CS3502 Operating Systems

Department of Computer Science

Fall 2017

ASSIGNMENT NO. 2a

MULTI-PROGRAMMING

Study the behavior of a batch system with multi-programming.

File: batchmio.cpp

1. Copy this model (batchmio.cpp) from /home/jgarrido/psim3
2. The model reads all input parameters; it has default values built-in. Run the simulation models with the default values by pressing the Enter key on each input parameter. The default value of the degree of multi-programming is 15. The output of the simulation run is stored in files: "batchmio\_statf.txt" and "batchmio\_trace.txt".
3. Rename these files appropriately so they will not be over-written by the next simulation run.
4. Run the simulation model again with the degree of multi-programming set to 1. Compare the performance of the two simulation run.
5. Write your report following the guidelines given. In the last part of your report include your answers to the following questions:
6. What are the main differences between this model and the previous model of OS (assignment #1 batch.cpp)?
7. Explain how multiprogramming is made possible for these models. How is this implemented?
8. With no multiprogramming, why is the input queue needed? Why is the Ready queue needed.
9. What aspect of an operating system is the model representing?
10. What performance measures does the model compute?
11. After changing some of the parameters in the model (the workload) and executing again the model:
12. What changes in the results do you notice?