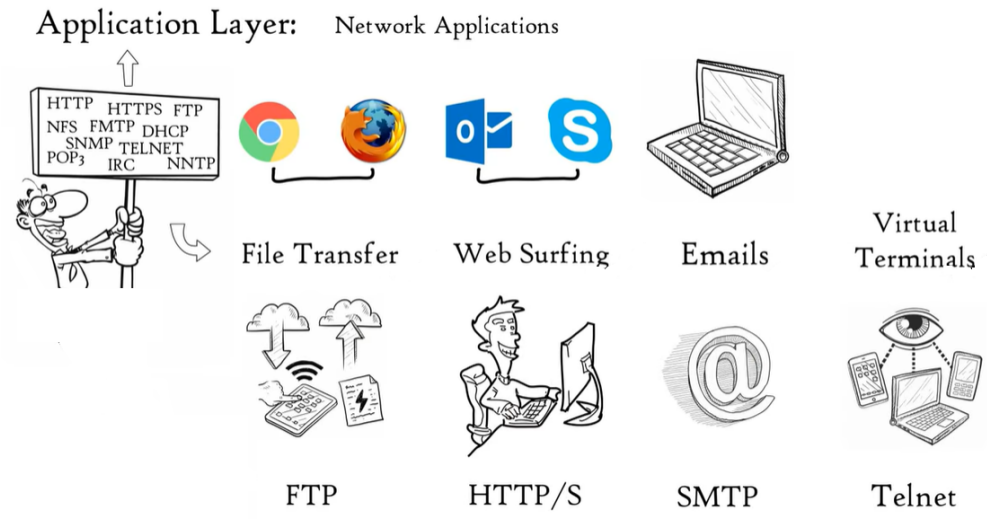
OSI model - Open System Interconnection

Simplest network: LAN cable and NIC cards

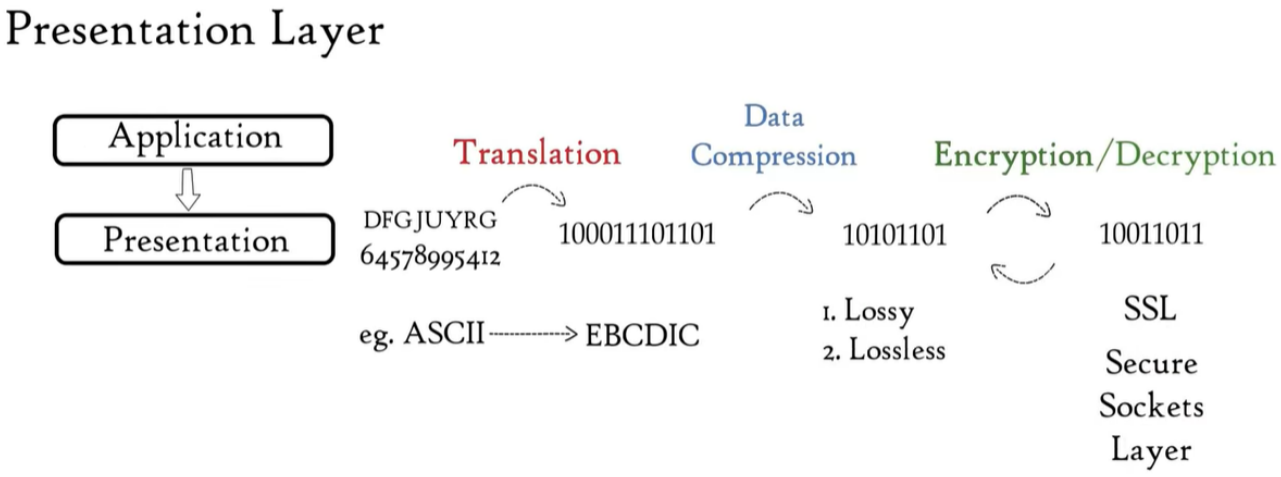
Please (Physical Layer)
Do (Data Link Layer)
Not (Network Layer)
Tell (Transport Layer)
Secret (Session Layer)
Password (Presentation Layer)
Anyone (Application Layer)

