Week 1.a
CS3650
01/08 2024
https://naizhengtan.github.io/24spring/

0. Lecture policies
1. Introduction and goals
2. What is a computer?
3. What is an operating system?
4. Why study systems?
5. How will we study systems?
6. Mechanics and admin

- no laptop
- chocolate
- "lottery"

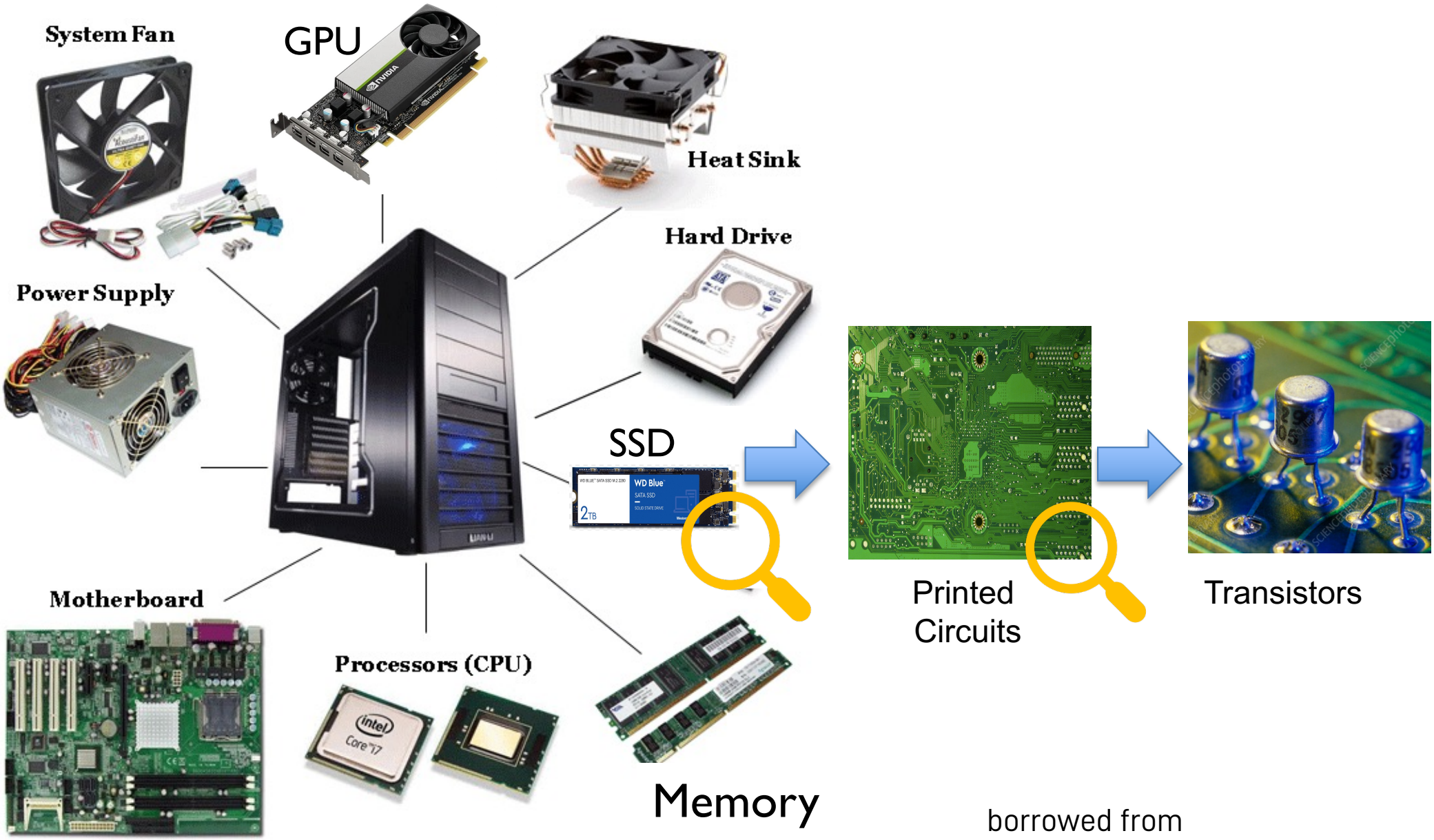
1. Intro & goals.

- a systems person
- abstraction & concepts
- skills
  - vim
  - gdb
  - shell
- "no pain no gain"

non-goals:

- not a programming course
- not teamwork course

Components of a computer: hardware



borrowed from
https://nyu-cso.github.io/notes/01-overview.pdf

Software:

- bit → byte
  (0/1) (8bit)
- binary, dec, hex (16)

git Vim/emacs

registers

int / float

$01000001 \Rightarrow 1 + 1*2^6 \Rightarrow 0x11$

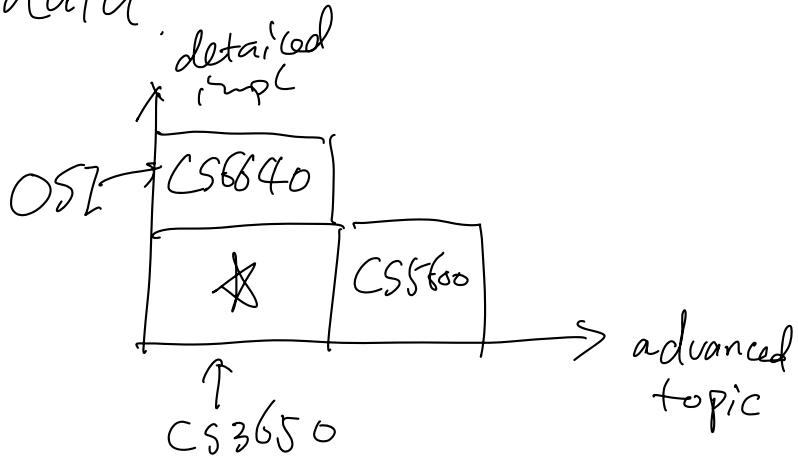
$= 17$

1 - 9 a b c d e f

16 == 0x10 (10 ~ 15)

program = code + data

- OS
  - system calls
  - 2 jobs:
    - resource management
    - abstrace HWs



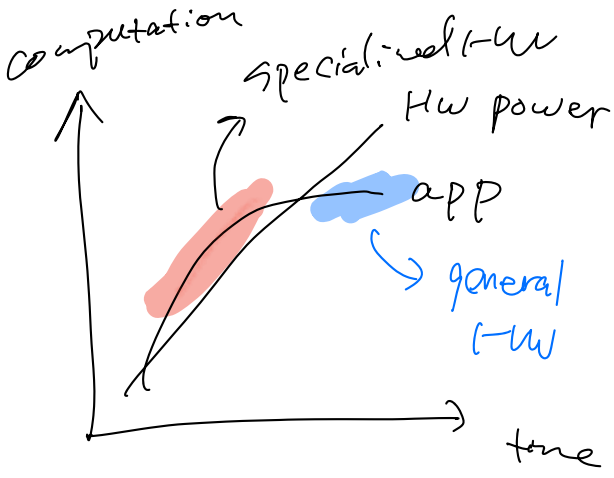
- "My future is DL!"

TF ⇒ OSDI'16

LLM { vLLM → 2-4x

Power user → RTX 4090, 11x

- "how things work"
- ideas are everywhere
- trade-off.
- challenges & skills



- Mechanics & admin.
  - Communication reading (COSTEP)
  - Course
    - lectures
    - assignments
    - labs
    - exams