

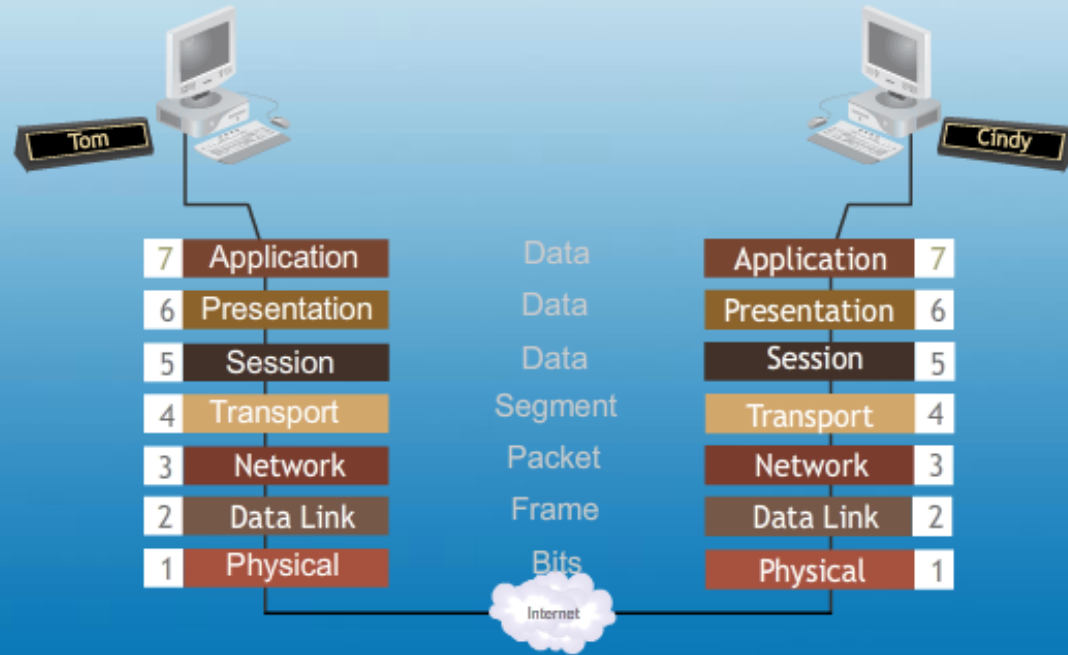
# Summary:

## Peer Communication with the OSI Model

The OSI Model uses peer communication between its 7 layers residing on the source and destination computers. Recall that each layer in the OSI model provides services to the next higher layer until you get to the Application layer, which has the job of providing services to user applications. In the layered approach, each layer on one computer behaves as though it were communicating with its counterpart on the other computer. This means each layer on the receiving computer sees network data in the same format as its counterpart on the sending computer. This simulation is similar to Simulation 1 - Layers of the Networking Process except that more details are provided.

Tom and Cindy are using a chat program. Tom types a message to Cindy. The Chat program communicates with the Application layer to request network services. The protocol data unit, or PDU, at this layer is just called Data. The Application layer sends the data to the Presentation layer for any necessary formatting. The Session layer, if needed, maintains the communication session. The PDU is still referred to as Data at the Presentation and Session layers. The Transport layer breaks the Data PDU into smaller Segments, if necessary, and adds port and sequencing information as needed. The Segment is transferred to the Network layer which adds logical addressing information to create a Packet. The Packet is sent to the Data Link layer which adds physical address information - the source and destination MAC addresses, and a CRC to create a Frame. The Data Link layer also gains access to the media. The Frame is passed down to the Physical layer which transfers the frame across the medium as bit signals.

When the message arrives at the destination computer, the bits are read in by the Physical layer and transferred up to the Data Link layer as a Frame.



The Data Link layer verifies the Destination MAC address and CRC and strips the Frame header and trailer and hands off the resulting Packet to the Network Layer. The Network layer verifies the logical address in the Packet header, strips the Packet header and sends the resulting Segment up to the Transport layer. The Transport layer strips off the Segment header, assembles multiple segments if necessary, uses the port number to determine which Application layer service should receive the message and sends the resulting Data to the Session layer. The Session layer passes the data to the Presentation layer and finally to the Application layer. The Application layer sends the original message to the chat program and the message is received.