UTM UNIVERSITI TEKNOLOGI MALAYSIA

SCHOOL OF COMPUTING
Faculty of Engineering

Semester I 2020/2021

Subject : Technology and Information System (SECP1513)

Section : 09

Assignment : Step by step PC Assembly

GROUP NUMBER : 3

No.	PHOTO	DETAIL
1.		**NAME:** MUHAMMAD HAZIM BIN AZLAN **MATRIC NO:** A20EC0090 **PHONE:** 0182507204 **EMAIL:** hzmazln00@gmail.com
		**NAME:** BILKIS MUSA **MATRIC NO:** A20EC0233 **PHONE:** +66980470343 **EMAIL:** bilkis718@gmail.com
		**NAME:** AIDATUL KHAIRINA BT AZMI **MATRIC NO:** A20EC0007 **PHONE:** 0142152935 **EMAIL:** aidatulkhairina@gmail.com

PART A: Tools needed to assemble a PC.

1.0 MAGNETIC SCREWDRIVERS

The screwdriver used to loosen the srew or tighten the screws on your components . The importance of this magnetic screwdriver is to make sure all the component stay securely in place also the magnetic tip is to avoid dropping small screws in small, dark, hard to reach places during installation.

2.0 ANTI-STATIC KIT

The anti-static kit used to discharge any electrical build up or component. The importance of the anti-static kit is to avoid any electrical risk that can damaged either your body or component by simply touched any electrical parts.

3.0 CABLE OR TWIST TIE

Cable ties or twist ties used to tie up any loose cables lying around in your case. The importance of cable ties are not only makes your finished build look neater, but promotes better airflow within your case also reduce the risk of tripping.

4.0 LIGHT SOURCE

Light source or lamp used to brighten things up if the PC cases really block the light. The importance of this light source is to make sure you are able to see what happening when you do the work also to avoid any mistake and accidents.

