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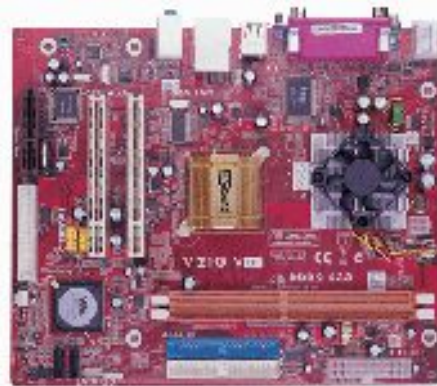
Nimitz After School Enrichment



# Hands On: Build a Computer

*Dr. James Liu, Nimitz PTA*  
*Lesson 2*

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# Classroom Rules

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1. Respect the desk you are using – some other student normally sits in it!
2. Kids need to use gloves whenever handle components
3. Return tools their place when done.
4. Clean up your desk and area around you before leaving.

# Quiz on Last Week's Lesson

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1. List 3 components needed to build our PC.

a) \_\_\_\_\_

b) \_\_\_\_\_

c) \_\_\_\_\_

2. Why does the CPU have a Heat Sink and Fan?

\_\_\_\_\_

3. What is the difference between Memory and Hard Disk?

\_\_\_\_\_

# Building a PC Parts List

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- **Case & Power Supply**. Come in several standard sizes to fit most motherboards (e.g. ATX, microATX, mini-ITX). We're building a Shuttle “shoebox” XPC.
- **Motherboard & CPU** – choose for your purpose – Surfing the Net? Email? Games? Desktop Publishing?
- **Memory** – choose the right type for your motherboard and enough to meet your needs (e.g. 512MB? 1GB?)
- **Hard Disk** – choose SATA or IDE and enough storage for your files, or songs, or movies (100GB? 200GB? 500GB?)
- **Other parts** – you may need an external USB optical drive, keyboard, mouse and monitor, and flash memory reader, speakers, etc.

# Reminder When Handling Electronic Components

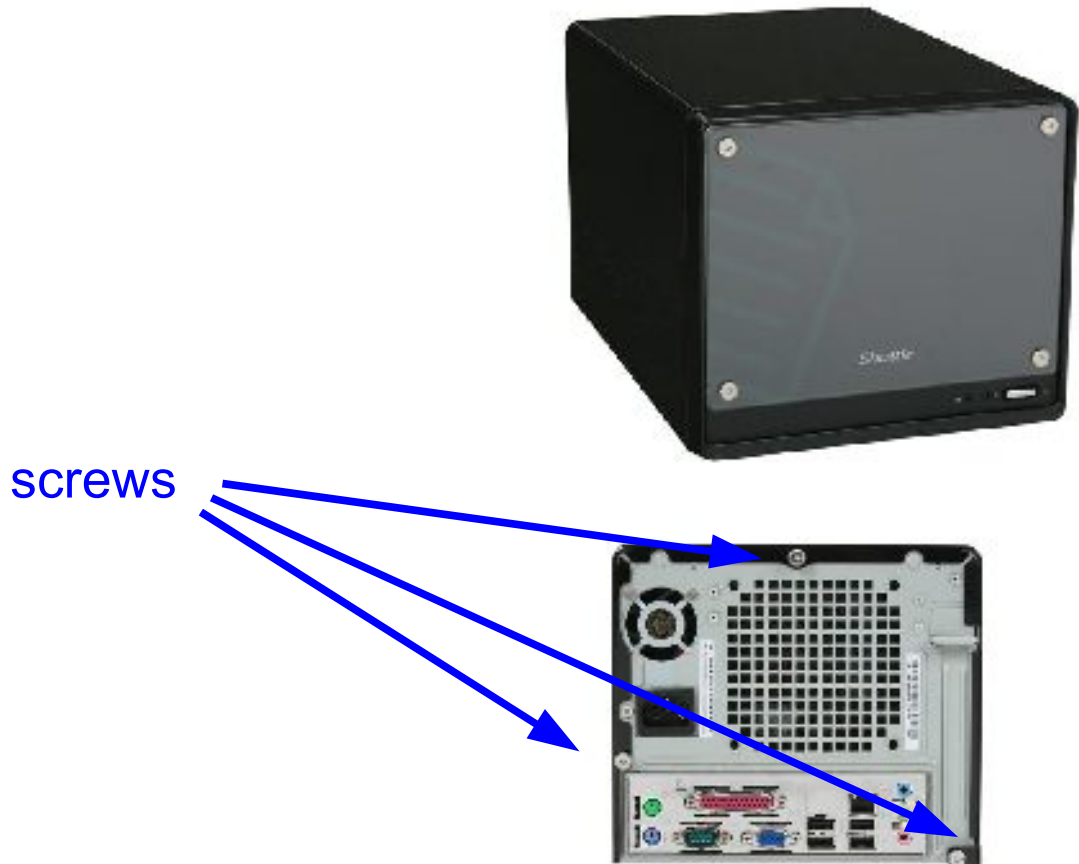
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- Be careful of Electro-Static Discharge (ESD)
- Always discharge static from your body by touching the metal of the back of the PC case before handling a component.
- Hold component by corners whenever possible and avoid touching any pins
- Avoid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

