

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)

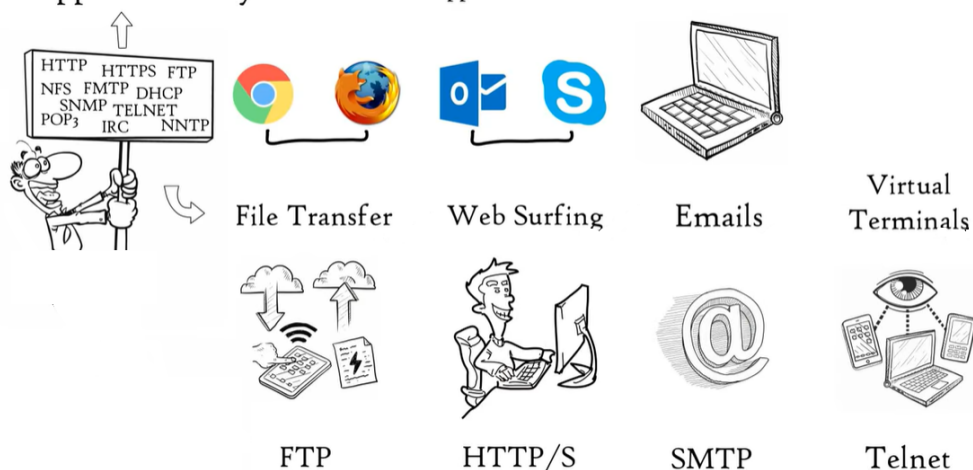
Password (Presentation Layer)

Anyone (Application Layer)

7 layers:

