FIAP
A MELHOR FACULDADE DE TECNOLOGIA

FUNDAMENTOS DE REDES DE COMPUTADORES

Aula 04 – Modelo OSI

Redes (TI)
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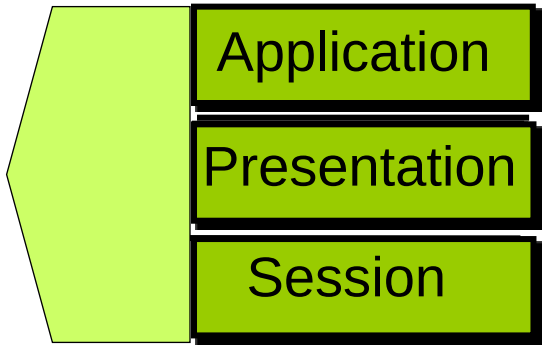
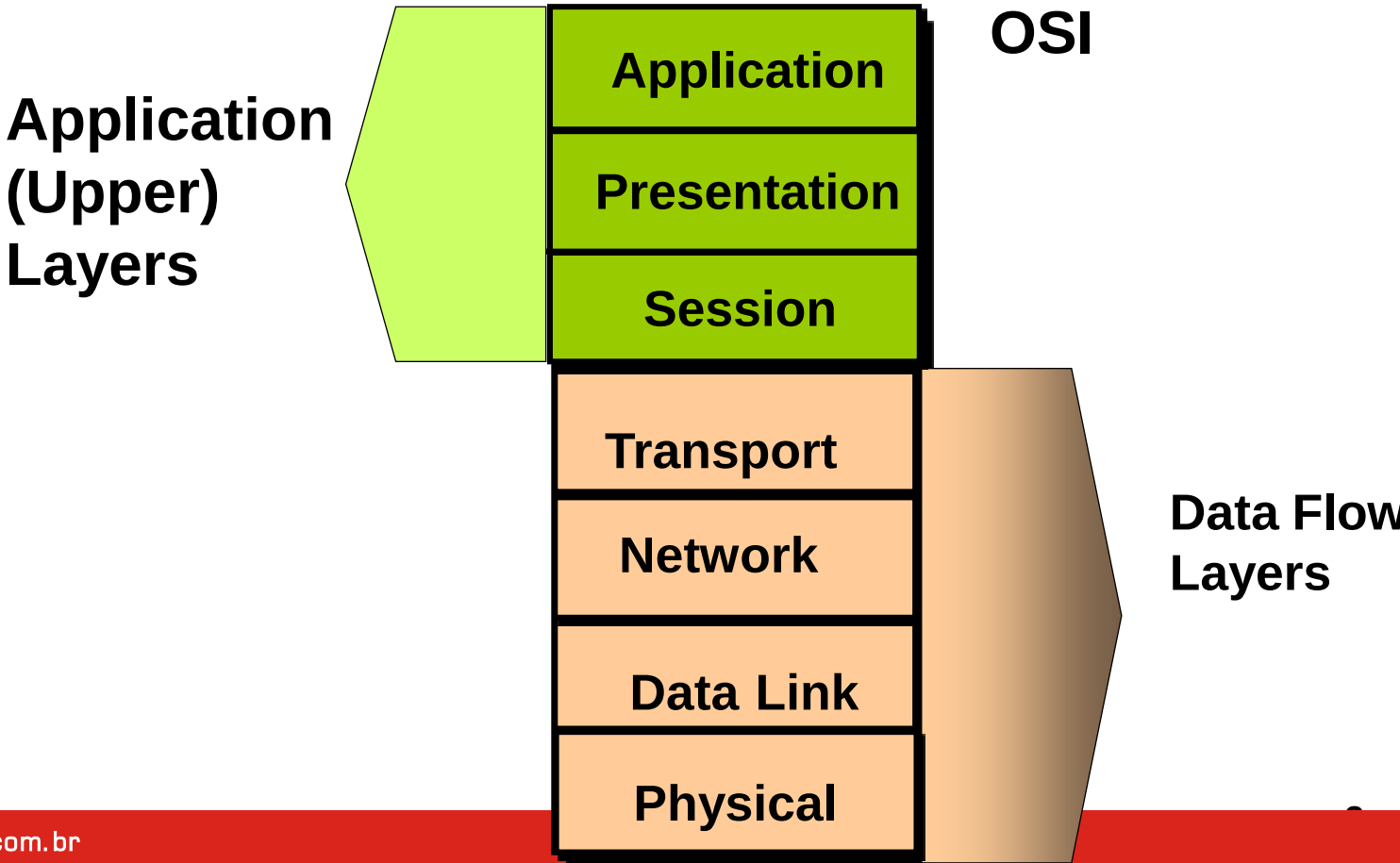
OSI Model

Application (Upper) Layers



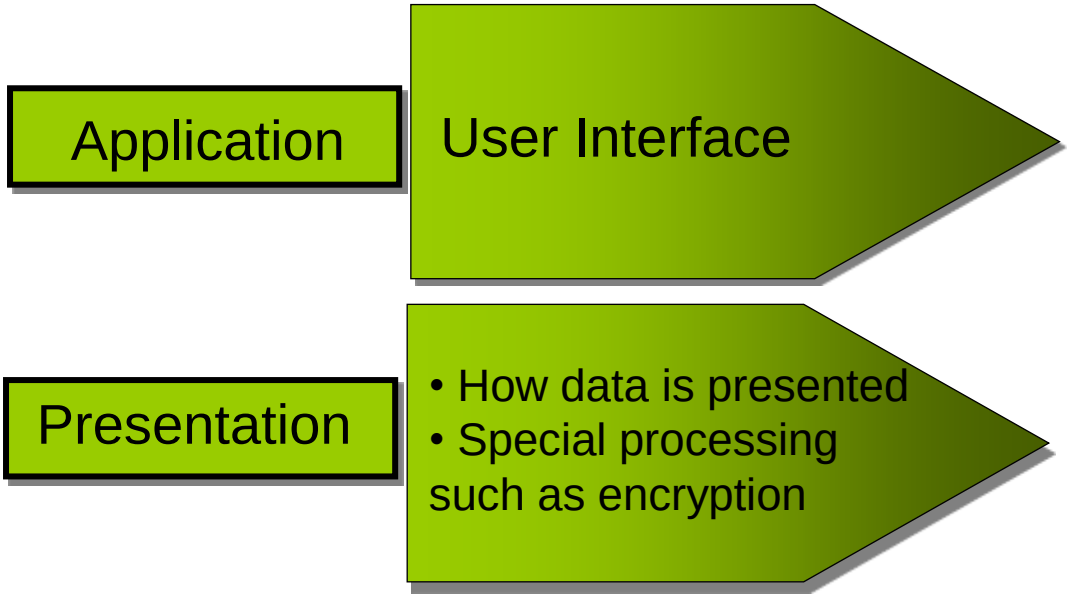

OSI
Application
(Upper)
Layers
Application
Presentation
Session
Transport
Network
Data Link
Physical
Data Flow
Layers

