

Chapter 13

vocabulary



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AJAXA collection of technologies that allows the creation of Web applications that can update information on a page without requiring the user to do a page refresh or leave the page. appletA small program designed to be run from within another application. Java applets are often run on your computer by your browser through the Java Virtual Machine (an application built into current browsers). cascading style sheets (CSS)A list of statements (also known as rules) that define in one single location how HTML/XHTML elements are to be displayed. CGI scriptA computer program that conforms to the Common Gateway Interface (CGI) specification, which provides a method for sending data between end users (browser users) and Web servers. cgi-binA directory where Common Gateway Interface (CGI) scripts are normally placed. circuit switchingA method of communication in which a dedicated connection is formed between two points (such as two people on telephones) and the connection remains active for the duration of the transmission. classless interdomain routing (CIDR)Pronounced "cider," this is an addressing scheme that allows a single IP address to represent several unique IP addresses by adding a network prefix (a slash and a number) to the end of the last octet; also known as supernetting. client/server modelA way of describing typical network functions. Client computers (such as your desktop PC) request services, and servers provide ("serve up") those services to the clients. client-side programA computer program that runs on the client computer and requires no interaction with a Web server. cloud computingThe process of using the Internet to deliver business, entertainment, or other services that were previously delivered by conventional means. commerce serverA computer that hosts software that enables consumers to purchase goods and services over the Web. These

servers generally use special security protocols to protect sensitive information (such as credit card numbers) from being intercepted. Common Gateway Interface (CGI) Provides a methodology by which a browser can request that a program file be executed (or run) instead of just being delivered to the browser. computer protocol A set of rules for accomplishing electronic information exchange. If the Internet is the information superhighway, then protocols are the driving rules. connectionless protocol A protocol that a host computer can use to send data over the network without establishing a direct connection with any specific recipient computer. connection-oriented protocol A protocol that requires two computers to exchange control packets, which set up the parameters of the data exchange session, before sending packets that contain data. crowdsourcing The process of taking a task that an employee or a contractor usually performs (such as product design) and instead outsourcing that task to a large group of people, usually via the Internet. Document Object Model (DOM) A means to organize objects and page elements in a Web page. DOM defines every item on a Web page, such as graphics, tables, and headers, as an object. domain name A part of a Uniform Resource Locator (URL). Domain names consist of two parts: the site's host and a suffix that indicates the type of organization. (Example: popsci. com) Domain Name System (DNS) server A server that contains location information for domains on the Internet and functions like a phone book for the Internet. dotted decimal number (dotted quad) One of the numbers in an Internet Protocol (IP) address. dynamic addressing The process of assigning Internet Protocol (IP) addresses when users log on using their Internet service provider (ISP). The computer is assigned an address from an available pool of IP addresses. Dynamic Host

Configuration Protocol (DHCP)The protocol that handles dynamic addressing. Part of the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol suite, DHCP takes a pool of IP addresses and shares them with hosts on the network on an as-needed basis.

Dynamic HyperText Markup Language (DHTML or dynamic HTML)A combination of Web development technologies including HTML, cascading style sheets, and a scripting language that are used to add interactivity to a Web site after the Web site has been loaded onto the client computer.

elementThe tags and the text between the tags in HyperText Markup Language (HTML).

e-mail serverA server that processes and delivers incoming and outgoing e-mail.

encryptionThe process of encoding data (ciphering) so that only the person with a corresponding decryption key (the intended recipient) can decode (or decipher) and read the message.

file serverA computer deployed to provide remote storage space or to act as a repository for files that users can access.

File Transfer Protocol (FTP)A protocol used to upload and download files from one computer to another over the Internet.

handshakingThe process of two computers exchanging control packets that set up the parameters of a data exchange.

hexadecimal notationA number system that uses 16 digits to represent numbers; also called a base 16 number system.

HTML tagThe bracketed information that surrounds elements of a Web page in order to convey information about them and define how their content is to be displayed.

HTML/XHTML embedded scripting languageA client-side method of embedding programming language code directly within the HTML/XHTML code of a Web page.

hypertextText that is linked to other documents or media (such as video clips or pictures).

