Jeffery Ho
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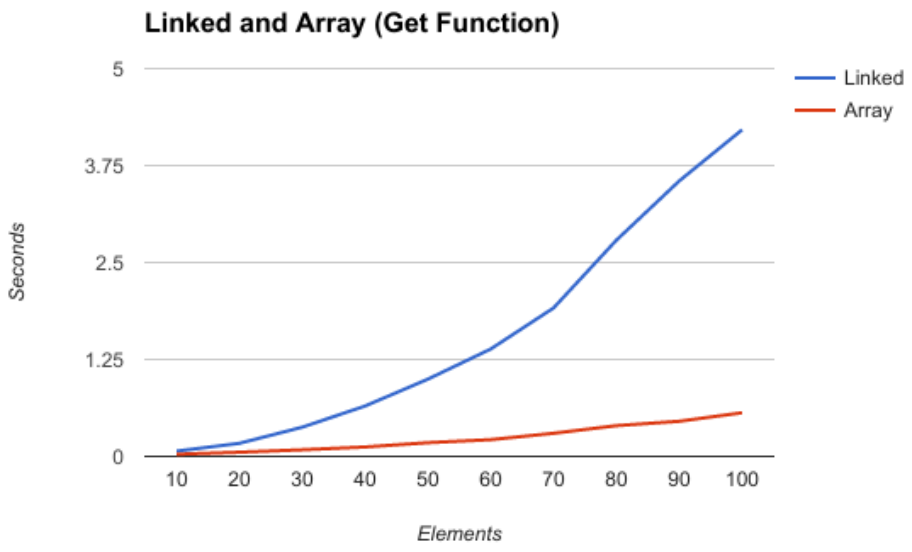
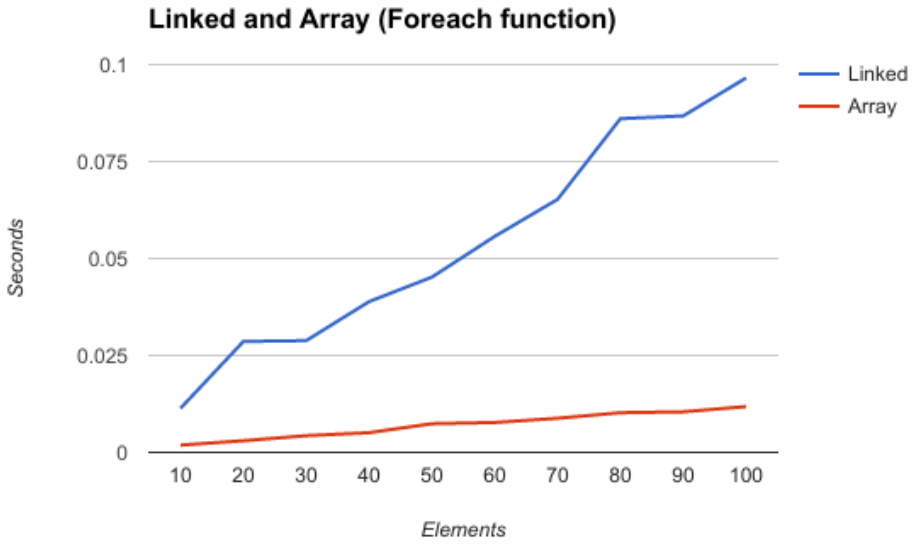
CPE103

4.1 Linked List vs Array List: Get function



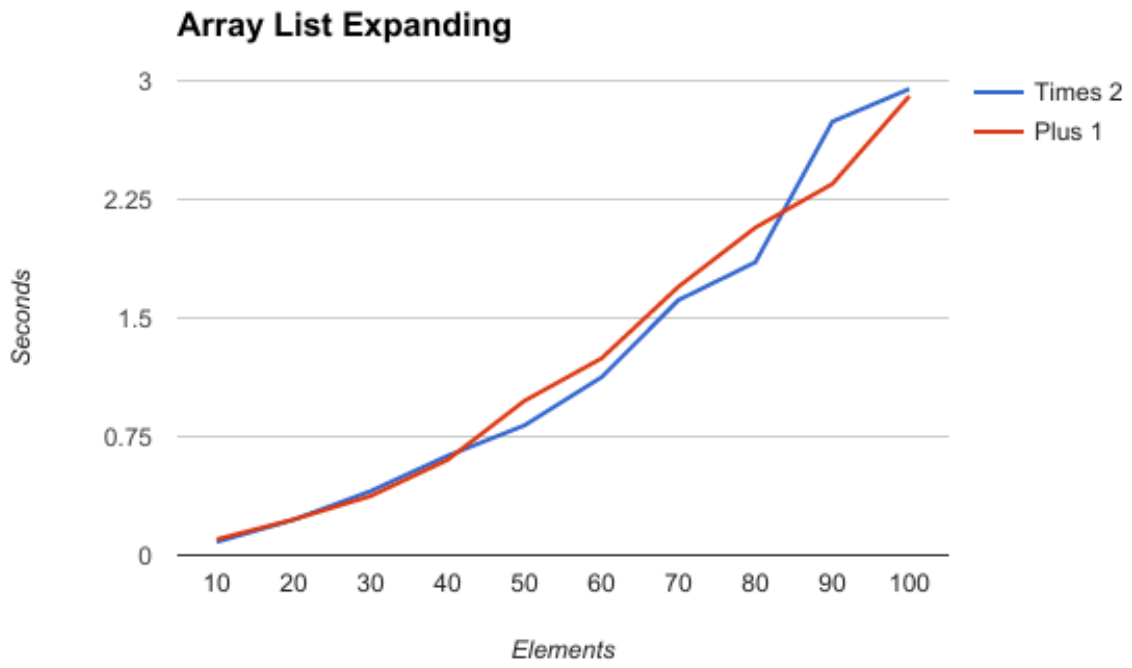
Linked list gets exponentially longer as there more elements within the list. Array list's timing has a linear growth as the elements increases

4.1 Lined List vs Array List: Foreach Function



The both linked list and array list increase linearly. However, array list requires significantly less time to run. Also, linked list may have some increased time at certain points because of my personal computer

4.2 Array List Expanding: Multiplying Vs Adding



Compares array list expanding times depending on adding or multiplying the capacity. Each time the capacity is multiplied, there is a significant increase in time required to complete the task. Adding 1 when the capacity is at the limit causes the time to increase a more linear rate. And after about 80 elements, adding requires less time to run.

Conclusion:

Overall, array list is significantly faster than a linked list. This proves that arrays are faster than recursions. Also comparing the speed of addition to multiplication, addition is faster with larger amounts of data. I was not able to test every single function, but with these three graph, it is possible to come to this reasonable conclusion.