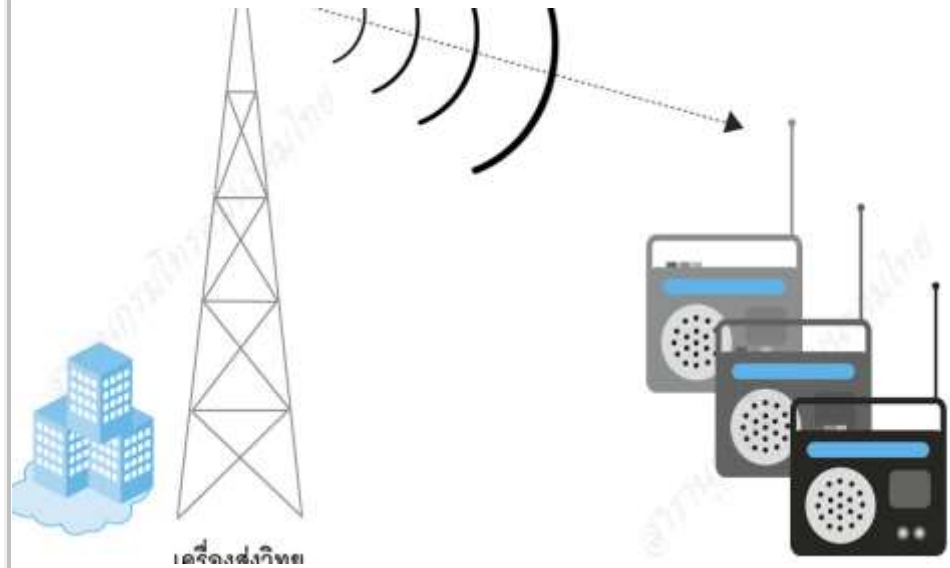
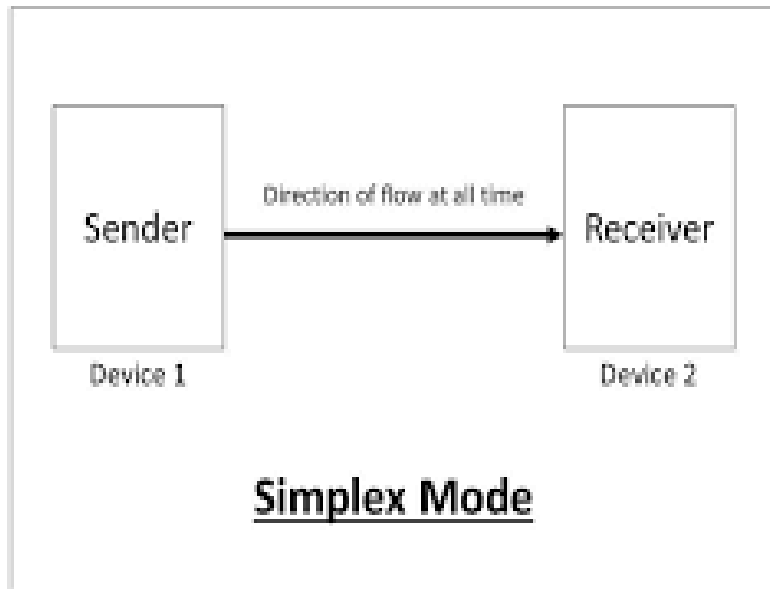


# Simplex network



Simplex communication is a **communication channel** that sends information in one direction only.<sup>[1]</sup>

The **International Telecommunication Union** definition is a communications channel that operates in one direction at a time, but that may be reversible; this is termed **half duplex** in other contexts. A **duplex** communication channel requires two simplex channels operating in opposite directions at the same time.

