

# Computer Networks: Concept, types and functions

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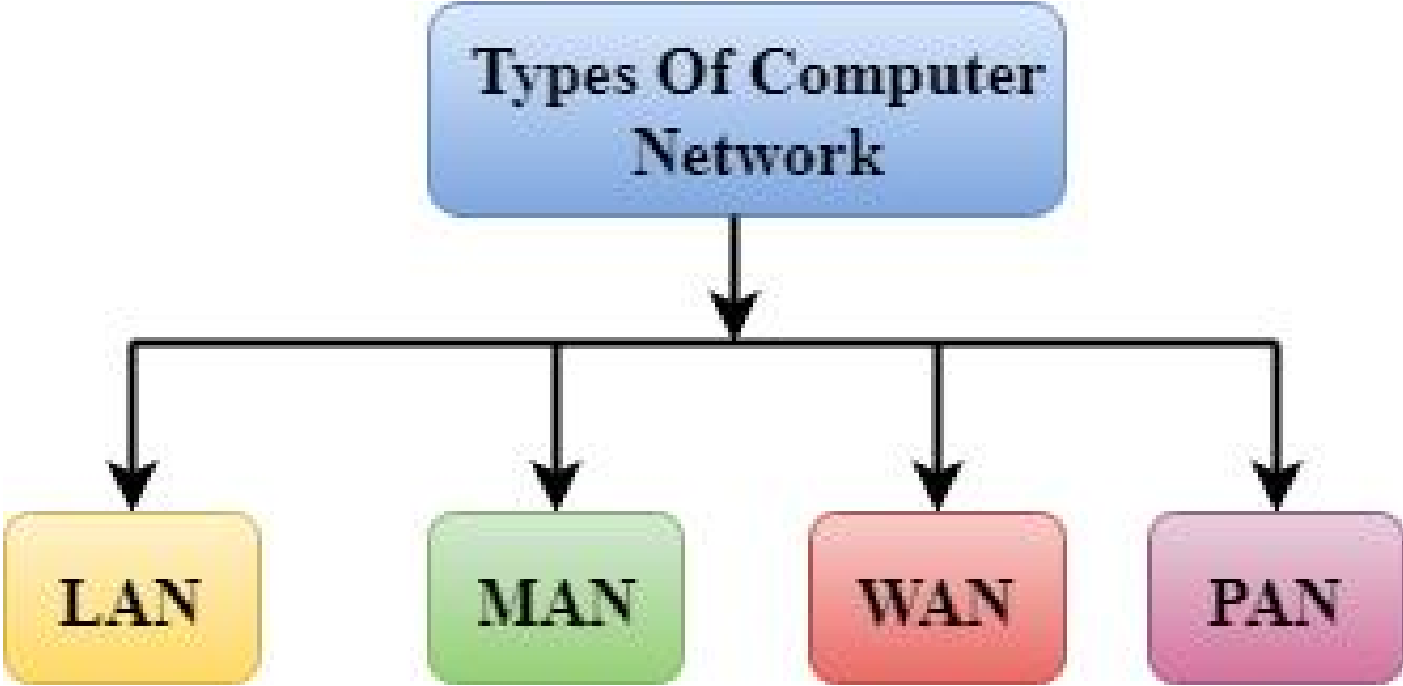
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# Computer network

- Computer network can be defined as a set of two or more computers having interconnection to the same resources, such as exchange files, printers, CDs and other similar equipment.
- The networks in a computer are built with a great combination of software and hardware.
- The main purpose of the networks is to facilitate communication through video conferencing, email, instant messaging, etc.
- Additionally, the multiple users are enabled to share a single hardware device, such as a scanner or printer.

- Computer networks are the basis of communication in IT.
- A computer network is a digital telecommunications network for sharing resources between nodes, which are computing devices that use a common telecommunications technology.
- It is the interconnection of multiple devices, generally termed as Hosts connected using multiple paths for the purpose of sending/receiving data or media.

# Types of Computer Networks



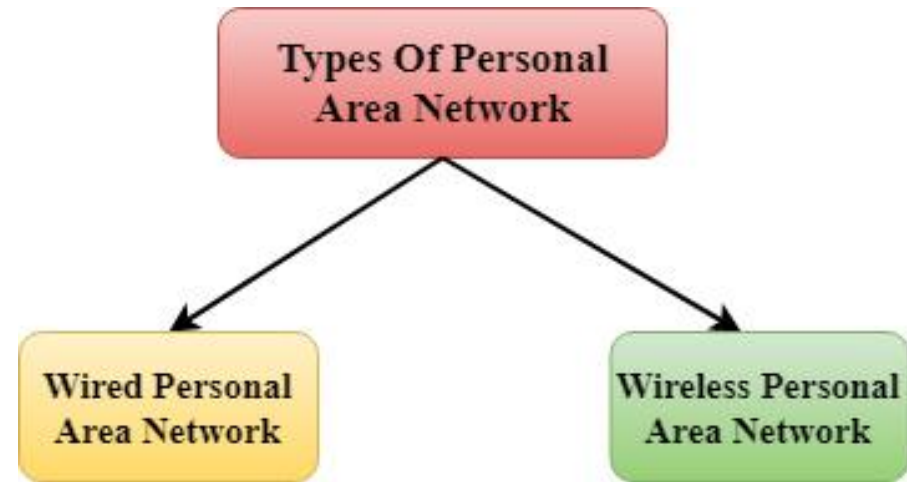
# Local Area Network (LAN)

- It is a group of computers connected to each other in a small area such as building, office.
- used for connecting two or more personal computers through a communication medium such as twisted pair, coaxial cable, etc.
- less costly as it is built with inexpensive hardware
- data is transferred at an extremely faster rate.
- provides higher security.



