CSYE7215: Homework 1:
Due date: September 14, 2016; 5:59 pm

Goal: In this project you will accomplish two tasks;

1. Complete several classes in the provided code to find the **maximum Integer** in a LinkedList **in parallel**.
2. Modify the code to first generate a linked list of randomly generated integers, one for each thread, then merge the lists into one **sorted list** in parallel.

Code to implement: In the starter files for the first task, the methods to implement have the comment // TODO: IMPLEMENT CODE HERE within them. The Javadoc explains what these methods should do for the max integer (which you can compare against the public test).

Replace / modify these comments for the second task so that they faithfully represent the objective of the second task.

Public tests for the first task are in the file PublicTest.java. They are in Course Documents / Code / HW 1 Code:

- Class ParallelMaximizer, method max
  Note: Since this method invokes several ParallelMaximizerWorkers, it is expected to be thread safe. The method runs numThread number of threads and then joins them. You are responsible for computing the partial maximum from these results by calling getPartialMax() from each ParallelMaximizerWorker.
- Class ParallelMaximizerWorker, method run
  Note: This method should find the maximum for all integers processed by this worker, which can be combined to find the overall maximum. If the list is not empty, the function synchronizes on it to prevent access by other threads and removes the head node, storing its value in the variable number. You are responsible for taking this value and evaluating the new partial maximum.
- Note: It is not acceptable that only one of the workers computes the maximum (for the first task) or does all the sorting (for the second task). Insure that all of the workers participate in this process. Show the results of each of the worker.

Additionally, you should modify the PublicTest.java so that it can be used for the testing of the computation of the sorted list. Show the results of each of the worker.

Submission: Use your Last Name (just one word; you can simplify your last name if you prefer) for the package name. Submit a .zip file containing your project files to Assignments in Blackboard as specified in the slides for Lecture 1. Remember to include Ant build scripts (build.xml).