

CSE-2203

Data and Telecommunications

Network Models (Logical Structures)

Google Classroom
r2dlrxn

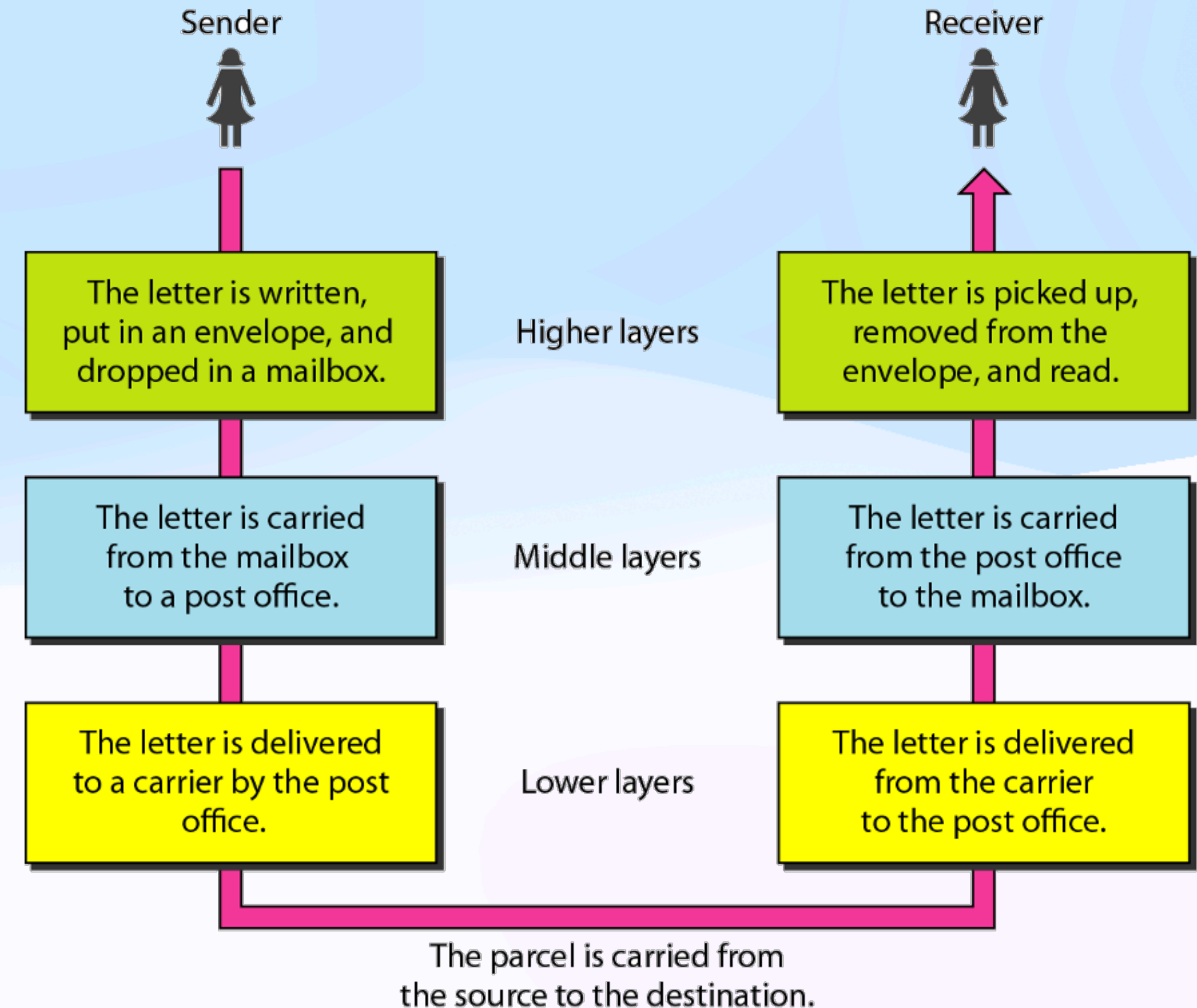


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Layered Architecture

➔ Example Postal Mail

- ⦿ The sender writes a mail and drops in Mailbox
- ⦿ The letter is carried to the Post Office
- ⦿ Post Office receives the letter and carries to the destination Post Office
- ⦿ The Destination Post Office Receives the Letter
- ⦿ The letter is carried to the Receivers Mailbox
- ⦿ The receiver collects the letter from the mailbox