# Crack Open The Case

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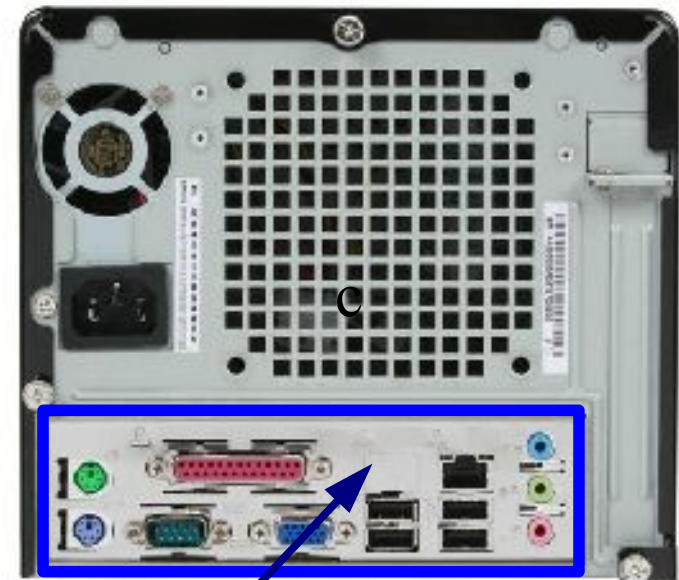
- Start by removing thumb screws that hold the top cover.
- Put screws in safe place.
- Slide top cover backwards and lift off.



# Barebones PC Pre-Installed

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- I/O Shield at the back already installed.
- Motherboard comes inside already mounted
- Power supply plugged into Socket on mobo



I/O shield

# Adding CPU

- This socket is for LGA 775 processors (Intel)
- Open lever (down, out, then up) and remove covers, if any.
- Align CPU “notch” and place onto pins.
- Close cover and use lever to clamp securely.



