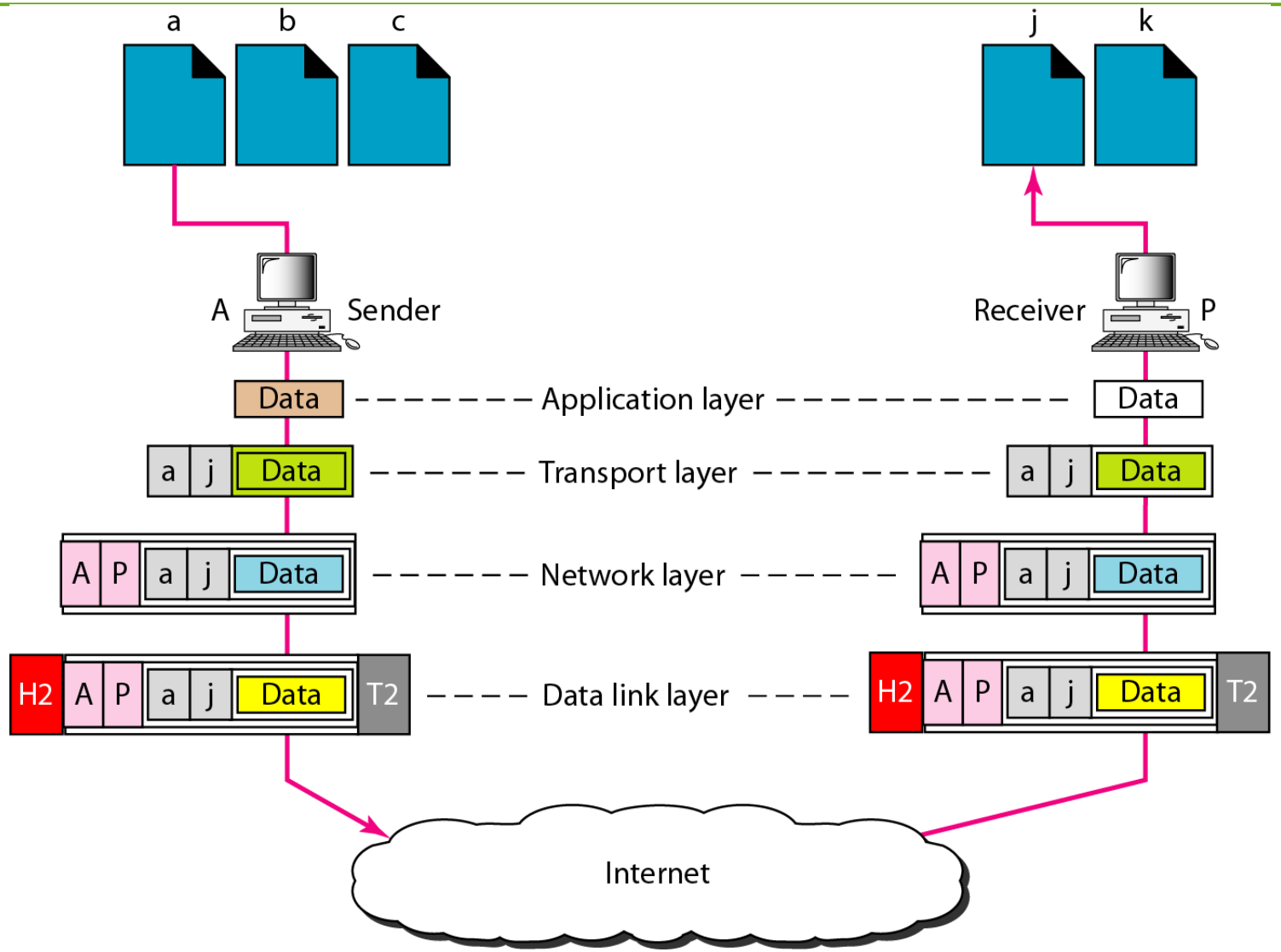
OSI Model

Example 4

Figure 3 shows two computers communicating via the Internet. The sending computer is running three processes at this time with port addresses a, b, and c. The receiving computer is running two processes at this time with port addresses j and k. Process a in the sending computer needs to communicate with process j in the receiving computer. Note that although physical addresses change from hop to hop, logical and port addresses remain the same from the source to destination.

