UTM UNIVERSITI TEKNOLOGI MALAYSIA

SCHOOL OF COMPUTING
Faculty of Engineering

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Subject : Technology and Information Systems (SECP1513)

Section : 08

Assignment : Step by step PC Assembly

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FORMAT OF REPORT

PART A – List at least FOUR tools needed to assemble a PC. For each tool, Provide picture(s), explanations of its functions and its importance.

(Nabil Rayhan-A20EC9107)

1.0 Screwdrivers

Computers are held along with screws and, fortunately, practically all types of screws use Computer are Phillips-head. We'll use it to fix the screws on our parts to hold them safely set up. The main most important tool for PC building is a Phillips-head screwdriver with a major digit, supportive to try not to strip the head; a long shaft additionally helps in keeping the handle far removed when working in restricted spaces—it's a smart thought to keep a short screwdriver around too, for a similar reason. A hex driver could likewise be valuable for hexagonal motherboard stalemate screws or some CPU cooler screws.

2.0 Needle-Nose Pliers

We could go through pliers for releasing screws or fasteners that are super-close, getting hard to arrive at screws that we may drop inside our case, eliminating chipped/broken screws, eliminating motherboard deadlocks, and cutting zip ties. Talking about free screws; consistently eliminate them in the event that we drop them inside your work, like we'd must be excessively unfortunate for this to occur, they do represent the chance of causing an electrical deficiency. Needle-Nose Pliers are helpful for reaching into small areas where cables or other materials have gotten stuck or unreachable with fingers or different methods.

3.0 Anti-Static Equipment

An anti-static wrist strap (or band) is a bracelet- type gadget you wear on your wrist which associates with an electric attachment, and if any electrical energize works among you and your equipment segments, the charge is safety dissipated through to the socket (keeping away from a sparkle and conceivably making harm your parts). Before cleaning or fixing hardware, ensure that your instruments are in acceptable condition. Clean, fix, or supplant things that are not working sufficiently. The reason for self-establishing or wearing an antistatic wrist tie is to balance the electrical charge among you and the hardware. Self-establishing is finished by contacting an uncovered metal piece of a Computer case. The antistatic wrist tie is a conductor that interfaces your body to the hardware that you are dealing with.

