Computer Assembly and Disassembly Procedures

Add a short description

MS. LESLIE ARRIO, LPT

12:45
PM

OBJECTIVE

Topic 3

Topic 4

Topic 2

Topic 1

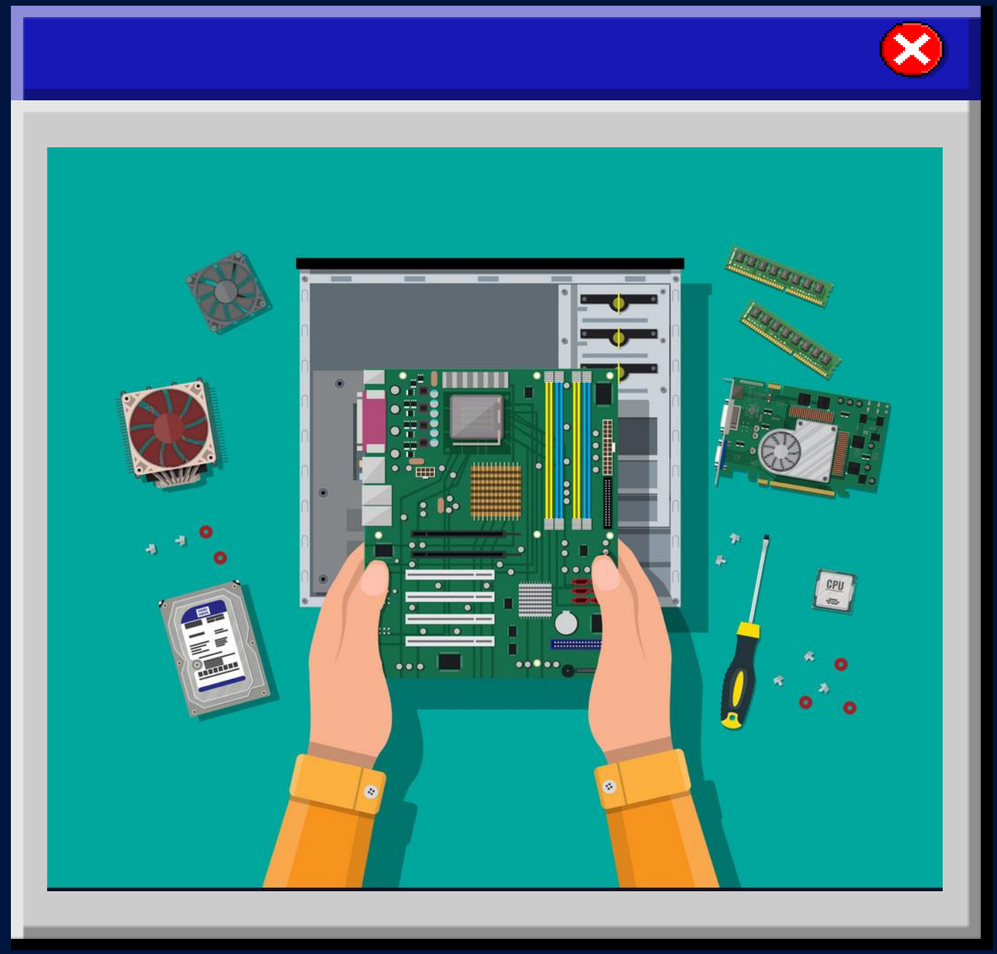
Topics Covered

- Define Computer assemble and disassemble.
- Identify computer parts included in computer assemble/disassemble
- State the steps in assembling computer system and value the importance of the Safety Precautions in assembling computer system

Start

COMPUTER SYSTEM ASSEMBLY

is the process of putting computer parts together in their respective places. The Do’s and Don’ts must be considered in assembling a computer system.



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Different Types of Tools/Materials for Computer System assembly

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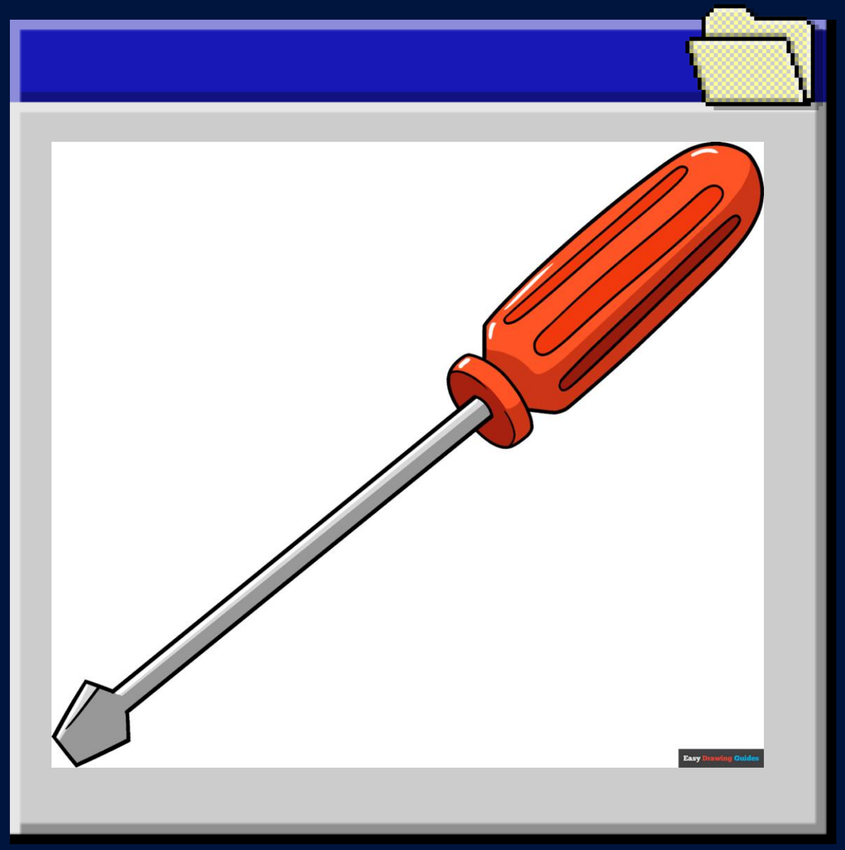

1. Screw Drivers- a tool with a flattened, cross-shaped, or star-shaped tip that fits into the head of a screw to turn it.

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a. Flathead Screwdriver - Flathead screwdrivers, sometimes called slotted-head screwdrivers or flat screwdrivers, are still among the most commonly used screwdrivers. They’re simple and work well for many applications.

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b. Phillips Screwdriver - Drive tip of a Phillips screwdriver features the same flat end of a flathead with the addition of a second perpendicular wing. This slides into a fastener with an “X” slot on its head.

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c. Torx Screwdrivers - drive fasteners with a recessed six-sided “star” head, leading them to often be called “star bits.”

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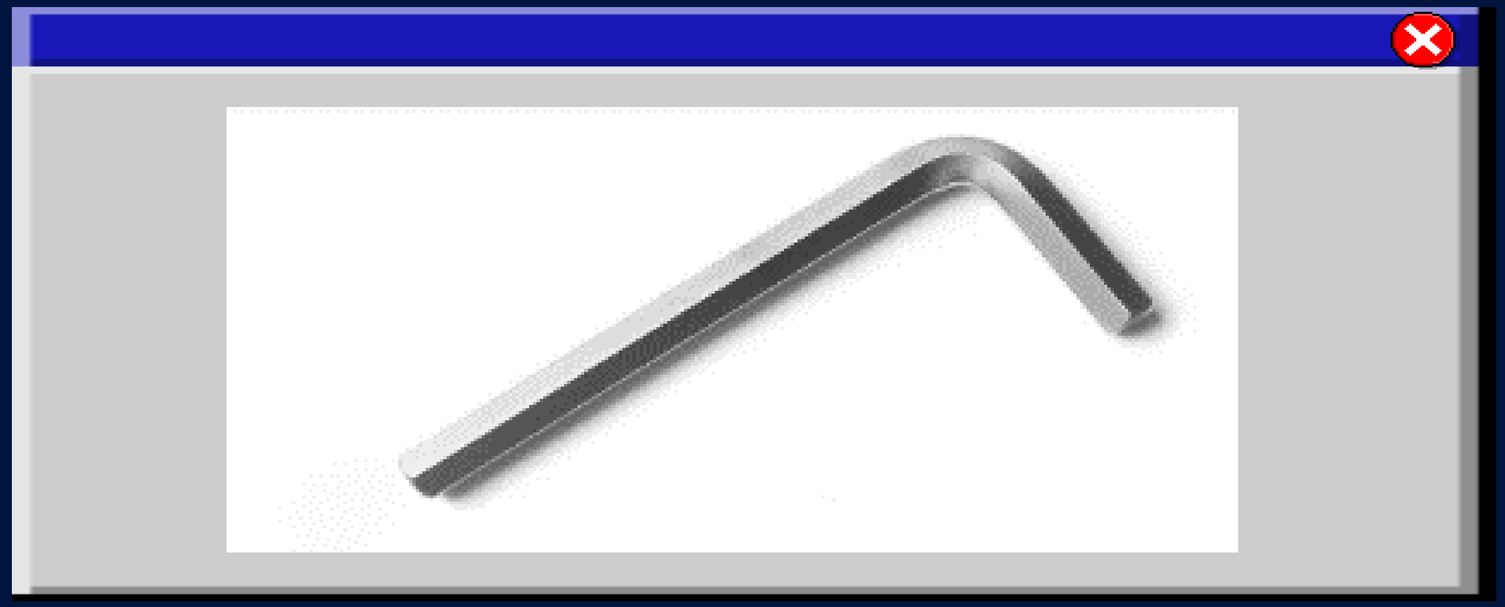
d. Hex Screwdriver - Hex screwdrivers, often called Allen-head screwdrivers, are drivers with six-sided drive tips. Best for Automotive repair, hardware repair and adjustment, fixture repair and adjustment.



