



MACQUARIE
University

WCOM125/ COMP125 Fundamentals of Computer Science Workshop - Custom Linked Lists

Learning outcomes

By the end of this session, you will have learnt about custom built linked lists.

Questions

NOTE: All questions in this workshop relate to code in `Node.java` and `MyLinkedList.java`

1. Consider the following code:

```
1 MyLinkedList list = new MyLinkedList();
2 list.add(20);
3 list.add(50);
4 list.add(70, 1);
5 list.add(60, 0);
6 list.add(30, list.size());
```

Draw a detailed memory diagram to represent the objects held in the memory.

2. What modifications do you have to make to classes `Node` and `MyLinkedList`, if, for two connected nodes `a` and `b`, you want to be able to go from `a` to `b` **AND** from `b` to `a`, and further be able to traverse list from left **AND** also from right or right to left?
3. Implement as many as possible of the following methods in the `MyLinkedList` class. Read the javadoc specifications carefully before attempting.
 - a. `public int countItemsMoreThan(int minValue);`
 - b. `public int getMedianIndex();`
 - c. `public void removeFirstOccurrence(int item);`
 - d. `public void removeAllOccurrences(int item);`
 - e. `public boolean containsAllDigits();`
 - f. `public MyLinkedList add(MyLinkedList other);`