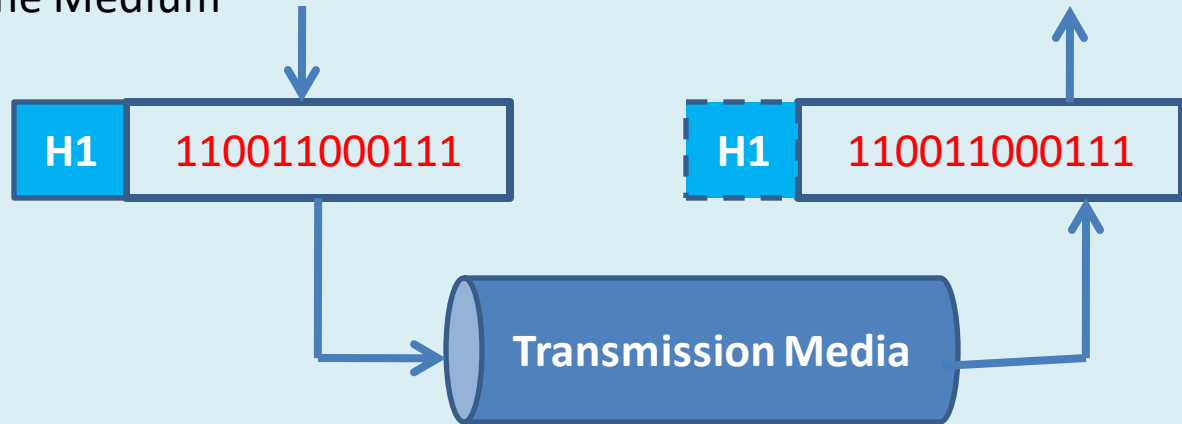


# Physical Layer

Responsible for moving bits from one node to other

- ✓ Define characteristics of the Medium
- ✓ Representation of Bits
- ✓ Data Rate
- ✓ Synchronization
- ✓ Link Configuration (Point to Point / Multipoint)
- ✓ Physical Topology(Mesh / Star/ Bus/ Ring)
- ✓ Transmission Mode (Simplex/ Half Duplex/ Duplex)



# Data Link Layer

Responsible for moving FRAMES from one node to next

✓ Framing :

Divides data bits received from network layer into frames

✓ Physical Addressing :

Add HEADERS to frames.

Header show senders/ receivers address

✓ Flow Control :

If Senders Data Flow Rate is higher than the receiver

✓ Error Control :

