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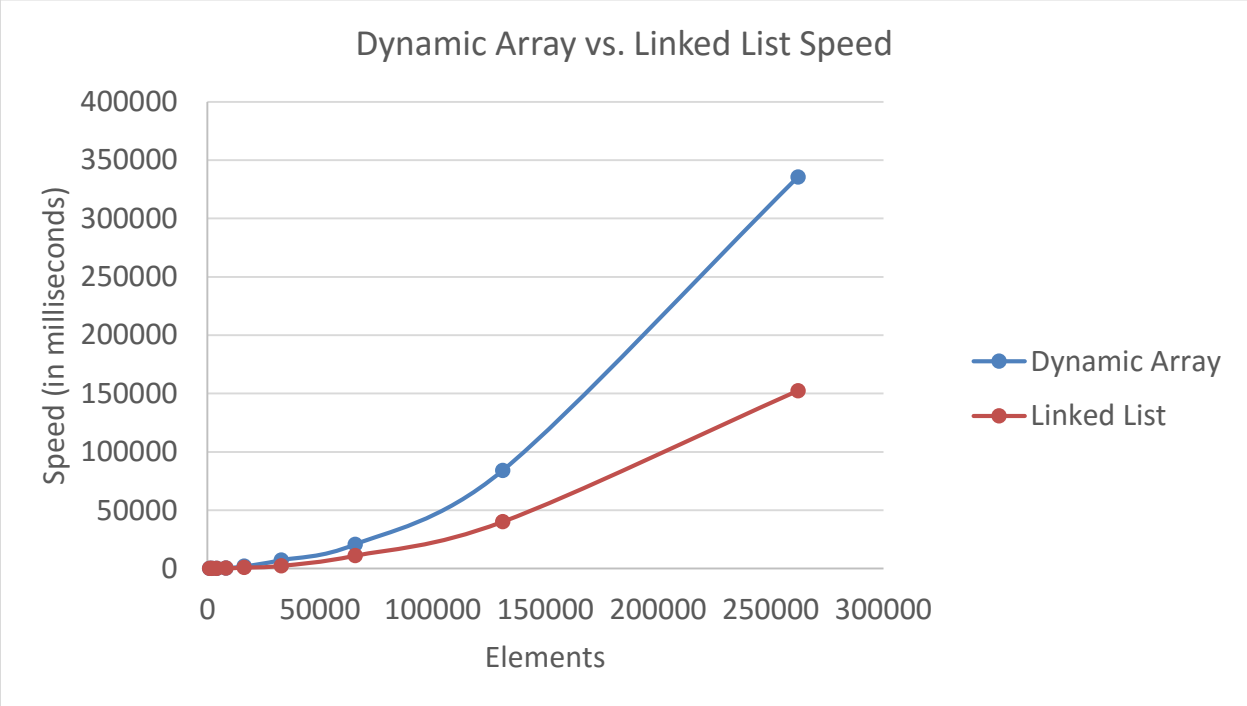
Assignment 3 – Problem 2

1. The Linked List uses more memory because Linked Lists do not use contiguous blocks of memory. Furthermore, linked lists require extra storage for references (links to the next node).
2. The Linked List is faster because it can simply add elements to the next available space in memory but a dynamic array's elements have to be added to the existing contiguous block.
3. No. Both the contains() and remove() functions perform a linear search on the array of data of O(n) complexity. These two functions, in both implementations, differ only in that the former returns the value while the latter removes it.

Time Comparsion		
Elements	Dynamic Array	Linked List
1024	0	0
2048	20	10
4096	90	60
8192	430	210
16384	1890	830
32768	7250	2340
65536	20760	11010
131072	84120	40090
262144	335570	152310



Space Comparison		
Elements	Dynamic Array	Linked List
1024	164	0
2048	164	0
4096	164	0
8192	164	0
16384	164	0
32768	164	168
65536	424	1224
131072	552	3072
262144	1068	7296