UNIVERSITI TEKNOLOGI MALAYSIA

School of Computing, Faculty of Engineering

Subject: Technology and Information System

Section: 05

1.		***Name: TOYA LAZMIN KHAN*** ***Matric Number: A20EC0284*** ***Phone Number: +8801711669929*** ***E-mail: lazmikhan00@gmail.com***
2.		***Name: MUHAMMAD DAFA RAYHAN YASSER*** ***Matric Number: A20EC0317*** ***Phone Number: +6281275210777*** ***E-mail: dafa.rayhanyasser@gmail.com***
3.		***Name: MD MOHAIMINUL ISLAM FAYSAL*** ***Matric Number: A20EC9105*** ***Phone Number: +601127739204*** ***E-mail: zxfaysalgrp@gmail.com***
4.		***Name: MAHMOUD KHALED ABDELFATTAH MAHMOUD OSMAN*** ***Matric Number: A20EC0271*** ***Phone Number: +60 11-6130 3153*** ***E-mail: yungmudu@gmail.com***

Assignment: Step by step assembly

Group 3

Part 1: Tools needed for PC assembly

1.0 Screwdrivers

Screwdrivers are used to screw the parts of the computer parts together. It is used when screws are needed to be added to the components to keep them together and screw drivers are used so all the screws stay in place. The screwdrivers can also be used to tighten up the screws or loosen it up. Without screwdrivers, the pc will disassemble as the parts of the computer will not be able to hold together.

2.0 Cable ties

While assembling the PC we need a lot of wires and they tend to get entangled and difficult to detangle when PC disassembly is done later on. In order to avoid it, cable ties can be used. They zip the wires together in many bundles preventing them from forming a mesh of wires. They also make the insides of the casing look neat.

3.0 Anti-static wrist strap

These materials are used so that the static electricity does not damage the computer components. It is very easy for the computer parts to get damaged due to the static electricity that builds up which does not affect human beings but can cause damage to RAM and processors of a computer. Anti-static materials that can be used to prevent the damage include anti-static wrist strap. The grounding strap is put on wrist and the other end is connected to the CPU cabinet.

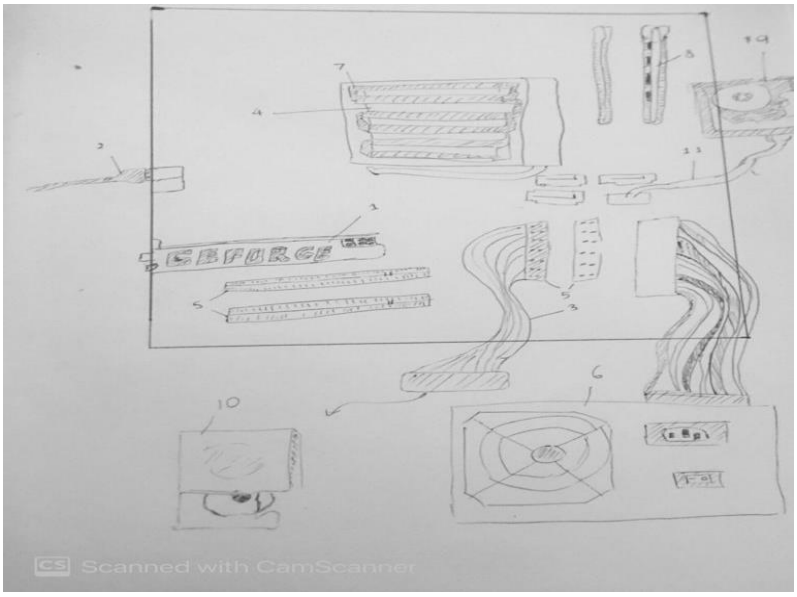
4.0 Small torch

It is dark inside the CPU cabinet so a small torch will help a lot when connecting the cables inside it.

5.0 Thermal Paste

This is necessary in case the CPU cooler does not come with Thermal paste and it is necessary for sticking the CPU cooler on top of the Processor.

Part B – Sketch of a Motherboard layout



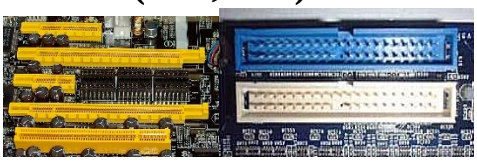
1. **GRAPHIC CARD**: An electronic circuit that accelerates the creation and rendering of images, video, and animations.

2. **USB CABLE:** A cable connected to computer units directly to peripheral devices like mobile phones, cameras, camcorders and printers/scanners. The main objective of these cables is to effectively, quickly and properly gather or transfer data from one device to another.

