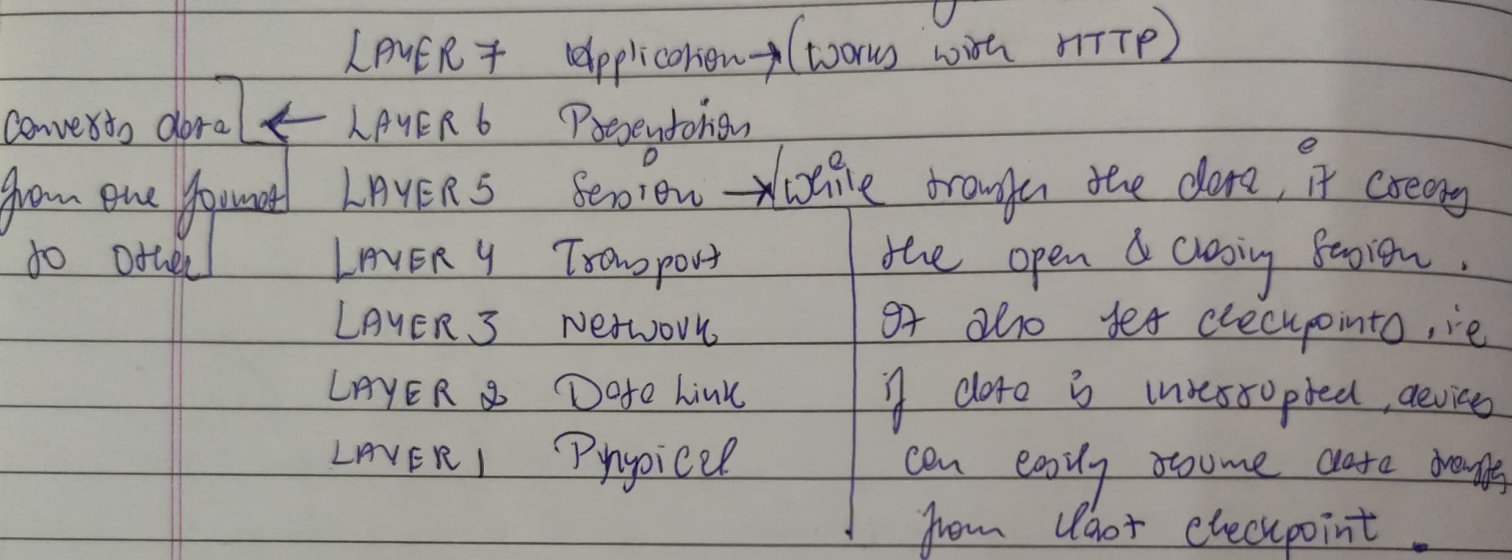


OSI MODELS

↳ Open Source Interconnects [OSI]

↓
adopted by ISO

International Organization
for Standardization



LAYER 4: TRANSPORT

manages data transfer across network connections or hosts.
It segments the data into diff. portion/parts.
After coming back from the stack, the Transport layer
is responsible for reassembling segmented data, so
that it will readable by session layer.

LAYER 3: NETWORK

Manages the routing of the data. Identify the hosts.

LAYER 2: DATA LINK LAYER

Divided into two sub layer: MAC & LLC

Controls how devices
on network gain access to
medium & transmit data.

(media
access control)

(logical link
control)

Manages the Error

LAYER 1: PHYSICAL LAYER

Responsible for the transmission of raw bitstreams [0s & 1s]

Converts digital data
into electrical, optical or radio
signals

• KEY FUNCTIONS:

- medium specification
- determine how fast data is transmitted
- Convert bit into signal form

#

Advantages of the OSI model

- Standardized model,
- Clearly defines which parts of network their component should work with
- Communication process is clear

#

SHORT FORMS:

MIME: Multipurpose
Interconnected mail
Extensions

PPP: Point to Point
Protocol

APPLICATION	HTTP
PRESENTATION	MIME
SESSION	SSL
TRANSPORT	TCP, UDP
NETWORK	IP
DATA LINK	PPP
PHYSICAL	Ethernet

TCP/IP MODEL :

It was created 1970s by [Defense Advanced Research Project Agency] DARPA. Like the OSI model it tell the designing & implementing computer protocols. It consist of 4 layers.

APPLICATION	TRANSPORT	Session, Presentation, Application
TRANSPORT	NETWORK	Transport layer
	INTERNET	Network layer
	NETWORK ACCESS	Physical, Data link layer

LAYER 1: NETWORK ACCESS

define or manages the protocols on hardware across physical network.

LAYER 2: INTERNET

define the protocols for logically transferring of data over the network.

LAYER 3: TRANSPORT

Reliable transmission of data & error free delivery of packets.

LAYER 4: APPLICATION

Define the protocols for the peer-to-peer communication application & provide services to application software.

- TCP sends data as byte & msg is transmitted to segments
- UDP send individual & on arrival are checked for integrity

TCP VS UDP :



User Datagram Protocol

or

Universal Datagram Protocol

• Transmission
Control
protocol

e.g. Video games

e.g. Email.

• Connection
oriented

• Connectionless

• Here, message makes its way across internet from one computer to another. This is connection based.

• Here one can send the multiple packet which would be the end of the relationship.

• Fixed order

• No fixed order

• TCP is slow than UDP as it uses both error detection & recovery.

• It is fast bec. error recovery is not attempted. It is "BEST EFFORT" PROTOCOL.

• Header size is 20 bytes

• Header size is 8 bytes

• Heavyweight as it contain 3 packets to setup connection

• It is lightweight as it doesn't contain such setup.

• HANDSHAKE like SYN, SYN+ACK, ACK

• No handshake

• POSITIVE ACKNOWLEDGE WITH RETRANSMISSION (PAR)

• "BEST EFFORT" protocol