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Project 1

Using a priority queue in a semaphore has its pros and cons. For example, a priority queue can aid in ensuring the most important processes can complete. It also is helpful in designing a Shortest-Job-First scheduler which can reduce the average wait time. One problem that can occur is that processes with a very high-priority can take up too much CPU time. This can simply be fixed with preemption. Starvation can also occur when low-priority processes are never able to execute. However, one can use aging and preemption to change the priority of processes as time progresses. Using a priority queue can allow a good hybrid approach to scheduling such as being able to use Round Robin. One can order the processes in the most time efficient way so that the time to complete all processes is the shortest. It can even be used to expand even further with multi-level feedback queues. In conclusion, priority queues in semaphores can have disadvantages but these can be easily fixed. They also can be used to provide more hybrid scheduling algorithms to optimize performance.