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e. Robertson (Square) Screwdriver - consist of a simple square drive tip, leading them to more commonly be called square drivers. The Robertson screwdriver's square shape was the original answer to screw slippage, as it gripped better than flathead and Phillips screwdrivers.

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f. Precision Screwdriver - are tiny iterations of common screwdriver styles, such as Phillips, flathead, and Torx. While you likely won't find a use for precision screwdrivers when remodeling your kitchen, these mini screwdrivers are irreplaceable for tasks like adjusting glasses, working on electronics, tightening jewelry, servicing tools, or anything that requires a tiny screwdriver tip.

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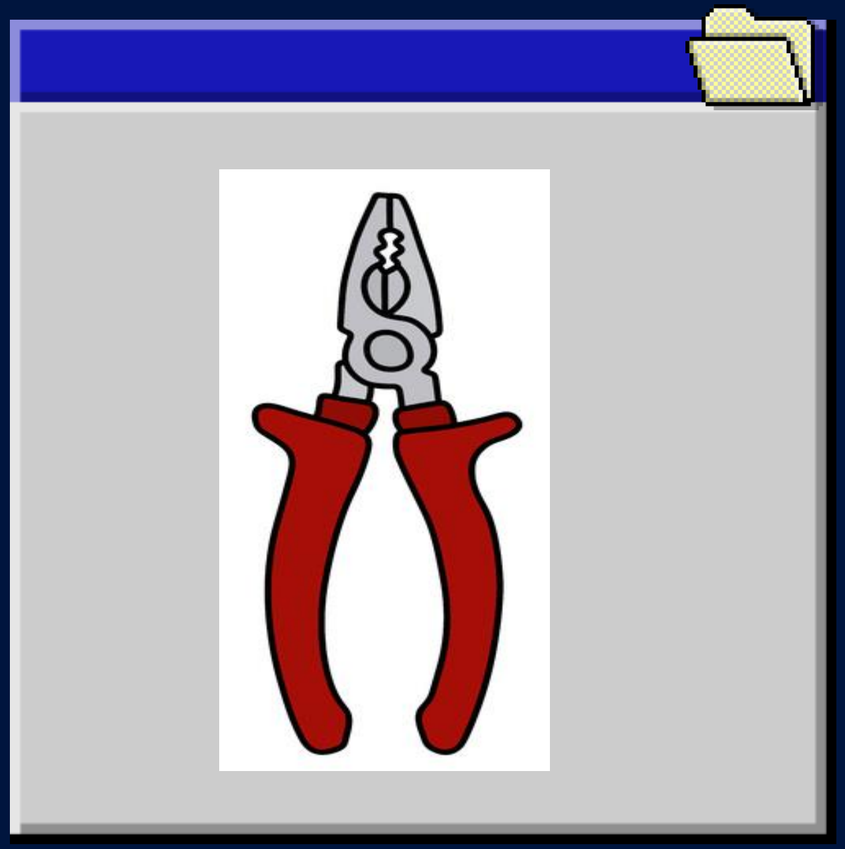

2. Pliers- hand-operated tool for holding and gripping small articles or for bending and cutting wire.

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a. Needle nose pliers - **This type of pliers can also handle holding, placing, bending, and cutting when equipped with side cutters. have similar functions to those of combination pliers, but with their tapered, long, and conical jaws, they are ideal for operations in less accessible areas where other pliers cannot reach.**

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b. Snap Ring Pliers - Snap ring is installed in parts like grooves, bores, and shafts to prevent these from slipping out, so it plays the role of a fastener. To insert or remove the ring.

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c. Diagonal Pliers - called a nipper in Japan, diagonal pliers (also termed as cutting pliers) are said to be an essential tool for those who conduct electric works and carpentry. These pliers usually have compact bladed jaws that are angled diagonally and longer handles to get more leverage

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3. Anti-Static Wrist Strap - prevents static electricity from building up. Static electricity can electronically destroy many of the delicate components inside the computer. It should be worn any time work is being done inside the computer. The alligator clip should be attached to a non-painted metal surface on the computer case.

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4. Flashlight (or Lamp)- depending on where you're assembling, your computer you may need an extra light source so that you can clearly see what you are doing.

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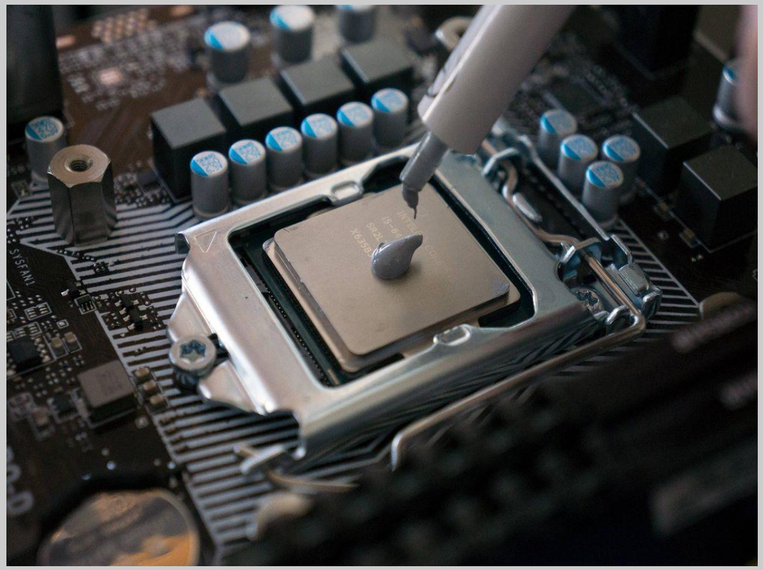

5. Thermal Paste- a silvery-gray substance that you apply to a processor before installing a cooling solution. It allows for an efficient transfer of heat from the processor to the base plate or water block of the CPU cooler that is designed to dissipate that heat.

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6. Contemporary gloves - providing insulation against electrical shocks and burns. They are also designed to be durable and flexible and exhibit high dielectric properties, meaning they can protect the wearer from even the highest voltages.

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6. Small container - keeping small parts —screws, nuts and bolts — neatly separated.

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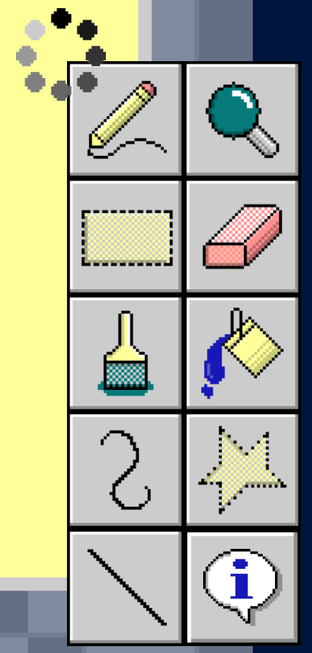
What are front Panel Connectors