4.0 Cable or Twist Ties

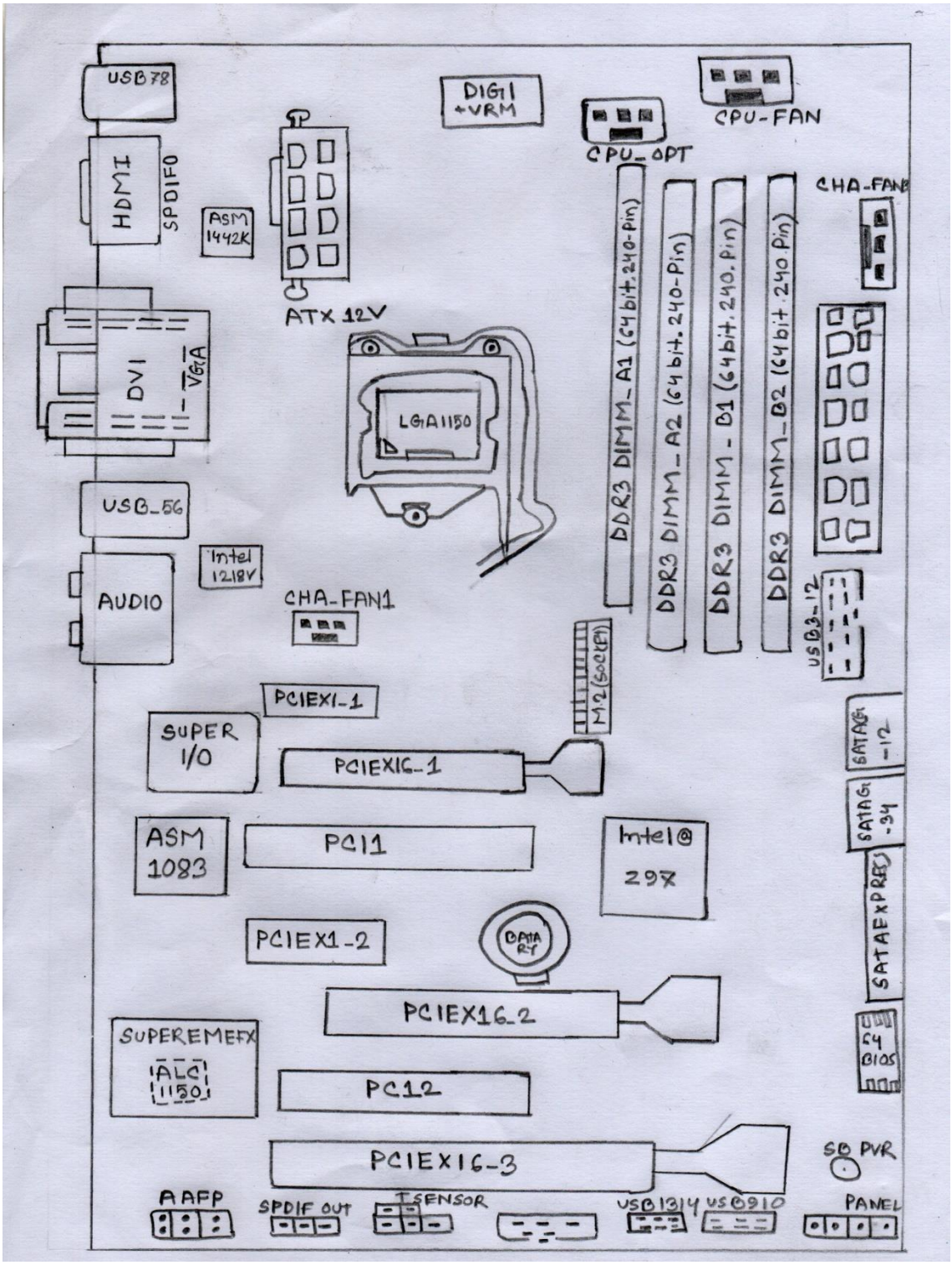
Cable ties (additionally called zip ties) and twist ties are utilized to tie up any free links lying around for our situation which makes our completed form look neater, however advances better wind current inside your case. Most current Computer cases will come dispatched with a lot of link/zip ties however, so risks are we won't have to purchase any more.
We could likewise utilize Velcro lashes all things being equal, however link/bend ties are best as Velcro will take up more space. I'd likewise favor utilizing link/zip ties versus turn ties, since curve ties have an uncovered metal center which can possibly scratch (or even short out) something. Finally, it's significant that we don't fit these excessively close around your links as you could harm them. To cut the closures of we ties once you've fitted one you can basically utilize sharp scissors, or needle-nose forceps (see underneath).

5.0 Adjustable wrench

It's capacity is a lot of equivalent to that of some other spanner or wrench, specifically to grip on to a clasp head (generally a nut or fastener) and permit the client to fix or relax it as required. The obvious characterizing contrast with customizable spanner devices is that we're expressly designed to offer an adaptable, moveable jaw. This empowers the client to set explicit opening widths to handle clasp of various sizes.

PART B – Sketch of a mother board layout **(Nabil Rayhan-A20EC9107)**

1.0



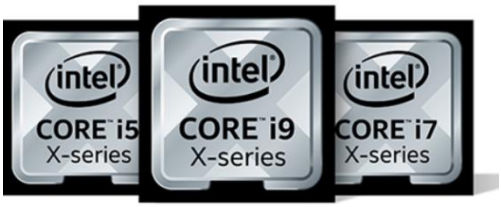
2.0.

1.RAM

A Computer's Random Access Memory stores information for short time use. Ram works related to the hard drive, which deals with long term storage, to give quick access to files that the Computer is actively reading or writing. Ram gives applications a spot to store and access information on a short-time premise. It stores the data your Computer is effectively utilizing so it very well may be accessed rapidly

2.CPU/PROCESSOR

A processor (CPU) is the rationale hardware that reacts to and processes the basic directions that drive a Computer. The CPU is viewed as the fundamental and most critical incorporated hardware (IC) chip in a Computer, as it is liable for interpreting a large portion of Computers orders. Central processors will perform most fundamental arithmetic, rationale and I/O activities, just as distribute orders for different chips and component running in a Computer.



3.GRAPHIC CARD

Graphic cards permit Computers to deliver designs and pictures all the more rapidly. An illustrations card has its own processor, a GPU or graphical handling unit, as indicated by Jason Cross at Computer World. The video card associates with the motherboard and the screen. This permits the card to acknowledge data from the CPU (focal handling unit) and send yield to the screen.

