Computer Networks Home Assignment Lab # 4

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What is OSI Model? – Layers of OSI Model

OSI stands for Open Systems Interconnection. It was developed by ISO – 'International Organization for Standardization', in the year 1984. It is a 7-layer architecture with each layer having specific functionality to perform. All these 7 layers work collaboratively to transmit the data from one person to another across the globe.

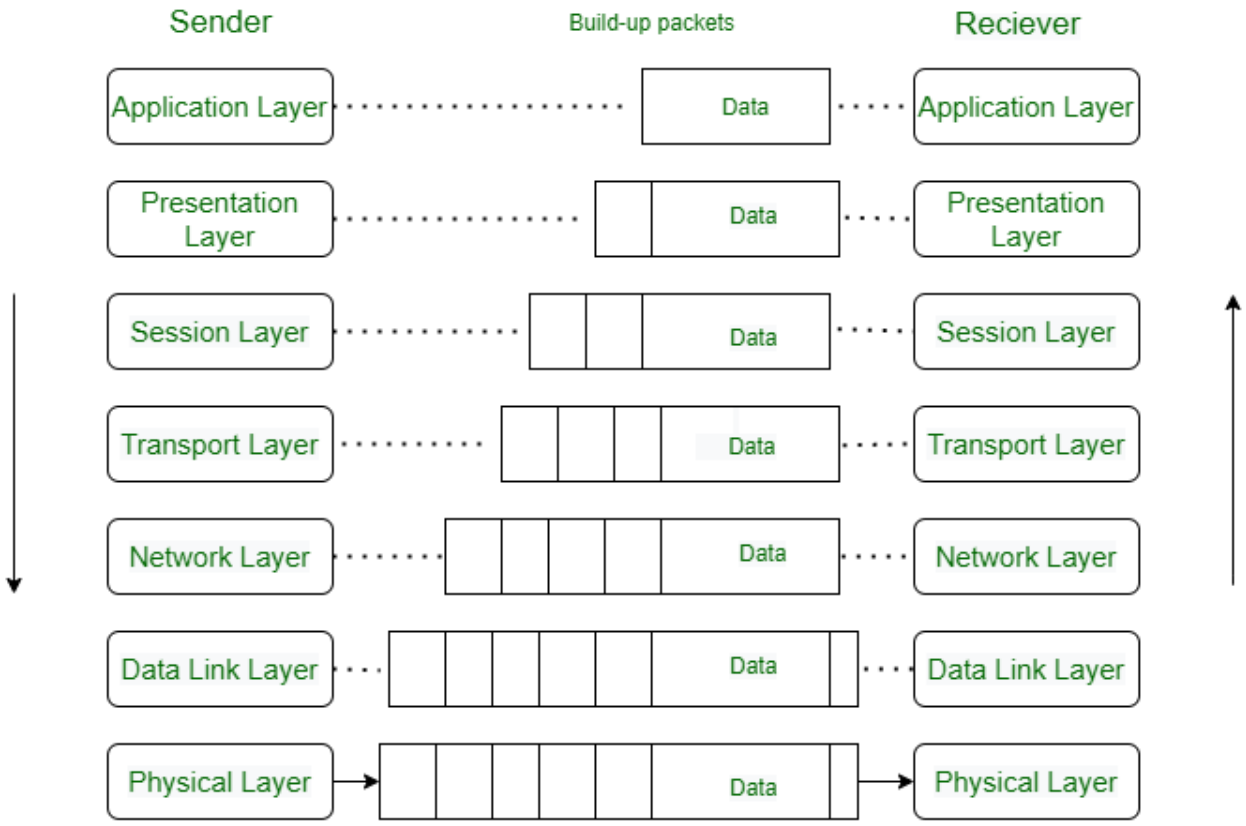

Figure 1: OSI Model

Layer No	Layer Name	Responsibility	Information Form (Data Unit)	Device or Protocol
7	Application Layer	Helps in identifying the client and synchronizing communication.	Message	SMTP
6	Presentation Layer	Data from the application layer is extracted and manipulated in the required format for transmission.	Message	JPEG, MPEG, GIF
5	Session Layer	Establishes Connection, Maintenance, Ensures Authentication, and Ensures security.	Message	Gateway
4	Transport Layer	Take Service from Network Layer and provide it to the Application Layer.	Segment	Firewall
3	Network Layer	Transmission of data from one host to another, located in different networks.	Packet	Router
2	Data Link Layer	Node to Node Delivery of Message.	Frame	Switch, Bridge
1	Physical Layer	Establishing Physical Connections between Devices.	Bits	Hub, Repeater, Modem, Cables

Table 1: OSI Model Layers

Parameters	OSI Model	TCP/IP Model
Full Form	OSI stands for Open Systems Interconnection.	TCP/IP stands for Transmission Control Protocol/Internet Protocol.
Layers	It has 7 layers.	It has 4 layers.
Usage	It is low in usage.	It is mostly used.
Approach	It is vertically approached.	It is horizontally approached.
Delivery	Delivery of the package is guaranteed in OSI Model.	Delivery of the package is not guaranteed in TCP/IP Model.
Replacement	Replacement of tools and changes can easily be done in this model.	Replacing the tools is not easy as it is in OSI Model.
Reliability	It is less reliable than TCP/IP Model.	It is more reliable than OSI Model.

Table 2: Comparison of OSI Model and TCP/IP Model