Practical 4: Setting Up and Configuring a LAN Using a Switch

AIM: To set up and configure a Local Area Network (LAN) using a switch and Ethernet cables.

What is a LAN?

A Local Area Network (LAN) connects devices in a limited area (like a lab, office, or home) to share resources such as data, printers, and internet access. It enables fast, secure data transfer between connected devices, like computers, printers, and servers, through a central device called a switch.

Steps to Set Up a LAN

1. Plan the Network
   * Design the layout based on equipment location and network requirements.
2. Gather Equipment
   * 4 computers, an 8-, 16-, or 24-port switch, and 4 Ethernet cables.
3. Connect Devices
   * Connect each computer to the switch using Ethernet cables.
4. Assign IP Addresses to Computers
   * Log in as an Administrator, go to Network Settings:

-Right-click Local Area Connection → Properties → Internet Protocol (TCP/IPv4) .

- Choose Use the following IP address and assign IPs:

- PC1: IP 10.1.1.1, Subnet Mask 255.0.0.0

- PC2: IP 10.1.1.2, Subnet Mask 255.0.0.0

- PC3: IP 10.1.1.3, Subnet Mask 255.0.0.0

- PC4: IP 10.1.1.4, Subnet Mask 255.0.0.0

1. Configure the Switch
   * Connect your computer to the switch and log into the switch's web interface using its IP address.
   * Set the switch’s IP address to \*\*10.1.1.5\*\* with Subnet Mask \*\*255.0.0.0\*\*.
2. Test Connectivity
   * Use the ping command in Command Prompt to check if each device can communicate with the switch and other computers.
3. Share Files
   * Right-click on a folder, select Properties → Sharing tab → Share it with everyone on the LAN.
4. Access Shared Files
   * On other computers, navigate to the shared folder to ensure file sharing is successful.