CS202(-001): Operating Systems

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

- [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

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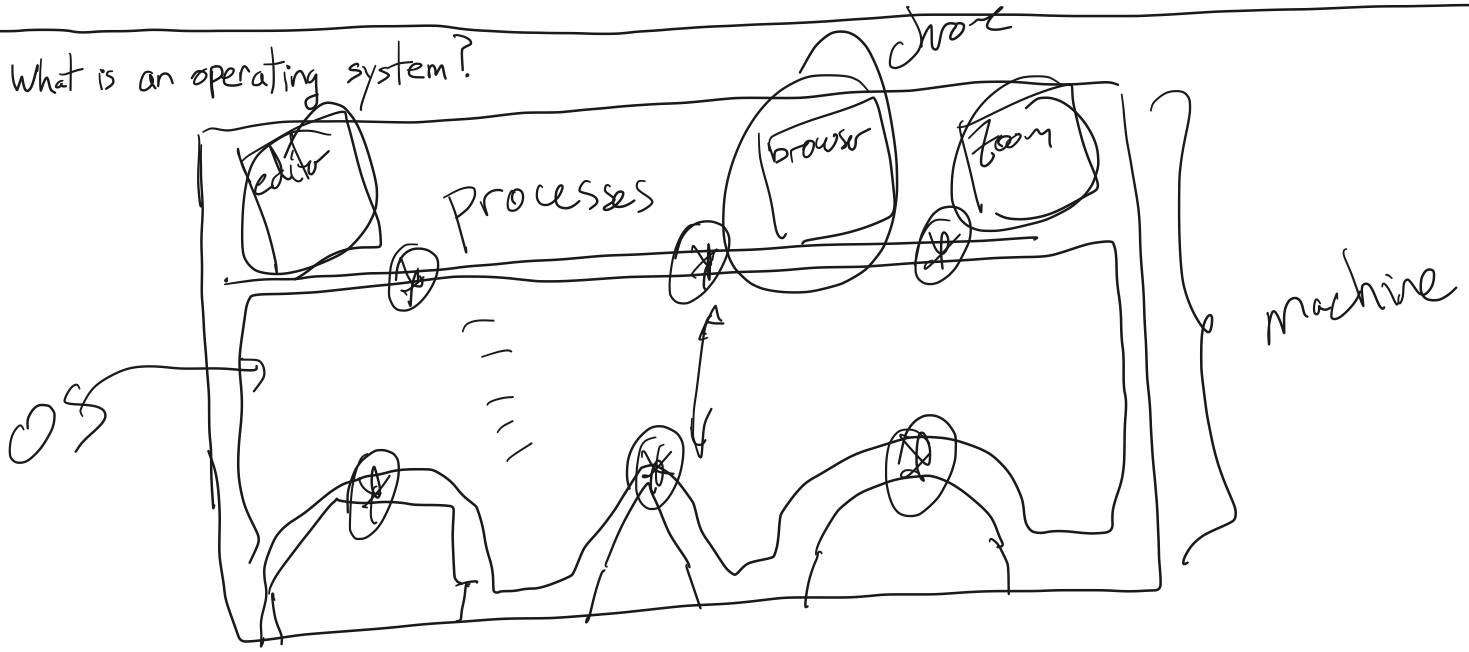
2. What is an operating system?




Classical description of OS:

I. Managing the resources of the machine

II. Abstracting the hardware

Examples?

- File systems

  Abstraction

```
fd = open("/tmp/foo", O_RDONLY);
rc = write(fd, "abc...z", 26);
```

  Isolation

- Text input
  Abstraction

  Isolation

- Memory
  Abstraction*

  Isolation

{ movq 0x1248, %rdx

- Scheduling

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

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4. How will we study?

