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* COMP 352  
* Assignment 2  
* Summer 2021  
*  
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All time measurements are in milliseconds.

Adding Elements:

N= 10	Insert at start	Insert at end	Insert random
MyArrayList	0	0	0
ArrayList	0	0	0
MyLinkedList	0	0	0
LinkedList	0	0	0

N= 100	Insert at start	Insert at end	Insert random
MyArrayList	2	4	4
ArrayList	1	2	3
MyLinkedList	2	2	3
LinkedList	2	2	4

N= 1000	Insert at start	Insert at end	Insert random
MyArrayList	48	177	105
ArrayList	27	38	24
MyLinkedList	45	192	106
LinkedList	28	35	25

N= 10000	Insert at start	Insert at end	Insert random
MyArrayList	16918	235749	92588
ArrayList	408	1481	919
MyLinkedList	6330	102038	39017
LinkedList	508	1545	982

Removing elements:

N= 10	Remove at start	Remove at end	Remove random	Remove by value
MyArrayList	0	0	1	1
ArrayList	0	0	0	1
MyLinkedList	1	0	0	0
LinkedList	0	0	0	0

N= 100	Remove at start	Remove at end	Remove random	Remove by value
MyArrayList	4	6	4	7
ArrayList	1	10	4	7
MyLinkedList	5	7	7	5
LinkedList	2	9	6	7

N= 1000	Remove at start	Remove at end	Remove random	Remove by value
MyArrayList	155	338	60	62
ArrayList	64	111	26	78
MyLinkedList	179	365	77	56

LinkedList	41	115	53	83
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N= 10000	Remove at start	Remove at end	Remove random	Remove by value
MyArrayList	74224	110332	58561	12587
ArrayList	1915	2349	1877	5715
MyLinkedList	81841	139603	61859	12342
LinkedList	1714	2481	1830	4947

Comparing all those values in the table one can clearly see that for both operations of inserting and removing the slowest times was inserting/removing from the end of the list, since it has to go over all the list to make the corresponding operation at the end(for 10 000 removing by value was the slowest for some of them).

With the confirmation of the professor, due to the large amount of time that the experiment takes for N numbers equal or greater to 100 000 the experiment was stopped at 10 000(The largest slowest time was the operation of inserting an element at a random index and for the removing operation the second slowest value was removing from a random index and removing by value).

Output files are saved and attached where "AN10" represent addition/insertion with N=10 and "RN10" represented removed with N = 10 size.