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 NAME / NUMBER : GROUP 6

1.		Name: AMIRAH BINTI ZULKILI Matric number: A20EC0012 Phone number: 0136878707 Email: amirah01@graduate.utm.my
2.		Name: MUHAMMAD SYAFIQ AKBAR Matric number: A20EC0323 Phone number: +6282367897168 Email: syafiq.fbs@gmail.com
3.		Name: GUO XU Matric number: A20EC4022 Phone number: +601163608352 Email: guoxu270499@gmail.com

PART A: Tools for assemble PC with its functions and importance

1.0 Screwdrivers

Screwdrivers are the most important tool when installed, and many computer accessories are secured with screwdrivers. Since the screws that assemble the computer are all cross-shaped, just prepare a cross screwdriver. A basic screwdriver is the only required tool to build a computer, we'll use it to tighten the screws on your components to hold them securely in place.

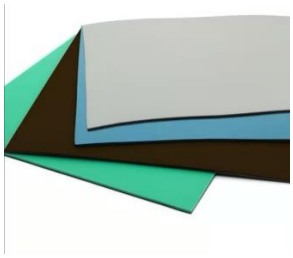
2.0 Needle-Nosed Pliers or Forceps

Forces are used to remove the bezel on the back of the chassis and install the screws of the copper column. In addition, for the screws of the silk and some hand-made places can come in handy. Very small needle-nosed pliers, forceps, or tweezers are very handy for removing and inserting jumpers on motherboards and hard drives.

3.0 Cable or Twist Ties

Cable ties (also called zip ties) and twist ties are used to tie up any loose cables lying around in your case which not only makes your finished build look neater, but promotes better airflow within your case. Plastic cable ties are useful for neatly bundling wires and cables away from fans and other components inside the computer.

4.0 Anti-Static Kit



Anti-Static Kit. An anti-static kit consists of a rubberized mat and a wrist strap that attaches to both the mat and the computer or electronic device you're working on. This both protects the equipment from static damage and protects your tabletop from scratches.

An anti-static wrist strap (or band) is a bracelet-type device you wear on your wrist which connects to an electric socket, and if any electrical charge builds up between you and your hardware components, the charge is safety dissipated through to the socket (avoiding a spark and potentially causing damage to your parts).

PART B: Sketch of a mother board layout

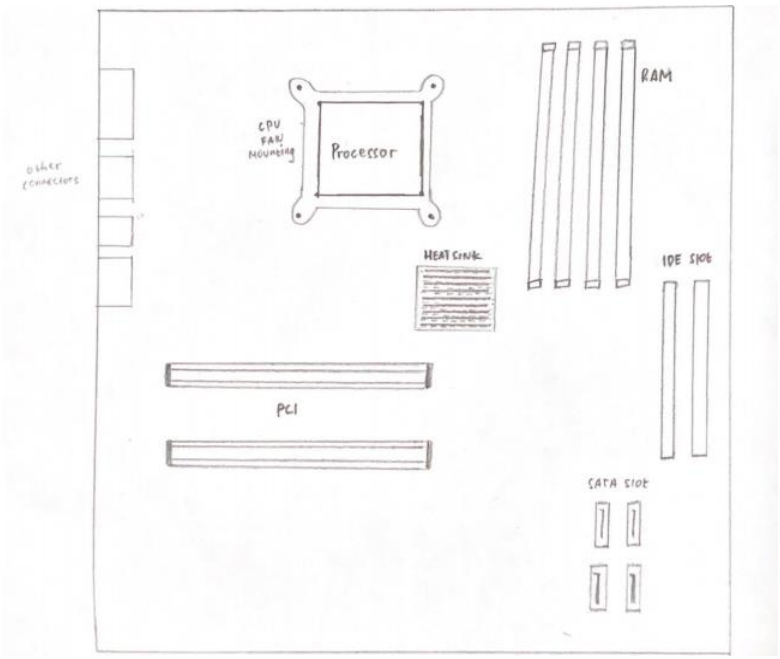


Diagram 1.0: sketching of a motherboard layout

1.0 Graphic card

Is expansion card to process images and then display through the monitor. Graphics card retrieves information from the CPU, converts to the image form and then sends the image to the monitor.

