COMPUTER NETWORK

Assignment : 2

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Q.1) Write note on Web & HTTP.

Ans Web :

- Web page consists of objects
- Object can be HTML file, JPEG image, JAVA applet, audio file,...
- Web page consists of base HTML-file which includes several referenced objects
- Each object is addressable by a URL.

E.g.: www.someschool.edu/somedept/pic.gif
Host name Path name

HTTP :

- HTTP stand's for Hypes Text Transfes Protocol.
- web's aplication layes psotocol.
- client / sesves model.
  * client : brawses that sequests, sereives, "displays" web objects.
  * sesves : web sesves sends objects in sesponse to sequests.
- HTTP is "stateless" : sesves maintains no infosmation about past client sequests
- These are two types of HTTP messages: sequest, sesponse.
- Also these is two types of HTTP connections : Non-pessistent HTTP and Pessistent HTTP

Q.2] What is FTP ? Explain it in detail.

Ans FTP stands for File Transfer Protocol.
- FTP transfers file to/from remote host.
- client / server model.
  * client : side that initiates transfer (either to/from remote)
  * server : remote host.
- ftp : RFC 959
- ftp server : port 21
- Seperate control, data connections
- FTP client contacts FTP server at port 21, TCP is transport protocol.
- client authorized over control connection.
- client browses remote directory by sending commands over control connection.
- when server receives file transfer command, server open 2nd TCP connection (for file) to client.
- after transferring one file, server closes data connection.
- server opens another TCP data connection to transfer another file
- control connection : "out of band".
- FTP server maintains "state" : current directory, earlier authentication.

Q.3] Explain Email protocols in detail.

Ans Firstly, E-mail these are three major components.

- Uses agents
- mail servers
- Simple Mail Transfer Protocol (SMTP).

- Now, the protocols which is used is SMTP. [RFC 2821]
- Here SMTP uses TCP to reliably transfer email message from client to server, port 25.
- direct transfer: sending server to receiving server.
- Three phases of transfer.
  * handshaking (greeting)
  * transfer of messages
  * closure.
- Command/response interaction
  * commands: ASCII text
  * response: status code and phrase

* Mail Access Protocols

- SMTP: delivery/storage to receiver's server
- Mail access protocol: retrieval from server
  * POP: Post Office Protocol [RFC 1939]
    - authorization (agent <-> server) and download.
  * IMAP: Internet Mail Access Protocol [REC 1730]

- more features (more complex).
- manipulation of stored msgs on server

* HTTP: gmail, Hotmail, Yahoo! Mail, etc.

Q.4] Describe DNS in detail.

Ans
- DNS stands for Domain Name System.
- DNS is a directory service that provides a mapping between the name of a host on the network and its numerical address.
- DNS is required for the functioning of the internet.
- Each node in a tree has a domain name, and a full domain name is a sequence of symbols specified by dots.
- DNS is a service that translates the domain name into IP address of 132.147.165.50, most people would reach this site by specifying ftp.eelusofl.com. Therefore, the domain name is more reliable than IP address
- DNS is a TCP/IP protocol used on different platforms. The domain name space is divided into three different sections:
  - Generic domains
  - Country domains
  - Inverse domain.

Q.5) Explain Socket Programming with TCP & UDP in detail.

Ans Firstly, socket means a door between application process and end-end- transport protocol (UDP or TCP).

-:- socket programming with TCP

* Client must contact server:
  - server process must first be running
  - server must have created socket (door) that welcomes client's contact.

* Client contacts server by:
  - creating client-local TCP socket
  - specifying IP address, port number of server process.
  - when client creates socket: client TCP establishes connection to server.
  - when contacted by client, server TCP creates new socket for server process to communicate with client.

-:- Socket programming with UDP

* UDP : no "connection" between client and server
  - no handshaking
  - sender explicitly attaches IP address and port of destination to each packet.

- server must extract IP address, port of sender from received packet.

* UDP: transmitted data may be received out of order, or lost.