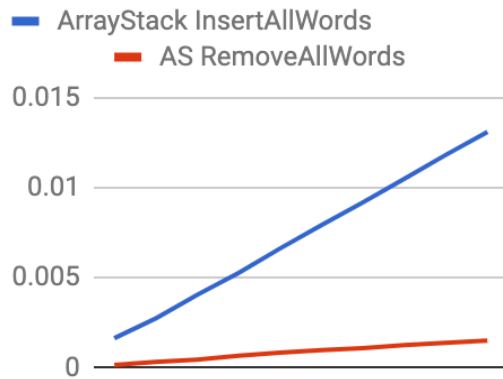


## ArrayStack:

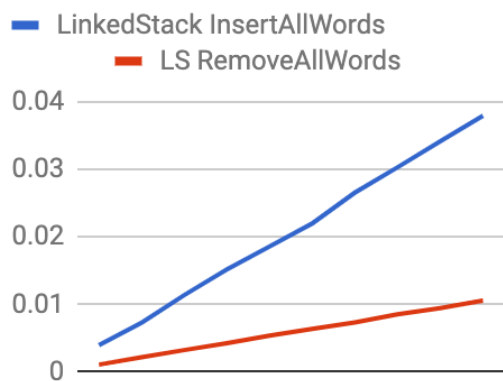


Observed time complexity:

**Insert:  $O(1)$ .** Inserting n words takes  $O(n)$  time, as observed in the graph

**Remove:  $O(1)$ .** Removing n words takes  $O(n)$  time, as observed in the graph

## LinkedListStack:

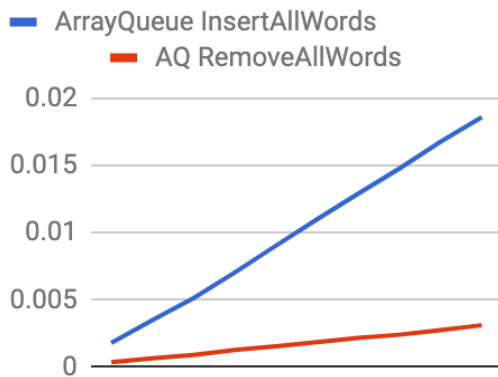


Observed time complexity:

**Insert:  $O(1)$ .** Inserting n words takes  $O(n)$  time, as observed in the graph

**Remove:  $O(1)$ .** Removing n words takes  $O(n)$  time, as observed in the graph

## ArrayQueue:

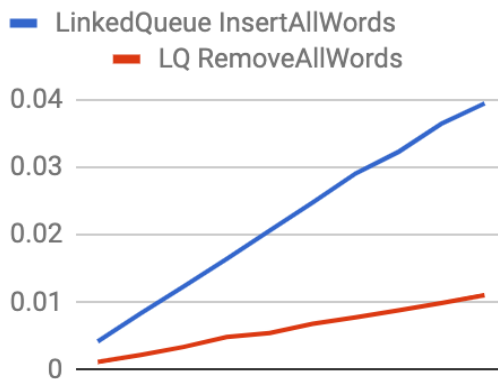


Observed time complexity:

**Insert:  $O(1)$ .** Inserting n words takes  $O(n)$  time, as observed in the graph

**Remove:  $O(1)$ .** Removing n words takes  $O(n)$  time, as observed in the graph

## LinkedListQueue:



Observed time complexity:

**Insert:  $O(1)$ .** Inserting n words takes  $O(n)$  time, as observed in the graph

**Remove:  $O(1)$ .** Removing n words takes  $O(n)$  time, as observed in the graph