
Date: 2026/1/26

Computer Networks

Introduction to Networks - Assignment 1

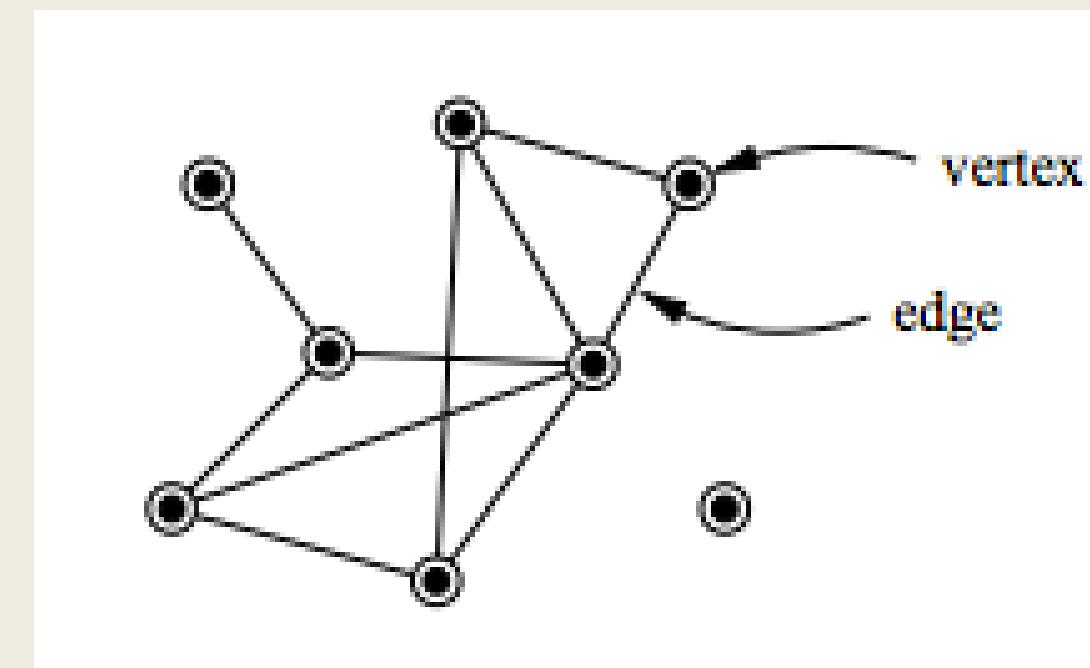
Present by :

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Introduction

Network : is Graph have connected nodes by lines
(edges)

Networks is very important in daily life and have a many applications.



