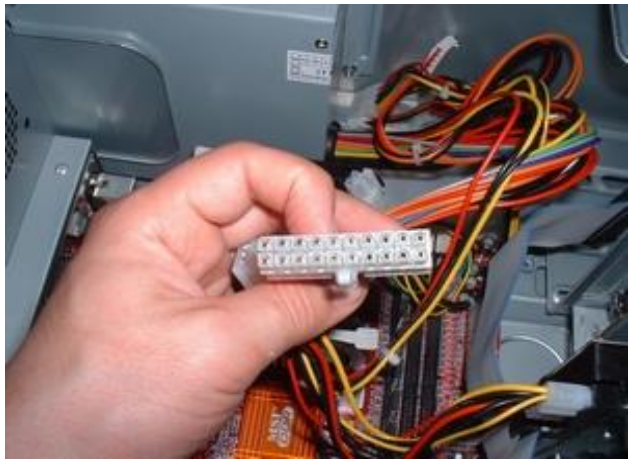
ASSEMBLING A PC…



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Why should we learn about Hardware…

- Troubleshoot our own PC and saves time
- Knowing about system internals and components
- Very easy installation for modern hardware
- Install extra memory
- Reusing components

Safety Precautions…

- Beware of Electro Static Discharge (ESD)
- Build your computer on a hard surface, away from carpets.
- Wear shoes and short-sleeved cotton wear.
- Use Phillips-head screwdriver
- Keep the components away from Moisture
- Avoid Using Pressure while installing.

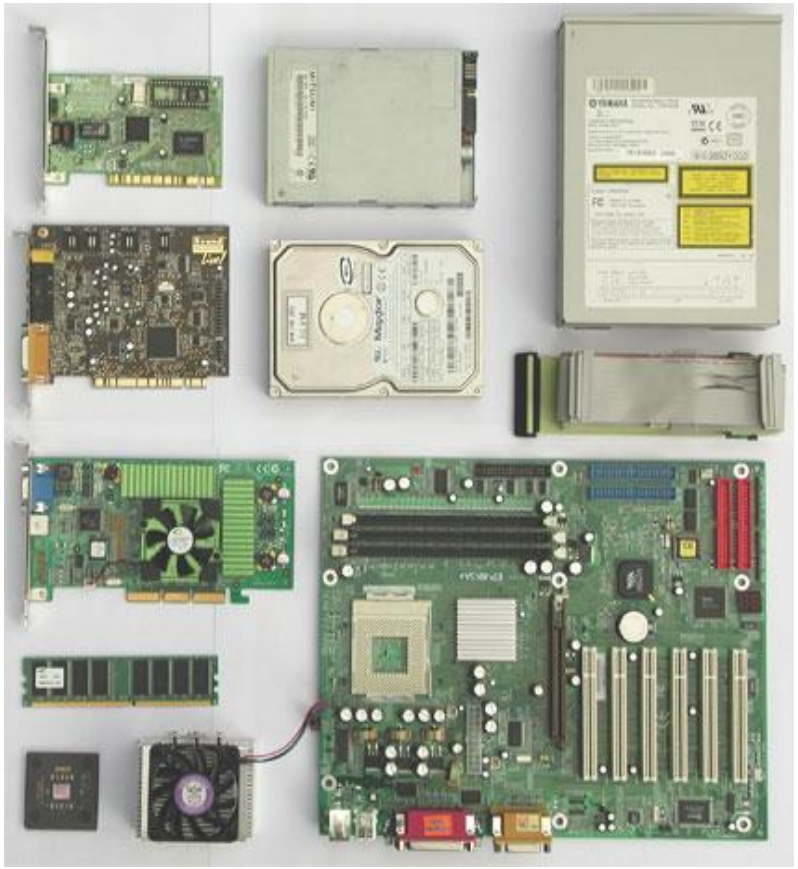
Steps for Assembling…

1. Getting the cabinet ready
2. Preparing to fit the components
3. Fitting the motherboard;
4. Fitting the RAM, processor, and cooler;
5. Installing the PCI Cards;
6. Fitting the hard disk and floppy drive;
7. Installing the CD-ROM drives;
8. Connecting the ribbon cables;
9. Powering the drives and motherboard;
10. Connecting the cables for the case front panel;
11. Final check.