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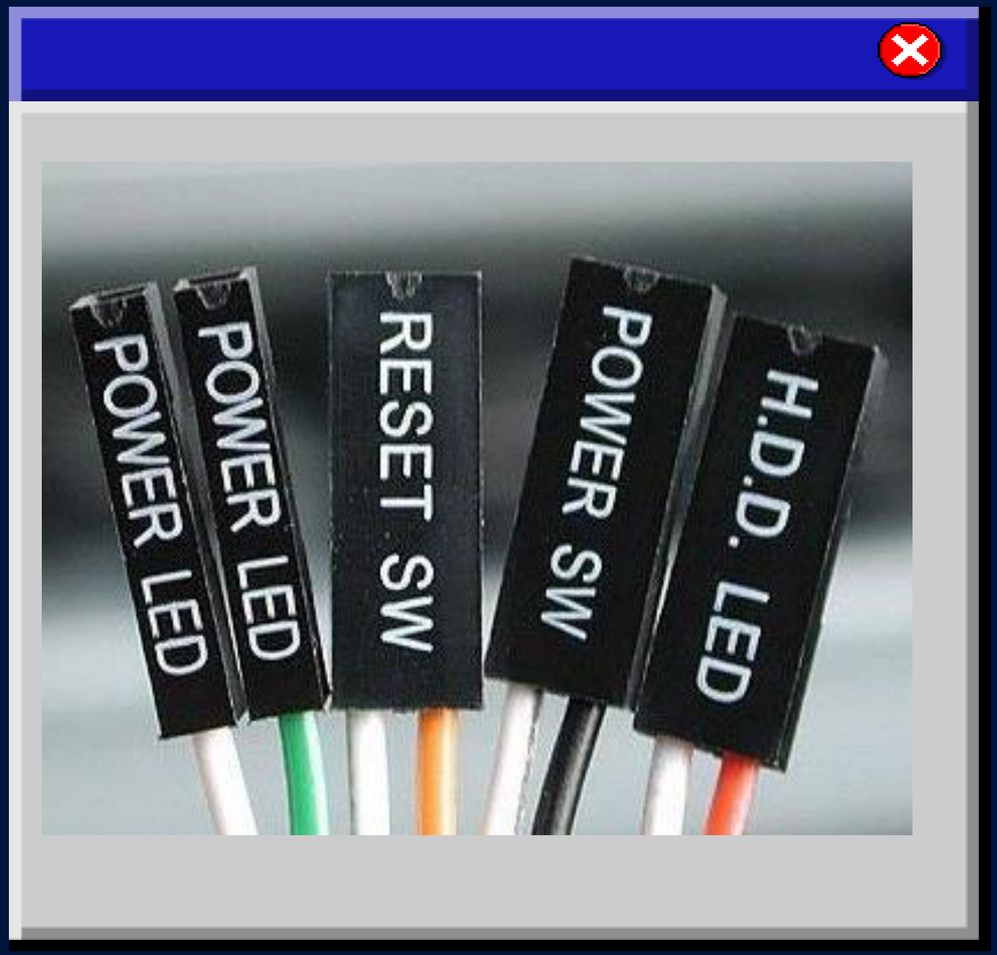
COMPUTER SYSTEM ASSEMBLY

fpanel or front panel connector, the system panel connector or system panel header controls a computer power button, reset button, and LED's.



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COMPUTER SYSTEM ASSEMBLY

The **System panel cables** are two wire cables that are color-coded to help identify where they connect to the motherboard system panel connector.

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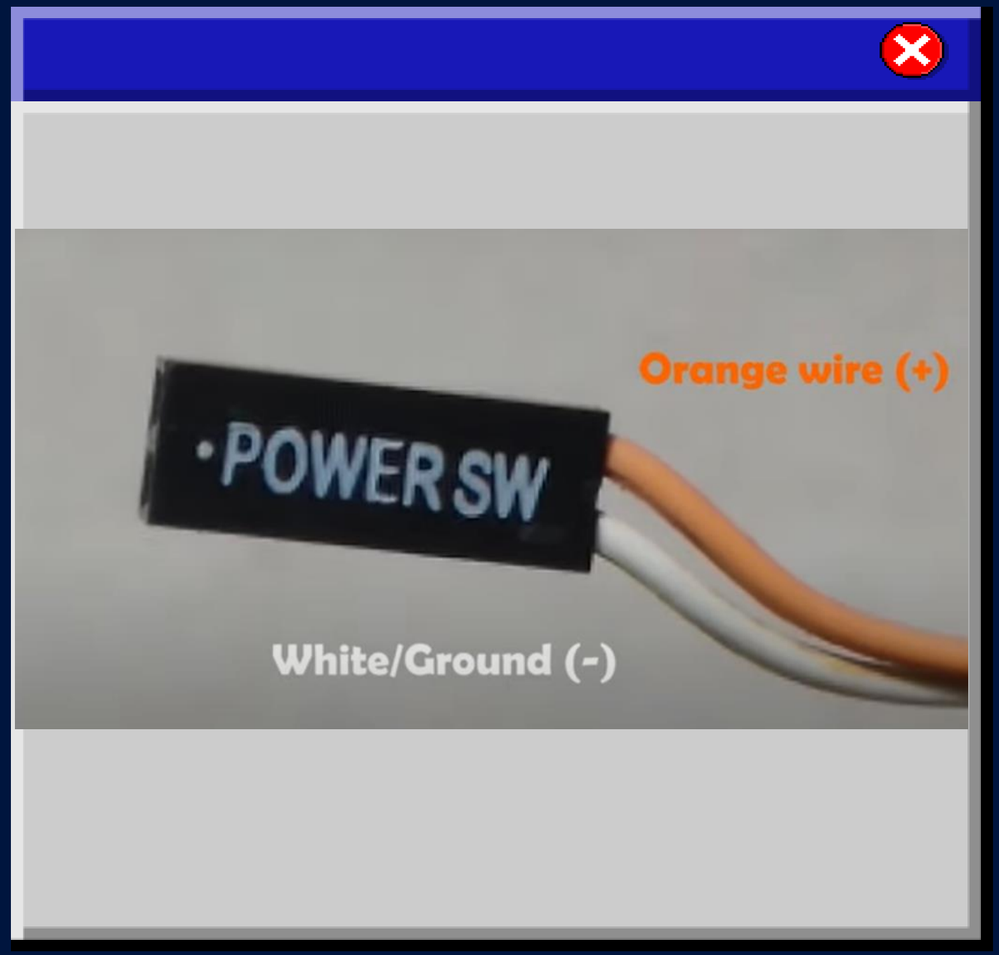
Types of System Panel Cables

Power Supply Switch
PWRSW (Power SW) - Controls the power button that allows you to turn on and off the computer.



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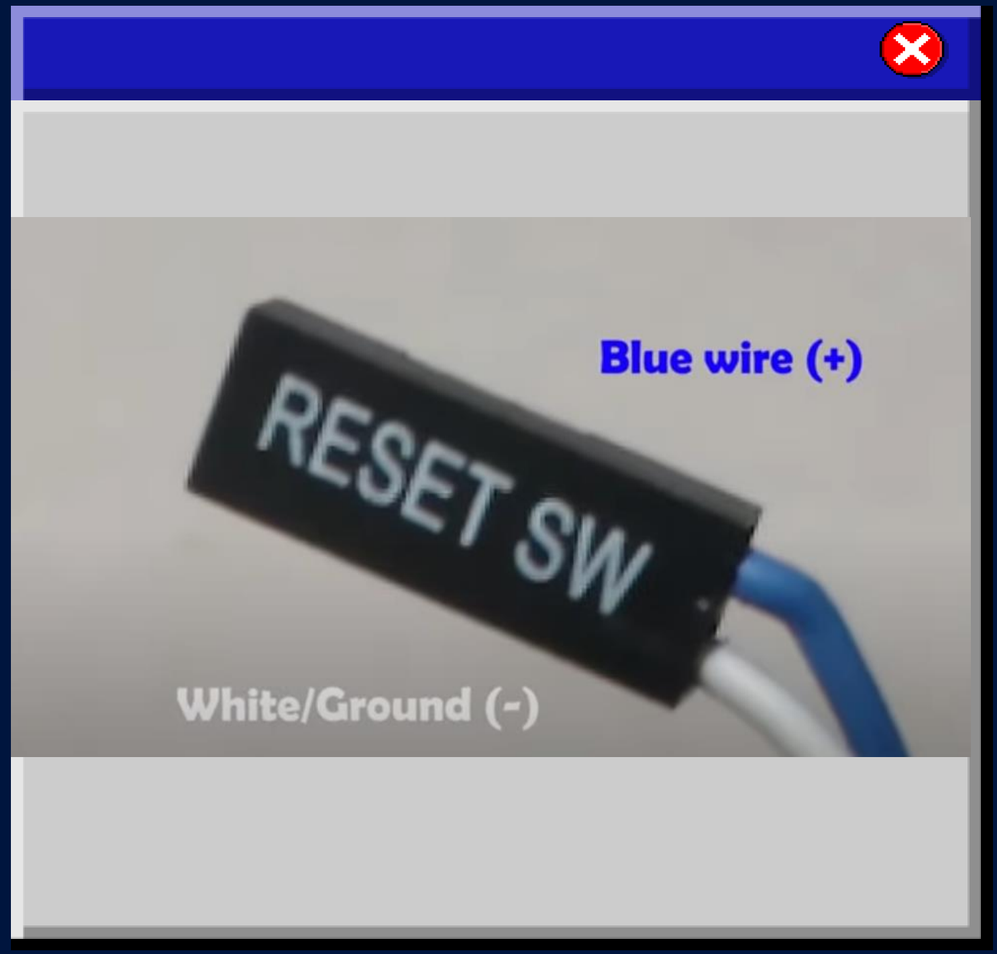
Types of System Panel Cables

RESET SWITCH (Reset SW) - Handles the reset button to restart the computer.



