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DCN ASSIGNMENT

→ Explain all protocalls used in data link layer and its sub layers and physical layer with its numerical explanations.

A   Data link layer is second layer of OSI Layered Model. This layer is one of most complicated layer and has complex functionalities and liabilities.

Data link layer hides the details of underlying hardware and represents itself to upper layer as midium to communicate.

→ Data link layer has 2 sub-layer:

Logical link control : It deals with protocols, flow control, and error control.

Media Access Control : It deals with actual control of media.

Functionality of DataLink Layer:

→ **Framming :** Data link layer takes packet from Network layer and encapsulates them into frames. Then it sends each frame bit by bit on hardware.

→ **Addressing :** Data link layer provides layer 2 hardware addressing mechanism. Hardware address is assigned to be unique on the link.

→ **Synchronization :** When data frames are sent on the link both machines must be synchronized in order to transfer to take place.

→ **Error control :** Sometime singals may have encountered problem in transmission and the bit are flipped. These error are detected and attempted to recover actual data bits.

→ **Flow Control :** Stations on same link may have diff speed or capacity. Data link layer ensures flow control that enables both machines to exchange data on same speed.

→ **MultiAccess :** When host on the shared

link tries to transfer the data, it has high probability of collision. Datalink layer provide mechanism such as CSMA/CD to equit capability of accessing a shared media among multiple systems.

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