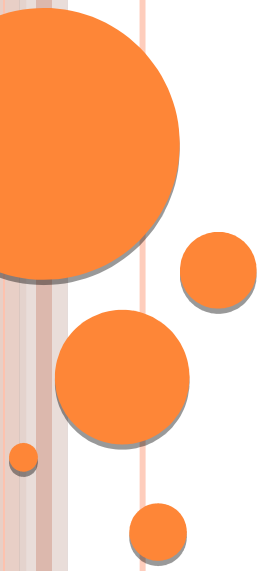
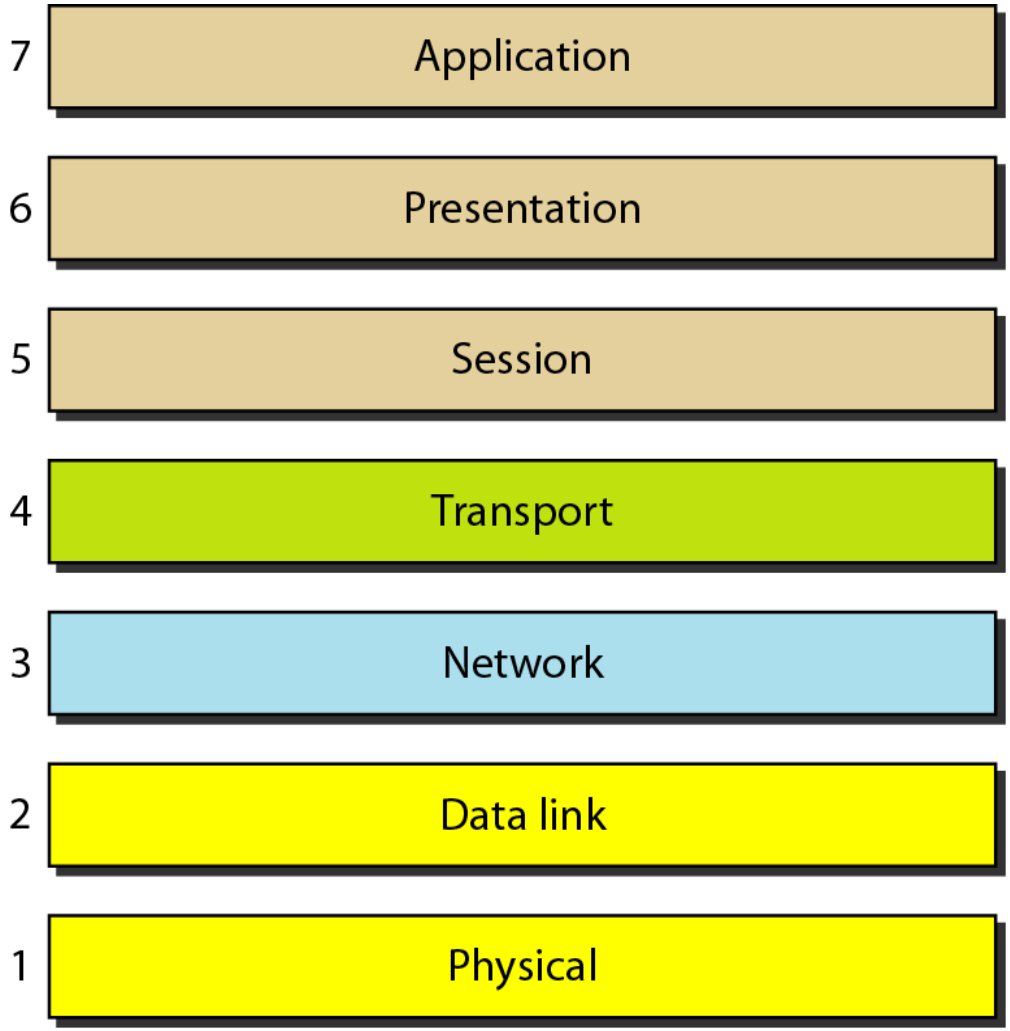
OSI MODEL