For example, in TV and radio **broadcasting**, information flows only from the transmitter site to multiple receivers. A pair of **walkie-talkie two-way radios** provide a simplex circuit in the ITU sense; only one party at a time can talk, while the other listens until it can hear an opportunity to transmit. The transmission medium (the radio signal over the air) can carry information in

# Half duplex

Send



A

Receive



B

Receive

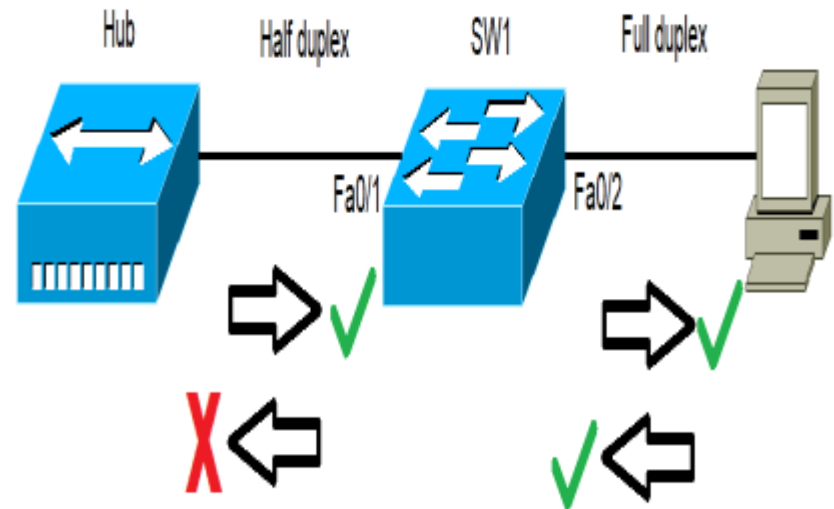


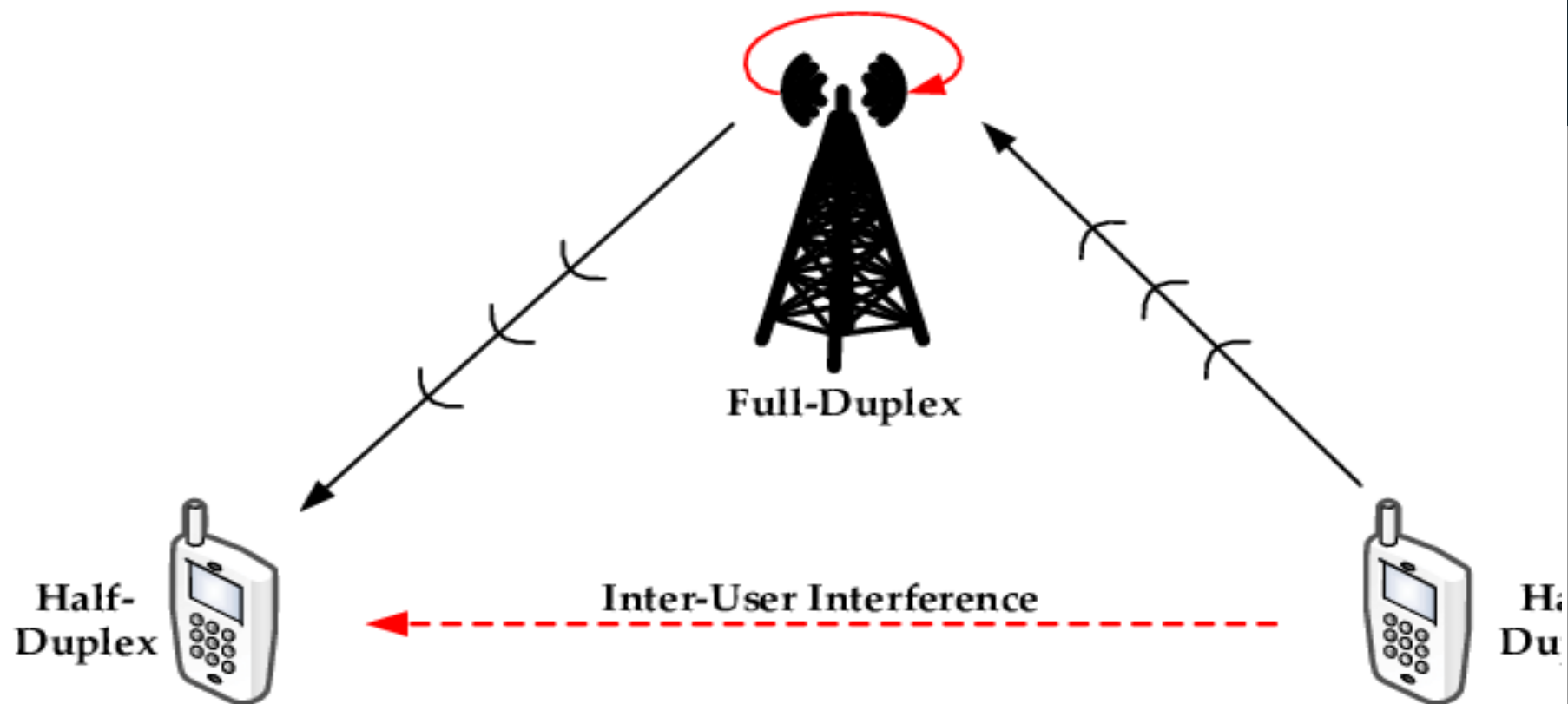
A

Send



B