Getting The Cabinet Ready…

- Check how to open the cabinet, and determine where to fix the components.
- Determine if the case has the appropriate risers installed

Preparing To Fit The Components…

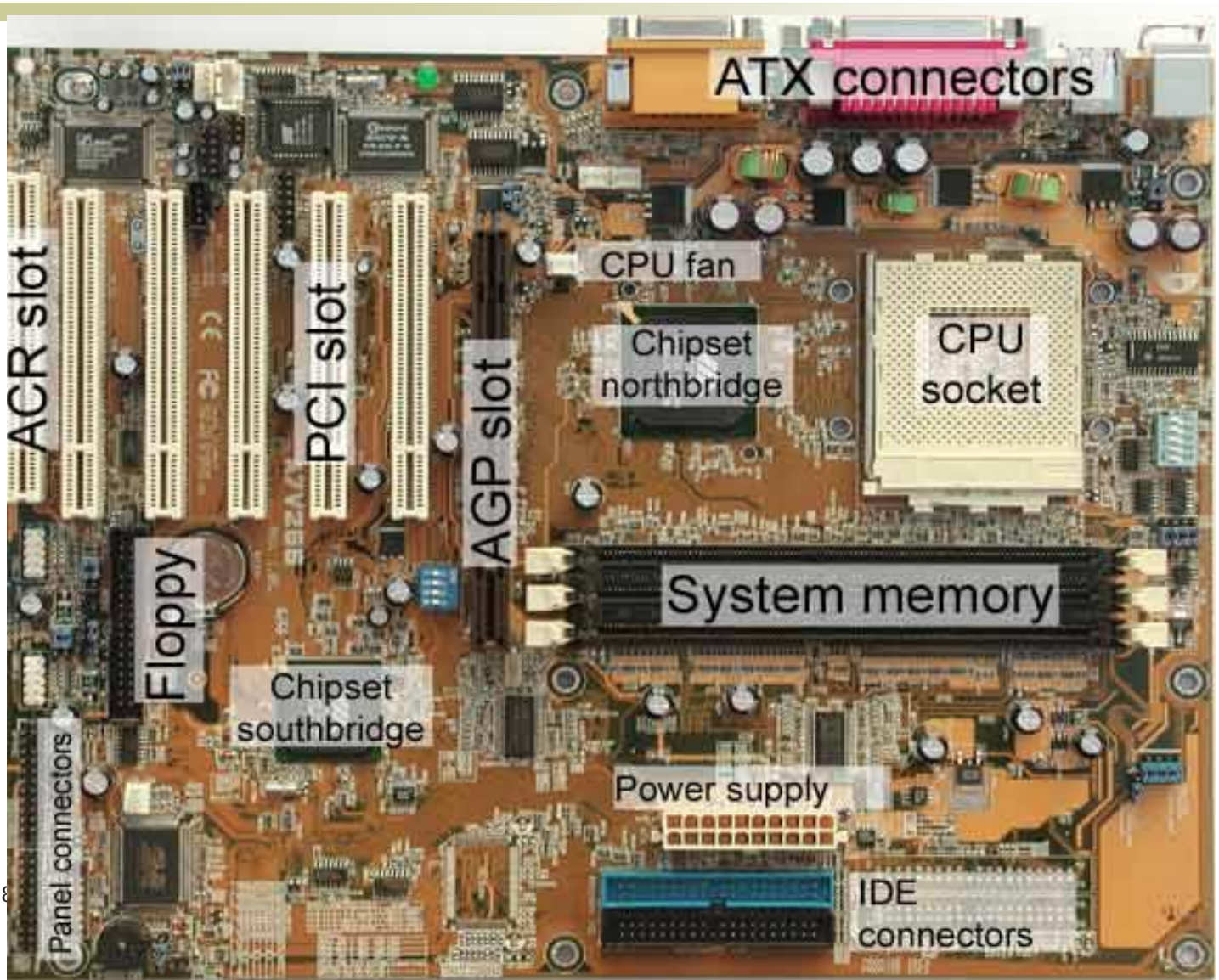


- Network Adapter Card
- Floppy Disk Drive
- CD-ROM Drive
- Hard Disk
- Ribbon Cables
- RAM
- CPU
- Heat sink / Cooler / Fan
- Motherboard.
- Screws

