what is BSS and ESS?

1. BSS (Basic Service Set)

- A **BSS** is the **fundamental building block** of a Wi-Fi network.

- It consists of a **single access point (AP)** and the **devices (stations) connected to it**.

- Each BSS is identified by a unique **BSSID (Basic Service Set Identifier)**, which is usually the **MAC address** of the access point.

Types of BSS:

- **Independent BSS (IBSS)**: A peer-to-peer **ad hoc network** without an access point.

- **Infrastructure BSS**: Uses an **access point (AP)** to manage connections.

2. ESS (Extended Service Set)

- An **ESS** is a collection of multiple **BSSs** connected through a common **distribution system (DS)** (e.g., a wired network).

- It enables **seamless roaming** between access points.

- Identified by an **SSID (Service Set Identifier)**, which is the **Wi-Fi network name** seen by users.