By adding Trailers to Frames

-Detect Damaged Frames

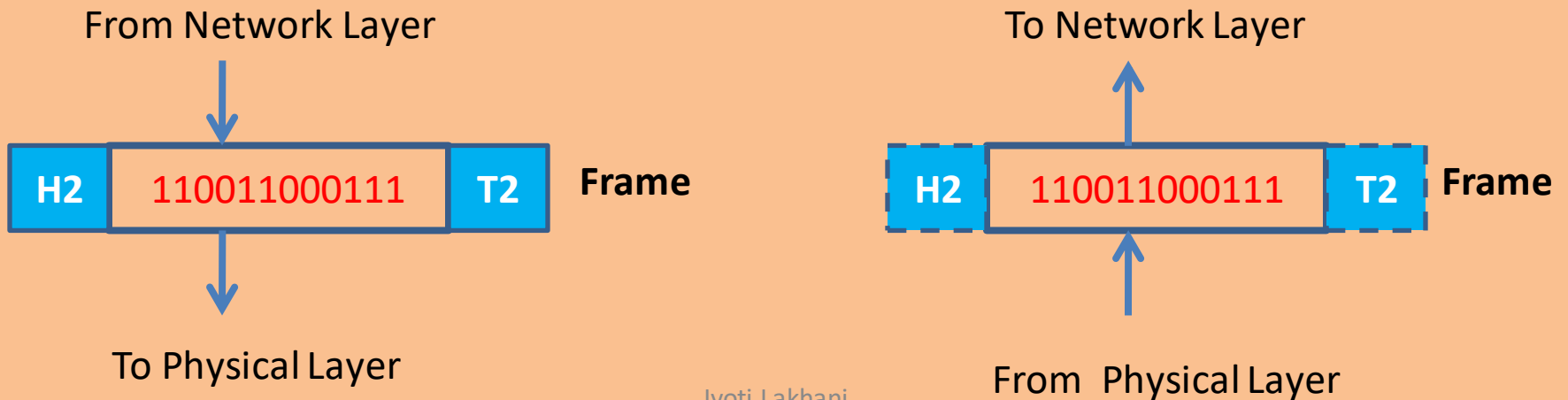
- Retransmit Lost Frames

-Recognize Duplicate Frames

✓ Access Control :

It will decide-

if more than one devices share the same link than which device control the link at that time



# Network Layer

Responsible for Source to Destination delivery of data PACKETS over multiple networks

If Source and Destination are on the same network, there is no need of this layer

- ✓ Logical Addressing
- ✓ Routing

Using Connecting Devices (Switches/ Routers)



# Transport Layer

Responsible for delivery of message from one process to another

