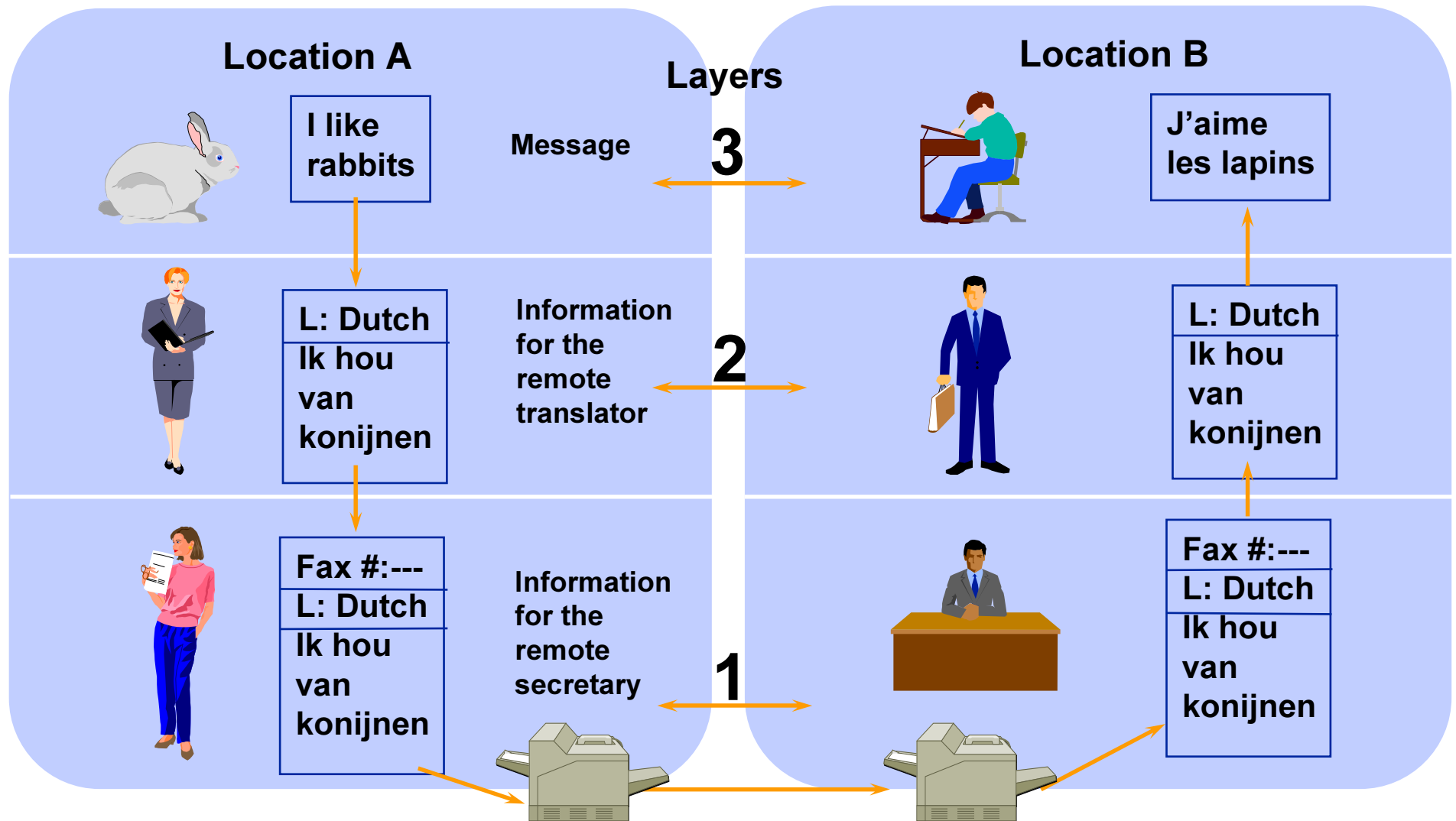
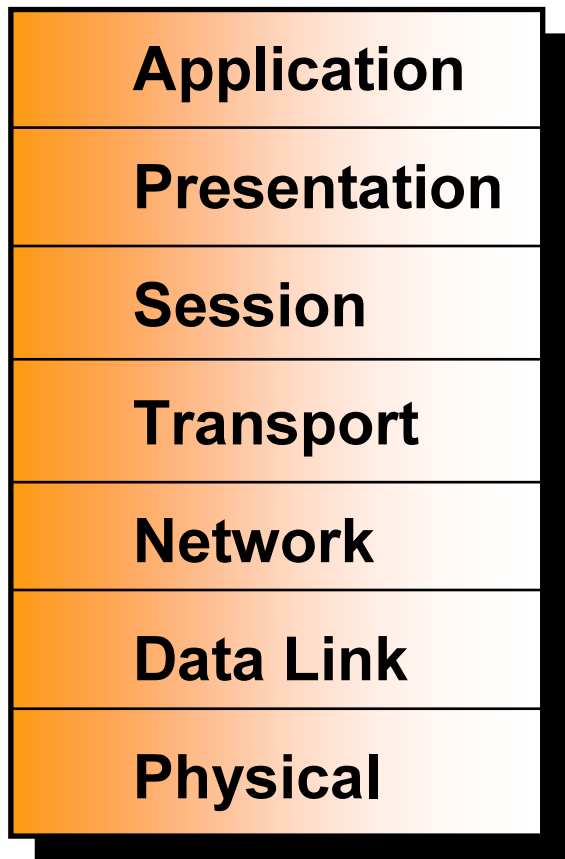


