Digicoders technologies (P) Ltd.

LECTURE NOTES

ON

INTERNET AND WEB TECHNOLOGY

Unit- 4

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UNIT-4

Internet Application

ELECTRONIC MAIL (E-Mail):-

Internet provides main communication services that are E-Mail, Newsgroup (Usenet). E-Mail :- E-mail is a private communication between two parties who have accounts on internet.

Advantages:-

- It is faster, easier.
- E-mail is more convenient than traditional mail.
- E-mail is cheap.
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E-mail Networks:-

Data and messages can be transmitted from one computer to another using telephone lines, microwave links, communication satellites or other telecommunication equipments.

The same message can be sent to a number of different addresses.

E-mail is sent through a company's local area network or beyond through a nationwide communication network.

E-mail services use a central computer to store messages and data and route them to their intended destination with a subscription to a public network and individual PC. It needs only is modem and a telephone to send and receive written or vocal message.

E-Mail clients:-

If you are accessing the internet at home through an ISP you will need a program which can send and receive E-mail. This is known as E-mail client.

Example:-

Microsoft's Outlook
ExpressNetscape Mail

Structure / format of mail:-

- E-mail address
- Header
- Body
- Signature
- A

ttachment

Header:-

The e-mail header contains from and to addresses and the subject and date of themessage. This information is in a

standardized format. Body:-

The body of a piece of E-mail is usually just the message typed by the sender.

Signature:-

People often append a signature to the body of the E-mail. This makes easy for the receiver to find information on the sender.

Attachment:-

You can send more than simple text in your E-mail message. You can also attach computer documents including word processor, spreadsheet, graphics and video files to an E-mail message.

Protocols of E-mail:-

1- **POP3 (Post Office Protocol 3):-**

POP3 is a protocol that define how e-mail messages are to be retrieved from a mail server. POP3 is one of the two protocol that a PC mail should be able to use if it is tosend and receive e-mail over the internet.
SMTP & POP3 can share information with each other. So we don't need to use the same e-mail client.

2- **SMTP (Simple Mail Transfer Protocol) :-**

This is the method protocol computer use to send messages by message transfer agents (MTA) on the internet.
MTA are client & server programs that perform e-mail services such as sending or receiving mail for a host computer.

3- **MIME (Multipurpose Internet Mail Extension):-**

It represents a standard for describing data types. It gives information about data. It was designed as an extension to the simple mail transfer protocol allowing people to send binary data.A particular MIME type is a pair of elements deliminated by "/". The 1st element describes the type of data and 2nd element describe the formatof data. Example:-

Text/
HTML
Image/JP
EG
Video/
MPEG

4- **IMAP (Internet Message Access Protocol):-**

- It is a method of accessing e-mail or bulletin board messages that have kept on a mail server.
- The latest version, *IMAP4,* is similar to *POP3* but supports some additional features.
- For example, with IMAP4, you can search through your e-mail messagesfor keywords while the messages are still on mail server.
- In other words, it permits a client in a program to access remote message storesas if they were local.

Example:-

E-mail stored in a IMAP server can be manipulated from a desktop computer at home, a work station at office and a notebook computer while travelling without the need to transfer messages or files back and forth between these computers.

TELNET (Terminal Network):-

- Telnet is a protocol or set of rules that enables one computer to connect

another computer. This process is also known as remote login.

- The user computer which initiates connection is referred as local computer and the machine being connected to which accepts the connection is referred as the remote or host computer.

To start telnet session you must login to the server by entering a valid user name and password.

Telnet is both TCP/IP application and a protocol for connecting a local computer to a remote computer.

Telnet operates on client server principle. The local computer uses a telnet client program to establish the connection and display data on local computer monitor. The remote or host computer uses a telnet server program to accept the connection and sends response to request for information back to the local computer.