- ✓ Service Point Addressing :

Sends entire message to the correct process on computer  
(port Addressing)

- ✓ Segmentation and Reassembly :

The message is divided into segments. Each segment with a segment no.

These segments are arranged in sequence using this  
segment number at receiver

- ✓ Connection Control :

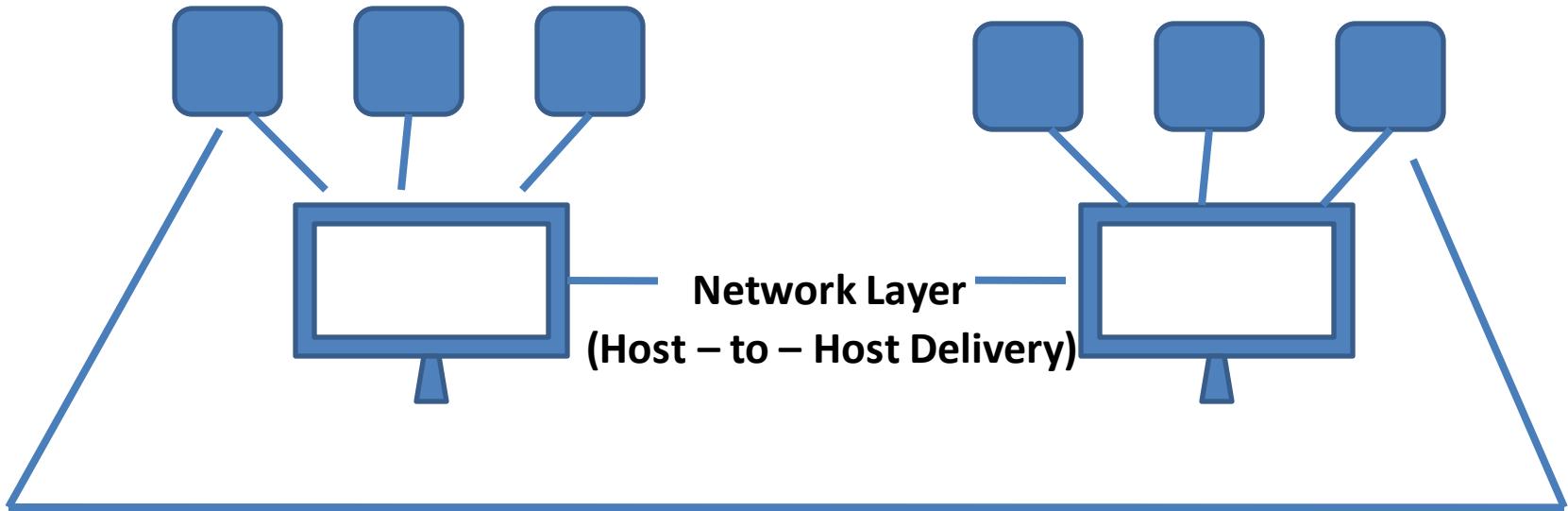
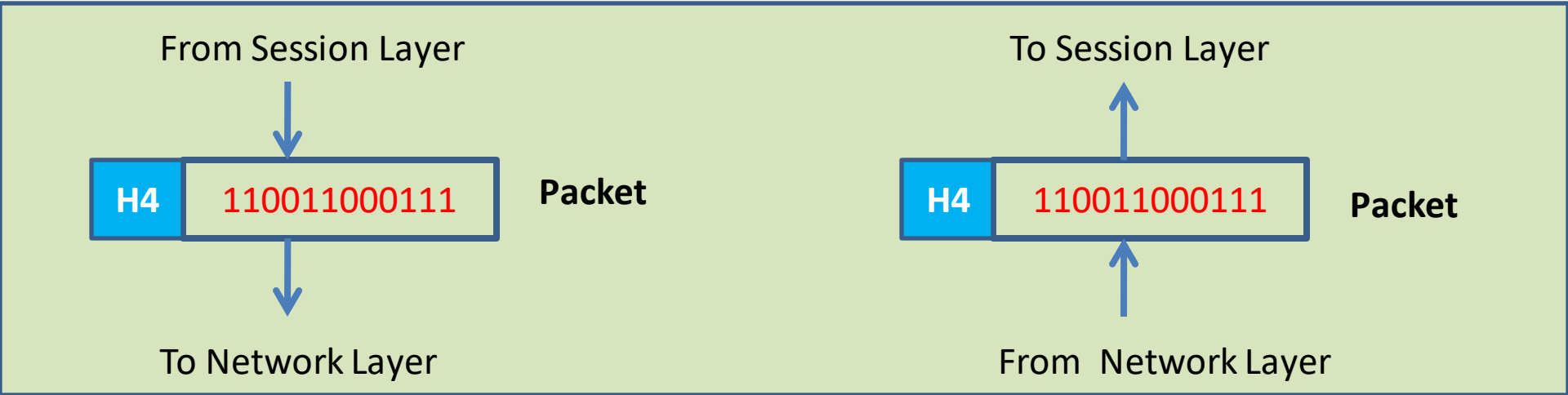
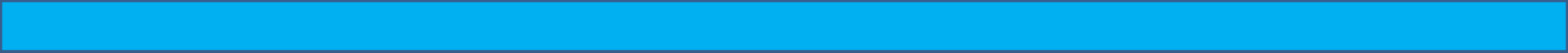
A connection is established before sending a message and  
After transmission, connection will be terminated

