Operating Systems Basics

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Operating System

- ▶ What is it?
  - ▶ OS's you are familiar with?
- ▶ According to wikipedia:
  - ▶ System software that manages computer hardware, software resources, and provides common services for computer programs.
  - ▶ I/O
  - ▶ Memory allocation. . .

Operating Systems

- ▶ How do we interact with it (on the programming level)?
  - ▶ System calls.
- ▶ What is a system call?
  - ▶ How would I view the system calls of a program?
  - ▶ strace

strace

- ▶ Traces system calls and signals.
- ▶ strace
  - ▶ ls
  - ▶ echo this

System calls

- ▶ How would I look up what a system call does?
  - ▶ check the manual for it
  - ▶ ex man sbrk

Who uses the OS?

- ▶ Users
  - ▶ Users can own files
    - ▶ Permission can be set to files.
  - ▶ Users can be part of groups.
  - ▶ Groups have permissions to read and write files.

Users and groups

- ▶ ls -alhs
  - ▶ Change permission with chmod
  - ▶ Add a user to a group usermod -aG additional_groups username
  - ▶ To view all groups cat /etc/group
  - ▶ change ownership on a file?
    - ▶ chown

Processes

- ▶ What is a process?