Application Layers

Examples

Telnet
HTTP

Application Layers

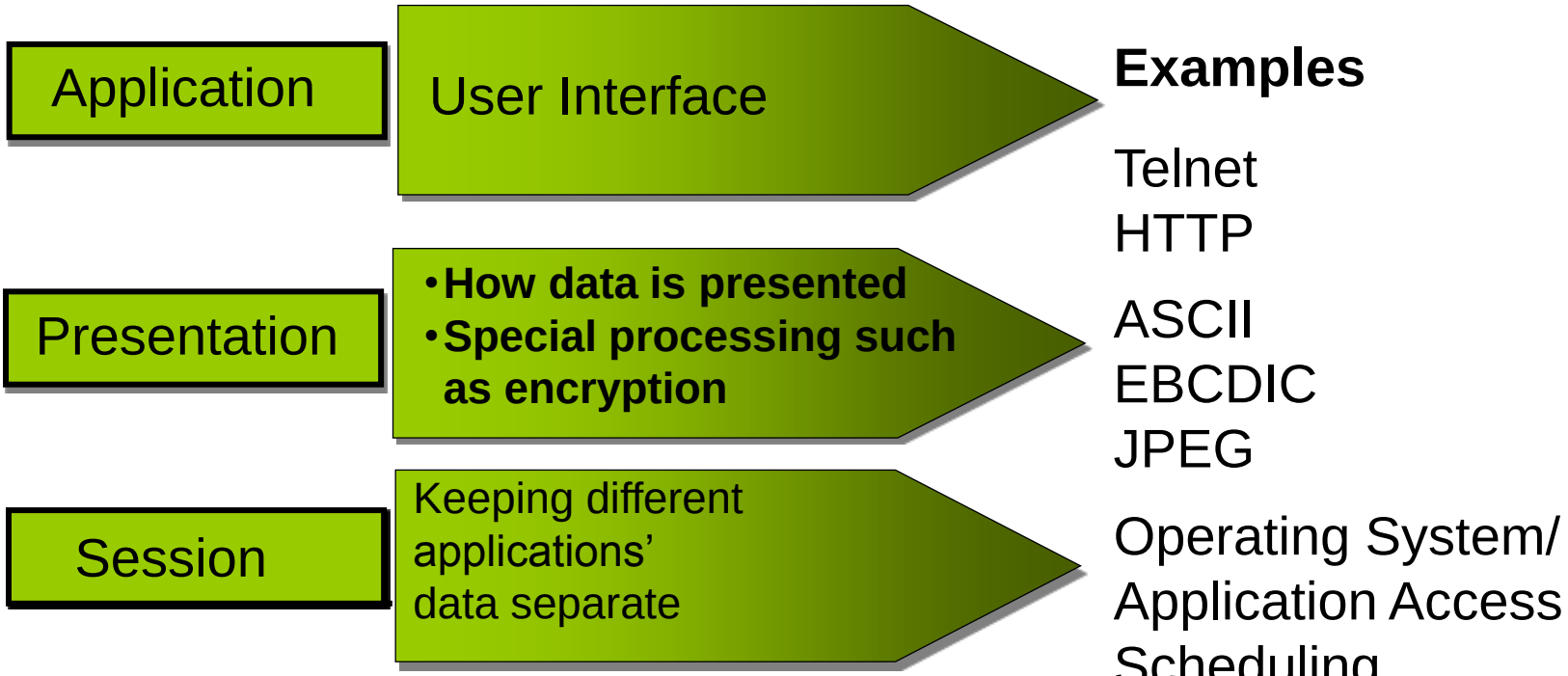


Examples

Telnet
HTTP

ASCII
EBCDIC
JPEG

Application Layers



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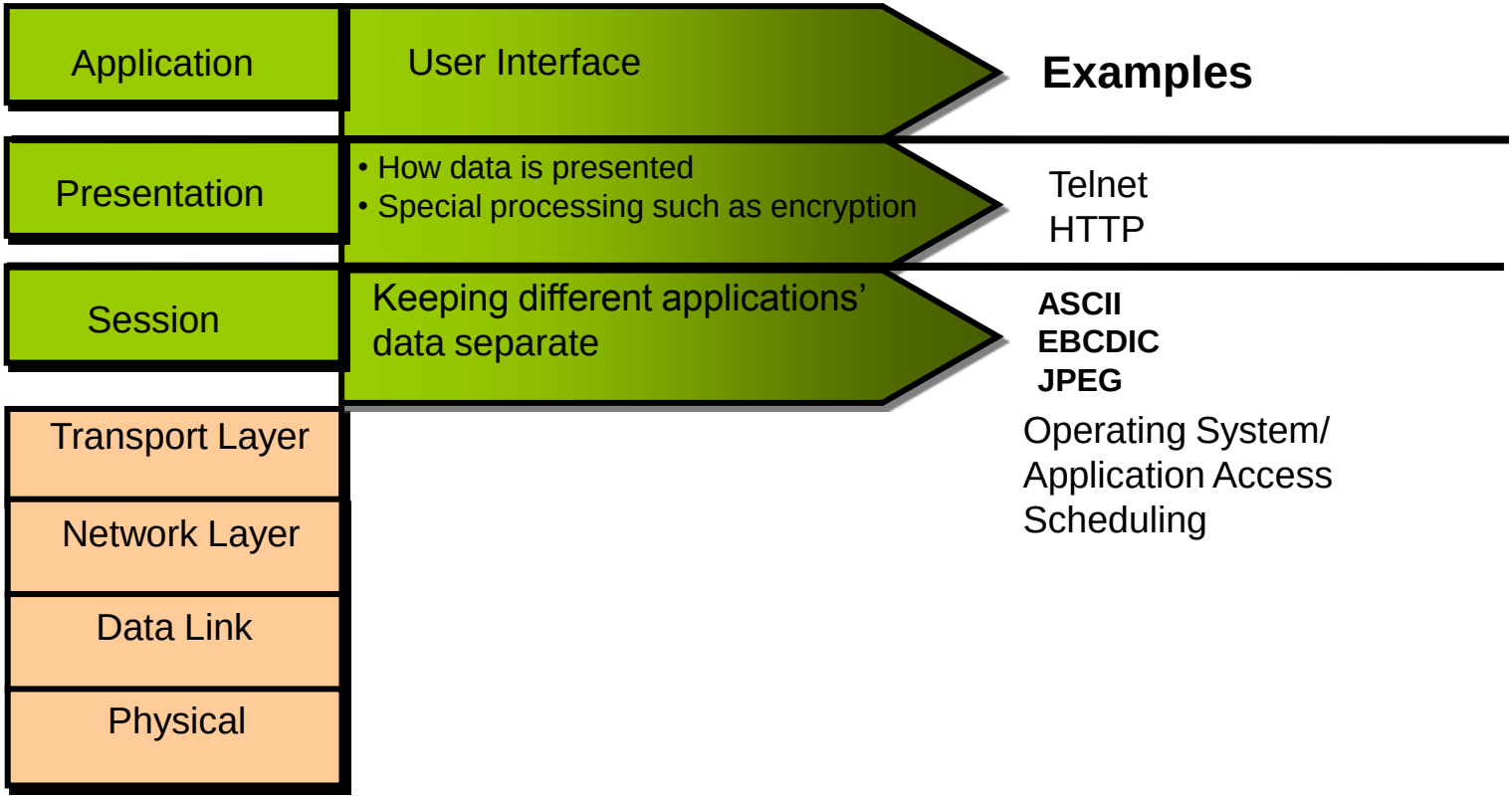
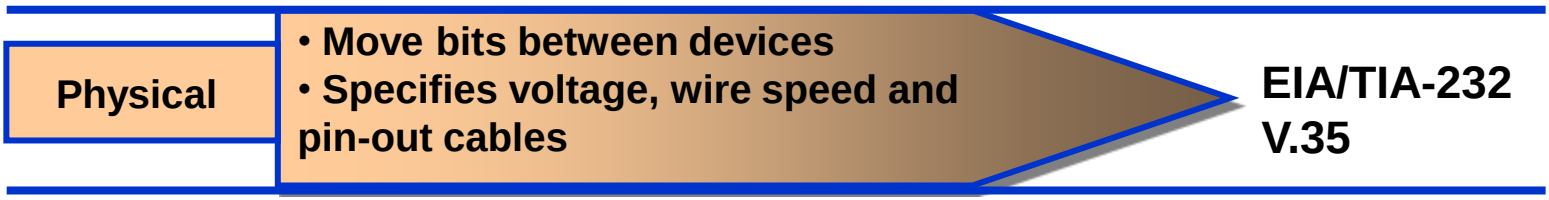
Application Layers

