UTM UNIVERSITI TEKNOLOGI MALAYSIA

SCHOOL OF COMPUTING
Faculty of Engineering

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Subject : Technology and Information Systems(SECP1513)

Section : 4

Assignment : Step by step PC Assembly

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Part A

1.0 Screwdrivers

Screwdriver is used to screw or unscrew all the screw used to held together almost all of the component in a PC. There are several type of screwdrivers which is philips, flathead, hexhead. Screwdrivers is very important because almost all of the components in the PC are held together using screw.

2.0 Pliers

Pliers is use when a screw is stuck or 'loose'. It also include a wire cutter which can be used to cut the excess of cable ties or wire. The importance of pliers is when screwdrivers can't be used to unscrew loose screws.

3.0 Nut Drivers

Nut Drivers are used to tighten nuts and bolts. It is important because some of the parts are held together using nuts or bolts.

4.0 Zip/Cable Tie

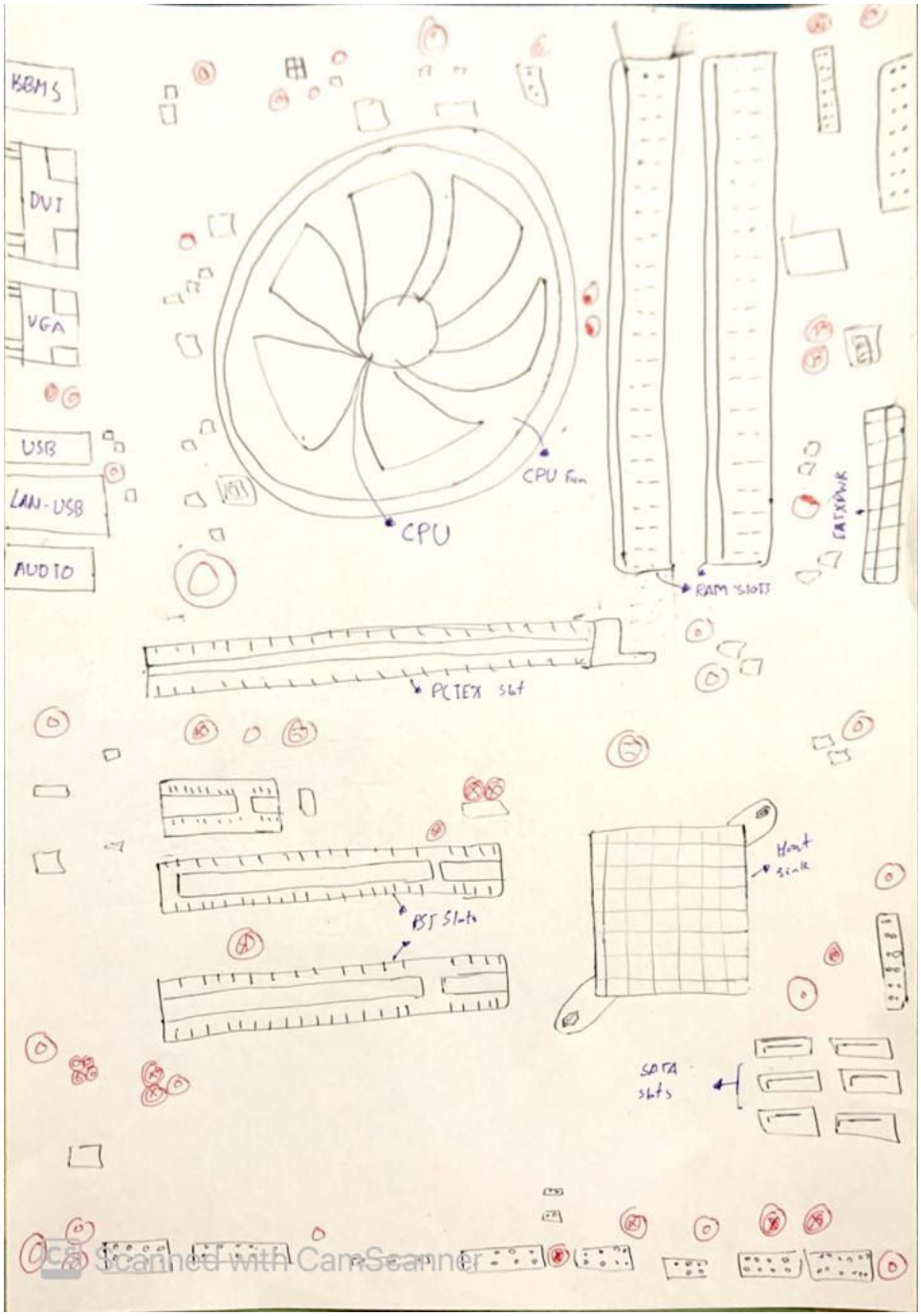
Cable Tie is used to perfectly packaging wires and cables from fans and different parts inside the PC. It is important to make sure that the cable and wire are neat and safe from any risks of damage.

