

COMP 7500 Advanced topics in Operating Systems

Project – 3 AUBatch Scheduler

Report

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1. How to run the software:

- a. Copy the “project3” directory into your system.
- b. Open this directory in terminal
- c. Compile using “make” command. Type “make.”
- d. Run ./aubatch.

2. Introduction to software:

This is AUBatch software which simulates different real-time jobs in different scheduling algorithms. It uses “execv()” command to create real time operating system processes and schedule it.

Note: The given code actually executes different processes in the background and those processes will print a message after specified burst time in AUBatch.

3. How to use this software:

The software UI opens with how to run tutorial. You can exactly follow the procedure to run it.

- a. Run ./aubatch.
- b. In the software UI type ‘h’ or ‘help’ or ‘?’ to open the help menu.
- c. Start software with run init <time><1> command which will start the job queue mechanism. It will start a timer with time specified in the command. While this timer ends you can choose a policy from ‘sjf’ or ‘priority’ and start adding jobs to the queue.
- d. Once the timer expires, it will start executing processes in the queue.

4. Challenges faced to tackle this project:

This was a really challenging project which required powerful C programming skills for threading, multi-threading and real time process scheduling. One of the biggest challenge was how to use mutex and condition wait commands to establish a good synchronization between THREE concurrent threads. I had to deal with countless segmentation faults and I have to think for the basics of algorithms like sorts and modify it to be compatible for this application.

Note: The code is given in “code.pdf” file.

5. Dataflow diagram:

