

Course Name : O Level(B4-1st sem.)
Topic : Internet Protocol and
Modes of Connecting Internet part-1

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Internet Protocol (IP)

Internet Protocol (IP) is the principal set (or communications protocol) of digital message formats and rules for exchanging messages between computers across a single network or a series of interconnected networks, using the Internet Protocol Suite (often referred to as **TCP/IP**). Messages are exchanged as **datagrams**, also known as data packets or just **packets**.

IP is the primary protocol in the Internet Layer of the Internet Protocol Suite, which is a set of communications protocols consisting of four abstraction layers: link layer (lowest), Internet layer, transport layer and application layer (highest).

The main purpose and task of IP is the delivery of datagrams from the source host (source computer) to the destination host (receiving computer) based on their addresses. To achieve this, IP includes methods and structures for putting tags (address information, which is part of metadata) within datagrams.

The process of putting these tags on datagrams is called encapsulation.

Modes of connecting Internet:

There are many ways a personal electronic device can connect to the internet. They all use different hardware and each has a range of connection speeds. As technology changes, faster internet connections are needed to handle those changes.

Wi-Fi



Wi-Fi is a wireless communication technology that uses radio frequency waves to connect mobile devices to the internet and to allow communication between them without using actual cables. Radio frequency bands are used in place of telephone or cable networks. One of the greatest advantages of wireless Internet connections is the "always-on" connection that can be accessed from any location that falls within network coverage.

It's like a wireless local area network that transmits and receives radio waves within devices. Wi-Fi operates on the traditional 2.4 GHz radio frequency band to connect devices within a fixed

range. It is one of the most popular means of wireless communication and the best example of Wi-Fi is our home network. The router receives the signal coming from outside the network like our ISP and transmits it back to our mobile devices such as mobile or laptop.

Hotspot



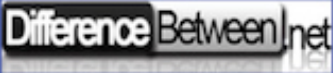
Hotspot is nothing but a physical location like a wireless access point that provides internet access to mobile devices typically using Wi-Fi. It allows devices to communicate with each other via a wireless local area network that creates a portable hotspot using a modem or wireless router that is connected to an ISP. The term hotspot is synonymous with wireless internet access. An access point is nothing but a networking device that obtains internet access via Wi-Fi. In simple terms, hotspots refer to physical locations typically public places like cafes, hotels, or airports where users can access internet wirelessly. Hotspots can be phone-based or free-standing, commercial or free to the public

Difference between Wi-Fi and Hotspot

Both Wi-Fi and hotspot are general terms used in conjunction with wireless internet access meaning they are the means of providing internet wirelessly, but they do it very differently. Wi-Fi is a wireless communication technology that allows you to build a wireless network based on Wi-Fi specifications and principles to gain seamless internet access. Hotspot, on the other hand, is a wireless access point, sort of like a physical location that provides internet access via wireless local area networks (WLAN).

WI-FI VERSUS HOTSPOT

Wi-Fi	Hotspot
It is a technology that uses radio waves to provide seamless internet access to mobile devices.	It is more like a physical location that allows interconnection of devices using Wi-Fi.
It is a networking protocol used to connect devices on a local area network without using any cables.	Hotspot uses Wi-Fi as the local area networking technology to provide internet access.
It is the most popular means of communicating data wirelessly.	Hotspots use Wi-Fi signals to connect to internet and there will be no hotspots without Wi-Fi.
It refers to a technology involving network protocols, specifications, hardware and drivers.	It refers to a physical location like a wireless access point that provides internet access to mobile devices.
Wi-Fi is more secure than hotspot.	Hotspots are usually in public places so they are less secure than private Wi-Fi networks.



Exercise:

1. What do you mean by Internet Protocol?
2. Write short note on Wi-Fi and Hotspot.