Slide 1

Administrivia

- Reminder: Midterm Wednesday. Review sheet (format and topics) on the Web.
- Sample solutions to written problems (or to be distributed) in hardcopy. (Homework 1 a while back, Homework 2 in class today, Homework 3 later today — I will send e-mail.)
- Sample solutions to programming homeworks online. (I'll post a sample solution for Homework 3 soon.)

Slide 2

Minute Essay From Last Lecture

- (Most people were at least close.)

Slide 3

Homework 2 Review

- Grades were — beyond disappointing, really.
- Many people lost a lot of points on the question about implementing semaphores. Key point — must include something to guarantee one-at-a-time access to shared variables. `disable_int()` is not a “wait” – it says “don’t interrupt me to do something else”.
- Even more people — all but one! – lost a lot of points on that last problem about restrooms. Admittedly I wasn’t as generous with partial credit as sometimes, but still. The key thing here was to use one of our “synchronization mechanisms” to control access to shared variables.

Slide 4

Exam Review

- History of O/S’s — nothing very detailed, maybe something about how they evolved, goals of different types.
- Functions to provide — resource manager, virtual machine (key abstractions).
- What’s needed from hardware — dual-mode operation, memory protection.
- System calls — what they are, when used and why.

Slide 5

Exam Review, Continued — Processes

- Process abstraction (meaning processes or threads) — “virtual CPU” (registers, PC, PSW, etc.).

  Process abstraction (“heavyweight” processes, not threads) — “address space”, maybe information about open files, etc.

  Table on p. 95 of text seems helpful in making this distinction.
- Context switches — what they are, how they work.
- CPU scheduling — how well (or not well) different algorithms work for different systems (batch, interactive, etc.).

Slide 6

Exam Review, Continued — IPC

- Notion of “atomicity”.
- Synchronization mechanism — shared variables only, shared variables with hardware assist (e.g., TSL), semaphores, monitors.
- Classical problems — mutual exclusion, bounded buffer, dining philosophers. For mutual exclusion, idea of “critical region” and how that might apply to instances of this problem.

Exam Review, Continued — This and That

- Deadlocks — what they are, when they can arise.
- In general, if it's in the textbook but wasn't mentioned in class or the homeworks. I probably won't ask you about it.

Slide 7

Minute Essay

- Any more questions about the exam? or send me e-mail any time between now and Wednesday morning.

Slide 8