Project 5 Questions

(a) Instance Variables & Invariants

LinkedList – to store data

capacity – used to keep track of sequence capacity

currentIndex – used to keep track of current index of sequence

1. LinkedList object will be used to store elements, and it must satisfy the inherent sequence state numberOfElements and capacity. Size of LinkedList = numberOfElements.
2. Capacity can be many times greater than size of LinkedList, but it is just a number and ultimately bears no meaning to LinkedList and its behavior
3. currentIndex should still keep track of which ListNode is currently being pointed at.

(b) Preconditions and Postconditions of Remove

Precondition: There is something to remove/there is something at the selected index to remove. Should be between 0 and length-1.

Postcondition: Selected node for removal is gone

If something is removed at the head, head should point to node after removed node.

If something is removed at the end, the node before that should point to null now.

If something is removed in between two nodes; the node before the removed node should now be pointing to the node after the removed node. The numberOfElements should be decreased by one.