Lever

Cover  
Plate

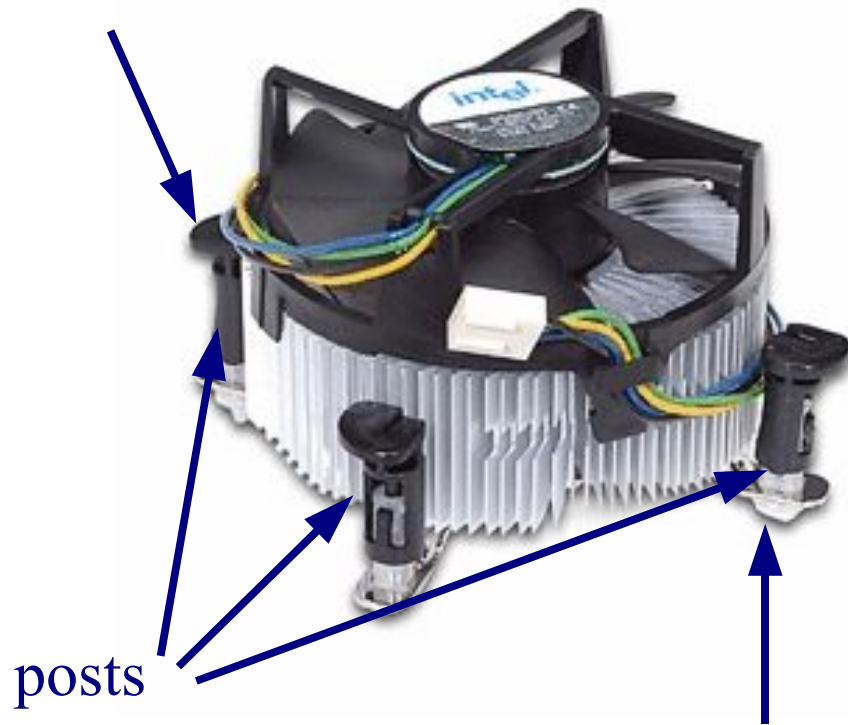
Notches  
under  
the plate

Slide 8

# Adding Heatsink/Fan

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tab/knob



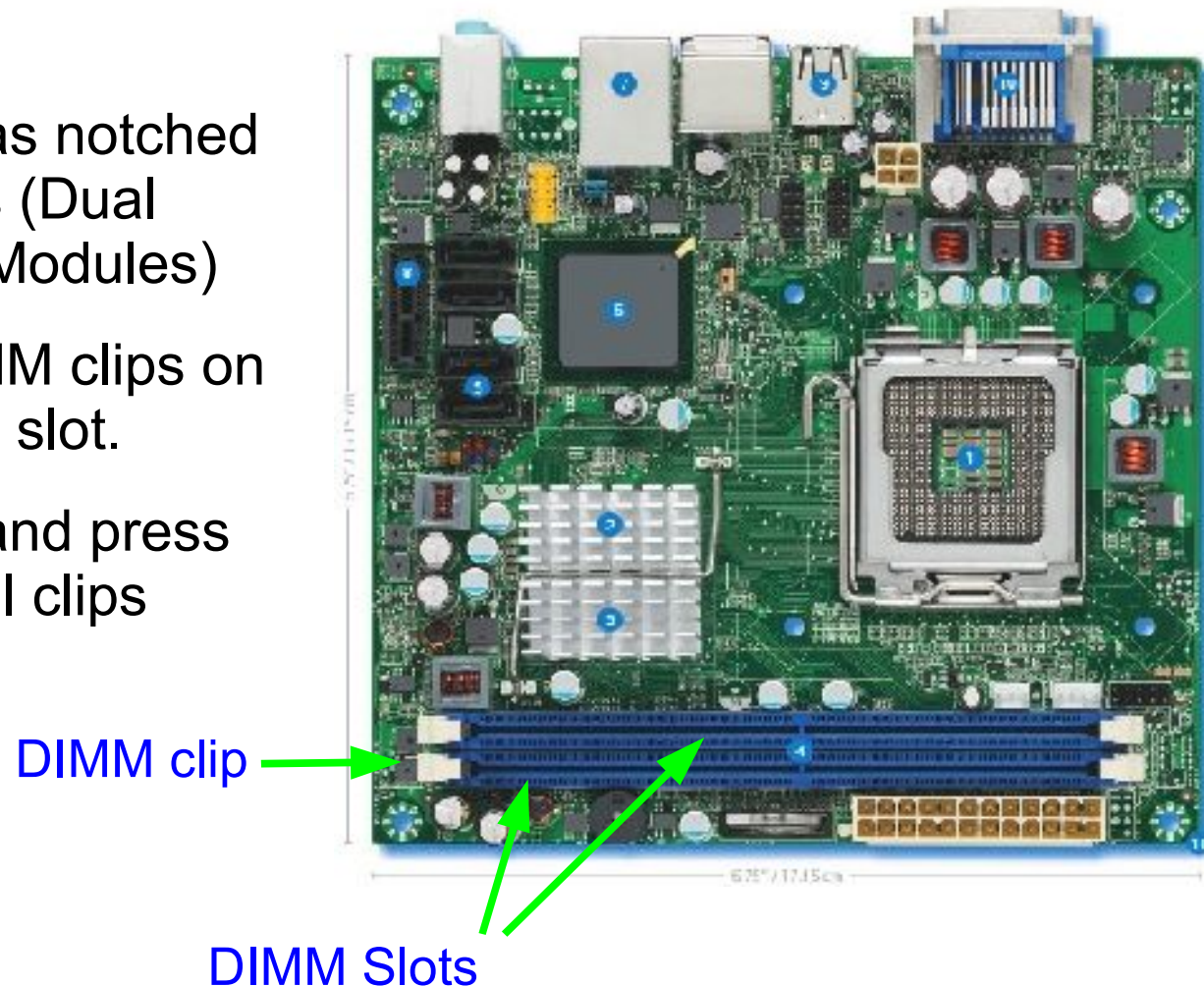
posts

push  
rivet

- Heatsink/Fan has 4 posts and push rivets and white thermal paste on the underside. (if no paste, you need to add your own).
- Posts fit holes in motherboard.
- Carefully line up posts with holes
- Push down firmly on each post until it clicks and locks into place.
- To remove, turn each tab/knobs on top of each post  $\frac{1}{4}$  (quarter turn).

# Install DDR2 Memory

- Motherboard has notched slots for DIMMs (Dual Inline Memory Modules)
- Spread out DIMM clips on the end of each slot.
- Line up DIMM and press down firmly until clips close.

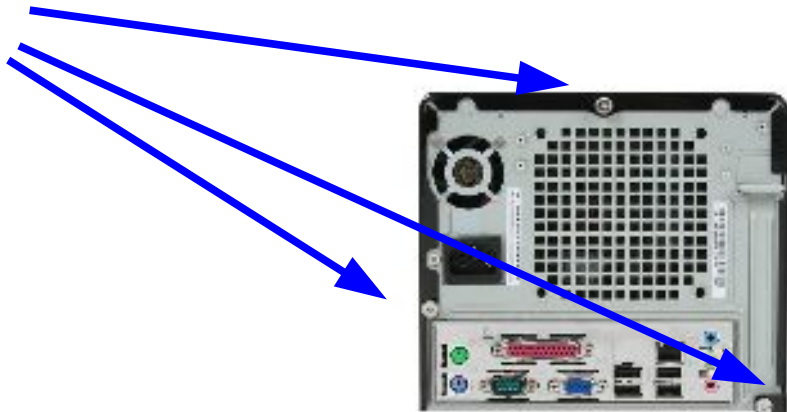


# Clean Up Time

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screws



- Close the case
  - Slide cover back on
  - Screw on 3 screws in the back.
- Put back tools
- Check desk area

# Next Time

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# **Install Hard Drive, Plug in Cables**

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