4.POWER SUPPLY

The power supply in our Computer provides all of the different voltages your computer needs to operate properly. See more computer hardware pictures.
If there is any one component that is absolutely vital to the operation of a computer, it is the power supply. Without it, a computer is just an inert box full of plastic and metal. The power supply converts the alternating current (AC) line from your home to the direct current (DC) needed by the personal computer

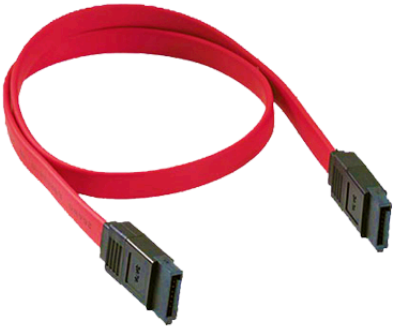
5.SLOT

The function of the PCI slot is to allow you expand computer capabilities. PCI stands for Peripheral Component Interconnect. This is a computer slot that allows you to insert expansion cards into your computer. These can come in the form of sound cards, RAID cards, SSDs, graphics cards, NIC cards, Co-processors, and several other functional computer parts. So it enables you to expand the capabilities of the PC by adding what you do not have.

6.HARD DISK

As you use your computer, you create documents and other bits of information to be stored. The hard drive saves these items, alongside the software and files that allow you to easily use and interact with your computer, including the operating system."Hard drive" is a common term used in the computer world for the component in computers and electronics that provides long-term storage of information.

7.SATA CABLE



The SATA (also known as the "Serial Advanced Technology Attachment) cable comes with every computer that has been released as of June 2010. These cables are known for transferring data at high rates (from 1.5 to 6 gigabytes per second) The cable comes with a few specific purposes that are used by every computer for some form of data access. Primarly, the SATA cable is used so that a motherboard can communicate with an internal hard drive, but there are other devices that can make use of the SATA cable as well.

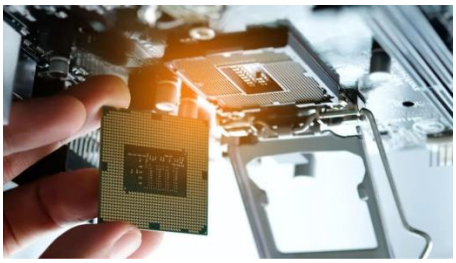
8.CD ROM

CD-ROM stands for Compact Disc Read Only Memory. It functions as a compact disc that stores computer data of graphics, text, and audio. They are popular for software and other multimedia applications. CD-ROMs can store up to 700MB of data.

PART C - "Step by Step PC Assembly"

(Shahariar Showmik-A20EC9108)

STEP 1 – CPU/PROCESSOR



1. Ready your motherboard

We will not assume that you want to put a new CPU into a new motherboard, but this is the simplest case. If you have a new motherboard, there may be a plastic cover on the CPU socket. If you want to put a new CPU on a motherboard that already has a CPU, then it is obvious that the CPU cooler will be disturbed. In both cases, you need to remove anything in the CPU socket. This is also a good opportunity for you to become familiar with the fixing arm (and the metal bracket on the Intel socket) that holds the processor in place after installation. You can understand the pressure required to press. Keep the fixed arm in the open, upward position. After opening the CPU socket, you can move on.

2. Line up your CPU

When holding the CPU, the best practice is to only touch the side. Touching the bottom surface or the metal cover may leave excess residue on it, which may affect performance.
Your CPU must be inserted into the socket on the motherboard in the correct direction. Fortunately, there are almost always indicators on the CPU and socket to help you align it correctly. Look for matching indicators on the corners of the CPU and socket. It may appear as a small triangle. If you do not see any indicators, you should consult the manuals of the motherboard and CPU.