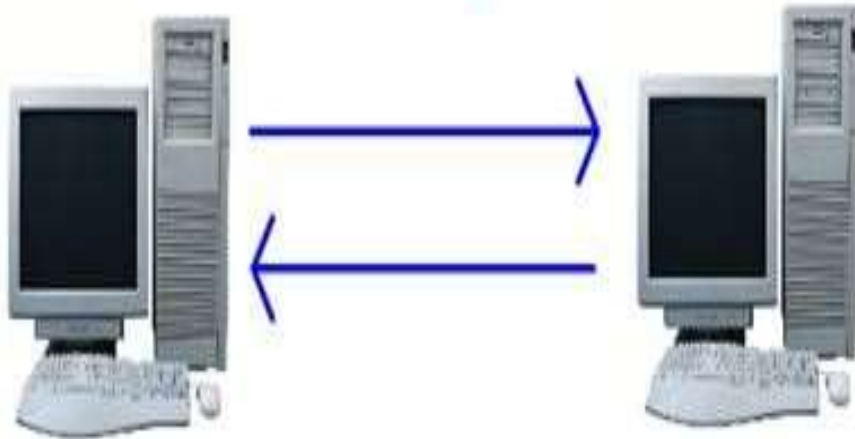




**A duplex communication system is a point-to-point system composed of two or more connected parties or devices that can communicate with one another in both directions. Duplex systems are employed in many communications networks, either to allow for simultaneous communication in both directions between two connected parties or to provide a reverse path for the monitoring and remote adjustment of equipment in the field. There are two types of duplex communication systems: full-duplex (FDX) and half-duplex (HDX)**

