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Group Project 4: CPU scheduler

CECS 326 – Operating Systems

To gain practicality in CPU scheduling and continue our application of C/C++ programming, we were tasked to implement a simulation of three CPU scheduling algorithms: First-come, first-served (FCFS), Priority scheduling, and Round-robin (RR). The design requires each scheduling algorithm to construct an ordering of tasks but adding or inserting into a linked list. The application must intake a schedule of tasks with the following attributes: task name, priority, and CPU burst. Afterwards, depending on each scheduling algorithm, we must implement the scheduling computation which prints out the execution of each task in the correct order. To implement the FCFS algorithm, we appended each task to the linked list. To get the correct output, the scheduling function must output the execution of the task in the order that it arrived in, which in this case, is the order being read into the driver.c file. In the priority case, its complexity arrives from figuring out the ordering of all tasks as they arrive at different times. Once the head node is initialized, we implemented a while loop to read each task and insert it into the appropriate location within the linked list. Furthermore, the scheduling function for priority is similar to FCFS's. Lastly, once all the tasks are read, the round-robin will schedule each task to run a specific amount of burst time. In our case, each tasks was able to burst or execute for 10ms. The scheduling function will loop until all tasks are finished at the specified quantum.

Video Submission: https://youtu.be/8IF0qDNt4LI