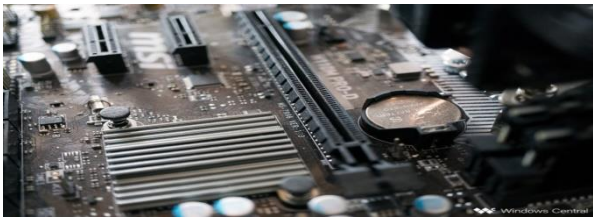
3. Set the CPU into its socket

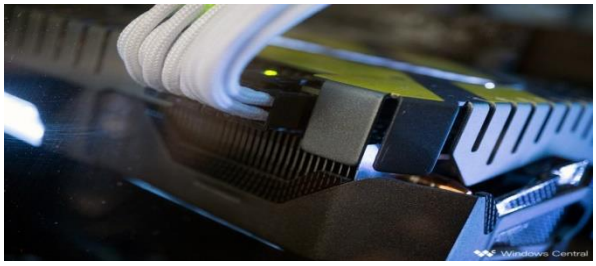
Assuming you have correctly aligned the CPU with the socket, it should be in place. You may need to lightly, and we mean lightly, and remove it if it doesn't feel in place. For example, it can be a little tricky to align the AMD CPU pins with the holes in the socket

4. Close the retention arm

With the CPU correctly inserted into the socket, you should be able to easily push the fixing arm down (if it is an Intel CPU, please lower the bracket first). If you feel that the fixed arm is blocking you, carefully check the position of the CPU in the socket. We found that a light push with a little finger is enough to close the fixed arm, so don't try to force it, otherwise it may damage the CPU (this bends the CPU pins, which is not fun) try to bend them back). Once the CPU is in place and the fixed arm is down, you are all set. (Please note: If you also want to set up the rest of the computer, please check and make sure that the CPU power socket on the motherboard is connected to the power source. This socket is separate from the larger power connector on the rest of the motherboard.)

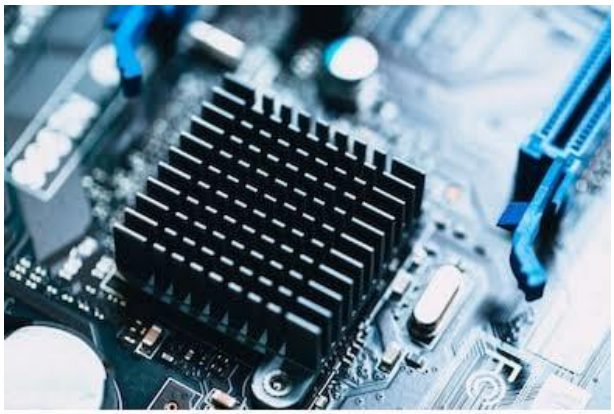
STEP 2 – GRAPHIC CARD





- Shut down the PC.
- Press the switch on the back of the PC to power off the PSU
- Pull out the side panel (usually fixed by two screws on the back).
    - If GPU is not installed, skip to step 7.
- Remove the screws that secure the GPU to the rear bracket.
- Unlock the **PCI-e slot clip**.
- Remove the **GPU** by lightly pulling on the card.
- Hover the new GPU over **PCI-e slot**.
- Source: Windows Central
- Push down on the **GPU** to slide the connector into the slot.
- Ensure the **secure lock** clicks into place.
- Screw the **rear bracket** down to secure the card to the chassis.
- Connect any required **PSU cables**.
- Source: Windows Central
- Reattach the **side panel**.
- Now, all you need to do is to plug in the display ports on the back of the case, whether they are DisplayPort, HDMI, DVI or VGA. After that, press the PSU power switch and start Windows. If the PC cannot be turned on or no signal is sent to the display, we need to double check whether all cables are properly connected (inside and back of the PC) and whether the GPU is properly installed in the display. PCIe slot.

