OSI Model – 7 Layers (Top to Bottom)

Layer 7 – Application Layer

- **This is the layer closest to the user. It allows users to interact with network services.**

Examples:

- Web browsing (HTTP)
- Email (SMTP)
- File transfer (FTP)

Layer 6 – Presentation Layer

- Translates data into a readable format
- Encrypts and decrypts data
- Compresses data

Example:
 Converts data so different systems can understand each other. *Makes data understandable and secure*

Layer 5 – Session Layer

- Starts, manages, and ends communication sessions
- Keeps track of who is sending and receiving data

Example:
 Keeps a video call running and ends it properly. *Controls the conversation*

Layer 4 – Transport Layer *Ensures data reaches safely*

- Breaks data into smaller pieces
- Ensures data is delivered correctly and in order
- Error checking

Protocols:

- TCP (reliable)
- UDP (fast but less reliable)

Layer 3 – Network Layer

- Finds the **best path** for data
- Uses **IP addresses**
- Handles routing

Example:
Routers work at this layer. *Chooses the route*

Layer 2 – Data Link Layer *Delivers data to the correct device*

- Uses **MAC addresses**
- Detects and fixes errors from the physical layer
- Controls access to the network

Example:
Switches operate at this layer.

Layer 1 – Physical Layer

- Sends raw bits (0s and 1s)
- Deals with cables, connectors, signals, voltage

Example:
Ethernet cables, fiber optics.

Memory Trick (Top → Bottom)

All
People
Seem
To
Need

Data
Processing