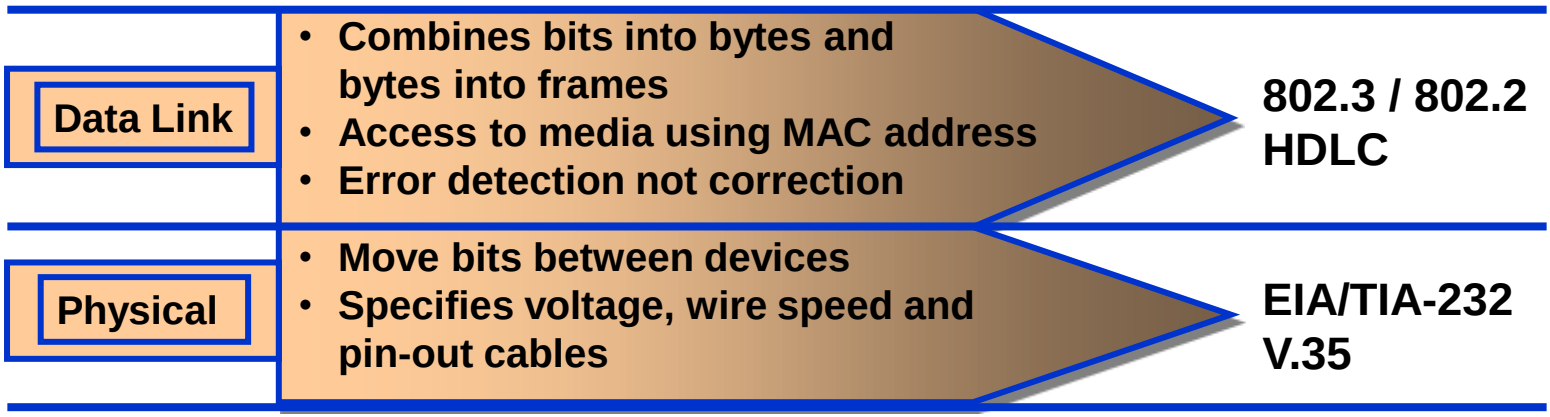


Data Flow Layers

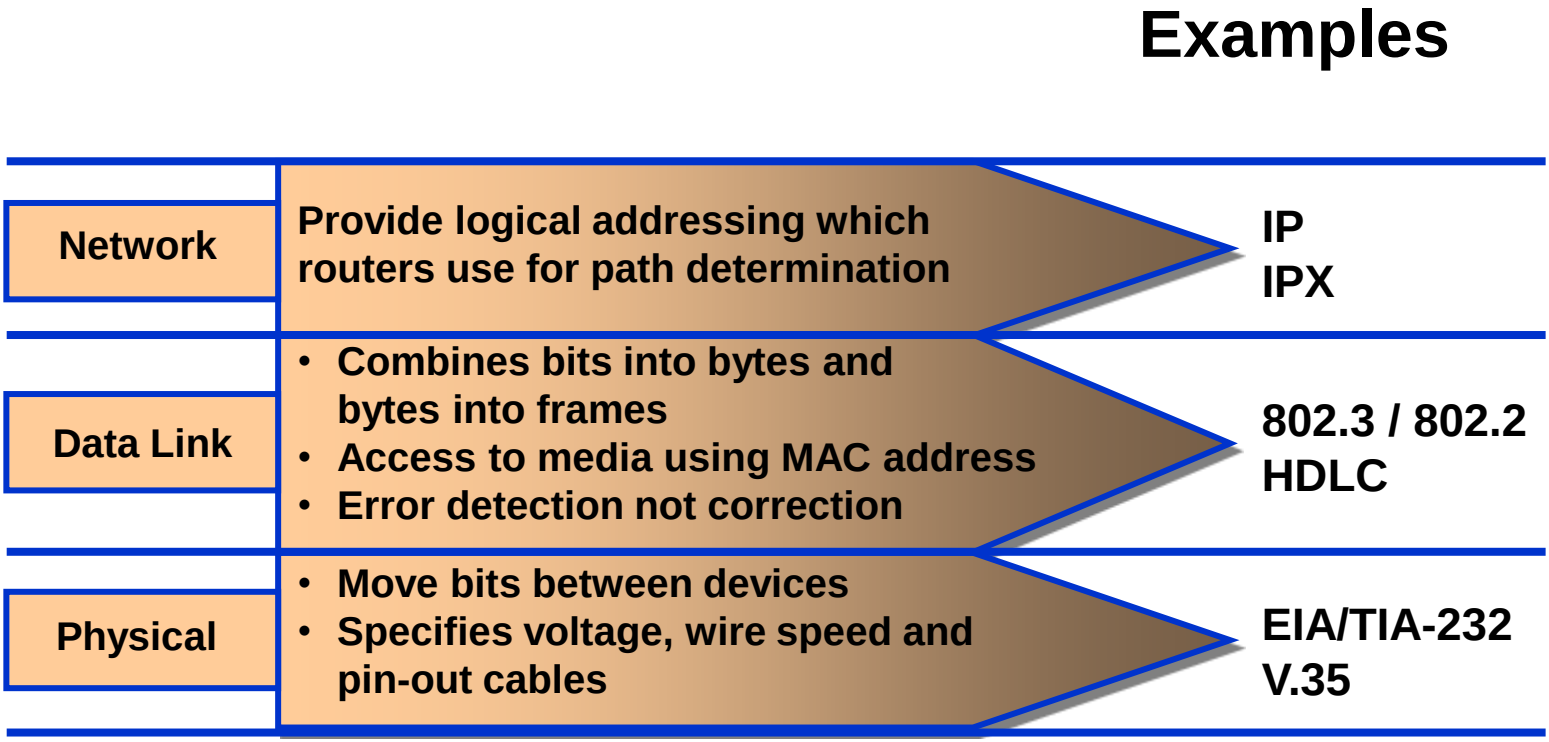
Examples



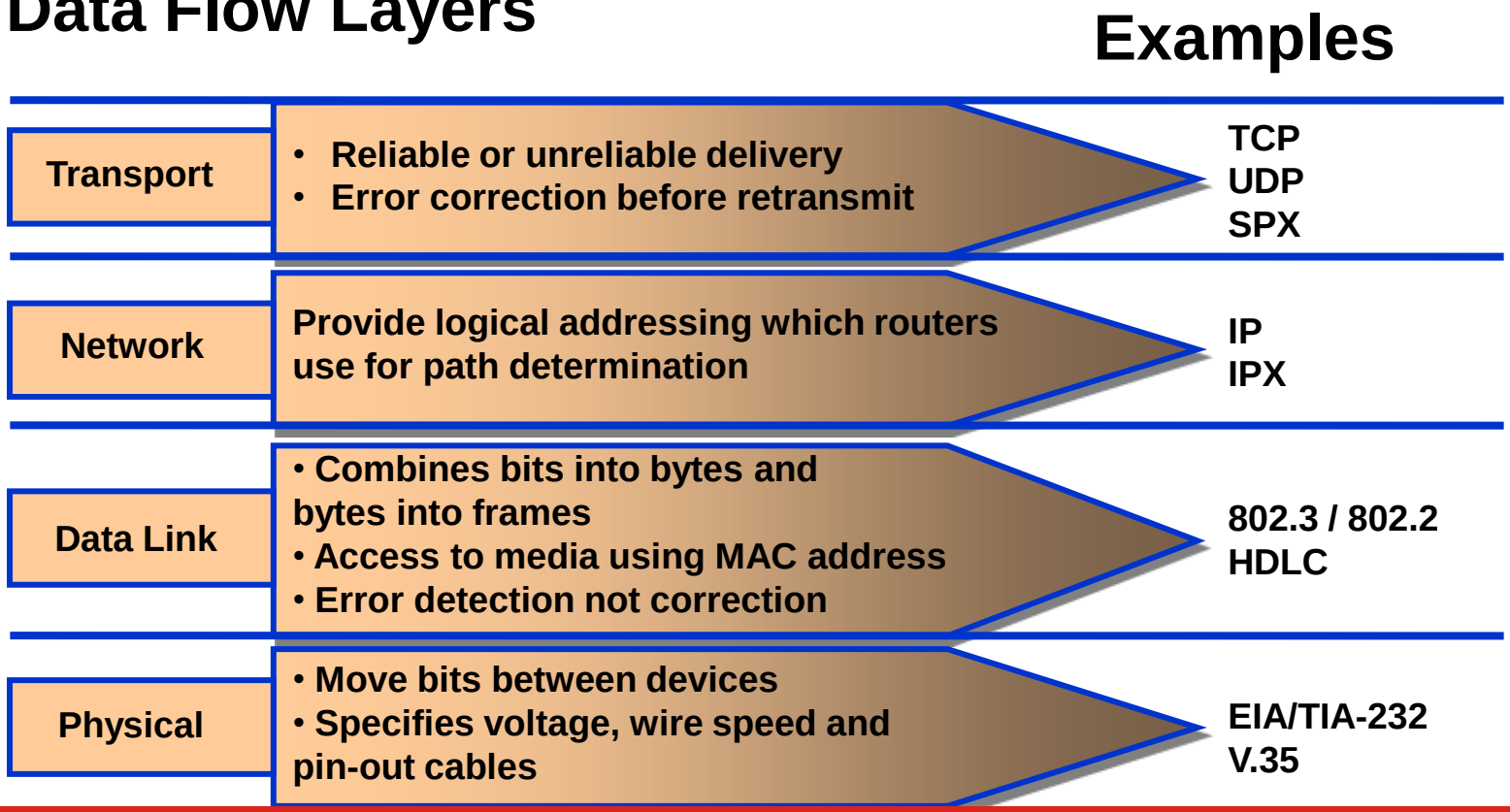
Data Flow Layers