STEP 3–HEART SINK

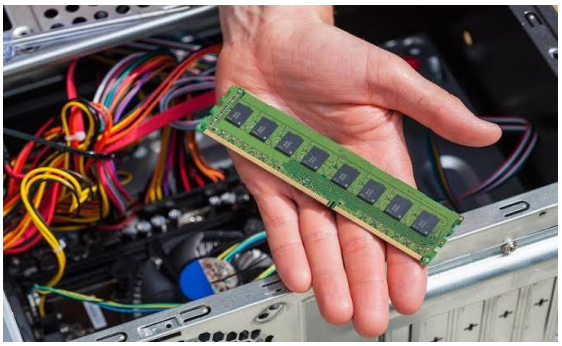


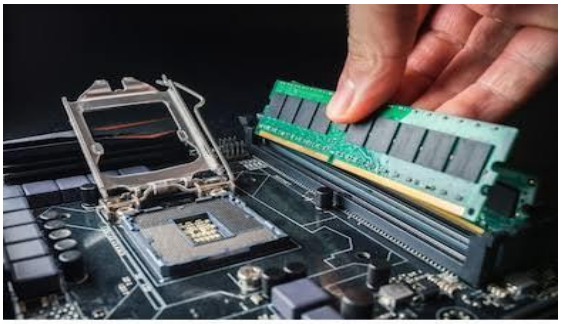
Apply Heat Sink Compound: Open the heat sink compound, and then use your fingers to apply a thin layer on the surface of the CPU. The thickness of this layer should be sufficient to cover the chip surface. On a completely flat CPU, almost all the way to the edge. On the CPU with a raised metal plate in the center, apply the compound almost to the edge of the plate. You should not try to spread it over the entire surface of the chip, but extend it to the entire raised area (this is how the package is designed). Don't use too much compound-it will not work well here, too much use will cause confusion when installing the radiator.

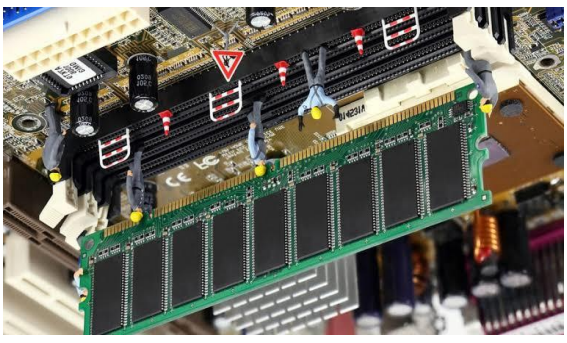
Attach Heat Sink: . Place the heat sink on the surface of the CPU. Then fix the heat sink to the processor. Some heat sinks just slide over the edge of the processor, but just "sit there." Most newer adapters use metal clips attached to the processor socket. To apply these, slide one of the metal clips onto the small plastic piece on one side of the socket, then place it on the CPU and stretch it over the small piece on the other side. It may take a little pressure to bend the metal clip to fit it into the slot. This is why the heat sink is forced into the processor to ensure good contact. Just don't push too hard

Check and Adjust Heat Sink Compound: Carefully remove the heat sink by loosening it and lifting it straight up from the processor . Then look carefully at the heat sink compound on the processor. From where you apply with your fingers, you may see some areas where the heat sink compound is still smooth, and other areas that are disturbed. The disturbance zone is where the radiator is in contact with the radiator compound; the smooth place is where it does not touch. In poor contact areas, apply a small amount of other compounds. Then reinstall the radiator. Repeat this step as necessary until you maintain good contact on most of the surface of the chip.

STEP 4–RAM







Step 1: Disconnect the power cable from the system, and unplug other rear panel cables when needed so that you can safely lay the system on its side.

Step 2:. Remove the side panel for full access to the interior. The RAM slots are long and usually located on the right side of the CPU and its massive cooler. These slots are typically two to eight and contain tabs at each end that lock the poles in place. Press these tabs towards the motherboard to slide out and remove the old RAM.

Step 3: Check the motherboard manual to determine the correct slot where the new memory should reside. If you only use one or two sticks, some motherboards prefer the second and fourth sockets. Others prefer first and third. Before installing the RAM, make sure to push the side flaps on both ends of the slot back to make it tilt from the slot Looking at the side of the RAM stick with metal contacts, you will see a notch that is not centered. You need to align the notch with the notch in the motherboard memory slot. If they are upside down, the joystick will not click e. If you are sure that the RAM stick is aligned correctly, please grasp the top with your fingers and push both ends down firmly and evenly until it clicks into place. When doing so, the wings will clip in and firmly hold the memory. If the joystick is not easy to click into place, make sure that the direction of the joystick is correct. Forcing RAM that is not arranged correctly may damage the motherboard. If in doubt, please check carefully. Flashlight can really help you

Step 4: Once all the joysticks are clicked into the slots, make sure that the wing clips are locked to secure the joysticks in place. If everything passes the check, shut down the PC. Next, re-plug all cables and start the system.