7 layers:

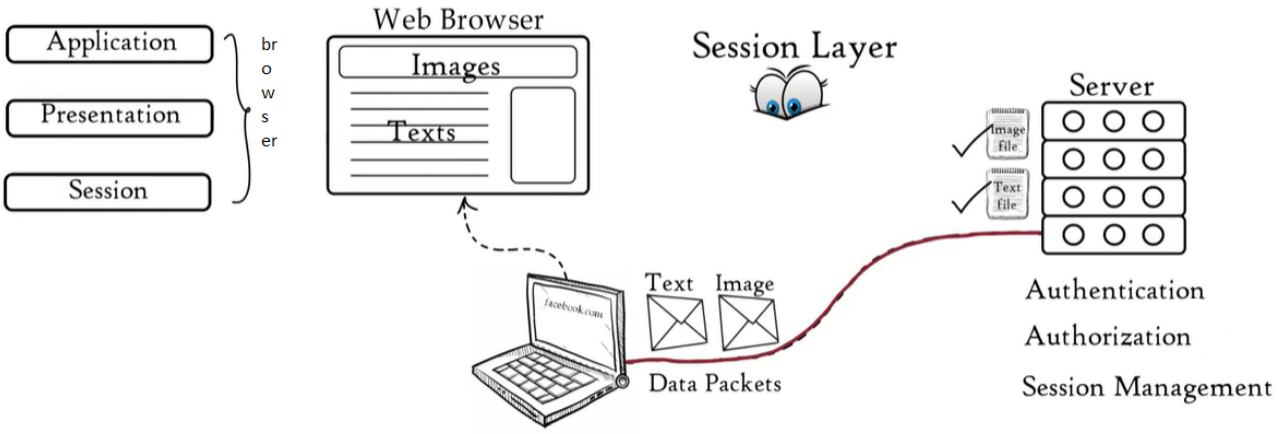
- **Application Layer**



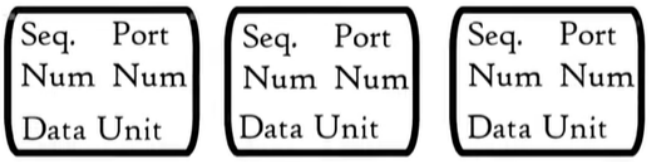
- **Presentation Layer**
  Receives info from Application layer.



- **Session Layer**
- **Transport Layer**

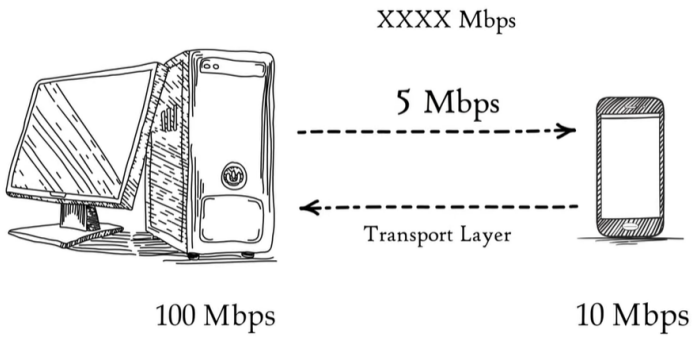


– *Segmentation*
Info received from Session layer is divided into segments.



