

Course Name : O Level(B3-1st sem.)

Subject : ITT&NB

Topic : Modes of connecting
Internet part-1

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Internet Protocol (IP)

- The Internet Protocol (IP) is the method or protocol by which data is sent from one computer to another on the Internet. Each computer which is known as a host, on the Internet has at least one IP address that uniquely identifies it from all other computers on the Internet.
- IP is the primary protocol in the Internet Layer of the Internet Protocol Suite(TCP/IP), which is a set of communications protocols consisting of four abstraction layers: link layer (lowest), Internet layer, transport layer and application layer (highest).

Task of Internet protocol

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**.

Common networking protocols

FTP(file transfer protocol), Telnet, Gopher, Hypertext Transfer Protocol (HTTP), Simple Mail Transfer Protocol (SMTP), Post Office Protocol version 3 (POP 3) etc.

Packets

When you send or receive data (for example, an e-mail note or a Web page), the message gets divided into little chunks called packets. Each of these packets contains both the sender's Internet address and the receiver's address

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 the popular name for a wireless local area network. It 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.



Hotspot

Hotspot is a physical location like a wireless access point that provides internet access to mobile devices typically using Wi-Fi. An access point is a networking device that obtains internet access via 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. 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

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. Define Internet protocol.
2. Write the difference between Wi-Fi and Hotspot.