computer science
college of dentistry
first stage

Lecture 2

Network Topologies

Ass.lecture Lamia Faris

2020-2021

Network topology

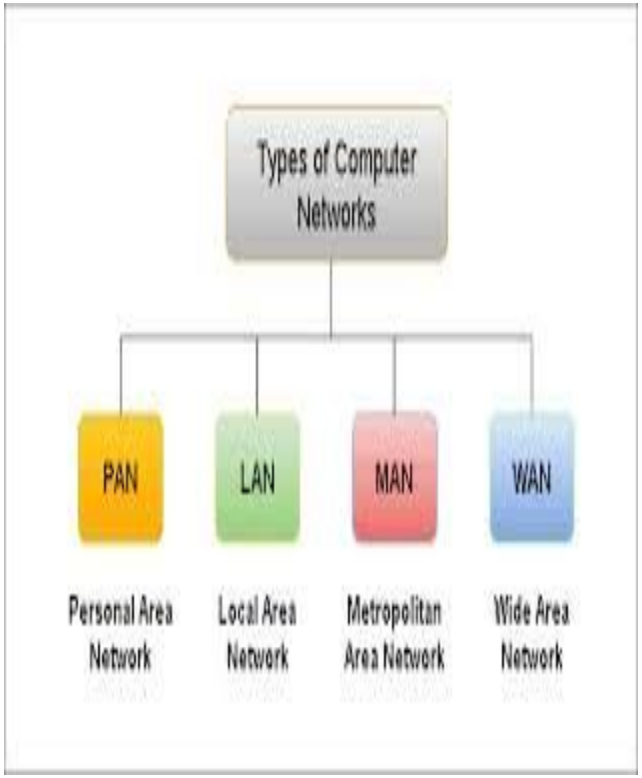
- The configuration, or topology, of a network is key to determining its performance. Network topology is the way a network is arranged, including the physical or logical description of how links and nodes are set up to relate to each other.

?What Is Network Topology

- There are two approaches to network topology: physical and logical.
- Physical network topology, as the name suggests, refers to the physical connections and interconnections between nodes and the network—the wires, cables, and so forth.
- Logical network topology, referring to the conceptual understanding of how and why the network is arranged the way it is, and how data moves through it

Types of Computer Network

- There are mainly three types of computer networks based on their size:
- 1. Local Area Network (LAN)
- 2. Metropolitan Area Network (MAN)
- 3. Wide area network
- (WAN)
- 4- Personal Area Network (PAN)



Network Topologies

- LANs and WANs - Geographical coverage
- LANs
  - A single geographical location, such as office building, school, etc
  - Typically High speed and cheaper.
- WANs
  - Spans more than one geographical location often connecting separated LANs
  - Slower
  - Costly hardware, routers, dedicated leased lines and complicated implementation procedures.

Metropolitan Area Network (MAN)

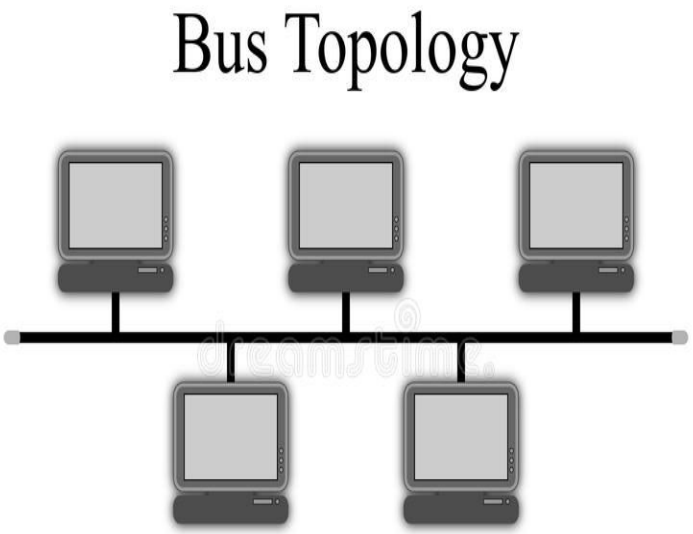
- MAN network covers larger area by connections LANs to a larger network of computers
- The size of the MAN is larger than LANs and smaller than WANs.
- MANs covers the larger area of a city or town.

:Common topologies

- Network Topologies
- Topology - Physical and logical network layout
- – Physical – actual layout of the computer cables and other network devices
- – Logical – the way in which the network appears to the devices that use it.
- Common topologies:
- – Bus, ring, star, mesh and wireless

Bus topology

- Uses a trunk or backbone to which all of the computers on the network connect.
- Systems connect to this backbone using T connectors or taps.



Bus Topology

Advantages	Disadvantages
Cheap and easy to implement	Network disruption when computers are added or removed
Require less cable	A break in the cable will prevent all systems from .accessing the network
Does not use any specialized .network equipment	.Difficult to troubleshoot