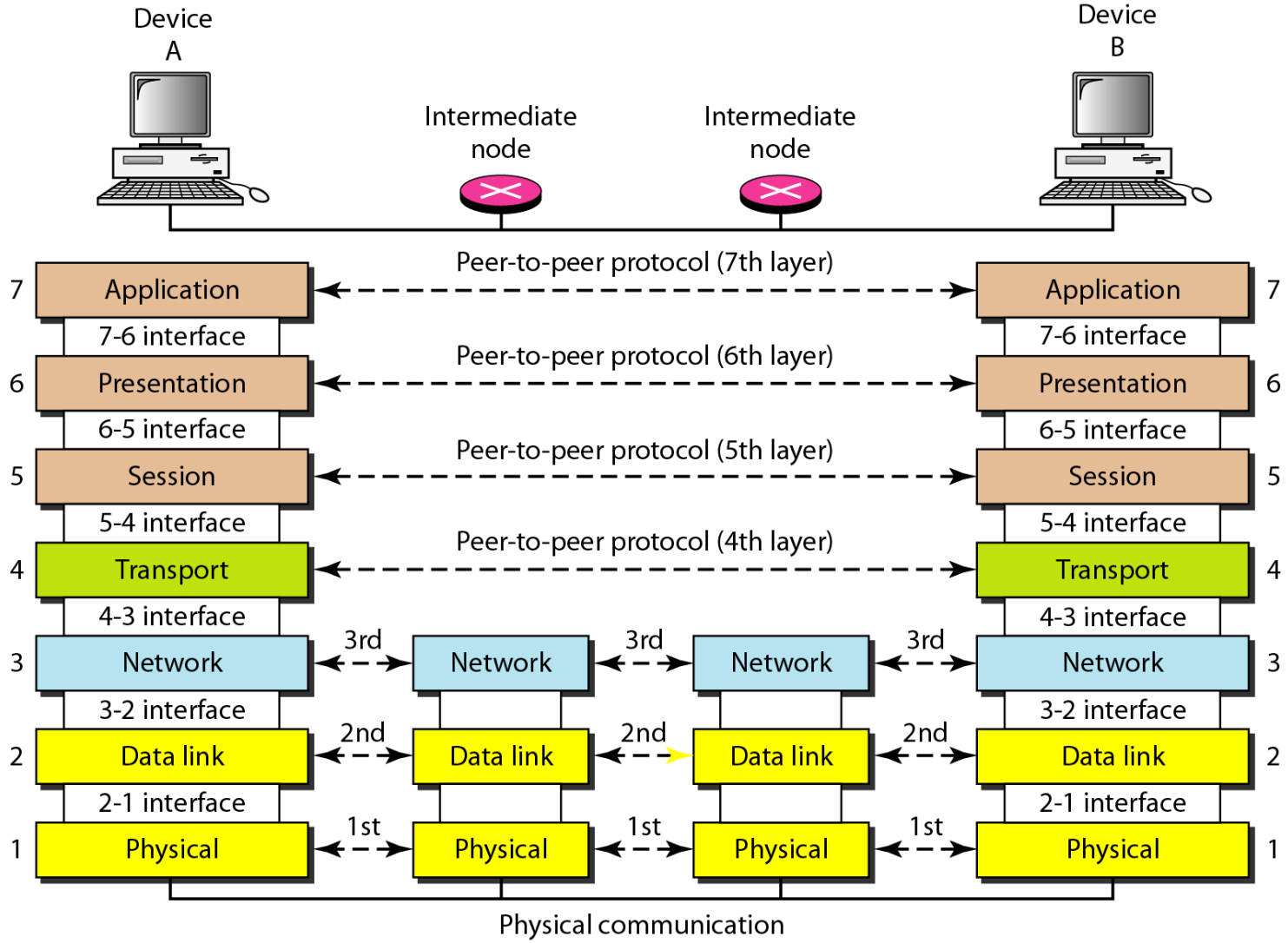
INTRODUCTION

- ISO established committee in 1977
- In 1984 approved the architecture
- Primary architectural model for inter computer communication.

