Midterm Topics

• Intro
  – What is an OS?
  – Monolithic vs. Microkernel architectures
  – Virtual Machines

• CPU Time
  – Processes
  • Creation
  • Termination
  • Context/Context Switches

Midterm Topics (2)

• CPU time (cont’)
  – Process Table
  – Process States
  – Threads
  – User vs. Kernel Threads
  – Scheduling
  – IPC
    • Race Conditions

Midterm Topics (3)

• CPU Time (cont’)
  – Critical Regions
  – Mutual Exclusion
  – Semaphores & Mutexes
  – Monitors and Barriers
  – Classical IPC Problems
    • Producer/Consumer
    • Sleeping Barber

Midterm Topics (4)

• Deadlocks
  – Deadlocks
  – 4 Conditions
  – Modeling
  – Detection and Recovery
  – Deadlock Avoidance
    • Banker’s Algorithm
  – Deadlock Prevention
    • Spooling, Global numbering, etc.

Midterm Topics (5)

• Memory Management
  – Memory Management
  – Fixed partitions
  – Degree of Multiprogramming
  – Relocation and Protection
  – Swapping
  – Memory Management
    • Bitmaps
    • Linked Lists