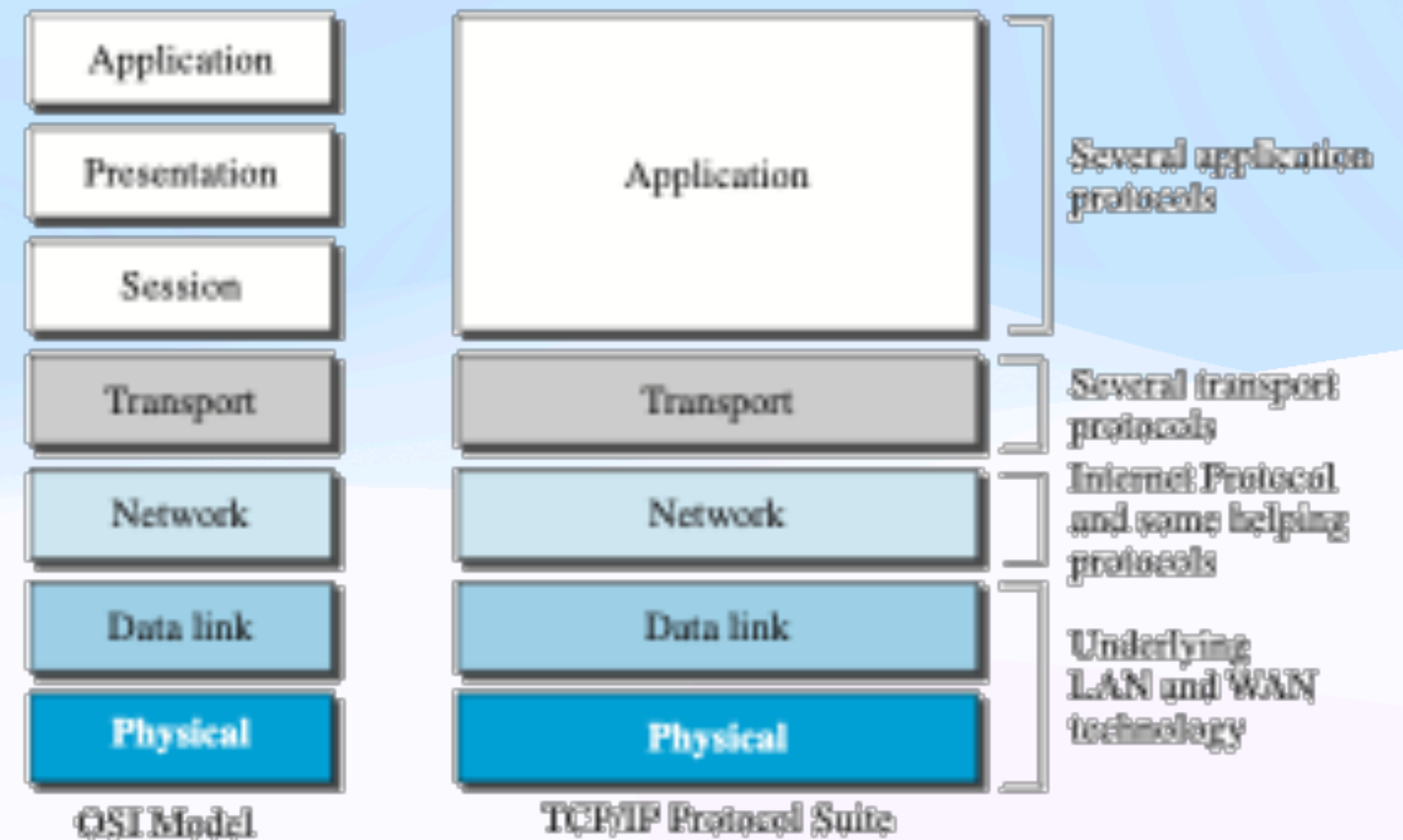


Layered Structure

OSI Model and TCP/IP Protocol Suite

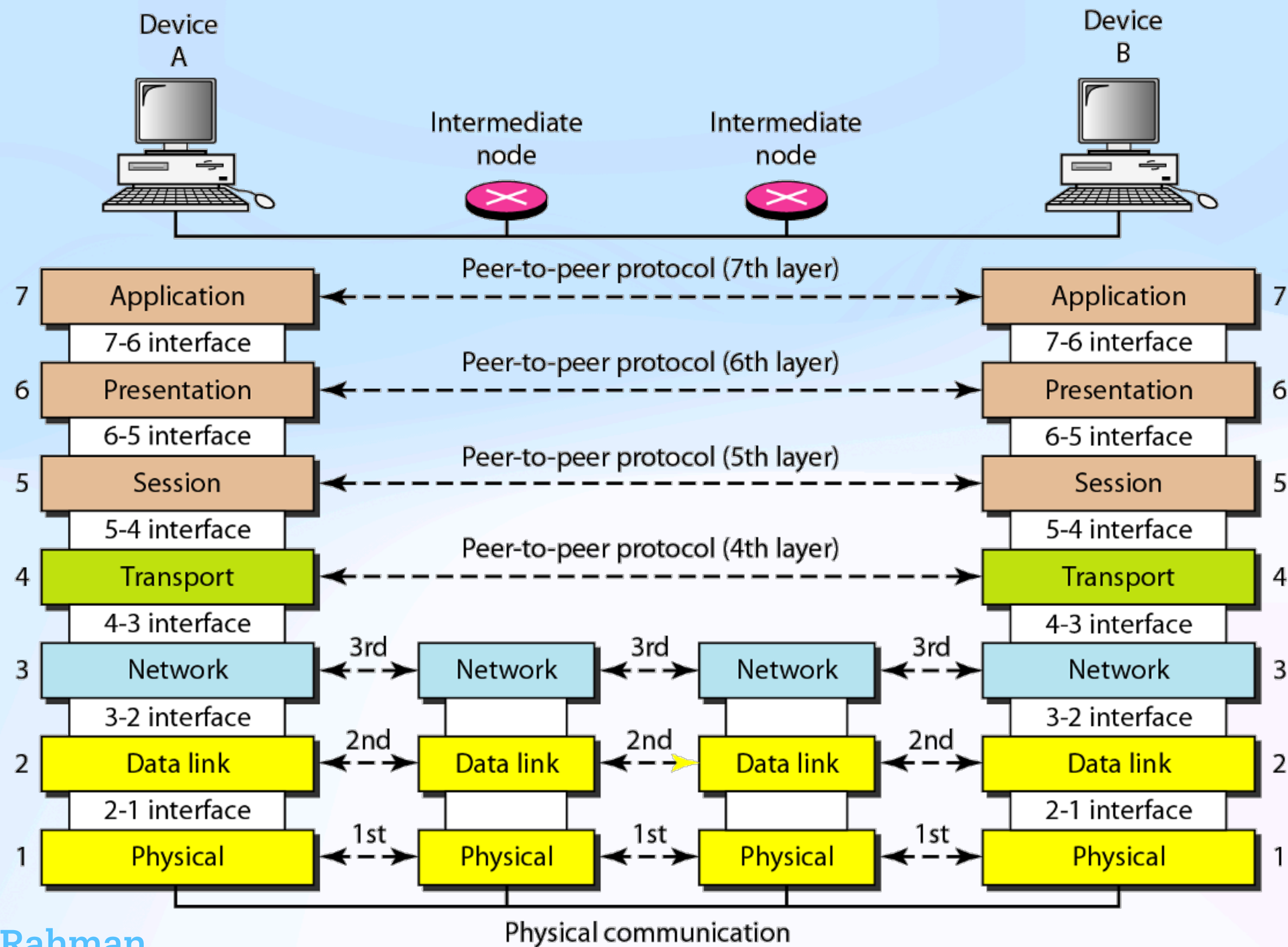
➔ Principles of Layering

- The first principle dictates that if we want bidirectional communication, we need to make each layer so that it is able to perform two opposite tasks, one in each direction.
- The second principle that we need to follow in protocol layering is that the two objects under each layer at both sites should be identical.