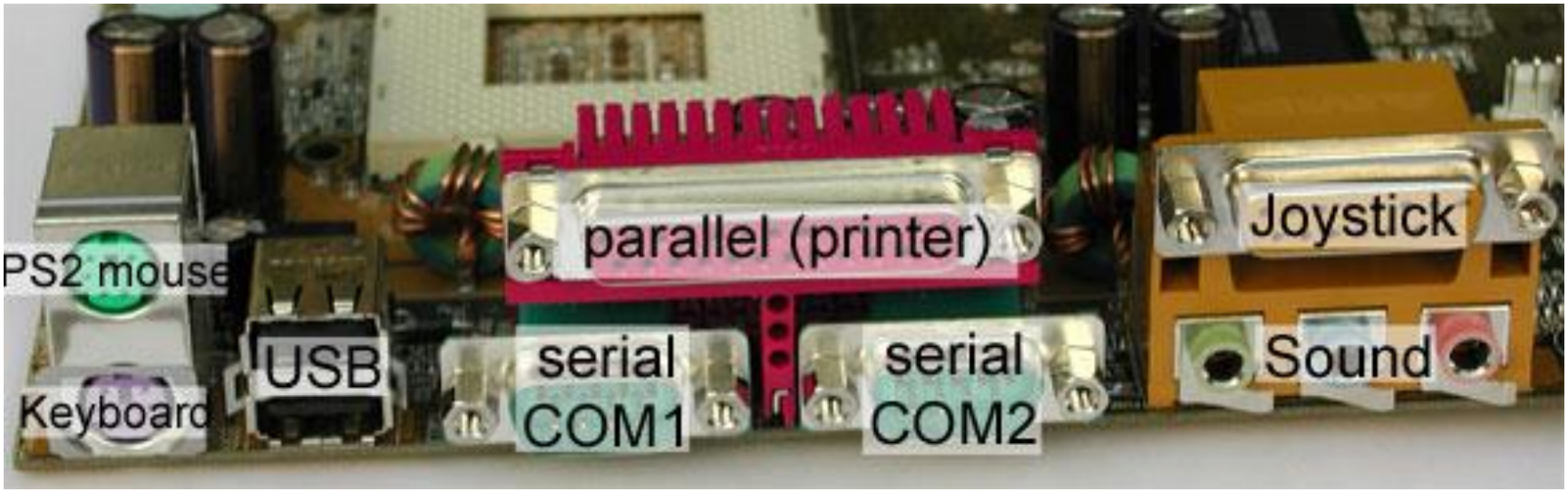
Fitting The Motherboard…

- Line up the ports on the motherboard (PS/2, USB, etc.) with the appropriate holes in the back panel I/O shield of the case.
- Check the points where you need to install raiser
- Install them and make the motherboard sit on them and fix screws if required.

