Unit – 5 Concepts of Internet

5.1 Concepts of Internet & WWW

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Basic Terminologies

Network

A network consists of two or more computers that are linked in order to share resources (such as printers and CDs), exchange files, or allow electronic communications. The computers on a network may be linked through cables, telephone lines, radio waves, satellites, or infrared light beams. An example of a network is the Internet, which connects millions of people all over the world.

LAN

A Local Area Network (LAN) is a network that is confined to a relatively small area. It is generally limited to a geographic area such as a writing lab, school, or building. LAN or Local Area Network connects network devices in such a way that personal computer and workstations can share data, tools and programs. The group of computers and devices are connected together by a switch, or stack of switches, using a private addressing scheme as defined by the TCP/IP protocol. Private addresses are unique in relation to other computers on the local network. Routers are found at the boundary of a LAN, connecting them to the larger WAN.

MAN

MAN or Metropolitan Area Network covers a larger area than that of a LAN and smaller area as compared to WAN. It connects two or more computers that are apart but resides in the same or different cities. It covers a large geographical area and may serve as an ISP (Internet Service Provider). MAN is designed for customers who need a high-speed connectivity.

WAN

WAN or Wide Area Network is a computer network that extends over a large geographical area, although it might be confined within the bounds of a state or country. A WAN could be a connection of LAN connecting to other LAN's via telephone lines and radio waves and may be limited to an enterprise (a corporation or an organization) or accessible to the public. The technology is high speed and relatively expensive.

Protocol

It is a set of formal operating rules, procedures, or conventions that govern a given process. On the above mentioned networks a communication/network protocol describes rules which govern transmission of data over communication networks.

5.1 Concepts of Internet and WWW

Internet

The Internet is the global system of interconnected computer networks that use the Internet protocol suite (TCP/IP) to link devices worldwide. It is a network of networks that consists of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies.

The Internet carries an extensive range of information resources and services, such as the inter-linked hypertext documents and applications of the World Wide Web (WWW), electronic mail, telephony, and peer-to-peer networks for file sharing.

However, It can be defined in many ways as follows:

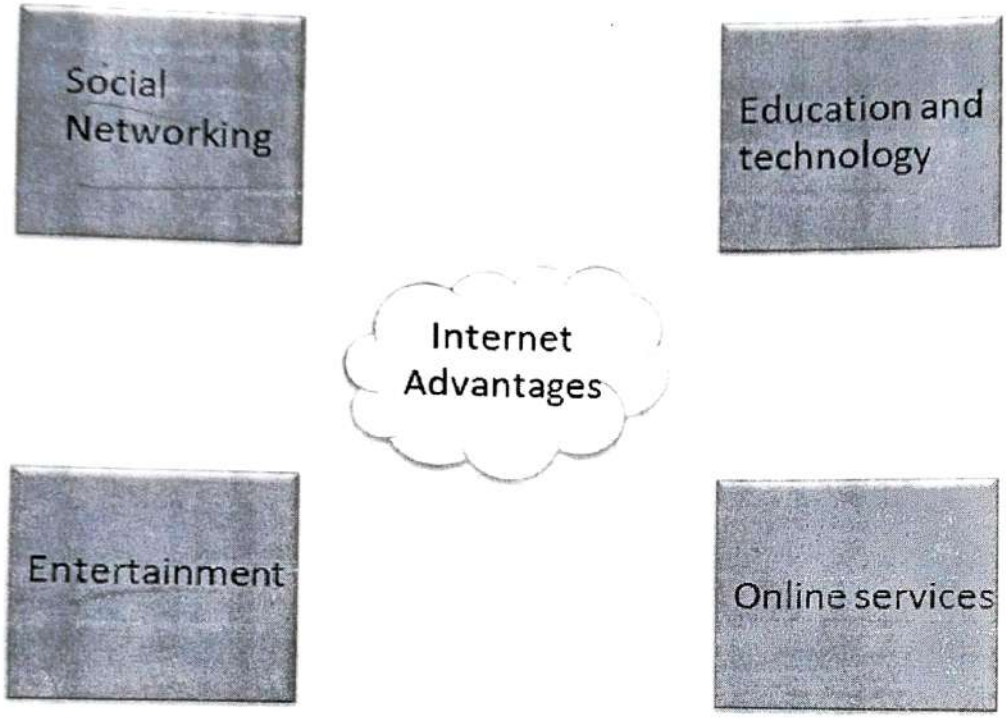
- Internet is a world-wide global system of interconnected computer networks.
- Internet uses the standard Internet Protocol (TCP/IP).
- Every computer in internet is identified by a unique IP address.
- IP Address is a unique set of numbers (such as 110.22.33.114) which identifies a computer location.
- A special computer DNS (Domain Name Server) is used to give name to the IP Address so that user can locate a computer by a name.
- For example, a DNS server will resolve a name **http://www.tutorialspoint.com** to a particular IP address to uniquely identify the computer on which this website is hosted.
- Internet is accessible to every user all over the world.

Evolution

The concept of Internet was originated in 1969 and has undergone several technological & Infrastructural changes as discussed below:

- The origin of Internet devised from the concept of **Advanced Research Project Agency Network (ARPANET).**
- **ARPANET** was developed by United States Department of Defense.
- Basic purpose of ARPANET was to provide communication among the various bodies of government.
- Initially, there were only four nodes, formally called **Hosts.**
- In 1972, the **ARPANET** spread over the globe with 23 nodes located at different countries and thus became known as **Internet.**

- By the time, with invention of new technologies such as TCP/IP protocols, DNS, WWW, browsers, scripting languages etc. Internet provided a medium to publish and access information over the web.