- **Application Layer**

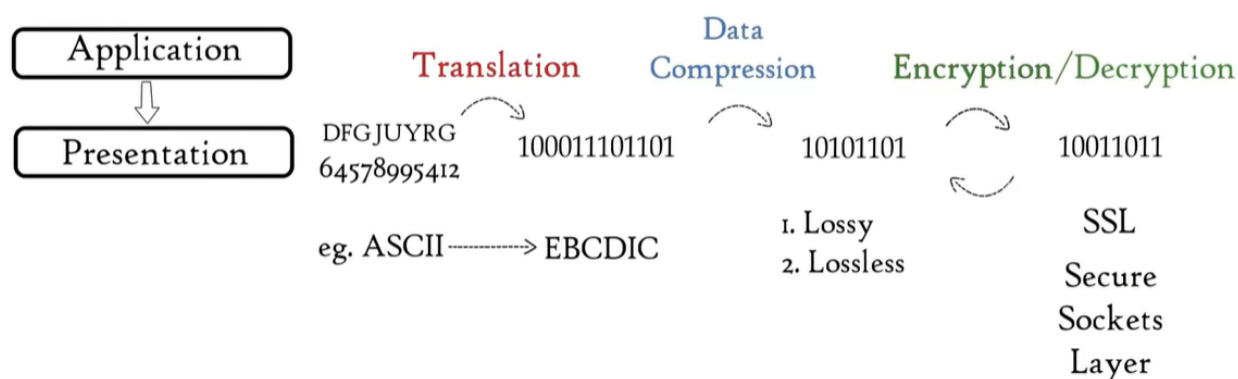
Application Layer: Network Applications



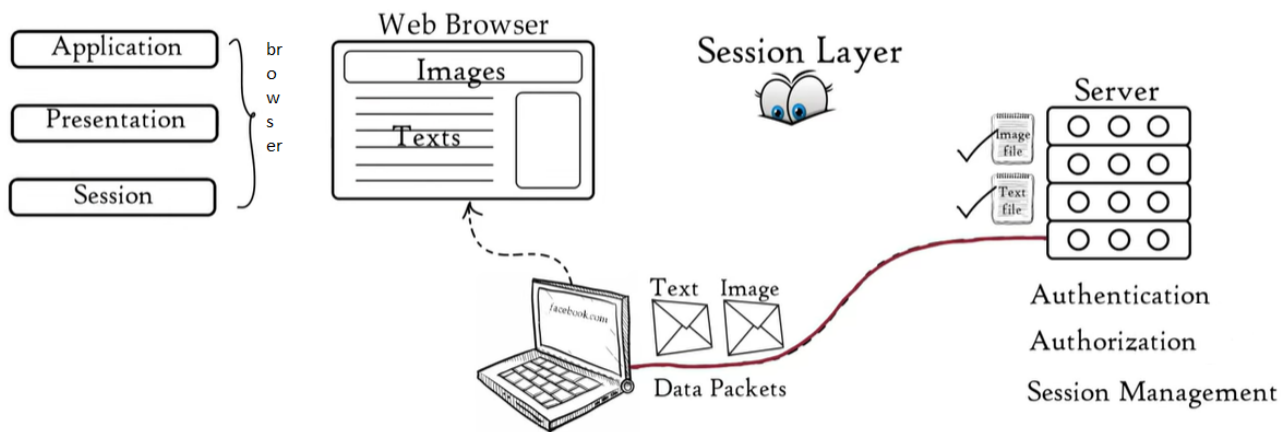
- **Presentation Layer**

Receives info from Application layer.

Presentation Layer



- **Session Layer**



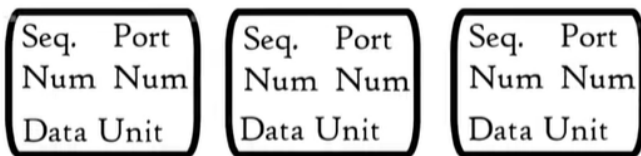
• Transport Layer

– *Segmentation*

Info received from Session layer is divided into segments.

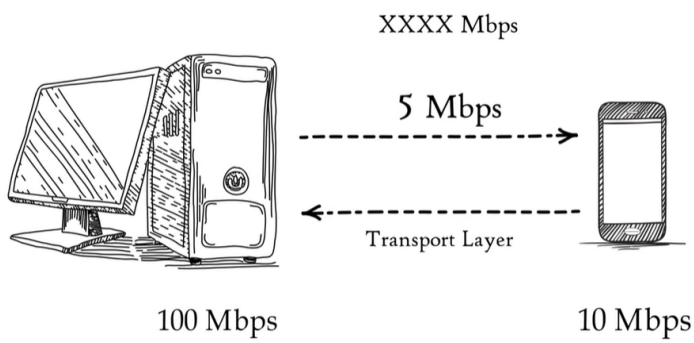
Port number - for correct application

Sequence number - for correct order of data segments



– *Flow control*

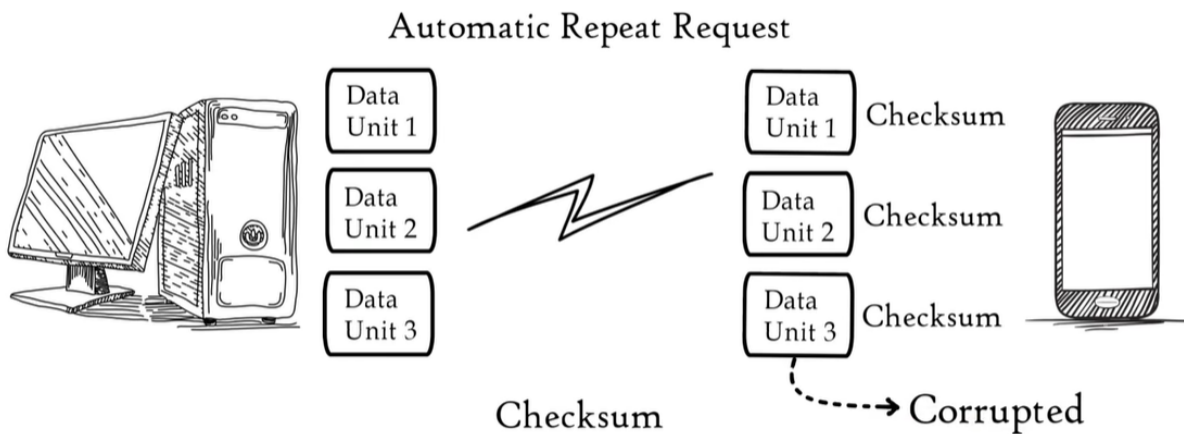
Controls the amount of data being transmitted.



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.