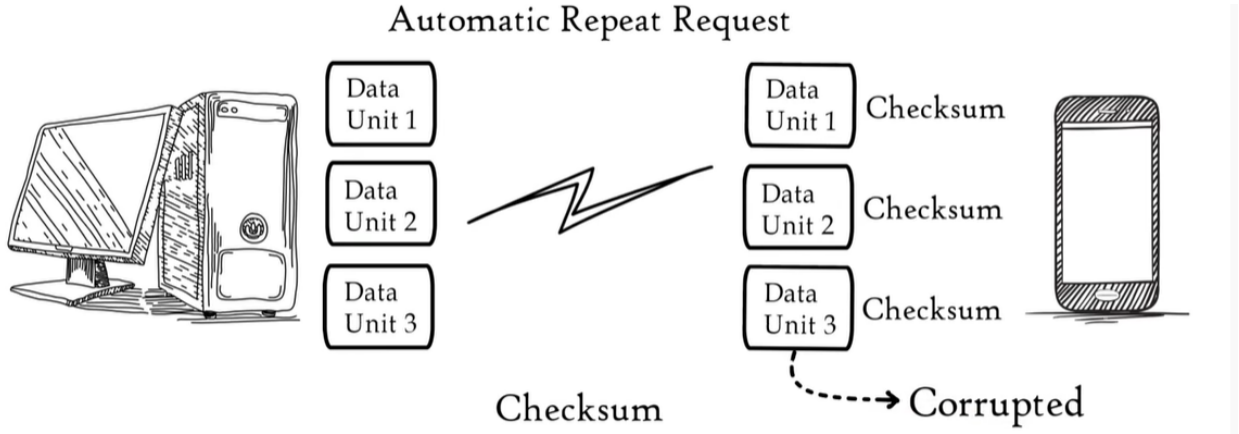
Port number - for correct application
Sequence number - for correct order of data segments

– *Flow control*
Controls the amount of data being transmitted.



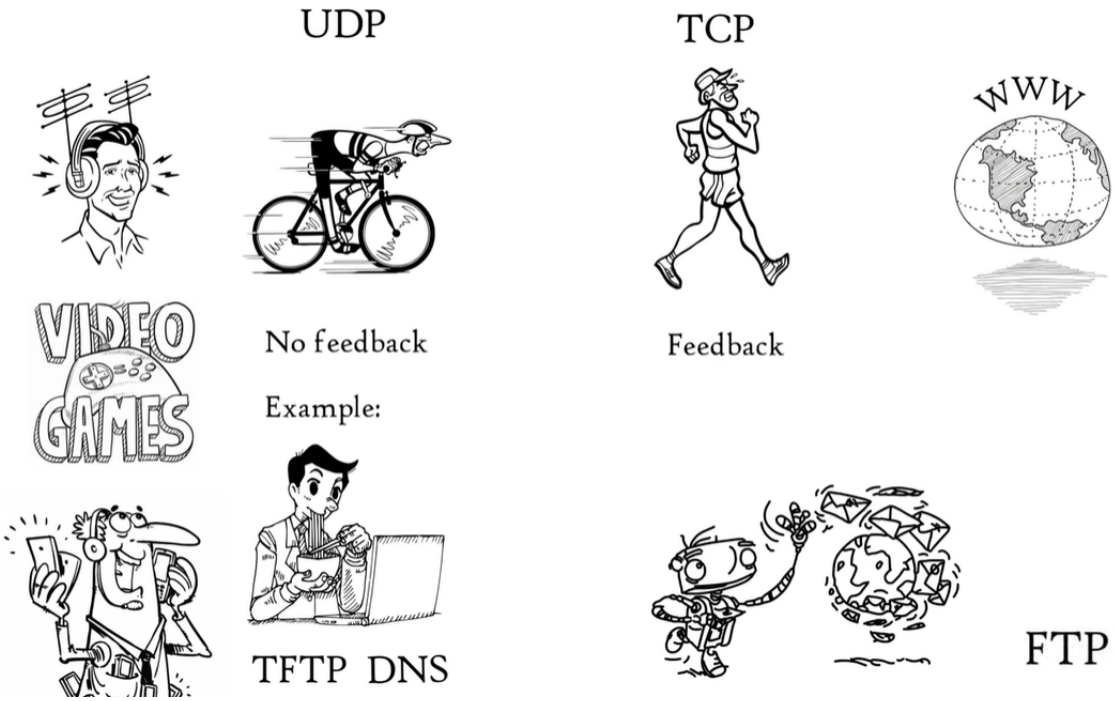
Transport layer can decrease or increase Mbps due to how much device can process.

– *Error control*
If some data is missing or corrupted, Transport layer uses Automatic Repeat Request.