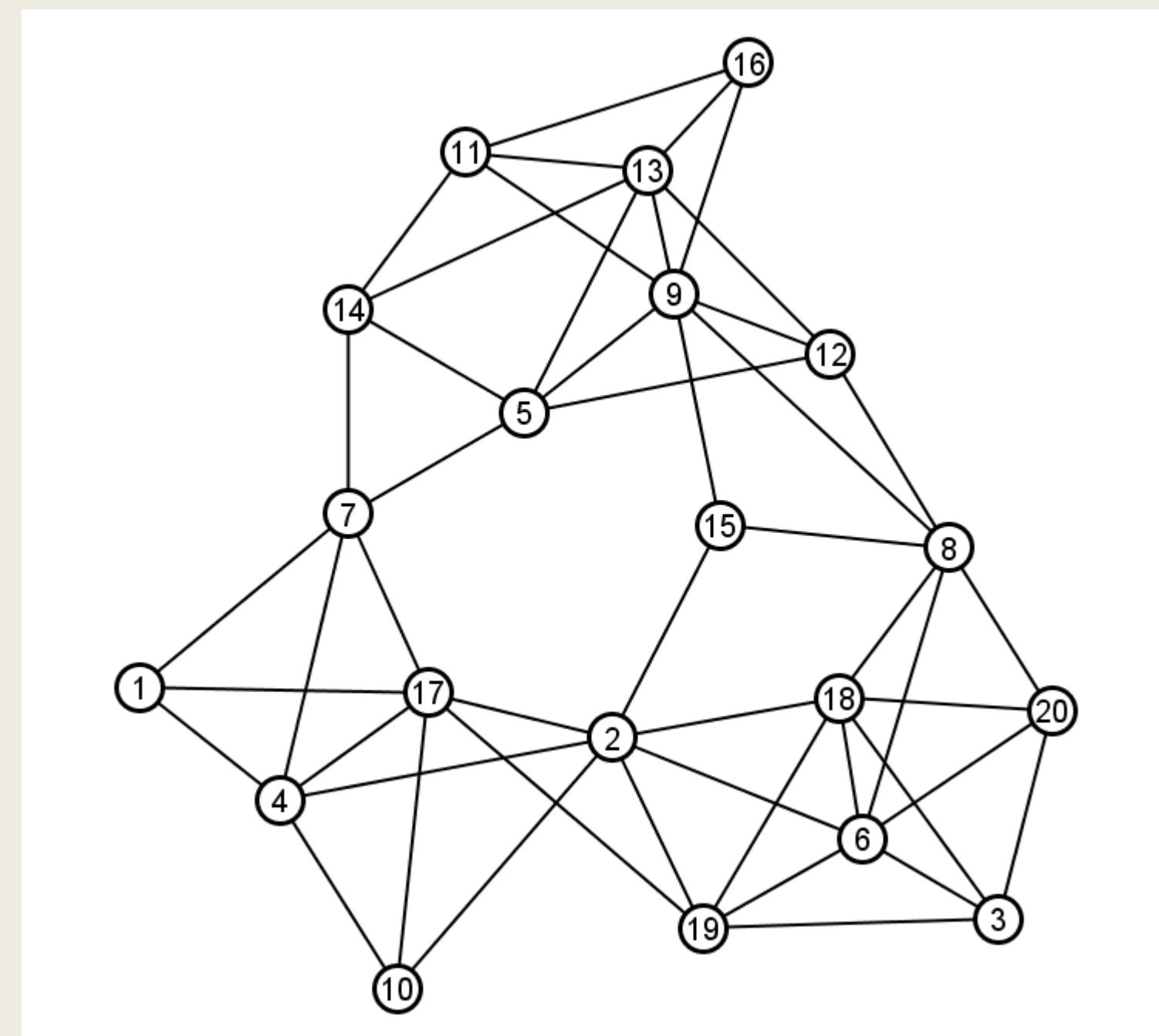
Examples

Dijkstra Algorithm used In maps :