- ✓ Flow Control :

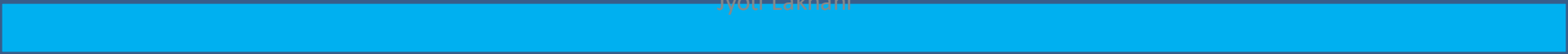
- ✓ Error Control :

Make sure that the entire message sends at the receiver

- Error control by RETRANSMISSION



**(Process to Process Delivery)**



# Session Layer

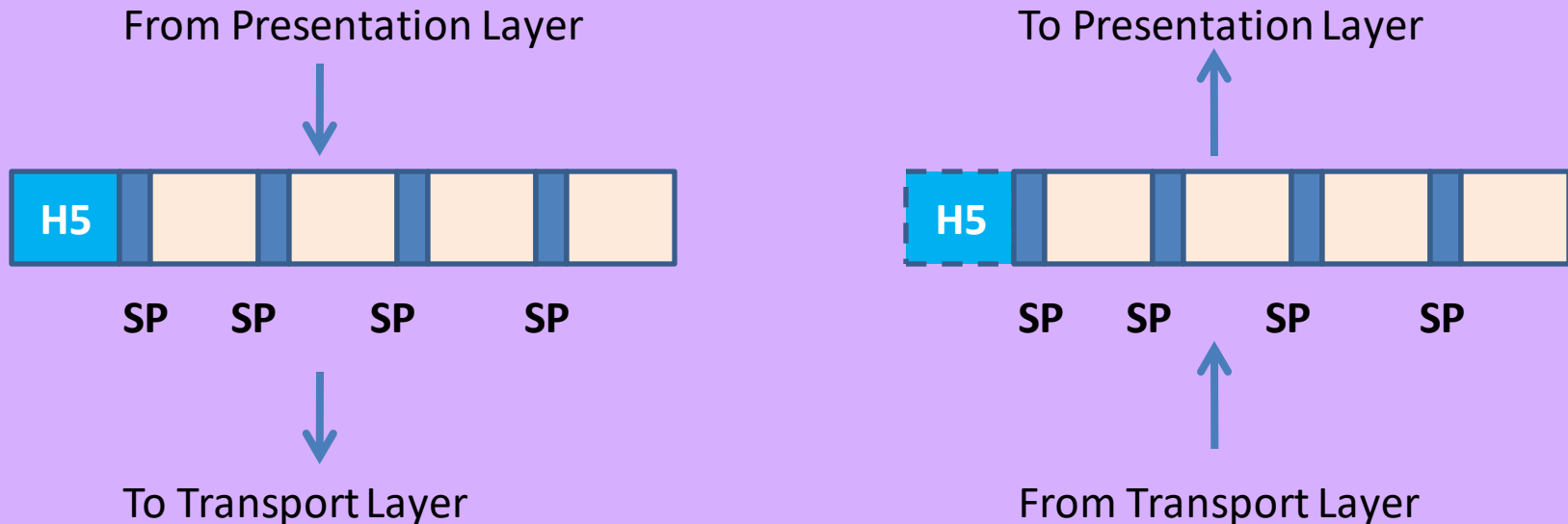
Responsible for establish , maintain and synchronize the interaction between the communicating devices

✓ Dialog Control

In Simplex/ Half Duplex/ Duplex mode

✓ Synchronization

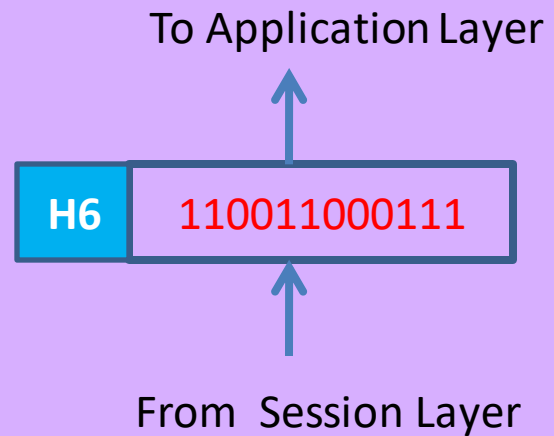
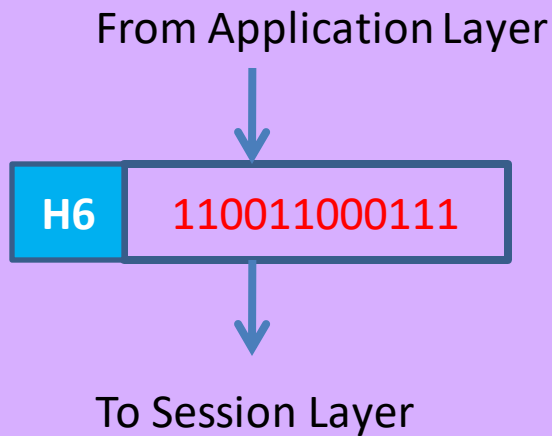
Add Check Points / Synchronization Points to Stream of Data