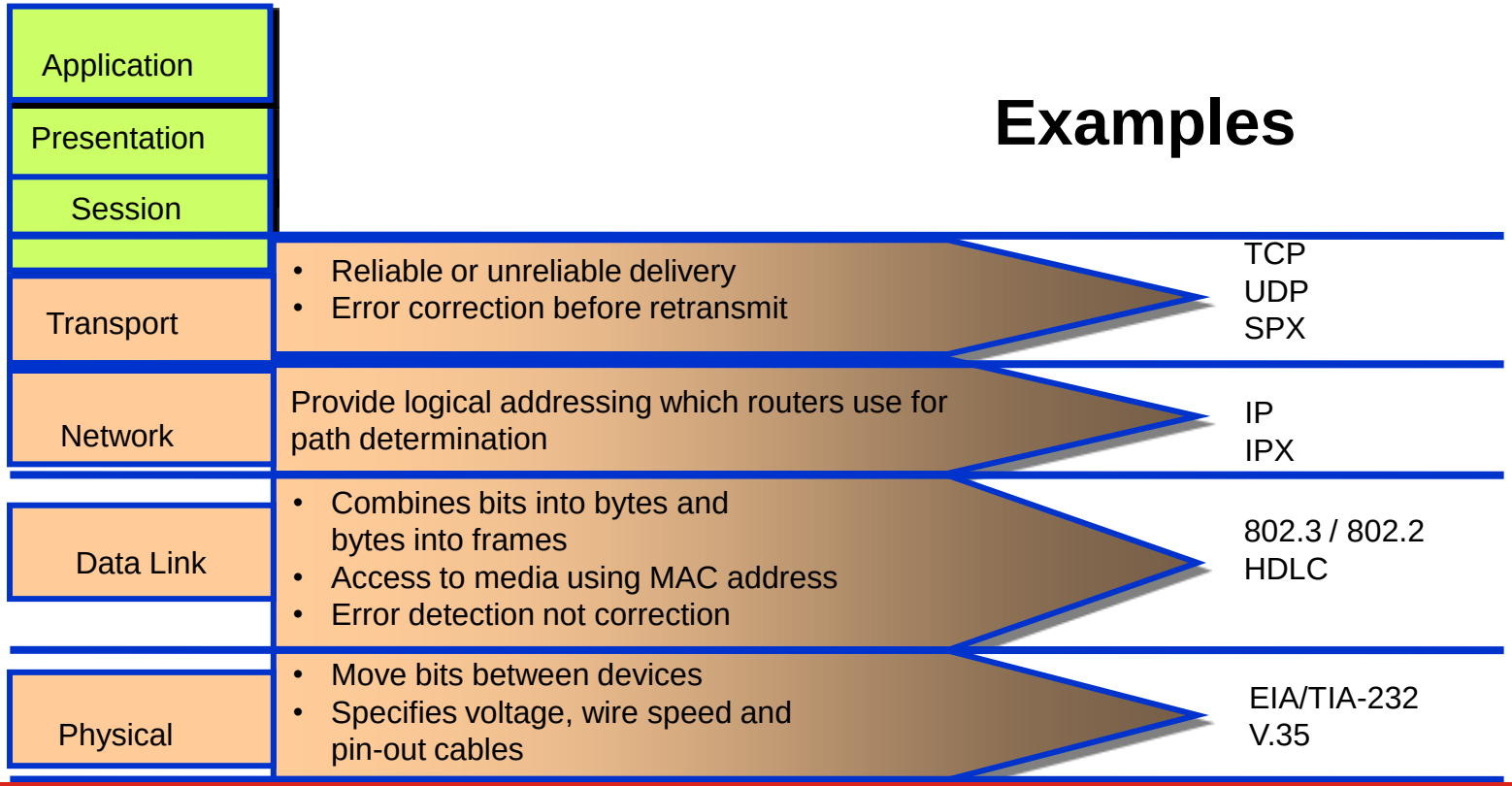
Data Flow Layers



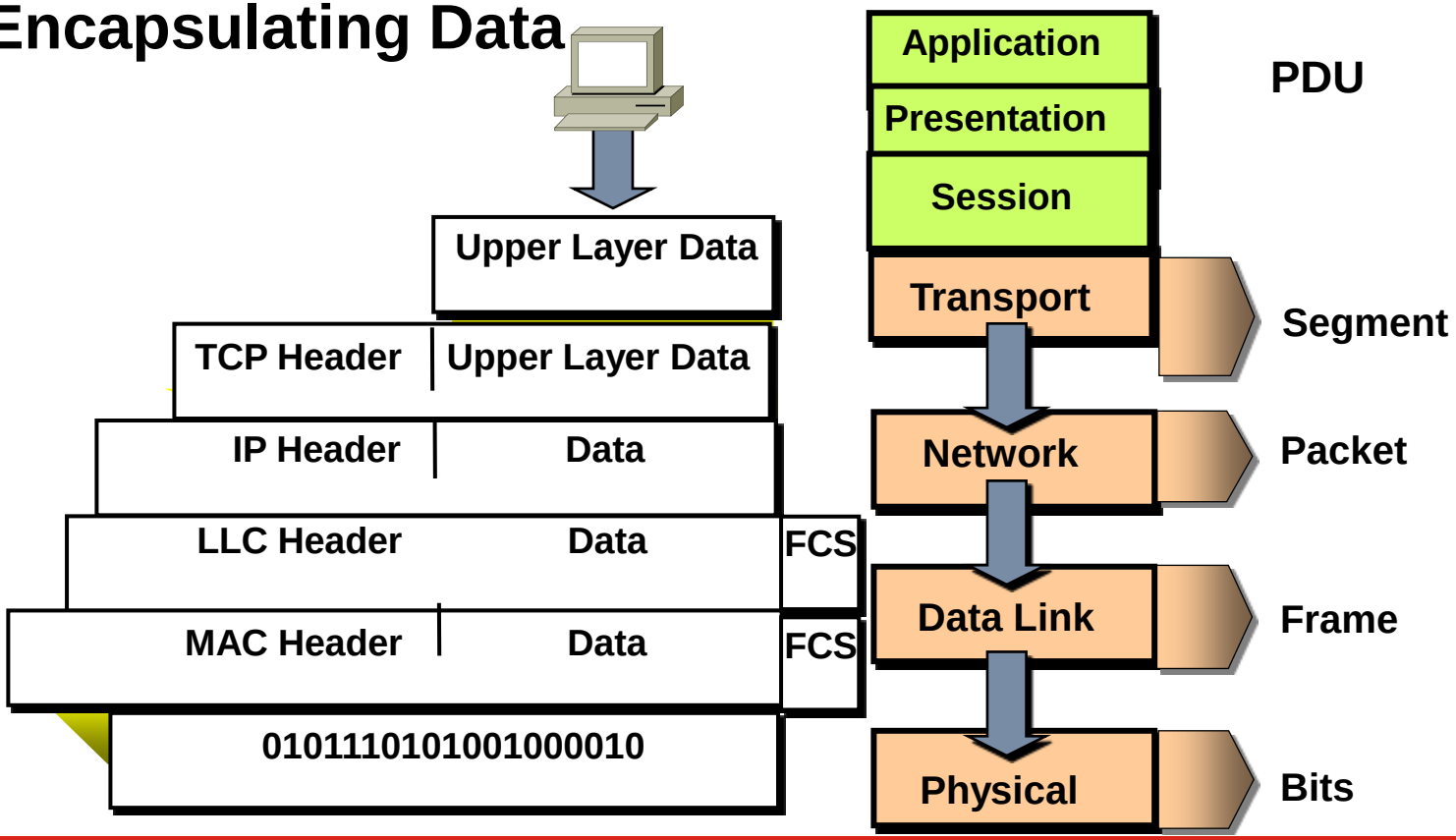
Data Flow Layers

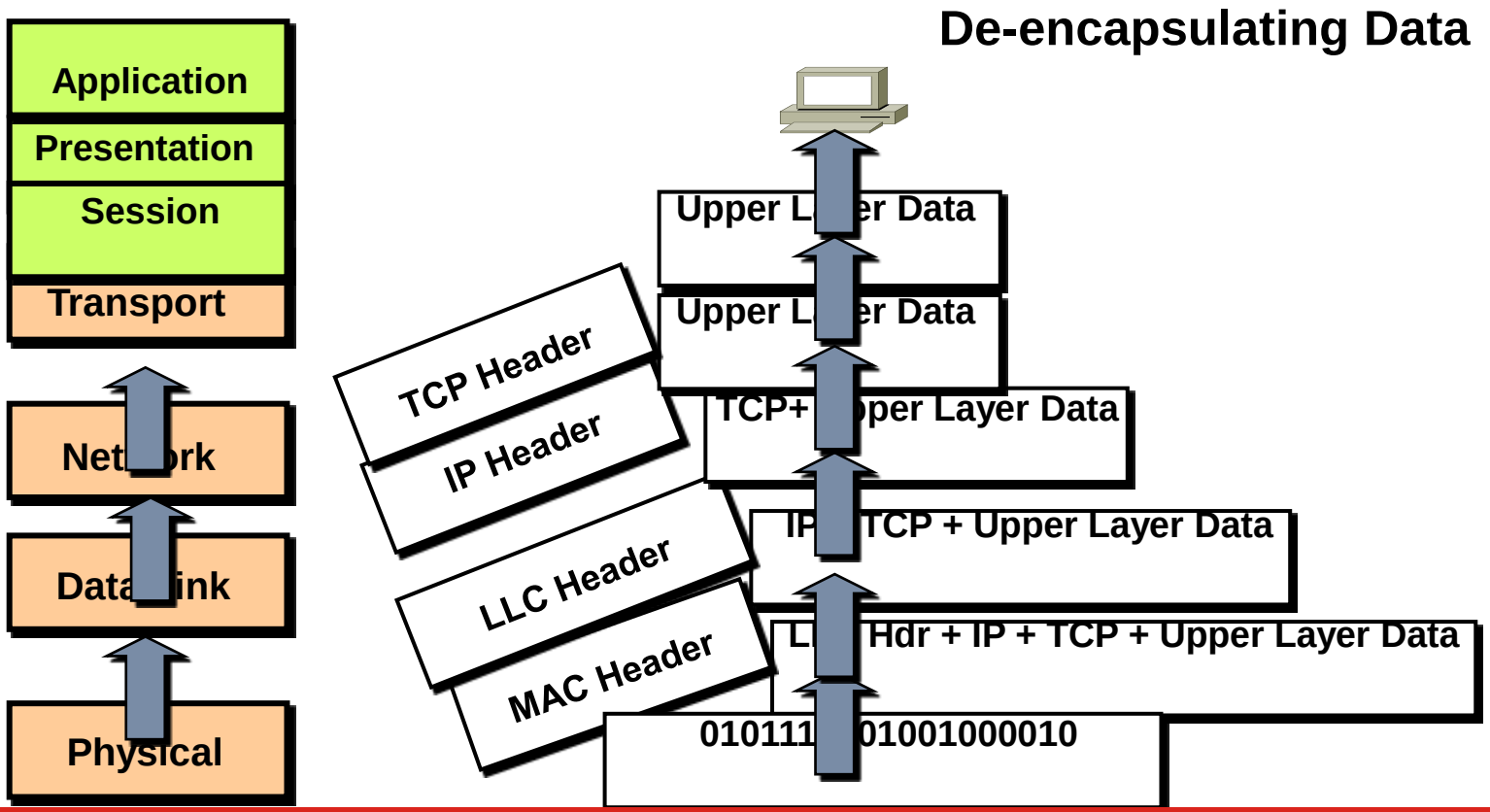


Data Flow Layers