Advantages

Internet covers almost every aspect of life, one can think of. Here, we will discuss some of the advantages of Internet:

- Internet allows us to communicate with the people sitting at remote locations. There are various apps available on the wed that uses Internet as a medium for communication. One can find various social networking sites such as:
  - Facebook
  - Twitter
  - Yahoo
  - Google+
  - Flickr
  - Orkut

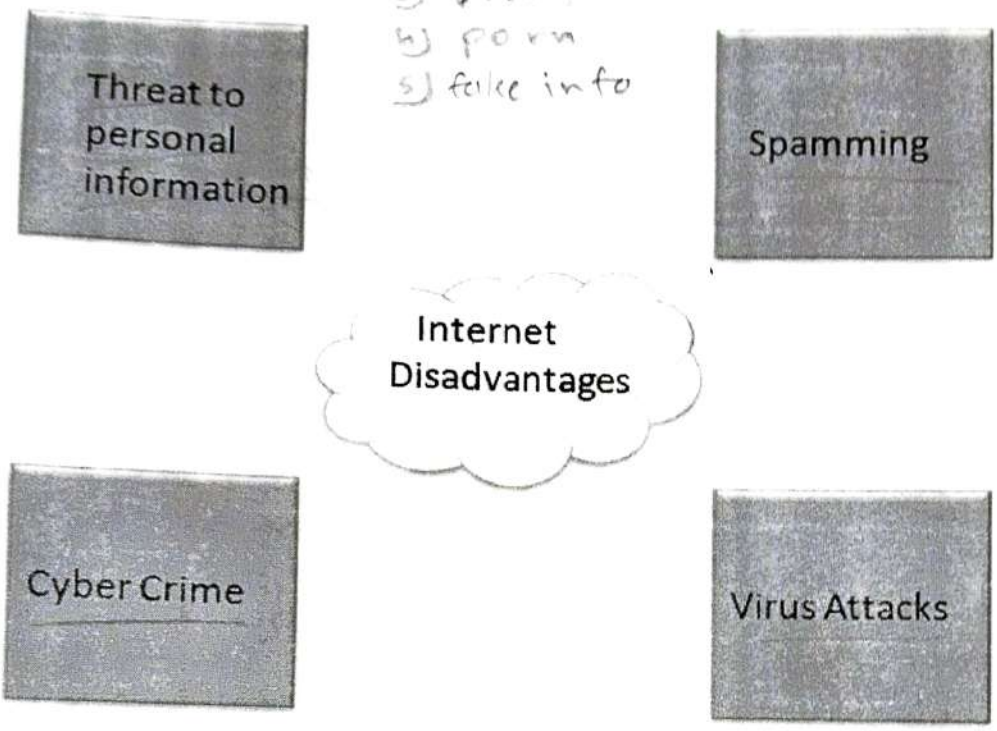
1) communication
2) surfing
3) entertainment
4) other service
5) e-commerce

- One can surf for any kind of information over the internet. Information regarding various topics such as Technology, Health & Science, Social Studies, Geographical Information, Information Technology, Products etc. can be surfed with help of a search engine.
- Apart from communication and source of information, internet also serves a medium for entertainment. Following are the various modes for entertainment over internet.
  - Online Television
  - Online Games
  - Songs
  - Videos
  - Social Networking Apps
- Internet allows us to use many services like:
  - Internet Banking
  - Matrimonial Services
  - Online Shopping
  - Online Ticket Booking
  - Online Bill Payment
  - Data Sharing
  - E-mail
- Internet provides concept of **electronic commerce**, that allows the business deals to be conducted on electronic systems

Disadvantages

However, Internet has proved to be a powerful source of information in almost every field, yet there exist many disadvantages discussed below:

- There are always chances to loose personal information such as name, address, credit card number. Therefore, one should be very careful while sharing such information. One should use credit cards only through authenticated sites.
- Another disadvantage is the **Spamming**. Spamming corresponds to the unwanted e-mails in bulk. These e-mails serve no purpose and lead to obstruction of entire system.



- **Virus** can easily be spread to the computers connected to internet. Such virus attacks may cause your system to crash or your important data may get deleted.
- Also a biggest threat on internet is pornography. There are many pornographic sites that can be found, letting your children to use internet which indirectly affects the children healthy mental life.
- There are various websites that do not provide the authenticated information. This leads to misconception among many people.

WWW (World Wide Web)

History: In 1989, Berners-Lee, a computer scientist at CERN, the European Particle Physics Laboratory in Switzerland, proposed a project to help that organization manage the vast quantities of information and technical documents that it produced. The fundamental idea was to create an information infrastructure that would allow separate departments within the laboratory to make documentation electronically accessible, to allow decentralized maintenance of the information, and to provide a mechanism for linking between projects and documents. That infrastructure, originally called "Mesh" and later the "World Wide Web," received internal funding in 1990, and Berners-Lee developed a prototype that ran on a computer called the NeXT. In 1991, Berners-Lee demonstrated the prototype at a conference in San Antonio, Texas. As related by Joshua Quittner and Michelle Slatalla (1998), by late 1992 the web had

piqued the interest of Marc Andressen and Eric Bina, two programmers at the National Center for Supercomputing Applications (NCSA). In short order they wrote the first widely available, graphics-capable web browser, called Mosaic.

World Wide Web (WWW), byname **the Web**, the leading information retrieval service of the Internet (the worldwide computer network). The Web gives users access to a vast array of documents that are connected to each other by means of hypertext or hypermedia links—i.e., hyperlinks, electronic connections that link related pieces of information in order to allow a user easy access to them. Hypertext allows the user to select a word or phrase from text and thereby access other documents that contain additional information pertaining to that word or phrase. Hypermedia documents feature links to images, sounds, animations, and movies. The Web operates within the Internet's basic client-server format; servers are computer programs that store and transmit documents to other computers on the network when asked to, while clients are programs that request documents from a server as the user asks for them. Browser software allows users to view the retrieved documents.

Internet Vs WWW

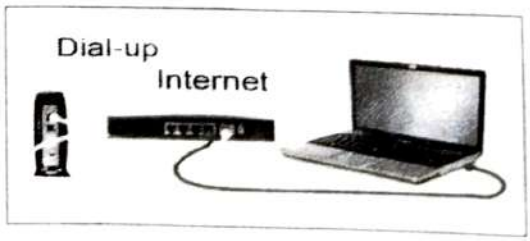
Internet	WWW
The Internet, linking your computer to other computers around the world, is a way of transporting content.	The Web is (a protocol) that lets you use that content...or contribute your own.
The Internet's roots are in the U.S. during the late 1960s.	The Web was invented 20 years later by an Englishman working in Switzerland—though it had many predecessors.

