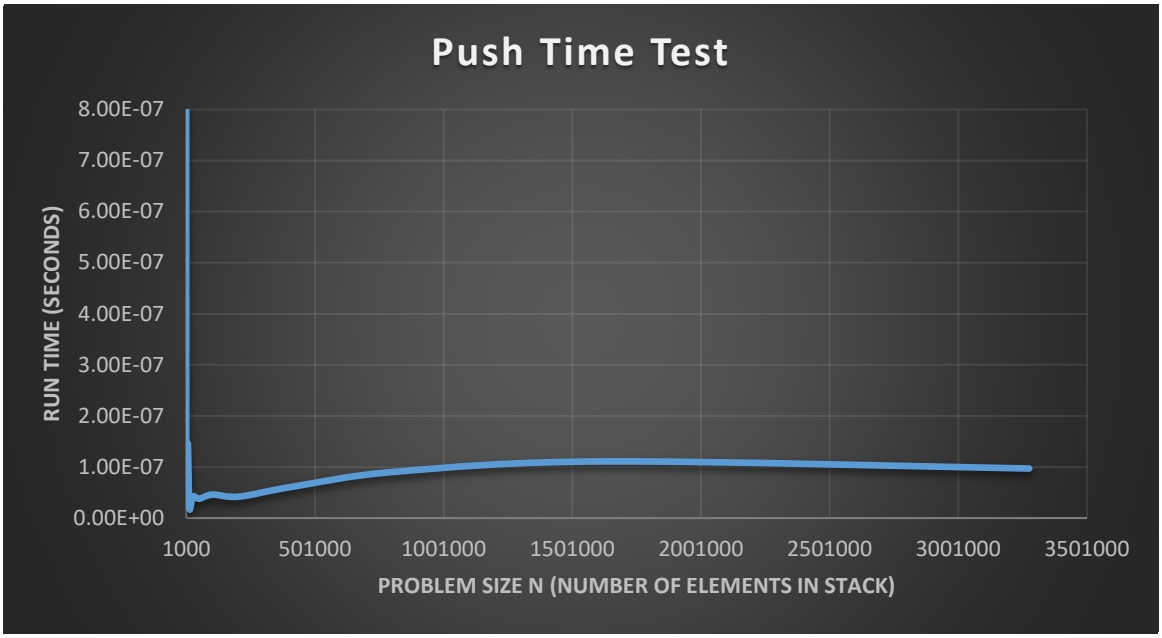

Figure 1

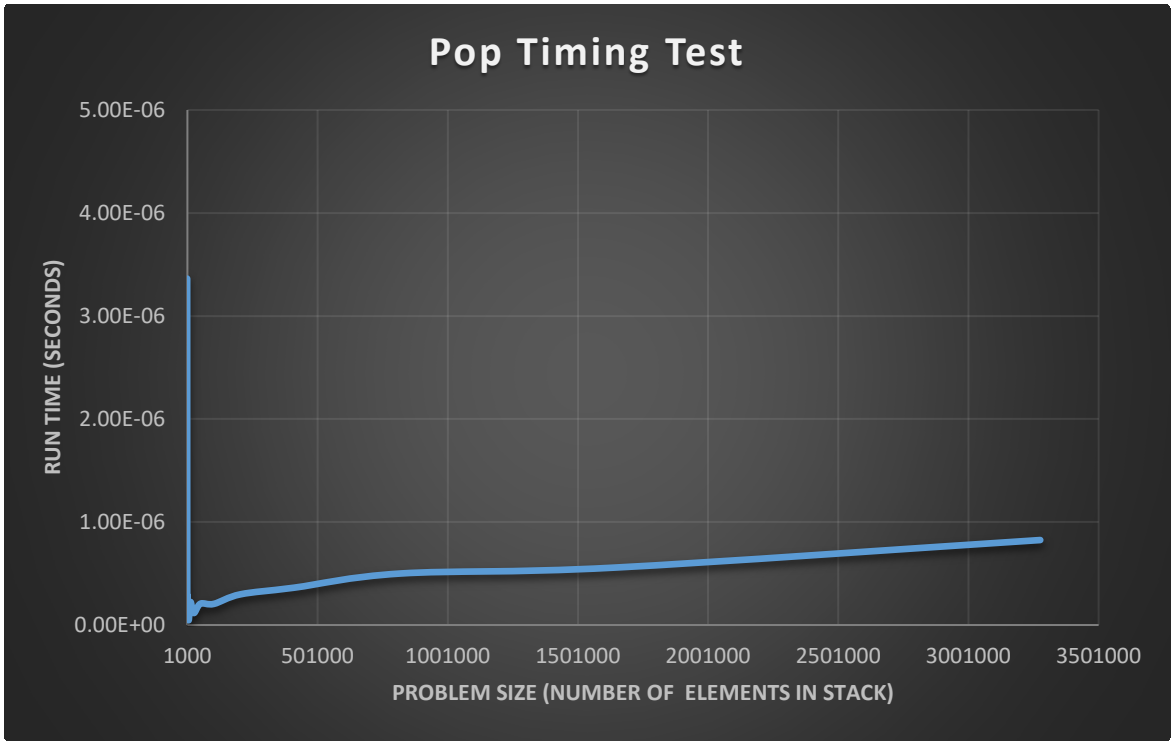

Figure 2

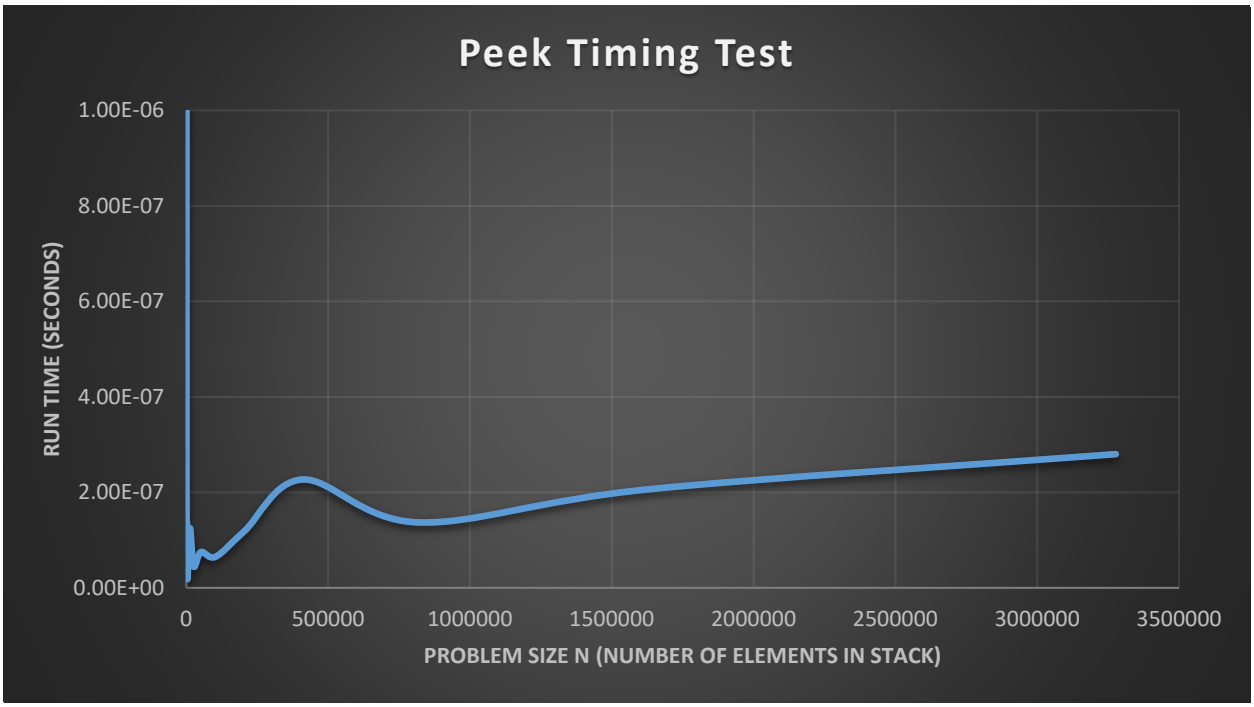

Figure 3

Based on figures 1, 2, and 3, it appears that the push, pop, and peek methods have Big-O behavior $O(1)$. This becomes more apparent when the plot is zoomed out, making the line appear constant near the x-axis.

Question 7

I've spent about +20 hours on this assignment.