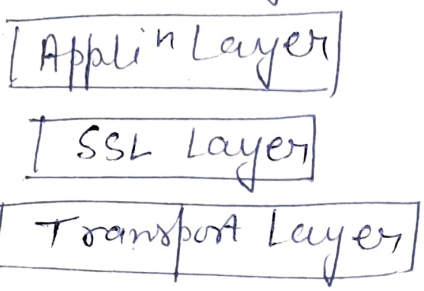
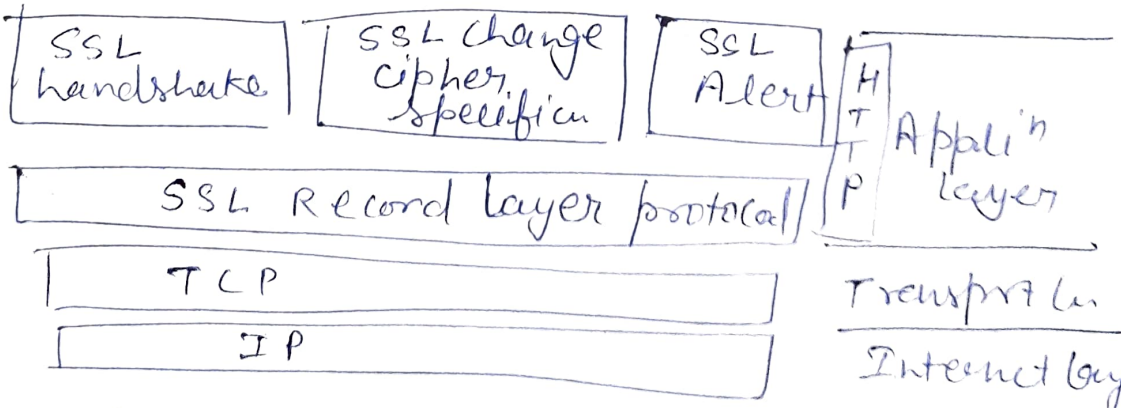
Campus: ..... Course: ..... Class/Section: ..... Date: .....
Name of Faculty: ..... Name of Subject: ..... Code: .....

Transport Layer & Applin Layer



SSL Layer works b/w the Applin layer and transport layer when encrypting the inform^n b/w client and server.

SSL



Key Tools

- Firewall
- VPN (Virtual private N/W) → encrypted co-operate, Personal N/W connection.
- Intrusion Prevention (H/W & S/W) Continously Scan N/W System. detection system.

- Behavior Analytics (It uses statistics that are b carried over and stored months and years for usages)

Benefits of N/w security

1) Protection against external threats.
   - S/w updates to detect abuse techniques.

2) Protection against internal threats
   - Human aspects weakens the cyber security.
   - Current workers, third party Vendors (They can be unintentional, careless / rapid
   - Expensions of wirules (remote work) IOT devices in remote location can make easier to these kind of threats.
   - Proactively monitoring and managing access can control these kind of disasters.

3) Increased productivity
   - websites, cyber attacks, min downtown by scanning
   - employee identification of possible e-mail fishing sche

4) Brand trust and reputation
   - loyality
   - ~~Cost~~ Cust mer retention.

Format of ARP

Hardware type		Protocol Type
Hardware length	Protocol length	operation Request 1, Reply 2
Sender hardware address (for eg - 6 bytes for ethernet)		
Sender protocol address (eg - 4 bytes for IP)		
Target H/w address (eg - 6 bytes for ethernet) (it is not filled in a req.)		
Target protocol address (eg - 4 bytes for IP)		

1) Hardware type - 16 bit field (type of H/W)
eg- ethernet is given type 1.

2) Protocol type - 16 bit field
IPV4 → 0800_{16} (ARP can be used for any higher level protocol)

3) Hardware length - 8-bit (length of physical address) eg - ~~IPV4~~ Ethernet value is 6

- Protocol length - 8 bit field (length of logical addrss)

IPV4 → value is 4

- operation

16-bit field defining the type of packet

ARP request (1)

ARP reply (2)

Sender H/w address - variable length defining physical address of sender

eg - Ethernet field is 6 bytes long.

Sender protocal address - defining logical address

IP protocol field is 4 bytes long.

Target H/w address -

Physical address of target

6 bytes long.

for ARP req. msg - this field is all 0s beause sender does not know the physical address of the target

Target protocol address

- IPV4 protocol

this is 4 bytes long