STEP 5– CD ROM

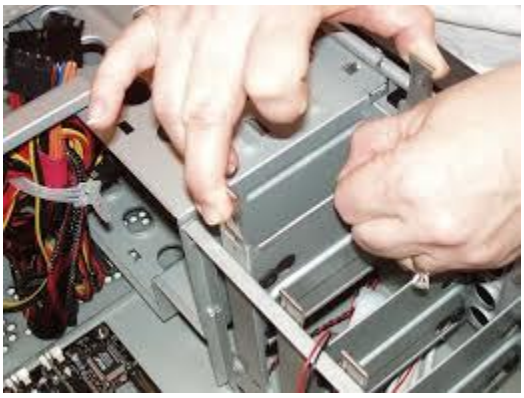
- Turn on the computer to install the CD or DVD drive. Remove the drive slot cover. Most computer cases have multiple slots for external drives, but only a few are used. Press the tab inside or outside the chassis to remove the drive slot cover. Sometimes the cover may be screwed into the housing.
- Set the IDE drive mode. Most CD and DVD drives on desktop computers use an IDE interface, which allows two devices to be connected via a single cable. Put each device on the cable into the appropriate mode. One drive is the primary drive, and the other drive is the secondary drive. One or more jumpers on the back of the drive usually handle this setting. For location and settings, please consult the documentation or diagram on the drive.
- . Put the CD/DVD drive into the computer. The method of installing the drive varies depending on the situation. The two common ways to install the drive are through the drive rail or directly into the drive cage
- Connect the internal audio cable. To use a CD/DVD drive to listen to music, the audio signal from the CD drive must be routed to a computer audio solution. Usually, a small two-wire cable with a standard connector can handle this problem. Plug this cable into the back of the CD/DVD drive. Then, according to the computer's audio settings, plug the other end into the PC audio card or motherboard. Finally, plug the cable into the connector labeled CD Audio. Connect the CD/DVD drive to the computer using an IDE cable. Usually, the drive is located in a secondary location of the hard drive. If so, find a free connector on the IDE ribbon cable between the computer and the hard drive, and then plug it into the drive. If the drive uses its own cable, connect the IDE cable to the motherboard and connect one of the other connectors of the cable to the CD/DVD drive.

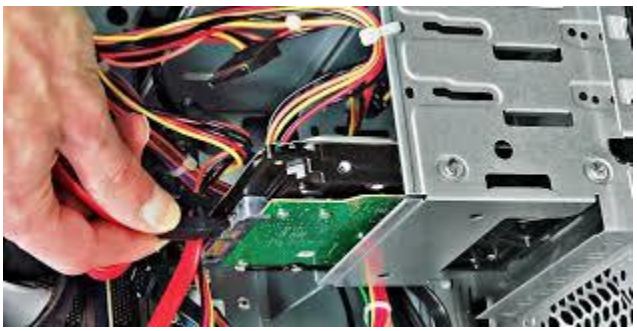
Plug the drive into the power source. Find one of the 4-pin Molex connectors from the power supply, and plug it into the power connector on the CD/DVD drive. After installing the drive, shut down the computer. Put the panel or cover back into the computer case. When removing the computer cover, use the screws fixed on the side to fix the computer cover or panel to the chassis. Plug the AC power cord into the power source, and then turn the switch to the "on" position. The computer system should automatically detect and use the new drive. Since CD and DVD drives are standardized, you do not need to install any specific drivers. For specific operating system instructions, refer to the instruction manual that came with the drive.

(Tanshiba Nawrin Prapti-A20EC4051)

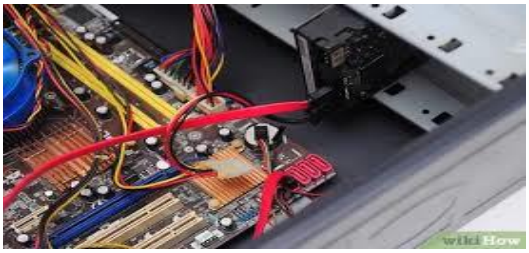
STEP 1: A 24-Pin Motherboard connector is required to connect the power supply cables. The PCI Express cable and SATA cable needs to be connected with the Graphics Card and Hard Drive of the computer. Place the power supply at its place and tighten it with screwdrivers.

STEP 2: Put the hard disk into the chassis. Plugin the SATA Power cable and the Data cable to connect the Hard Disk with the Motherboard.





STEP 3: Connect the SATA cable and the IDE to the CD ROM Drive and Hard Disk and also connect the power supply cables to the drivers in the case. Then form the cables accordingly so that it saves space in the casing so that the heat gets released.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