3. **IDE CABLE:** Used to connect some hard drives and optical drives to each other and to the motherboard.

4. **CPU/PROCESSOR:** Provides the instructions and processing power the computer needs to do its work.

5. **SLOTS (IDE, PCI):** used to connect IDE or PCI.



6. **POWER SUPPLY:** Converts mains AC to low-voltage regulated DC power for the internal components of a computer.

7. **HEAT SINK:** A piece of metal that sits on top of a computer chip such as a CPU and regulates heat by drawing power away from components by letting it rise through a set of fins.

8. **RAM:** Gives applications a place to store and access data on a short-term basis. It stores the information your computer is actively using so that it can be accessed quickly.

9. **HARD DISK:** Stores and retrieves digital data using magnetic storage and one or more rigid rapidly rotating platters coated with magnetic material.

10. **CD ROM:** A type of computer memory in the form of a compact disc that is read by optical means.

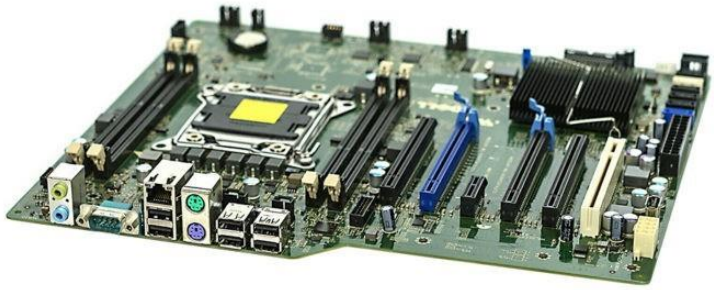
11. **SATA CABLE:** Connect hard drives and optical drives to computers. These cables let the drives exchange data with the computer through the motherboard.

Part 3 STEP BY STEP PC ASSEMBLY

Mainly there are 12 steps of for creating a PC.

Step-1. Motherboard

The Motherboard itself is a printed circuit board that permits the CPU, RAM, and any remaining PC equipment parts to speak with one another. There are gigantic varieties in Motherboards from configuration, cases, power supply, size (Form Factor) and similarity. A motherboard from one maker will uphold a solitary kind of CPU and a couple of various sorts of memory. Different peripherals like video cards, hard drives and different parts may not be compatible.

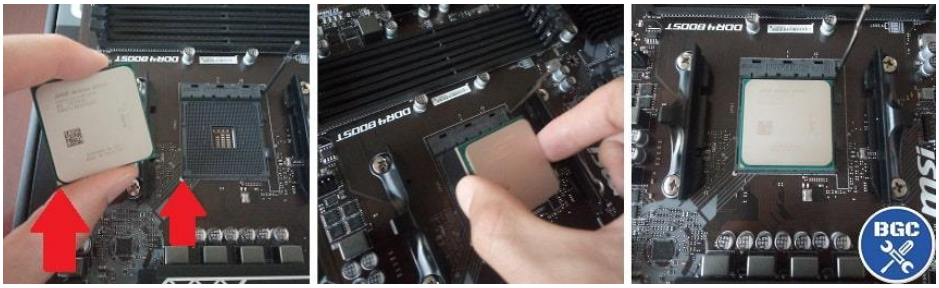


Step 2. CPU

If you have a new motherboard, here might be a plastic cover over the CPU attachment. You can choose any chip, AMD or Intel. In case you're putting your new CPU onto a motherboard that as of now has a CPU, at that point clearly that and the CPU cooler will stand out.

In the two cases, you'll need to eliminate whatever is obstructing the CPU attachment. This is likewise a decent chance for you to get acquainted with the maintenance arm (and potentially the metal section on an Intel attachment) that holds the processor set up once introduced. You can get a feeling of how much pressing factor it brings to push down. Keep the maintenance arm in its open, up position. With your CPU attachment open, you're prepared to proceed onward.

Expecting you effectively fixed up your CPU with the attachment, it should drop directly into the right spot. You may have to tenderly, and we mean delicately, move it around in the event that it seems like it's not exactly set up. AMD CPU pins, for example, can be somewhat trickier to agree with the openings in the attachment. With your CPU appropriately situated in the attachment, you ought to have the option to push down the maintenance arm effortlessly (if it's an Intel CPU, bring down the section first). On the off chance that it seems like the maintenance arm is opposing you, twofold check the seating of the CPU in the attachment. Once your CPU is seated and the retention arm is down, you're all set.



