Module 1.3

NETWORK

Computer Network

➢ A computer network is a group of computer systems and other computing hardware devices that are linked together through communication channels to facilitate communication and resource-sharing among a wide range of users.

➢ Networks are commonly categorized based on their characteristics.

➢ There are many types of networks, including:
  ➢ Local Area Networks (LAN)
  ➢ Personal Area Networks (PAN)
  ➢ Home Area Networks (HAN)
  ➢ Wide Area Networks (WAN)
  ➢ Campus Networks
  ➢ Metropolitan Area Networks (MAN)
  ➢ Enterprise Private Networks
  ➢ Internetworks
  ➢ Backbone Networks (BBN)
  ➢ Global Area Networks (GAN)
  ➢ The Internet

Local Area Network (LAN)

➤A local area network (LAN) is a computer network within a small geographical area such as a home, school, computer laboratory, office building or group of buildings.

➤A LAN is composed of inter-connected workstations and personal computers which are each capable of accessing and sharing data and devices, such as printers, scanners and data storage devices, anywhere on the LAN. LANs are characterized by higher communication and data transfer rates and the lack of any need for leased communication lines.
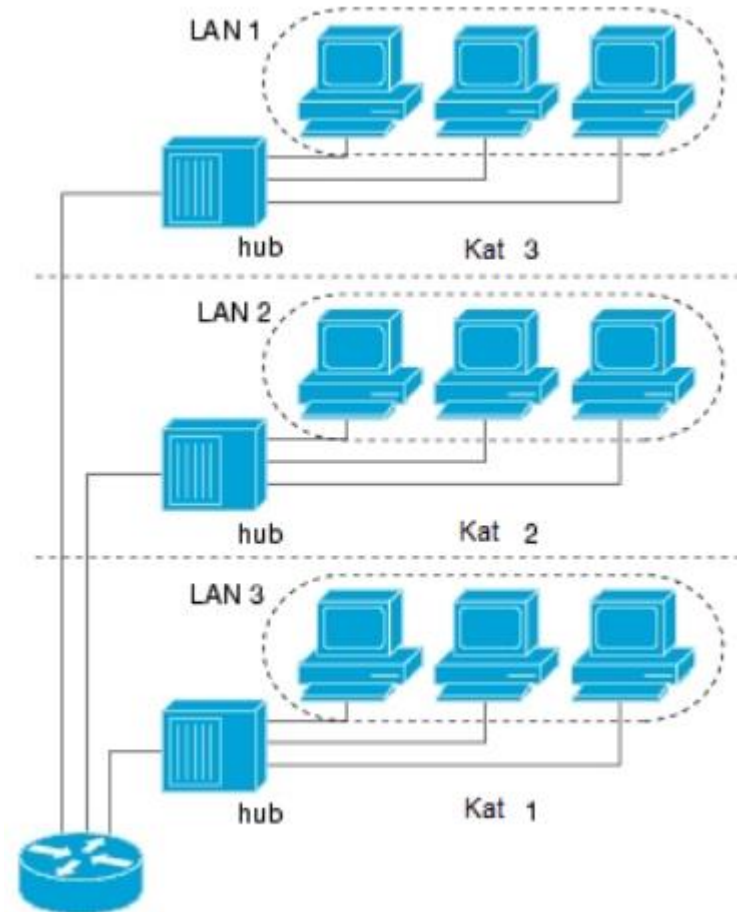
Wireless Local Area Network (WLAN)

➢ A wireless local area network (WLAN) is a wireless distribution method for two or more devices that use high-frequency radio waves and often include an access point to the Internet.

➢ A WLAN allows users to move around the coverage area, often a home or small office, while maintaining a network connection.

Wide Area Network (WAN)

➤ A wide area network (WAN) is a network that exists over a large-scale geographical area.

➤ A WAN connects different smaller networks, including local area networks (LAN) and metro area networks (MAN).

➤ This ensures that computers and users in one location can communicate with computers and users in other locations.