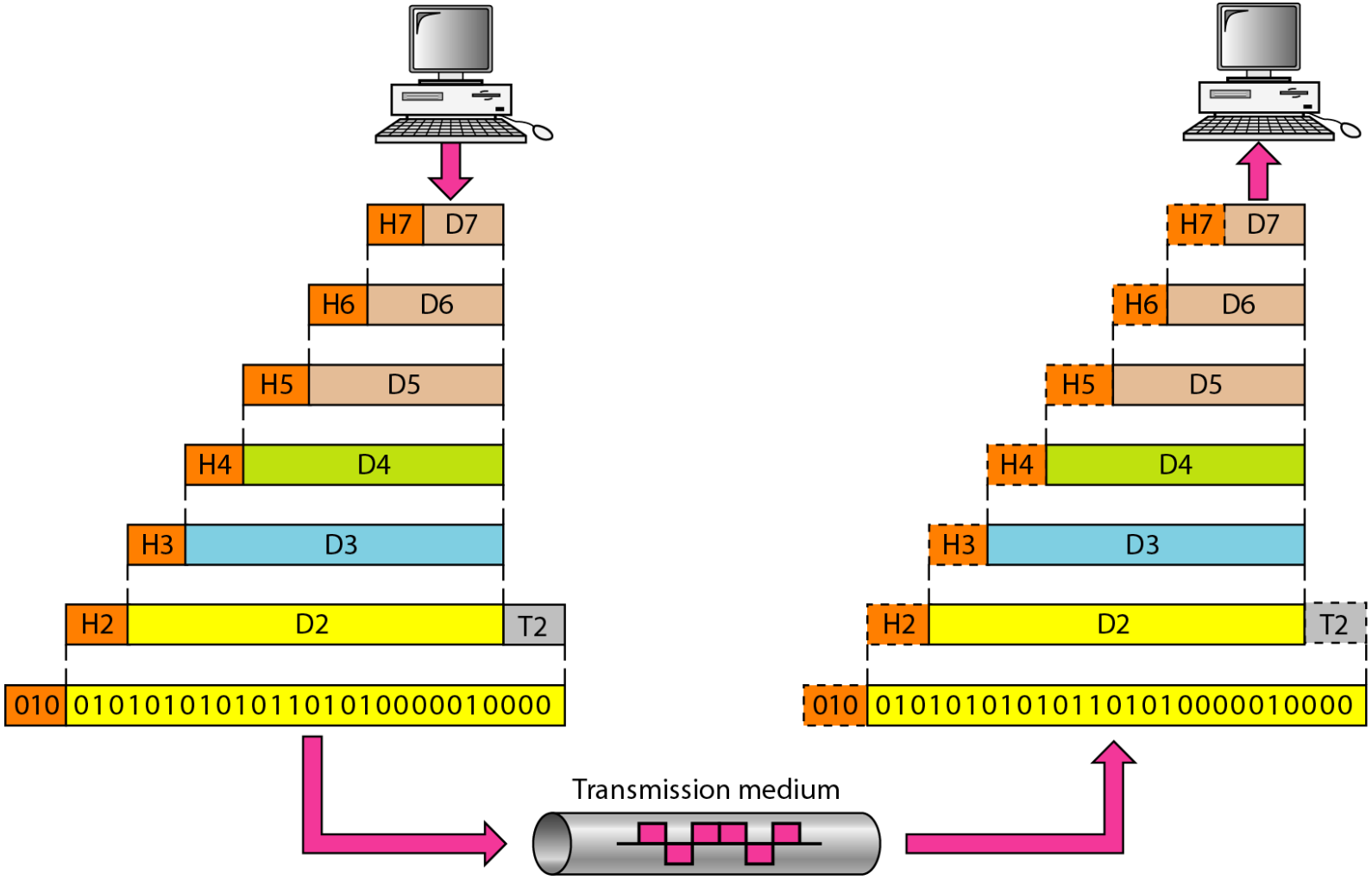
LAYER OF OSI MODEL



The interaction between layers in the OSI model

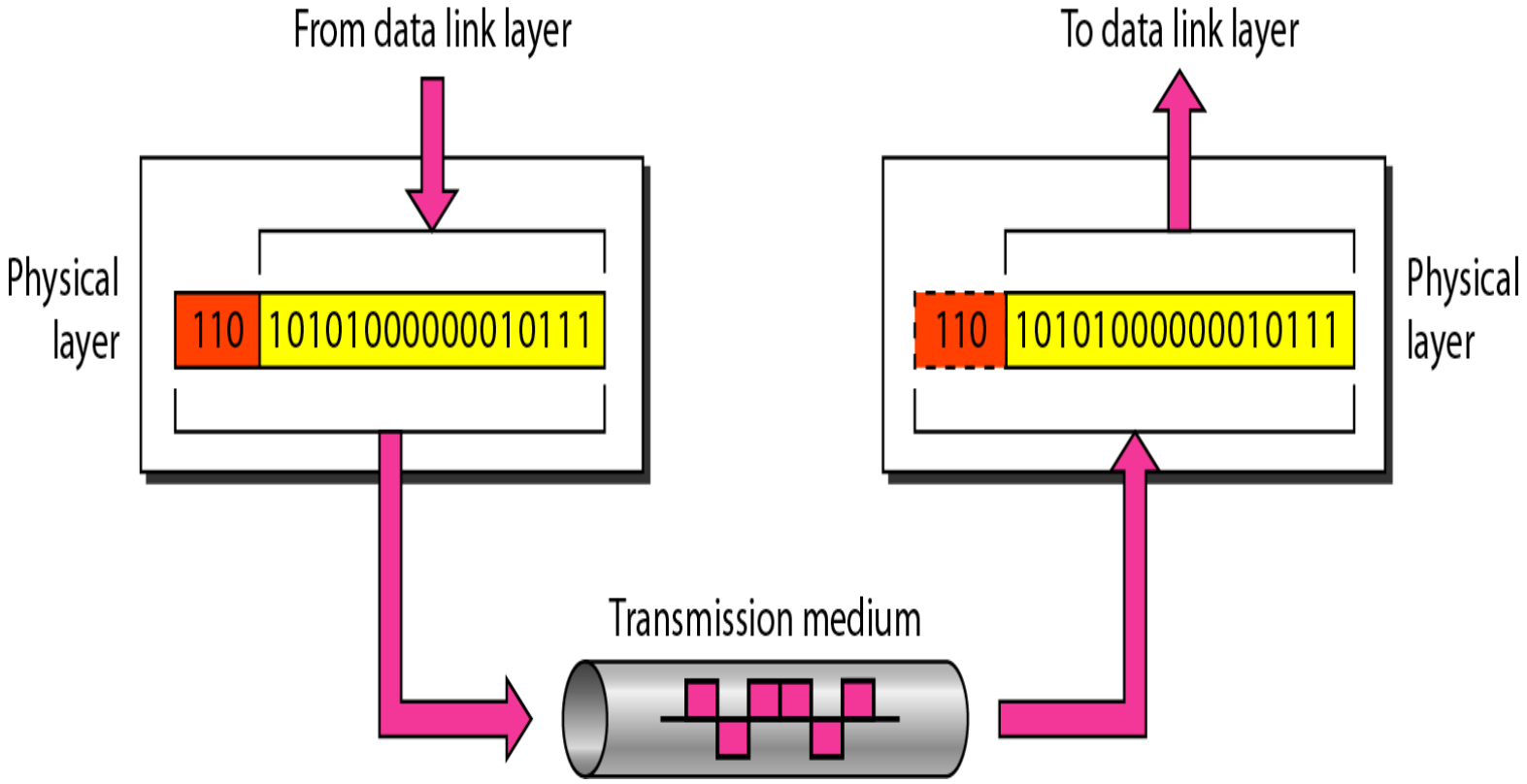


An exchange using the OSI model



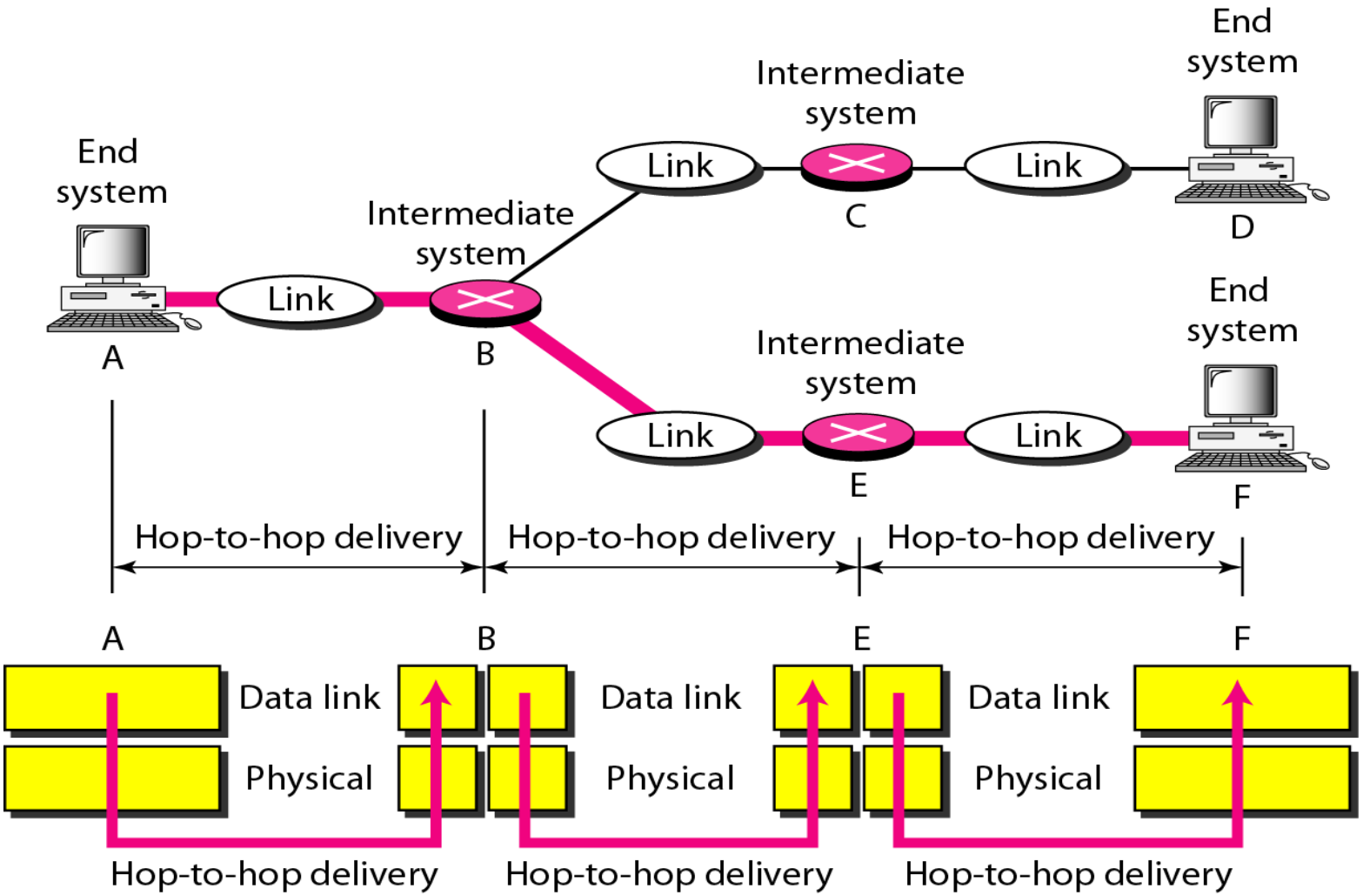
PHYSICAL LAYER

- **Define rules** by which **bits** are passed from one system to another on a physical communication medium.
- Covers all – mechanical, electrical, functional and procedural – aspect for physical communication.
- Such characteristics as voltage levels, timing of voltage changes, physical data rates, maximum transmission distance, physical connectors and other similar attributes are defined by physical layer specifications.


From data link layer
To data link layer
Physical layer
110
1010100000010111
110
1010100000010111
Physical layer
Transmission medium

