



# **SNS COLLEGE OF TECHNOLOGY**

**Coimbatore-35**  
**An Autonomous Institution**



Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade  
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

## **DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**

### **19ECT301- COMMUNICATION NETWORKS**

III YEAR/<sub>1</sub>V SEMESTER

**UNIT 1 – INTRODUCTION TO NETWORKS AND LAYERED ARCHITECTURE**

**TOPIC 1 – DATA COMMUNICATION CONCEPTS**

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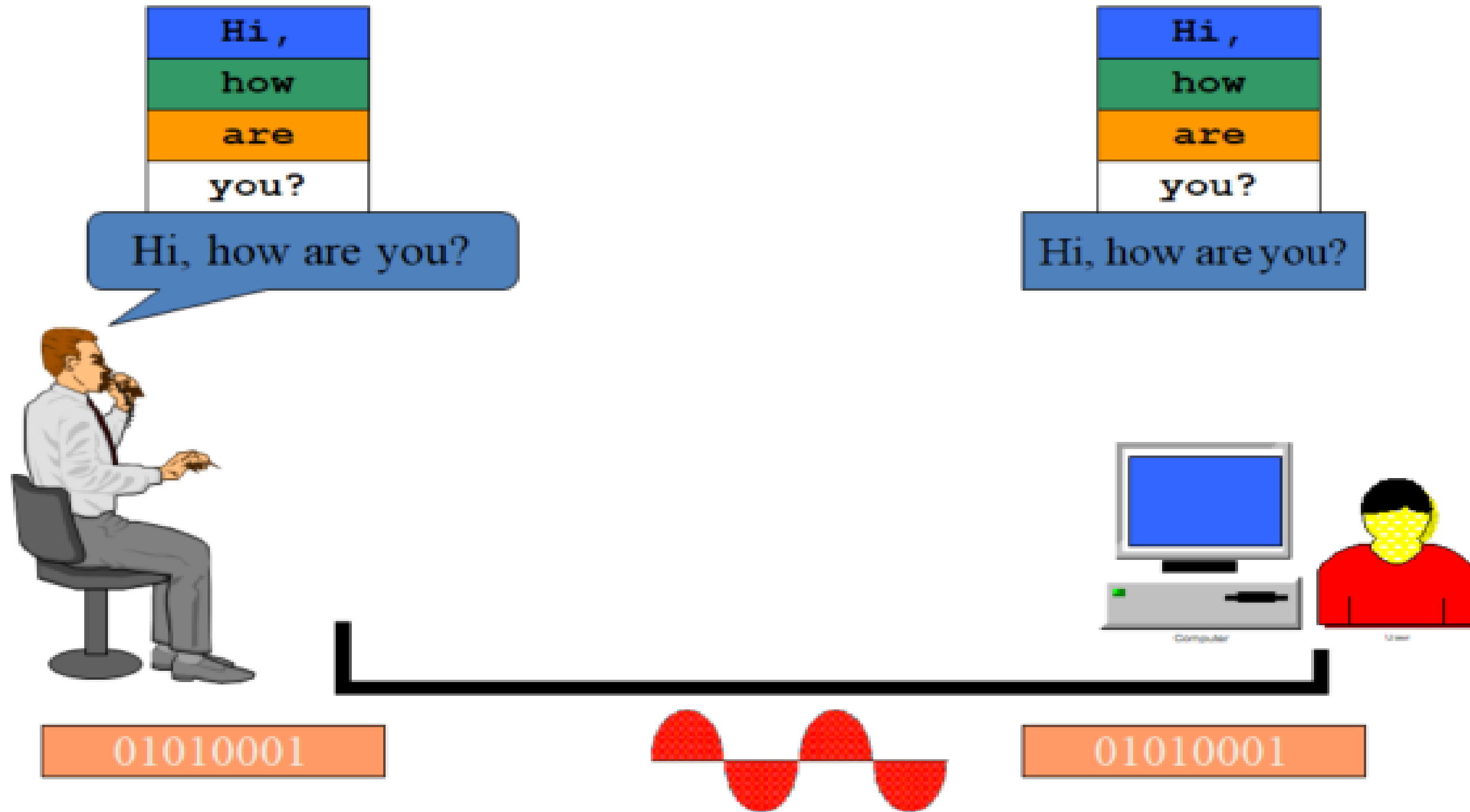
# DATA COMMUNICATION



Transfer of data from one device to another via some form of transmission medium.