# OSI Reference Model

# Layered Communication

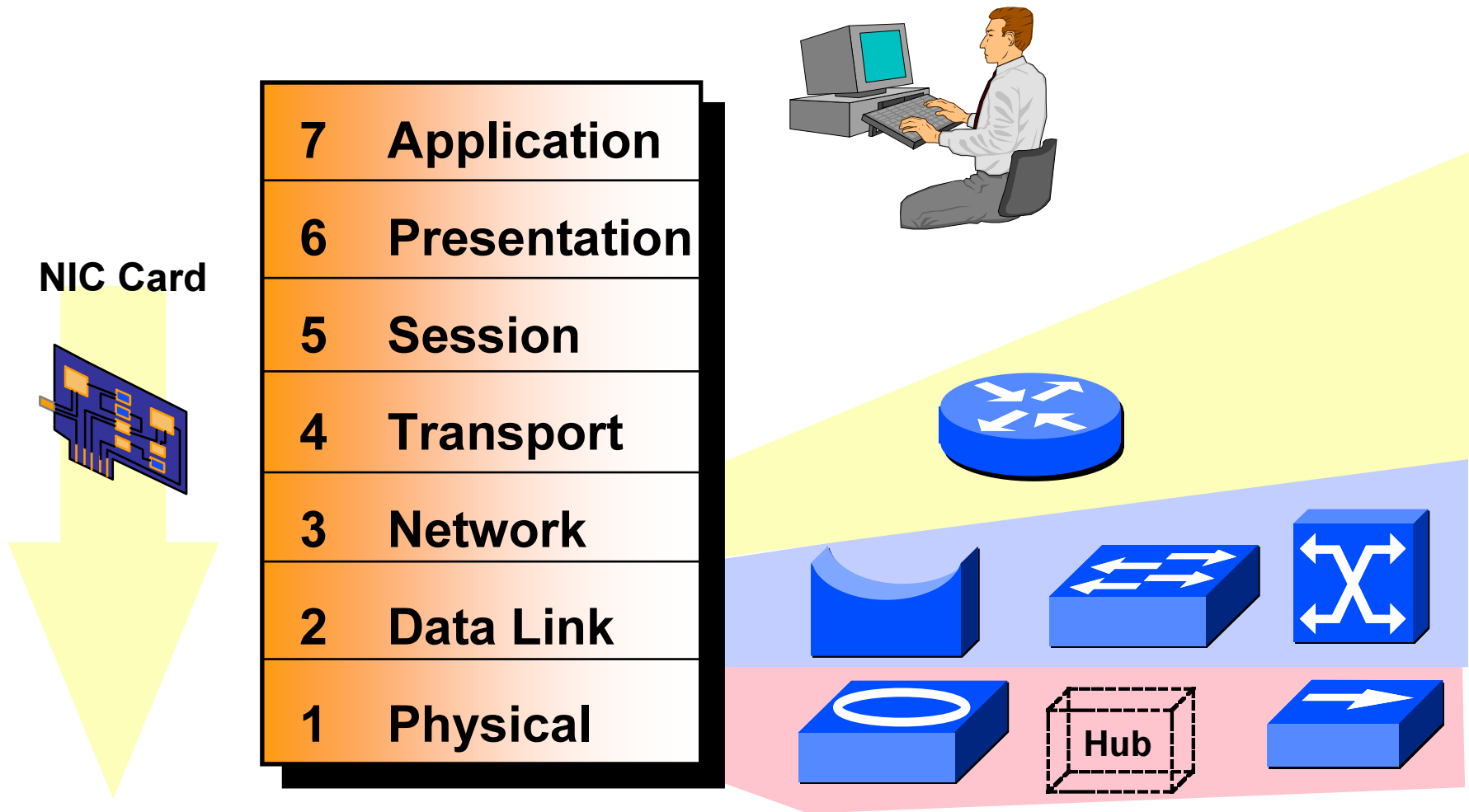


# Why a Layered Network Model?

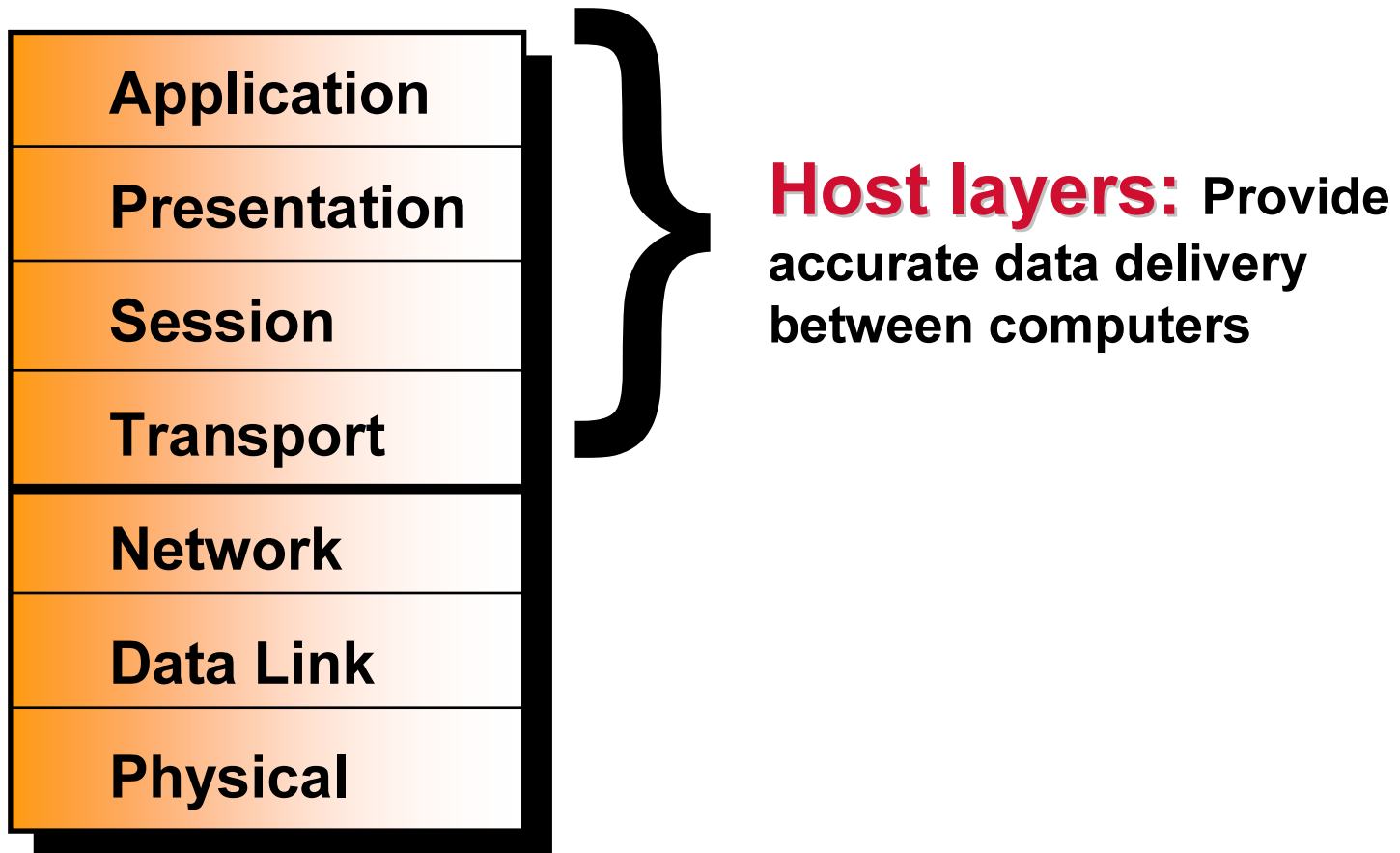


- **Reduces complexity (one big problem to seven smaller ones)**
- **Standardizes interfaces**
- **Facilitates modular engineering**
- **Assures interoperable technology**
- **Accelerates evolution**
- **Simplifies teaching and learning**