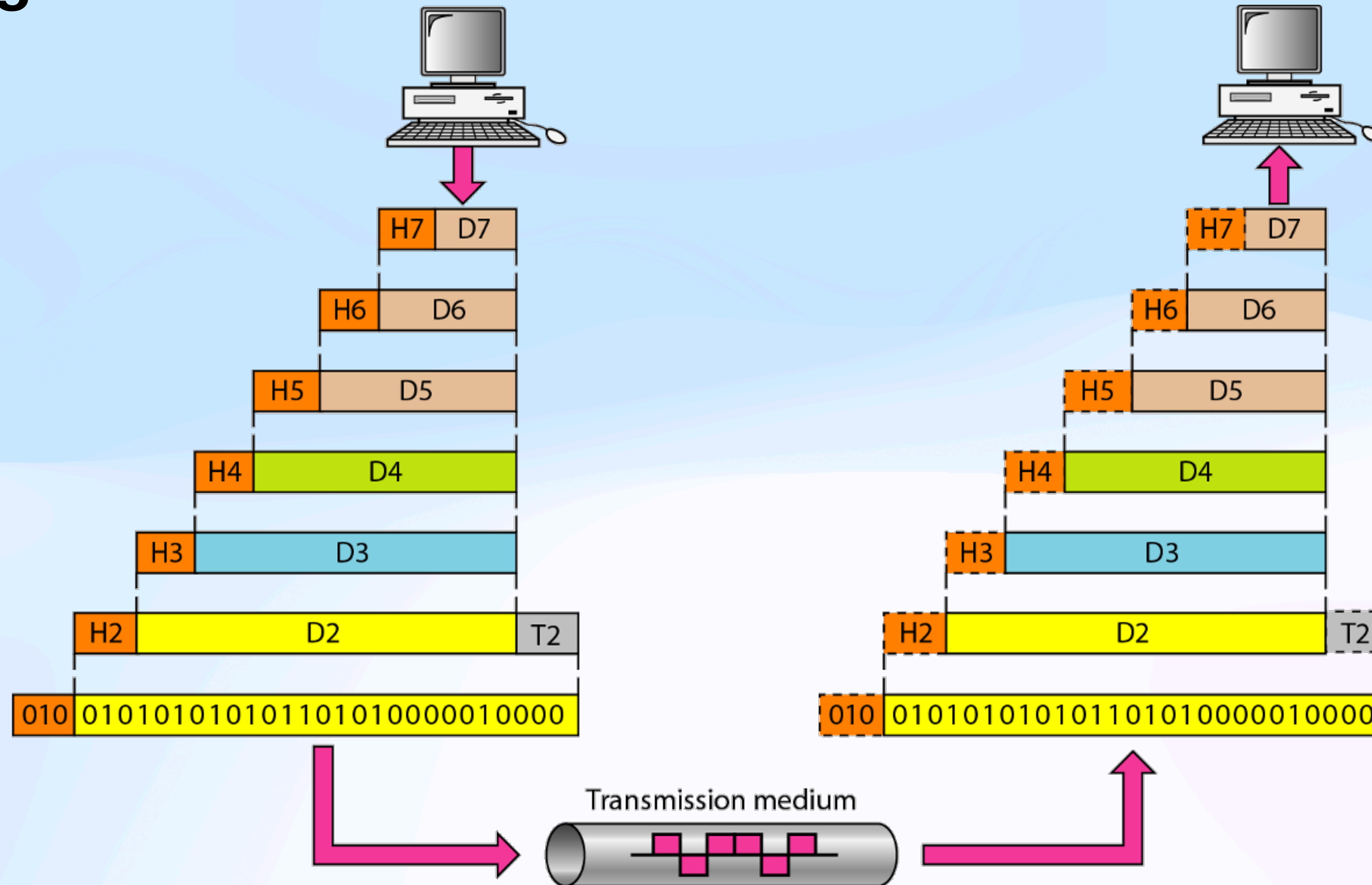
Layered Architecture

Peer-to-peer Protocol



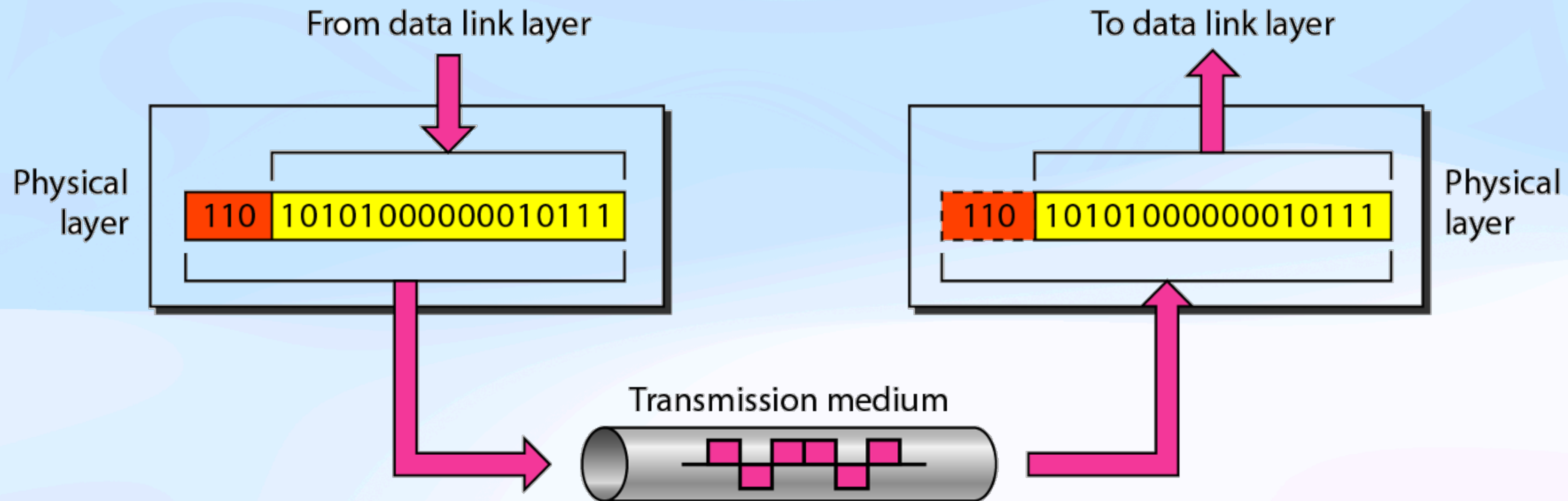
