

# ITBU 373, Operating Systems Homework 22

## Chapter 28, *Operating Systems, Three Easy Pieces*

### Readings

Read chapter 22 in the *Operating Systems, Three Easy Pieces* book.

### Discussion Questions

Answer the discussion questions in writing.

1. What is the function of a *lock variable*? Why do we need a lock variable to do this?
2. What are the two states of a lock variable? What is the meaning of each state?
3. Who is the *owner* of a lock?
4. Explain the difference between *coarse grained locking* and *fine grained locking*.
5. Briefly define the goals of locking: *mutual exclusion*, *fairness*, and *performance*.
6. Section 28.5 discusses disabling interrupts. It lists four negatives. For each negative, describe it and explain why it is seen as a negative, i.e., what could go wrong with it.
7. What do we mean by *spin-wait*?
8. Explain the algorithm used by *test and set*.
9. Explain the algorithm used by *compare and swap*.
10. Explain the algorithm used by *load linked* and *store conditional*.
11. Explain the algorithm used by *fetch and add*.