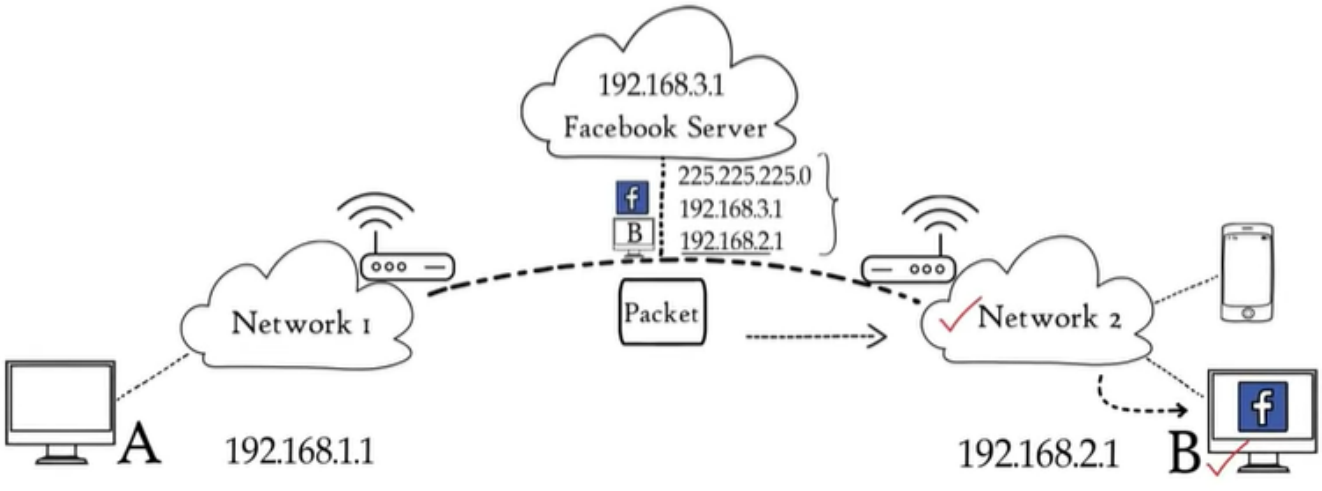


– *TCP/UDP protocols*

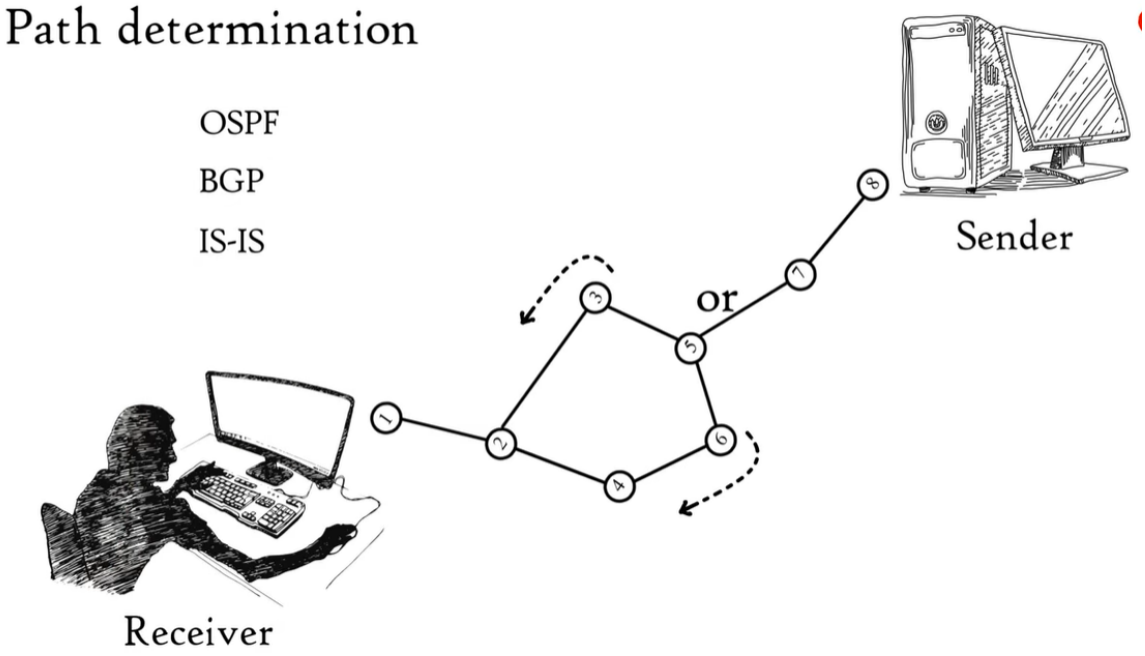
Services:	Protocols:
- Connection-oriented Transmission	Transmission Control Protocol (TCP)
- Connectionless Transmission	User Datagram Protocol (UDP)