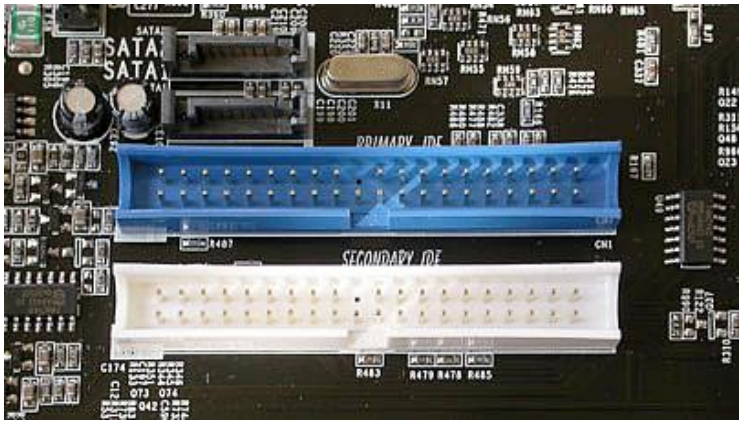
Step3. IDE Slot

Generally, IDE alludes to the sorts of links and ports used to associate some hard drives and optical drives to one another and to the motherboard. An IDE link, at that point, is a link that meets this determination. Usually, a motherboard has two IDE sockets.

It's essential to have the option to recognize an IDE drive, IDE links, and IDE ports when you're overhauling your PC equipment or purchasing new gadgets that you'll plug into your PC.

For instance, knowing whether you have an IDE hard drive will figure out what you need to purchase to supplant your hard drive. In the event that you have a fresher SATA hard drive and SATA associations, yet

then go out and purchase a more seasoned PATA drive, you'll see that you can't interface it to your PC as effectively as you'd trusted.

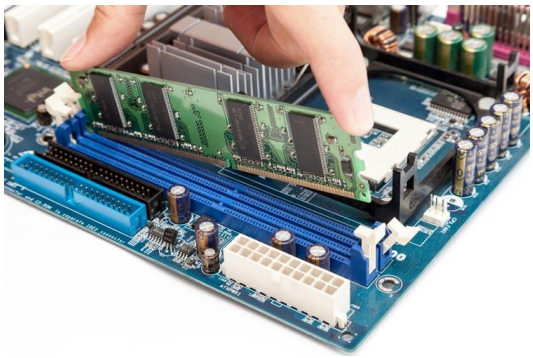


Step4.RAM

As simple all things considered to pop RAM sticks into your motherboard, You need to ensure you're placing the RAM into the right slot to get the full performance out of them. Which openings you go with will likewise rely upon the number of RAM sticks you have.

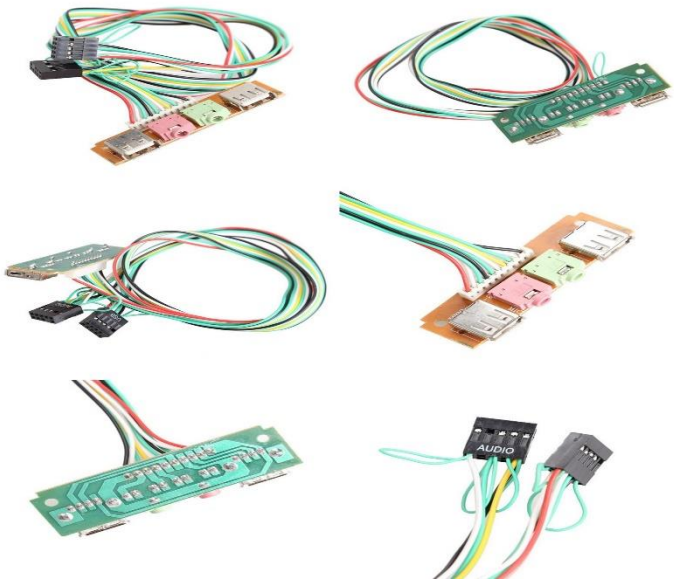
In a motherboard with two RAM slots, you'll just place your initial stick of RAM into Slot 1 and a second stick into Slot 2. On the off chance that you simply have one stick, you don't need to fill Slot 2.

In case of a motherboard with four RAM spaces, it's likely you'll need to introduce your first RAM stick into the opening marked 1. A subsequent stick should go into Slot 2, which isn't close to Slot 1. In the event that you have a third stick, it would go into Slot 3, which will really be between Slot 1 and Slot 2. At last, a fourth stick would go into Slot 4.



