Practice Exercise #29: Simple Exercise on Queue

http://www.comp.nus.edu.sg/~cs1020/4_misc/practice.html

Objectives:

1. Implementing a queue using Linked List
2. Using queue operations

Task statement:

Write a program **QueueExercise.java** to read inputs that consist of either the "Add" or "Query" operation. The program is to create a queue that holds integer values.

The "Add" operation:

- The word "Add" is followed by a list of integers.
- For example, Add 8 12 to add the values 8 and 12 into the queue in that order (i.e. 8 is added to the end of the queue first, followed by 12.)
- Your program displays the items in the queue after each "Add" operation.

The "Query" operation:

- The word "Query" is followed by a list of integers.
- For example, Query 3 6. Your program is to check if it is possible to retrieve the values 3 and 6 (in that order) by removing values from the front of the queue. Suppose the queue contains the following values (first value at front of queue):

  5, 6, 3, 5, 8, 6, 7

  This will require the program to perform 6 dequeues to meet the query.
- Your program is to indicate whether the query is met, and display the queue.

Your queue uses the **QueueLL** class given in lecture, which in turn uses the **TailedLinkedList** class. The programs for these two classes, and the skeleton program for **QueueExercise.java**, are given on the "Practice Exercises" web page. Please study the programs. (Note that the **print()** method in **TailedLinkedList.java** shown in lecture has been replaced with **toString()** method.)

You are to submit **QueueExercise.java**.

Sample input:

```
Add 10 5
Add 7 2 12
Query 5 2
Add 11 20 18 4 7
Query 12 20
Add 3 8 9
Query 3 4
Add 17 6 15
Query 17
```

Sample output:

```
Items added: [10, 5]
Items added: [10, 5, 7, 2, 12]
Query met: [12]
Items added: [12, 11, 20, 18, 4, 7]
Query met: [18, 4, 7]
Items added: [18, 4, 7, 3, 8, 9]
Query not met: []
Items added: [17, 6, 15]
Query met: [6, 15]
```