**3. What is BSS and ESS?**

**BSS (Basic Service Set)**

* The basic unit of a Wi-Fi network with a single Access Point and connected devices.
* Identified by a unique BSSID (MAC address of the Access Point).
* Can be infrastructure-based (with Access Point) or independent (ad-hoc, no Access Point).
* Communication stays within the range of one Access Point.
* Used in home networks and small setups.

**ESS (Extended Service Set)**

* A network with multiple Access Points working together to provide extended coverage.
* All Access Points share the same SSID, allowing seamless roaming.
* Uses a wired distribution system (like Ethernet) to interconnect Access Points.
* Covers larger areas like offices, campuses, and malls.
* Devices can switch between Access Points without disconnecting.