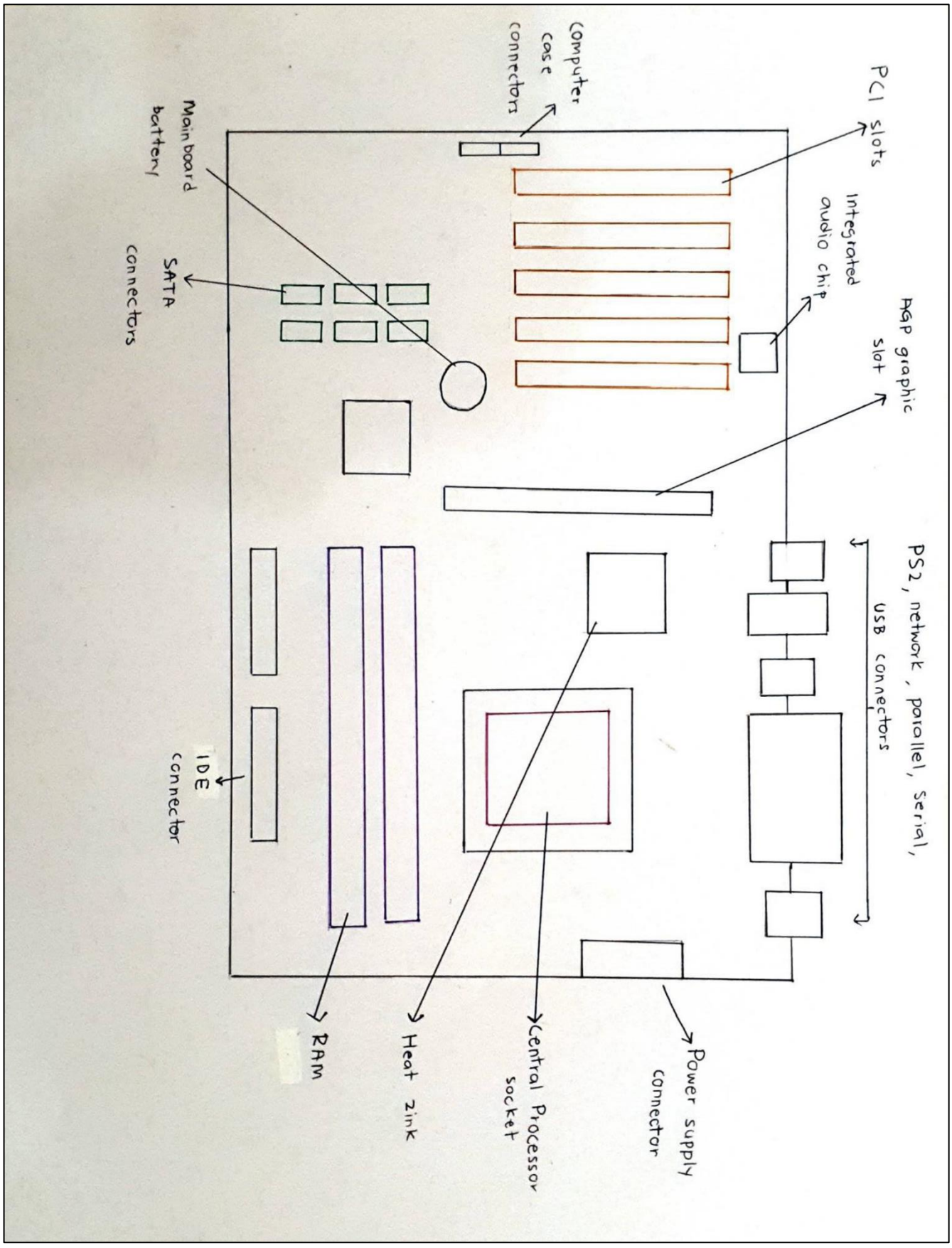
5.0 NEEDLE-NOSE PLIERS

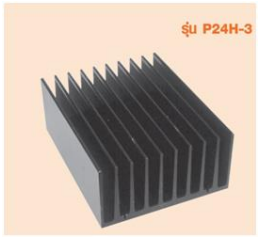
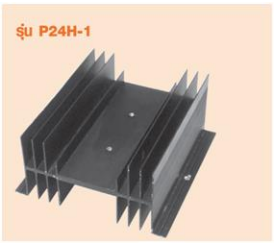
Needle-nose pliers are very handy and use for removing and inserting jumpers on motherboards and hard drives. The importance of needle-nose pliers is to make sure all small component can be handled carefully it will be really unlucky if any of the component dropped they can cause an electrical shortage.

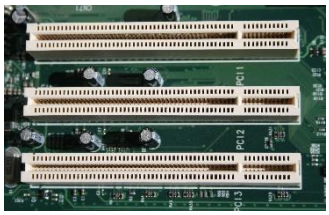
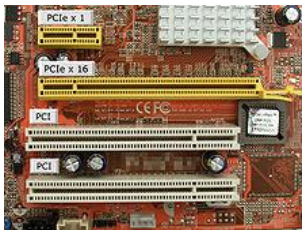
6.0 SMALL CONTAINER

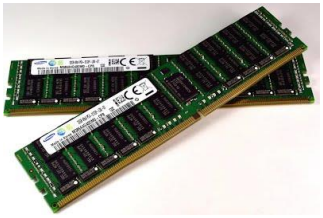
Small container are used to to hold the various screws, jumpers, and other small parts used to assemble and and built a computer. The importance of this small container is to avoid any missing screw or components.

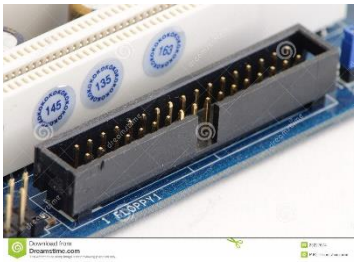
PART B: Sketch of a mother board layout



Name	Pictures	Models	Functions
Graphic Card	 https://sites.google.com/site/cp5810122113022/graphic-card	  https://notebookspec.com/web/topics/nvidia-geforce	Transforming data into a signal that the monitor can understand by rendering an image to monitor.
CPU	 https://sites.google.com/site/cam5910122137078/cpu	 https://sites.google.com/site/11236yanineesukkaew/siphiyu  https://www.techtalkthai.com/intel-launches-core-x-series-aka-intel-core-i9/	Execute the instructions of the computer program. Performing the basic arithmetic, logic, control and input/output operations mentioned in the instructions.
Heat Zink	 http://www.tic.co.th/index.php?op=tips-detail&id=109	 https://www.amazon.com/Thermaltake-CL-P0497-Intel-Heatsink-Fan/dp/B001CCGYU0 	Increase the heat flow away from a hot system by increasing the working surface area of the system and the volume of low-temperature fluid that passes through its increased surface area.