Encapsulating Data

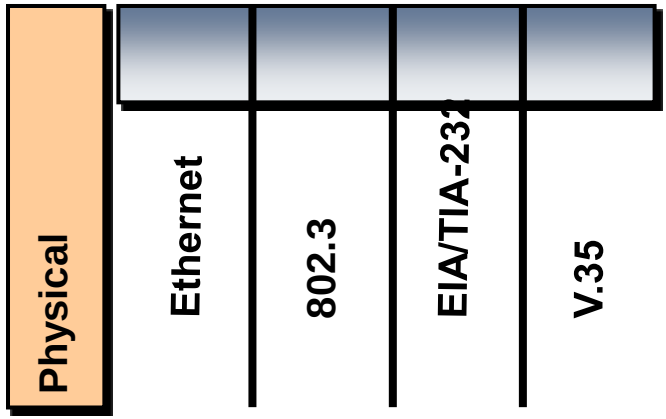


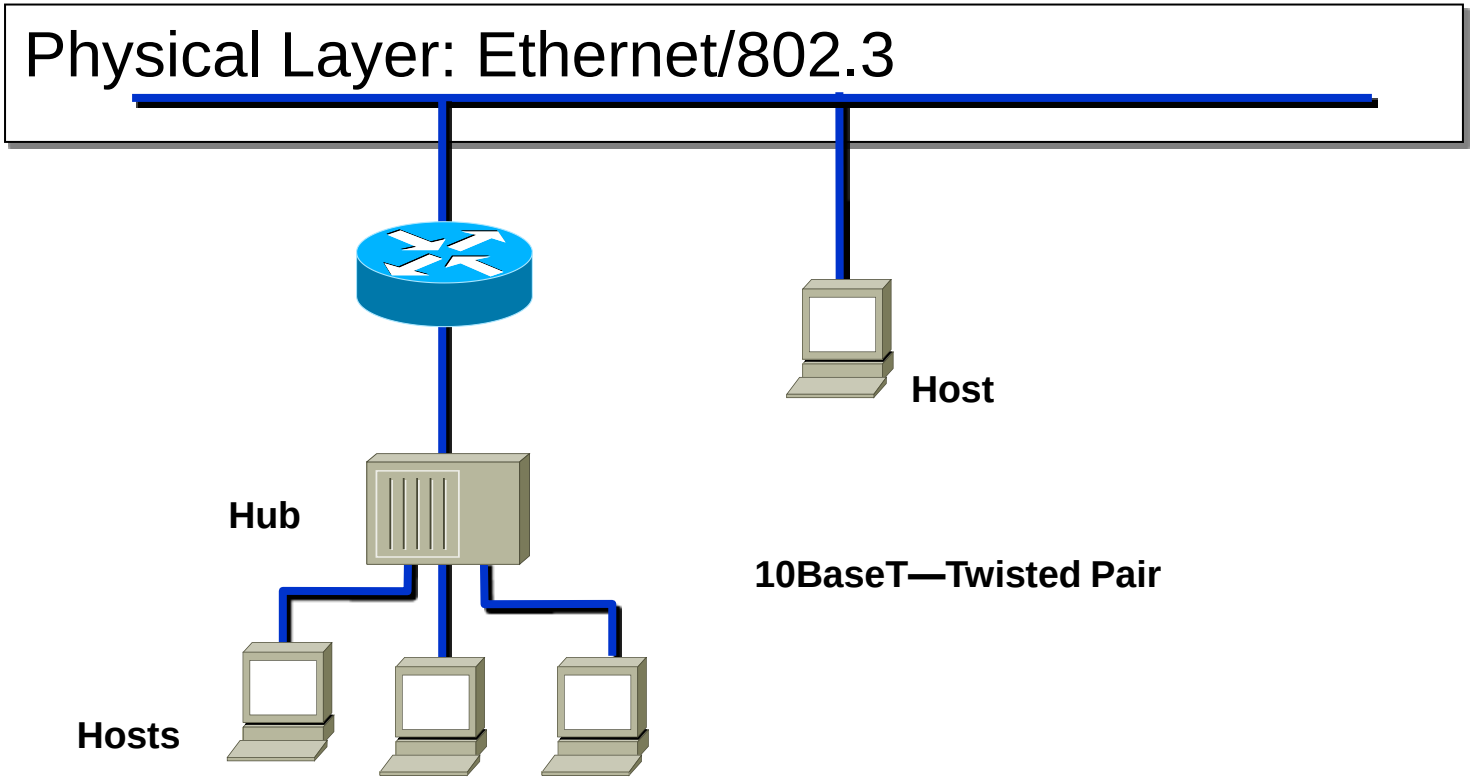

De-encapsulating Data
Application
Presentation
Session
Transport
Network
Data Link
Physical
TCP Header
IP Header
LLC Header
MAC Header
Upper Layer Data
Upper Layer Data
TCP+ Upper Layer Data
IP + TCP + Upper Layer Data
Hdr + IP + TCP + Upper Layer Data
01001000010

