

Administrivia

- Review sheet on Web, updated earlier today.
- Solutions to all homeworks available tomorrow.
- Graded homeworks to be returned no later than Monday.

Slide 1

Exam Format

- Open book, open notes. Can bring a calculator, but I'll try to keep any calculations simple.
- Questions probably similar in format to last exam — some multiple-choice, some short essay, some calculational problems.

Slide 2

Memory Management

- Schemes for managing memory — contiguous allocation, paging, segmentation — and their pluses/minuses. Notice that choice is usually constrained by hardware (MMU).
- Memory protection / shared memory.
- Calculations related to paging (virtual address to physical address, sizes of page tables, etc.).
- Page replacement algorithms, and role of R and M bits in page table.
- Page fault processing.

Slide 3

Input/Output

- I/O hardware — devices, device controllers, I/O ports versus memory-mapped I/O, DMA.
- I/O software — programmed I/O versus interrupt-driven I/O versus I/O using DMA.
- I/O software layers and how they work together. Functions provided by user-level and device-independent layers (e.g., buffering). Synchronous versus asynchronous.
- I/O software for disks, terminals (character-oriented and GUI-capable), clocks.

Slide 4

Filesystems

- File and directory abstractions — notice many variations.
- Schemes for keeping track of which blocks belong to a file (contiguous allocation, linked list, FAT, i-nodes) — pluses/minuses, comparison of how long it takes to find a particular block in a file.
- Schemes for keeping track of free space — free list versus bitmaps.
- Calculations involving the above — how much space is required for a FAT, limits on file size, etc.
- Backups and consistency checking.
- Optimizations — buffer cache, placement of data on disk, fragmentation.

Slide 5

Minute Essay

- Do you feel reasonably prepared for this exam?
- (Optional) Any plans for the holiday weekend (other than studying)?

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