CD ROM	 https://sites.google.com/site/comakkaradech/hnwy-thi-5-xupkrn-khxmphiwtexr-prapheth-cd-laea-dvd-drive/1-prapheth-khxng-cd-rom-drive	 https://grabcad.com/library/tag/cd-rom  https://computerscience.fashion.blog/2019/02/06/%E0%B8%81%E0%B8%B2%E0%B8%A3%E0%B8%97%E0%B8%B3%E0%B8%87%E0%B8%B2%E0%B8%99%E0%B8%82%E0%B8%AD%E0%B8%87-cd-rom/	Stores computer graphics, text, and audio content. The machine can read the data, but cannot write or delete it.
USB cable	 https://th.element14.com/lumberg/2480-01/cable-usb-a-to-mini-b-1m/dp/1308878		Connect personal computer with external device.
Slot (PCI)	 https://www.comgeeks.net/expansion-slot/index.htm	h1111z   https://en.wikipedia.org/wiki/Peripheral_Component_Interconnect	Allows the attachment of various hardware components, such as network cards, modems, sound cards, disk controllers and other components.

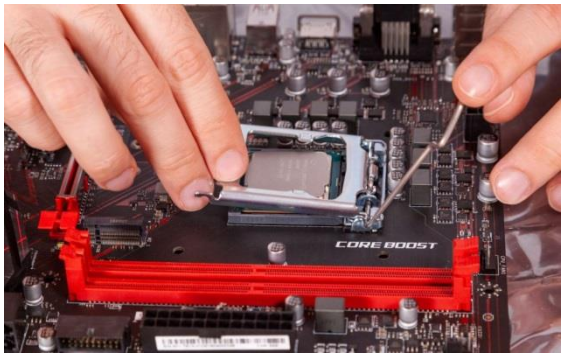
RAM	 https://sites.google.com/site/mis5830122113316/work1/1-6-ram	 	Store and access data while computer still active. Information is lost when the device is turned off.
SATA cable	 https://th.rs-online.com/web/p/sata-cables/1930318/	 https://th.rs-online.com/web/p/sata-cables/1448647/ 	Used to connect storage device with a host bus adapter such as a motherboard.
IDE cable		  https://pantip.com/topic/32593189	There are three connection point. Can use one IDE cable to attach two hard drives and motherboard.

Power supply	 https://th.rs-online.com/web/p/pc-power-supplies/1366054/	  	Convert electric current from batteries to the correct voltage, current, and frequency.
Hard Disk	 https://sites.google.com/site/cp5810122113022/harddiks	 	Stores and retrieves digital data using magnetic charge, one or more rigid rapidly rotating surfaces coated with magnetic material.
Slot (IDE)	 http://wanussapong.blogspot.com/p/blog-page_21.html		Used to connect some hard drives to each other and to the motherboard.

PART C : STEP BY STEP PC ASSEMBLY

STEP 1 – Installation of Central Processing Unit (CPU)

- Place the CPU on the socket and make sure to do it properly and neatly



- The arrow/triangle on the top of the CPU needs to line up with one socket or the socket cover
- **Caution :** Do not attempt to install a CPU with the arrow facing the wrong direction or you could damage your chip, your board, or both. Do not force the processor into the socket or you'll damage something.
- After the CPU settled correctly in the socket, press the tension lever back down.

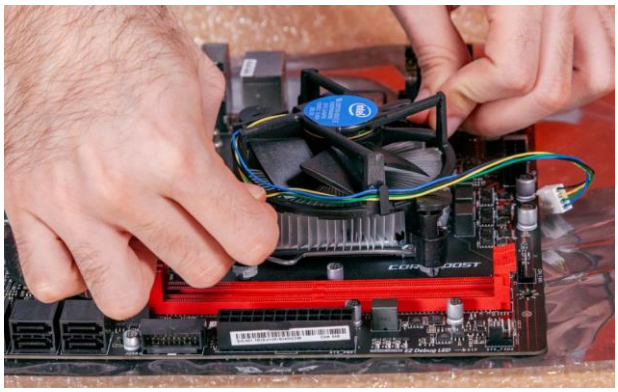
STEP 2 – Use Thermal Paste

- You have to apply the thermal paste on the CPU.

- You don't need to put much, just a little amount applied to the center of the CPU and it will spread when you put the cooler on.
- **Caution :** Make sure don't add too much paste or you definitely don't want it squirting out the sides onto the socket and surrounding PCB.