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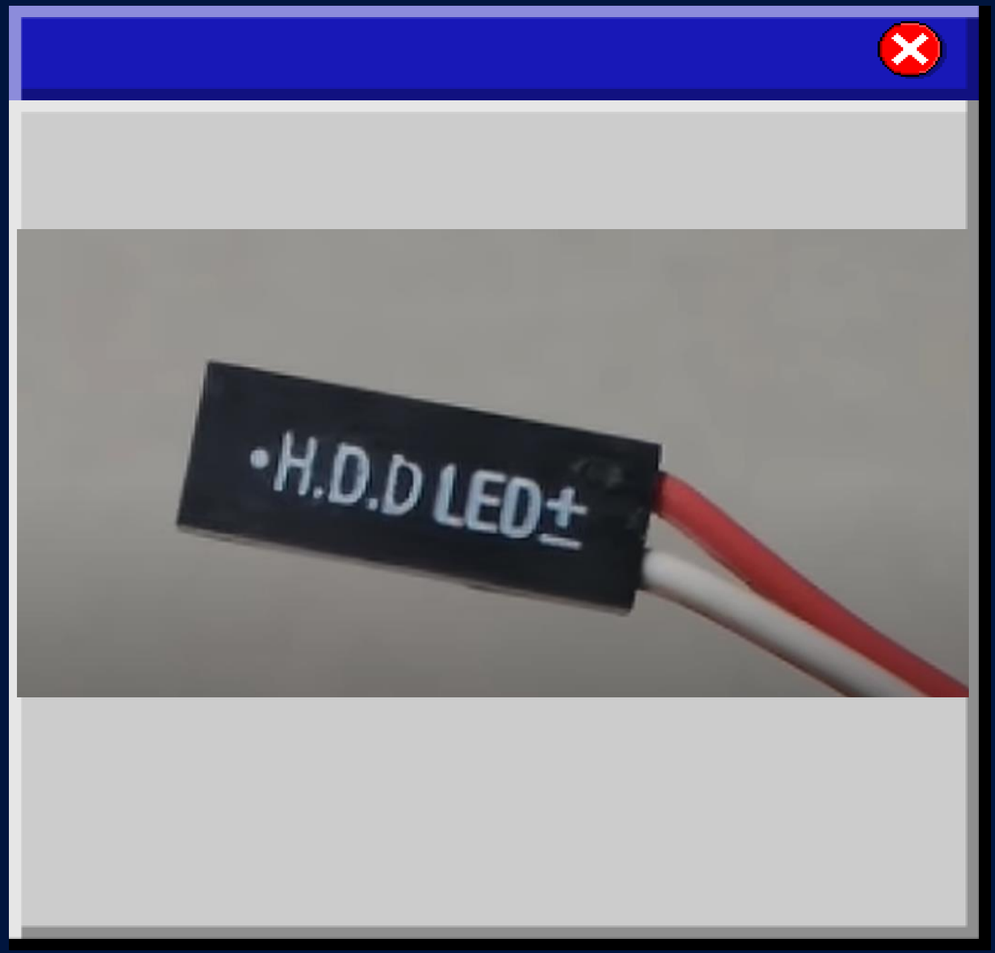
Types of System Panel Cables

HARD DISK DRIVE LED (HDD) - The LED activity light for the hard drive. This indicator is the light that flashes as information is being written to and read from the hard drive



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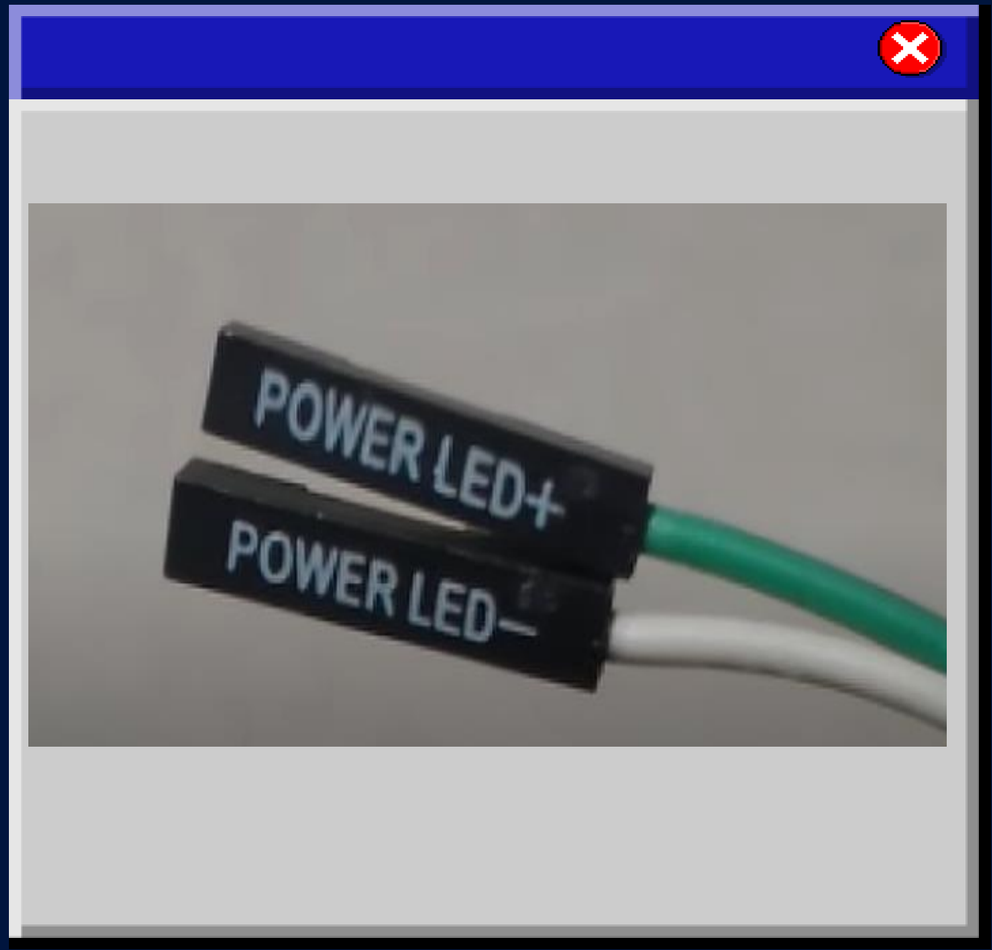
Types of System Panel Cables

PLED (Power LED) - The LED power light, which indicates when the computer is on, off, or in Standby.



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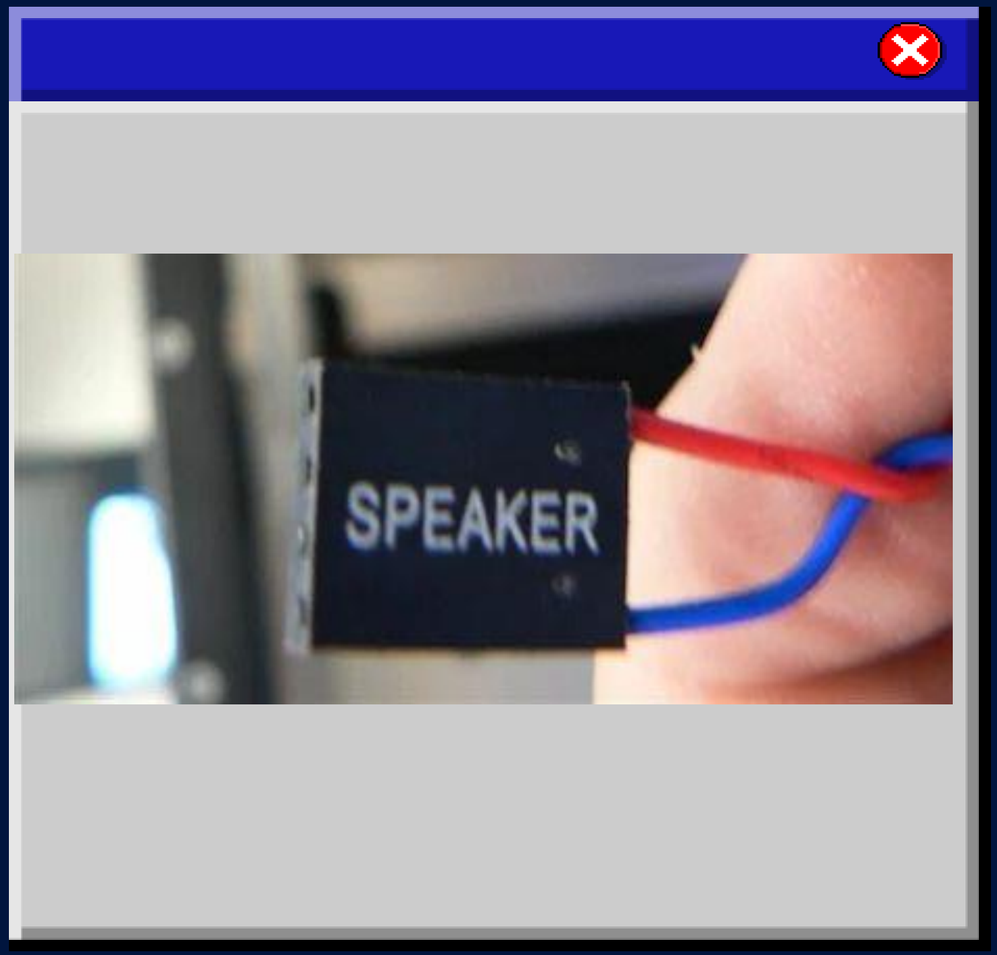
Types of System Panel Cables

Speaker - The internal speaker used to sound the beep noises you hear from your computer when it is booting.