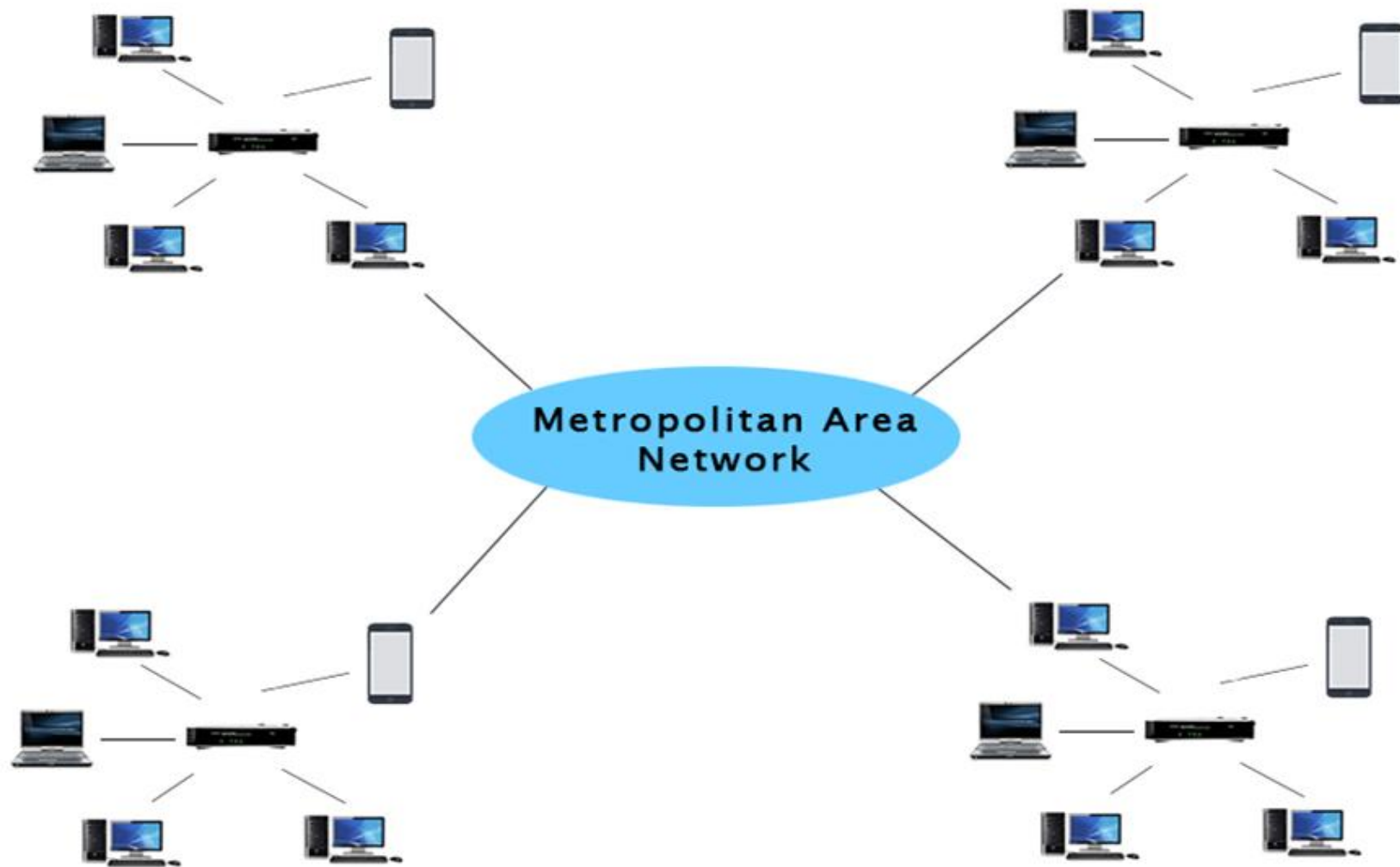
- Personal Area Network (PAN)

- is a network arranged within an individual person, typically within a range of 10 meters.
- used for connecting the computer devices of personal use is known as Personal Area Network.
- Personal computer devices that are used to develop the personal area network are the laptop, mobile phones, media player and play stations.