➤ WAN implementation can be done either with the help of the public transmission system or a private network.
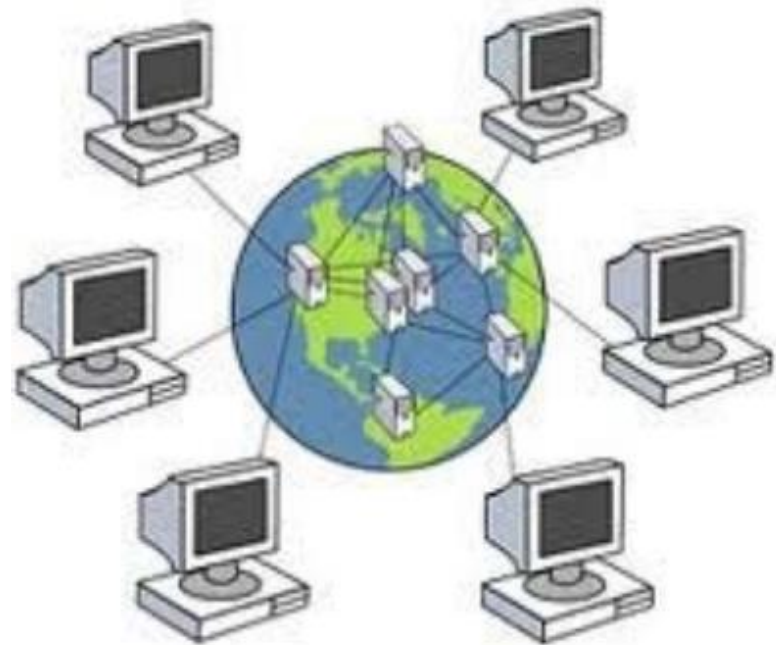
Metropolitan Area Network (MAN)

➤ A metropolitan area network (MAN) is similar to a local area network (LAN) but spans an entire city or campus.

➤ MANs are formed by connecting multiple LANs.

➤ Thus, MANs are larger than LANs but smaller than wide area networks (WAN).
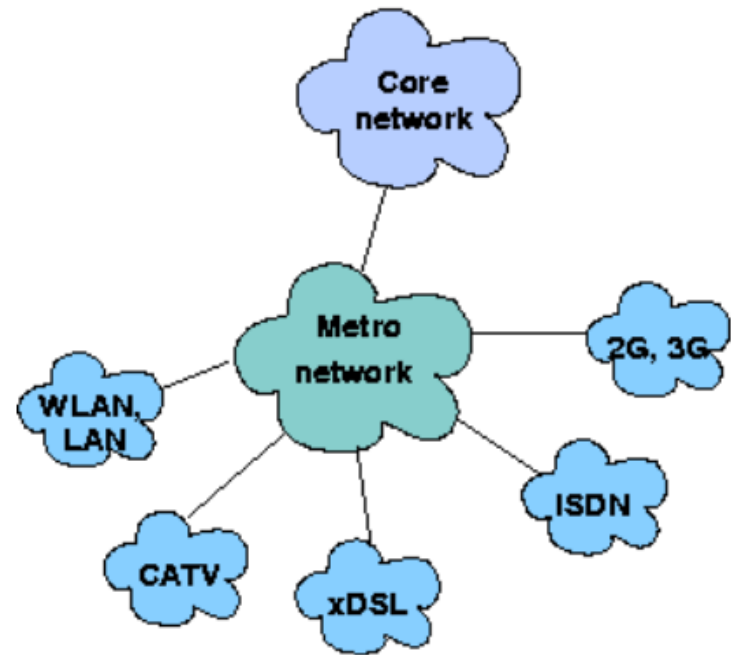
Internet

➤ The internet is an informal term for the world-wide communication network of computers. It sends information quickly between computers around the world.

➤ The World Wide Web is one of its biggest services. It is used by a few billion people all over the world.

➤ The internet is used for many things, such as electronic mail, online chat, file transfer, and the interlinked web pages and other documents of the World Wide Web.

Intranet

➢An Intranet is a secure and private enterprise network that shares data o application resources via Internet Protocol (IP). An Intranet differs from the Internet, which is a public network.

➢Intranet, which refers to an enterprise's internal website or partial IT infrastructure, may host more than one private website and is a critical component for internal communication and collaboration.

Extranet

➢An extranet is a controlled private network allowing customers, partners, vendors, suppliers and other businesses to gain information, typically about a specific company or educational institution, and do so without granting access to the organization's entire network.

