**What is 5G Network Architecture**

**5G Network Architecture:**

- User Equipment (UE): Devices like smartphones, laptops, etc.

- Radio Access Network (RAN): 5G base stations (gNBs) that connect devices to the network.

- Next-Generation NodeB (gNB): 5G base stations that provide radio access.

- 5G Core Network (5GC): The brain of the network, responsible for authentication, routing, and billing.

- AMF (Access and Mobility Management Function): Manages device connectivity and mobility.

- SMF (Session Management Function): Manages data sessions and routing.

- UPF (User Plane Function): Handles data transfer and routing.

- Data Network (DN): External networks like the internet, IoT networks, etc.

**Key Features:**

- Network Function Virtualization (NFV): Allows for virtualized network functions.

- Software-Defined Networking (SDN): Enables centralized network control and management.

- Edge Computing: Enables data processing and analysis at the network edge.

**Key Characteristics:**

- Builds upon existing 4G LTE infrastructure

- 5G radio access network (RAN) is added to the existing 4G network

- Relies on the 4G core network (EPC) for essential functions

- Enables faster data speeds and lower latency compared to 4G

**How it Works:**

- A device connects to the 4G LTE network first

- If 5G is available, the device can use it for additional bandwidth

- Aggregate speed is the combination of 4G and 5G speeds