# Devices Function at Layers



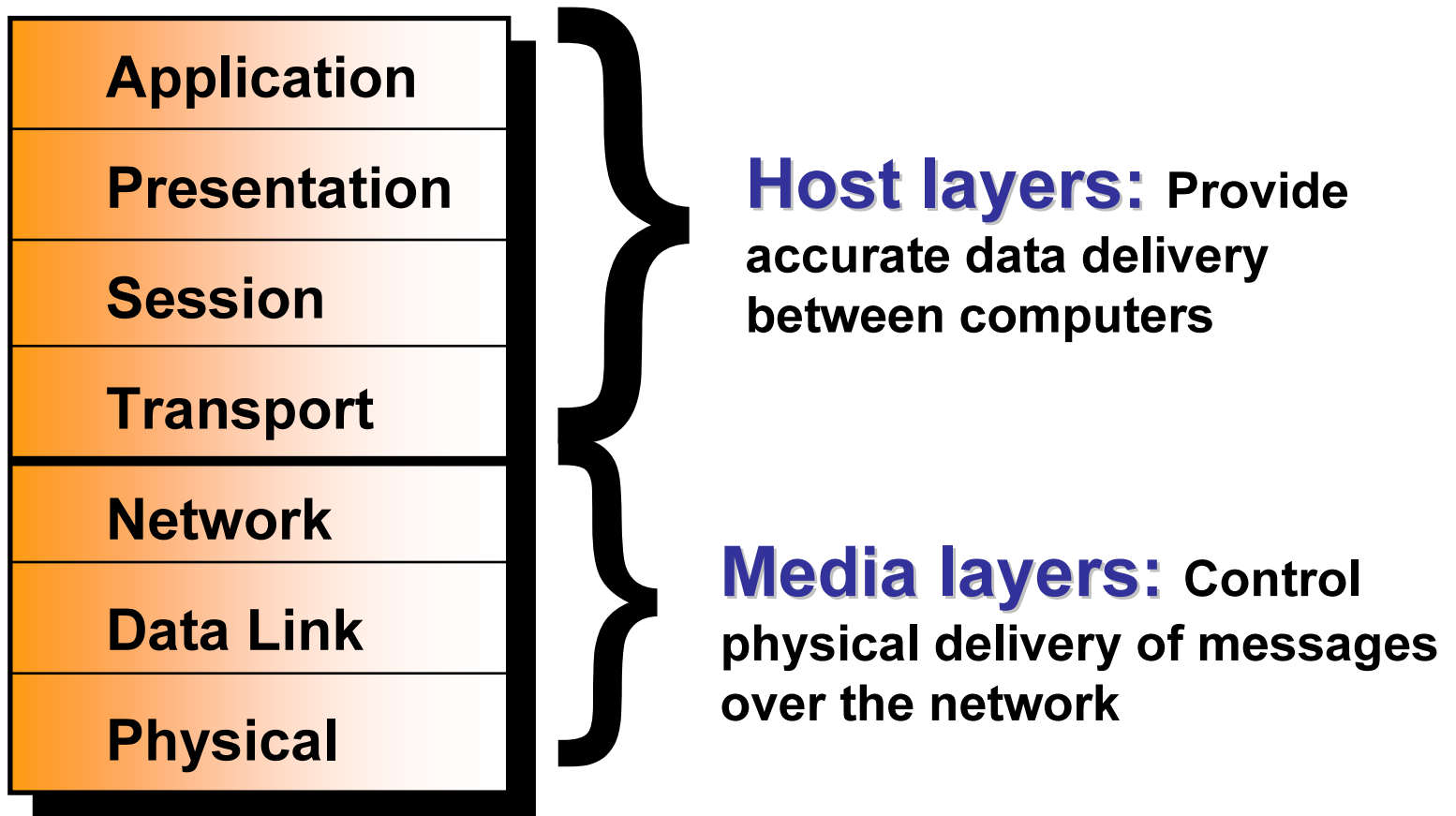
# Host Layers



# Role of Application Layers

		Examples
Application	<ul style="list-style-type: none"><li>• User interface</li></ul>	Telnet FTP
Presentation	<ul style="list-style-type: none"><li>• How data is presented</li><li>• Special processing such as encryption</li></ul>	ASCII EBCDIC JPEG
Session	<ul style="list-style-type: none"><li>• Keeping different applications' data separate</li></ul>	Operating System/ Application Access Scheduling
Transport		
Network		
Data-Link		
Physical		

