From the Internet to the Web

How does the internet work?

- The internet is a network of networks.
- It is a global system of interconnected computer networks that use the Internet protocol suite (TCP/IP) to link devices worldwide.
- It is a network of networks that consists of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies.
- The internet carries a vast range of information resources and services, such as the inter-linked hypertext documents and applications of the World Wide Web (WWW), electronic mail, telephony, and file sharing.

Transmission Control Protocol (TCP)

- TCP is a standard that defines how to establish and maintain a network conversation through which application programs can exchange data.
- TCP works with the Internet Protocol (IP), which defines how computers send packets of data to each other.
- Together, TCP and IP are the basic rules defining the Internet.

Internet Protocol (IP)

- IP is the principal communications protocol in the Internet protocol suite for relaying datagrams across network boundaries.
- Its routing function enables internetworking, and essentially establishes the Internet.
- IP has the task of delivering packets from the source host to the destination host solely based on the IP addresses in the packet headers.
- For this purpose, IP defines packet structures that encapsulate the data to be delivered.
- It also defines addressing methods that are used to label the datagram with source and destination information.

IP Address

- An IP address is a numerical label assigned to each device connected to a computer network that uses the Internet Protocol for communication.

- An IP address serves two main functions: host or network interface identification and location addressing.
- Internet Protocol version 4 (IPv4) defines an IP address as a 32-bit number.
- However, because of the growth of the Internet and the depletion of available IPv4 addresses, a new version of IP (IPv6), using 128 bits for the IP address, was standardized in 1998.
- IPv6 deployment has been ongoing since the mid-2000s.
- IP addresses are written and displayed in human-readable notations, such as