Sam Fellers <sfellers>

Lab 3 Answers

**3**. Null Process priority is set to 2 billion, will only run if it's the only process in the readylist. Also there is a check for the pid when adding cpu-usage. So it won't go over max int.

When printing out the information doing tests on cpu-heavy processes vs "io-bound" processes, it looks like the io-bound processes are sharing the cpu time much better than the cpu-bound ones.

As my processes are run at the start of main before the shell, there are no other processes to monitor cpu usage for outside the 4 that I spawn.

**4**. Could not get the min heap working as a priority queue, code is currently commented out below both inserts in ready/resched and the dequeue in resched. I would imagine that the minHeap priority queue would do better with larger sets of processes though.

**Bonus**. I think that the red-black tree would be disadvantageous to use here instead of a min heap. The red black tree requires more overhead. It is better at searching through the tree, however that's not a property that we need. All we really need to be able to do quickly is check the minimum element in the priority queue, which can be done O(1) in a min heap. And insert/delete relatively quickly, the insertion and deletion in both of these structures is O(log(n)).