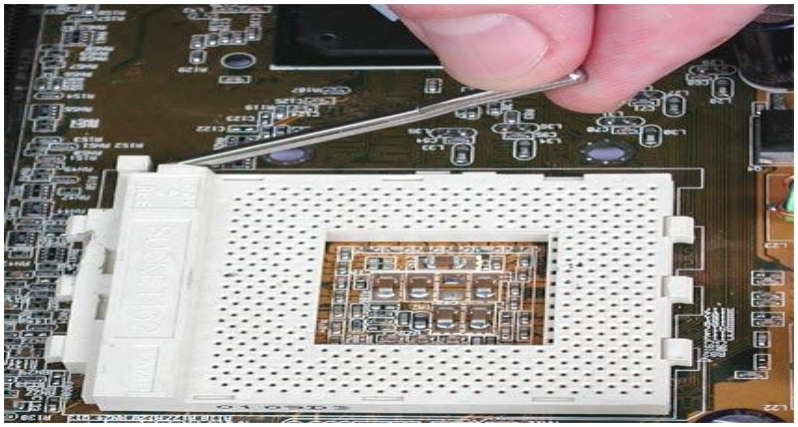
Motherboard Overview…

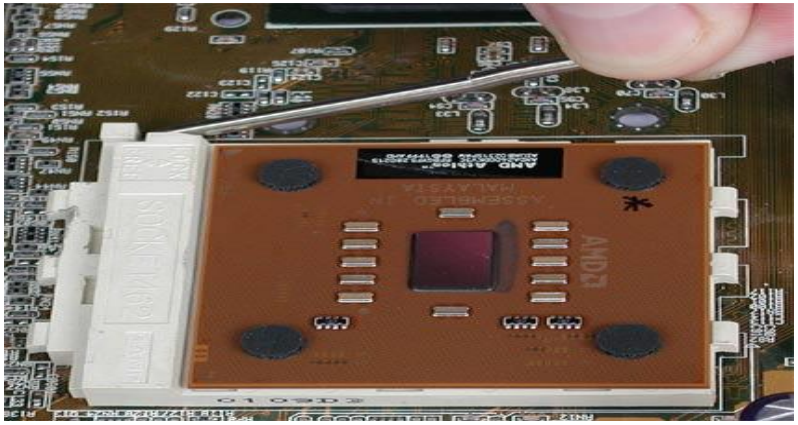


Motherboard Connectors…



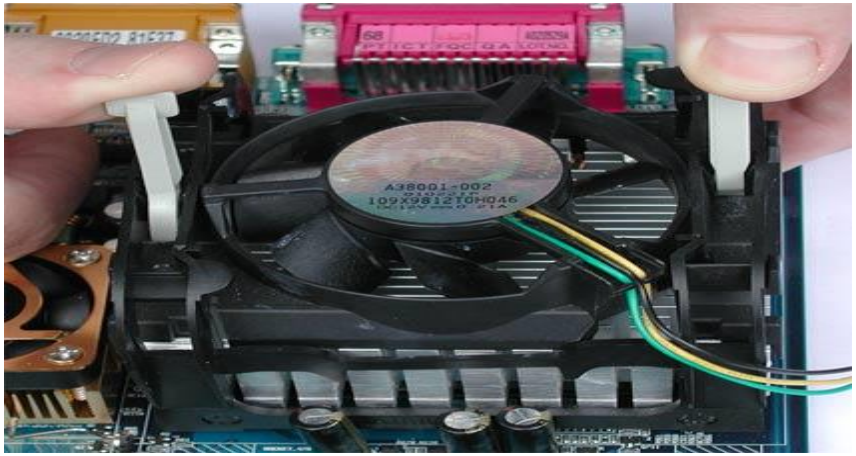
Fitting The Processor…





- Raise the small lever at the side of the socket.
- Notice that there is a pin missing at one corner, determine the direction to fit in the processor.
- You should not force the CPU when inserting it, All pins should slide smoothly into the socket
- Lock the lever back down
- Install the Heat Sink over it. (Different type for each processor)

Heat Sink / CPU fan …



Fitting the RAM…

- The RAM must be suitable for the motherboard.
- There are currently three types of RAM available: SDRAM, DDR SDRAM and RDRAM.
- The motherboard's chipset determines which type of RAM may be used

Installing The PCI Cards…

- Most of the cards are inbuilt these days
- NIC, sound cards etc… are fitted into PCI slots

Fitting The Hard Disk And Floppy Drive…

- Place the floppy and hard disks in their slots.
- leave some space above HDD to prevent heat buildup
- Check the jumper configuration.
- Fix the screws

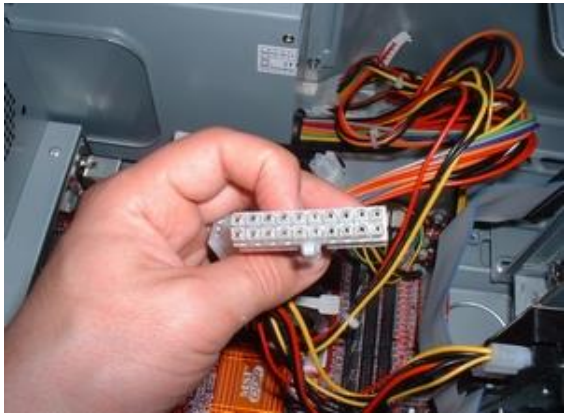
Installing The CD-ROM Drives…

- CD-ROM drive is similar to installing a hard disk.
- First, check that the jumper configuration is correct.
- Fix the screws

