Operating Systems Concepts

(CMSC 125 Project)

Phase 2: (Simulation of the Scheduling Policies)

Simulate the 4 different scheduling policies, that is, FCFS, SJF (preemptive), Priority, and Round-robin. In actual OS, the implementation of any of these scheduling policies is not shown unless you view the task manager, but for educational purposes, please provide a visual presentation in your computer screen. There is no need to connect this work to your Phase 1 output.

Requirements:

1. Provide a menu where I can choose a particular scheduling policy that I want to view.
2. Create a Process Control Block (PCB) with the following information: Process ID, Burst Time, Memory Size, Arrival Time, Priority, Status. You may add additional necessary information as you deem fit. The Burst Time, Memory Size, and Priority are randomly generated numbers. Use integer numbers for all numeric data.
3. Display the contents of the PCB in table form.
    a. The display is initially empty every time a particular scheduling policy is chosen.
    b. As new processes are created over time, the display of processes will expand, and if the number of processes exceeds the viewable area, use a scroll pane.
    c. You may omit in the display the priority of processes for all scheduling policies except Priority Scheduling.
    d. You may hardcode the quantum size for the round-robin scheduling policies.
4. Your OS will be run as infinite loop. As it runs, it checks for some tasks to do. For checking purposes, the task is to display the menu, where I can choose a particular scheduling policy.
5. For any simulated scheduling policy task, you must have a CPU scheduler that dispatches one of the ready processes taking into consideration the chosen type of scheduling policy.

Points:

60% correctness (group) – according to the specifications
20% aesthetics (group) – layout and design
10% creativity (group) – introduced something useful
10% honest peer-evaluation (individual) – rate of member's contributions