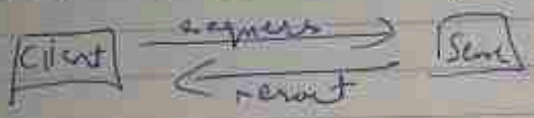
TCP/IP Model
also The Internet protocol Suite

1) App layer
2) Transport layer
3) Network layer
4) Data Link
5) Physical layer

* Application layer

1) User interact, ex - whatsapp, where it deals - protocol, client-server and its architecture.

Server: It's a system that contains website we are hosting
Data Center: collection of huge no of computers



2) Peer to peer architecture : apps getting connected to one another.

a) Repeater - Two ports, it don't amplify physical layer

b) Hub - multiple ports (can't filter so data is sent to all connected devices.

c) Bridge - operate at data link layer. It can filter by reading MAC address

d) Switch - can perform error checking

3) Router - network layer

4) Bridge - package to connect two network modules

5) Gateway - ...

protocol in App layer.
web protocol
TCP/IP : HTTP (How data is transferred)
: DHCP (allocate IP address)
FTP (How files can be transferred)
SMTP ((to email) send email
IMAP & POP3 (receive email)
SSH (to login into other comp shell)
VNC (limited network control)
Telnet (to connect to remote host)
UDP : stateless connection

[A running instance of a program is process]
[lighter version of process is thread]

Socket : when we need to send msg from one system to another system
interface between process and internet is socket.

Ephemeral ports : which tab of application should request go to.

* HTTP is a client server protocol and it tell us how you request the data from server and how the server will send back data to client
HTTP uses TCP. because HTTP is stateless

HTTP - App layer
TCP - transport layer

=> method => telling the server what to do

HTTP methods
1) GET   2) POST   3) PUT   4) DELETE

Status code   404 can't find
200 say was successful
400 bad request
500 internal server error

Status code
1xx → information relate
2xx → success
3xx → redirection
4xx → client error (you made an error)
5xx → server error

* Cookies:
unique string stored on a client browser

Third party
placed on website by someone other than the owner (a third party) and collects user data for third party.

Q) How Email works?   App layer
A) SMTP, POP3

gmail to yahoo

nslookup -type=mx gmail.com

POP server   Port 110

client —request→ [POP server]
←transact—

other folders, drafts, sent not sync in POP

IMAP - Internet message access protocol

DOMAIN NAMING SYSTEM : DNS

- IP address is mapped to name

directory of database service in DNS.

mail.google.com
- mail — sub domain
- google.com — second level domain
- com — Top level domain

ROOT DNS server
- .io — abc.io etc
- .org
- .com — google.com, yahoo.com

icann manage Top level domain

If we type www.google.com
first search in own cache
Then search in local DNS server.
Then search in root server
If answer is NO
then it will check in Top level domain.
Top level directory will provide ip address

dig google.com

dig is DNS lookup utility.