Layered Architecture

An Exchange of Data



Layered Architecture

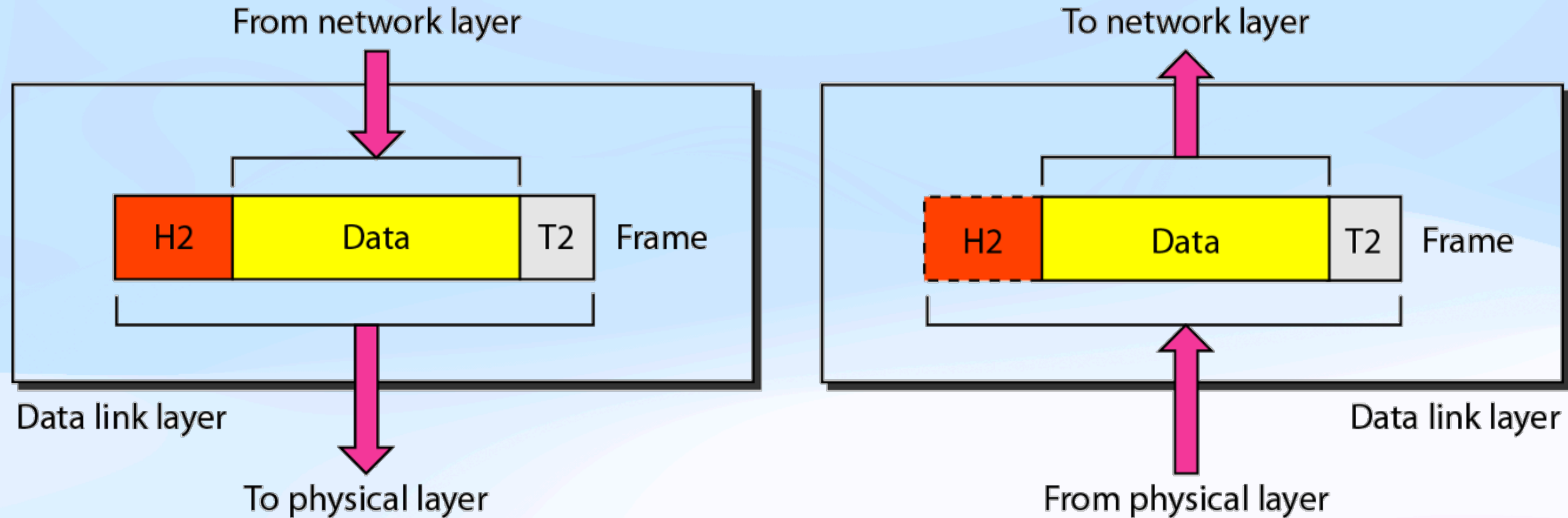
The Physical Layer (L1)