Figure 3 *Port addresses*



Note

The physical addresses will change from hop to hop, but the logical addresses usually remain the same.

Example 5

A port address is a 16-bit address represented by one decimal number as shown.

753

A 16-bit port address represented
as one single number.

Data Encapsulation In TCP/IP

At each layer in the TCP/IP protocol stack

- Outgoing data is packaged and identified for delivery to the layer underneath

PDU – Packet Data Unit – the “envelop” information attached to a packet at a particular TCP/IP protocol

- e.g. header and trailer

Header

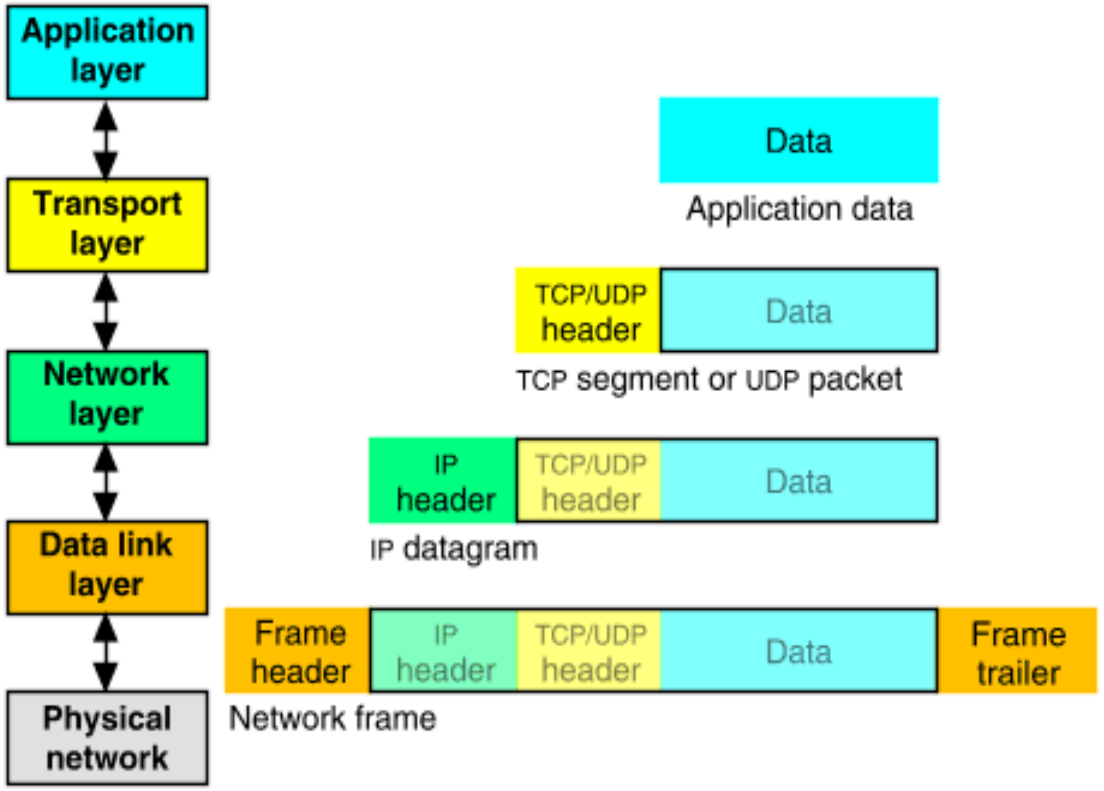
- PDU’s own particular opening component
- Identifies the protocol in use, the sender and intended recipient

Trailer (or packet trailer)

