CPSC 3125, Operating Systems Homework 05

Chapter 7, *Operating Systems, Three Easy Pieces*

Readings

Read chapter 7 in the *Operating Systems, Three Easy Pieces* book.

Discussion Questions

Answer the discussion questions in writing.

1. The beginning assumptions form the basis of this chapter. As a preliminary, list the five assumptions stated at the beginning of the chapter.
2. Briefly describe *turnaround time* and state the formula for calculating turnaround time.
3. Why do you think that turnaround time and fairness are inversely related? What is it about "fairness" that is at odds with turnaround time?
4. Briefly describe FIFO, and give an example different from operating systems or grocery shopping.
5. What is the *convoy effect*?
6. Briefly describe SJF, and give an example different from operating systems or grocery shopping.
7. Briefly describe STCF, and give an example different from operating systems or technology.
8. Briefly describe *response time* and state the formula for calculating response time.
9. Briefly describe RR, and give an example different from operating systems or technology.
10. What scheduler(s) maximize turnaround time? Which scheduler(s) maximize response time?
11. What does it mean to say that a job running on a CPU is *blocked* on account of an I/O request?
12. (not in book) Define the terms *compute bound* and *I/O bound*. You will see these terms used in your reading.
13. For the four processes listed below, compute the turnaround time and the response time of each according to the scheduling policies reviewed in this chapter. Where necessary, indicate your choice of time slice. You can draw pictures if it will be easier, but include the formulas used in the book.
    - FIFO
    - SJF
    - STCF
    - RR

Process	**Arrival time**	**Run Time**	**Turnaround Time**	**Response Time**
1	0	10	?	?
2	5	40	?	?
3	15	30	?	?
4	40	20	?	?