# Presentation Layer

Concerned with syntax and semantics of information exchanged

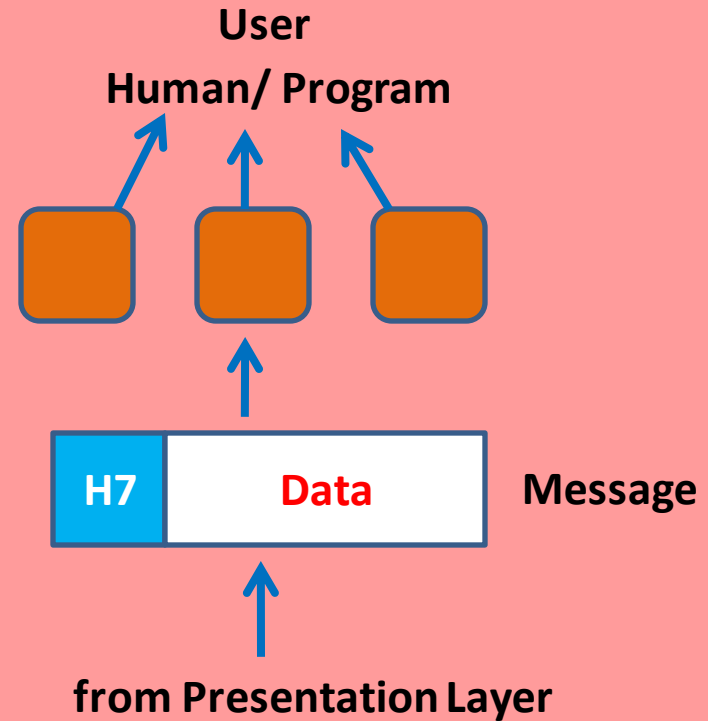
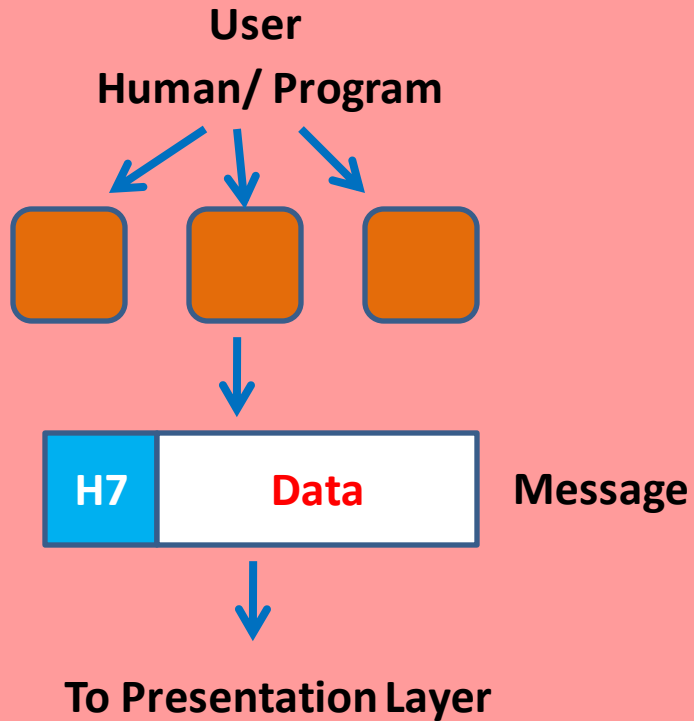
- Translation
- Compression
- Encryption





# Application Layer

Enable User to access network



# Summary

**Application**

Allow Access to network resources

**Presentation**

Translate or Encrypt Compressed data

**Session**

Establish, Maintain, Terminate Session

**Transport**

Process to Process Message delivery

**Network**

Inter-Networking (packet Transfer)

**Data Link**

Hop- to – Hop delivery ( Frame Transfer)

**Physical**

Bits Transfer

<b>H7</b>	What, When, How, where transfer data
<b>H6</b>	Info about translation/ Encryption/ Compression
<b>H5</b>	Synchronization Points
<b>H4</b>	Info About Port Address
<b>H3</b>	Logical Address Packet Switching
<b>H2</b>	Physical Address / Frame Sequencing
<b>H1</b>	All Above

<b>A</b>	Message
<b>P</b>	Encrypted Message
<b>S</b>	Encrypted Message
<b>T</b>	Encrypted Message
<b>N</b>	Packets
<b>DL</b>	Frames
<b>Ph</b>	Bits