COSC 4740 Operating System Design
Written Q6
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What are the 5 goals of a scheduling algorithm?

1. **Fairness or Waiting Time**: The time a process waits in the ready queue, ensuring no process waits too long.

2. **CPU Utilization**: Maximizing CPU activity.

3. **Response Time**: The time to respond to user interactions.

4. **Turnaround Time**: The time from process submission to completion.

5. **Throughput**: The number of processes completed per time unit.

Give 2 examples where the goals are contradictory.

1. **Fairness vs. Throughput**: Prioritizing fairness can reduce throughput, as frequent context switching to ensure no process waits too long increases overhead, lowering the number of completed processes.

2. **Response Time vs. CPU Utilization**: Optimizing for response time can underutilize the CPU, as prioritizing quick user input may leave the CPU idle while waiting for more input.