COMP 2355
Winter 2012
Lab #13
February 21, 2013

This lab should be submitted to your course SVN by noon on February 22 in a folder named "Lab13".

In this lab you are going to write a multi-threaded program to find the maximum number of legal moves in any possible peg board configuration (using the small board with 30 locations). You should be measuring this for all boards, regardless of whether they are reachable from the start state. Your program will create a fixed number of threads (N), and then use a locked queue to send and receive results from the threads.

Use your DLList code from Lab 10. Add functions for removing the front and back items from the list, and modify the code to use locks whenever the the list is accessed. Create one list for each thread to send data from the main thread to the worker thread, and one list for each thread to send data back to the main thread.

Your main code should create N threads, and then send ranges of boards (via the hash function) to each of the threads. A range is specified by the first state in the range and the number of states after that range to expand. For each range, the thread should send the state with the maximum number of moves and the number of legal moves back to the main thread.

The main thread should then read all the results and print the state with the maximum number of moves.