Explain Applications of Internet

The common applications of the Internet can be classified into three primary types namely: Communication, Data retrieval and Data publishing.

Communication

- Communication on the Internet can be online or offline
- When some users connect to a single server or an on-line service at the same time, they can communicate in an "online chat".
- Off-line communication is e-mail facility where persons communicating with each other need not be logged on to the net simultaneously.
- In Usenet. users post messages to be read and answered by others at their convenience, in turn all of which can be read and replied to by others and so on.

Data Retrieval

- On the Internet, a large number of databases exist.
- These have been put together by commercially run data providers as well as individuals or groups with special interest in particular areas.
- To retrieve such data, any user needs to know the address/s of such Internet servers.
- Then depending on the depth of information being sought, different databases have to be searched and required information compiled.

Data publishing

- Information that needs to be made available to others, can be either forwarded to a specific addresses, posted in a Usenet site or kept on display in a special site

Explain Business use of Internet

- Quicker and cheaper communication eliminating telephone calls, faxes etc.
- Online interactive communication among the executives, business associates, when many persons have to contribute to discussions.
- At pre-defined timings, those who have to communicate together can be online through Internet and have **electronic conferences**
- Businesses require a lot of external information in various functions regularly for taking decisions.
- Internet is a storehouse of information and is able to cater to a very wide range of information needs.
- Businesses can set up their own **web sites or home pages** to make information on their products and services available to others
- E-commerce

Explain the term World Wide Web

- The World Wide Web or the Web is a component of the Internet that provides access to large amounts of information located on many different servers.
- The Web also provides access to many of the services available on the Internet.
- The fundamental unit of the Web is the **Web page**
- The Web page is a text document that contains links to other Web pages, graphic and audio files, and other Internet services such as file transfer protocol (FTP) and E-mail.
- Tens of thousands of Web servers are currently connected to the Internet.
- A user can directly access any Web page on one of these servers and then follow the links to other pages
- This process creates a Web of links around the world and, thus, the name World Wide Web.
- Web pages are created by using *hypertext Markup Language* (HTML)
- HTML lets the creator of a Web page specify how text will be displayed and how to link to other Web pages, files, and Internet services.

Explain Web browser

- The Web browser reads a specified Web page using the HTML commands within the Web page to display the desired information.
- Text positioning, fonts, colors, and size are specified through HTML.
- The browser software interprets the HTML commands and displays the information on the user's monitor.
- Netscape and Internet Explorer are widely used browsers

Explain Uniform Resource Locator (URL)

- They are used to address and access individual Web pages and Internet resources.
- The format of a URL is: **protocol/Internet address/Web page address.**
- The protocol that the Web uses for HTML codes for Web page is **Hyper Text Transfer Protocol** (HTTP)
- Consider the web page address: **http://pages.prodigy.com/kdallas/index.htm.**
- **http://** specifies that HTTP will be used to process information to and from the Web server
- Pages.**prodigy.com** is the Web server's Internet address
- **kdallas/index.htm** is the address of the page on the server
- Index.htm could have been omitted, because this is the default for the main page within a directory (i.e., kdallas in this example)

What is Surfing on the Internet?

- Many servers on the Internet provide information, specialising on a topic or subject.
- When a user is looking for some information, it may be necessary for him/her to look for such information from more than one server.
- WWW links the computers on the Internet, like a spider web, facilitating users to go from one computer to another directly.
- When a user keeps hopping from one computer to another, it is called **"surfing"**.

Explain Webcasting or Push Technology

- It allows users to passively receive broadcast information rather than actively search the Web for information.
- Push technology allows users to choose from a menu of sources, specifying what kind of information they want to receive.
- Once selected, the information is automatically forwarded to the user
- Internet news services, which deliver the day's activities to the user's desktop, are an example of push technology
- Users can also download software, select the frequency with which they will receive services, and subscribe to a variety of information sources.
- It is cheaper to the user because information is delivered with advertising, and users view their custom-tailored news off-line.
- Push technology differs from the traditional uses of the Internet
- The Internet is, for the most part, **a pull environment** where a user opens a browser application and searches for information.
- Push technology is having a major impact on the Internet, probably the biggest impact since the emergence of the Web

Discuss some of the intrinsic benefit of internet as a business resource

- Information on the business and services is placed in an assembled fashion in a common location.
- Access to this information is provided at reasonable costs (which are steadily declining, and with a significant reduction in duplication and distribution costs)
- A mechanism for immediate feedback from consumers or business partners is provided.
- The cost of information delivery to internal and external sources is reduced.
- Employee access to significant amounts of information is increased.
- An efficient means of updating and disseminating current information to customers and internal staff is provided.
- Customized information to consumers is delivered (for example, individual investment portfolios can be tracked).