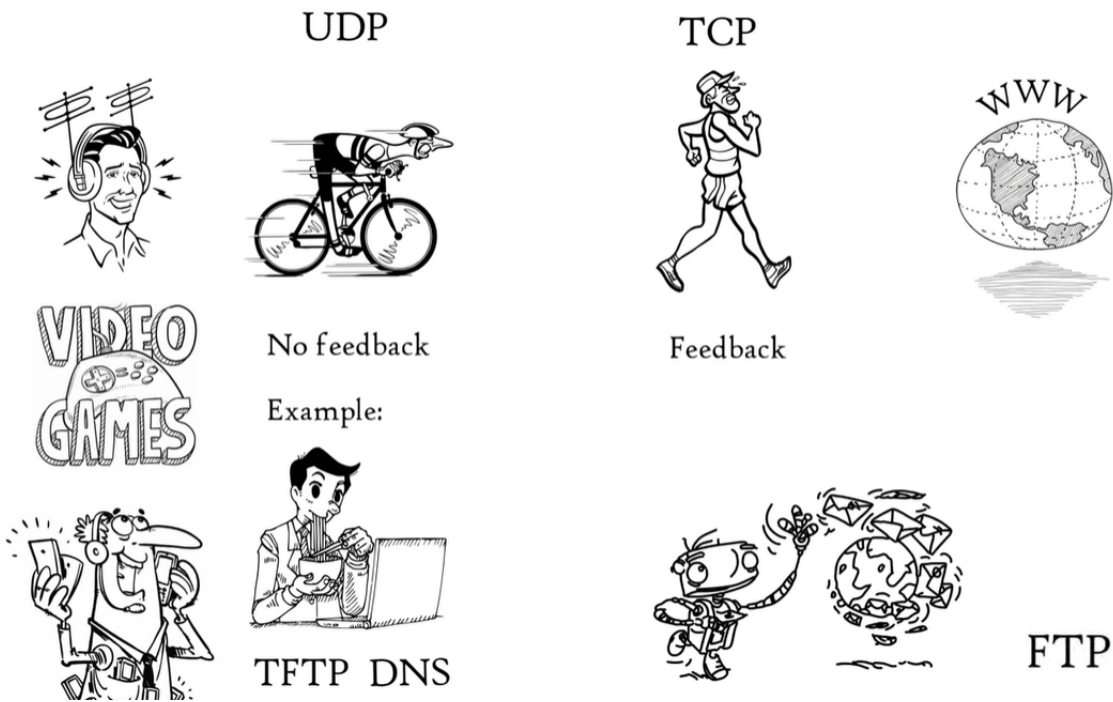


– *TCP/UDP protocols*

Services:

Protocols:

- Connection-oriented Transmission -----> Transmission Control Protocol (TCP)
- Connectionless Transmission -----> User Datagram Protocol (UDP)



- **Network Layer**

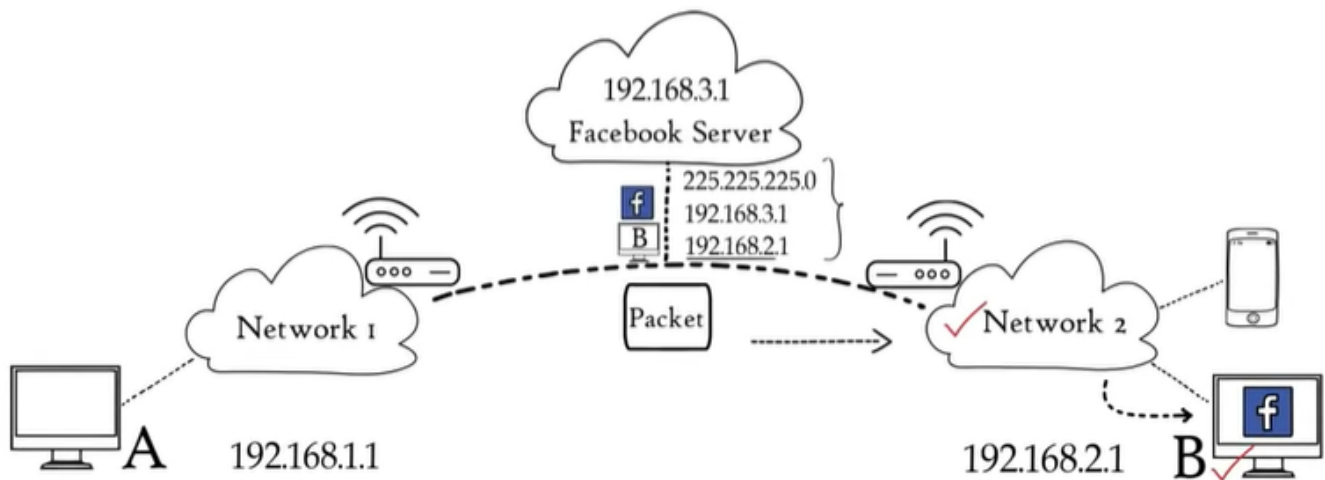
Works for the transmission of received data segments from one computer to another located in different networks. Data units in the Network layer are called **Packets**.

