Computing Systems and Networks Vocabulary

Highlighted terms are part of the course standards

Bandwidth	The bandwidth of a computer network is the maximum amount of data that can be sent in a fixed amount of time. It is usually measured in bits per second.
Bit	Binary digit. The smallest unit of information in a computer.
Bit rate	The number of bits per second that can be transmitted along a digital network.
Broadband	Network technologies that generally provide data transfer speeds greater than 128K bps.
Bus topology	A LAN configuration in which all nodes share a common line.
Client/server model	A distributed approach in which a client makes requests of a server and the server responds.
Computer network	A type of computing system made of a group of interconnected computing devices capable of sending or receiving data.
Computing device	A physical artifact that can run a program
Computing system	A group of computing devices and programs working together for a common purpose
Data stream	Information is passed through the Internet as a data stream. Data streams contain chunks of data, which are encapsulated in packets.
Digital subscriber line (DSL)	An internet connection made using a digital signal on regular phone lines.
Domain name system (DNS)	A distributed system for a **naming** database in which internet **domain names** are located and translated into internet protocol (IP) addresses. T
Distributed computing	Distributed computing is a computational model in which multiple devices are used to run a program
Download	Receiving data on your home computer from the internet.
Dynamic routing	Routing that is not specified in advance
Ethernet	The most commonly used method for linking computers together in a LAN. It uses a wired connection.

Fault tolerant	The ability of a system to support failures and still continue to function. This is important because elements of complex systems fail at unexpected times, often in groups, and fault tolerance allows users to continue to use the network.
File Server	A computer dedicated to storing and managing files for network users.
Gateway	A node that handles communication between its LAN and other networks.
HTTP/HTTPS	Protocol used by the world wide web to transmit hypermedia documents, such as HTML. It was designed for communication between web browsers and web servers, but it can also be used for other purposes
Internet	The Internet is a computer network consisting of interconnected networks that use standardized, open (nonproprietary) communication protocols.
Internet Corporation for Assigned Names & Numbers (ICANN)	an internationally organized, non-profit **corporation** that has responsibility for Internet Protocol (IP) address space allocation and protocol identifier assignments
Internet Engineering Taskforce (IETF)	the premier Internet standards body, developing open standards through open processes.
Internet protocol (IP)	A commonly used protocol for routing and addressing packets of data so that they can travel across networks and arrive at the correct destination.
Internet service provider (ISP)	A company providing access to the internet.
Interoperability	The ability of software and hardware on multiple machines and from multiple commercial vendors to communicate.
IP address	An address made up of four numeric values separated by dots that uniquely identifies a computer on the internet.
Local area network (LAN)	A network connecting a small number of nodes in a close geographic area.
Metropolitan area network (MAN)	A network infrastructure developed for a large city.
Node (Host)	Any addressable device attached to a network.
Open System	A system that is based on a common model of network architecture and an accompanying suite of protocols.
Open Systems Interconnection Reference Model	A seven-layer logical breakdown of network interaction to facilitate communication standards.
Open protocols	The protocols used in the Internet are open, which allows users to easily connect additional computing devices to the Internet.

Packets	Packets contain a chunk of data and metadata used for routing the packet between the origin and the destination on the Internet, as well as for data reassembly
Packet switching	The approach to network communication in which packets are individually routed to their destination, then reassembled.
Parallel computing	Parallel computing is a computational model where the program is broken into multiple smaller sequential computing operations, some of which are performed simultaneously.
Path	A path between two computing devices on a computer network (a sender and a receiver) is a sequence of directly connected computing devices that begins at the sender and ends at the receiver
Ping	A program used to test whether a particular network computer is active and reachable.
Proprietary system	A system that uses technologies kept private by a particular commercial vendor
Protocol	A protocol is an agreed-upon set of rules that specify the behavior of a system.
Redundancy	Redundancy is the inclusion of extra components that can be used to mitigate failure of a system if other components fail.
Ring topology	A LAN configuration in which all nodes are connected in a closed loop.
Router	A network device that directs a packet between networks toward its final destination.
Routing	Routing is the process of finding a path from sender to receiver.
Scalability	The scalability of a system is the capacity for the system to change in size and scale to meet new demands
Sequential Computing	Sequential computing is a computational model in which operations are performed in order one at a time.
Speedup of a parallel solution	The “speedup” of a parallel solution is measured in the time it took to complete the task sequentially divided by the time it took to complete the task when done in parallel.
Star Topology	A LAN configuration in which a central node controls all message traffic.
TCP/IP	The combination of IP and TCP that manages creation of data packets, the movement of data across the Internet and the reassembly of messages when they reach their destination.
Traceroute	A program that shows the route a packet takes across the internet.
Transmission Control Protocol (TCP)	A common protocol that provides reliable, ordered, and error-checked delivery of a stream of data packets

Uniform Resource Locator (URL)	a location or address identifying where documents can be found on the Internet.
Upload	Sending data from your home computer to a destination on the internet.
User Datagram Protocol (UDP)	An alternative to TCP that achieves higher transmission speeds at the cost of reliability.
Web Server	A computer dedicated to responding to requests for Web pages.
Wide area network (WAN)	A network connecting two or more local-area networks.
Wireless	A network connection made without physical wires.
World Wide Web	The World Wide Web is a system of linked pages, programs, and files.