5.0 Light Source

Light source is used to lighten the case of the PC. PC cases are brimming with shadows, and screws love to fold into the most obscure corners. Light sources are important to increase our vision.

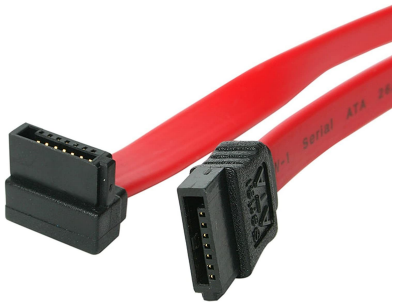
Part B

1.0



2.0

Name	Picture	Explenion	Example model
Graphic card		(Graphics Processing Unit) A programmable processor specialized for rendering all images on the computer's screen. A GPU provides the fastest graphics processing, and for gamers, the GPU is a stand-alone card plugged into the PCI Express (PCIe) bus. GPU circuitry can also be part of the motherboard chipset or on the CPU chip itself.	**RTX3090**
USB cable		Universal Serial Bus (USB) is an industry standard that establishes specifications for cables and connectors and protocols for connection, communication and power supply (interfacing) between computers, peripherals and other computers. A broad variety of USB hardware exists, including eleven different connectors, of which USB-C is the most recent.	
CPU / Processor		Central processing unit (CPU), principal part of any digital computer system, generally composed of the main memory, control unit, and arithmetic-logic unit. It constitutes the physical	**AMD Ryzen 7 3700X 8-Core**

		heart of the entire computer system; to it is linked various peripheral equipment, including input/output devices and auxiliary storage units. In modern computers, the CPU is contained on an integrated circuit chip called a microprocessor.	
CD ROM		Stands for "Compact Disc Read-Only Memory." A CD-ROM is a CD that can be read by a computer with an optical drive. The "ROM" part of the term means the data on the disc is "read-only," or cannot be altered or erased. Because of this feature and their large capacity, CD-ROMs are a great media format for retail software. The first CD-ROMs could hold about 600 MB of data, but now they can hold up to 700 MB. CD-ROMs share the same technology as audio CDs, but they are formatted differently, allowing them to store many types of data.	
SATA cable		Serial Advanced Technology Attachment (SATA) or Serial ATA cables are used to connect devices in computer cable assemblies, such as storage devices, for example. The SATA technology itself is a connector interface primarily used for computer bus connections in storage applications. In this application, the cables are used to connect a mass storage device (e.g. hard disk drives, optical drives, solid-state memory drives) to a host bus adapter such as a motherboard.	

