

Computer Workshop (CO24992)

ASSIGNMENT – 01

1. Write the general specifications/ configuration of desktop and laptop Computers available these days.

Ans. **DESKTOP COMPUTERS:**

1. Processors (CPU):

- Options include Intel Core i3, i5, i7, i9 series or AMD Ryzen 3, 5, 7, 9 series.
- Multicore processors for multitasking and performance.

2. Memory (RAM):

- Minimum 8GB DDR4 RAM, often expandable.
- Higher-end configurations may offer 16GB, 32GB, or even 64GB for heavy multitasking and demanding applications.

3. Storage:

- Solid State Drives (SSD) for faster boot times and application loading.
- Capacities ranging from 256TB to 1TB or more.
- Additional options for secondary storage include Hard Disk Drives (HDD) with larger capacities (1TB to 4TB).

4. Graphics:

- Integrated graphics for general use.
- Dedicated graphics cards (GPU) like NVIDIA GeForce or AMD Radeon for gaming, video editing and graphic-intensive tasks.

5. Ports and Connectivity:

- USB 3.0/3.1 ports, USB-C ports.
- HDMI, DisplayPort for video output.
- Ethernet port for wired internet connectivity.
- Wi-Fi and Bluetooth connectivity.

6. Operating System:

- Windows 10/11, macOS, or Linux.

LAPTOP COMPUTERS:

1. Processor (CPU):

- Similar to desktops, options include Intel Core i3, i5, i7, i9 series or AMD Ryzen 3, 5, 7, 9 series.

2. Memory (RAM):

- Minimum 8GB DDR4 RAM, often soldered on but sometimes upgradeable.
- Higher-end configurations may offer 16GB or 32GB for heavy multitasking.

3. Storage:

- SSD storage for faster boot times and applications loading.
- Capacities usually ranges from 256GB to 1TB .

4. Graphics:

- Integrated graphics for general use and some light gaming.
- Some laptops offer dedicated GPUs for gaming and professional applications.

5. Display:

- Screen sizes typically ranging from 13 to 17 inches.
- Options for resolutions including Full HD (1920x1080), QHD (2560x1440) and 4K (3840x2160).

6. Ports and Connectivity:

- USB Type-A and Type-C ports.
- HDMI, DisplayPort for video output.
- Wi-Fi, Bluetooth, and Ethernet connectivity.

7. Operating System:

- Windows 10/11, macOS, or Chrome OS.
- Choice of operating system based on user preference and requirements.

Que.2) What are the necessary tools and accessories required for assembly and disassembly?

Ans-

.For assembling and disassembling a desktop computer, we'll need various tools and accessories to ensure a smooth process. Here's a list of the necessary items:

TOOLS:-

- 1. Head Screwdriver:** This is the most common type of screwdriver used in computer assembly. You may also need a flathead screwdriver for some components.
- 2. Anti-Static Wrist Strap:** To prevent static electricity from damaging sensitive electronic components, it's essential to wear an anti-static wrist strap while handling computer parts.
- 3. Cable Ties or Zip Ties:** These are useful for managing cables and keeping your build neat and organised.
- 4. Needle-Nose Pliers:** Handy for manipulating small components or bending metal tabs on connectors.

ACCESSORIES:-

- 1. Spare Screws :** It's always a good idea to have some extra screws and standoffs on hand in case you lose or misplace any during assembly.
- 2. Screw Organisier or Magnetic Tray:** Keeps screws and small components organized and prevents them from rolling away.
- 3. Microfibre Cloth:** For wiping down components and removing fingerprints or dust.
- 4. Computer Building Guide or Manual:** While not a physical tool or accessory, having a comprehensive guide or manual handy can help you navigate the assembly process more effectively.
- 7. Safety Glasses:** Protect your eyes from debris or small particles that may be generated during assembly or disassembly.

Que.3) Write the steps of Assembling and Disassembling of System.

Ans:-

ASSEMBLY OF SYSTEM:

- 1. Prepare Workspace:** Choose a clean, well-lit area with sufficient space to work comfortably.
- 2. Gather Components:** Collect all necessary components including the motherboard, CPU, RAM, GPU (if applicable), storage drives, power supply, case, peripherals (keyboard, mouse, monitor), and any additional accessories.
- 3. Prepare Case:** Open the computer case by removing screws or latches on the side panel. Place the case on a stable surface with the open side facing up.

4. Install Power Supply: Slide the power supply unit (PSU) into the designated area at the top or bottom of the case and secure it with screws.

5. Mount Motherboard: Carefully place the motherboard into the case, aligning the ports with the corresponding holes in the case. Secure the motherboard with screws.

6. Install CPU: Lift the CPU retention arm on the motherboard's CPU socket. Gently place the CPU into the socket, ensuring proper orientation. Lower the retention arm to secure the CPU in place.

7. Install CPU Cooler: Apply thermal paste to the CPU if necessary, then attach the CPU cooler following the manufacturer's instructions. Typically, this involves mounting a heatsink/fan assembly or attaching a liquid cooling system.

8. Install RAM: Open the latches on the RAM slots, align the notches on the RAM module with the slot, and firmly press the RAM into place. Ensure that the latches close automatically, securing the RAM.

9. Install Storage Drives: Slide SSDs or HDDs into their respective drive bays and secure them with screws if needed. Connect SATA cables from the drives to the motherboard.

10. Connect Cables: Connect power supply cables to the motherboard, CPU, GPU, storage drives, and any other components requiring power. Attach front panel connectors (power switch, reset switch, LED indicators) from the case to the motherboard.

11. Install GPU: If using a discrete graphics card, insert it into the appropriate PCIe slot on the motherboard and secure it with screws.