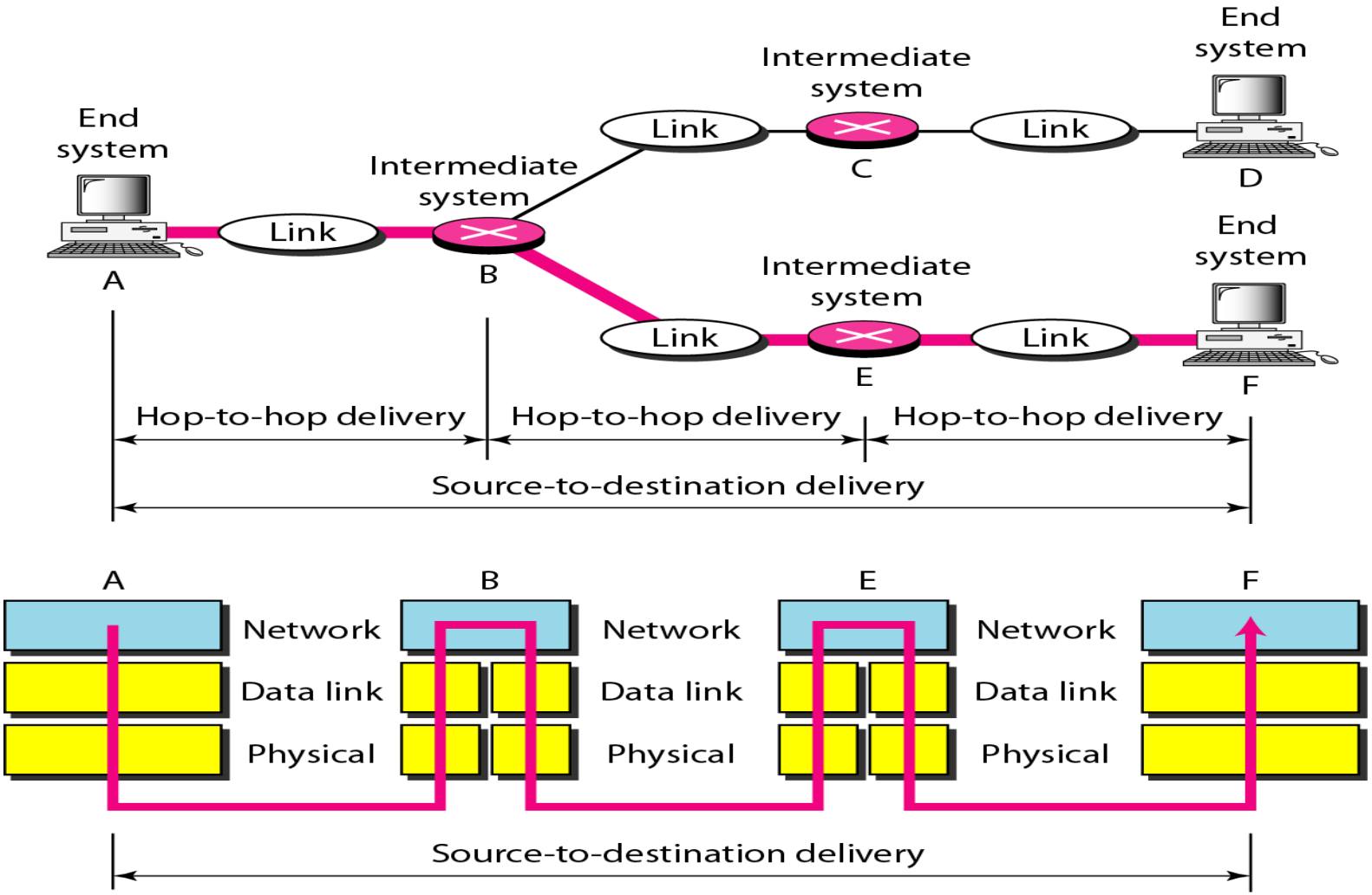
DATA LINK LAYER

- Responsible for node to node delivery
- Breaks the outgoing data into frames and reassemble the received frames
- Create and detect frame boundaries
- Handle errors and flow control


End system
Intermediate system
End system
Link
Link
C
D
End system
Intermediate system
Link
Intermediate system
A
Link
B
End system
Intermediate system
Link
Link
E
F
Hop-to-hop delivery
Hop-to-hop delivery
Hop-to-hop delivery
A
B
E
F
Data link
Data link
Data link
Physical
Physical
Physical
Hop-to-hop delivery
Hop-to-hop delivery
Hop-to-hop delivery

