

The background features a dark blue gradient with a series of curved, glowing lines that create a sense of depth and movement. On the right side, there is a grid-like pattern of light blue lines that recedes into the distance, suggesting a digital or network environment.

Kardan University
BCS Faculty
Data Communication and
Networks

Outline

- Categories of network
- Transmission modes

Categories of network

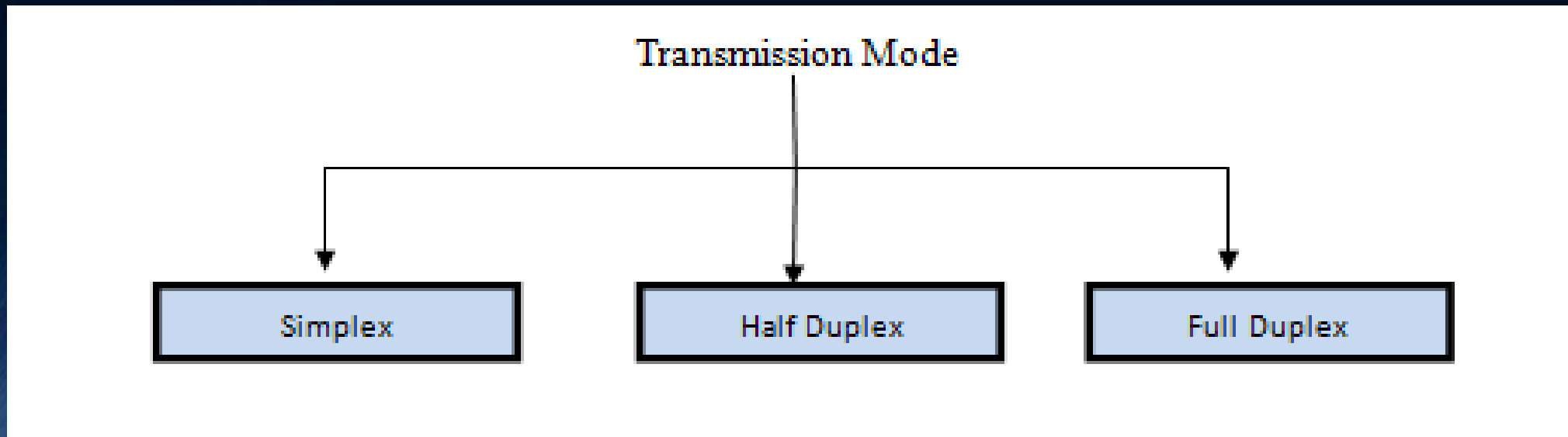
- The networks are categorized as follows:
- LAN (Local Area Network)
 - A local area network (LAN) is a computer network in a small area like a home, office, or school.
 - A LAN is usually Privately owned and Links the devices in a single office, Building or a campus.
 - In LAN, the network management responsibility falls solely on the user/company
 - LAN can be as simple as two PCs and a printer in someone's home office or it can extend throughout a company.

Categories of network

- WAN (Wide Area Network):
 - A computer network that covers a relatively large geographical area. Typically, a WAN consists of two or more local-area networks (LANs).
- MAN (Metropolitan Area Networks):
 - Designed to extend over an entire city.
 - It may be a single network e.g Cable TV Network.
 - Interconnection of a No. of LANs into a larger network.
 - Example: A company can use a MAN to connect the LANs in all of its offices throughout a city.