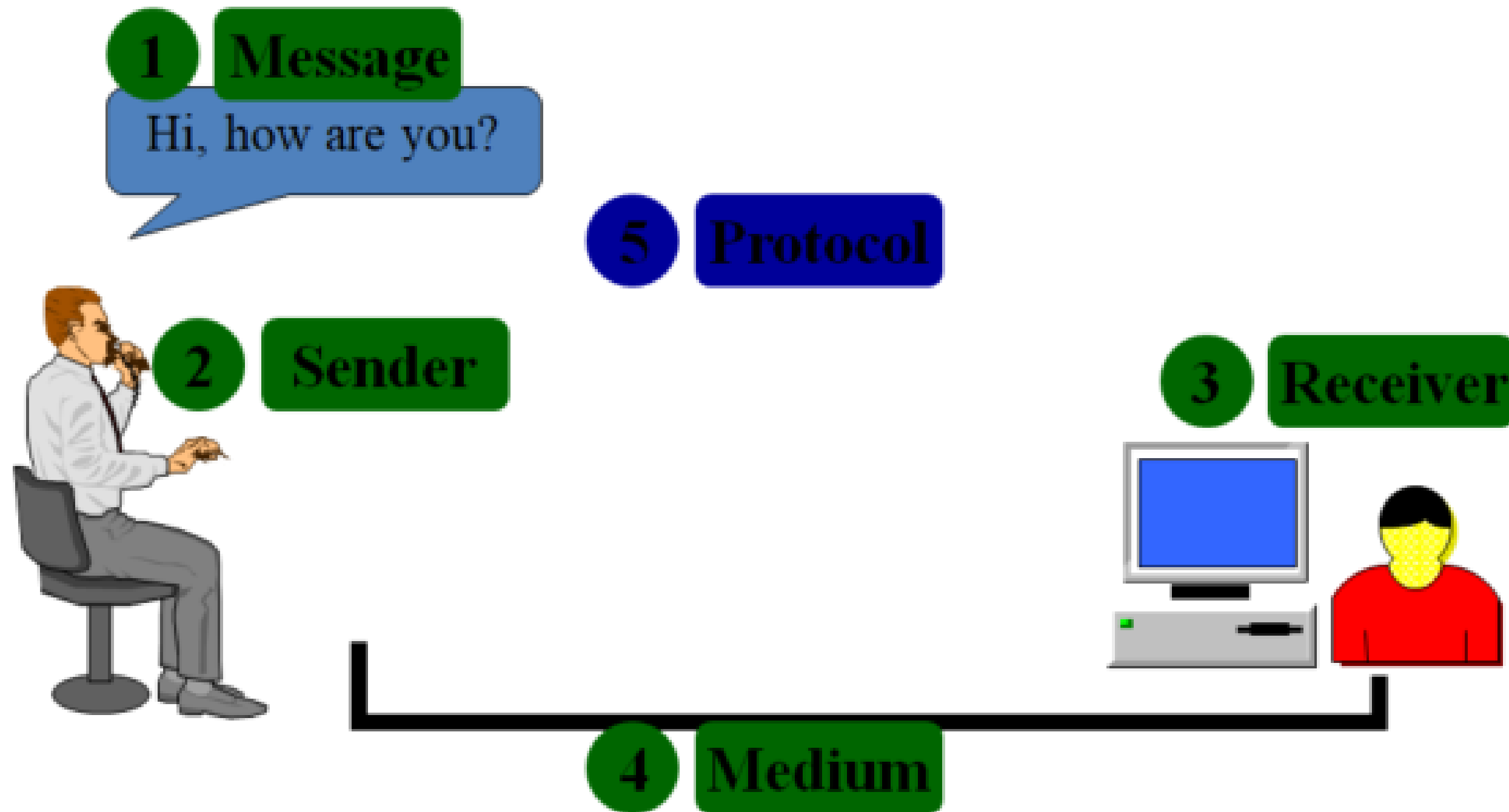


# DATA COMMUNICATION





# COMPONENTS IN COMMUNICATION





# DATA REPRESENTATION



## Numbers

8/16/32 bit integers  