# Media Layers

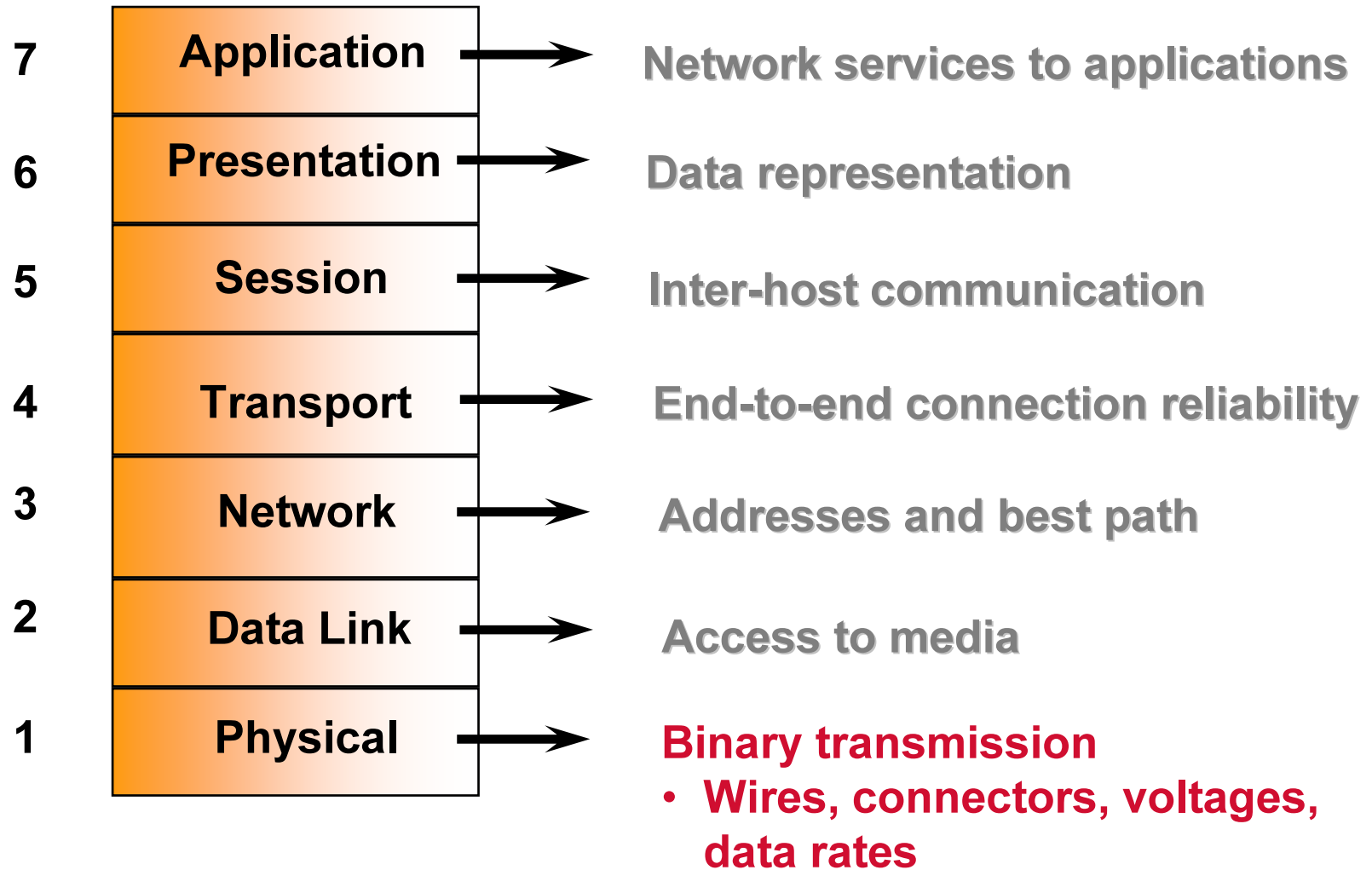


# Role of Data Flow Layers

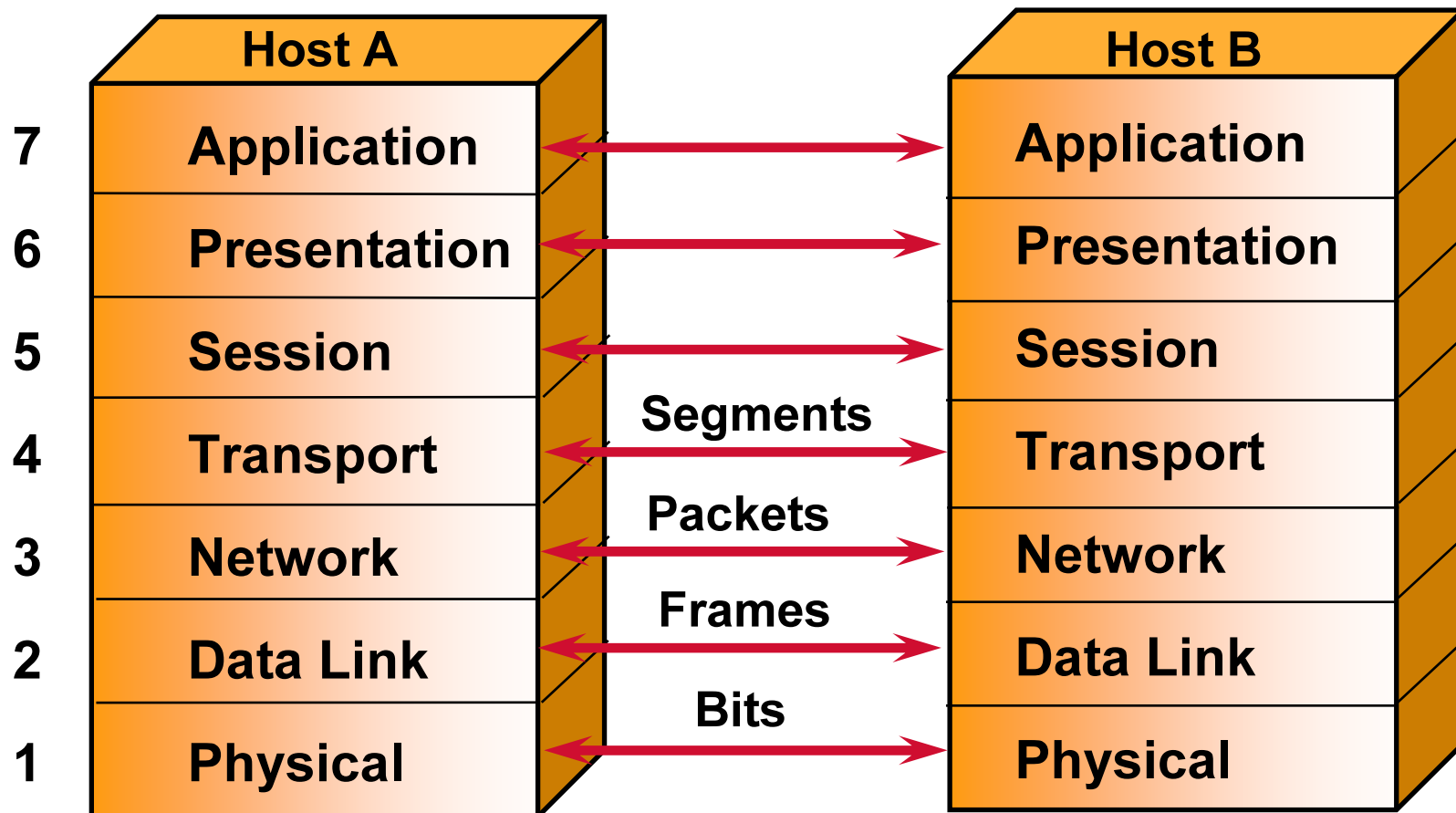
Application		
Presentation		
Session		Examples
Transport	<ul style="list-style-type: none"> <li>• Reliable or unreliable delivery</li> <li>• Error correction before retransmit</li> </ul>	TCP UDP SPX
Network	<ul style="list-style-type: none"> <li>• Provide logical addressing that routers use for path determination</li> </ul>	IP IPX
Data-Link	<ul style="list-style-type: none"> <li>• Combines bits into bytes and bytes into frames</li> <li>• Access to media using MAC address</li> <li>• Error detection, not correction</li> </ul>	802.3/802.2 HDLC
Physical	<ul style="list-style-type: none"> <li>• Move bits between devices</li> <li>• Specifies voltage, wire speed, and pinout cables</li> </ul>	EIA/TIA-232 V.35