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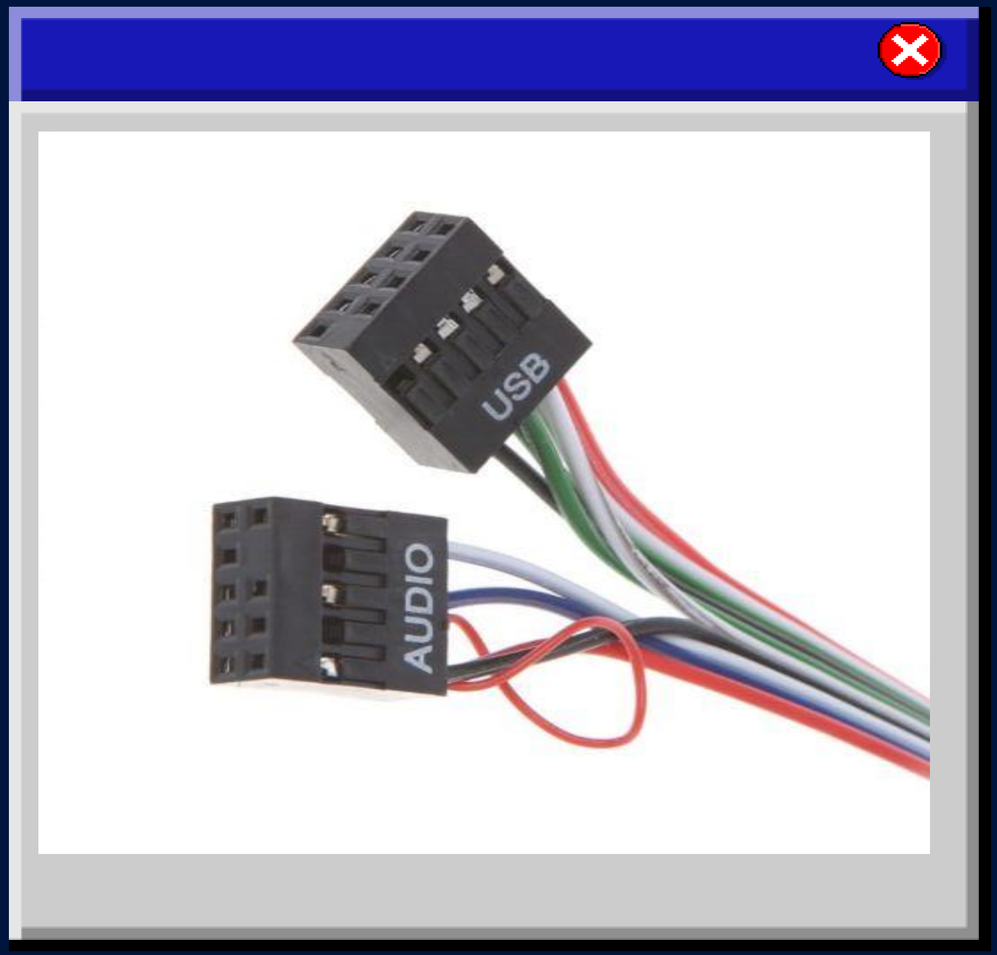
Types of System Panel Cables

USB - These connectors allow you to connect USB devices, such as keyboards, mice, and external storage devices, directly to the front of your computer case.



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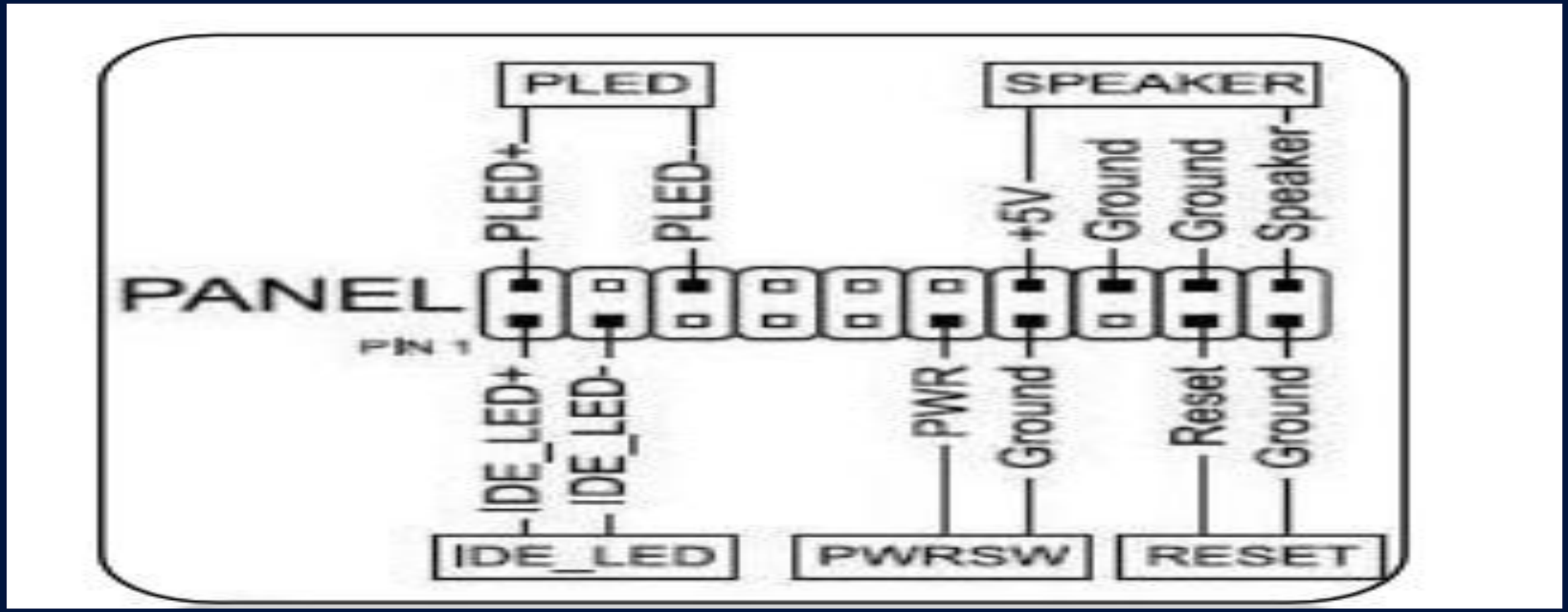
Types of System Panel Cables



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COMPUTER SYSTEM ASSEMBLY

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SAFETY PRECAUTIONS WHEN WORKING

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SAFETY PRECAUTIONS WHEN WORKING

1. Always ground or discharge yourself before touching any part of the computer.
2. Do not work alone so that there is someone who can take care of you in case of accident or emergency.
3. Be careful with the tools that may cause short circuit.
4. Always full the cable connector on the handle and not hold on the cable itself.
5. Use only rubber shoes when standing on the ground or in a concrete floor.

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SAFETY PRECAUTIONS WHEN WORKING

6. Make sure that the pins are properly aligned when connecting a cable connector.
7. Always power off and unplug the computer before working on it.
8. Take away any liquid such as mineral water or soft drinks near your working area or near computers.
9. Contingency measures during workplace accidents, fire, and other emergencies are recognized.
10. Personal protective equipment is correctly used in accordance with organization procedures and practice.

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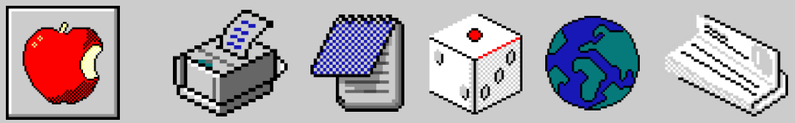
SAFETY PRECAUTIONS WHEN WORKING

11. Hazard/risks in the workplace and their corresponding indicators are identified to minimize or eliminate risk to co- workers, workplace, and environment.
12. Take necessary precautions to protect the component of the computer from damaged caused by Electrostatic Discharge (ESD).
13. Hold the components by edges and do not touch the IC's.
14. Read and follow instructions on the manual carefully.
15. Do not use excessive force if things do not quite slip into place.



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REMINDER:

Before Disassemble and Assemble Computer System Unit

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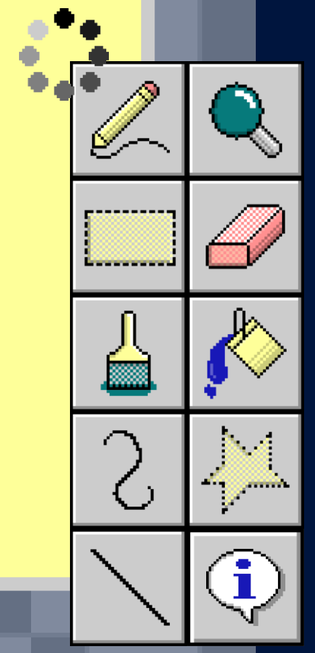

Topic 3

Number 1

Topic 4

Topic 2

Topic 1

REMINDER

- **PREPARE YOUR WORKPLACE**

Take Inventory - Before you start, take inventory of your parts. Make sure you have the following components and tools with you.