Physical Layer Functions

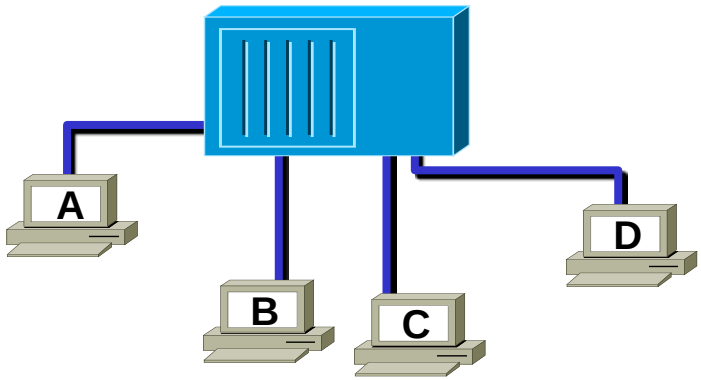
Defines

- Media type
- Connector type
- Signaling type




Physical Layer: Ethernet/802.3
Host
Hub
10BaseT—Twisted Pair
Hosts

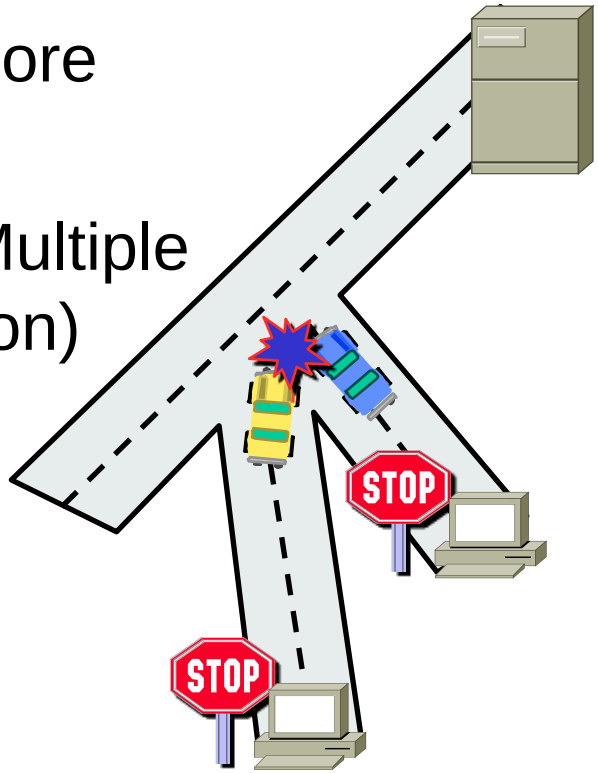
Hubs Operate at Physical Layer



- All devices in the same collision domain
- All devices in the same broadcast domain
- Devices share the same bandwidth

Hubs: One Collision Domain

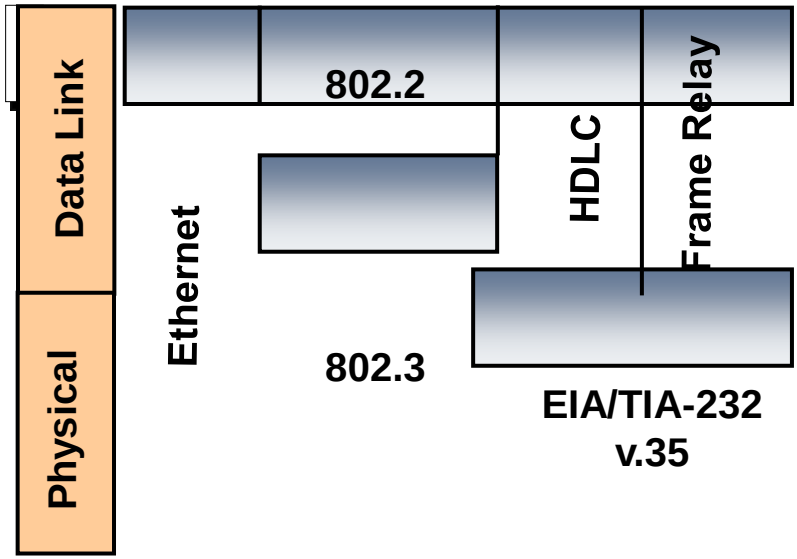
- More end stations means more collisions
- CSMA/CD (Carrier-Sense Multiple Access with Collision Detection)



Defines

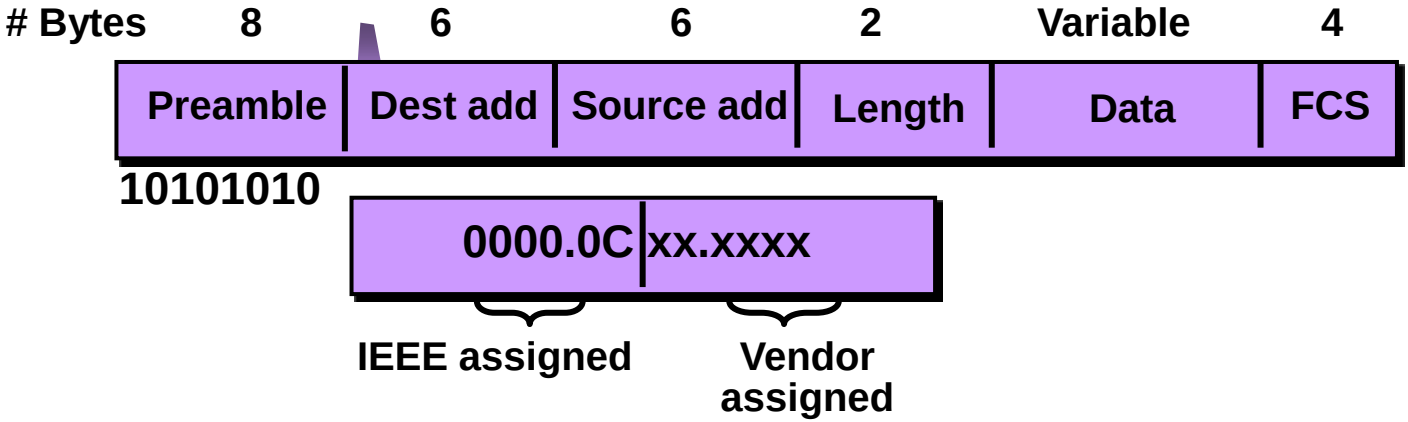
- Physical source and destination addresses
- Higher layer protocol (Service Access Point) associated with frame
- Network topology
- Frame sequencing
- Flow control
- Connection-oriented or connectionless