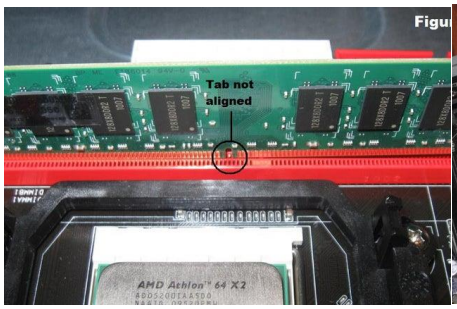
STEP 3 – Install the CPU Fan

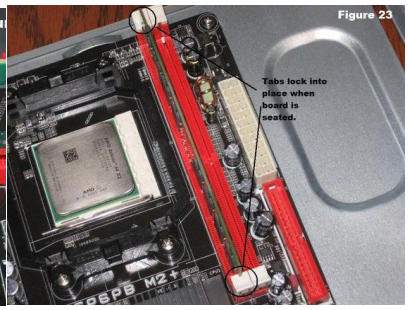
- Install the heat sink and fan neatly on the processor.



- Push the opposite corners in to evenly spread the thermal paste and to keep from putting uneven pressure on one side of the CPU.
- **Caution:** Failure to apply thermal compound will result in insufficient cooling and will cause damage to the CPU or motherboard.

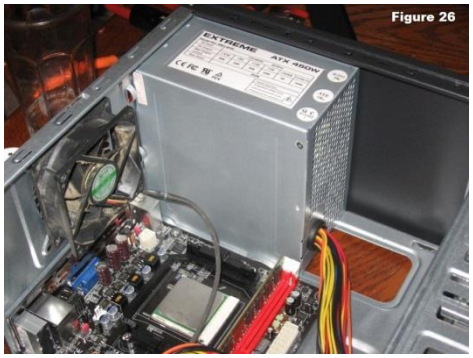
STEP 4 – Install the RAM





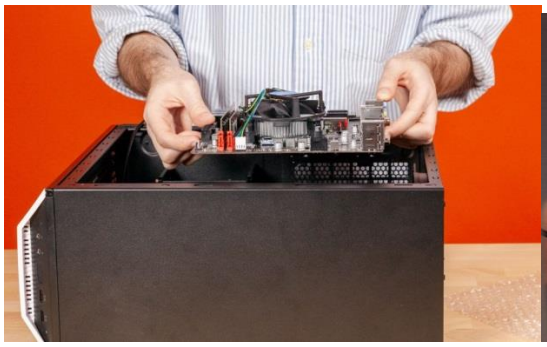
- Set the RAM board in the socket as shown in first picture. Check to see that the notch in the board is in the correct location. If it is not, turn it around 180º.
- Press firmly on both ends of the board to set it into the socket. Make sure the tabs lock into place as shown in second picture.
- **Caution:** Pressing the boards in when the tab is not aligned could cause damage to the RAM boards as well as the motherboard.

STEP 5 – Install Power Supply



- Put the power supply to its place and screw it into place with four screws. Tighten it.

STEP 6 – Install the motherboard



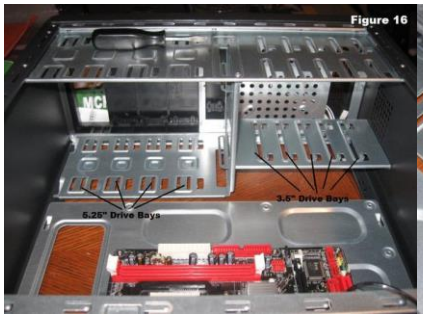
- Put the motherboard to its place.
- Once the motherboard is in, install all the screws tightly.
- **Caution:** To prevent damage to the motherboard it must only contact the standoffs and screws. All of the standoffs and screws must be installed.

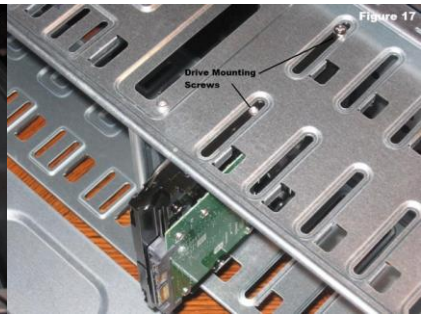
STEP 7 – Install Graphic Card

- To install the graphic card, you'll have to remove some slot covers on the back of the case, so that the HDMI, DVI and other ports show through, letting you can connect your monitor later.
- Connect the graphic card onto the PCI slot on the motherboard then screw on the graphic card holder to make sure it will not pulled off.

