CS 326: Operating Systems

libc

Lecture 5

Today's Schedule

- Reviewing lab report questions
- Extra credit results
- Tracing the boot process, debugging with gdb
- Project 1
- libc
- Checking off Lab 1

Lab Report Questions

- Most lab reports will have questions about material we've covered since the last lab
- They can be multiple choice, true/false, or short answer
- You are likely to see similar questions on our quizzes
- It's okay to get them wrong, so try figuring them out without looking up the answers

Extra Credit

- Tetris:
  - Colin
  - Enrico
  - Arya
  - Smrithi
  - Rebecca
  - Natalie
- Tracing:
  - Pratha
  - Carlos

Tracing and Debugging

- Let’s look at a couple approaches for tracing through the xv6 source code.

Project 1

- The spec is up for Project 1!
- I have not posted the base OS we will all build off of yet (that's coming Monday)
- For now, you should try to decide *what* you want to do and *who* you'll work with
  - Teams of 2

The C Library (libc)

- You are probably somewhat familiar with the C standard library at this point
  - `Your program -> C Library -> System Calls -> Kernel`
- In this class, we'll use our own `libc` implementation
- Let's look at some relevant files:
  - `user/ulib.c`
  - `user/umalloc.c`

Why do we care?

- Applications need a stable interface / API
- On Linux, it's safe to use system calls directly
  - Guaranteed stable
  - See: golang
- On Windows, macOS, *BSD, the C library represents the stable interface for applications
- What are the pros and cons of these two approaches?

Misc: Creating a shell alias

- Typing `cd /raid/$(whoami)/os-*` every time you log into gojira can be quite annoying, right?
- Let's create a shortcut (shell alias) for ourselves.
  - There's some instructions on the schedule page that go into detail

Checking off Lab 1

- If you haven't had L1 checked off, now is your last chance!
  - Well, office hours works too…