

## Aim:

Assembling and disassembling a personal computer.

## Theory:

### Assembling of PC (Steps):

1. Prepare the workspace – Ensure a clean, static-free area and gather all necessary components (motherboard, CPU, RAM, power supply, etc.).
2. Install the processor (CPU) – Open the CPU socket on the motherboard, align the CPU correctly, and lock it in place.
3. Attach the CPU cooler – Apply thermal paste (if required) and mount the fan or heatsink securely.
4. Insert the RAM modules – Fit the RAM sticks into the memory slots by pressing them until they click.
5. Mount the motherboard – Place it inside the cabinet aligning with the standoffs and screw it firmly.
6. Install the power supply unit (PSU) – Fix the PSU in the cabinet and connect power cables to the motherboard and drives.
7. Install storage devices (HDD/SSD) – Mount the drives in their slots and connect SATA data and power cables.
8. Install expansion cards (if any) – Insert GPU, network, or sound cards into PCIe slots.
9. Connect front panel connectors – Attach power switch, USB, and audio headers to the motherboard.
10. Check all connections and power up – Connect the monitor, keyboard, and mouse; then switch on the PC to test.

### Disassembling of PC (Steps):

11. Shut down and unplug the computer completely from the power source.
12. Remove external peripherals such as the monitor, keyboard, and cables.
13. Open the cabinet by unscrewing the side panels.
14. Disconnect power and data cables from the motherboard and components.
15. Remove storage devices like HDDs and SSDs.
16. Detach expansion cards (GPU, sound card, etc.) from PCIe slots.
17. Unscrew and remove the motherboard carefully from the cabinet.
18. Take out RAM, CPU, and cooler gently, handling parts by their edges.
19. Finally, remove the PSU and other remaining components.

### Precautions to be taken:

- Always disconnect power before starting work.
- Use an anti-static wrist strap or work on an anti-static surface.
- Handle all components by the edges to avoid static or physical damage.
- Keep screws and small parts organized.
- Never force components into place; align connectors properly.

**Conclusion:**

Through this experiment, I learned how to systematically assemble and disassemble a personal computer. It helped me understand the internal components, their interconnections, and the importance of handling them safely. This practical knowledge builds confidence in maintaining and troubleshooting computer hardware effectively.

**Course Outcome Covered:**

Develop skill required for hardware maintenance.

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