Data Link layer Functions



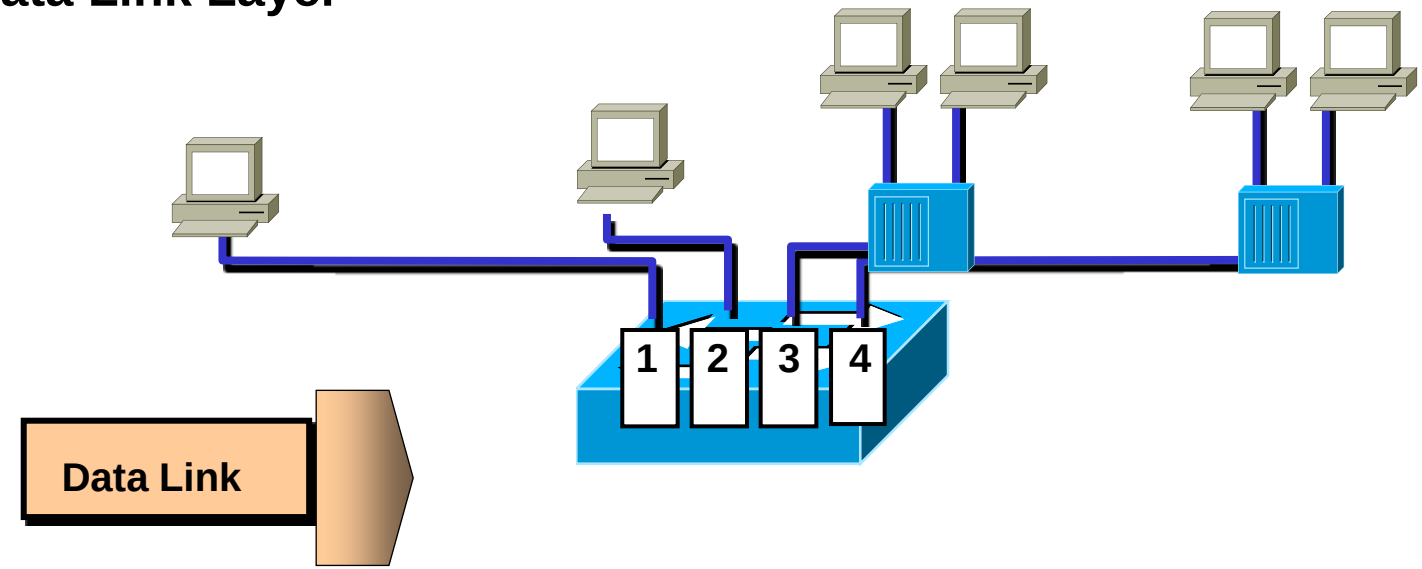
Data Link Layer Functions (cont.)

MAC Layer - 802.3



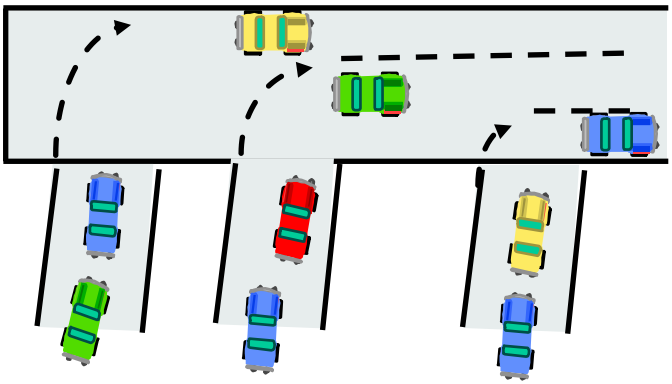
MAC Address 48 bit's

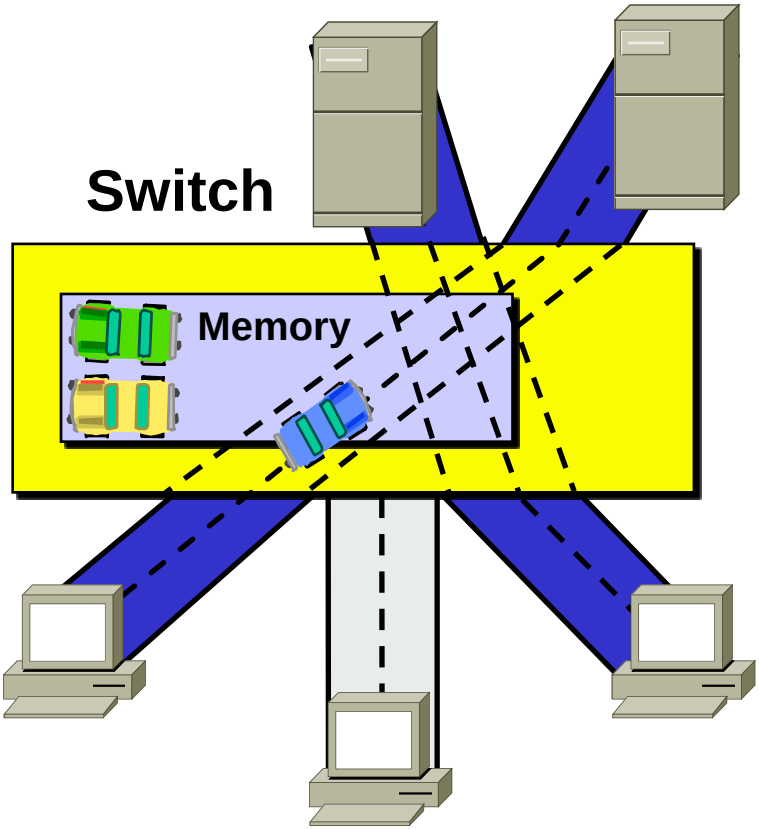
Switches Operate at Data Link Layer



- Each segment has its own collision domain
- All segments are in the same broadcast domain

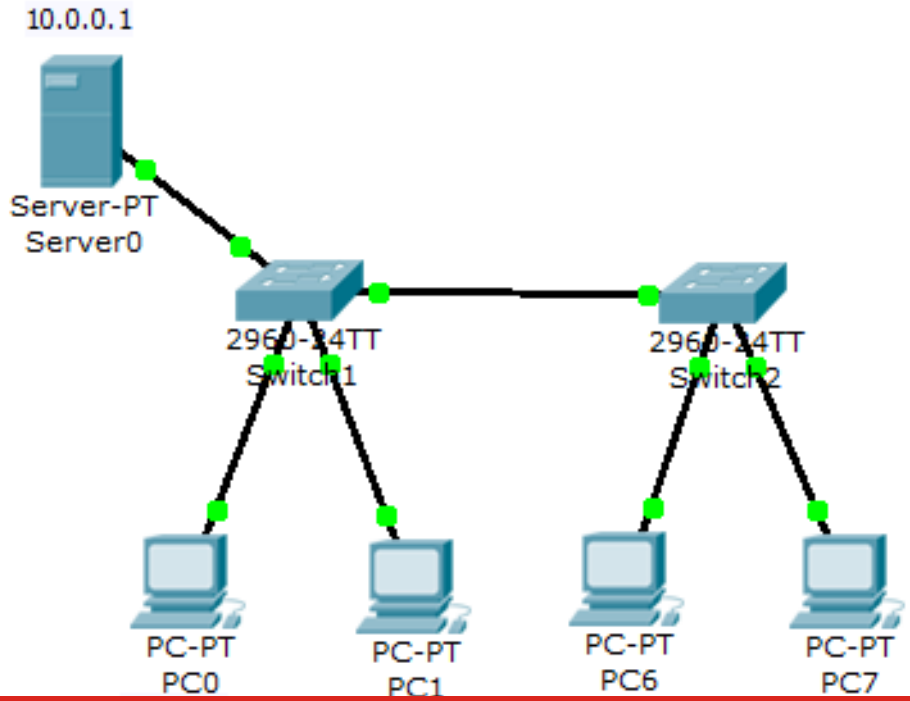
Switches





- Each segment has its own collision domain
- Broadcasts are forwarded to all segments

Verificar a tabela MAC



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Verificar a tabela MAC

Complete com as informações:

Switch1
Porta mac-address

Switch> enable
Switch#show mac-address-table