CS3502 Operating Systems

Fall 2017

ASSIGNMENT 3 -- Synchronization with the Producer-consumer and Readers/Writers problems

Study the behavior of synchronization: the simulation models are implemented in the programs "consprod.cpp" and "reawriter.cpp"

1. Run the simulation models as is, then change the delay on the critical section of the producer and consumer processes.
2. Compare the performance of the two simulation runs.
3. The parameters are hard-coded so you have to edit the source program and recompile.
4. Change (decrease) the inter-arrival intervals for readers
5. Change the delay on the critical section of the writer processes.
6. Compare the performance of the two simulation runs.

In the last part of your report include your answers to the following questions.

1. What are the main differences between the two models and with the previous models?

2. Explain how synchronization affects the behavior of the processes in the simulation run.

3. Identify the "slower" process in the simulation runs.

4. What aspect of an operating system is the model representing?

5. What performance measures does the model compute?

6. What is noticeable in the dynamic behavior of the system?

7. What other performance measures can this model compute?