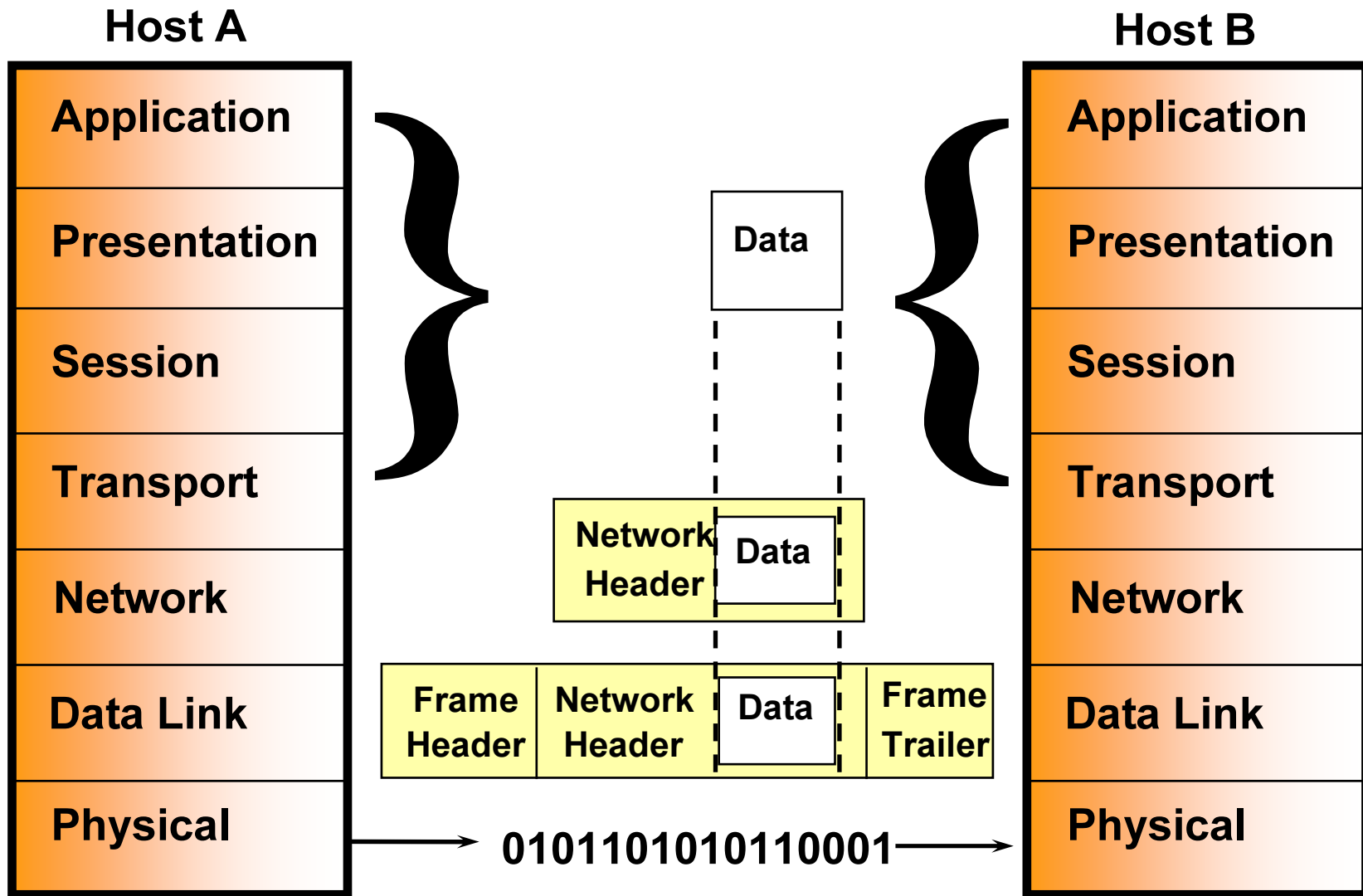
# Layer Functions



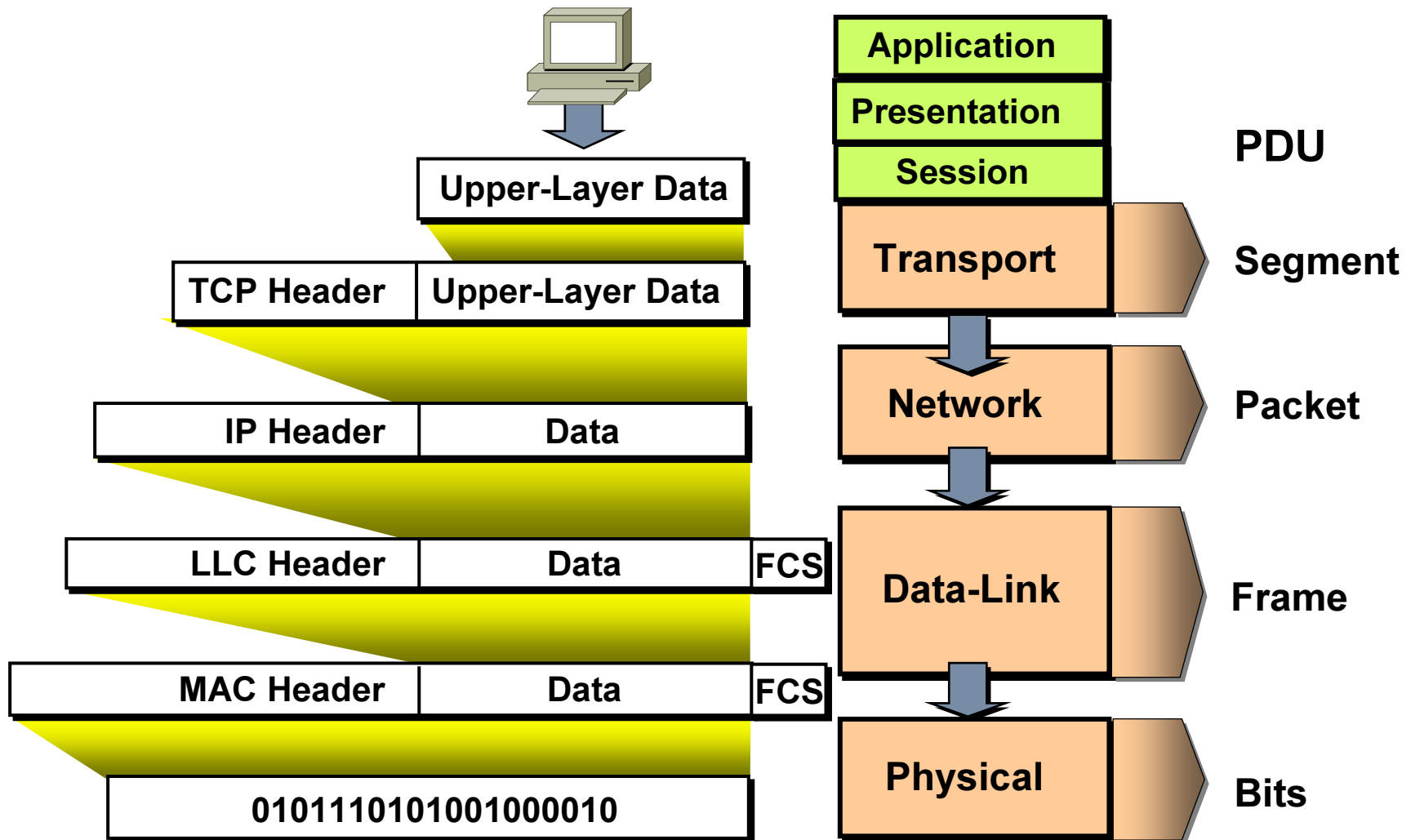
# Peer-to-Peer Communications



# Data Encapsulation



# Encapsulating Data



# De-encapsulating Data