HyperText Transfer Protocol (HTTP)The protocol that allows files to be transferred from a Web server so

that you can see them on your computer by using a browser. HyperText Transfer Protocol Secure (HTTPS) A combination of the HTTP protocol and a network security protocol (usually SSL or TLS) that ensure data is sent securely over the Web. Internet backbone The main pathway of high-speed communications lines over which all Internet traffic flows. Internet cache A section of your hard drive that stores information that you may need again for surfing (such as IP addresses and frequently accessed Web pages). Internet Corporation for Assigned Names and Numbers (ICANN) The organization responsible for allocating IP addresses to network administrators to ensure they are unique and have not been assigned to other users. Internet exchange point (IXP) A device that allows different Internet service providers to exchange information between networks. Internet Protocol (IP) A protocol for sending data between computers on the Internet. Internet Protocol version 4 (IPv4) The original IP addressing scheme. Internet Protocol version 6 (IPv6) A proposed IP addressing scheme that makes IP addresses longer, thereby providing more available IP addresses. It uses eight groups of 16-bit numbers. Internet Protocol address (IP address) The means by which all computers connected to the Internet identify each other. It consists of a unique set of four numbers separated by dots such as 123. 45. 178. 91. key pair A public and a private key used for coding and decoding encrypted messages. multipurpose Internet mail extensions (MIME) A specification that was introduced in 1991 to simplify attachments to e-mail messages. All e-mail client software now uses this protocol for attaching files. negative acknowledgment (NAK) What computer Y sends to computer X if a packet is unreadable, indicating the packet was not received in understandable form. network prefix The part of a network

address under the CIDR IP addressing scheme. It consists of a slash and a number added to the end of the last octet in an IP address. OC (optical carrier) line A high-speed fiber-optic line. octet Eight bits. For example, each of the four numbers in the dotted decimal notation of an Internet Protocol (IP) address is represented by an octet. open system A system whose designs are public, enabling access by any interested party. optical carrier line See OC (optical carrier) line. packet (data packet) A small segment of data that is bundled for sending over transmission media. Each packet contains the address of the computer or peripheral device to which it is being sent. packet switching A communications methodology in which data is broken into small chunks (called packets) and sent over various routes at the same time. When the packets reach their destination, they are reassembled by the receiving computer. point of presence (POP) A bank of modems through which many users can connect to an Internet service provider (ISP) simultaneously. positive acknowledgment (ACK) What computer Y sends when it receives a data packet that it can read from computer X. Pretty Good Privacy (PGP) A popular public-key encryption package. private key One-half of a pair of binary files that is needed to decrypt an encrypted message. The private key is kept only by the individual who created the key pair and is never distributed to anyone else. The private key is used to decrypt messages created with the corresponding public key. private-key encryption A procedure in which only the two parties involved in sending a message have the code. This could be a simple shift code where letters of the alphabet are shifted to a new position. proprietary system A software product whose code is not generally available (is kept private) and that is generally developed and marketed by a single company. public key One-half

of a pair of binary files that is needed to decrypt an encrypted message. After creating the keys, the user distributes the public key to anyone he wishes to send him encrypted messages. A message encrypted with a public key can be unencrypted only using the corresponding private key. public-key encryption A procedure in which the key for coding is generally distributed as a public key that may be placed on a Web site. Anyone wishing to send a message codes it using the public key. The recipient decodes the message with a private key. root DNS server A group of servers maintained throughout the Internet to which ISP Web servers connect to locate the master listings for an entire top-level domain. second-level domain A domain that falls within top-level domains of the Internet. Each second-level domain needs to be unique within that particular domain but not necessarily unique to all top-level domains. Secure Sockets Layer (SSL) A protocol that provides for the encryption of data transmitted using the Internet. The current versions of all major Web browsers support SSL. server-side program A program that is run on a Web server as opposed to inside a Web browser. simple mail transfer protocol (SMTP) A protocol for sending e-mail along the Internet to its destination. static addressing A means of assigning an Internet Protocol (IP) address that never changes and is most likely assigned manually by a network administrator. switch A device for transmitting data on a network. A switch makes decisions, based on the media access control (MAC) address of the data, as to where the data is to be sent. T line A high-speed fiber-optic communications line that is designed to provide much higher throughput than conventional voice (telephone) and data (DSL or cable) lines. TCP/IP The main suite of protocols used on the Internet. Telnet A network protocol used primarily on the Internet for connecting to a remote computer to make it

accessible to other computers. three-way handshakeA process used by the Transmission Control Protocol (TCP) to establish a connection. Transmission Control Protocol (TCP)A protocol that prepares data for transmission and provides for error checking and resending lost data. Transport Layer Security (TLS)A protocol that provides data integrity and security for transmissions over the Internet. User Datagram Protocol (UDP)A protocol that prepares data for transmission but that has no resending capabilities. Web serverA computer running a specialized operating system that enables it to host Web pages (and other information) and provide requested Web pages to clients.

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