1.COMPUTER PARTS

2.TOOLS

Start

Topic 3

Number 2

Topic 4

Topic 2

Topic 1

REMINDER

- **Make Space, Make Time**

Building a PC take space so, make sure you have plenty of working room and enough time to proceed with minimal interruption. Work on a flat, stable tabletop surface or bare floor, where you have room to lay out all of the items.

Start

Topic 3

Number 3

Topic 4

Topic 2

Topic 1

REMINDER

- **Safety First**

- *Disconnect all peripheral devices attached to the system unit and unplug all sources of power before assembling.*
- *Never disassemble individual parts like your power supply or monitor.*
- *Take care of sharp edges on your computer case which can cause cuts or injury.*

Start

STEPS TO DISASSEBLE SYSTEM UNIT

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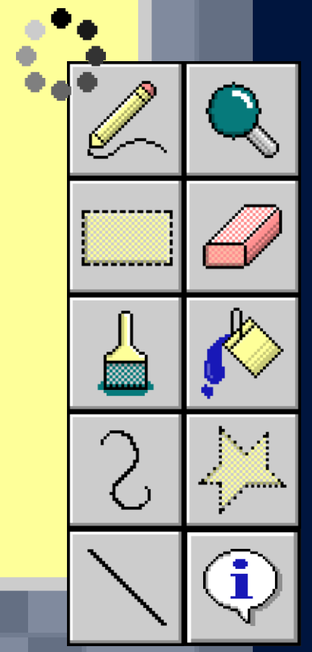

Topic 3

STEP 1

Topic 4

Topic 2

Topic 1

STEPS: DISASSEMBLE SYSTEM UNIT

- **OPEN THE CASE**

A. Open the computer case by removing the side panels. Find the screws that hold the side panels in place and remove them using appropriate screwdriver

B. The panel is removed by first sliding it back; then

C. Lifting it away from the case.

Start

Topic 3

STEP 2

Topic 4

Topic 2

Topic 1

STEPS: DISASSEMBLE SYSTEM UNIT

- **GROUND YOURSELF**

A. Put the grounding strap on your wrist and connect the other end to the computer case.

B. If your strap is not equipped with a clip to hook to the case, find a place to wedge against the metal. This will prevent any buildup of static electricity on your body from damaging the computer components.

Start

STATIC

Topic 3

Topic 4

Topic 2

Topic 1

STEPS: DISASSEMBLE SYSTEM UNIT

Static electricity

Refers to the buildup of electric charge on the surface of objects. The static from your fingers can damage sensitive computer parts such as microprocessors and memory chips.

Start

STEP 3

Topic 3

Topic 4

Topic 2

Topic 1

STEPS: DISASSEMBLE SYSTEM UNIT

- **UNPLUG ALL THE PANEL CONECTOR**

A.POWER SUPPLY
B.HARD DISK
C.MOTHER BOARD

Start

Topic 3

STEP 4

Topic 4

Topic 2

Topic 1

STEPS: DISASSEMBLE SYSTEM UNIT

- **REMOVE POWER SUPPLY**

Start

STEPS: DISASSEMBLE SYSTEM UNIT

STEP 5

- **REMOVE HARD DISK DRIVE**

Start

Topic 3

Topic 4

Topic 2

Topic 1

STEP 6

Topic 3

Topic 4

Topic 2

Topic 1

STEPS: DISASSEMBLE SYSTEM UNIT

- **REMOVE CD or DVD Drive/Optical Drive**

Start

STEPS: DISASSEMBLE SYSTEM UNIT

STEP 7

- REMOVE RAM, HEAT SINK AND CPU

Topic 3

Topic 4

Topic 2

Topic 1

Start

STEPS: DISASSEMBLE SYSTEM UNIT

STEP 8

- **REMOVE MOTHER BOARD**

Topic 3

Topic 4

Topic 2

Topic 1

Start

STEPS TO ASSEMBLE SYSTEM UNIT

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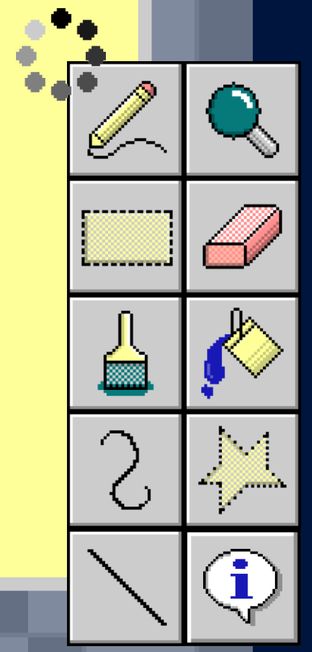
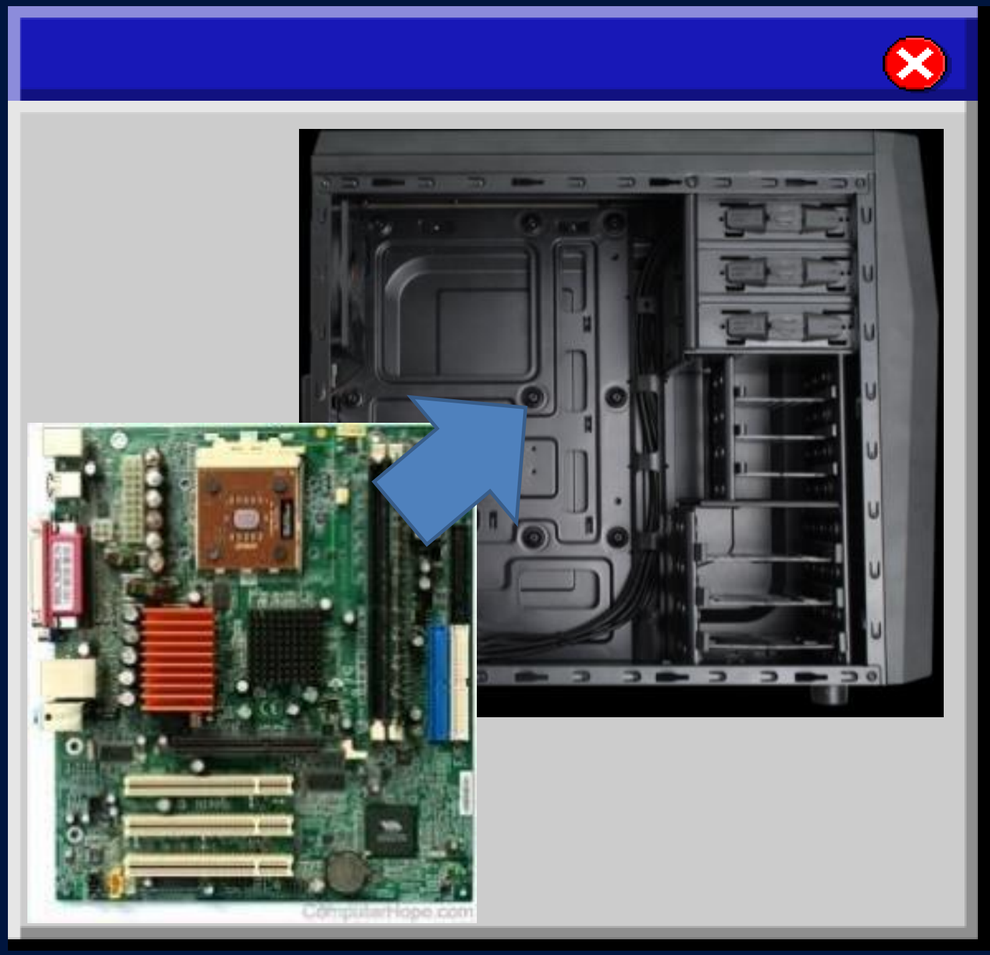


STEP 1:

MOUNT THE MOTHERBOARD

1. Screw motherboard standoffs into the case.
2. Fasten the motherboard in place on top of the mounting standoffs.



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STEP 2:

MOUNT PROCESSOR (CPU)

1. Locate the CPU socket holder on the motherboard.
2. Lift up the latch lever to release and center open the CPU socket cover
3. Holding the CPU by its sides, line up any alignment notches or the triangel on the corner of the CPU to the triangle marked on the motherboard to ensure the correct orientation.
4. Lower the CPU socket cover over the CPU and lower the latch closed again to secure the CPU socket holder close