STEP 8 – Install CD ROM drive and hard drive

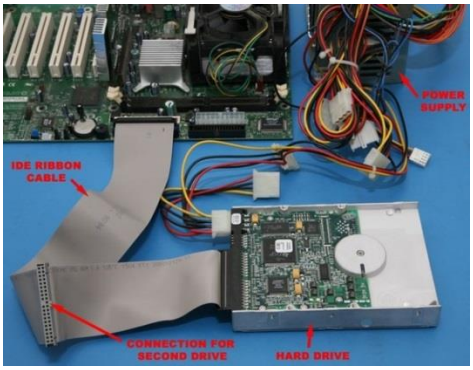
- Slide in the CD ROM drive into the computer case and make sure you install it right side up so that you can insert a disk.



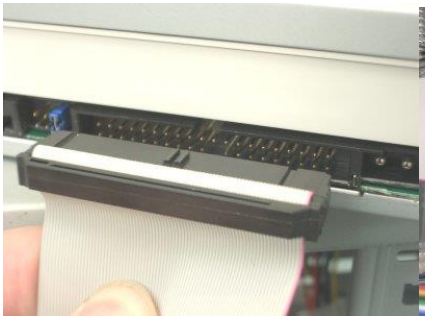


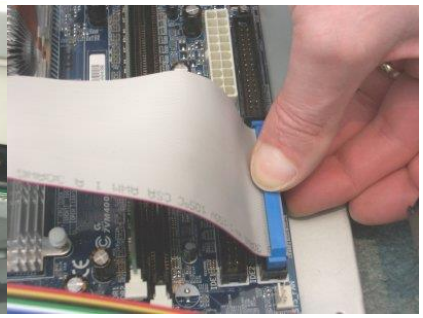
- Slide in the hard drive into one of the drive bay until the screw holes on the sides are lined up with the holes in the case. Then install the screws.
- Make sure hard drive and CD ROM are not easy to loose to prevent damage.

STEP 9 – Connection of IDE Cable, SATA Cable and power supply

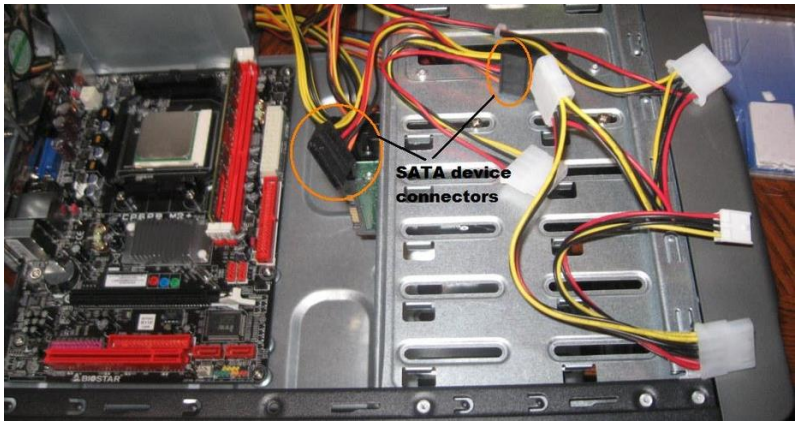


- Connect IDE cable to CD ROM drive, SATA cable to hard drive and connect power supply to each drive.





- Connect an extended IDE cable to the DVD ROM drive. The blue end connects to the motherboard and the red strip connects to the right hand side at the back of the drive. Blips in the plastic surround help you get the cable connected the right way round.
- When installing the IDE cable to the motherboard you may need to support the motherboard with your fingers to avoid bending it too much.
- Untangle the power leads with the various connectors and select the leads which do not contain the small floppy disk power lead.



- Connect the SATA data cable to the motherboard and your drive, then connect the SATA power connector from the power supply to your drive.
- Mount the hard drive or SSD in the appropriate bracket and screw or snap it into place.
- **Warning:** Incorrect connections can damage components and cause bodily injury.

STEP 10 – Closing the Case and connecting the peripherals

- Place the side cover back on and secure the side panels with case screws.

- Connect peripheral devices which include keyboard, mouse, wireless network dongle, printer and webcams with your CPU by plugging into USB port.
- The PC keyboard plugs into the keyboard port on the back of the case. The mouse plugs into the mouse port.
- The monitor plugs into the VGA, or graphics adapter, jack on the back of the case.
- Plug the network cable into the network jack on the back of the case.
- Set up the printer where it's within arm's reach of the case. To get the printer connected, you need a cable, either a USB cable or the traditional printer cable.
- USB devices plug into any USB port.

- Connect speakers and microphone into 2.5 mm sockets.

- Finally connect the CPU with monitor by plugging into display ports.