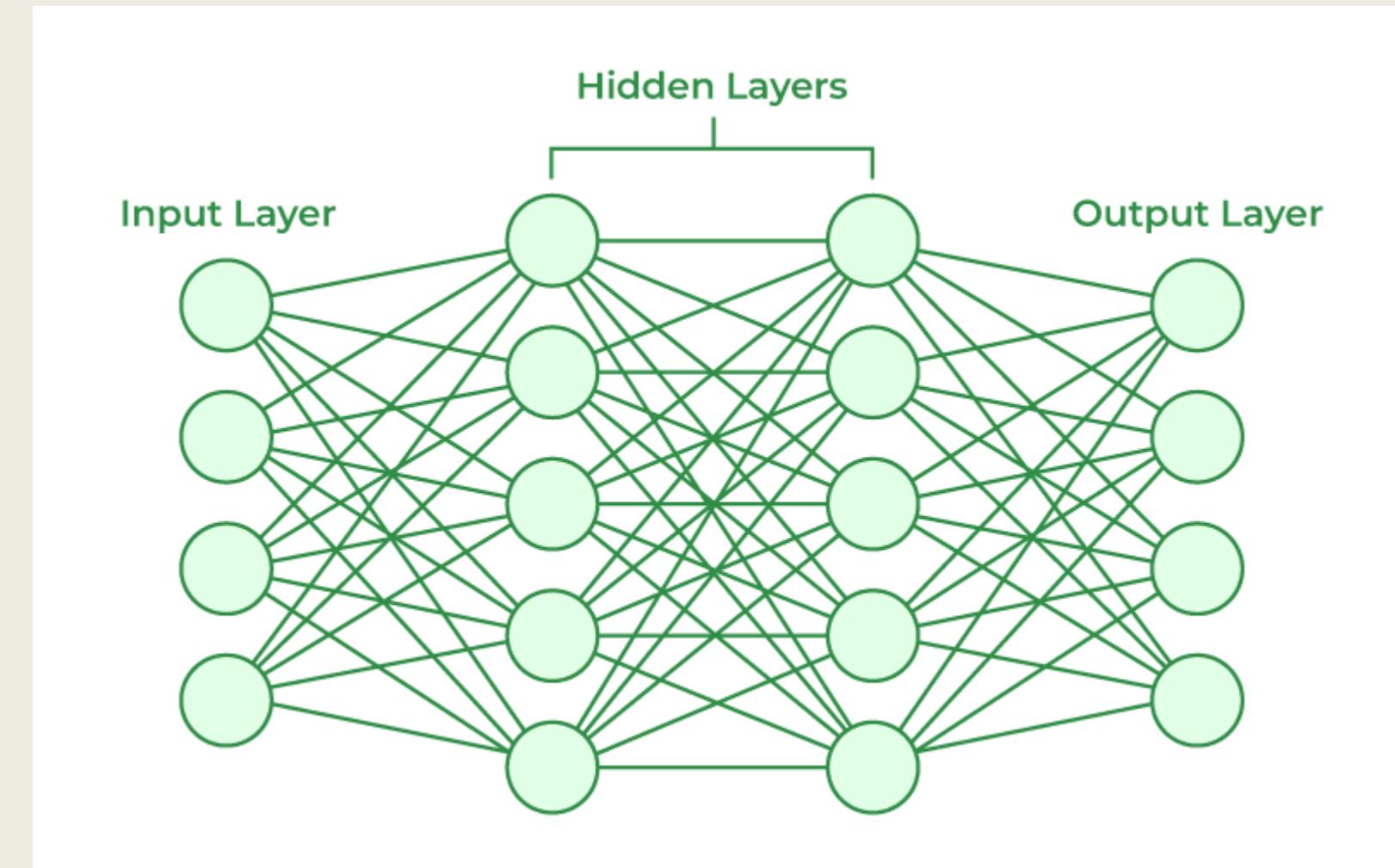
Examples

Network Theory in Mathematics :



Examples

Neural networks in Artificial Intelligence :



Computer Networks

Computer Network : Is group of connected two devices or more.

Why we need to networks ?

- Devices in same network can easily communicate and share resources with each devices.

Uses of Computer Networks

- Business Applications
- Home Applications
- Social Media Applications
- Using mobile device

Home Network Applications

- Access to remote information
- Person-to-Person Communicate
- Interactive entertainment
- Electronic commerce (E-Commerce)
- Chats and Blogs

Types of Networks

By Network Size :

- LAN (Local Area Network)
- WAN (Wide Area Network)
- MAN (Metropolitan Area Network)

By Transmission media : Wired or Wireless

By Communicate method : P2P or Client/Server

By Network Topology type : Ring – Bus – Star – Cube – Mesh

LAN

LAN or Local area network : small group of devices used in short distances .

- Room
- Floor
- House
- Building

Limited by **number of devices and distance covered** , And usually used to covering departments or campus within a large organization .