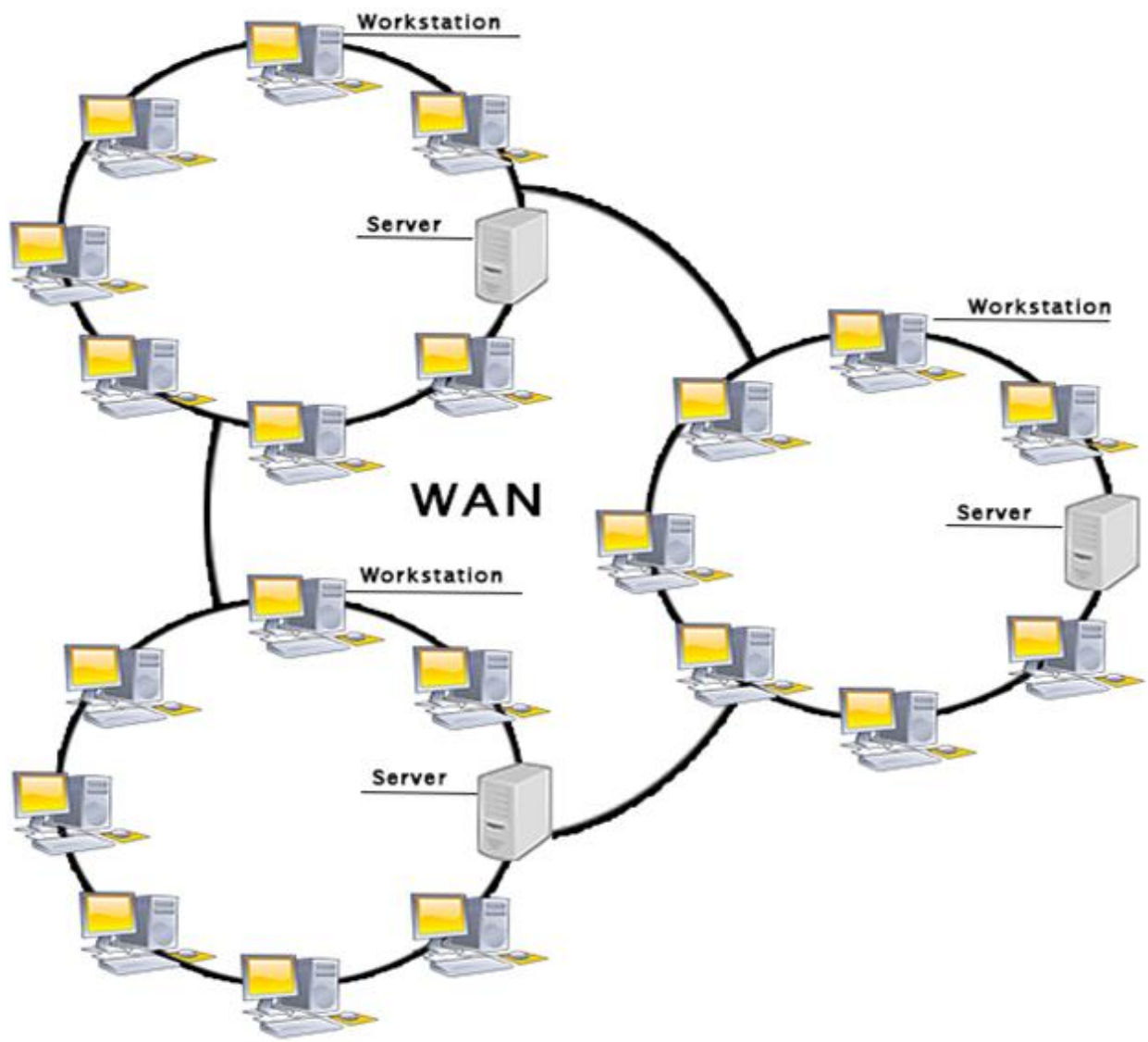


- Metropolitan Area Network (MAN)
  - There is an involvement of a computer network that spreads across the whole city in the metropolitan area network.
  - It is bigger than a LAN and covers an area that can range from many miles to ten miles.
  - The major use of the MAN is to connect many LANs together for forming a larger network.
  - Government agencies use MAN to connect to the citizens and private industries.



- Wide Area Network (WAN)

- A WAN is a complex type of computer network that connects the computer together over larger distances such as states or countries..
- It allows them to have communication no matter how far they are from each other.
- through a telephone line, fibre optic cable or satellite links.
- The internet is one of the biggest WAN in the world.
- It is widely used in the field of Business, government, and education.



# Advantages of Computer Networks

- More Convenient Resource Sharing
  - large companies can share lots of resources to all the staff through it.
- Instant and Multiple Accesses
  - multiple users to access the same data from a remote location at the same time.
- Low cost and high flexibility
  - very low cost involved in installing the networking software on the computers or any other device.
  - allows the users to explore all the things

# Disadvantages of Computer Networks

- Dangers of Security Issues
  - security can be at risk because a larger size of people uses a computer network and share files.
- Increase Dependence on Computers
  - great involvement of computers in this technology and it makes the people get relied on them instead of making some physical effort

