**Personal Computer Disassembly**

**Step1. Unplugging**

The first thing you do is to unplug every cable that is plugged in toyour computer. That includes the cables such as Power, USB, Mouse, Keyboard,Internet, Ethernet, Modem, AM\FM Antenna, Cable TV, etc. Just unplug all the cablesfor safety purposes.Now that your computer is fully unplugged, move your PC to a clean work space,preferably a carpet. The carpet is better than tile, because screws and other small partswill roll around.

**Step2. Opening the Outer Shell/Case**

- First, unscrew the four screws at the back of the computer. On most computer cases, there will be large knobs that you can un screw by hand or by screw driver on the back-right side of the computer. The left side has small screws because on that side you can't access much on the inside.

Once the screws are removed, you can remove the side panels. On most computers, they just slide off. Start with the left side panel (the side that once had the knobs), slide it towards the back of the computer. Now you can remove the left panel. Just like the other side, slide it towards the back of the computer.

**Step3. Removing the System Fan**

- First, unplug the fan from the motherboard. You can find the plug by following the wire from the fan. It should be labeled "SYS\_FAN1". Next, you will have to unscrew the fan from the outside. You should now be able to lift the fan out of the PC.

**Step4. Removing the CPU Fan-**

The CPU fan is located right on top of the CPU heatsink, which is a large piece of metal with fins on the top. The CPU fan plugs into themotherboard in an awkward place, that is hard to access. But just follow the wires and you should easily find it. It is labeled "CPU FAN1". To remove the fan from the heat sink, remove the four screws securing it in place.

**Step5. Power Supply -**

The first thing to do is unplug every wire coming from the powersupply. You must disconnect the motherboard (very large connector/plug), CD/DVDdrive(s) power, internal hard drive power and portable hard drive slot power.Once everything is unplugged, unscrew the four screws holding the power supplyin place, on the back of the computer. Next, push the power supply from the outside,and then lift it out.

**Step6. CD/ DVD Drive(s)-**

First, unplug the ribbon from the back of the drive. Once that is completed, pull on the tab securing the drive in place, then push it out from the inside.

**Step7. Hard Drive -**

First, unplug the connector at the back of the slot, and unplug the other end from the motherboard. Also unplug the SATA cable from the motherboard and the hard drive. The portable hard drive slot is secured the same way the CD/DVD drives, with a tab. Pull on the tab, and then slide the slot out.

To remove the hard drive from the side of the slot, unscrew the four screws securing itin place. You must be very careful not to drop the hard drive, since it is very delicate!

**Step8. Memory (RAM) -**

To remove the RAM, push down on both tabs holding the RAM in place, which are located at both ends of the RAM.

**Step9. Motherboard -**

The motherboard has seven screws holding it to the frame, which are indicated by large white circles around them. Remove them and then lift the motherboard out of the frame.

**Step by Step Computer Assembly**

**Step 1. Prepare your workplace**

**1**. **Take Inventory:** Before you start, take an inventory of your parts. Do not begin assembling your computer if you don't have everything you need. Begin the step-by-step process onceyou are ready with everything you need.

**2**. **Make Space, Make Time:**Building a PC takes up space - about a dining room table worth. So make sureyou have plenty of working room and a few hours to proceed with minimal interruption.Work on a flat, stable table top surface, or bare floor, where you have room to layout allof the items.

**3. Prepare Grounding Protection:**Use an inexpensive antistatic wrist strap. It is the perfect preventive measure ifyou have no alternative to working on carpet. Remember, a table top or bare floor isalways the best place to build your system. Make sure you are wearing your antistatic  
wrist strap correctly (it does you no good at all if you do not wear it!), and you are readyto proceed.

**4. Have the Drivers Ready:** Assuming you have another internet connected PC, download the latest driversfrom the vendors' websites for each component you will be installing. Sometimesdrivers are updated between the time the component was manufactured and the timeyou are installing it. It is always best to have the latest. Copy them to a CD for easy access.

**Step 2. Prepare the Motherboard**

1. Great care should be taken when installing the motherboard. First, take the boardout of its packaging and put it on top of the antistatic bag it came in (see Figure45). Remember, you always want to safeguard your components from potentiallyhazardous static electricity (wear your strap).