5.1.1 Types of Internet Services

Internet can be accessed using following methods -

Dial-up Connections

In dial-up connection, computer uses its modem to dial a telephone number given to the user by an Internet Service Provider. This launches a connection between personal computer and ISP server. The process begins when the ISP server answers, and ceases when your computer or the server "hangs up". This is similar to a traditional telephone call. Most ISP servers disconnect

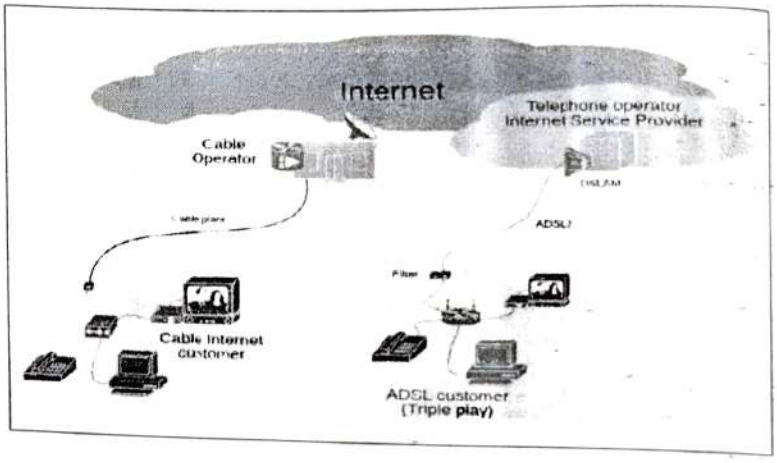


ISDN - Integrated Services Digital Network

automatically after a certain period of inactivity. Once a connection is configured on the user's computer, he/she can use the connection. It is secure and de-allocates unused memory automatically.

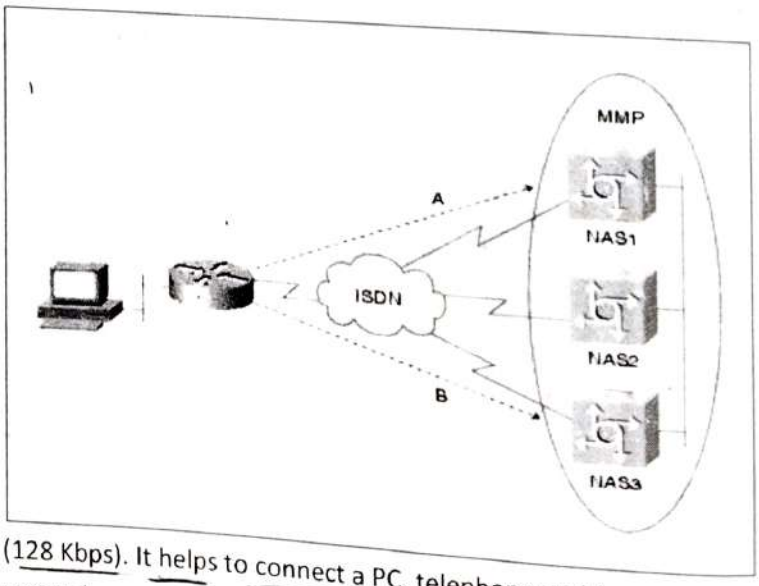
Broadband Connection

Broadband connections are considered as high speed connections, as they use modes that can handle several signals at once, such as fiber optics, twisted pair cables, coaxial cable and other technologies. Even with hundreds of users on the network, these connections allow large files and complex web pages to download quickly. To be considered as a broadband, the connection must be able to transmit data at a rate faster than is possible with the fastest dial-up connection. Downloading and uploading content will be fast.



Integrated Services Digital Network (ISDN) Service

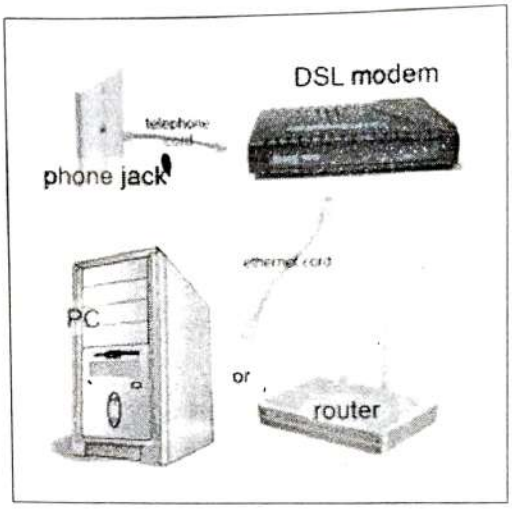
Integrated Services Digital Network (ISDN) is a digital service that simultaneously transmits voice & data, and controls signals over a single telephone line. ISDN service operates on a standard telephone line, but requires a special modem and phone service, which adds to the cost. An ISDN data connection can transfer data up to 128,000 bits per second (128 Kbps). It helps to connect a PC, telephone and fax to a single ISDN line and use them simultaneously.



DSL - Digital Subscriber line

Digital Subscriber Line (DSL)

Digital Subscriber Line is similar to that of ISDN in using telephone network, but it uses more advanced digital signal processing and algorithms to squeeze maximum number of signals through telephone lines. DSL also requires changes in components of telephone network before it can be offered in any area. Like ISDN, DSL provides simultaneous data, voice and fax transmission on the same line. Several versions of DSL services are available for home and business use; each version provides 24/7 full-time connection at different levels of service, speed, bandwidth and distance.

