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OSI MODEL (open system interconnection): This set of rules that explains how different computer systems communicate over a network.

7 types of layer:

--Physical Layer
--Data Link Layer
--Network Layer
--Transport Layer
--Session Layer
--Presentation Layer
--Application Layer

1.physical layer:

Physical Layer is responsible for the actual physical connection between the devices.
The physical layer contains information in the form of bits.

Real time example:
Wi-Fi router,ethernet cable,optical fiber

2.Data link layer:

The data link layer is responsible for the node-to-node delivery of the message.
Data link layer is to make sure data transfer is error-free from one node to another.

Functions of the Data Link Layer:

Framing: Framing is a function of the data link layer. It provides a way for a sender to transmit a set of bits that are meaningful to the receiver.

Physical Addressing: After creating frames, the Data link layer adds physical addresses (MAC addresses) of the sender and/or receiver in the header of each frame.

Error Control: The data link layer provides the mechanism of error control in which it detects and retransmits damaged or lost frames.

Flow Control: The data rate must be constant on both sides else the data may get corrupted thus, flow control coordinates the amount of data that can be sent before receiving an acknowledgment.

3.Network layer:

The network layer works for the transmission of data from one host to the other located in different networks.

Real time example:
sending an email from your computer to a friend's computer across the internet. The network layer is responsible for figuring out how to get that email from your computer, through various routers and networks, to your friend's computer. It does this by using IP addresses to route the data packets.

4.Transport Layer:

The transport layer provides services to the application layer and takes services from the network layer.

The data in the transport layer is referred to as Segments.
It is responsible for the end-to-end delivery of the complete message.

Protocols used in Transport Layer :TCP, UDP NetBIOS, PPTP.

5.Session Layer:

Session Layer in the OSI Model is responsible for the establishment of connections, management of connections, terminations of sessions between two devices.

It also provides authentication and security.

Protocols used in the Session Layer:NetBIOS, PPTP.

6.Presentation Layer:

The presentation layer is also called the Translation layer.

The data from the application layer is extracted here and manipulated as per the required format to transmit over the network.

Protocols used in the Presentation Layer: TLS/SSL (Transport Layer Security / Secure Sockets Layer).JPEG, MPEG, GIF.

7.Application Layer:

The Application layer which is implemented by the network applications.

Applications produce the data to be transferred over the network.

Protocols used in the Application layer:SMTP, FTP, DNS.