floating point

## Text

ASCII, Unicode

## Images

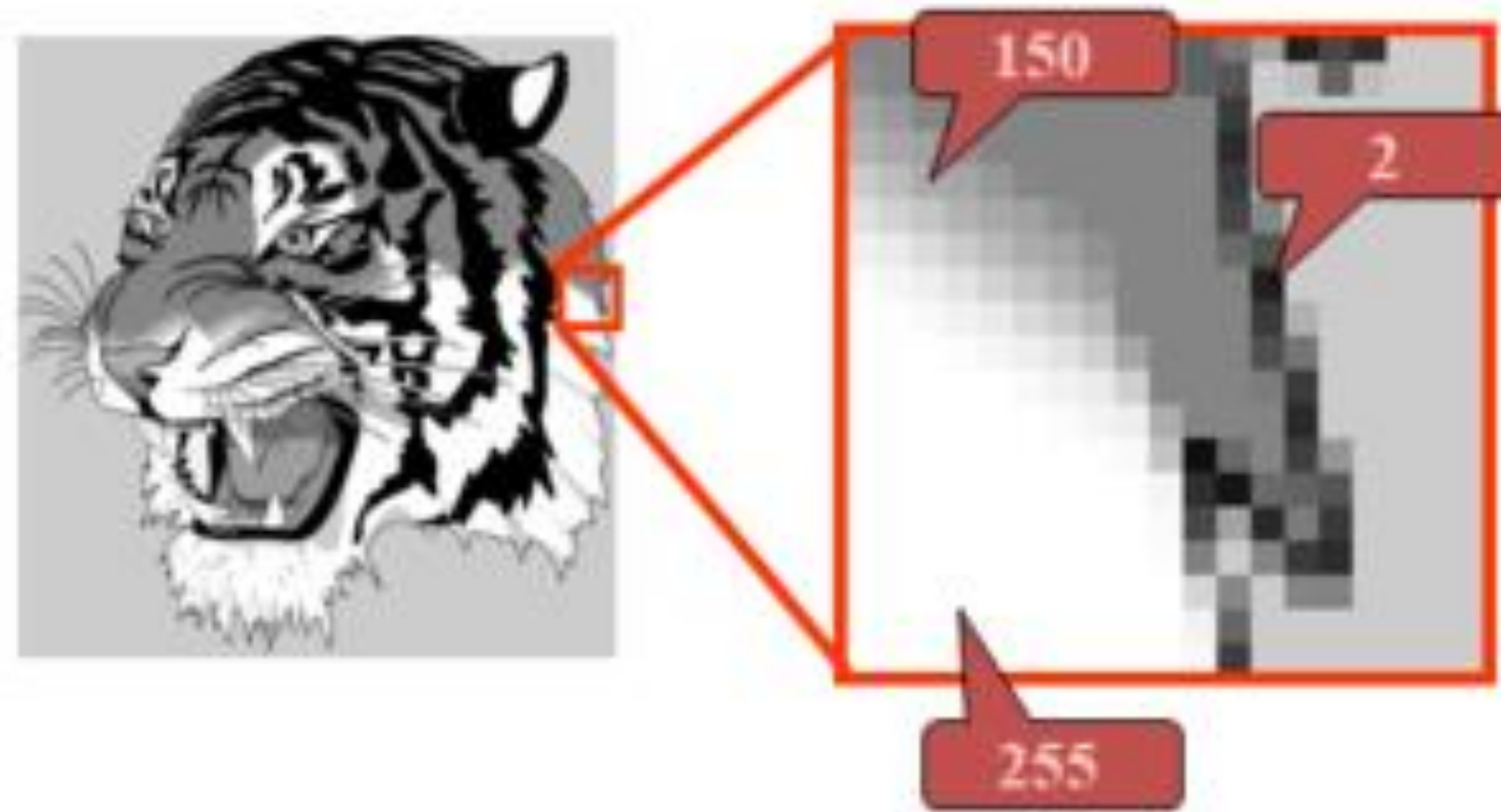
Bit patterns, Graphics formats JPG/GIF/etc