LAN



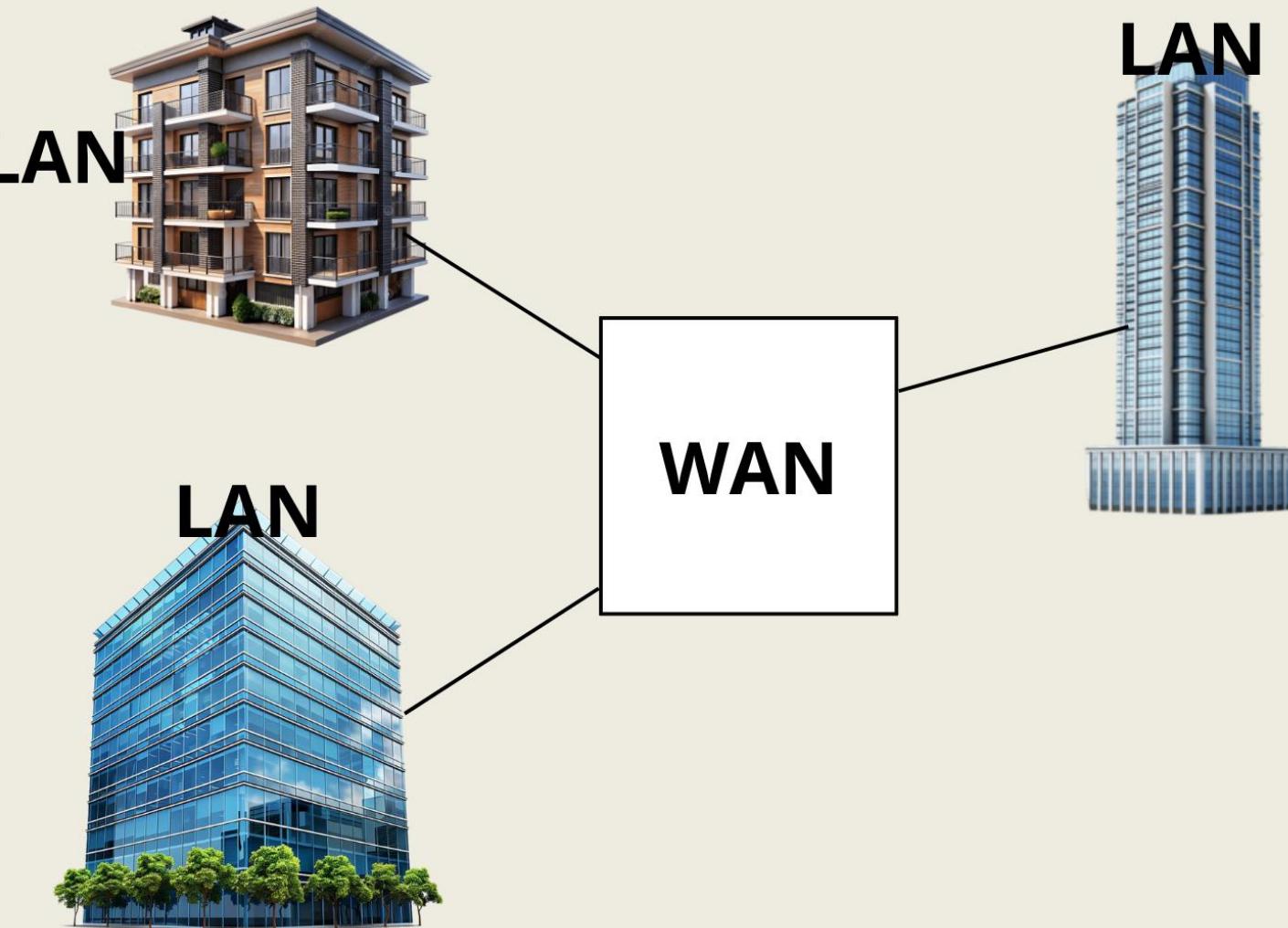
Maybe wired or wireless .

WAN

WAN or Wide area network : uses long-range telecommunication links to connect 2 LANs or more .

Examples :

- Internet
- Telephone network in cities and towns



Types of Networks by methods

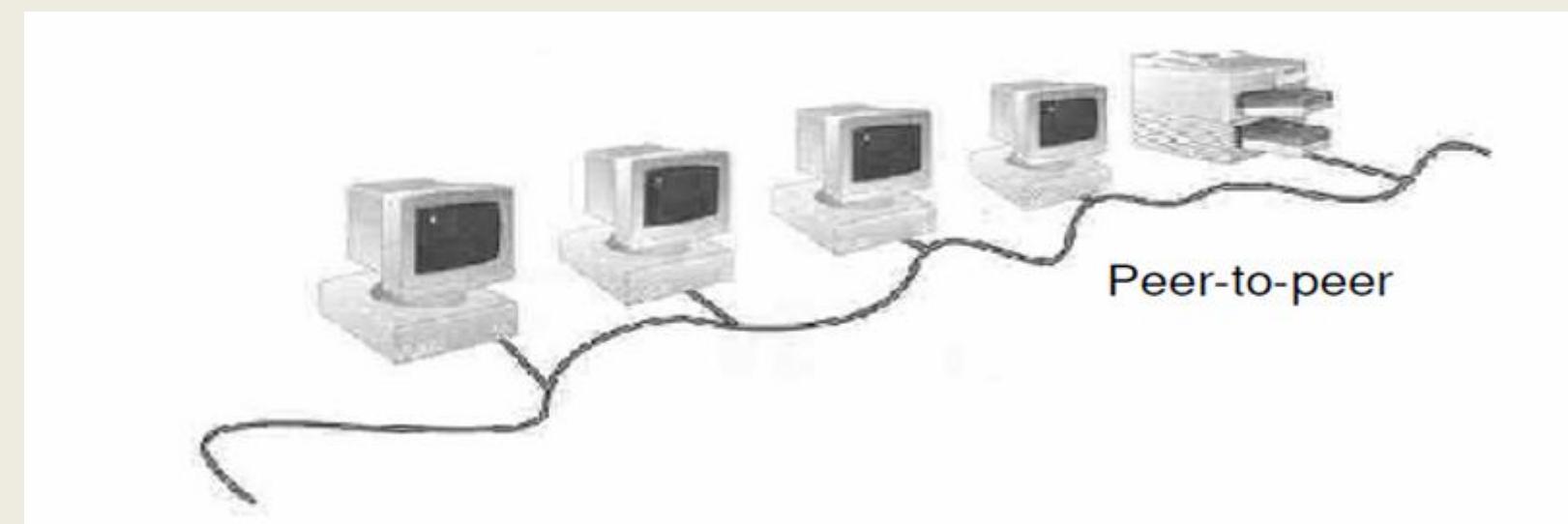
There are two main methods to manage and communicate in networks :

