CS202-(001): Operating Systems

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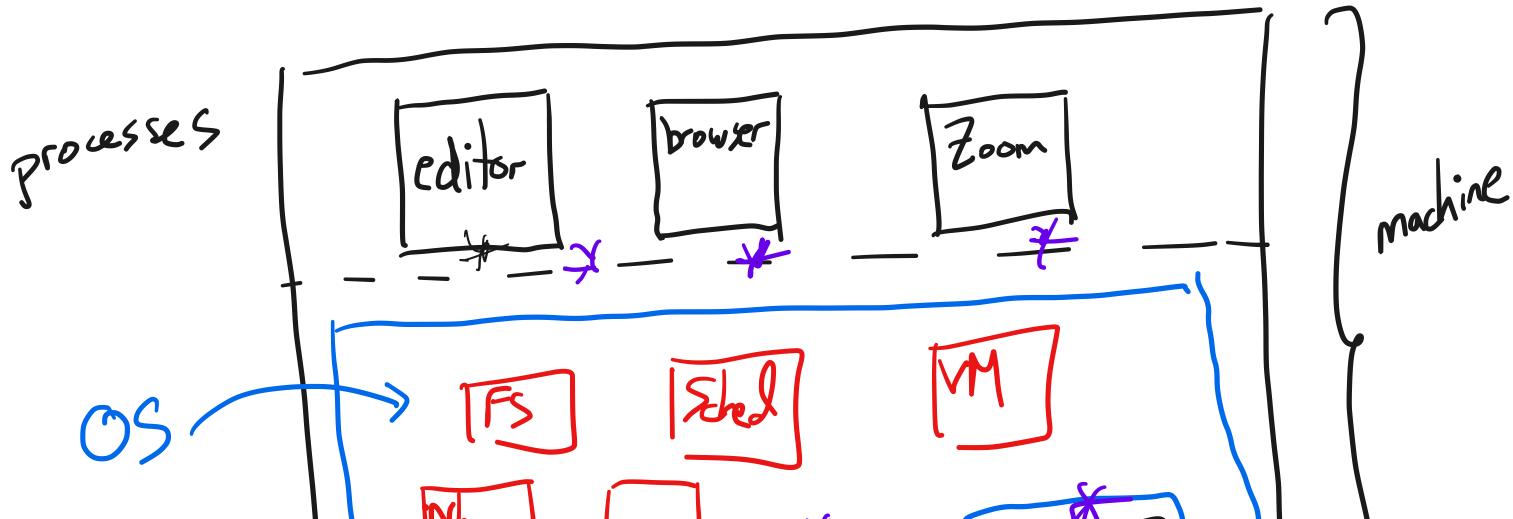
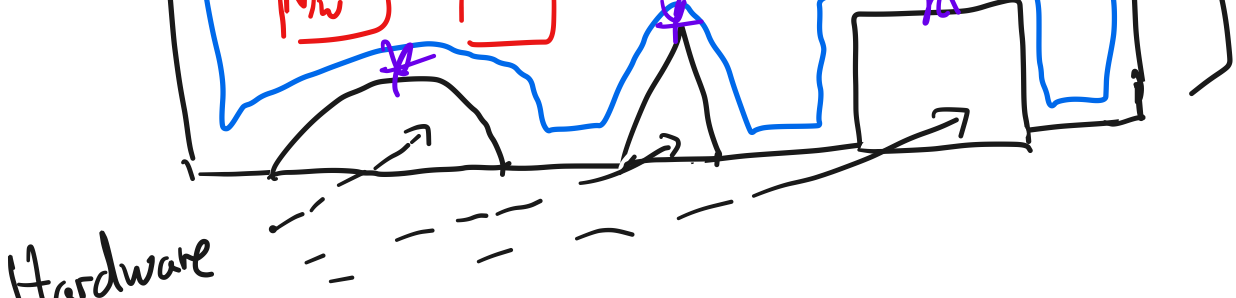
http://www.cs.nyu.edu/~mwalfish/classes/21fa

- [x] 1. Intro & goals
- [x] 2. What is an operating system?
- [x] 3. Why study systems?
- [x] 4. How will we study (operating) systems?
- [x] 5. Mechanics + admin
- [x] 6. History
- [ ] 7. Processes

2. What is an operating system?





Classical description of OS:

I. Managing the resources of the machine

II. Abstracting the hardware

Examples?

- file system
  - Abstraction: file: contiguous
  - Isolation: user A can't user B's files
- Text input
  - Abstraction: all inputs "look the same"
  - Isolation: deliver keystrokes to the right process
- Memory
  - Abstraction: virtual memory `movq 0x1248, %rdx`
  - Isolation: processes cannot write to each memory

- Scheduling
  - Abstraction : Continuous execution
  - Isolation : CPU-heavy applications/processes switched out

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3. Why study systems?
   a. "how things work"
   b. ideas are everywhere
   c. fundamental design trade-offs
   d. unsolved problems
   e. skills building

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4. How will we study?