- [x] Comms
- [x] components of the course
  - [x] ⇒ lecture/class
  - [x] ⇒ labs
  - [x] ⇒ exams
  - ⇒ reading
  - ⇒ HW
- [x] grading
- [x] policies

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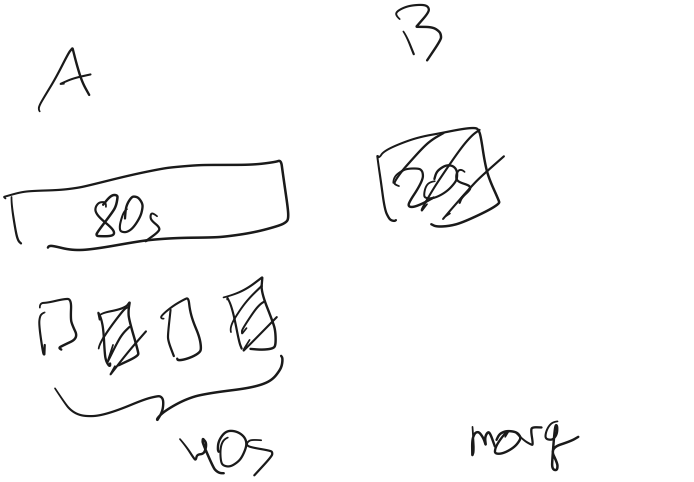
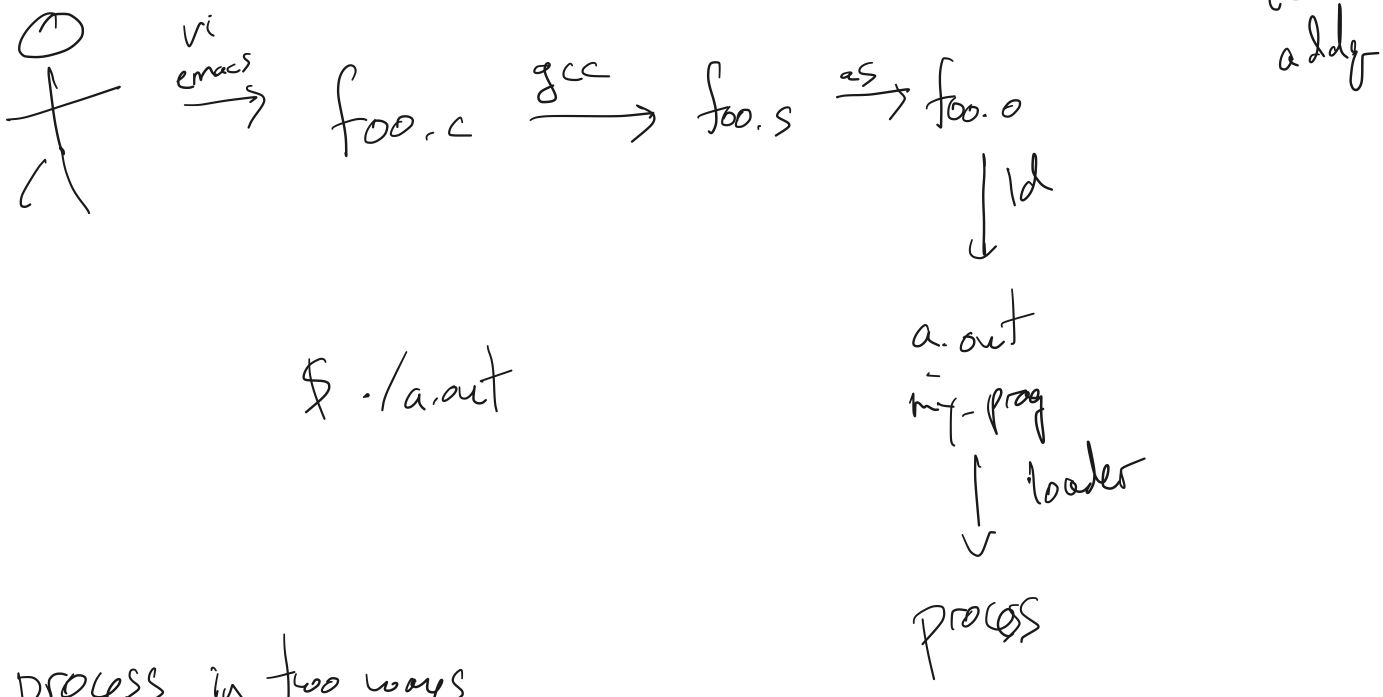
# 7. Processes