- P2P or Peer to Peer
- Client and Server

Peer to Peer (Workgroup) :

Advantages : Low cost – Simple configuration – Users have full access to computer

Disadvantages : Hard to implement security policy – Difficult to handle uneven work load



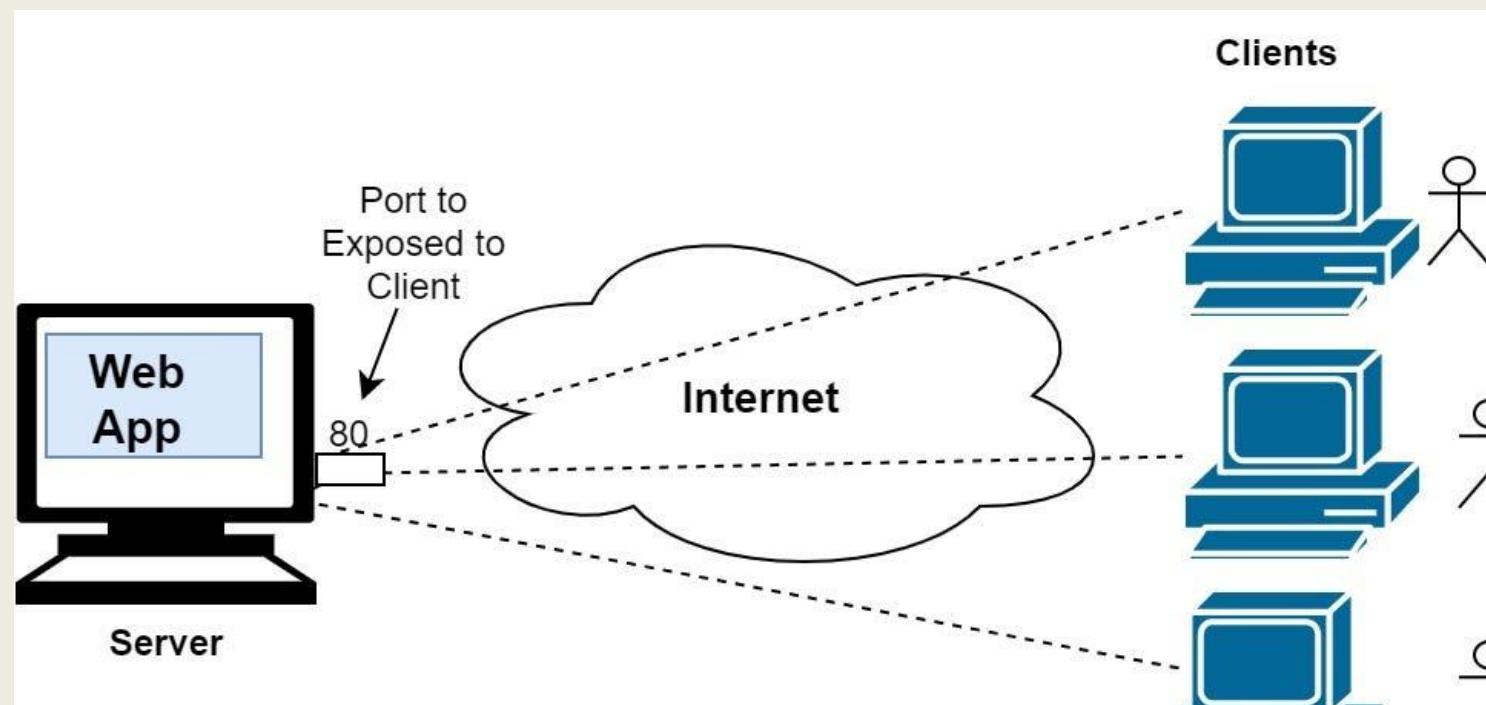
Types of Networks by methods

Client and Server (Workstation) :

Client request service or resource from system , The server will Directly response through network.