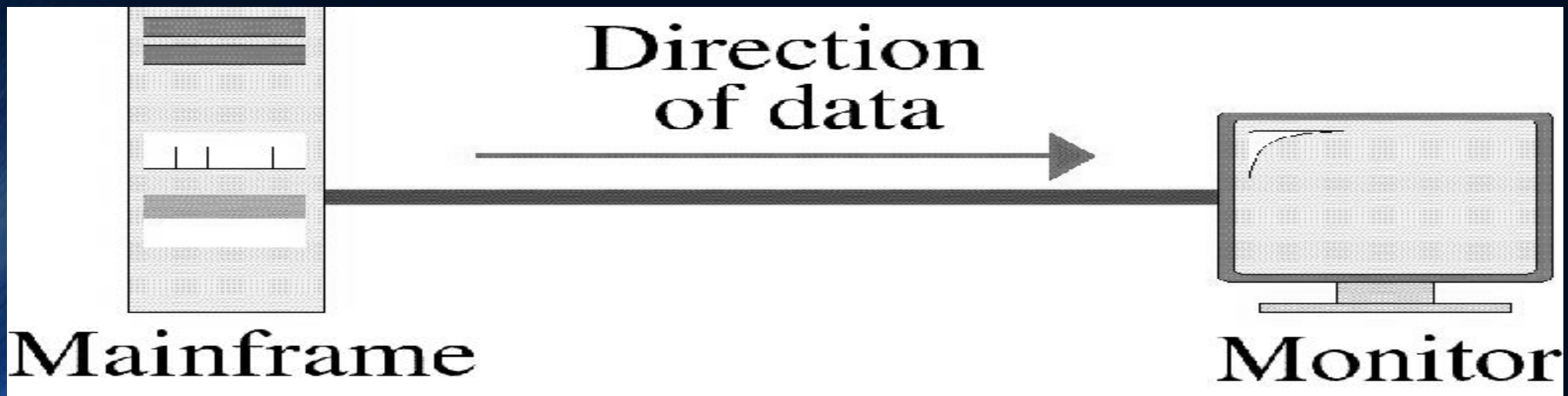
Transmission modes

- Transmission Mode is used to define the direction of the signal flow between the linked devices.



Simplex

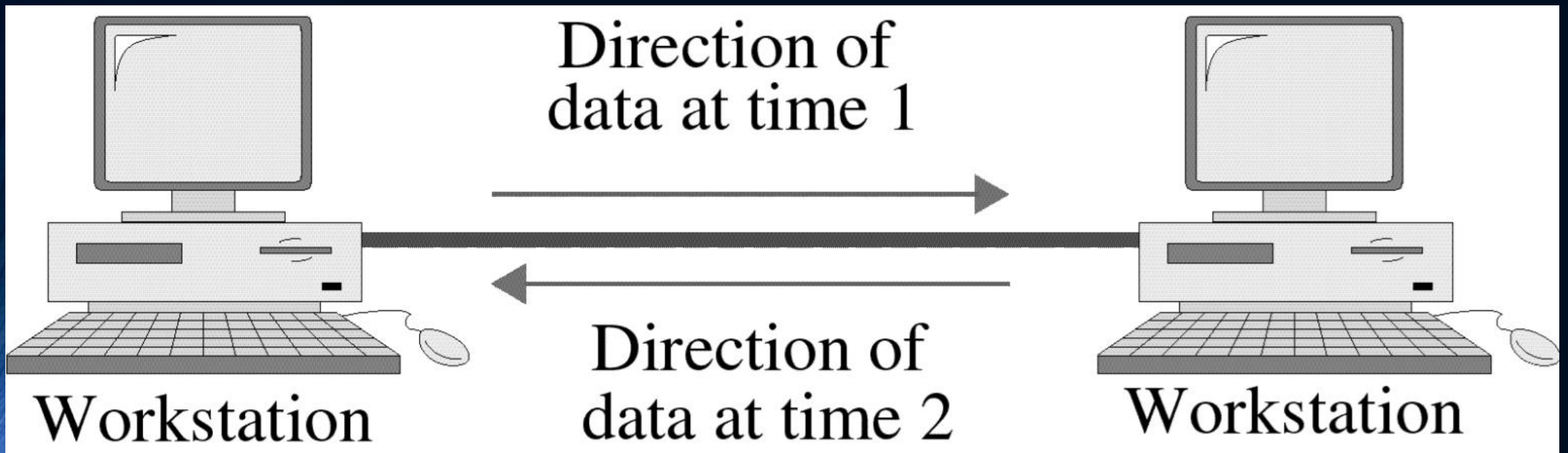
- Communication is Unidirectional.
- Only one of the two stations can transmit.
- Other can only receive.
 - Examples: KEYBOARDS (Only Input), Monitors (Only Output)