The physical layer is responsible for movements of individual bits from one hop (node) to the next.

Layered Architecture

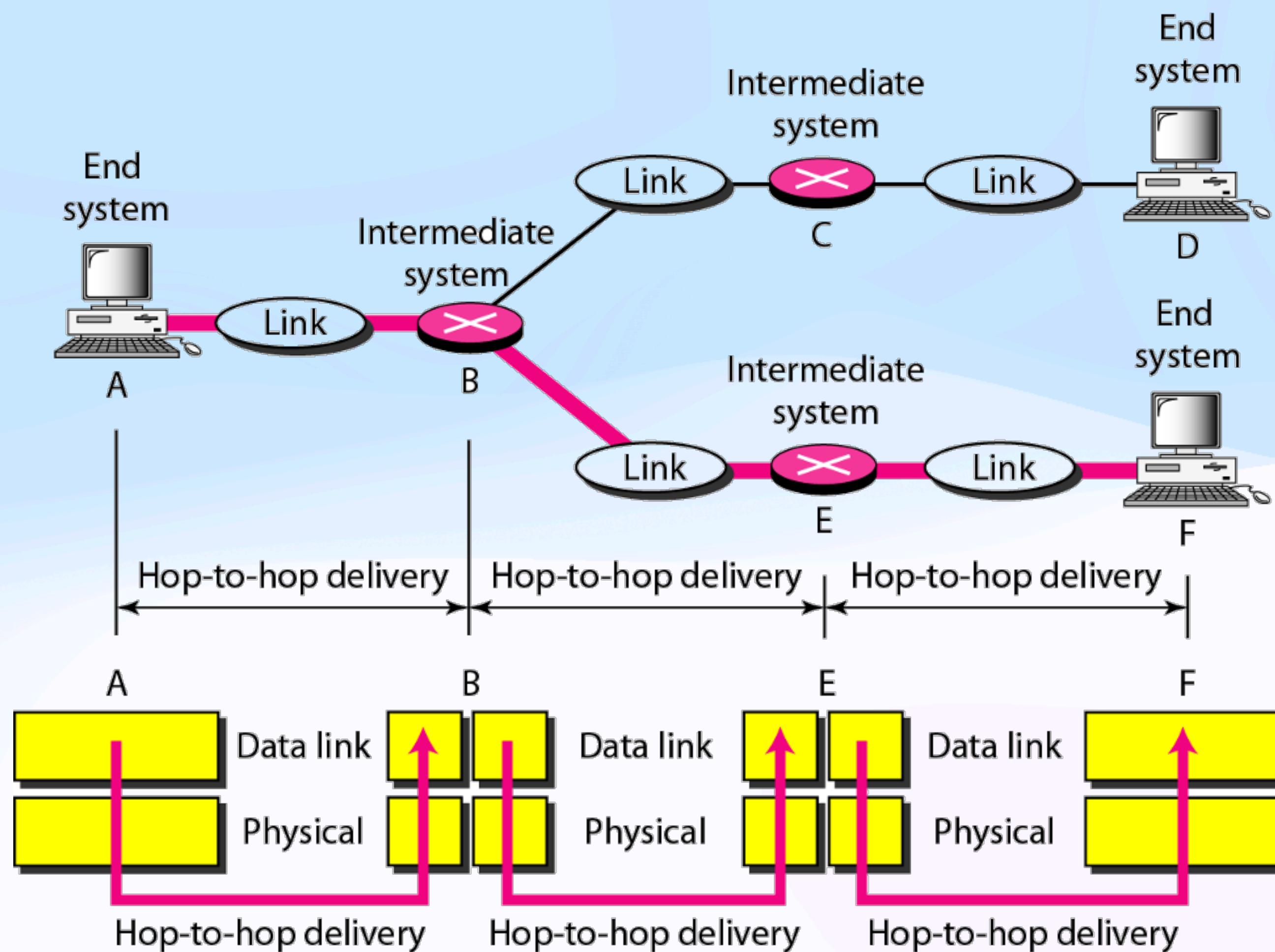
The Data Link Layer (L2)



