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Data Link Layer

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- The packets that we received from the Networking Layer are taken by the Data Link Layer.
- The data link layer is responsible for transporting the data packets to the physical layer.
- When a new device gets connected to a router, the router has a pool of IP Addresses. When a new device is recognized, that device first gets connected to a `DHCP server` and then there the device gets assigned a new IP Address.
- The devices connected in `LAN` communicate using the Data Link Layer Address.

Situation

- Few computers are connected together in a `LAN` system.

- Let's say we have PC_a which wants to send some data to PC_b.

- Now it will check if PC_b has the Data Link Layer Address. If yes then it will send the data to PC_b.

- If the data was not found then PC_a will ask all the computers connected in the LAN.

- This is known as `ARP Cache`.

- ARP Cache is known as `Address Resolution Protocol Cache`.

- The data link layer address is actually the `MAC Address`.

- The device itself does not have a MAC Address but its components have their own MAC Address.

- The Data Link Layer processes the data in the form of `Frames`.

- A frame contains the data link layer address of the sender and the IP Address of destination.

- The data link layer works very closely with the physical layer.

- MAC Address is a 12 digit alphanumeric string and is unique.

- MAC Address means Media Access Control Address.