CS 2810: Computer Organization and Architecture

Fall 2017	Topics	Assigments
Aug 21–25	binary numbers, UNIX, vim	Command-line tutorial
Aug 28–Sep 1	2s comp, octal, hex, floats	Binary quiz
Sep 5–8 (*Labor Day*)	binary math, ssh, git	Floats quiz
Sep 11–15		
Sep 18–22	processes, system calls	
Sep 24–29	job control	Shell part 1
Oct 2–6		Shell part 2
Oct 9–11 (*Fall Break*)		Midterm exam
Oct 16–20	assembly language (6502)	
Oct 23–27	assembly language (ARM)	Mandelbrot
Oct 30–Nov 3		
Nov 6–10		
Nov 13–17	caching	
Nov 20–21 (*Thanksgiving*)	virtual memory	
Nov 27–Dec 1	malloc, free, gc	
Dec 4–7	Atari 2600	

Changes to the schedule will be announced in class.

Resources

- Syllabus
- Examples from class
- Deep Mandelbrot zoom video

git and ssh

- How to set up ssh (public key, firewall)
- How to set up ssh forwarding using PuTTY (for Windows)
- git book
- git cheat sheet
- git for computer scientists
- longer cheat sheet
- How to set up git for a centralized repository
- 25 tips for intermediate git users

Screencasts

These screencasts are to help you get started with CodeGrinder and with writing ARM assembly language.

- Writing the maxlist function
- Using GDB to step through itoa
- Help for individual assignment steps:
  - Itoa part 1: intro to grind and itoa
  - Itoa part 2: solution and grading process
  - WriteHeader

These screencasts are to help you review floats and 2's complement:

- Two's complement review (11:44)
- Float review (13:47)

- Converting numbers to floats (10:23)
- Python script to convert 9-bit floats into decimal fractions

Raspberry Pi

- Recommended Raspberry Pi 3 kit (red/white case)
- Recommended Raspberry Pi 3 kit (black case)
- Recommended 32GB micro SD card
- MicroSD card benchmarks (use this to help pick a fast 32GB card)

Assembly language resources

- ARM assembly notes [html] [pdf]
- Makefile
- Assembler directives cheat sheet
- ARM quick reference
- Official instruction set quick reference
- ARM instruction set slides

Assignments

Most of the projects for this class are managed through Canvas and CodeGrinder. The shell assignment is not:

- Shell [html] [pdf]