hard disk	 	A hard drive is the hardware component that stores all of your digital content. Your documents, pictures, music, videos, programs, application preferences, and operating system represent digital content stored on a hard drive. Hard drives can be external or internal. Everything stored on a hard drive is measured in terms of its file size. Documents (text) are generally very small whereas pictures are large, music is even larger, and videos are the largest. A hard drive determines the size of digital files in terms of megabytes (MB), gigabytes (GB), and terabytes (TB).	**Seagate BarraCuda 8TB Internal Hard Drive HDD – 3.5 Inch Sata 6 Gb/s 5400 RPM 256MB**
RAM		RAM stands for Random Access Memory. The data stored in RAM can be accessed almost instantly regardless of where in memory it is stored, so it's very fast — milliseconds fast. RAM has a very fast path to the computer's CPU, or central processing unit, the brain of the computer that does most of the work. RAM is random access as opposed to sequential access. Data that's accessed sequentially includes stuff that's written to your hard disk drive, for example. It's commonly written in files, with a specific start location and end location. We'll get to your hard drive storage in a moment.	**G.SKILL TridentZ RGB Series 16GB**

heat sink		A heat sink (also commonly spelled heatsink) is a passive heat exchanger that transfers the heat generated by an electronic or a mechanical device to a fluid medium, often air or a liquid coolant, where it is dissipated away from the device, thereby allowing regulation of the device's temperature. In computers, heat sinks are used to cool CPUs, GPUs, and some chipsets and RAM modules. Heat sinks are used with high-power semiconductor devices such as power transistors and optoelectronics such as lasers and light emitting diodes (LEDs), where the heat dissipation ability of the component itself is insufficient to moderate its temperature.	
Power supply		A power supply is an electrical device that supplies electric power to an electrical load. The primary function of a power supply is to convert electric current from a source to the correct voltage, current, and frequency to power the load. As a result, power supplies are sometimes referred to as electric power converters. Some power supplies are separate standalone pieces of equipment, while others are built into the load appliances that they power. Examples of the latter include power supplies found in desktop computers and consumer electronics devices. Other functions that power supplies may perform include limiting the current drawn by the load to safe levels, shutting off the current in the event of an electrical fault, power conditioning	**Corsair RMX Series RM550x, 550 Watt**

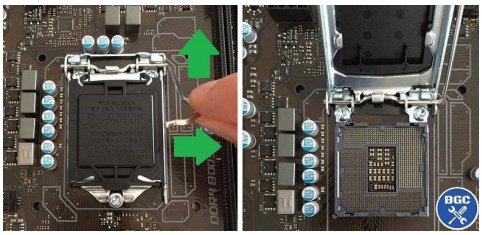
		to prevent electronic noise or voltage surges on the input from reaching the load, power-factor correction, and storing energy so it can continue to power the load in the event of a temporary interruption in the source power (uninterruptible power supply).	
Slots (IDE, PCI)		A PCI slot is a built-in slot on a device that allows for the attachment of various hardware components such as network cards, modems, sound cards, disk controllers and other peripherals. It was often a component of traditional do-it-yourself (DIY) desktop computer design.	
IDE cable		IDE, an acronym for Integrated Drive Electronics, is a standard type of connection for storage devices in a computer. Generally, IDE refers to the types of cables and ports used to connect some hard drives and optical drives to each other and to the motherboard. An IDE cable, then, is a cable that meets this specification. Some popular IDE implementations that you might come across in computers are PATA (Parallel ATA), the older IDE standard, and SATA (Serial ATA), the newer one.	

Part C

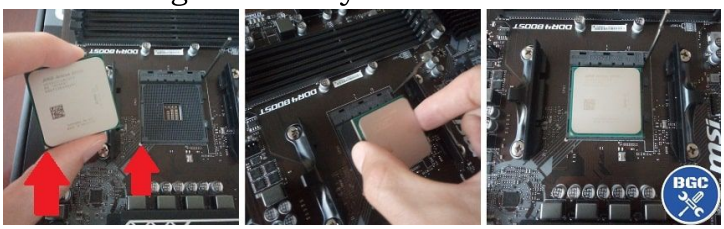
Step 1 - Install CPU/processor

First Locate the CPU socket (usually in the center of Motherboard).

