



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA

**SCHOOL OF COMPUTING**  
Faculty of Engineering

## Semester I 2020/2021

Subject : Technology and Information Systems (SECP1513)

Section : \_07\_\_\_\_\_

Assignment : Step by step PC Assembly

**GROUP NAME / NUMBER : \_\_02\_\_\_\_\_**

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## Part A

- 1. *Wire cutters and strippers*



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The wire cutter and stripper is used to remove the insulation from electric wires for making contact .it is very important for assembling a pc. without this we can't make contact with one wire to another wire .While assembling a pc ,we must need wire cutters and strippers so that we can make the wire to wire connections so easily.

- 2. *Adjustable wrench*



An adjustable spanner or adjustable wrench is an open-end wrench with a movable jaw which is commonly used with different size of nuts or bolts or fasteners . we often use this product while assembling a pc .we use this because when we assemble a pc we meet different sizes of fasteners .As it is a adjustable wrench, we can easily use it to fasten any kind of nuts or bolts .

- *3. Heat sink compound*



Heat sink compound is used to fill that gap and is made to efficiently transfer the heat from the heat generating component to the heat dissipating device. Without this the gap won't be filled and the component will not work properly.

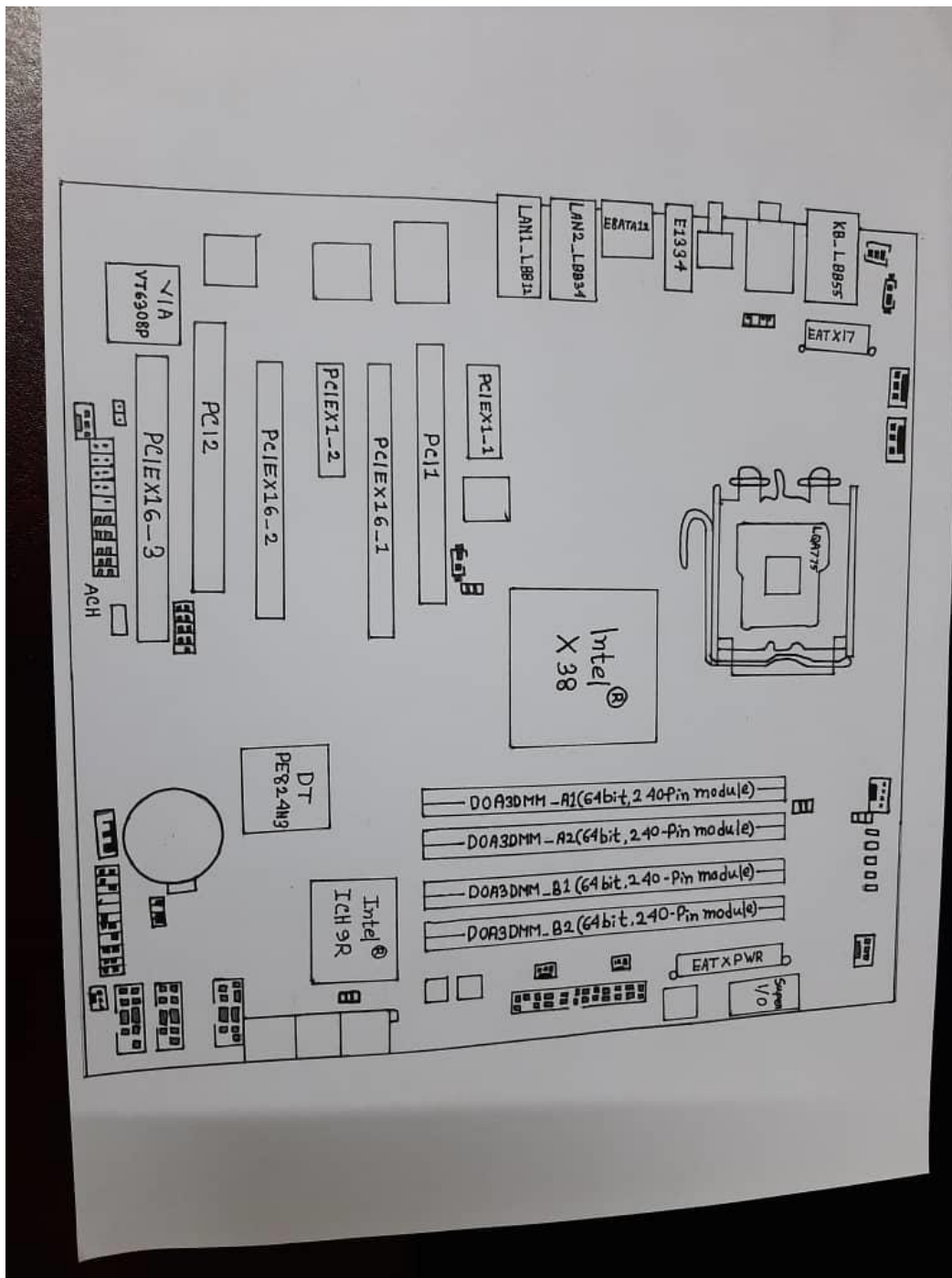
- 4. Small container to hold screws



This is widely used to store screws. While assembling a pc, we met different kind of screws, each have its own destination. If we use a small container and level them according to their size, it would be easy for us to situate the screws according to its place. If we do so, it will make our work easier.

## Part B

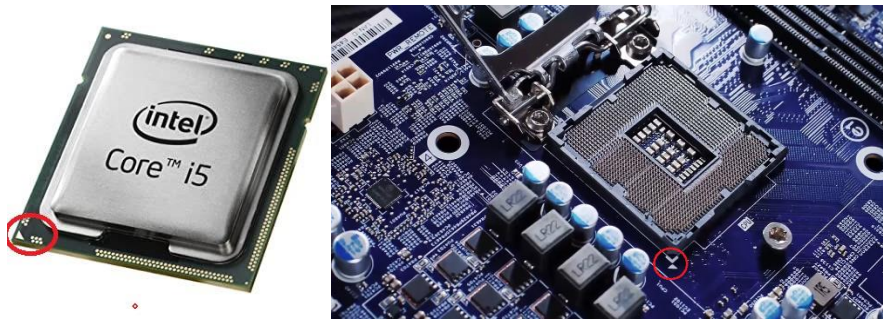
### Sketch of a motherboard layout



## PART C

### PC ASSEMBLY STEPS

## STEP 1 CPU INSTALLATION



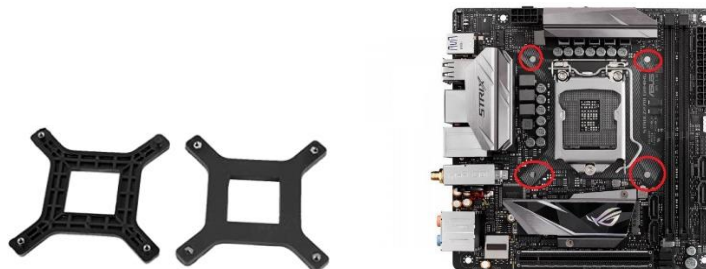
Prepare the motherboard for CPU installation. Match the triangle at corner of the CPU and the motherboard before inserting the CPU into the CPU socket on the motherboard. Insert the CPU gently into the socket.

## STEP 2 RAM INSTALLATION



Open the tabs at the end of the RAM slot and line up the notches on the RAM with the RAM slot on the motherboard. Press both ends of the RAM until the tabs at the RAM slots closes. Repeat the same step for the 2<sup>nd</sup> RAM. If you're only installing one RAM, use the 2<sup>nd</sup> RAM slot on the motherboard which is the furthest from the CPU socket.