Advantages : Supports many users – Have system backups – Enhancing security and privacy.

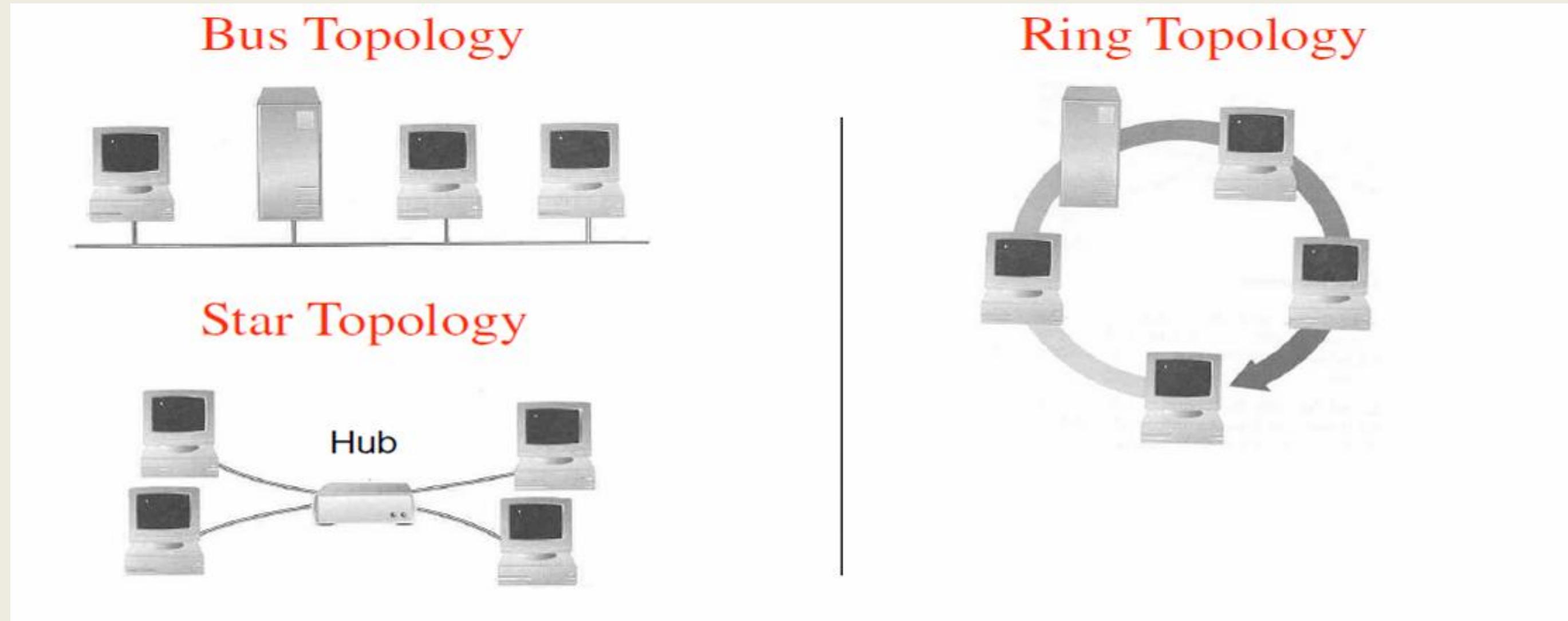
Disadvantages : High cost – Need expert to configuring the network



Types of Networks by Topology

Many types :

- Bus
- Ring
- Star
- Mesh
- Cube



Sources

- Taif University - Computer Networks ch.1
- Fundamentals of Network Communication - University of Colorado Boulder , Coursera
- Data Communications and Networking By Behrouz A.Forouzan
- Networkchuck - What is network ?

Thanks to listen