- *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.

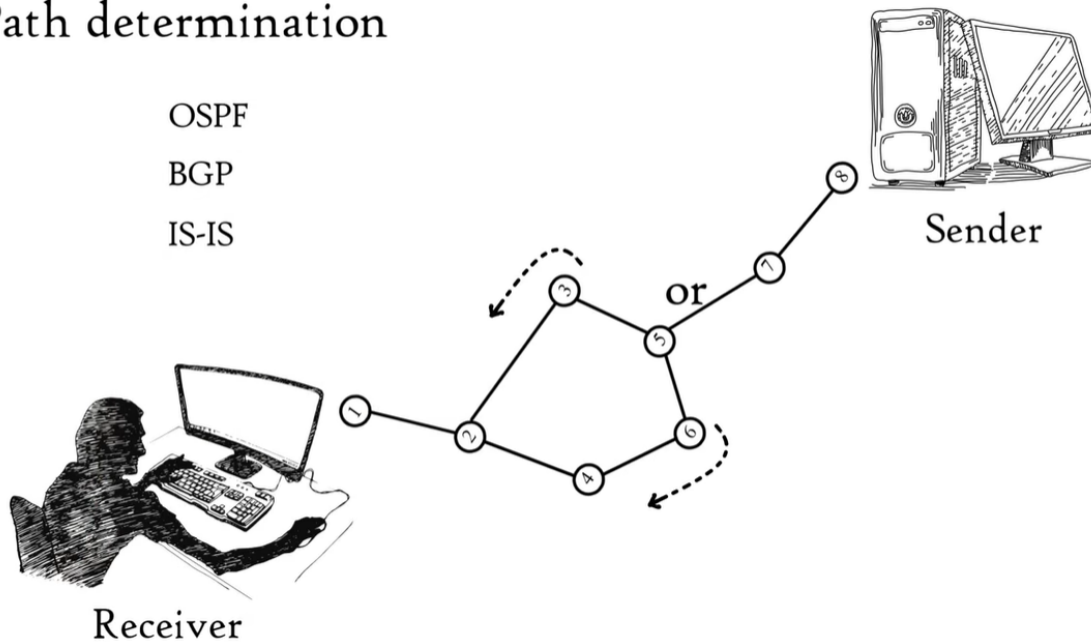
- *Routing*

Method to move packets from source to destination.



