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OPERATING SYSTEM (CO2018)

Assignment (Semester 202, Duration: 03 weeks)

Simple Operating System

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1 Priority feedback queue versus the world

The priority feedback queue holds several advantages compared to other scheduling algorithms. First and foremost, it implements a mechanism where the relative importance of each process maybe defined, meaning that we can let certain processes run before the others, for example a set of processes in a procedure.

Other scheduling algorithms poses downsides in comparison with priority feedback queue as follows

- FCFS: Here, the early process will get the CPU first, other processes can get CPU only after the current process has finished it's execution. Now, suppose the first process has long burst time, and other processes have less burst time, then the processes will have to wait unnecessarily more, this will result in more average waiting time, also known as Convey effect.
- SJF, SRTF: Here, the process with shorter burst time is executed first. Meaning that processes with long burst time will be pushed further back in the queue, and potentially never executed. This is know as starvation. In the case that a process finishes before another one arrives, SJF/SRTF becomes FCFS.
- RR: Choosing an optimal quantum is hard: too short and the overhead for context switching outweighs the runtime, too long and it becomes FCFS.
- Multilevel: Processes at the lowest level might suffer from starvation if the implementation is not thoroughly considered.

2 Question 2

```
1 printf("Hello World!");
```