Key abstraction




mov
lea
add

process in two ways

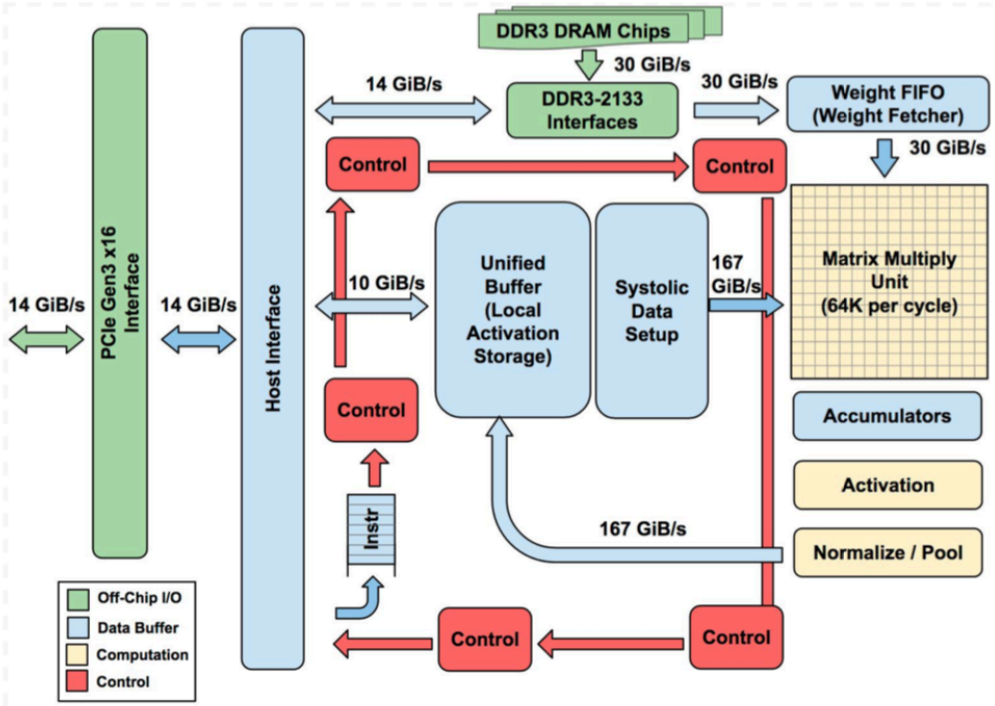
→ from the process' point of view

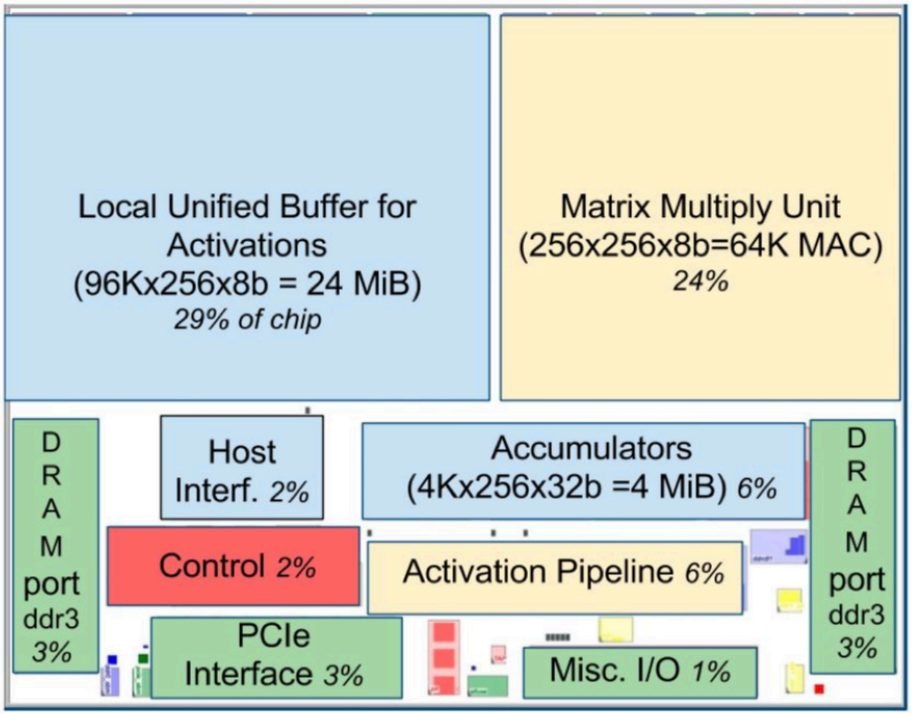
next class

"abstract machine"

→ from the OS POV ]

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




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