- **Network Layer**
  Works for the transmission of received data segments from one computer to another located in different networks. Data units in the Network layer are called **Packets**.
  - *Logical addressing* - IPv4 & IPv6 & mask
    Network layer assigns sender and receiver IP addresses to each segment to form an IP packet - to be sure that the data reaches the correct destination.
  - *Routing*
    Method to move packets from source to destination.



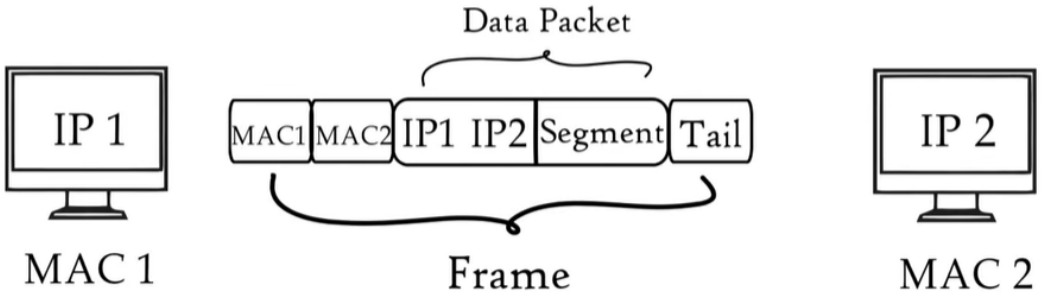
  - *Path determination*



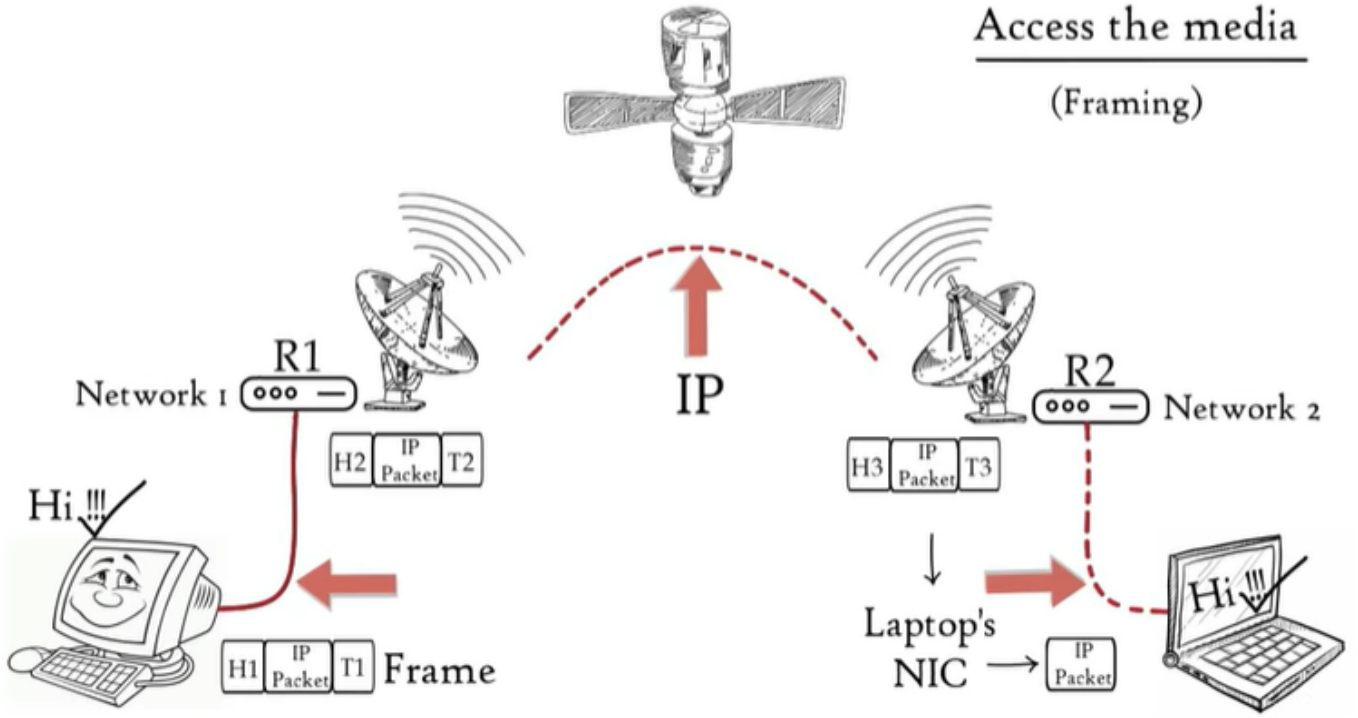
- **Data Link Layer**
  Receives data packet from Network layer.

