DAY 5

SESSION LAYER

- Session layer is used to establish, maintain and synchronizes the interaction between communicating devices.

PRESENTAION LAYER

- Presentation layer is mainly concerned with the syntax and semantics of the information exchanged between the two systems.
- Responsible for encryption,dycryption and compression

APPLICATION LAYER

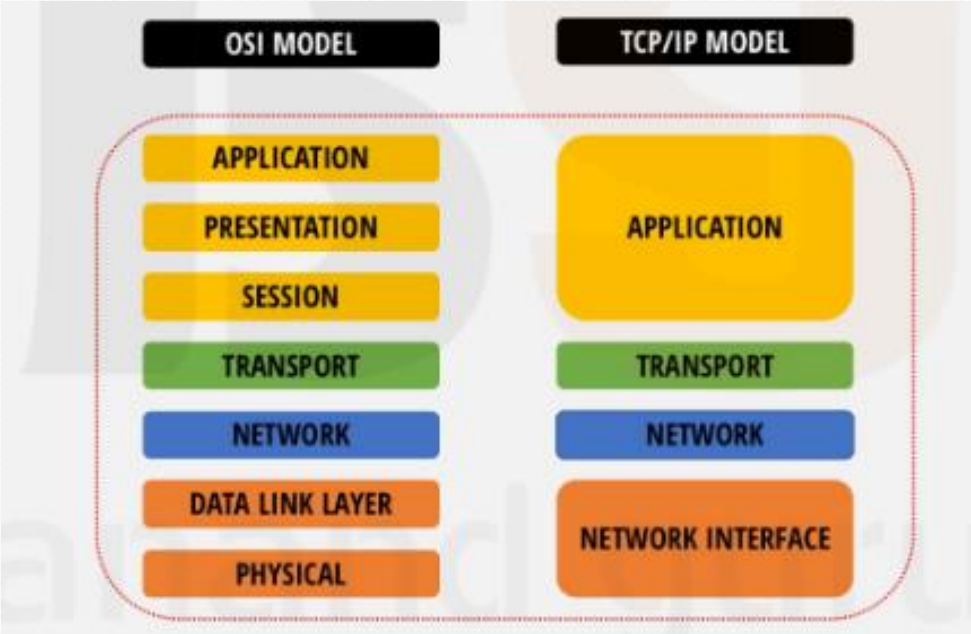
- Application layer serves as a window for users and application processes to access network service.
- This layer provides the network services to the end-users.

OSI MODEL WITH EXAMPLE

1. Sender uses an application like Outlook to compose and send the email. - **APPLICATION**
2. The email is encoded, encrypted (if enabled) and compressed. - **PRESENTATION**
3. The sending server initiates the connection with the receiving server. - **SESSION**
4. The entire email flows is done error free, receiving acknowledges. - **TRANSPORT**
5. Each packet will be routed from sender email server to recipient email server. - **NETWORK**
6. Node to Node transmission happens using next hop's MAC address. - **DATA LINK LAYER**
7. All the data is transmitted as bits through cables or wireless signals. - **PHYSICAL**

One the recipients side, the data moves from cable to users machine, where the presentation layer will take care of decoding, decrypting and decompressing the data. Finally the Outlook application will display the message to the recipient

TCP/IP MODEL


OSI MODEL
TCP/IP MODEL
APPLICATION
PRESENTATION
SESSION
TRANSPORT
NETWORK
DATA LINK LAYER
PHYSICAL
APPLICATION
TRANSPORT
NETWORK
NETWORK INTERFACE

COMMONLY USED PORT NUMBERS

Protocol	Service	Port Number
FTP	File Transfer Protocol	20, 21
Telnet	Telnet	23
SSH	Secure Shell	22
SMTP	Simple Mail Transfer Protocol	25
DNS	Domain Name System	53
DHCP	Dynamic Host Configuration Protocol	67, 68
HTTP	Hyper Text Transfer Protocol	80
POP3	Post Office Protocol	110
NTP	Network Time Protocol	123
NetBIOS	NetBIOS Name Service	135 - 139
IMAP	Internet Message Access Protocol	143

Protocol	Service	Port Number
SNMP	Simple Network Management Protocol	161, 162
LDAP	Lightweight Directory Access Protocol	389
HTTPS	Secure Hyper Text Transfer Protocol	443
MS SQL	Microsoft SQL	1433
MySQL	mySQL Database	3306
RDP	Remote Desktop Protocol	3389
Syslog	Used to send logs to remote server	514
TLS Syslog	Secure Syslog	6514
SFTP	Secure File Transfer Protocol	22
Secure SMTP	Secure Simple Mail Transfer Protocol	587

DIFFRENCE BETWEEN TCP AND UDP

TCP	UDP
Transmission Control Protocol	User Datagram Protocol
Connection Oriented	Connection Less
Acknowledgement for each packet transmitted	No Acknowledgement
Failed packets are retransmitted	No re-transmission
Guaranteed delivery	Best effort delivery
Reliable	Unreliable
TCP is slower	UDP is faster
Example: HTTP, HTTPS, SMTP, SSH etc.	Streaming Videos, VOIP Calls, Online Games etc.

ASSIGNMENTS

- PROTOCOLS USED IN EACH LAYER
- WRITE A NOTE ON TCP/IP MODEL
- COMMONLY USED PORT NUMBER AND USES OF THAT

THANK YOU