Half duplex

- Each station can both transmit and receive but not at the same time
- When one device is sending the other can only receive and vice versa
- Lets understand the concept by using an example
 - One Lane Road with two directional traffic
 - When cars are traveling in one direction, cars going the other way must wait.
- Full Channel capacity is allocated to whatever entity that is transmitting at a specific time
 - Walkie Talkies

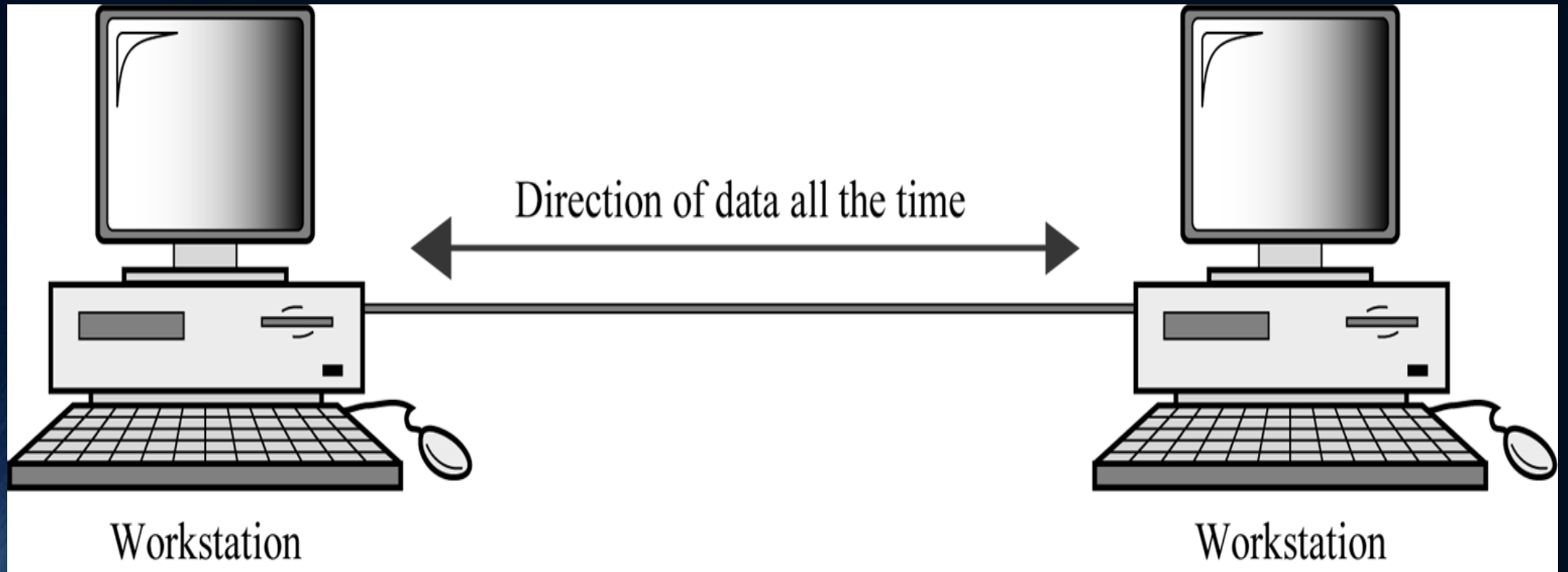
Half duplex



Duplex of full duplex

- Both stations can transmit and receive simultaneously.
- Two way road (bi-directional).
- Signals traveling in either direction share the capacity of the link.
- The sharing can take place in two ways:
 - Either the link must contain two physically separate transmission paths:
 - One for sending and
 - One for receiving
 - Capacity of the channel is divided between signals traveling in opposite directions

Duplex of full duplex



Note

- We must also know about:
 - Broadcast, unicast, multicast
 - Source node and destination node

THANK YOU