

# CPSC 3125, Operating Systems Homework 20

## Chapter 26, *Operating Systems, Three Easy Pieces*

### Readings

Read chapter 26 in the *Operating Systems, Three Easy Pieces* book.

### Discussion Questions

Answer the discussion questions in writing.

1. If threads are like processes, what is one major difference between them?
2. Is there a context switch when threads are swapped out? If so, what does the OS do to switch the context of execution?
3. What is the purpose of a *thread control block* (TCB)? How is it like a PCB? How is it different?
4. What is *thread local storage*?
5. We will be discussing *parallelization* quite a bit. How would you explain parallelization to your grandmother? What specific kind of task would be a good candidate for parallelization?
6. In multi-threaded programs, what is a potential problem with *shared data*? What is shared data?
7. What is a *race condition*? What causes race conditions? Why do we want to avoid race conditions?
8. What is *atomicity*? (not in book) What are the “ACID” properties in relational database management? What does the “A” stand for? Why are the ACID properties incredibly important?
9. What is a *critical section* in a block of code?
10. What is a *mutex*?