Wifi USB dongle (AKA Wifi adapter) is a small device you plug in a USB port on a computer to connect it to wireless network

Purpose

It adds wifi capabilities to devices that do not have a built in WI-FI or replaces a faulty internal adapter

How does it work?

The dongle contains a wireless network interface card(NIC) that communicates with your router or access point over wi-fi

Advantages
-Portable to use

-Often supports newer standards than old built in cards(eg. wi-fi 5 or wi-fi 6)

-Can impove signal reception if It has a better antenna

Which devices use Wi-Fi USB dongles?

Wi-Fi USB dongles are most commonly used with:

Desktop Computers

- Many desktop PCs do **not come with built-in Wi-Fi**, especially older models.
- A dongle allows a desktop to connect to Wi-Fi networks without installing an internal card.

Laptops

- Older laptops that only have Ethernet or outdated Wi-Fi standards (like 802.11g) can use a dongle to access modern, faster Wi-Fi.
- Also useful if the built-in Wi-Fi adapter is **broken** or **underperforming**.

Smart TVs and Media Players

- Some older Smart TVs and streaming boxes (like certain Roku, Amazon Fire Stick, or Blu-ray players) support USB Wi-Fi dongles for wireless internet access if they lack built-in Wi-Fi.

Printers and Scanners

- A few older network-capable printers can use a USB Wi-Fi adapter to join a wireless network (if they have a USB host port and support it).

Single-Board Computers

- Devices like the **Raspberry Pi** (older models) that don’t have Wi-Fi can use a USB dongle for wireless networking.

Network Appliances

- Some industrial or special-purpose devices that only have USB ports can add Wi-Fi connectivity through a dongle if supported by their firmware.

- In summary:
- **Any device with a USB port, running an operating system or firmware that supports external USB Wi-Fi adapters, can potentially use a Wi-Fi dongle to access a wireless network.**

Types & Functions of networking and wireless connections

Networking and wireless connections Link devices so that they share data and resources

Types

Wired Connections

1.Ethernet: Reliable, fast connections using cables

2.Fiber optics: Extremely high- speed, long distance connections

Wireless Connections

Wifi: Wireless local area network (WLAN) for homes and offfices

Bluetooth: Short-range connection for peripherals

Cellular (3G .4G ,5G): Mobile networks for internet access

Satellite: Wireless, long-distance internet access(used in remote areas)

Functions:

- Allow communication between devices (file sharing, messaging, streaming).
- Enable resource sharing (printers, storage, internet connection).
- Support remote work and collaboration over the internet.
- Facilitate access to cloud services and online resources.

Description of the Common Functionality of Server Networks

A **server network** is a system where one or more servers provide services to client devices on the network.

Common functions:

- **File server**: Stores and manages files centrally for clients to access.
- **Print server**: Manages printers and print jobs for multiple clients.
- **Web server**: Hosts websites and serves web pages to browsers.
- **Database server**: Stores and manages structured data for apps or users.
- **Email server**: Sends, receives, and stores email messages.
- **Authentication server**: Verifies user identities (e.g., Active Directory).
- **Application server**: Runs specific business applications for clients.

Benefits of server networks:

- Centralized management and security.
- Easier to back up and maintain data.
- Shared resources lower costs and improve efficiency.