## Unit 11 text Network Communications

Users don’t see the most of the work that **application layer** does to send message over a network, such as converting data into bits.

The **presentation layer** transmits message in the correct language (often ASCII), also might encrypt the data.

The **session layer** is responsible for communications among all nodes on the network, and establishes whether the message will be sent.

The **transport layer** protects the data being sent by dividing the data into segments and making backup copies of it.

The **network layer** selects a route for the message by adding a header with sequence of packets and the address of the receiving computer.

The **data-link** layer controls the transmission, it keeps a copy of each packet until every packet has arrived undamaged.

The **physical layer** encodes the packets into the *medium* that will carry them.

An **intermediate node** calculates and verifies the checksum for each packet.

When receiving the message, the process is reversed.

The **physical layer** reconverts the message into bits. The **data-link layer** recalculates the checksum, confirms arrival, and logs in the packets. The **network layer** recounts incoming packets for security and billing purposes. The **transport layer** recalculates the checksum and reassembles the message segments. The **sessions layer** holds the parts of the message until the message is complete and sends it to the next layer. The **presentation layer** expands and decrypts the message. The **application layer** converts the bits into readable characters, and directs the data to the correct application.