**Audio** → Samples of continuous signal

**Video** → Sequence of bitmap images



# DATA REPRESENTATION





# PROTOCOLS



## Protocol

A set of rules governing data communications

**Syntax:** format of data block

**Semantics:** meaning of each section

**Timing:** speed and sequencing



# STANDARDS ORGANIZATIONS



## Creation Committees

ISO, ITU-T, ANSI, IEEE, EIA

## Forums

## Regulatory Agencies

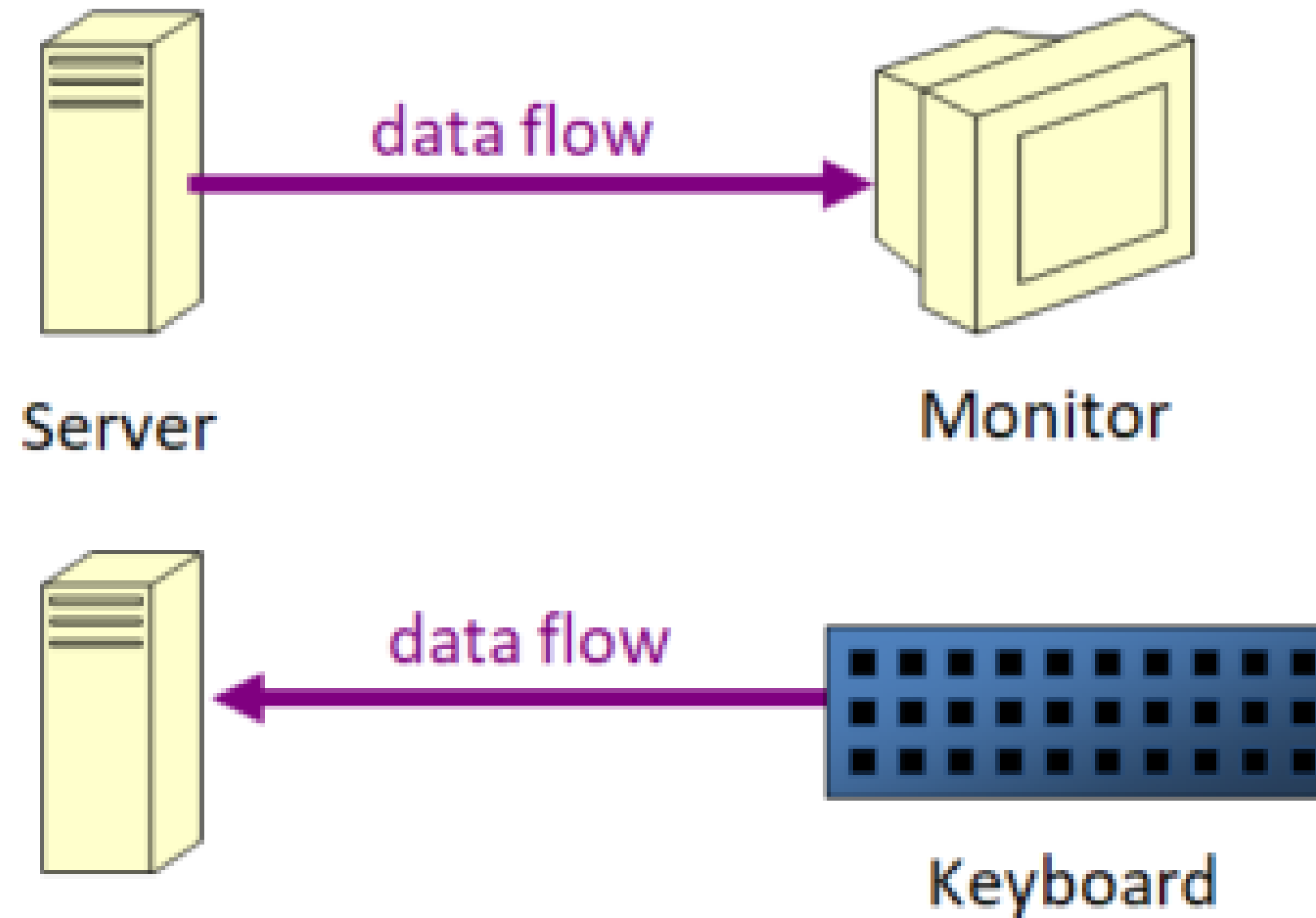




# DIRECTION OF DATA FLOW



**Simplex:** One direction only

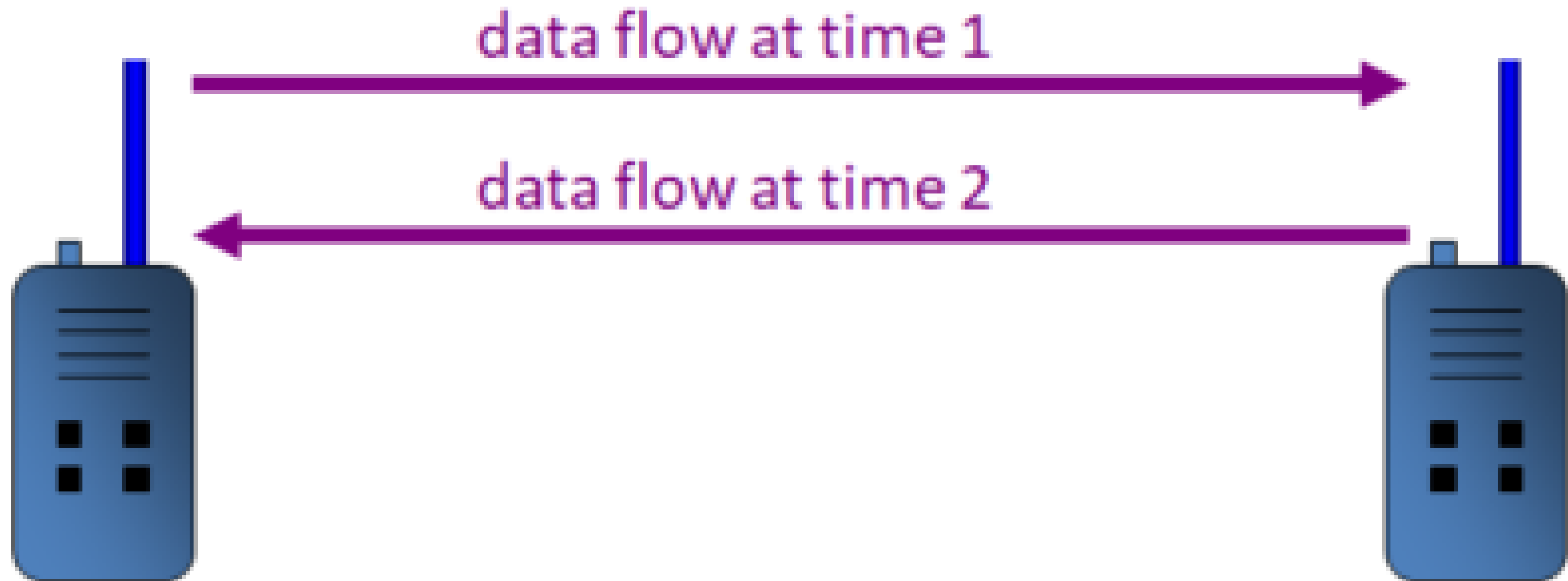




