CS321: Operating Systems

Spring 2019 - Dr. Lawlor (Engineering 134)

Announcements

- Course overall and final exam grades are now on NetRun's grading area.
- The final exam will be Thursday, May 2, 10:15am-12:15pm, in our usual classroom, with basically the same format as the midterm.
- Project writeups are due Friday, April 26 on Blackboard (log in first). The writeup is formatted like a README (txt) or white paper (PDF), has *at most* 2 pages, and briefly describes what you did, your lessons learned, and the project's security implications. (Everything has security implications!)
- Project final code is due Wednesday, April 17 on Blackboard (log in first).
  - Super short rough draft feedback is on NetRun's grading area.
- HW4 on multicore and basic networks is due midnight Friday, April 5.
- Project rough draft code is due midnight Wednesday, March 20 on Blackboard (log in first).
- Midterm exam grades are on the NetRun grading area.
- Spring break March 9-17
- HW3.0 is up, and uses the "Not-so Small Linux (NSL)" virtual machine, as on the thumb drives in class, or available for download here (6GB). It's in the 'hw3' folder in the example programs in CS321 via github, so "git pull" to get the most recent version. Due date is midnight Monday, March 4.
- Project proof of concept reports, a few sentences in class this Wednesday, should describe your initial experiments making it work. Any groups should be solidified at this point.
- Project topics are due in class Wednesday *or* Friday, February 13 or 15. (postponed due to weather)
- HW2 on disk I/O and interrupts is tiny (1 question!) but due Saturday, February 9 by midnight. It's another NetRun / boot block hybrid, like HW0.
  - Mac users, your version of nasm (0.98) doesn't seem like "dq" for 64-bit int constants. You can work around this by splitting the load address into two 32-bit constants, like "dd 1,0" (the low 32 bits first, then zero for the high 32 bits). I just updated the dsl_examples and disk I/O lecture notes to avoid dq, and pushed the homework due date forward one day.
- HW1 on memory mapping and allocation is due Wednesday, January 30 by midnight.
- HW0 on virtual machines (using this virtual machine OS sampler pack), and a bit of review assembly, is on NetRun and due Tuesday, January 22 by midnight.
  - If you don't see a "CS 321 (Spring 2019)" link at the bottom of your NetRun, please email me and I can add you to the class there.

Reference info

- 05/02: Final exam
- 04/29: [Course review for final exam](#)
- 04/22-26: Project presentations
- 04/22: [Parallelism Summary](#)
- 04/19: [Cryptocurrencies as a Distributed System](#)
- 04/17: [Cryptography for Operating Systems](#)
- 04/15: In-class computer security exercise (== HW5)
- 04/12: [Distributed system design](#)
- 04/10: [Real web servers: SQL vs NoSQL](#)
- 04/08: [Real web servers: JavaScript objects](#)
- 04/05: [Web intro: HTML and JavaScript](#)
- 04/03: [Network Sockets: Inside a Web Server](#)
- 04/01: [Network Sockets: Details of HTTP](#)
- 03/29: [Network Socket Programming Intro](#)
- 03/27: [Multicore programming: pipes](#)
- 03/25: Multicore programming: OpenMP threads
- 03/22: [Multicore programming: processes](#)
- 03/20: [Multicore programming](#): [threads](#), and midterm recap
- 03/18: [Parallelism Abstractions](#) (high-level overview of the rest of the semester)
- 03/08: Midterm exam in class
- 03/06: [Course review for midterm exam](#)
- 03/04: [UNIX programming interface: syscalls vs library calls](#)
- 02/29: [History of Operating Systems](#)
- 02/25: [Virtual Memory handling](#)
- 02/22: [Kernel structs with function pointers](#)
- 02/20: [Kernel Data Storage Interfaces, fopen through /dev/sda](#)
- 02/18: [Kernel mode programming: Kernel Modules](#)
- 02/13: [File Allocation Table (FAT) Filesystem Layout on Disk](#)
  - [Filesystem lecture on YouTube](#)
- 02/11: [Disk Layout: Partitions & Filesystems](#)
- 02/08: [Switching Processes on a timer interrupt](#)
  - Reference: [SeaBIOS source code](#)
- 02/06: [Signal handlers](#) (program-visible interrupts)
- 02/04: [Interrupt Table and Interrupt Handlers](#)
- 02/01: [BIOS disk access](#)
- 01/30: [x86 boot: Global Descriptor Table (GDT)](#)
- 01/28: [Memory Allocation](#)
- 01/23: [BIOS boot block](#)
- 01/18: [Networking Intro](#)
- 01/16: [Command Line and Batch File Programming](#)

- 01/14: [Virtual machine OS sampler pack](#)
- The [course syllabus](#) has grading info, my office hours, course topics, and other good stuff.
  - Linux [command line cheat sheet](#)
  - The [register-level VirtualBox debugger](#) can be started with this command line: "VBOX_GUI_DBG_ENABLED=y virtualbox --startvm *YourVM*"
  - Example boot blocks are at http://tinyurl.com/cs321-dsl via a simple http page that should work from inside the DSL VM. (Unlike this google doc!) You can type that URL into DSL once, and either bookmark it in that wacky browser, or save the URL in a text file.

(Why is this a Google Doc? To make it easy for me to update, and so you can see my updates in real time!)