Step5. USB Cables

If your case has a front-mounted USB port or a card reader, you'll need to associate it to the extra headers on your motherboard. The link is probably going to be marked as USB for the situation. Your motherboard may have "USB"- checked extra connectors, however the manual will advise you absolutely where the pins are found on the off chance that they exist. USB connectors require power, so you need to connect the link the correct bearing. Fortunately, in most PC examples, USB ports have a solitary connector that lone appends to the motherboard one way. In the event that your PC doesn't have an implicit attachment, you'll need to survey the case and motherboard manuals intently and ensure you introduce the wires appropriately. Expecting you are utilizing a square connector, plug it into the extra USB pins on the motherboard. It's more secure to utilize the closest link header to forestall hanging links anyplace.



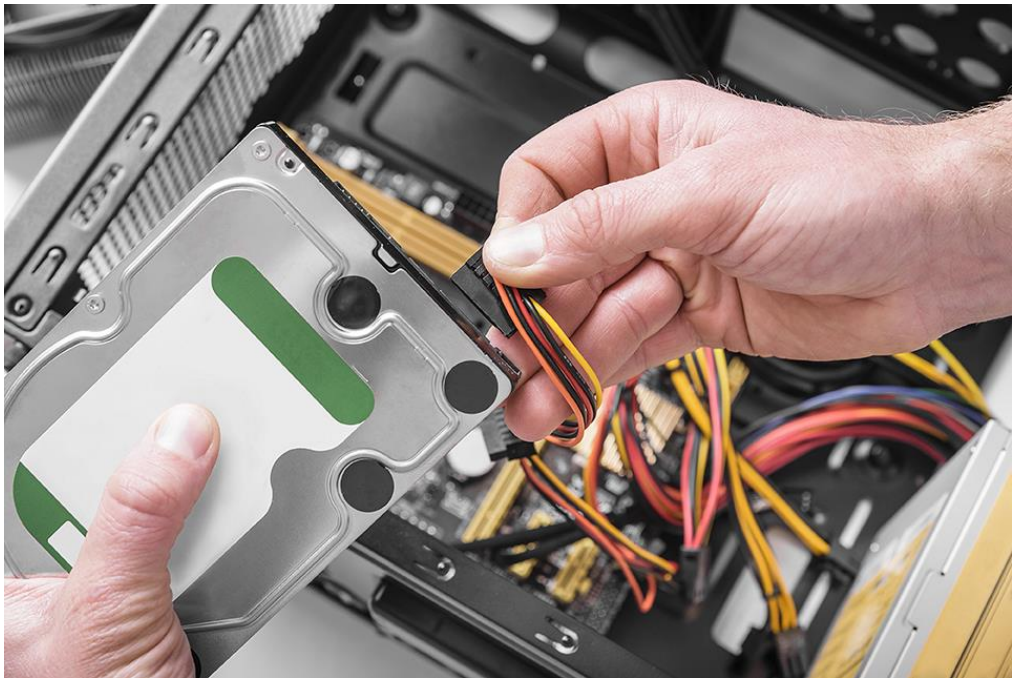
Step6.IDE Cables

IDE is a standard interface that associates the PC motherboard to a capacity gadget. The most widely recognized of these sorts of links are the 34-pin floppy drive link that interfaces from the motherboard to the floppy drive and the 40-pin strip link that associates from the motherboard to the hard drive or potentially the cd drive. The IDE link is a sort of AT Attachment which has had speeds from 33, 66, 100 and 133 MB/s. A quicker link can go in a more slow hard drive yet a more slow link will diminish the speed of a quick hard drive.

Step7.Hard Disk

There are a couple of types of hard drives you need to consider. The normal SATA hard drive is 3.5 creeps in tallness, but on the other hand is accessible in 2.5 crawls for note pads. These hard drives have a turning circle inside, making them less sturdy yet less expensive and ready to convey more records. More current drives or Solid-State Drives (SSDs) are additionally 2.5 crawls in stature. They don't have a turning plate, permitting them to run quicker than the standard hard drive. Nonetheless, SSDs are more costly and have less information. For best execution, it is by and large encouraged to give a SSD that houses the working framework and the most pertinent applications, while most of the data on the gadget is saved money on the typical hard drive. The third type of hard drive is M.2, which is a little, exposed chip of around 1 x 3

inches. This M.2 drives give off an impression of being the costliest decision and are just accessible for some motherboards. For your situation, there ought to be a hard drive straight for a hard plate or a SSD. Since SSDs are more modest in size, you can have to purchase an extra SSD section to find a way into the narrows. Slide your hard drive or SSD to one of the straight spaces. The drive ought to be situated with the connectors within the motherboard. The drive incorporates power from the PSU and a SATA connect from the motherboard. They ought to be anything but difficult to track down, since the links are L-formed.