2.0 USB cable

Connector between the computer with other electronic devices

3.0 IDE cable (Integrated Drive Electronics)

Cable that is used as a regulator on the motherboard so that it can be connected to the Disk Drive

4.0 CPU/Processor

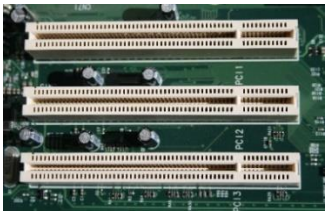
Electronic circuits inside a computer that execute the instructions that make up computer programs

5.0 Slot IDE

to connect a hard drive or optical drive such as a CD ROM, DVD, etc. with the ATA type with the motherboard

6.0 Slot PCI

Slots that can be inserted for various other components such as sound cards, graphics cards, and various other hardware.



7.0 Power supply

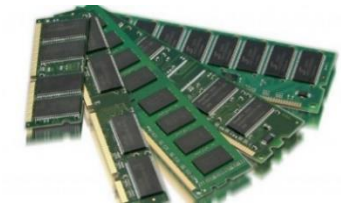
A computer component that has the function of providing voltage and electric current to the component

8.0 Heat sink

To control or cool down the temperature of computer and laptop components that perform strenuous activities that produce a lot of heat energy

9.0 RAM

A piece of hardware that is inside the computer as a temporary data storage (memory) and various program instructions



10.0 Hard disk

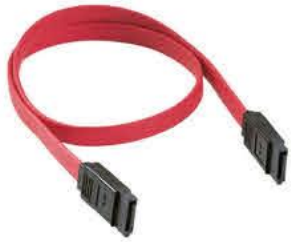
A hardware used to store data on a computer

11.0 CD ROM

Used to read data from a CD

12.0 SATA cable

To transfer data between the motherboard and data storage media, such as hard disks and optical drives

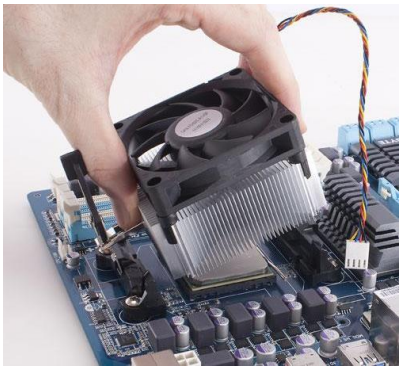


PART C: “Step by Step PC Assembly”

STEP 1: Install the CPU on the motherboard in the socket.

- Lift the small metal rod next to the socket.
- **Tips:** Find the corresponding marking on the CPU socket that designates pin1 of the CPU. The corner is marked with an arrow to ensure that CPU are installing in the correct position.
- Gently lay the processor into the socket. After ensuring that you have the processor oriented correctly, gently place the processor directly in the socket.
- Relatch the socket cover. once the processor has been properly inserted, close the socket cover over it and relatch it so that the processor is securely held in place. Push the rod down to lock the processor.
- **Precautions:** You should never need to force the processor into place. If you apply pressure, you may bend or break the pins, rendering the processor inoperable.