- *Path determination*

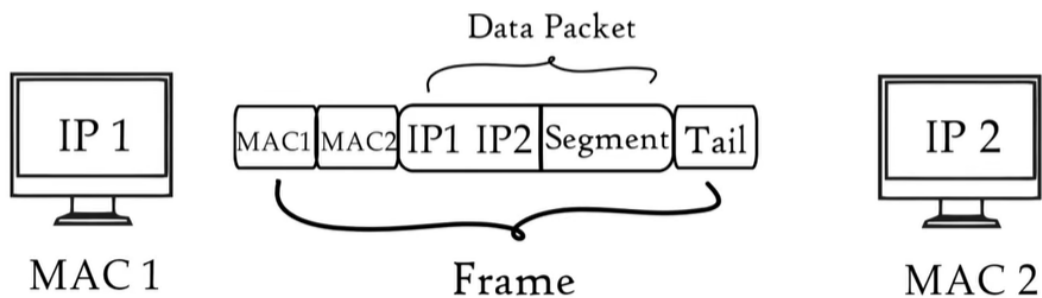
Path determination



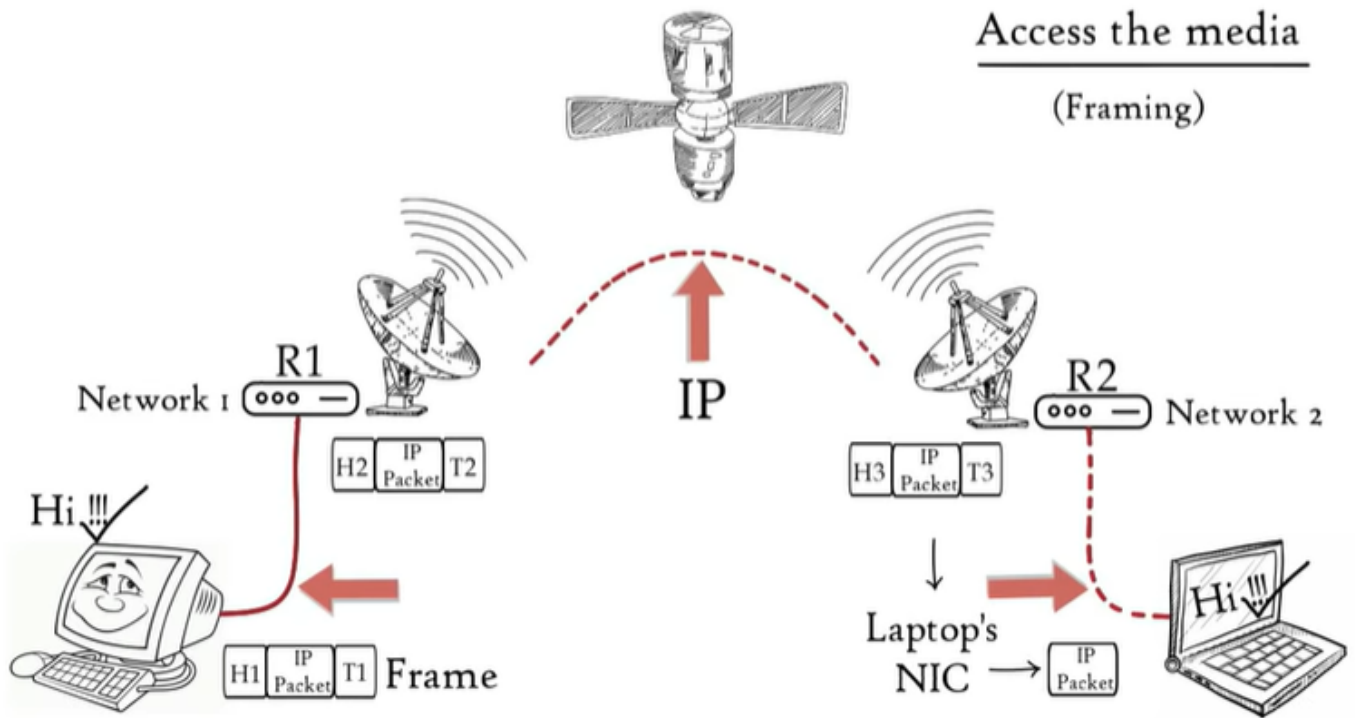
- **Data Link Layer**

Receives data packet from Network layer.

- Logical addressing : Network layer
- Physical addressing : Data Link layer



- *Access the media* - framing



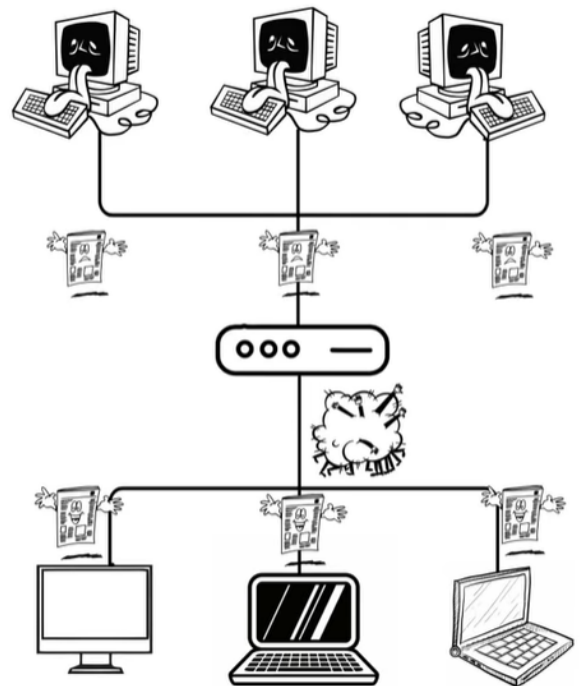
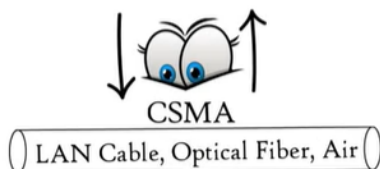
- Controls how data is received and placed
Avoid collisions.

Controls how data is placed and received from the media

(Media Access Control)
(Error Detection)



DATA LINK LAYER



- Physical Layer

Physical Layer

