Outline for October 21, 2008

1. Device Interfaces
   a. Device registers, controllers
   b. Channels, commands, channel programs
   c. Command chaining, data chaining (scatter-gather)
   d. Selector, multiplier channels
2. Device Drivers
   a. Standard interface; upper, lower part
3. Device Hardware
   a. Communication lines: simplex, half-duplex, full duplex
4. Example device driver: line clock, programmable clock
5. Example device driver: disk device driver
   a. Virtual disk as a linear array of sectors, reducing latencies
   b. Ordering outstanding disk requests:
      i. First come, first serve
      ii. Pickup
      iii. Shortest seek time first
      iv. SCAN (elevator algorithm), LOOK
      v. N-Step SCAN, N-Step LOOK
      vi. C-SCAN, C-LOOK
      vii. Sector queueing
6. Memory Management
   a. How programs interact with memory
   b. Compilers, assemblers, linkers, loaders
   c. Absolute addressing and the execution cycle