System Practicum : CS-307

Assignment - 06

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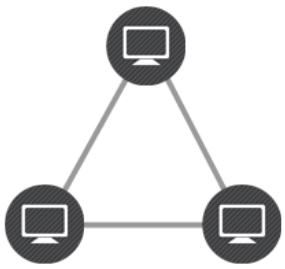
1. Design a model for question 3 using peer to peer architect instead of client server using block diagrams. What are issues in this architect?



Usually, P2P applications need the firewall to open a number of ports in order to function properly. Each open port in the firewall is a potential avenue that attackers might use to exploit the network. It is not a good idea to open a large number of ports in order to allow for P2P networks
Propagation of malicious code such as viruses.
When a file is downloaded using the P2P software, it is not possible to know who created the file or whether it is trustworthy.

2. Design a file transfer application in client server architect which supports multiple clients simultaneously. Client sends file name to the server which checks its local disk for the file, if found it will send the file to the requesting client.

   (a) Client will send a request code(File transfer or Usage details).
   (b) After receiving the request server will decode what user wants and acts as following :
      i. If user requests for the File Transfer
      Server will search for it in its directories if found it will convert it into a byte array and send user that byte array. If not found it will send the signal file not found.
      Since TCP can't send large files altogether server will send only chunk of data at a time, so for sending a file it will have to send it through a loop.

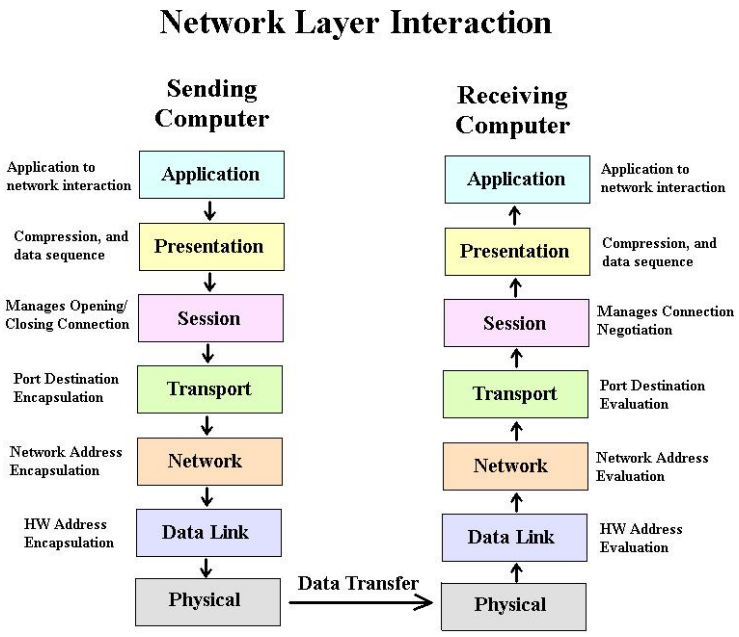
      ii. If user requests for the Usage Details
      Server will send the file details which it has maintained for every user. Every user will have a separate file in which all the necessary details(files transferred, files requested, data exchange etc) will be there.

3. Explore following (Theory) :

(a) What is DNS, DHCP.
Every device on the Internet is assigned an IP address, but navigating to them using their 12-digit IP address would be very cumbersome. DNS allows a domain name to be used as a pseudonym for a specific IP address.
If you get your IP address dynamically, then DHCP is used. Simply put, the PC requests an IP address and the DHCP server on the network ”leases” one out of its available pool of addresses.

(b) What are differences between TCP and UDP.
TCP is connection-oriented protocol while UDP is connectionless protocol.
TCP is ordered connection protocol while UDP is orderless connection protocol.
TCP is slower than UDP.
In TCP data is send as stream(group of packets) while in UDP data is send individually.

(c) What is meant by layers in networking.
Each layer of a specific network model may be responsible for a different function of the network. Each layer will pass information up and down to the next subsequent layer as data is processed.



(d) Which are the two service providers that provide services to IIT Mandi.
a. NKN Core Network
b.

(e) Find out IP address of your laptop using ifconfig. Now go to ip2location.com and check ip there. Do it using other laptops. Explain your observation.
These are coming different.

(f) What is special about 0.0.0.0 and 255.255.255.255.
0.0.0.0 is the IP address for the Internet.
255.255.255.255 is the broadcast address for your network.