Then open the CPU socket by lifting it up the retention arm (the small metal lever on the side of the socket). Unlock the retention arm by pulling it out to the right (away from the socket) so that it's free to then be lifted up.



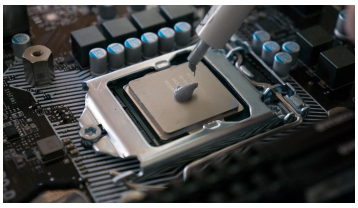
Next we need to coordinate the bolt and lower CPU into the attachment by looking to the base left of the socket's.This shows what direction to introduce CPU, as there will be a bolt on the CPU itself that goes in this corner. Presently put the CPU to the attachments, recall don't contact the base and top of the CPU, the right CPU position is just one so we should put it delicately and don't power or push the CPU in. To affirm it's completely introduced, VERY tenderly attempt to bump it a division to left or right. In the event that it wasn't at that point appropriately situated, it will tenderly become all-good when you do this.



At that point we lock the CPU attachment by bringing down the attachment cover, at that point bring down the maintenance arm (the little switch) and clasp it back into the snare. The CPU attachment cover should then consequently fall off

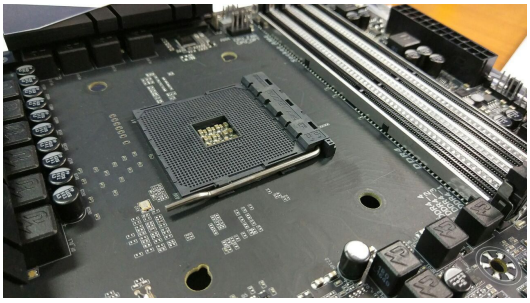
Step 2 - Install CPU Cooler/Heatsink

First apply thermal paste on the CPU, don't put too much or too little.



Before we mount the CPU cooler on the CPU we need to find the fan link so we can change the best situation of the fan.

At that point get the cooler by its sides and cautiously bring down the cooler onto the highest point of CPU by fixing up the four corners with the four openings on the motherboard

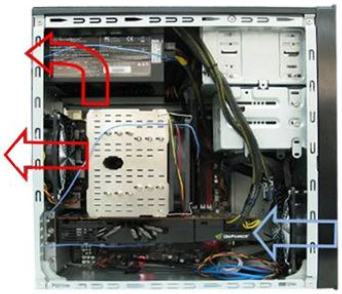


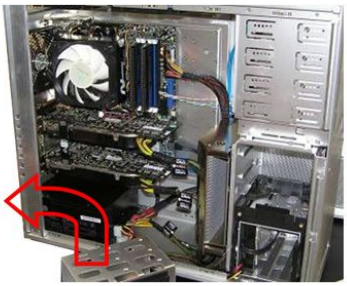
At that point Mount the central processor cooler on the attachment and lock it(the lock framework its rely upon ther CPU cooler some simply need to push it down and turn it and some other need screw to bolt it)

After this progression we simply need to associate the fan link to the port named CPU_FAN

Step 3 - Mount Power Supply/PSU

Fit it in the lower part of the case, which is the place where most present day cases house. For the top-mounted force supply, the cycle will be a lot of equivalent to simply expecting to opening it in and screw it into the spot like we'll be doing here for the base mounted PSU establishment. place the force supply unit in the lower part of the case, ensuring the force attachment and force change face out the back of the case, with the link associations looking into the case.

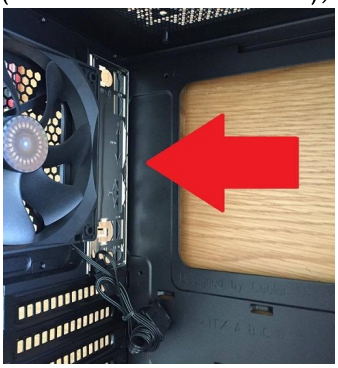




Next screw openings on the rear of the case with the PSU, and keeping in mind that holding the PSU solidly set up feel free to fasten them with the screws that ought to have been furnished with your PSU. Something else, use screws gave by the case. Fix them pleasant and solidly, yet not excessively close.