Explain various ways of connecting to internet.

Dial up connection

- It requires only a normal telephone connection with a computer, modem and suitable Internet software.
- It is suitable for individual user.

Leased line

- Charges for leased telephone line depend on the speed required - 128 Kbps, 256 Kbps 512 Kbps, 1 Mbps and 2 Mbps, and the distance to be covered.
- Unlike the dial up, the user is permanently connected while using the leased line.
- For a corporate user with multiple users within the organisation, the leased line is an economical option.

Explain briefly Electronic Mail (e-mail)
Explain various features offered by E-mail software.

- E-mail has become the primary means of communication for many organizations and individuals.
- Electronic mail on the Internet provides quick, cost-effective transfer of messages to other E-mail users worldwide.
- With each E-mail address, the user gets a certain amount of Disk space on the Server on which he has been registered.
- When somebody sends an E-mail message to the subscriber, the message lies in this post box.
- One can send common circulars/letters to all those clients or other recipients who have E-mail facilities.
- By creating Address Books in the computer, one does not have to remember the E-mail addresses of others.
- E-mail beats the Postman and the Courier boy in the race by miles.
- E-mail transcends all time zones and barriers.
- Files created in any application such as, a Word Processor or a Spreadsheet can be sent as attachments with the E-mail messages.

The E-mail software supplied with Internet connection comprises of some important and useful features, which are as follows:

Composing messages

- This software gives the facility to compose messages in an attractive way with the help of various fonts.
- It provides various word processing features such as spell check.

Replying to the mail received

- This facility allows sending the reply to all the recipients of the original message.

Address Book

- This is an electronic form of Address Book wherein the features such as, Name, full name, E-mail address, name of organisation to which the person belongs, the designation of such person etc. can be saved.
- When one has to send an E-mail, by merely typing the first name, for example, it would be possible to recall the E-mail address of the recipient.

- It is also possible to store addresses on the basis of categories.
- When a common letter or circular is to be sent to all clients, one has to merely type in the name of the category in place of the addresses.
- This does away with the tedious task of retyping or reprinting the same letter again and again and putting the letters in envelopes, addressing and stamping the envelopes and finally, mailing the same.

Printing of messages

- E-mail facilitates creating a hard copy of any message.

Offline Editing/Composing/Reading

- One does not have to be connected to the Internet all the time to be able to read/edit/compose messages.
- Reading messages, composing messages, editing the same or replying to messages received can be done off-line.
- This results in saving of Internet time as also helps in keeping telephone lines free.
- It is also possible to compose messages and save them as drafts so that at a later stage, the same can be edited or continued and then sent.

Forwarding of messages

- It is possible to forward any message without retyping the message.

Transfer of Data Files

- An important use of the E-mail is the ability to send/receive data files to/from a client.
- This results in considerable saving of time, energy and money.

Greeting Cards

- On the Internet, there are several sites which offer free greeting cards for thousands of occasions to anybody who wants to send greeting differently.
- To send an electronic greeting card, one has to simply visit a site offering this facility, select a card from amongst the several available, type in one's message, name and E-mail address of the recipient, name of the sender and with a simple click, send the card.
- The recipient is notified by E-mail that he has been sent a greeting card.
- Most such cards also come with music.
- This makes the card extremely attractive, interesting and many times better than the traditional printed cards.

What is INTRANET? Explain its features, objectives and benefits.

- The Intranet is a type of information system that facilitates communication within the organisation, among widely dispersed departments, divisions, and regional locations.
- Intranets connect people together with Internet technology, using Web Browsers, Web Servers and Data Warehouses in a single view.

