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Topics:

Chapter 1-6, 8

OS design goals

Dual Mode

OS Services

OS Structure
    ASM vs C in the kernel
    monolithic, microkernel, modular

Processes
    PCB
    What is in a process? Memory regions?
    How is an ELF related to a process?

    What states can a process be in (for scheduling)?

    What happens in a context switch?
    fork()/exec() (How does Fork/exec interact with the PCB?)
    dup2() (How does dup2 interact with the PCB?)
    pipe()
    shared memory

    How does your CS460_Shell work?

Threads
    how is a thread and process different? The same?

    Benefits?
    Risks?
    Define thread-safe

    mutexes
    semaphores
    atomic instructions

    multicore vs multi-CPU

Synchronization
    race condition/critical section
    3 properties of synchronization

    why is hardware support necessary for synchronization?

    dangers of synchronization

Scheduling
    what are the measurable goals of a scheduler?
    FCFS, SJF, SFJ (preemptive), RR
    How do you predict the length of the next CPU burst?
    Multilevel queue scheduling


Main Memory
    memory heirarchy (fastest to slowest)
    logical vs physical address
    what is the memory management unit?
    first fit/best fit/worst fit
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63        fragmentation
64        how does a function in a dynamically loaded shared library get called?
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