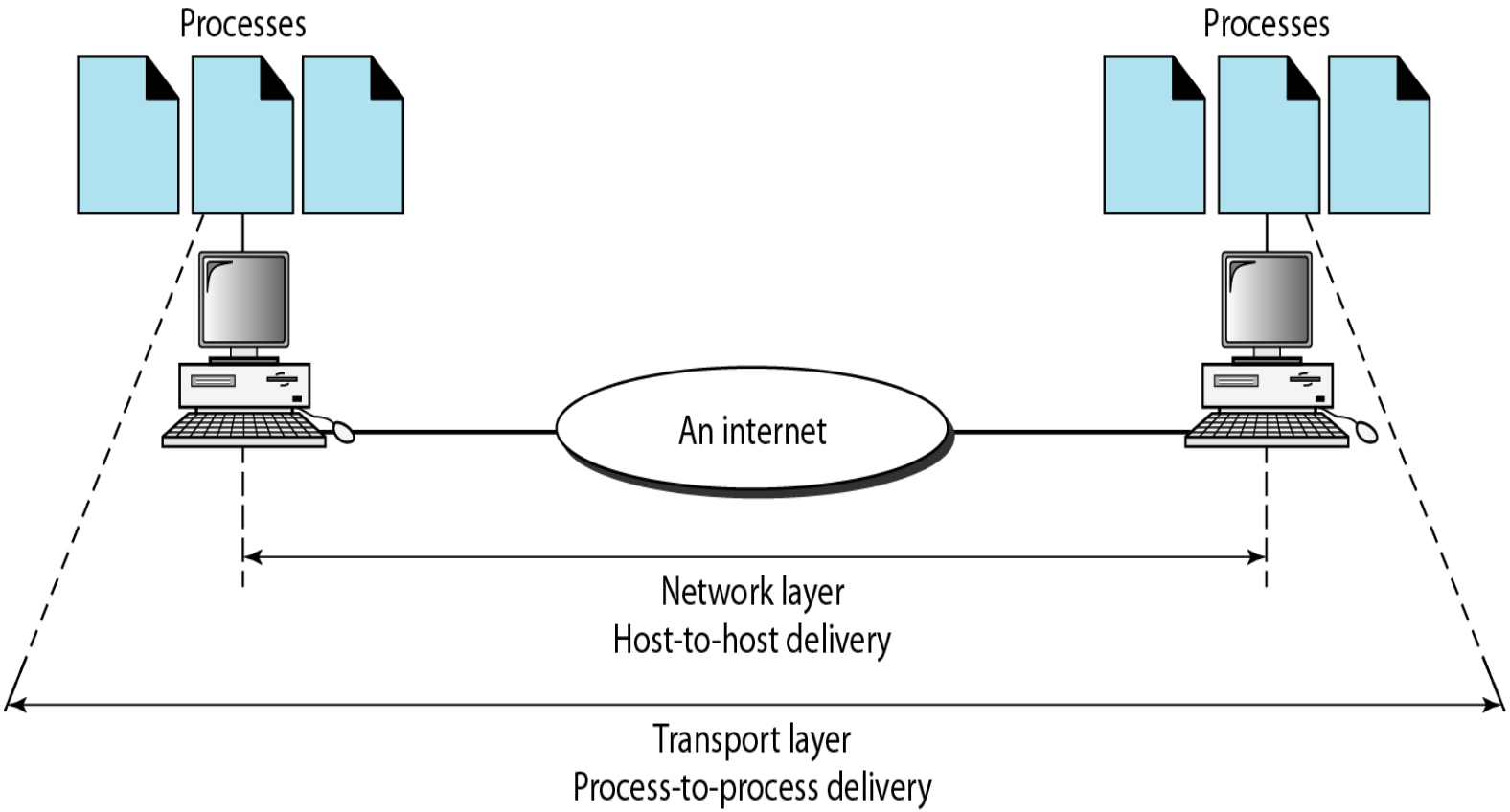
NETWORK LAYER

- Responsible for the delivery of packets from the source to destination
- Most optimum path for packet
- Defines logical addressing
- Fragment a packet according to different media


End system
Intermediate system
End system
Link
Link
Link
A
B
C
D
Intermediate system
End system
Link
Link
Link
E
F
Hop-to-hop delivery
Hop-to-hop delivery
Hop-to-hop delivery
Source-to-destination delivery
A
B
E
F
Network
Network
Network
Data link
Data link
Data link
Physical
Physical
Physical
Source-to-destination delivery

TRANSPORT LAYER

- Responsible for process to process delivery.
- Provides connectionless or connection oriented service.
- Ensures error free and in sequence delivery.
- Ensures no loss or duplication of data units.


Processes
Processes
An internet
Network layer
Host-to-host delivery
Transport layer
Process-to-process delivery

SESSION LAYER

- Provides mechanism for controlling conversations (called sessions) between applications.
- Logical connection to be established on an end-user's request.
- Log-on or password validation handled by this layer.
- Responsible for terminating the connection.
- Check-pointing mechanism

PRESENTATION LAYER

- Source format Common Format Destination Format
- Data compression
- Data encryption (cryptography).

APPLICATION LAYER

- Interacts with application programs
- Responsible for providing services to the user
- Examples of application layer are applications such as file transfer, electronic mail, remote login etc.

THANK YOU