# Full duplex

Full-Duplex



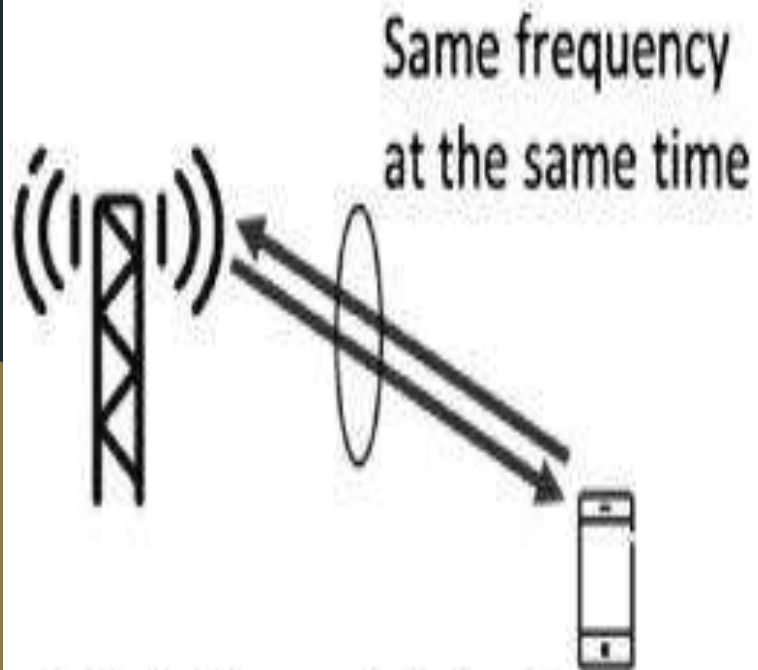
Both directions at  
the same time

Send and Receive Simultaneously

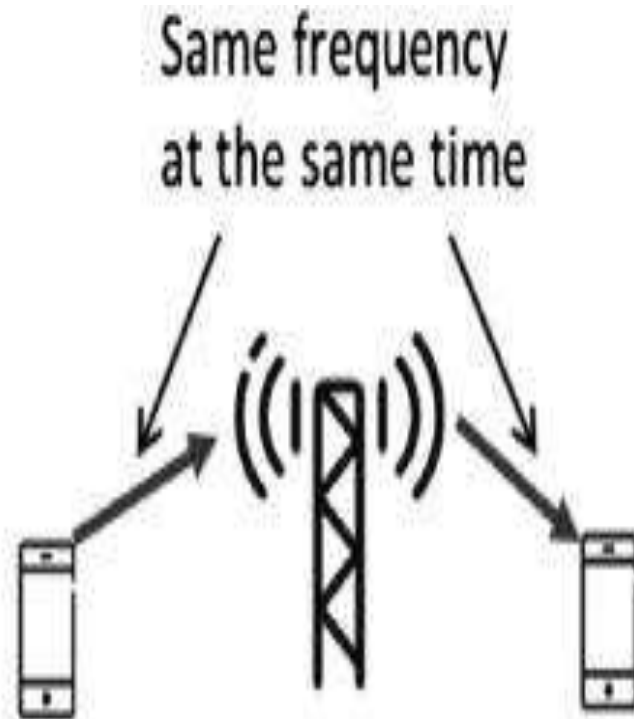


Full-Duplex

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Full duplex on link level

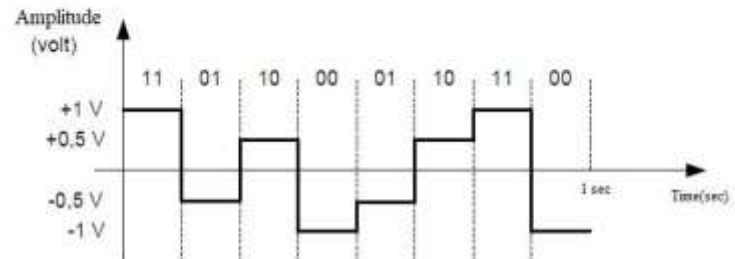
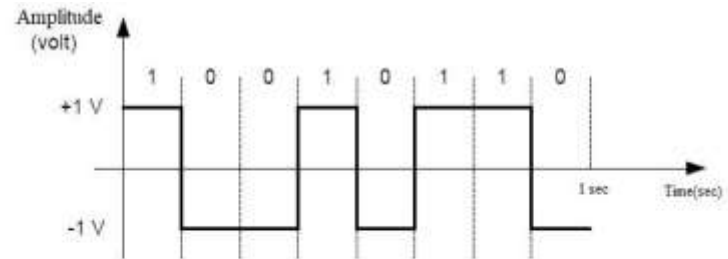
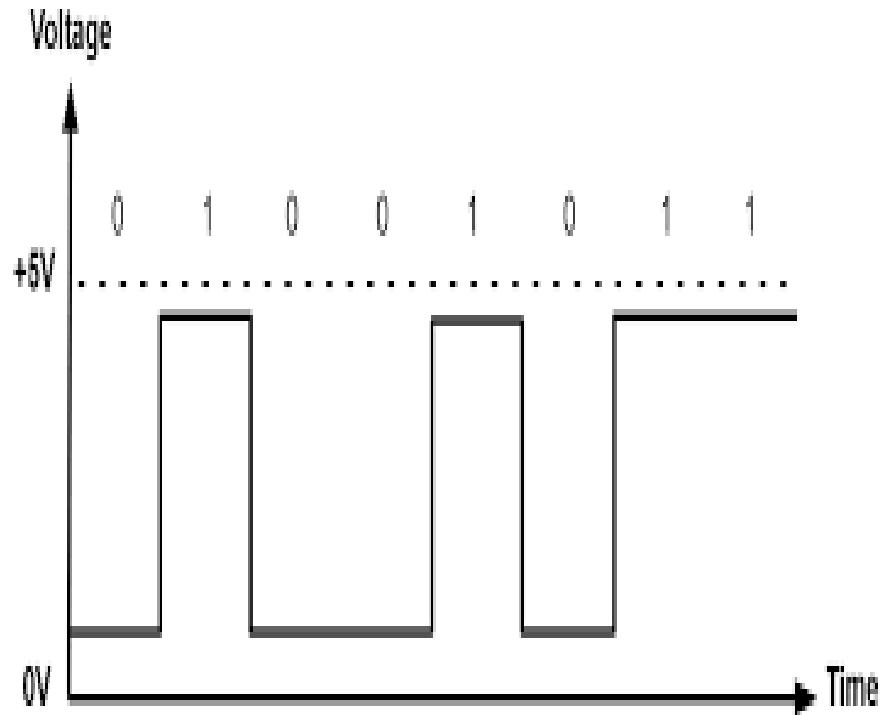


Full duplex on cell level

**In a full-duplex system, both parties can communicate with each other simultaneously. An example of a full-duplex device is plain old telephone service; the parties at both ends of a call can speak and be heard by the other party simultaneously. The earphone reproduces the speech of the remote party as the microphone transmits the speech of the local party. There is a two-way communication channel between them, or more strictly speaking, there are two communication channels between them.**