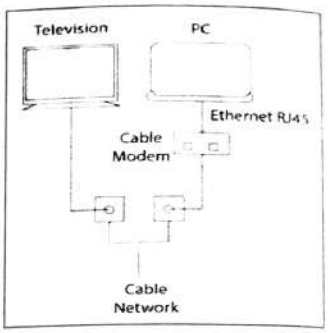


DSL Type	Maximum Sending speed	Maximum Receiving speed	Maximum Distance	Lines Required	Phone Support
ADSL	800 Kbps	8 Mbps	5,500 m	1	Yes
HDSL	1.54 Kbps	1.54 Mbps	3,650 m	2	No
IDSL	144 Kbps	144 Mbps	10,700 m	1	No
MSDSL	2 Mbps	2 Mbps	8,800 m	1	No
RADSL	1 Mbps	7 Mbps	5,500 m	1	Yes
SDSL	2.3 Mbps	2.3 Mbps	6,700 m	1	No
VDSL	16 Mbps	52 Mbps	1,200 m	1	Yes

Cable Modem Service

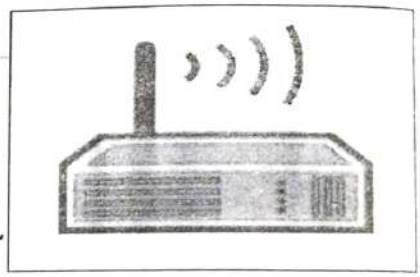
Now-a-days many cable television companies use some percentage of their network's bandwidth to provide internet access through prevailing cable television connections. Since this connection uses a special cable modem, it is called "Cable Modem Service". Cable television systems

transmit data via coaxial cable, which can transmit data as much as 100 times faster than common telephone lines. Coaxial cable allows transmission via several channels simultaneously, i.e., the internet data can be transmitted on one channel, while audio, video and control signals are transmitted separately. The user can access internet and watch television concurrently, with two non-interfering data streams.



Wireless LAN (WLAN) Connections

Wireless LAN connections are very common these days, which are based on the technology that is often cited as Wi-Fi (Wireless Fidelity). The distance covered by WLAN is usually measured in meters rather than miles. Therefore, this is not a technology that connects directly to an ISP but can be used to connect to another LAN or device through which internet access is achieved.



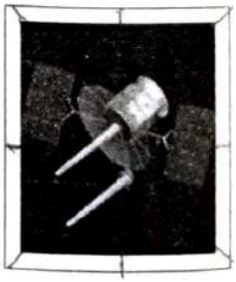
- To connect to internet, the wireless access point is connected to a wired LAN like any other devices, and then computers with wireless NICs can access the wired LAN.
- "Wireless access point" is a device that acts as a hub or switch.
- "NIC" refers to a Network Interface Card which helps to identify a computer on a network.

Wireless WAN (WWAN) Connections

A WWAN is a digital network that spans over a large geographical area. A WWAN accepts and transmits data using radio signals via cellular sites and satellites. At the switching center, the WWAN divides off into segments and then connects to either isolated or public network through telephone or other high speed communication links. The data is then linked to an organization's existing LAN/WAN infrastructure. The coverage area for WWAN is normally measured in miles (kilometers) with a data transmission rate of 100 Mbps.

Satellite Services

Satellite services provide a mutual (two-way) communication between user and the internet. This provides a full-time connection which is used in armed forces, business, etc. It includes two parts –



Transceiver – A satellite dish that is placed outdoors in direct line of sight to one of the several satellites in geostationary orbit.

Modem-like device – It is connected to a dish, placed indoors and connected to a LAN or computer.

5.1.2 Hardware for Internet Use

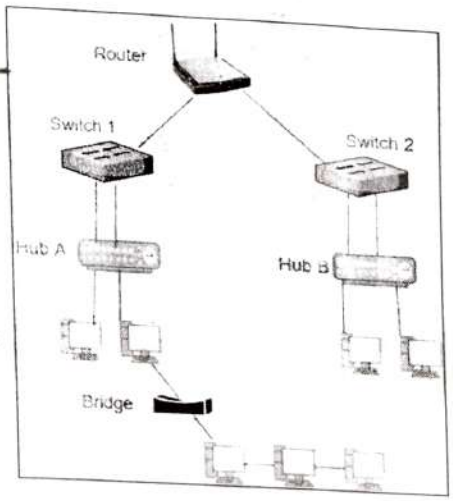
Modem

Once you have your computer, you really don't need muth additional hardware to connect to the Internet. The primary piece of hardware you need is a modem.

The type of Internet service you choose will determine the type of modem you need. Dial-up access uses a telephone modem, DSL service uses a DSL modem, cable access uses a cable modem, and satellite service uses a satellite adapter. Your ISP may give you a modem—often for a fee—when you sign a contract, which helps ensure that you have the right type of modem. However, if you would prefer to shop for a better or less expensive modem, you can choose to buy one separately. Price of modem may vary from 700 up to 2500 and more depending upon one's need.

Router

A router is a hardware device that allows you to connect several computers and other devices to a single Internet connection, which is known as a home network. Many routers are wireless, which allows you to create a home wireless network, commonly known as a Wi-Fi network.

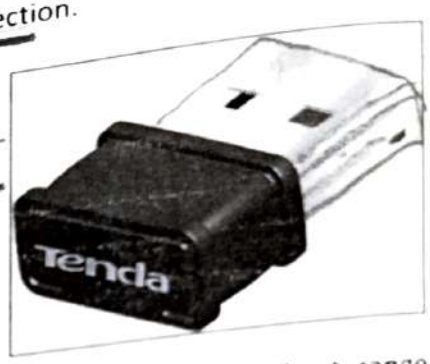


A router is a device like a switch that routes data packets based on their IP addresses. Router is mainly a Network Layer device. Routers normally connect LANs and WANs together and have a dynamically updating routing table based on which they make decisions on routing the data packets. Router divide broadcast domains of hosts connected through it.

You don't necessarily need to buy a router to connect to the Internet. It's possible to connect your computer directly to your modem using an Ethernet cable. Also, many modems include a built-in router, so you have the option of creating a Wi-Fi network without buying extra hardware.

Bluetooth

The most common method of using Bluetooth is to pair two devices like a set of headphones and a mobile phone or laptop. This provides a convenient wire-less connection.



Bluetooth pairing in this manner is well established and very easy to achieve, but it is also possible to set up networks. This capability has been available since the inception of Bluetooth, but with Bluetooth 5, this capability has been enhanced to accommodate many IoT applications.

The Bluetooth specification defines a variety of forms of Bluetooth network connection that may be set up. In this way Bluetooth networking is a particularly flexible form of wireless system for use in a variety of short range applications.

The way in which Bluetooth devices make connections is more complicated than that associated with many other types of wireless device. The reason for this is the frequency hopping nature of the devices. While the frequency hopping reduces the effects of interference, it makes connecting devices a little more complicated.