  - Logical addressing : Network layer

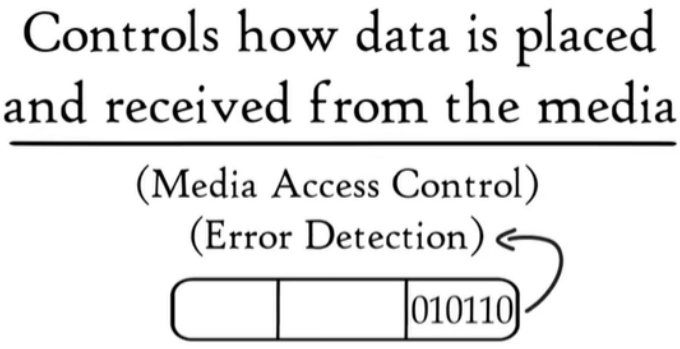
  - Physical addressing : Data Link layer

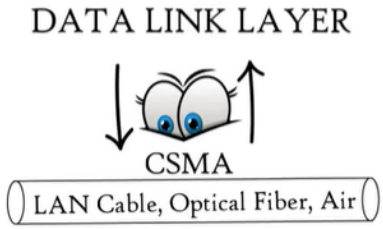


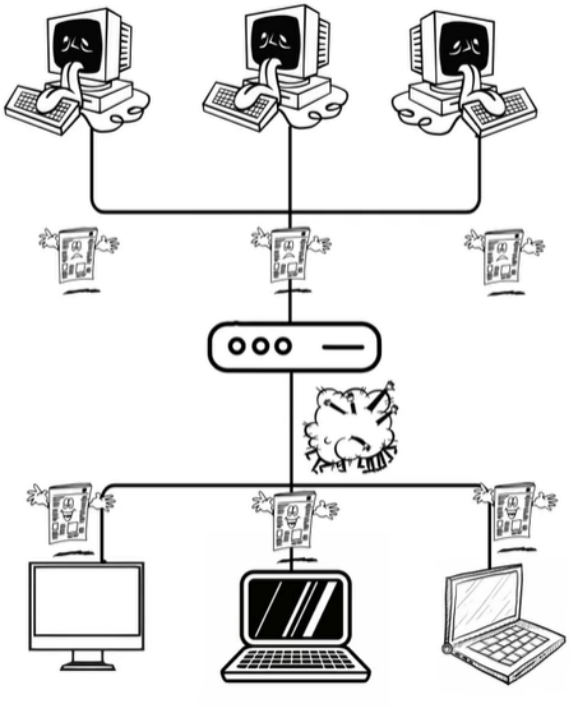
  – *Access the media* - framing



– *Controls how data is received and placed*
Avoid collisions.







- Physical Layer

Physical Layer