The data link layer is responsible for moving frames from one hop (node) to the next.

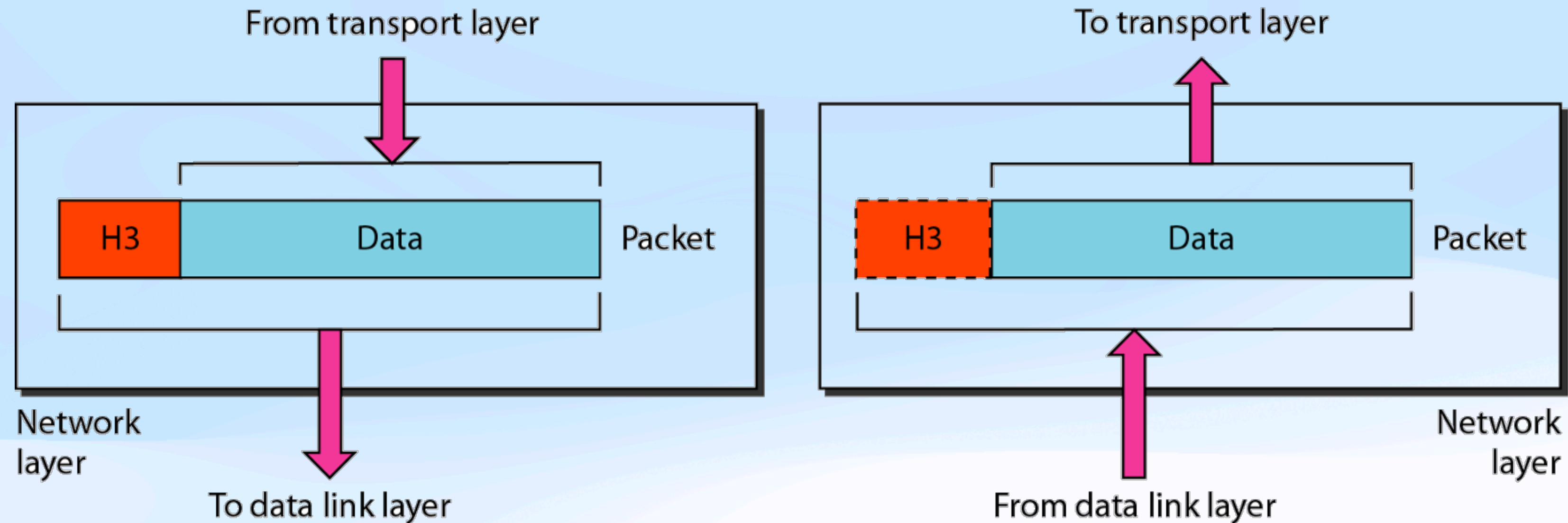
Layered Architecture

Hop-to-hop Delivery (L2)