12. Final Checks: Double-check all connections, ensuring everything is properly seated and secured. Close the case and connect peripherals.

Ans:-

ASSEMBLY OF SYSTEM:

- 13. Prepare Workspace:** Choose a clean, well-lit area with sufficient space to work comfortably.
- 14. Gather Components:** Collect all necessary components including the motherboard, CPU, RAM, GPU (if applicable), storage drives, power supply, case, peripherals (keyboard, mouse, monitor), and any additional accessories.
- 15. Prepare Case:** Open the computer case by removing screws or latches on the side panel. Place the case on a stable surface with the open side facing up.
- 16. Install Power Supply:** Slide the power supply unit (PSU) into the designated area at the top or bottom of the case and secure it with screws.
- 17. Mount Motherboard:** Carefully place the motherboard into the case, aligning the ports with the corresponding holes in the case. Secure the motherboard with screws.
- 18. Install CPU:** Lift the CPU retention arm on the motherboard's CPU socket. Gently place the CPU into the socket, ensuring proper orientation. Lower the retention arm to secure the CPU in place.
- 19. Install CPU Cooler:** Apply thermal paste to the CPU if necessary, then attach the CPU cooler following the manufacturer's instructions. Typically, this involves mounting a heatsink/fan assembly or attaching a liquid cooling system.
- 20. Install RAM:** Open the latches on the RAM slots, align the notches on the RAM module with the slot, and firmly press the RAM into place. Ensure that the latches close automatically, securing the RAM.
- 21. Install Storage Drives:** Slide SSDs or HDDs into their respective drive bays and secure them with screws if needed. Connect SATA cables from the drives to the motherboard.
- 22. Connect Cables:** Connect power supply cables to the motherboard, CPU, GPU, storage drives, and any other components requiring power. Attach front panel connectors (power switch, reset switch, LED indicators) from the case to the motherboard.
- 23. Install GPU:** If using a discrete graphics card, insert it into the appropriate PCIe slot on the motherboard and secure it with screws.
- 24. Final Checks:** Double-check all connections, ensuring everything is properly seated and secured. Close the case and connect peripherals.

DISASSEMBLING A SYSTEM:

- 1. Power Off:** Shut down the computer and disconnect all cable from power sources.
- 2. Open Case:** Remove screws or latches to open the computer case.
- 3. Disconnect Cables:** Unplug all cables connected to the motherboard, drives, and other components.
- 4. Remove Components:** Start with the components installed last, such as the GPU, RAM, storage drives, and CPU cooler. Unscrew and carefully remove each component.
- 5. Remove Motherboard:** Unscrew the motherboard from the case and lift it out gently, being mindful of any attached cables.
- 6.Remove Power Supply:** Unscrew and detach the power supply unit from the case.
- 7. Organize and Store:** Keep all screws and components organized in separate containers. Store components in anti-static bags if available.
- 8. Clean:** Use compressed air or a soft brush to remove dust from components and the case.

By following these steps, you can efficiently assemble or disassemble a computer system with minimal risk of damage to the components. Always refer to the user manuals for specific instructions regarding your hardware.

Que.4) Describe different computer cables for building a computer.

Ans.4) Building a computer involves connecting various components together, often requiring different types of cables to ensure proper communication and power supply. Here are some common types of computer cables used in building a computer:

POWER SUPPLY CABLES:

- **Main Power Connector (ATX):** This cable connects the power supply unit (PSU) to the motherboard. It's usually a 24-pin connector.
- **CPU Power Connector (EPS/ATX12V):** This cable provides power to the CPU socket on the motherboard. It's typically a 4-pin or 8-pin connector.
- **Peripheral Power Connectors:** These cables provide power to various components such as hard drives, SSDs, optical drives, and case fans. They come in

SATA power connectors, molex connectors, or proprietary connectors depending on the component.

DATA TRANSFER CABLES:

- **SATA Cable:** Used for connecting storage devices like hard drives, solid-state drives (SSDs), and optical drives to the motherboard.
- **USB Cable:** Used for connecting various peripherals like keyboards, mice, printers, and external storage devices.
- **Ethernet Cable:** Used for establishing a wired network connection between the computer and a router or modem.
- **Display Cables:** Various types such as HDMI, DisplayPort, DVI, and VGA cables are used to connect monitors or other display devices to the computer's graphics card or motherboard.

INTERNAL COMPONENT CABLES:

- **Front Panel Connectors:** These cables connect the power button, reset button, HDD activity LED, power LED, and other front panel components to the motherboard.
- **Fan Cables:** Used to connect case fans and CPU fans to the motherboard or fan controller for power and control.
- **Audio Cable:** Connects the audio ports on the front or top of the case to the motherboard for audio input and output.

EXPANSION CARDS CABLES:

- **PCIe Power Cables:** Some high-powered graphics cards or other expansion cards may require additional power directly from the power supply. These cables typically connect to the PSU and the graphics card.
- **SLI/Crossfire Bridge:** Used to connect multiple graphics cards together for SLI (NVIDIA) or Crossfire (AMD) configurations.

MISCELLANEOUS CABLES:

- **Internal USB Header:** Used to connect internal USB ports on the case to the motherboard.
- **RGB Lighting Cables:** Used for connecting RGB LED strips, fans, or other RGB components to the motherboard or a separate RGB controller.
- **Firmware Update Cables:** Some components may require specific cables for firmware updates, such as certain peripherals or motherboard BIOS updates.

Abhay Bamboriya
NAME-BHAGYADEEP MAHAWAR
ENROLLMENT NO-0801CS221041