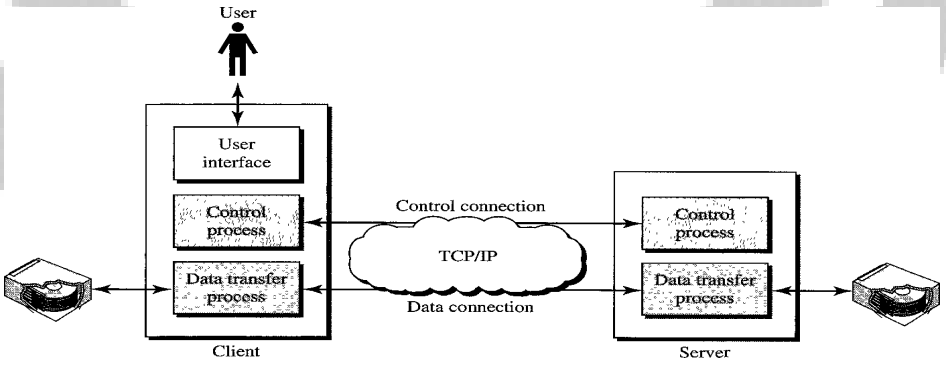
- The telnet application acts as a terminal emulator i.e. whatever commands are typed in local computer are sent across the network for the execution by the remote computer.

File Transfer Protocol (FTP)

- File Transfer Protocol (FTP) is the standard mechanism provided by *TCP/IP* for copying a filefrom one host to another or transferring files from one system to another.
- It is not only a protocol but also a service as well as application.
- Some problems in transferring files are two systems may use different file name conventions, twosystems may have different ways to represent text and data, two systems may have different directory structures. All these problems have been solved by FTP in a very simple and elegant approach.

FTP Server and FTP Client:

- In host computer program called a FTP server, when the server or host is one that uses the FTPfor transferring files to client.
- A FTP client is a user program that downloads a file from the server.



- FTP establishes two connections between the hosts. One connection is used for data transfer, theother for control information (commands and responses). So separation of commands and data transfer makes FTP more efficient.
- FTP uses two well-known TCP ports: Port 21 is used for the control connection,and port 20 is used for the data connection.

- The client has three components: user interface, client control process, and the client data transferprocess.
- The server has two components: the server control process and the server data transfer process.The control connection is made between the control processes. The data connection is made between the data transfer processes.
- The control connection remains connected during the entire interactive FTP session. The data connection is opened and then closed for each file transferred. It opens each time commands that involve transferring files are used, and it closes when the file is transferred.**Types of FTP**

In networking, the FTP is divided in to two types according to role of the FTP Server:

1. Active FTP
2. Passive FTP

1. **Active FTP*:***

If we maintaining a active FTP server, the FTP Server is the active part during the wholesession. When a client starts an active FTP Session, the server will initiate data transfer.

Passive FTP*:*

Passive FTP requires the client to be the active part, i.e. once control session is established it will ask for aport with which data connection will take place, and finally initiate data connection with the port received. Passive FTP is considered more secure than active FTP.

Newsgroup

A newsgroup is an online discussion forum accessible through Usenet. Each newsgroup contains discussions about a specific topic, indicated in the newsgroup name. You can browse newsgroups andpost or reply to topics using a newsreader program. Access to newsgroups also requires a Usenet subscription.

Newsgroups may be either moderated or unmoderated. In a moderated newsgroup, a moderator must approve posts in order for them to become part of the discussion. In an unmoderated group, everythingposted is included in the discussion. Some newsgroups may also use bots to moderate the content, automatically eliminating posts that are deemed offensive or off topic.

Chat rooms

Chat rooms are Web sites or programs that allow people to send text messages to one another in real time.The chat room works as a virtual room, where groups of people send messages that others can read instantaneously.

IRC (Internet Relay chart):-

i) IRC is form of real time internet charge or synchronous conferencing. It is mainly designed for group communication in discussion forums called channel.

ii) It also allows one to one communication via private message, as well as chart

iii) and data transfer via client to client.

