Outline for April 1, 2022

Reading: text, §3–6

Assignments: Homework and Extra Credit 1, due Apr 11

1. Operating system overview
   (a) I/O functions
      i. Read data: polling, interrupts
      ii. Direct memory access (DMA)
   (b) Process functions
      i. Create, delete, schedule
      ii. Synchronize, communicate
   (c) Memory functions
      i. Share memory among many processes: address transformation
      ii. Memory management
   (d) Secondary storage functions
      i. Space management and addressing
      ii. When to move data; scheduling
   (e) User interface functions
      i. Enable users to run processes easily
   (f) Other desirable features
      i. Efficient
      ii. Reliable
      iii. Maintainable
      iv. Small

2. Process as an abstraction
   (a) Process is representation of a program executing
      i. Address space
      ii. State information (frame, stack pointer, etc.)
      iii. resources
   (b) CPU virtualized, so process thinks only it is using the CPU
   (c) Scheduling policy decides which process gets CPU, and for how long

3. Process APIs
   (a) Create process (fork()), delete process (exit()), pause process (wait(), waitpid())
   (b) Miscellaneous process control
   (c) Process status

4. Process status

5. Process table entry