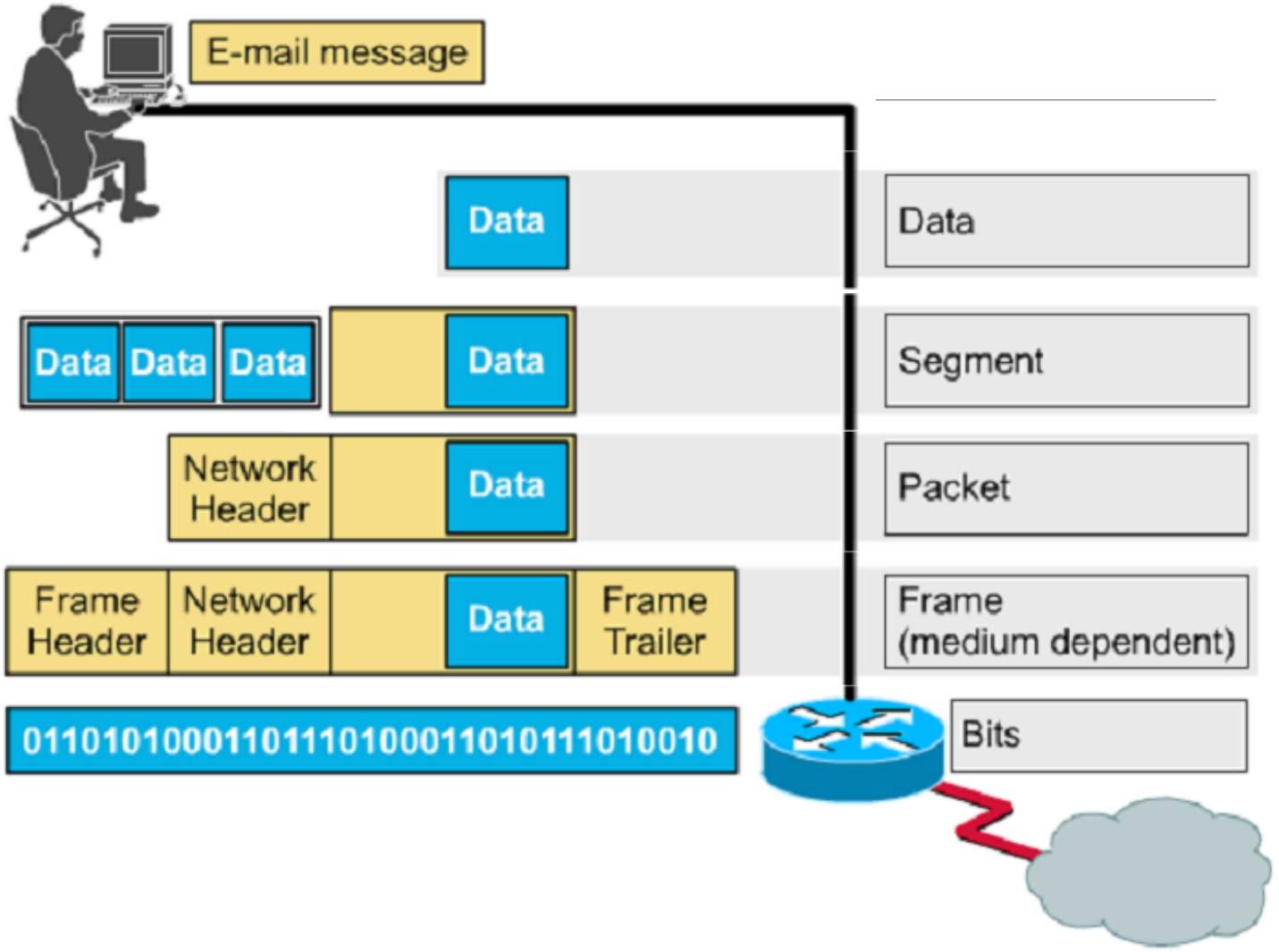
- Provides data integrity checks for the payload

Packet Encapsulation (TCP/IP)

- The data is sent down the protocol stack
- Each layer adds to the data by prepending headers



Encapsulation
Example 6: E-mail



How the OSI and TCP/IP Models Relate in a Networking Environment

OSI Model Layer	OSI Model Name	Equipment	PDU	Words to Remember	TCP/IP Model
Layer 7	Application	Computer	Data/Message	Browsers	Application
Layer 6	Presentation			Common Data Format	Application
Layer 5	Session			Dialogues and Conversations	Application
Layer 4	Transport	Computer	Segment	Quality of Service, and Reliability	Transport
Layer 3	Network	Router	Packet	Path Selection, Routing, and Addressing	Internet
Layer 2	Data Link - MAC -LLC	Bridge, Switch	Frame	Frames and Media Access Control (MAC)	Network Access
Layer 1	Physical	Repeater, Hub	Bit	Signals and Media	Network Access