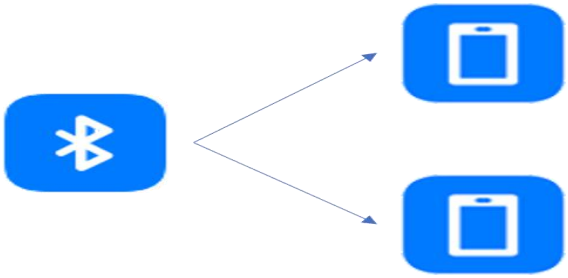
Wireless Technologies:Bluetooth and Wi-Fi

Bluetooth :

Bluetooth is a WPAN technology. Accordingly, its radio characteristics include low power, short range, and medium transmission speed. These characteristics influence what devices will incorporate Bluetooth, how users will experience it, and what it will be used for. First, its low power consumption makes Bluetooth ideal for small, battery-powered devices like mobile phones and Pocket PCs that have little energy to spare. As a result, Bluetooth is poised to capitalize on the emerging market of small mobile devices that is expected to grow in the next several years. Second, Bluetooth's short range (10 meters1) is ideal for the concept of "personal operating space"2 and integrates the notion of using devices carried or worn on the body or otherwise located within immediate reach. And Bluetooth's transmission speed of 800 Kbps3 works well for transferring small to medium-sized files. All of these properties make cable replacement Bluetooth's primary application. For example, while keeping your Bluetoothenabled mobile phone turned on inside your coat pocket or purse, you could form a WPAN with your Bluetooth-enabled Pocket PC to dial into your ISP and access the Internet. After downloading a file, you could walk within 10 meters of a Bluetooth-enabled printer and send the file from your Pocket PC to the printer to have it printed. These examples show how Bluetooth can eliminate the need for a cable to the phone or printer.



Wi-Fi:

As stated earlier, not all radio waves are the same, and the faster and further a radio wave travels, the more energy it requires. Herein lies the difference between Bluetooth and Wi-Fi, and from these technical differences, disparities in usage and target market also arise. Unlike Bluetooth, which emphasizes low power and short range and in turn offers a transmission speed of approximately 800 Kbps, Wi-Fi depends on a higher energy intake to offer a 100-meter range and 11 Mbps maximum transmission rate. This speed makes Wi-Fi more than 10 times as fast as Bluetooth and similar to a high-speed modem. For large file transfers and quick Internet access, Wi-Fi outperforms Bluetooth. The 100-meter range makes Wi-Fi conducive to wireless local area networking; its chief application will be to augment existing local area networks (LANs) that run on cables. Unlike Bluetooth, Wi-Fi does not involve new functionalities (e.g., Wi-Fi does not involve different profiles like Bluetooth). Rather, Wi-Fi simply provides a new wireless coverage area for an already existing cabled network. In this sense, Wi-Fi is not a completely cable-free solution — the wireless access points still must connect via a physical cable to the main network. Whereas Bluetooth is used for wireless cable replacement, Wi-Fi is utilized for wireless cable extension.

Difference between Bluetooth and Wi-Fi:

Bluetooth	WIFI
Bluetooth has no full form.	While wifi stands for Wireless Fidelity.
It requires bluetooth adapter on all devices for connectivity.	Whereas it requires wireless adapteron all devices and wireless router for connectivity.
Bluetooth consumes low power.	while it consumes high power.
The security of bluetooth is less in comparison of wifi.	While it provides better security than bluetooth.
Bluetooth is less flexible means in this limited users are supported.	Whereas wifi supports large amount of users.
The radio signal range of bluetooth is ten meters.	Whereas in wifi this range is hundred meters.
Bluetooth require low bandwidth.	While it requires high bandwidth.