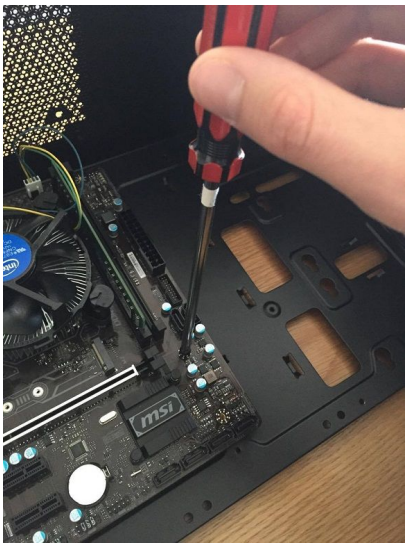
Step 4 - Mount Motherboard into the case

Before we mount the motherboard we need to introduce the IO shield. Fit the IO shield to the case at that point push in the 4 corners of the IO shield (from inside the case), at that point fit in to the motherboard



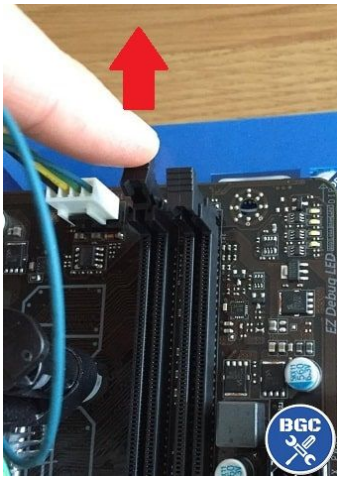
After we fit the motherboard to the IO shield the motherboard will consequently fit to the stalemate case

Next Put screw and tighten them (don't screw TOO tight it may damage the motherboard)



Step 5 - Install RAM/Memory

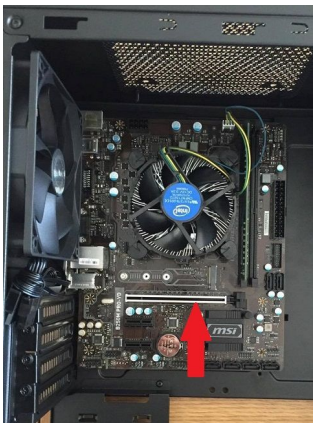
FIrst unlock the slots on Motherboard by pushing it outwards. It may require a firm little push, but don't use *too* much force in case you're pushing the wrong area of the socket.



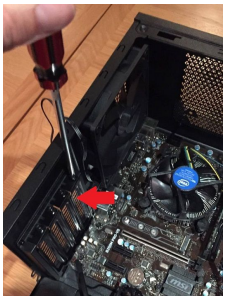
Next insert the RAM by giving it a firm little press from the top, but never use too much force because it shouldn't require a crazy amount of force if you're aligned it properly. To properly seat it all the way, it might be easier to press down on either side one at a time until the slots locked(the slot will automatically locked the ram if inserting it in properway)

Step 6 - Install Graphic Card/GPU

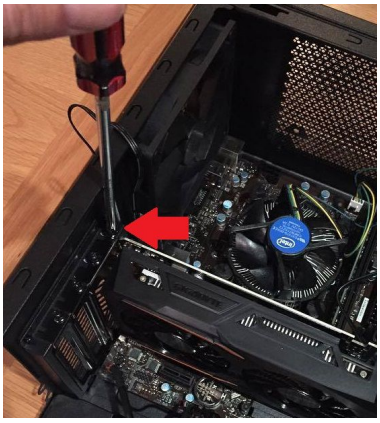
Firstly find the GPU PCIe slot



Then remove the case expansion bracket after that, mount the Graphic card to the PCIe slot.