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5. Mechanics + admin

- [x] Comms
- [ ] Components
  - [x] class
  - [x] labs * 10/27/21
  - [x] exams
  - [x] reading
  - [ ] H/w
  - [x] recitation / review
  - [x] grading
  - [x] policies ←

1 = labs

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6. History (abridged) Unix

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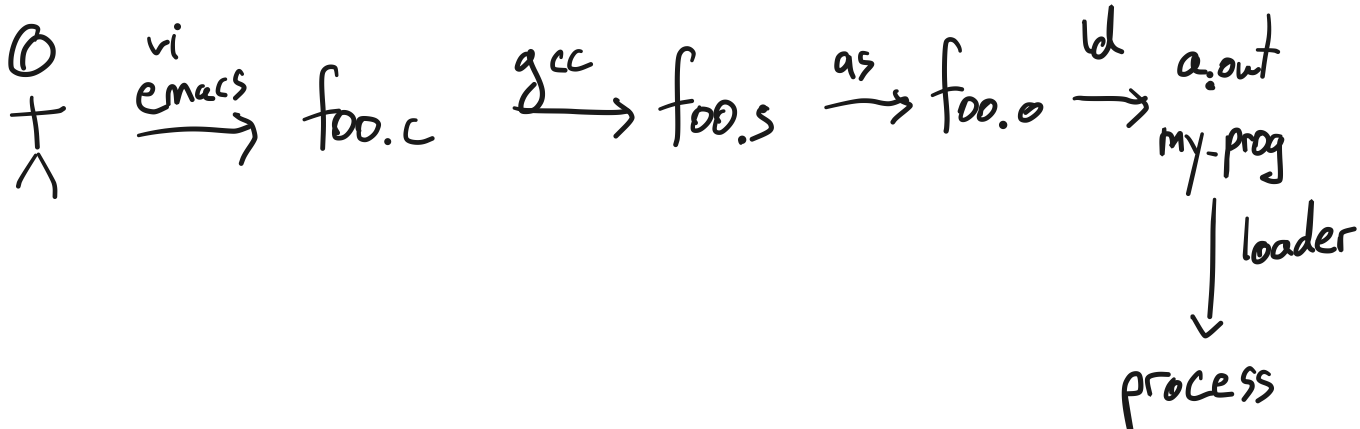
7. Processes

Key abstraction

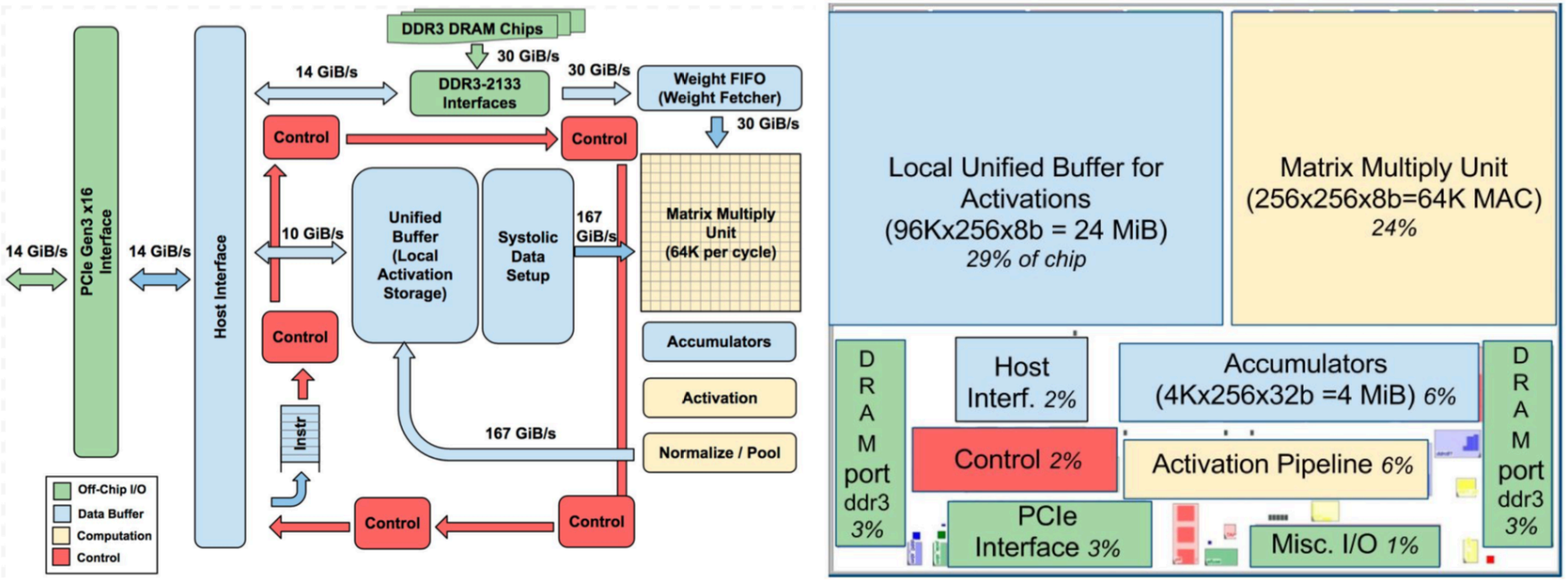


processes can be understood in two ways:

- from the process's point of view

- from the OS's point of view

C? x86-64? My Future Is In Machine Learning!



- Cutting-edge ML backed by custom TPU, unique system software and OS support...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