

20CT1112 - Computer Networks

Assignment 1

Q. Describe OSI Model using your own example

A. OSI Model: The following are the components of the OSI Model.

7	Application Layer	Human-computer interaction layer, where applications can access the network services
6	Presentation Layer	Ensures that data is in a usable format and is where data encryption occurs
5	Session Layer	Maintains connections and is responsible for controlling ports and sessions
4	Transport Layer	Transmits data using transmission protocols including TCP and UDP
3	Network Layer	Decides which physical path the data will take
2	Data Link Layer	Defines the format of data on the network
1	Physical Layer	Transmits raw bit stream over the physical medium

My example for the OSI Model is Postal Delivery System.

1. Physical Layer => Letter
2. Data Link Layer => Stamp on the letter
3. Network Layer => Postal Department
4. Transport Layer => Mail Compartments in Train
5. Session Layer => Postal Department in co-ordination with Transport authorities.
6. Presentation Layer => Placing a seal on letters
7. Application Layer => Post Office/Postman

Explanation:

- Physical Layer: The letter is the medium through which we transmit the message to be conveyed.
- Data Link Layer: We know that the data link layer defines the format in which the message is to be transmitted. This can be considered equivalent to stamp on postcard or letter which marks its validity or indicates that the post is eligible to be delivered.
- Network Layer: The network layer is responsible for choosing the path through which the data is delivered. The same can be said about the postal department as it decides the best route through which the message can be efficiently delivered.
- Transport Layer: The transport layer takes services from the Network layer and provides services to the Application layer. In the postal service system, this can be thought of as the actual transport i.e., the train or bus through which the transport of the data takes place while some actual protocols.
- Session Layer: maintains connections between two different postal departments and checks the no of post cards received.
- Presentation Layer: Since the presentation layer deals with encryption and decryption of data, a seal to the post card helps in protection of data as encryption and the data can be read by removing the seal acts as decryption of data.
- Application Layer: This can be thought of as the layer helps in user-services because we can access the postcards from post office to read the data (or) can send postcards to post office.