CS475: Lab 7 Code Review

Reviewing with Cassie Esvelt.

# Questions to answer:

1. Who did you work with?

By herself.

1. How is time defined?

While loop with counting clock time, generic unit. Based on when all processes entered the “finished” state, end the simulation.

1. What kinds of things can happen at each “moment”?

Go through all processes and see if arrival time is same as the clock. If so, add to the ready queue.

Decrement Io bursts. Check the IOqueue and see if burst time has gone to zero. If so, go back to ready queue or to finished vector.

Handle processes in processors.

If doing RR scheduling, then send back into queue when RR time is up.

1. What happens when the parameters of the simulation changes? Do the results make sense?

FCFS had best turnaround and throughput, RR did ok but SPN was the worst. She had assumed round robin would be faster but was surprised by the results.

When increasing the number of CPUs, the throughput goes up.

Average CPU Utilization for more CPUs as well.

RR response times went up when the time quantum was larger.

1. Were there any bugs or issues that you fixed?

One really big issue when taking io process out of ioqueue, wasn’t popping them out of the io queue correctly. Led to accessing memory that was not meant to be accessed.

In PCB, initialized arrival time as nothing.

1. Explain how each data structure is used.

map of processors for easy access – map of the actual processor classes

map of processes for easy access – map of the actual process classes

ioqueue is a vector

ended vector is all ended processes

readyqueue is a priority queue. Priority is set based on the algorithm

1. What alternative data structures were considered? Why were they not chosen?

Considered using actual queues instead of vectors, felt more familiar with vectors

1. What alternative data structures would you have also considered?

Could have used an array for the processors and processes instead of a map.

1. Is memory managed correctly (e.g. are pointers correctly deallocated)?

Yes, since pointers weren’t really used in the simulation.

1. Are exceptions handled correctly?

Used try catch statements in the file input output.

Checked user input for invalid entries.

Make sure queues actually have processes in them before working with them.

Make sure that the processor actually has a process in it before working with a