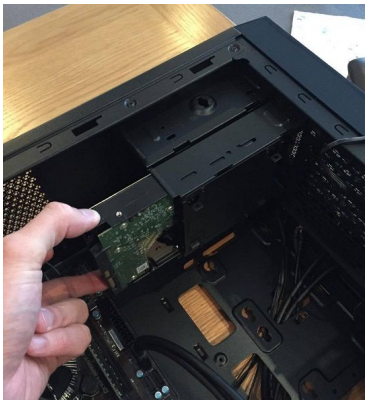


Next make sure to fit and secure the GPU by screw it again the same screw/s that you removed in step 2 back into the top of the metal brackets to fully secure your graphics card into the case



Step 7 - Install Hard Drive

Fit Hard Drive Into Case Bay and Screw it to make it tight

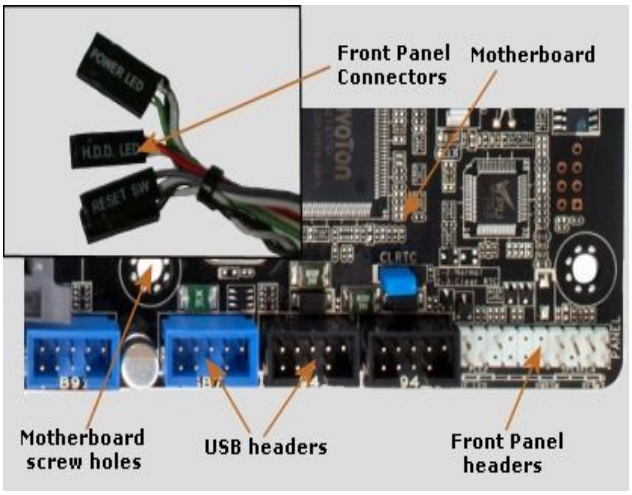


Step 8 - Install CD ROM

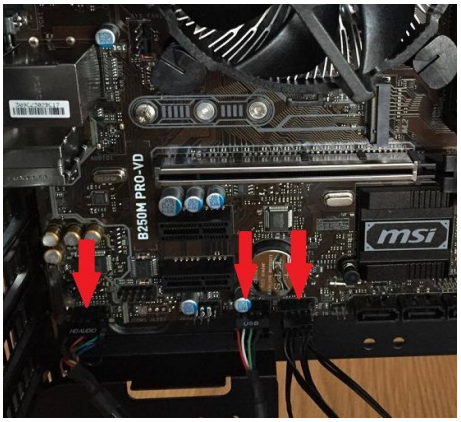
This step is the same as installing the Hard Drive. Just fit the CD ROM to the case and Screw it to make it tight

Step 9 - connecting front panel cable

First locate the front cable panel headers on Motherboard



Then connect the cable to right headers on Motherboard



Step 10 - Connecting the Component cable to PSU
first Connect the 24-pin connector to the motherboard

then the 8-pin connector to the CPU Slot

Next connect the SATA cable to the Drive disk and connect the other side cable to the SATA slot in motherboard

If you want to make your PC tidy you should manage your cable properly by using Zip/Cable tie

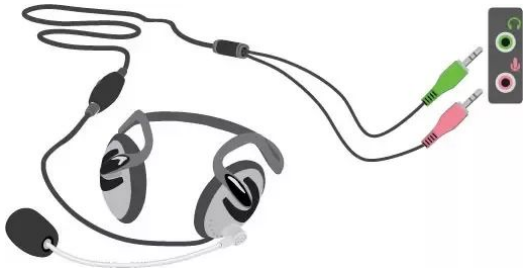
Last step - closing the case and connecting to the

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.

Then, connect speakers and microphone into 2.5 mm sockets.



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