➢An extranet is often a private part of a website. It is restricted to select users through user IDs, passwords and other authentication mechanisms on a login page.
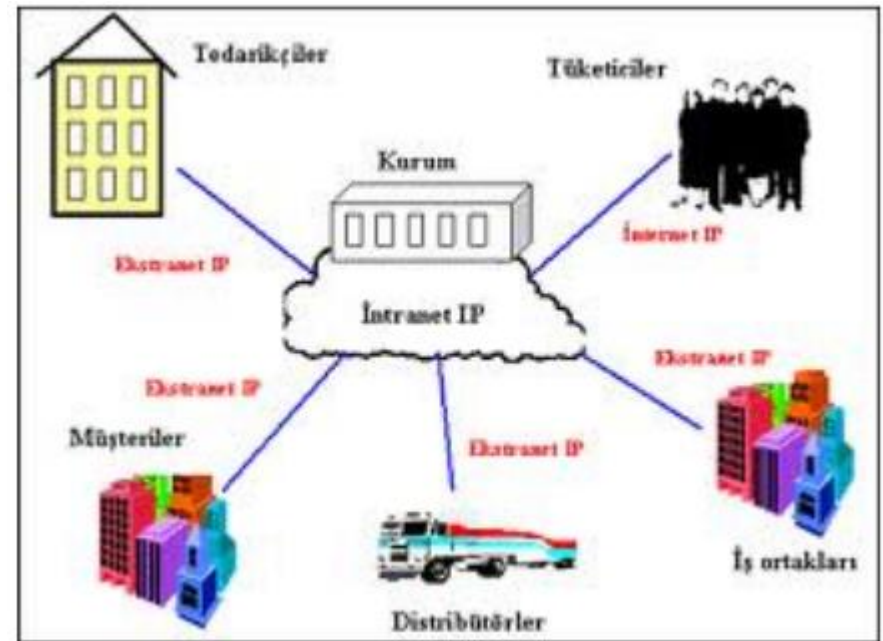
Data Transfer – Uploading and Downloading

➢Uploading means data is being sent from your computer to the internet. E.g. Sending e-mail, posting photos to social media.

➢Downloading means your computer is receiving data from the Internet. E.g. Opening a web page, receiving an e-mail
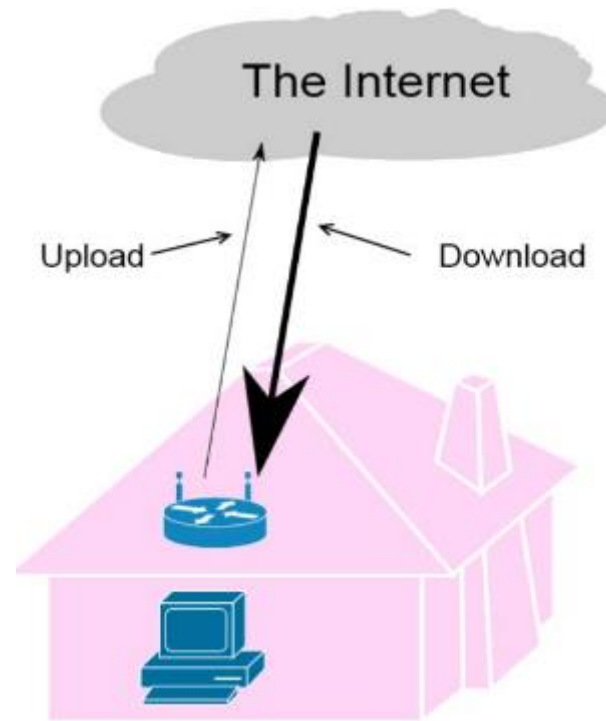
Connection Types

➢A **dial-up connection** uses a standard phone line and analog modem to access the Internet at data transfer rates (DTR) of up to 56 Kbps.

➢A dial-up connection is the least expensive way to access the Internet, but it also slowest connection.
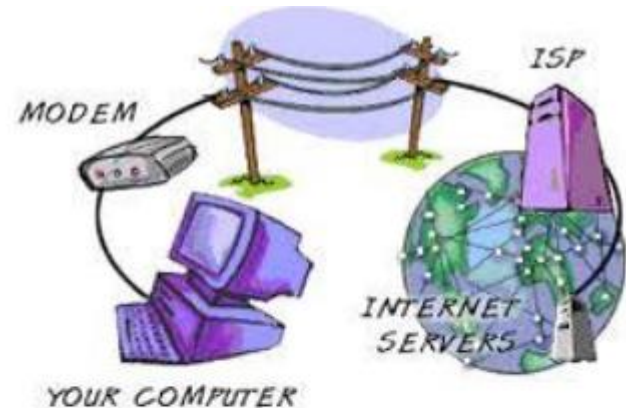
Broadband Connections

➤ The term broadband commonly refers to high-speed Internet access that is always on and faster than the traditional dial-up access.

➤ Broadband includes several high-speed transmission technologies such as:
  ➤ Digital Subscriber Line (DSL)
  ➤ Cable Modem
  ➤ Fiber
  ➤ Wireless
  ➤ Satellite
  ➤ Broadband over Powerlines (BPL)

➤ For more information about these technologies, see the link:

https://www.fcc.gov/general/types-broadband-connections