
Nimitz After Class Enrichment



Hands On: Build a Computer

James Liu, Nimitz PTA
Lesson 1



Introduction to building PCs

PC = Personal Computer

Yes! You can build your own computer system with parts you buy.

You can choose the *style*, *size* and *performance*.



Case & Power Supply



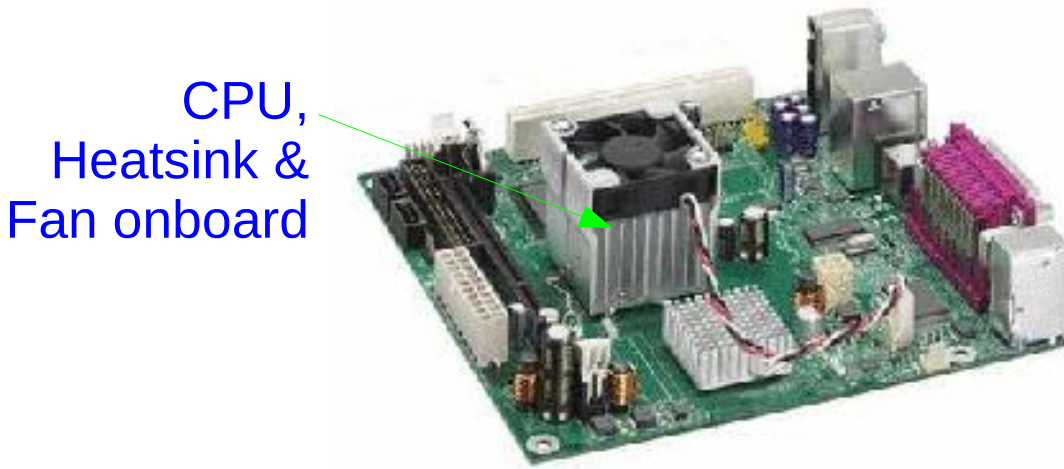
1. Case holds all the parts
2. Power supply converts wall power (AC) into usable power (DC – 5V & 12V)
3. Parts are usually standard. They fit inside standard cases, regardless of who makes them.



Motherboard & CPU

Motherboard is also the “main” board where most parts connect with cables. (abbrev. “Mobo”). May include Graphics, network, audio, and even CPU onboard.

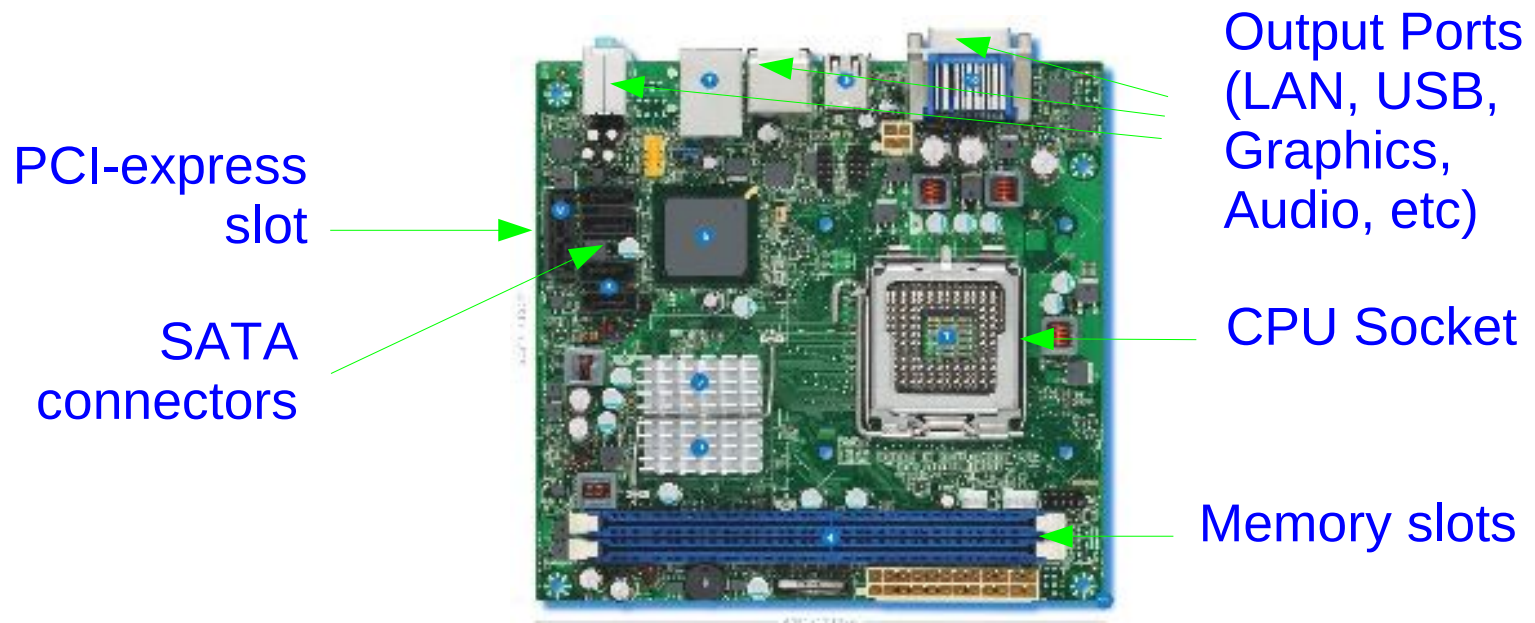
CPU = Central Processing Unit – the brains of the computer. Also a “*microprocessor*.”



CPU by itself

More Motherboard Info

Slots and Connectors on the Motherboard are for add-on or *peripheral* components or devices.



DIMM slot for memory

PCI/PCI-express slots for peripheral cards

SATA connector – newer disk drives

Memory



- Main memory is for fast access
- Works only when powered on.
- **DIMM** = Dual Inline Memory Module
- **SDRAM** is really old memory (1995 - 2002)
- **DDR** (Double Data Rate) memory is faster (2000 – 2005)
- **DDR2** (current generation memory) even faster

Hard Disk/Optical Disks

- Hard drives & Optical (e.g. CDROM or DVD-burner) drives are for storing data when power is off
- Slower than main memory
- Can hold very large amounts of data cheaply.



Handling Electronic Components

- Be careful of Electro-Static Discharge (ESD)
- Always discharge static from your body by touching the metal of the back of the PC case before handling a component.
- Hold component by corners whenever possible and avoid touching any pins
- Avoid dropping, tapping, knocking or shaking computer components

Power and Heat

- Computers use electricity. Some use more than others and this produces heat.
- To get rid of heat, we need heat sinks, and sometimes fans to move the hot air away.
- Parts with heat sinks and/or fans usually use quite a bit of power and must remove the heat.



Next Time

**Start Building
a
Personal
Computer**

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