2. Before you secure the motherboard onto the PC case/chassis, inspect it carefullyfor any visible defects.3. Next, review the motherboard manual, to make sure you are familiar with the mother board layout and understand which socket is which. Manuals areextremely helpful, usually easy to read, and include illustrations. Below you canfind instructions on how to install the processor, the heat sink and the memorymodules on the motherboard. You should not place the motherboard in thecomputer case until you are told to do so.

**Step 3. Install the CPU**

1. Use the unlocking mechanism toopen the CPU socket which isusually a lever.2. Carefully line up the pins andplace the chip in its socket; it willfit only when oriented the properway. An arrow or a missing pin onone corner of the chip will showyou how to line things up.3. Align Triangular CPU and socketkey marks as shown in Figure 46.4. Lower the lever to lock the CPUinto place.

**Step 4. Install the CPU Heat Sink**

1. Follow the manufacturer's directions to install the heat sink and the fan that willcool the processor. If you bought an OEM CPU and a separate heat sink, youmay need to spread a thin layer of the thermal grease that came with the heatsink over the chip to ensure proper transfer of heat (some heat sinks come withthis grease already applied).

2. Attach the clip that holds the heat sink in place keeping in mind that it mayrequire a fair amount of force. Again, follow the instructions that came with theheat sink. They will show you how to fit it correctly. If you are in doubt, you canvisit the manufacturer's website for more information.

3. Plug the CPU fan's power connector into the proper connector on themotherboard.

**Step 5. Install Memory (RAM Modules)**

In order to install the memory modules, insert them into the proper sockets and push down firmly but evenly until the clips on both sides of the socket pop into place. If your motherboard supports dual-channel memory, consult the usermanual to determine which pairs of RAM sockets you should use. The motherboard andthe CPU are the brain and nerve center of your PC, so selecting these components isthe most important decision you'll make.

**Step 6. Place the motherboard into the case**

1. Some PC cases have a removable motherboardtray. If yours does, remove the screws holding it inplace and pull it out of the case .
2. 2. Note the pattern of the holes in your motherboard and screw brass standoffs into the motherboard tray or into the PC case in the correct locations(ALWAYS check the manual and follow their instructions to the letter).

**Step 7. Connect the Power Supply**

Making the proper connections is crucial to successfully assembling your PCsystem. Fortunately, manufacturers provide color-coded power cables and uniqueconnector shapes to make the job easy.1. First, plug the large ATX power connector (Figure 53) from your power supply into thematching port on your motherboard. Look Figure X for details.2. Locate the smaller, square processor power connector (Figure 54) (you cannot missit - it is the one sprouting the yellow and black wires) and attach it to the motherboard.Note: your connector is usually located near the processor. As always, refer to yourmotherboard's manual for the exact locations.

**Step 8. Install Graphics / Video Cards**

1. Begin by removing the backplane cover from the AGP or PCI Express X16 slot(the metal piece where the monitor connector will emerge).

2. Install the graphics board in that slot, and then secure the card with a screw

**Step 9. Install Internal Drives**

Now it is time to install your drives. This is an easy process, but it requires attention todetail.

1.Make any necessary changes to jumpers on the drives before mounting them inthe case. A two-drive system (one or two SATA **S**erial **ATA-**is a standardhardware interface for connecting hard drives and CD/DVD drives to a computer)hard drives, plus one parallel ATA (Advanced Technology Attachment) opticaldrive, for example) is easy to set up; the SATA drives are jumper less, and theoptical drive can be set as master on its own parallel ATA channel. Many caseshave removable drive rails or cages to house drives.

2. Use the included screws to attach your drives to the rails or cage, and slide theminto the case. For externally accessible drives such as a DVD recorder, you cansave time by installing one drive rail and sliding the drive in for a test fitting tomake sure that its front is flush with the case 3. When the drives are installed, connect power and data cables to each one.Parallel ATA drives use wide, flat data cables that can be installed only in thecorrect way. Floppy drives use a similar but smaller cable; SATA drives use athin, 1cm-wide data cable.

**Step 10. Install the Add- in Cards**

1. For each add-in card, you must choose a free PCI slot.

2. Remove its backplane cover to allow access from the rear of the case.

3. Carefully position the card above the slot, and press down firmly to seat the card

4. Secure the card with a screw.