**10. List down the Wi-Fi topologies and use cases of each one.**

**Star Topology:**

* + This is the most common Wi-Fi topology. All devices connect to a central access point (AP) or router.
  + The AP acts as a hub, managing communication between all connected devices.

**Use Cases:**

* + **Home networks:** Where all devices (laptops, smartphones, smart TVs) connect to a home router.
  + **Office networks:** Where employees' devices connect to centrally located access points.
  + **Public Wi-Fi hotspots:** In cafes, airports, and hotels, where users connect to a central AP for internet access.

**Mesh Topology:**

* + In a mesh network, devices (nodes) connect to each other directly, as well as to the AP.
  + This creates a redundant network where data can take multiple paths to reach its destination.
  + This is very good for expanding coverage.

**Use Cases:**

* + **Large homes or buildings:** To eliminate dead zones and provide consistent Wi-Fi coverage.
  + **Outdoor areas:** Such as parks or campuses, where it's difficult to run cables to multiple access points.
  + **Industrial environments:** Where reliable and robust wireless connectivity is essential.
  + **Smart city applications:** for city wide wireless coverage.