Layered Architecture

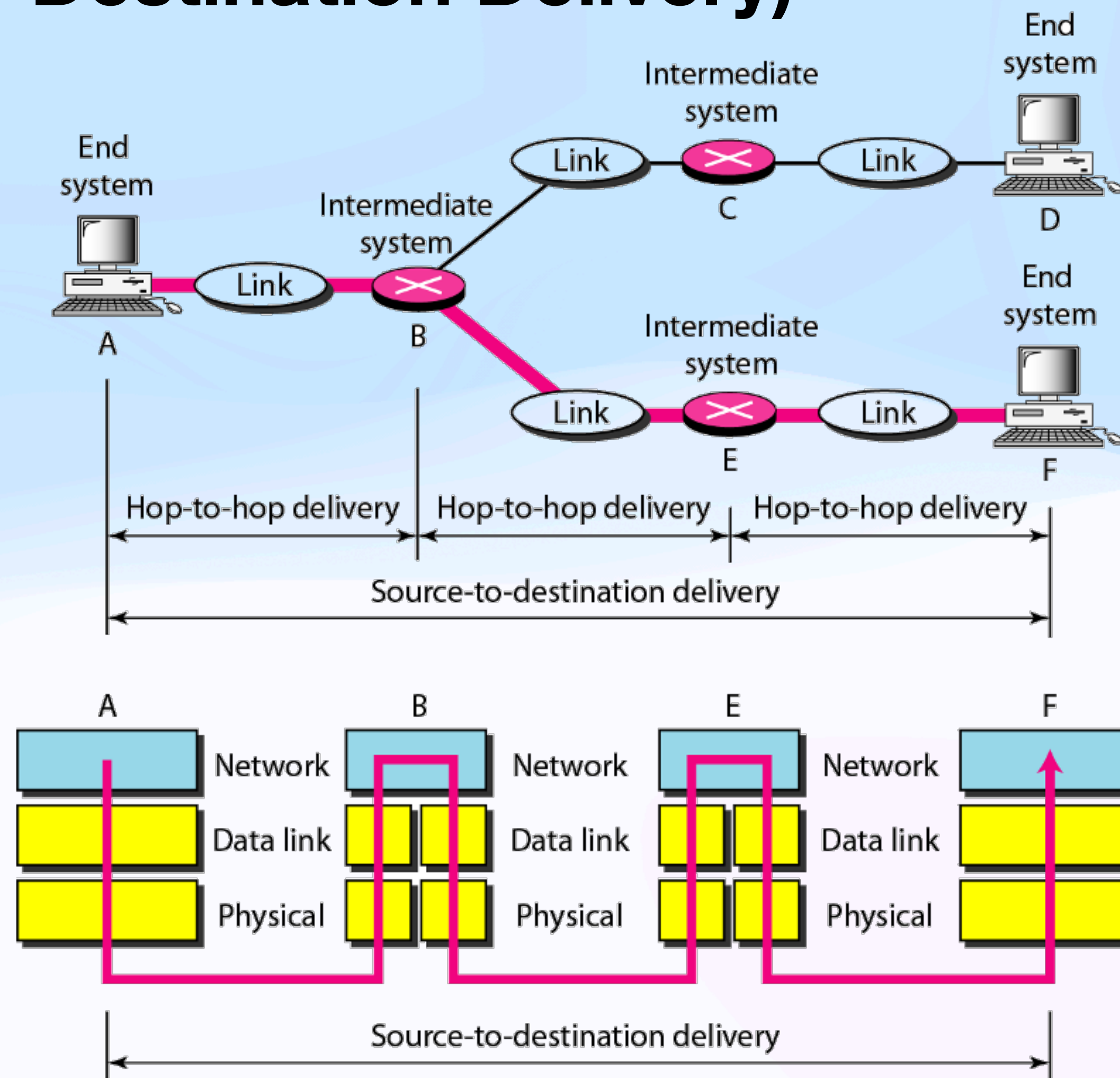
Network Layer (L3)

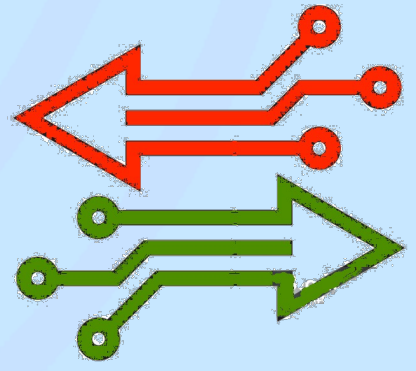


The network layer is responsible for the delivery of individual packets from the source host to the destination host.

Layered Architecture

End-to-End Delivery (Source-to-Destination Delivery)





Questions?