Bluetooth is a system in which connections are made between a master and a slave. These connections are maintained until they are broken, either by deliberately disconnecting the two, or by the link radio link becoming so poor that communications cannot be maintained - typically this occurs as the devices go out of range of each other.

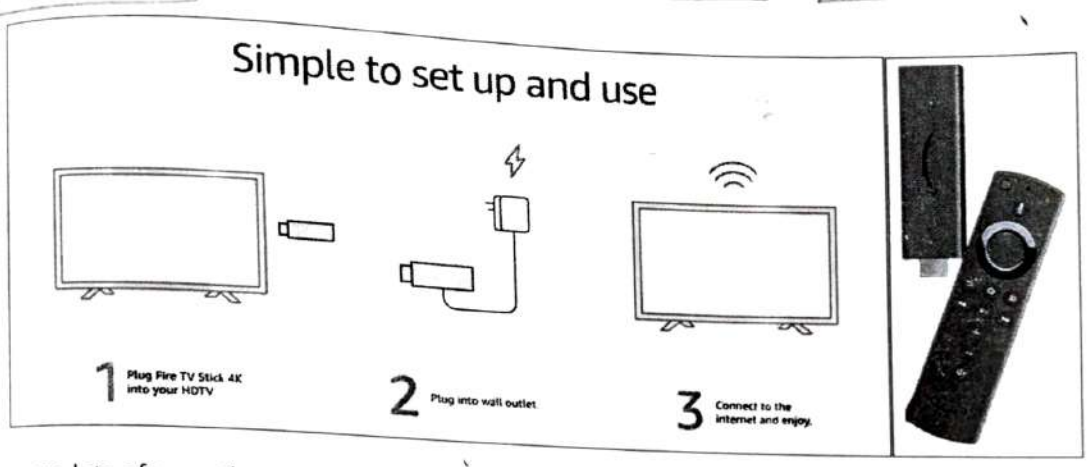
Fire-stick

FireStick is a streaming device that connects to your TV and lets you stream content over the internet. FireStick is officially branded as **Amazon Fire TV Stick**. However, it and more popularly known as just FireStick.

FireStick is an Android-based device. However, unlike most Android devices, FireStick does not support Google Play Services. It uses the modified Android OS and supports Amazon Store.

With FireStick, you can stream movies, shows, live TV, and just about anything you can think of. You can download dozens of apps from the Amazon Store, including the most popular ones, such as Netflix, Amazon Prime, Hulu, and more.

To use the Fire Stick, you'll have to download apps first. These apps are like TV channels, except you can watch the content at any time. Some of these apps offer free content, while others require you to pay a subscription fee.



There are lots of apps that require a subscription fee, such as Netflix, Hulu, and Disney+. You can also find free Hollywood hits and TV shows on apps like Pluto TV, Tubi, and Sony Crackle, IMDb TV, and others without a paid subscription. And if you want to cut the cord on your cable or satellite, you can watch live TV and sports with subscriptions to Hulu, Sling, Youtube TV, and many more. You can even stream music through services like Amazon Music, Apple Music, Spotify, Pandora, and iHeart Radio.

5.1.3 Internet Connection Using hotspot, Wi-Fi, cable

Hotspot

combination

At its essence, a hotspot is a blend of software, hardware and back-end network data services that combine to transforms a phone into the equivalent of a broadband modem and router. In other words, it can distribute a web connection to nearby systems via Wi-Fi. This not only lets us allow laptop and tablet online, but can share it with co-workers, as long as they're in range and they know the password.

it can be shared

devices

How it Works? To use a phone as a hotspot, the device treats its online connection to the data network as if it were a broadband data source. It then transmits this data locally like a mini-Wi-Fi router using the 802.11ac or 802.11ax protocol with the newest handsets. The net result is that those Wi-Fi devices that are within range can tap into the data signal as if it were a regular old Wi-Fi network – because it is.

We can use our mobile data in shared mode for accessing the internet in the laptop devices. All we need is to turn on the portable hotspot under our mobile. We can set the SSID and password for sharing the internet connection with other devices. We can also share QR code of the connection

information to other devices. It is also possible to restrict the data sharing limit. The hotspot sharing is possible through US tethering as well as Bluetooth tethering.

How much Secure: Using a phone hotspot can increase your security profile by letting you avoid the use of insecure public hotspots in coffee shops and hotels. At the phone end of the equation, it's just as secure and private as making a phone call or web surfing with your phone, because 4G data traffic is generally encrypted using the Snow Stream cipher with a 128-bit encryption key.

For those able to tap into one of the emerging 5G networks, the protection is increased with 256-bit encryption; the ability to block fake mobile network transmission sites, known as stingrays; and encryption of your identity and location to thwart identity thieves. This is only the case if the network implements these defenses, though.

With any mobile network, a VPN can build a stronger wall around your communications with AES 256-bit encryption, but it often comes at the cost of performance.

Between the phone and the clients connecting through it, the phone's hotspot uses WPA2 encryption, which requires a passcode of at least eight characters. Some newer phones from LG, Asus and Samsung can use the stronger WPA3 scheme that better protects the authentication phase of connecting.

Wi-Fi

In public places like an airport, coffee shop, library or hotel we've been right in the middle of a wireless network. Many people also use wireless networking, also called Wi-Fi or 802.11 networking, to connect their computers at home, and some cities are trying to use the technology to provide free or low-cost Internet access to residents. In the near future, wireless networking may become so widespread that you can access the Internet just about anywhere at any time, without using wires.

A wireless network uses radio waves, just like cell phones, televisions and radios do. In fact, communication across a wireless network is a lot like two-way radio communication. Here's what happens:

1. A computer's wireless adapter translates data into a radio signal and transmits it using an antenna.

2. A wireless router receives the signal and decodes it. The router sends the information to the Internet using a physical, wired Ethernet connection.

The process also works in reverse, with the router receiving information from the Internet, translating it into a radio signal and sending it to the computer's wireless adapter.