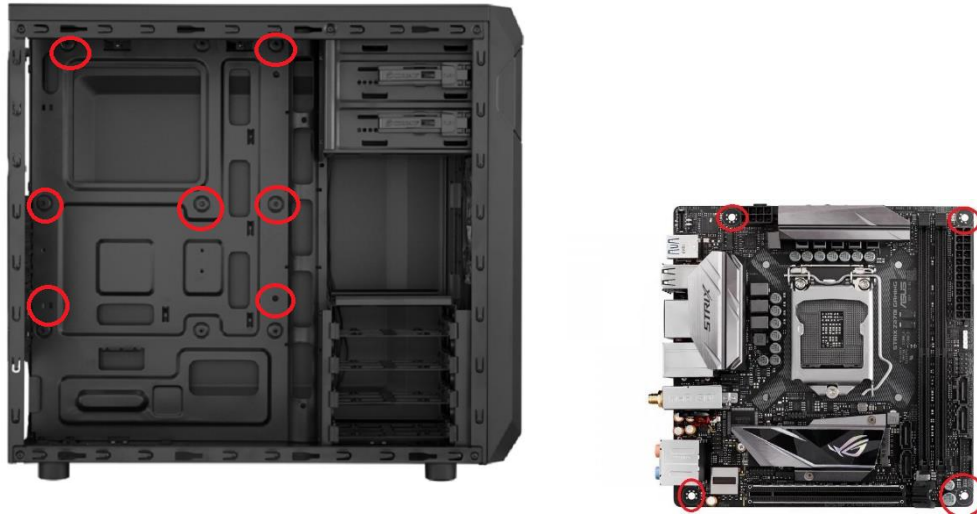
## STEP 3 CPU COOLER INSTALLATION



Install the backplate of the cooler on the backside of the motherboard through the holes on the motherboard before putting the cooler on the processor apply a small amount of thermal paste (size of a grain of rice) on the CPU. Install the cooler onto the CPU and use the screws given.



#### STEP 4 INSERTING MOTHERBOARD INTO THE CASE



Insert the motherboard into the case by lining up the standoffs in the case with the holes on the motherboard

#### STEP 5 POWER SUPPLY INSTALLATION



Install the power supply at the bottom part of the case and make sure the power supply fan is pulling the air into the power supply itself. Do not suffocate the fan as it can cause serious damage to the PC

#### STEP 6 STORAGE



Some motherboards now can use m.2 SSD as storage with the operating system with higher boot speeds when opening your computer, you can install these on the m.2 slot on the motherboard.



You can also use Hard Drives as an additional storage. Insert the Hard Drive in the Hard Drive tray in the computer case.

### STEP 7 FAN INSTALLATION



When installing the fans in the case, it is important to have a good airflow in the case. Install the fans with the arrows pointing into the case as air intakes and with arrows pointing out of the case as exhaust fans. The air intakes are labelled blue and the exhaust fans are labelled red.

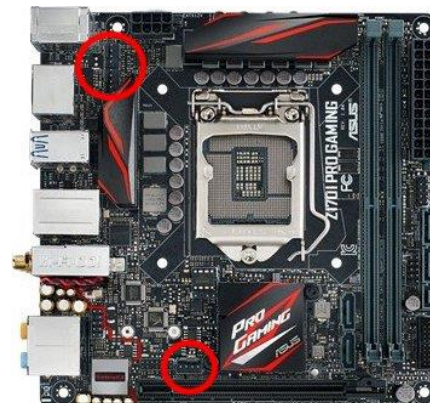
### STEP 8 GPU INSTALLATION



Some motherboards have integrated graphics so you don't need to have a graphics card to display your output. But if you have a graphics card you can insert the card into the PCIe slot on the motherboard.



## STEP 9 CABLE ROUTING



Fan Connectors



Front Panel Headers



Front Panel Connectors



CPU connector



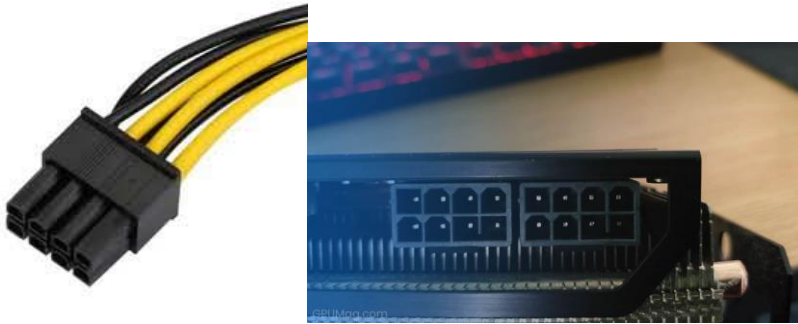
24 – Pin Connector



SATA  
connectors

Connect the 24-Pin power connector on the motherboard labelled blue, connect the CPU connector on the motherboard labelled red, connect the SATA connectors on the motherboard labelled green and the hard drives you are using. Connect the front panel headers that are in the

case to the connectors on the motherboard they are labelled which pins is for each function. Connect the fan headers on the motherboard.



If you have a GPU installed, use the two 8-pin connectors and connect them to the GPU power port.



You can use the holes in the case to route your cables and you can also use zip ties to tie your power cables onto the case. A good cable management will make your computer look nice.



Example of a well cable management PC

## STEP 10 CONNECTING PERIPHERALS



Connect your keyboard and mouse to the USB port on the motherboard rear I/O. Connect your display connector from your monitor to the motherboard rear I/O, if you have a GPU installed you should use the GPU display port as a display output.

#### STEP 11 TURNING IT ON



Press the power button on the case and hope it turns on.