STEP 2: Install the Heat Sink



- Place a tiny drop of thermal paste to the center of the cooler base.
- **Tips:** The bead of paste should be smaller than a BB or a grain of rice.
- Install the heat sink to the processor with even pressure from all sides, and the bead that you placed on the surface will spread over the entire contact surface.
- **Precautions:** Avoid removing the heat sink after installing it. It can be difficult to check if your paste has been applied correctly. If you break the seal that is created when you install the heat sink, you will need to restart the process, first cleaning off the old paste and then reapplying it.
- Reconnect the CPU fan wire in the CPU fan socket

STEP 3: Install the power supply

- **Tips:** Set the power supply's voltage switch. If there's a voltage switch on the power supply, switch it to the 110v or 115v setting. This will ensure that power supply provides ample power without damaging the components to which it's connected.
- Lay the computer case on its side, with the exposed side facing up.
- Find the power supply's intended location. Power supply units (PSUs) typically sit at the top of the case
- Insert the power supply. The power supply should have a distinct "back" with plugs and a fan, as well as a "bottom" with a fan on it. The "back" should face the back of the case, while the "bottom" should face the internal part of the case.
- Screw the power supply into place. With the "back" of the power supply unit pressed against the back of the case, insert the included screws to lock the power supply into place.

STEP 4: Transfer the hard disk into hard drive enclosure

- Place the hard drive in the enclosure.
- Secure the hard drive. Once the hard drive has been inserted, use the screws that came with it to secure the hard drive in the housing. Ideally, you should use two screws on each side of the hard drive.
- Single Drive - If this is your only hard drive then set the jumper selector to master
- Two Drives - If the new drive will be the main drive set the jumper to master. If you want it as a secondary drive then set it to slave.
- **Precautions:** If the hard drive is loose, it can rattle and cause more noise and lead to physical damage.
- **Tips:** Tighten the screws to a firm tightness, but don't over-tighten as that may cause damage as well.

STEP 5: Installing the RAM

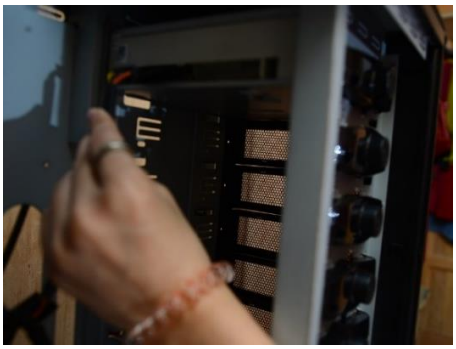
- Locate your RAM sockets. It is typically located near the CPU
- Line up the notch in the stick of RAM to the break in the slot. Set the stick into the slot and then apply equal pressure onto the stick until the clamps on the side click and lock the RAM in.
- **Tips:** Make sure matching pairs are inserted into their matching sockets. Most are labeled on the board or by color, make sure that they are facing the same way.
- **Precautions:** Grip it from the sides to avoid touching the contacts on the bottom or the circuitry on the board.

STEP 6: Install CD ROM

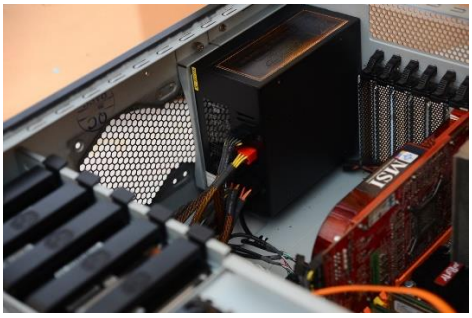
- Remove the drive bay cover where you put the CR-ROM drive.
- Insert the CD-ROM drive inside the drive bay.
- Precautions: Make sure to insert it slowly smoothly, or else it will get stock.
- Fasten the CD-ROM drive with the locking mechanism, to let it steady.

STEP 7: Plugged the SATA cable

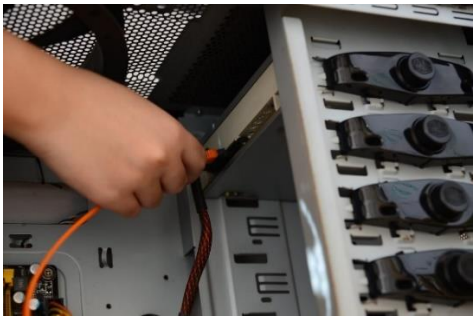
- Connect the SATA power cable to the CD-ROM drive.



- Connect the other end of the SATA power cable to the power supply.