MAC- Media Access Control
CATV- Community Antenna TeleVision

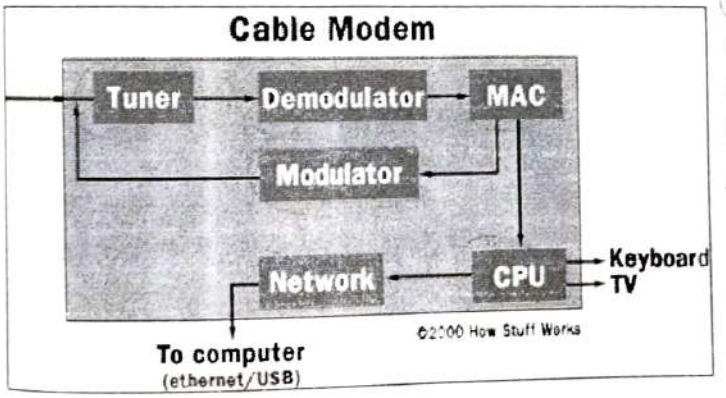
The radios used for Wi-Fi communication are very similar to the radios used for walkie-talkies, cell phones and other devices. They can transmit and receive radio waves, and they can convert 1s and 0s into radio waves and convert the radio waves back into 1s and 0s.

Wi-Fi has a lot of advantages. Wireless networks are easy to set up and inexpensive. They're also unobtrusive -- unless you're on the lookout for a place to watch streaming movies on your tablet, you may not even notice when you're in a hotspot. In this article, we'll look at the technology that allows information to travel over the air. We'll also review what it takes to create a wireless network in your home.

Internet through Cable

Cable modems can be either internal or external to the computer. In some cases, the cable modem can be part of a set-top cable box, requiring that only a keyboard and mouse be added for Internet access. In fact, if your cable system has upgraded to digital cable, the new set-top box the cable company provides will be capable of connecting to the Internet, whether or not you receive Internet access through your CATV connection. Regardless of their outward appearance, all cable modems contain certain key components:

Tuner, Demodulator, Modulator, Media Access Control (MAC) device, Microprocessor



The tuner connects to the cable outlet, sometimes with the addition of a **splitter** that separates the Internet data channel from normal CATV programming. Since the Internet data comes through an otherwise unused cable channel, the tuner simply receives the modulated digital signal and passes it to the demodulator.

In some cases, the tuner will contain a **diplexer**, which allows the tuner to make use of one set of frequencies (generally between 42 and 850 MHz) for downstream traffic, and another set of frequencies (between 5 and 42 MHz) for the upstream data. Other systems, most often those with more limited capacity for channels, will use the cable modem tuner for downstream data and a dial-up telephone modem for upstream traffic. In either case, after the tuner receives a signal, it is passed to the demodulator.

Demodulators have four functions. A quadrature amplitude modulation (QAM) demodulator takes a radio-frequency signal that has had information encoded in it by varying ~~both the~~ amplitude and phase of the wave, and turns it into a simple signal that can be processed by the analog-to-digital (A/D) converter. The A/D converter takes the signal, which varies in voltage, and turns it into a series of digital 1s and 0s. An error correction module then checks the received information against a known standard, so that problems in transmission can be found and fixed. In most cases, the network **frames**, or groups of data, are in MPEG format, so an MPEG synchronizer is used to make sure the data groups stay in line and in order.

In cable modems that use the cable system for upstream traffic, **a modulator** is used to convert the digital computer network data into radio-frequency signals for transmission. This component is sometimes called a **burst modulator**, because of the irregular nature of most traffic between a user and the Internet, and consists of three parts:

- A section to insert information used for error correction on the receiving end
- A QAM modulator
- A digital-to-analog (D/A) converter

The **MAC** sits between the upstream and downstream portions of the cable modem, and acts as the interface between the hardware and software portions of the various network **protocols**. All computer network devices have MACs, but in the case of a cable modem the tasks are more complex than those of a normal network interface card. For this reason, in most cases, some of the MAC functions will be assigned to a central processing unit (CPU) -- either the CPU in the cable modem or the CPU of the user's system.

The **microprocessor**'s job depends somewhat on whether the cable modem is designed to be part of a larger computer system or to provide Internet access with no additional computer support. In situations calling for an attached computer, the internal microprocessor still picks up much of the MAC function from the dedicated MAC module. In systems where the cable modem is the sole unit required for Internet access, the microprocessor picks up MAC slack and much more.

5.2 Introduction of Cloud

5.2.1 Concept of Cloud

The cloud is **the Internet**—more specifically, it's all of the things you can **access remotely** over the Internet. When something is **in the cloud**, it means it's stored on **Internet servers** instead of your computer's hard drive.

There are hundreds of different cloud storage systems. Some have a very specific focus, such as storing Web e-mail messages or digital pictures. Others are available to store all forms of digital data. Some cloud storage systems are small operations, while others are so large that the physical equipment can fill up an entire warehouse. The facilities that house cloud storage systems are called **data centers**.

At its most basic level, a cloud storage system needs just one data server connected to the Internet. A client (e.g., a computer user subscribing to a cloud storage service) sends copies of files over the Internet to the data server, which then records the information. When the client wishes to retrieve the information, he or she accesses the data server through a Web-based interface. The server then either sends the files back to the client or allows the client to access and manipulate the files on the server itself.

Cloud storage systems generally rely on hundreds of data servers. Because computers occasionally require maintenance or repair, it's important to store the same information on multiple machines. This is called **redundancy**. Without redundancy, a cloud storage system couldn't ensure clients that they could access their information at any given time. Most systems store the same data on servers that use different power supplies. That way, clients can access their data even if one power supply fails.

Not all cloud storage clients are worried about running out of storage space. They use cloud storage as a way to create backups of data. If something happens to the client's computer system, the data survives off-site. It's a digital-age variation of "don't put all your eggs in one basket."

5.2.2 Purpose and Applications of Cloud

Purpose of Cloud

Some of the main reasons to use the cloud are **convenience** and **reliability**. For example, if you've ever used a **web-based email service**, such as **Gmail** or **Yahoo! Mail**, you've already used the cloud. All of the emails in a web-based service are stored on servers rather than on your computer's hard drive. This means you can access your email from any computer with an Internet connection. It also means you'll be able to recover your emails if something happens to your computer.

- **File storage**: You can store all types of information in the cloud, including files and email. This means you can access these things from **any computer** or **mobile device** with an Internet connection, not just your home computer. **Dropbox** and **Google Drive** are some of the most popular cloud-based storage services.

