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Part-B

8.1] a] SMTP:-

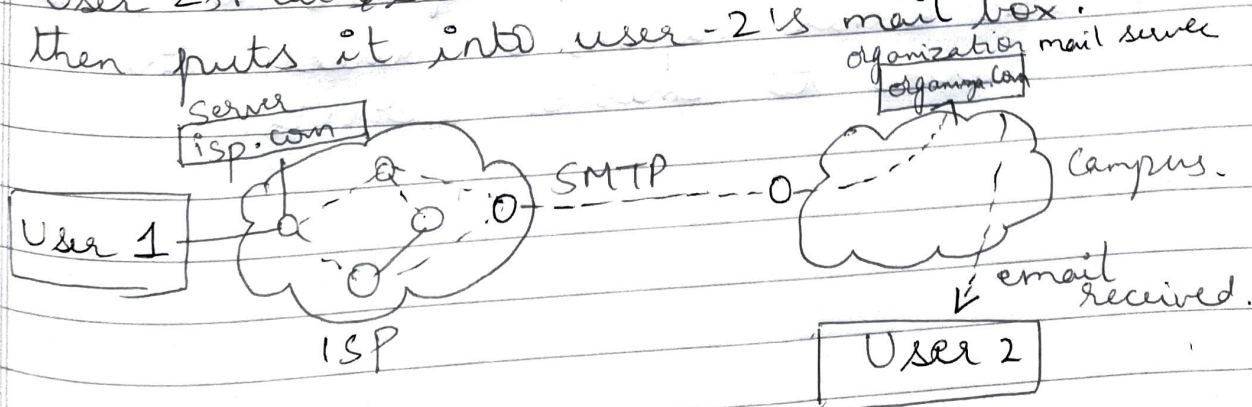
- SMTP stands for Simple Mail Transfer Protocol & Email.

- SMTP transfers email from the mail server of a source to the mail servers of destination.

- A user mail box is a space in the mail server allocated to the user to keep its email.

→ Begin SMTP between 2 users:-

- ① User 1 provides user 2's email and composes its message.
- ② User - 1 sends the message to its mail server (isp.com)
- ③ Server isp.com places its message in queue.
- ④ SMTP on user 1's mail server
 - Notices the message in the queue and
 - Opens TCP connection with organization mail server (organization.com).
- ⑤ Initial SMTP handshaking takes place between the two servers
- ⑥ The message is sent to organization.com's mail-server.
- ⑦ User-2's mail server receives the message and then puts it into user-2's mail box.



Q.1 b] DNS:-

- DNS stands for Domain Name System.
- It is a distributed hierarchical & global directory that translates domain names into numerical IP addresses & vice versa.
- This is an application layer protocol.
- This is a critical infrastructure & all hosts contact DNS to access servers and start connections.
- This can run either on TCP or UDP but running on UDP is preferred for fast response.
- Functions of DNS:
 - ① Finding address of particular host.
 - ② Mapping IP address to host names.
 - ③ Finding an alias for real name of host.
 - ④ Finding host type & operating system information.
 - ⑤ Naming the host that processes incoming mail for the designated target.
 - ⑥ Delegating a sub tree of server names to another server.
 - ⑦ Denoting the start of a sub tree that contains ~~a~~ cache & configuration parameters and giving corresponding addresses.
- Every ISP has a DNS server.
- A host sends UDP requests to DNS server.
- DNS either replies or directs the queries to smarter servers.