CS 3243 / 5243 Operating Systems Phase III

At the completion of Phase II the CPU is executing all of the jobs. For Phase III you need to move to threaded operations for the CPU and begin to expand our system. Additionally, you will want to track the performance of your system. The first goal should be to get multiple CPU's running. You need to get it to run with any number, but it will be tested with 1, 4, and 8 processors. You also need to track the following information for each job: the throughput, turnaround time, waiting time, and response time. This information is in the Chp. 6 slides starting on slide 8. You will then need to provide the average of each of these for all jobs (the average across the 100 jobs, for example).   Additionally, you will need to track the CPU utilization. This should be the total number of instructions executed on each CPU divided by the total number of cycles the simulated OS ran OR the total number of CPU cycles that the CPU was 'alive', depending on your threading model.   This should be reported per CPU and as an average across all CPU's.

All of this data is for the analysis that you are doing that will be reported in your final project report. This report, presented as a research paper, should be written in a standard research paper format (two column, centered title in large font, divided into sections: 1 Introduction (tell me about the project, be brief but precise), 2 Related Works (list here your text book as a reference and any other material that you used in your project; this will be very small), 3 Methodology (How you implemented your OS simulation - language, technique, interesting bits about your code, etc.; how you gathered the statistics, how you executed each run, etc.), 4 Results (here you present the results of your experiments - this would be the statistical and graphical analysis of each of the runs and the aggregate data of these runs (FCFS, SJF, Priority; 50, 100, 150 RAM; 1, 4, 8 Processors). The goal of this analysis is to determine the optimal configuration for your OS, so make sure to make that point quite clear), 5 Conclusions (how did it go, what did your learn, how do you feel about your results, what do they mean, etc. Explain your results). This report should be well-written and technical in nature. Verbosity is punished; concise and technically correct is rewarded. The report should take several pages, but I am not interested in you making it longer than it should be so there is no specific page limit.   If you just give this minimal effort you will lose points. There are templates available from IEEE at http://www.ieee.org/conferences_events/conferences/publishing/templates.html . There is a sample template included here as well.

You should turn in a zipped file with your code, detailed instructions on running it, and this report.   Please leave any comments or instructions in the comments section with your submission. Honesty here gains you grace, so if there are issues, note them.

Please check the dropbox on D2L for the due dates, and remember that there is no late submission allowed because of the end of the semester.