# Digital signal

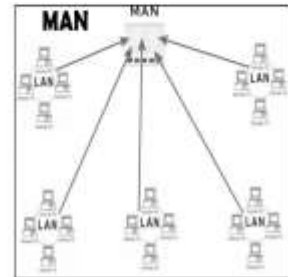
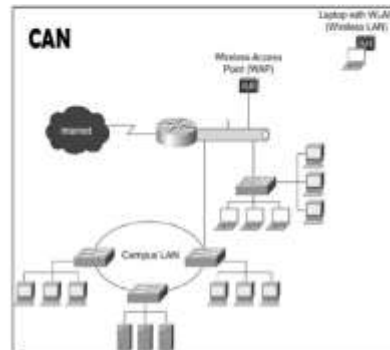
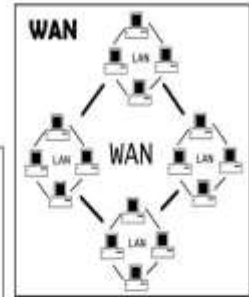
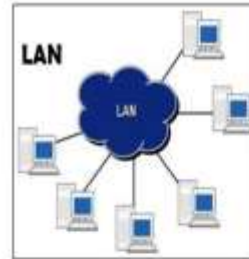
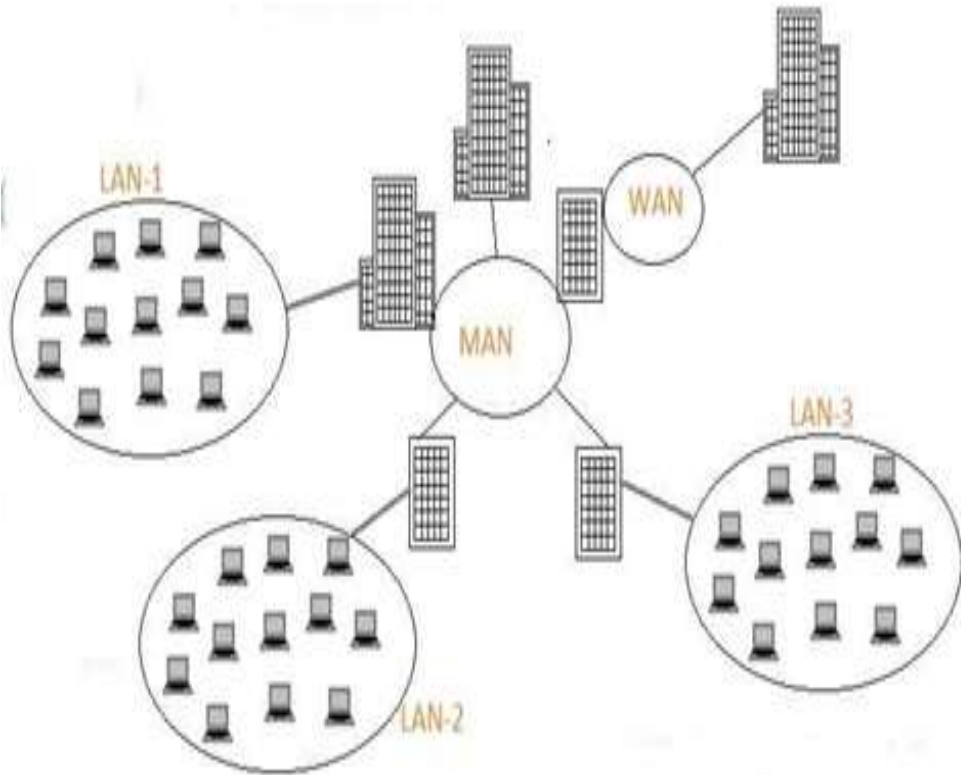