- Connect the SATA data cable to the CD-ROM drive.

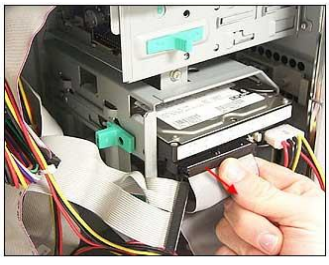


- Connect the other end of the SATA data cable to the motherboard.

STEP 8: Plugged the IDE data cable

- There are 3 connectors. Connection A plugs into the motherboard and then the slave and master connections are used for IDE devices.

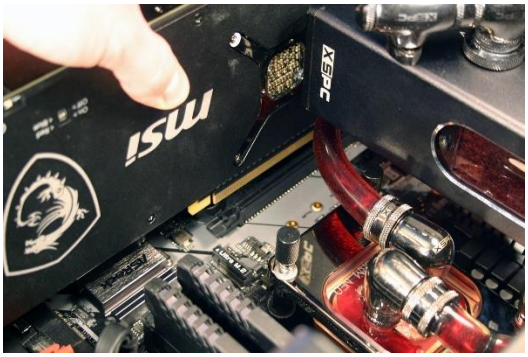
- **Tips:** The IDE cable will be marked down one side with a red or black strip, this denotes Pin 1, match this with the pin 1 indicator on the back of the hard drive.



-

STEP 9: Connect the USB cable from motherboard to the CD ROM

STEP 10: Install the graphic card



- Hover the new GPU over PCI-e slot.
- 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 one or two PCI-E connectors from the power supply.
- **Precautions:** before installing graphic card, clean out the dust around the PCI slot as dust can cause your components to overheat
- **Tips:** When you insert the card, you may need to remove the neighboring panel if your graphics card is two panels wide.

STEP 11: Closing the case and connecting paripherals

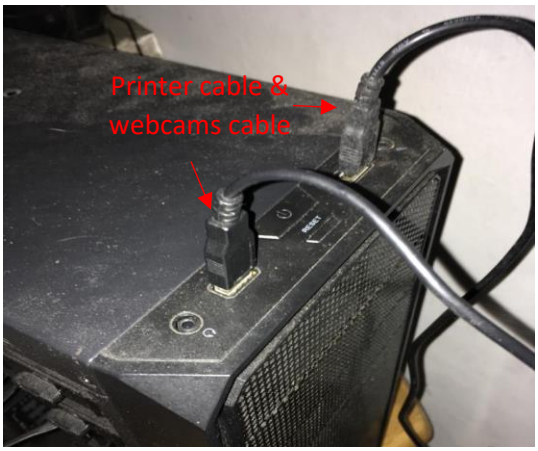
- Place the side cover back on and secure the side panels with case screws.

- Connect peripheral devices which include keyboard, mouse, wireless network dongle, printer and webcams with your CPU by plugging into USB port.
  - Connect mouse

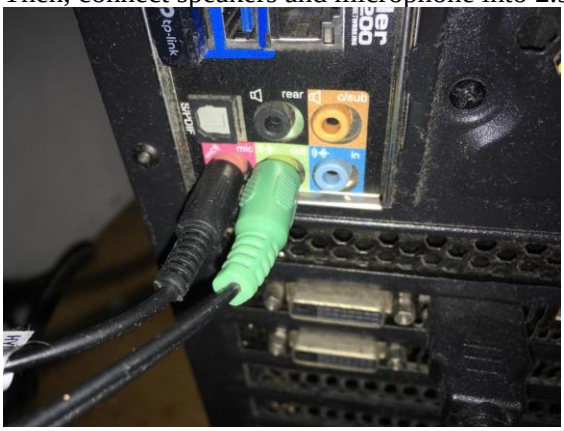
  - connect keyboard

  - Connect wireless network dongle


- Printer & webcams



- Then, connect speakers and microphone into 2.5 mm sockets.



- Finally connect the CPU with monitor