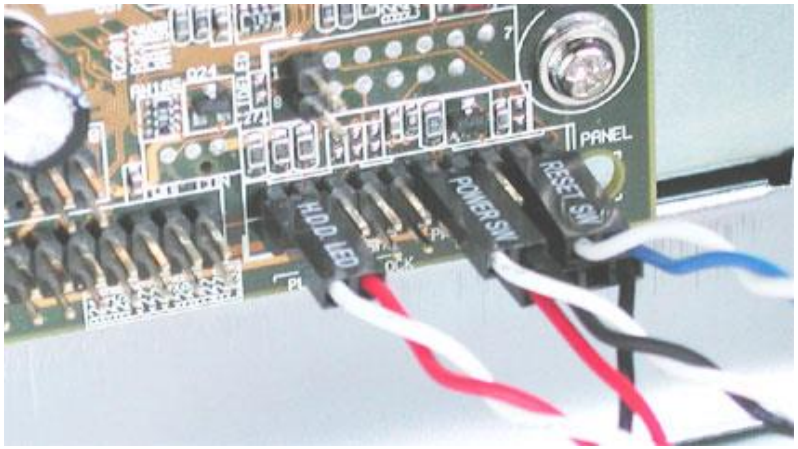
Connecting The Ribbon Cables…

- Attach the long end of the cable to the IDE 0 connector on the motherboard first
- The red stripe on the IDE cable should be facing the CD power

Powering The Drives And Motherboard…



Connecting The Cables For The Case Front Panel…



- SP, SPK, or SPEAK: the loudspeaker output. It has four pins.
- RS, RE, RST or RESET: connect the two-pin Reset cable here.
- PWR, PW, PW SW, PS or Power SW: power switch, the PC's on/ off switch. The plug is two-pin.
- PW LED, PWR LED or Power LED: the light-emitting diode on the front panel of the case illuminates when the computer is switched on. It is a two-pin cable.
- HD, HDD LED: these two pins connect to the cable for the hard disk activity LED.

Final Check…

- Motherboard jumper configuration: are the settings for the processor correct?
- Drive jumper settings: master/ slave correct?
- Are the processor, RAM modules and plug-in cards firmly seated in their sockets?
- Did you plug all the cables in? Do they all fit neatly?
- Have you tightened all the screws on the plug-in cards or fitted the clips?
- Are the drives secure?
- Have you connected the power cables to all drives?

Powering Up For The First Time…

- Ensure that no wires are touching the CPU heat sink fan
- Plug your monitor, mouse, keyboard
- Plug in the power cord and switch the power supply
- If everything is connected as it should be
  - all system fans should start spinning
  - you should hear a single beep, and after about 5-10 seconds
  - the amber light on the monitor should go green
  - and you will see the computer start to boot with a memory check.
- Now check the front LEDs to see if you plugged them in correctly
  - Check all other buttons
  - Power off and change any wrong settings.

Troubleshooting (if any)…

- If you hit the power button and nothing happened
  - Check all power connections
  - Check for power on the mother board
- If the system turns on, but does not beep or begin to boot up
  - Remove all components except motherboard/CPU/Memory, check by giving power to them.

Computer Error Beep Codes…

- No Beeps -> Short, No power, Bad CPU/MB, Loose Peripherals
- One Beep -> Everything is normal and Computer POSTed fine
- Two Beeps -> POST/CMOS Error
- One Long Beep, One Short Beep -> Motherboard Problem
- One Long Beep, Two Short Beeps -> Video Problem
- One Long Beep, Three Short Beeps -> Video Problem
- Three Long Beeps -> Keyboard Error
- Repeated Long Beeps -> Memory Error
- Continuous Hi-Lo Beeps -> CPU Overheating

You Have Done The Assembling Of Computer

Hurry to get a PC and assemble it for some hands-on