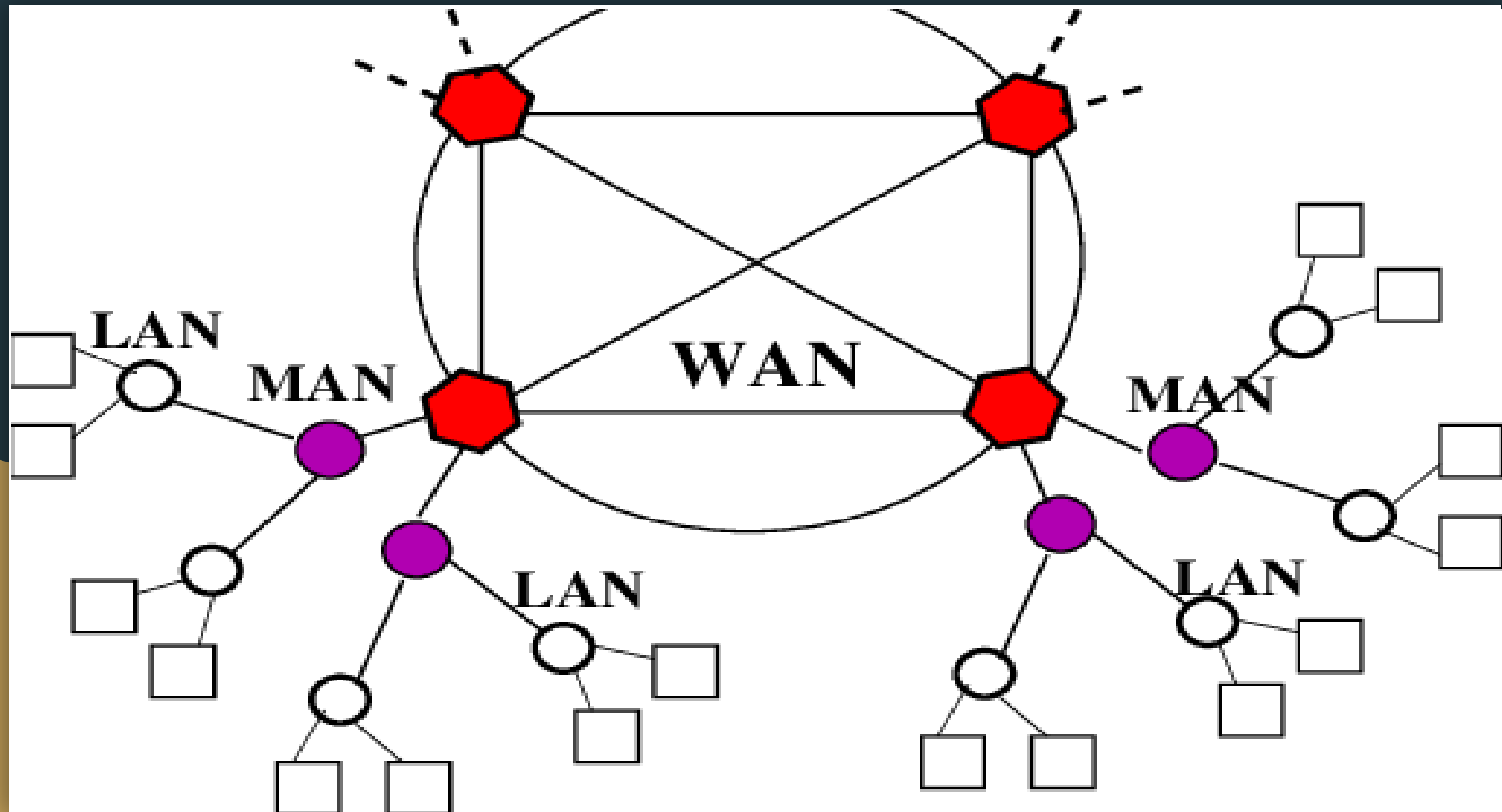
**Digital Signal** A digital signal is a signal that represents data as a sequence of discrete values. A digital signal can only take on one value from a finite set of possible values at a given time. With digital signals, the physical quantity representing the information can be many things:

- Variable electric current or voltage
- Phase or polarization of an electromagnetic field
- Acoustic pressure
- The magnetization of a magnetic storage media

Digital signals are used in all digital electronics, including computing equipment and data transmission devices. When plotted on a voltage vs. time graph, digital signals are one of two values, and are usually between 0V and VCC (usually 1.8V, 3.3V, or 5V)

# ***Difference between lan wan man***





## Prerequisite - Types of area networks - LAN, MAN and WAN

LAN stands for local area network. It is a group of network devices that allow communication between various connected devices. Private ownership has control over the local area network rather than the public. LAN has a short propagation delay than MAN as well as WAN. It covers the smaller area such as colleges, schools, hospitals, and so on.

MAN stands for metropolitan area network. It covers the larger area than LAN such as small towns, cities, etc. MAN connects two or more computers that reside within the same or completely different cities. MAN is expensive and should or might not be owned by one organization.

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WAN stands for wide area network. It covers a large area than LAN as well as a MAN such as country/continent etc. WAN is expensive and should or might not be owned by one organization. PSTN or satellite medium is used for wide area networks.

# What is operating system

An Operating System is the most important program that is first loaded on a computer when you first switch on the system. The communication between a user and a system takes place with the help of an operating system. It translates the instructions given by the user in a high-level language to machine language, which a computer can understand. It acts as an intermediary between a user and computer hardware and provides an environment required to execute different programs efficiently.

**User**

**Application**

**Operating system**

**Hardware**



# **Types of operating system**

- 1. Batch Operating System**
  - 2. Time-Sharing Operating System**
  - 3. Distributed Operating System**
  - 4. Embedded Operating System**
  - 5. Real-time Operating System**
- 