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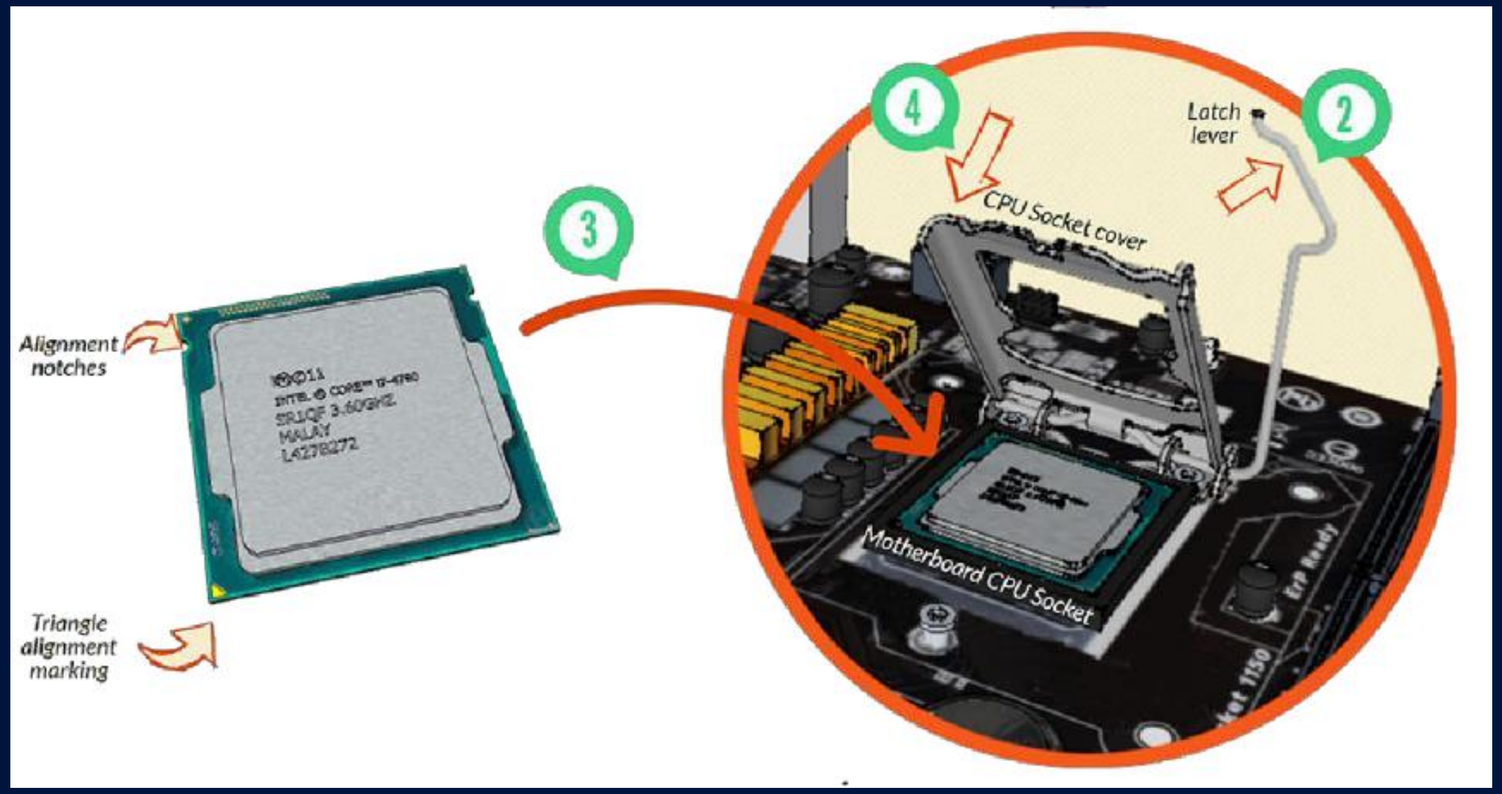
COMPUTER SYSTEM ASSEMBLY

STEP 2:

MOUNT PROCESSOR (CPU)



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STEP 3:

INSTALL CPU COOLER

1. If required, apply thermal paste to the back of CPU.
2. Seat CPU heatsink/cooler and fix in position.
3. Plug the power cable attached to the cooler fan into the motherboard

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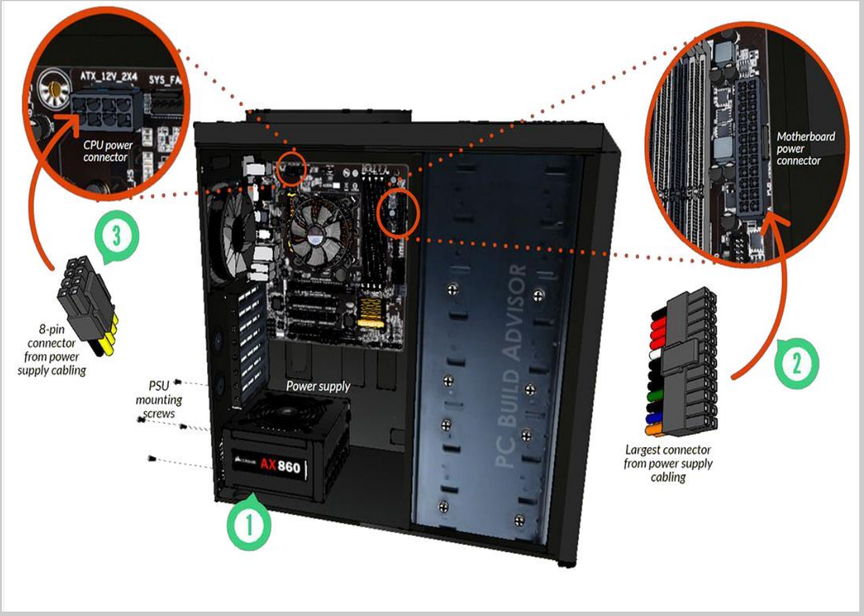
STEP 4:

INSTALL POWER SUPPLY UNIT (PSU)

1. Mount the power supply and fasten with screw to the case mounting points.
2. Plug the largest cabling connector from the power supply cabling into the motherboard power connector.
3. Plug the cabling connector from the power supply cabling into the power connector.



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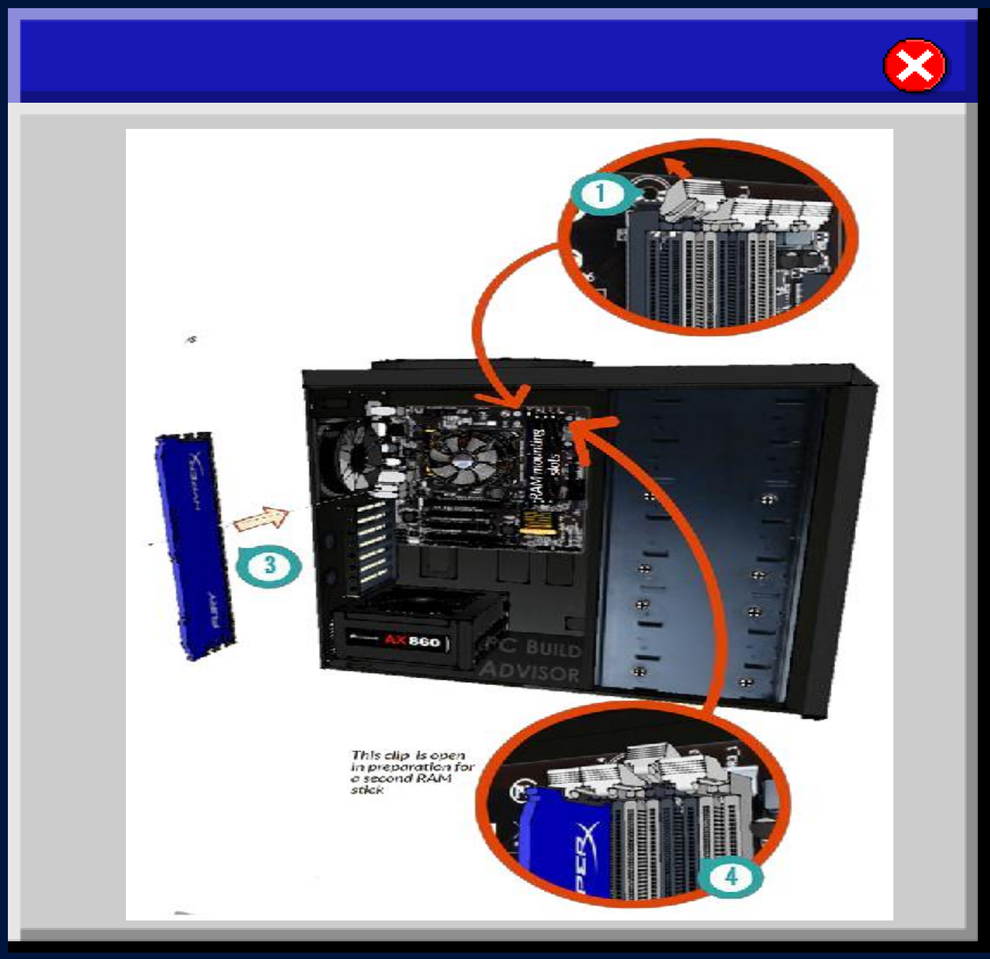
COMPUTER SYSTEM ASSEMBLY

STEP 5:

MOUNT THE RAM

1. Press to open the clips at both ends of the RAM mounting slots
2. Line the notch on the RAM stick with the mounting slot.
3. Seat the RAM and press it firmly down into the slot. The tabs should automatically fasten closed as you press the RAM down, securing the RAM in place.
4. Install any other RAM sticks using the same process.