Dropbox
Google Drive

Flickr, ICloud Photos

- **File sharing**: The cloud makes it easy to **share files** with several people at the same time. For example, you could upload several photos to a cloud-based photo service like **Flickr** or **iCloud Photos**, then quickly share them with friends and family.

Mozy Carbonite

- **Backing up data**: You can also use the cloud to protect your files. Apps like **Mozy** and **Carbonite automatically back up your data** to the cloud. This way, if your computer ever is lost, stolen, or damaged, you'll still be able to recover these files from the cloud.

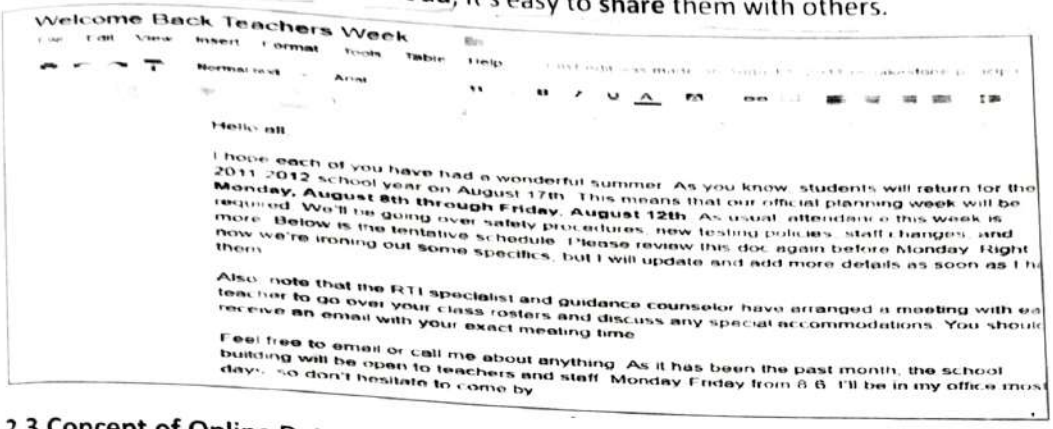
Applications of Cloud

Previously, we talked about how **desktop applications** allow you to perform tasks on your computer. But there are also **web applications**—or **web apps**—that run **in the cloud** and do not need to be installed on your computer. Many of the most popular sites on the Internet are actually web apps. You may have even used a web app without realizing it! Let's take a look at some popular web apps.

- **Facebook:** Facebook lets you create an online **profile** and interact with your **friends**. Profiles and conversations can be updated at any time, so Facebook uses web app technologies to **keep the information up to date**.

- **Pixlr:** Pixlr is an **image editing application** that runs in your web browser. Much like **Adobe Photoshop**, it includes many advanced features, like color correction and sharpening tools.

- **Google Docs:** Google Docs is an **office suite** that runs in your browser. Much like **Microsoft Office**, you can use it to create documents, spreadsheets, presentations and many more. And because the files are stored **in the cloud**, it's easy to **share** them with others.


Welcome Back Teachers Week

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Hello all

I hope each of you have had a wonderful summer. As you know, students will return for the 2011-2012 school year on August 17th. This means that our official planning week will be **Monday, August 8th through Friday, August 12th**. As usual, attendance this week is required. We'll be going over safety procedures, new testing policies, staff changes, and more. Below is the tentative schedule. Please review this doc again before Monday. Right now we're ironing out some specifics, but I will update and add more details as soon as I h them.

Also, note that the RTI specialist and guidance counselor have arranged a meeting with ea teacher to go over your class rosters and discuss any special accommodations. You shoul receive an email with your exact meeting time.

Feel free to email or call me about anything. As it has been the past month, the school building will be open to teachers and staff Monday-Friday from 8-6. I'll be in my office most days, so don't hesitate to come by.

5.2.3 Concept of Online Data Backup

Online backup or remote backup, is a strategy for sending a copy of a physical or virtual file or database to a secondary, off-site location for preservation in case of equipment failure or catastrophe. The secondary server and data storage systems are usually hosted by a third-party service provider, who charges the backup customer a fee based on storage space or capacity used, data transmission bandwidth, number of users, number of servers or number of times data is accessed. This type of off-site storage is typically part of a business disaster recovery plan, as the data remains safe should your office be at risk from disasters such as fires, flood or employee theft. Implementing Online data backup can help bolster an organization's data protection strategy without increasing the workload of information technology (IT) staff. The labor-saving benefit may be significant and enough of a consideration to offset some of the additional costs associated with cloud backup, such as data transmission charges.

Why to Use?

strengthen

Online data backup makes copies of your important data and stores it in safe servers. For extra safety, there are multiple copies on servers distributed to multiple locations in order to guarantee data availability, even if something happens with one particular backup server. The best online backup service providers like Online data backup makes copies of your important data and stores it in safe servers. For extra safety, there are multiple copies on servers distributed to multiple locations in order to guarantee data availability, even if something happens with one particular backup server. The best online backup service providers like Backblaze, Livedrive, ZipCloud and MyPCBackup offer the highest bank-grade encryption of your data, so nobody can access it without the encryption key (it is a password known only to you).

Different sources call online data backup differently, for example, cloud backup, remote backup and web-based offline backup but, basically, they mean the same thing. However, you need to be aware that online data backup and cloud storage solutions have some differences, since cloud storage was historically used only for storing and retrieving files, without offering sophisticated backup software. Offers the highest bank-grade encryption of your data, so nobody can access it without the encryption key (it is a password known only to you). Just be sure to choose a strong password which is at least 8 characters long and consists of letters, numbers and other characters to make guessing impossible.

5.3 Introduction of Web Browser and relevant terminology

"**World Wide Web**" or simple "Web" is the name given to all the resources of internet. The special software or application program with which you can access web is called "Web Browser".

Although browsers are primarily intended to use the World Wide Web, they can also be used to access information provided by web servers in private networks or files in file systems.

The major web browsers are Firefox, Internet Explorer, Google Chrome, Opera, and Safari.

The first web browser was invented in 1990 by Sir Tim Berners-Lee. Berners-Lee is the director of the World Wide Web Consortium (W3C), which oversees the Web's continued development, and is also the founder of the World Wide Web Foundation. His browser was called WorldWideWeb and later renamed Nexus.

