OSI Model (ISO)

OPEN SYSTEM INTER CONNECTION

Application Layer
Presentation Layer
Session Layer   } Each Layer is a
Transport Layer   Package of Protocols.
Network Layer
Datalink Layer
Physical Layer

Application Layer

Network applications

chrome, firefox, Outlook, Skype

HTTP
HTTPS

- Some Protocols name :- Http, Https, FTP,NFS, FMTP, DHCP, SNMP, SMTP, POP3, TELNET, IRC, NNTP

File Transfer, web surfing, Emails, Virtual Terminals.

↓ Presentation Layer :-

Data from characters and numbers are converted into binary. (Translation) (i)*

· ASCII → EBCDIC

*(ii) Data compression, (i) Lossy (ii) Lossless.

*(iii) Encryption : SSL (Secure Sockets Layer) Decryption.

Session Layers:-

Manages connection and Tramoinasion of connections.
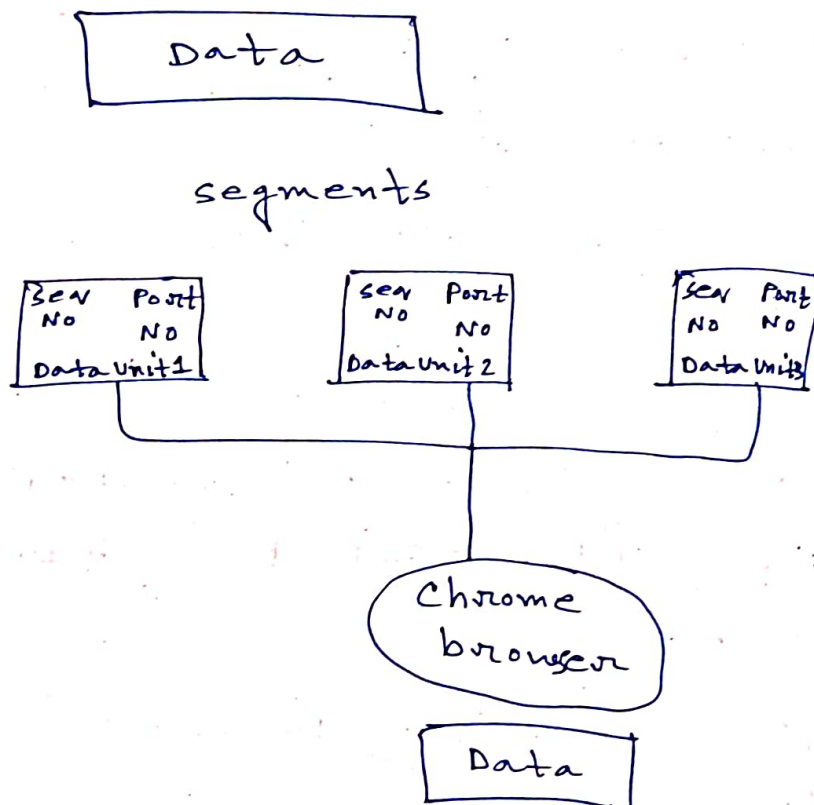
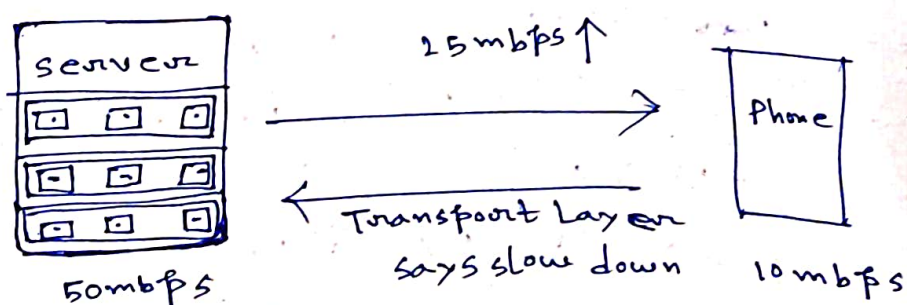### Main Concept

(i) Authentication

(ii) Authorization

(iii) Session Management

Transport Layer :-

Segmentation:-

```
┌─────────────┐
│    Data     │
└─────────────┘
```

segments

```
┌──────────────┐   ┌──────────────┐   ┌──────────────┐
│ Seq   Port   │   │ Seq   Port   │   │ Seq   Port   │
│ No    No     │   │ No    No     │   │ No    No     │
│ Data Unit 1  │   │ Data Unit 2  │   │ Data Unit3   │
└──────────────┘   └──────────────┘   └──────────────┘
```

```
     ╭───────────╮
     │  Chrome   │
     │  browser  │
     ╰───────────╯
     ┌───────────┐
     │   Data    │
     └───────────┘
```

Flow control:-

```
┌─────────────┐                25 mbps ↑          ┌────────┐
│   server    │    ──────────────────────────→    │ Phone  │
│  ▫ ▫ ▫      │                                   │        │
│  ▫ ▫ ▫      │    ←──────────────────────────     └────────┘
│  ▫ ▫ ▫      │       Transport Layer
└─────────────┘       says slow down
   50 mbps                                          10 mbps
```

Error Control:-

(i) Automatic Repeat Request if any data lost.

(ii) checksum.

Protocols:-

Transmission control Protocol (TCP).
→ Slower but acknowledgement of receiving data
User Datagram Protocol (UDP)
→ Faster, but no acknowledgement of receiving of data.

Services:-

connection Oriented Transmission
Via → TCP (www, Email), FTP).

connection Less Transmission
Via → UDP (online streaming, video games, TFTP DNS).

↓

Network Layer:-

Logical Addressing:-   Works with
IP4 & IP6   Packets.

Routing

Path Determination.

↓ ~~~~ Datalink Layer:-
          works with Frames.
          MAC ADDRESS.

Physical Layer :-

Frames $\longrightarrow$ Bits $\longrightarrow$ Wired or Wireless Media.