## DIRECTION OF DATA FLOW



**Half Duplex:** Both directions, one at a time

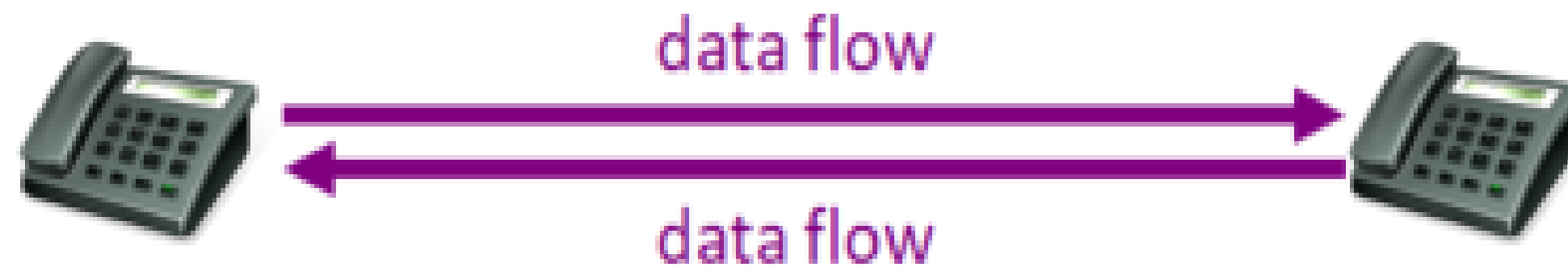




## DIRECTION OF DATA FLOW



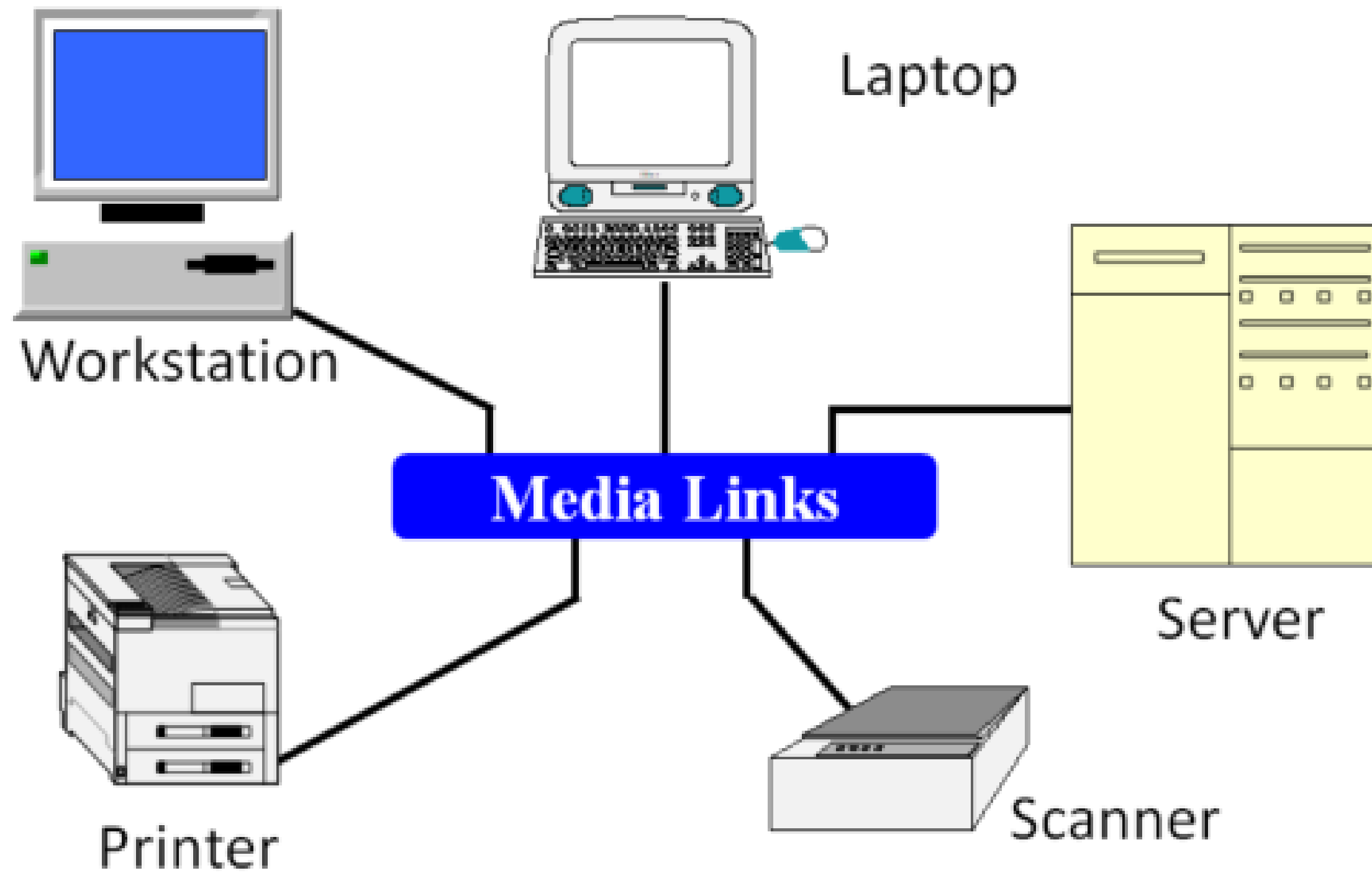
**Full Duplex:** Both directions simultaneously



– E.g., telephone



# NETWORKS





**THANK YOU**