IRC Channel:IRC establish a communication IRC session, is called an IRC channel.IRC Network:- There are thousands of IRC networks in the world. They run various implementation of IRC server and are administered by various group of IRC operator.

IRC Server: An IRCD (Internet Relay Chart Daemon) is a server software that implement the IRCprotocol, which enables people to talk with each other via internet.

Video conferencing

Videoconferencing (or video conference) means to conduct a conference between two or more participants at different sites by using computer networks to transmit audio and video data. For example, a point-to-point (two-person) video conferencing system works much like a video telephone. Each participant has a video camera, microphone, and speakers mounted on his or her computer. As thetwo participants speak to one another, their voices are carried over the network and delivered to the other's speakers, and whatever images appear in front of the video camera appear in a window on theother participant's monitor

E-COMMERCE

- E-COMMERCE Commonly known as Electronic Marketing.
- It consist of buying and selling goods and services over an electronic systems Such as theinternet and other computer networks.
- E-commerce is the purchasing, selling and exchanging goods and services over computer networks (internet) through which transaction or terms of sale are performed Electronically.

THE PROCESS OF E-COMMERCE

- A consumer uses Web browser to connect to the home page of a merchant's Web site on the Internet.The consumer browses the catalog of products featured on the site and selects itemsto purchase. The selected items are placed in the electronic equivalent of a shopping cart.
- When the consumer is ready to complete the purchase of selected items, she provides a bill-toand ship-to address for purchase and delivery
- When the merchant's Web server receives this information, it computes the total cost of the orderincluding tax, shipping, and handling charges-and then displays the total to the customer.
- The customer can now provide payment information, such as a credit card number, and thensubmit the order.
- When the credit card number is validated and the order is completed at the Commerce Serversite, the merchant's site displays a receipt confirming the customer's purchase.
- The Commerce Server site then forwards the order to a Processing Network for paymentprocessing and fulfilment

TYPES OF E-COMMERCE

1. **BUSINESS-TO-BUSINESS (B2B) :**

- B2B stands for Business to Business. It consists of largest form of Ecommerce. This model defines that Buyer and seller are two different entities. It is similar to manufacturer issuinggoods to the retailer or wholesaler.
- E.g.:-Dell deals computers and other associated accessories online but it is does not make up allthose products. So, in govern to deal those products, first step is to purchases them from unlikebusinesses i.e. the producers of those products.

2. **BUSINESS-TO-CONSUMER (B2C):**

- It is the model taking businesses and consumers interaction. The basic concept of this model isto sell the product online to the consumers.
- B2C is the direct trade between the company and consumers. It provides direct selling throughonline. For example: if you want to sell goods and services to customer so that anybody can purchase any products directly from supplier's website.

3. **BUSINESS-TO-EMPLOYEE (B2E) :**

- Business-to-employee (B2E) electronic commerce uses an intra business network which allowscompanies to provide products and/or services to their employees.
- Typically, companies use B2E networks to automate employee-related corporate processes.

4. **CONSUMER-TO-CONSUMER (C2C) :** There are many sites offering free classifieds, auctions, andforums where individuals can buy and sell thanks to online payment systems.
5. **M-COMMERCE (MOBILE COMMERCE**)

- M-commerce (mobile commerce) is the buying and selling of goods and services through wireless handheld devices such as cellular telephone and personal digital assistants (PDAs).
- Known as next-generation e-commerce, mcommerce enables users to access the Internetwithout needing to find a place to plug in.

<u>Advantages of E-Commerce:</u>

- No checkout queues.
- Reduce prices.
- You can shop anywhere in the world.
- Easy access 24 hours a day.
- Wide selection to cater for all consumers.

<u>Disadvantages of E-Commerce:</u>

- Unable to examine products personally.
- Not everyone is connected to the Internet.
- There is the possibility of credit card number theft.

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