Objectives

- Easily accessible information
- Reduced information searching time
- Sharing and reuse of tools and information
- Reduced set-up and update time
- Simplified reduced corporate licensing
- Reduced documentation costs
- Reduced support costs
- Reduced redundant page creation and maintenance
- Faster & cheaper creation
- One-time archive development costs
- Sharing of scarce resources of skills.

Benefits of Intranet

- Reduced costs - printing, paper, software distribution, mailing, order processing, telephone
- Easier, faster access to information
- Easier, faster access to remote locations
- Latest, up-to-date research base
- Easier access to customers and partners
- Collaborative, group working

Explain INTRANET Applications

- An Intranet usually has a system of access privileges controlled by passwords, restricting access to certain areas of the network.
- Payroll, sales projections, product development notes, and client memos are all examples of the kinds of information that a corporation would not want made accessible to every employee.
- Often a company Intranet is a main means of infra-office communication.
- Updates to business policies and procedures can be posted, as can job openings, information on health insurance and other benefits, profiles of various employees, the company's organisational structure, as well as in-house training for employees.
- Intranets also can be set up to provide an electronic directory service so employees can easily find someone's telephone number and location.
- It provides constantly updated company calendar so employees can check the time and location of all company events and meetings
- An Intranet also may have a whiteboard, an electronic chat space where employees can "talk" to each other in real time by posting text messages.
- Some employees even have their own home pages on their company's Intranet.
- Personal home pages allow employees to get to know each other, and promote camaraderie among co-workers.
- Use of an Intranet for access to GroupWare offers exceptionally high potential.
- **GroupWare** is the name given to software used in a group decision support system, in which several people jointly solve a problem.
- Most major corporations already have at least one Intranet, and many larger companies have several.
- Many universities and colleges have their own Intranets for students, faculty, and other designated users.
- Standard University, for example, posts documents about campus life on its Intranet.
- Students can log onto the Intranet and read a variety of informational postings about campus events, programs, and activities.

Explain briefly EXTRANET.

- An Extranet is an extension of an Intranet that makes the latter accessible to outside companies or individuals with or without an Intranet.
- It is also defined as a collaborative Internet connection with other companies and business partners.
- Parts of an Intranet are made available to customers or business partners for specific applications.
- The Extranet is an extended Intranet, which isolates business communication from the Internet through secure solutions.
- Extranets provide the privacy and security of an Intranet while retaining the global reach of the Internet.

Characteristics of Extranet

- Extranet extends the Intranet from one location to another across the Internet by securing data flows using cryptography and authorisation procedures, to another Intranet of a business partner.
- Intranets of business partners, material suppliers, financial services, distributors, customers, etc. are connected to the Extranets by an agreement between the collaborating parties.
- The emphasis is on allowing access to authorised groups through strictly controlled mechanisms.
- This has led to the true proliferation of e-commerce.

Explain INTERNET PROTOCOL SUITE

- The **Internet protocol suite** is the set of communications protocols that implement the protocol stack on which the Internet and most commercial networks run.
- It is sometimes called the **TCP/IP** protocol suite, after the two most important protocols in it: the Transmission Control Protocol (TCP) and the Internet Protocol (IP), which were also the first two defined.
- The Internet protocol suite — like many protocol suites — can be viewed as a set of layers
- Each layer solves a set of problems involving the transmission of data, and provides a well-defined service to the upper layer protocols based on using services from some lower layers.
- Upper layers are logically closer to the user and deal with more abstract data, relying on lower layer protocols to translate data into forms that can eventually be physically transmitted.
- The OSI model describes a fixed, seven layer stack for networking protocols.
- TCP/IP consists of only 4 layers as follows:-

Layer	TCP / IP Protocols
Application	DNS, TLS/SSL, TFTP, FTP, HTTP, IMAP, IRC, NNTP, POP3, SIP, SMTP, SNMP, SSH, TELNET, BitTorrent, RTP, rlogin, …
Transport	TCP, UDP, DCCP, SCTP, IL, RUDP, …
Network	IP (IPv4, IPv6), ICMP, IGMP, ARP, RARP, …
Link	Ethernet, Wi-Fi, Token ring, PPP, SLIP, FDDI, ATM, DTM, Frame Relay, SMDS