Step8. DATA CABLE

SATA links ought not be a troublesome work, yet it is as yet important to finish the establishment securely and effectively. The specific establishment strategy can differ contingent upon the planned expectation of the SATA link.

In the event that you are utilizing a SATA link to associate additional ability to your arrangement, you don't have to address the first hard plate. Addition the new hard crash into a vacant straight in the PC case, ideally with space among new and current drives to permit more prominent wind stream. Guarantee that the SATA link interface ports are promptly open and keep the drive set up. Join the SATA link to the hard drive connector, at that point associate the opposite finish of the link to the motherboard, taking consideration not to hinder or discourage the association with the current HDD.

Step9. CD Drive

Until mounting a CD drive, it is significant that the jumpers are appropriately set to auxiliary, essential, or link select. The CD-ROM may have two links appended to it and it could have a sound association, which is the more modest of the links. While associating this link to a CD-ROM drive, there ought to be a 3 or 4 pin link interface. (see above picture). Ensure you connect the wire fitting to this link, not the jumpers on the rear of the drive. Despite the fact that it very well may be practical for the link to connection to these pins, this may make further issues.

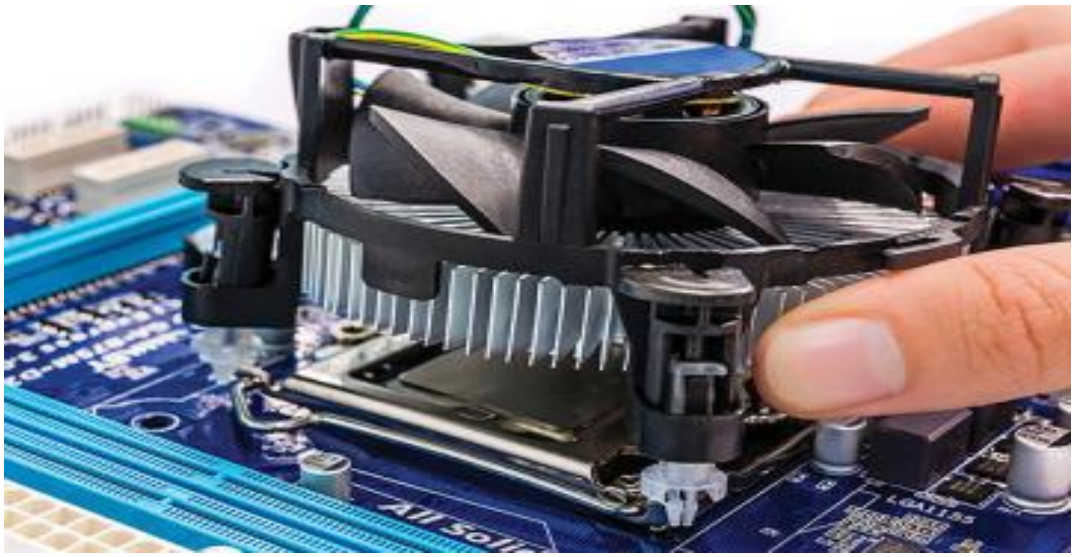
At that point associate the 40-pin IDE/EIDE interface link (enormous dark lace link) to the rear of the CD-ROM drive. This link has one side of the link, which is red or blue, which means PIN 1. This side of the link likewise prompts where the control is joined to the CD-ROM drive.

At long last, interface the Molex power link to the rear of the CD-ROM drive. This link is keyed, so it must be appended to the gadget one way.

At the point when the links are appended to the drive, associate the far edges of the IDE/EIDE interface link and the sound link to their separate positions. The sound link can join to one of the accompanying areas: sound card, motherboard (when installed sound present), or DVD decoder card.

Step10. Heat sink & Installing Fan

Thermal paste is applied on top of the processor making sure that the paste only stays on top and does not seep anywhere else which will damage the parts. The cooler is placed on top and it is made sure that the screws of heat sink align with the screw holes of the backplate. Screw drivers used to screw the cooler with the heat sink tightly and the cooler makes a connection with the heat sink. The cooler's fan power lead is then connected to the CPU fan header on the motherboard.



Step11.Power Supply

The PSU is ordinarily positioned on the rear of the crate. Frequently, you'll see it at the tip, however it's for the most part positioned at the base, so it can suck the cold air from underneath the skeleton. At the point when you set up it, it's typically as simple as tightening it place with four screws at the rear of the case. At that point embed the 24-pin power connector and the extra/CPU power connector into the motherboard.

Step12. Last step (Closing the Case)

Finally, it ends by **CLOSING THE CASE AND CONNECTING THE PERIPHERAL**

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