5.3.1 Important Terms

URL

Uniform Resource Locator - Web address of a particular object (Web pages, images, or Word or PDF document) published on the Internet. A URL incorporates the domain name, along with other detailed information, to create a complete address (or "web address") to direct a browser to a specific page online called a web page. In essence, it's a set of directions and every web page has a unique one.

URL elements – for example http://www.vbpolishwala.co.in

- http: - protocol (rules of transmission)
- www – a type of service available on the Internet
- vbpolishwala – a domain name (computer)
- .co – top–level domain
- .in – Country code (sub domain)

Address bar

The term **address bar** refers to the text field in a web browser that identifies the user's location on the web and allows them to access different websites. The address bar is known as a **location bar**, and in Google Chrome, it's called the omnibox. The user can edit the text to navigate to a new location. For instance, clicking the mouse in the address bar allows you to change the address or delete it and enter a new one. The address should be a URL, such as **vbpolishwala.co.in**

Domain

A domain is your website name. A domain is the address where Internet users can access your website. It is used for finding and identifying computers on the Internet. Computers use IP addresses, which are a series of number. However, it is difficult for humans to remember strings of numbers. Because of this, domain names were developed and used to identify entities on the Internet rather than using IP addresses. A domain name can be any combination of letters and numbers, and it can be used in combination of the various domain name extensions, such as .com, .net and more. It must be registered before you can use it. Every domain name is unique. No two websites can have the same domain name. If someone types in www.yourdomain.com, it will go to your website and no one else's. The price of a domain name typically runs between $15-25 per year.

A domain name is an essential part of having a website, but it's only part of the equation. In order to launch a website, you'll also need content and a hosting service to store your files so they can be accessed on the internet. Remember that owning a domain does not mean hosting is also included.

- commercial (.com, .net, .biz)
- international (.hr, .si, .it)
- non-commercial (.edu, .mil, .gov)

Links

Links are the part of text or graphics or a web page which allows you to redirect/navigate through the other pages of the same pages or another website. It is very much essential part of website for moving from one to another page of the website. Rather we can also use the buttons of HTML form for navigating page to page of website.

Navigation Button

Navigation buttons are part of the website which are normally controls of HTML form that allow us to navigate from page to page in the website. Specific language construct of HTML (Hyper Text

Markup Language) called tags are used like: <button>, <input type='button' /> it carries an attribute/property with value as the URL for navigating.

5.3.2 Tabbed browsing, Bookmarks and History

Tabbed Browsing

Tabbed browsing is a Web browser feature in which several websites may be opened in one browser window, versus the traditional method where each website is opened in an individual browser window. Tabbed browsing allows a user to open websites on an alternating basis. Tabs usually display in a row at the top or bottom of a browser window and include short titles for identification.

Tabbed browsing was initially offered in 1994 as part of the Internet Works browser. In 2003, tabbed browsing was officially introduced by Mozilla and has become a popular Web browser feature.

Tabbed browsing is a useful Web browser feature for the following reasons:

- Multiple website tabs may be opened simultaneously.
- A slow-loading Web page or website may be opened and loaded in the background, which allows a user to remain engaged in another tab.
- Because tabs are neatly arranged, tabbed browsing reduces desktop clutter.

Tabbed browsing does not allow side-by-side browser tab viewing, but most browsers allow open tabs to be viewed in separate windows.

Bookmarks

A bookmark is a saved shortcut that directs your browser to a specific webpage. It stores the title, URL, and favicon of the corresponding page. Saving bookmarks allows you to easily access your favorite locations on the Web. To bookmark a page using your mouse, click the icon (or something similar) to the right of the address bar. In Microsoft Internet Explorer, bookmarks are referred to as favorites.

All major web browsers allow you to create bookmarks, though each browser provides a slightly different way of managing them. For example, Chrome and Firefox display your bookmarks in an open window, while Safari displays them in a list in the sidebar of the browser window. Internet Explorer uses the name "Favorites" to refer to bookmarks, and like Safari, it displays all your favorites in a list within the browser window sidebar.

Why create a Bookmark?

A bookmark is handy when you find a web page that you want to remember and be able to look at another day. When you bookmark a web page, you are creating a shortcut for quick access to that

web page. You can access that bookmark at any time to view the web page again without having to search the Internet to find it.

To View a Bookmark

- Google Chrome - Ctrl+Shift+O or Cmd+Shift+B on
- Mozilla Firefox - Ctrl+B or Ctrl+Shift+B
- Microsoft Edge - Ctrl+I
- Internet Explorer - Ctrl+I
- Opera - Ctrl+Shift+B

History

Internet history is a term for a tool [redacted] in a **Web** browser that keeps track of sites and pages that a user visits. Through tabulating URLs, **Internet history** facilitates a quick reference or lookup of previously visited pages. **Internet history** is also known as browser history. It also used by some web browsers for serving google ads according to the surfing history.

Browsing history allows the user to delete browsing history by clicking the **Delete** button. The user may then check which options to delete or preserve including: Preserve favorites Web site data, temporary Internet files, cookies, history, form data, passwords, and InPrivate filtering data

Answer in Short

1. What is web browser? List out the name of Web browsers.
2. What is difference between WIFI and hotspot?
3. What is the use of Bluetooth?
4. List out Advantages and Disadvantages of Internet.
5. Explain use of Modem.
6. Explain URL with an example.
7. What is cloud?
8. Explain the concept of bookmark in Web browser.
9. Explain the uses of router.
10. What are the uses of Fire-Stick?

Answer in Brief

1. What is internet? Explain types of internet services with an example.
2. S.N. – Modem.
3. S.N. – Bluetooth.
4. S.N. – Fire-stick.
5. What do you mean by cloud? Explain various application of cloud. Discuss the advantages and disadvantages of cloud.
6. Explain the concept of online data backup with suitable example.
7. Explain comparison between various internet connections using Hotspot, WiFi, and cable.
8. What do you mean by e-mail? Explain the meaning of TO, SUBJECT, CC, BCC and attachment. Give the suitable example of it with proper diagram.
9. What do you mean by Web browser? List out the names of Web browser. Discuss the various terminologies of web browser.