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COMPUTER SYSTEM ASSEMBLY

STEP 6:

INSTALLING GRAPHICS CARD/ VIDEO CARD

1. Remove the expansion slot covers from the rear of your case where the graphics card will be placed.
2. Line the graphics card into a PCI expansion slot on the lower half of the motherboard
3. Press down formyl to seat the card
4. Put in the screws to hold the graphics card in place.

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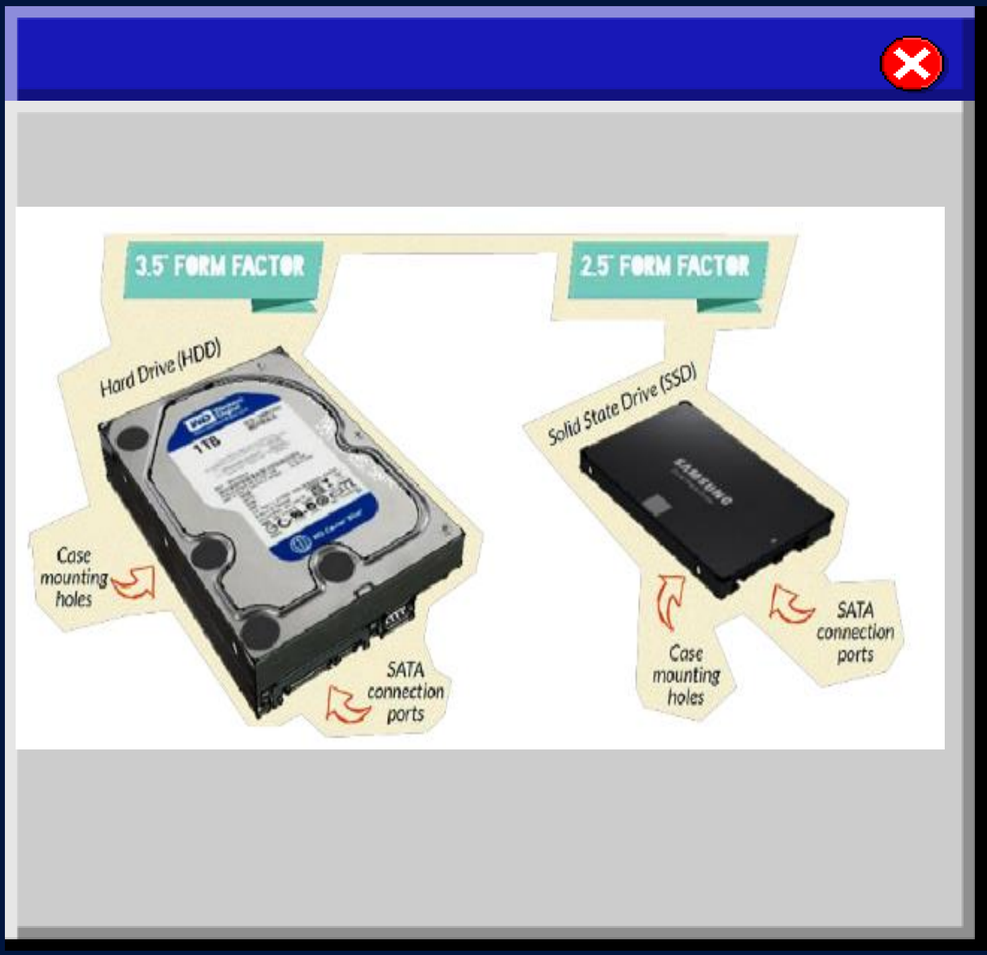
COMPUTER SYSTEM ASSEMBLY

STEP 7:

MOUNT STORAGE DEVICES

Storage drives come in two main sizes: 3.5 form factor or 2.5 form factor.

1. Mount storage drives in the case drive bays. Fix the drive in place with screw through the case frame into the case mounting holes located on the storage drive.
2. Connect the drive to the motherboard using a SATA Cable.
3. Plug in power cabling to the storage drive.



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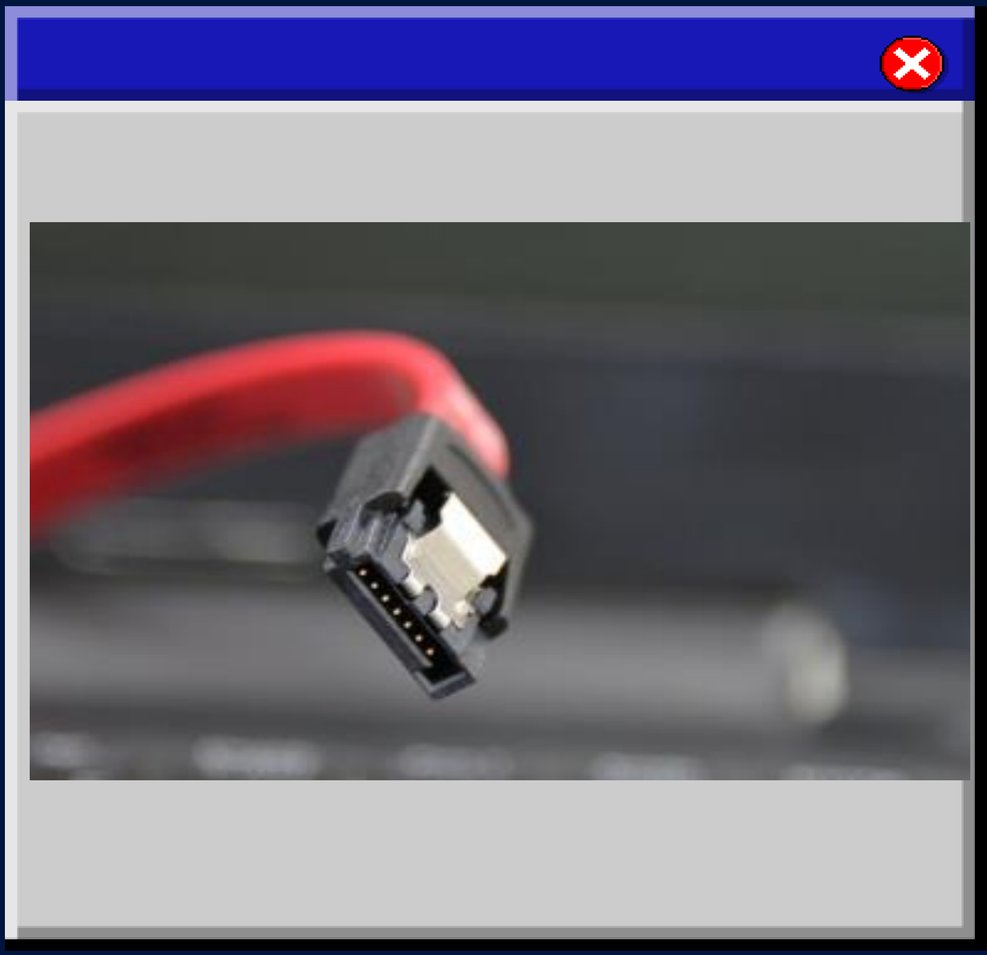
SATA

Serial Advanced Technology Attachment

also called serial ATA, an interface for transferring data between a computer's central circuit board and storage devices.



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COMPUTER SYSTEM ASSEMBLY

STEP 8:

CONNECT CASE FANS & FRONT PANEL CONNECTORS

1. Mount any case fans within your case as required using the supplied screws or clips.
2. Connect any case fan power connectors to the multiple fan headers located at various places on the motherboard.
3. Identify the cabling from the front panel ports of your PC.
4. Connect any front panel audio connectors to the motherboard front audio header. Connect any front panel USB connectors to the motherboard USB headers.
5. Connect front panel case connectors to the motherboard front panel headers.

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COMPUTER SYSTEM ASSEMBLY

These front panel connectors will need to be plugged into the motherboard so that buttons and inputs/outputs on your case front panel will work.

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PRACTICAL ASSESSMENT:

Student will demonstrate competency in the following areas:

1. Computer System Disassembly
2. System Unit Parts Identification
3. Computer System Assembly
4. Install Panel Cable

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COMPUTER SYSTEM ASSEMBLY

PRACTICAL ASSESSMENT:

TASK	POOR 5	GOOD 8	EXCELLENT 10
Remove Parts Of Unit			
Identify The Components			
Assemble The Unit			
Install Panel Cable Correctly			

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COMPUTER SYSTEM ASSEMBLY

NR	COMMON MISTAKES	EFFECT	SOLUTION
1			
2			
3			
4			
5			

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