TASK:Difference between wired and wireless connection.

1. **Physical Connection:**
    - Wired: Utilizes physical cables to establish a connection between devices.
    - Wireless: Establishes connections through electromagnetic signals, typically via Wi-Fi, Bluetooth, or cellular networks, without the need for physical cables.
2. **Speed:**
    - Wired: Generally offers faster and more consistent data transfer speeds compared to wireless connections. This is especially true for technologies like Gigabit Ethernet.
    - Wireless: Speeds can vary depending on factors like distance from the router, interference, and the specific wireless technology used (e.g., Wi-Fi 5, Wi-Fi 6).
3. **Reliability:**
    - Wired: Tends to be more reliable since it's not as susceptible to interference from other devices or physical obstacles.
    - Wireless: Susceptible to interference from other electronic devices, physical obstacles (like walls), and environmental factors (such as weather conditions), which can lead to fluctuations in connection quality.
4. **Security:**
    - Wired: Generally considered more secure because it's more difficult for unauthorized users to intercept data transmitted over physical cables.
    - Wireless: Can be vulnerable to unauthorized access if not properly secured. Encryption protocols like WPA2 and WPA3 are commonly used to secure wireless connections.
5. **Convenience:**
    - Wired: Requires physical cables, which can limit mobility and require more planning for device placement.
    - Wireless: Offers greater mobility and flexibility since devices can connect without being physically tethered to a specific location. This makes wireless connections more convenient for devices like laptops, smartphones, and tablets.

6. **Installation and Maintenance:**
    - Wired: Typically requires more effort and cost for installation due to the need to lay cables and set up physical connections.
    - Wireless: Generally easier and more cost-effective to set up, especially in situations where running cables is impractical or expensive. However, wireless networks may require occasional maintenance to optimize performance and security.
7. **Scalability:**
    - Wired: Can be more challenging to scale, particularly in large buildings or campuses, where laying cables can be labor-intensive and costly.
    - Wireless: Offers greater scalability since additional devices can connect to the network without the need for physical infrastructure upgrades. However, adding too many devices to a wireless network can lead to congestion and decreased performance.