**Key Terms**

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| **3D sound card** | An expansion card that enables a computer to produce sounds that are omnidirectional or three dimensional. |
| **802.11 standard** | A wireless standard established in 1997 by the Institute of Electrical and Electronics Engineers; also known as WiFi (short for Wireless Fidelity), it enables wireless network devices to work seamlessly with other networks and devices. |

**A**

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| **access card reader** | A device that reads information from a magnetic strip on the back of a credit cardÐlike access card (such as a student ID card); card readers are easily programmed by adding authorized ID card numbers, Social Security numbers, and so on. |
| **access method** | A program or hardware mechanism that controls which computer is allowed to use the transmission media in a network at a certain time. |
| **access time** | The time it takes a storage device to locate its stored data. |
| **accounting software** | An application program that helps business owners manage their finances more efficiently by providing tools for tracking accounting transactions such as sales, accounts receivable, inventory purchases, and accounts payable. |
| **ActionScript** | A programming language included in Flash; similar to JavaScript in its keywords, operators, and classes. |
| **Active Server Pages (ASP)** | A scripting environment in which users combine HyperText Markup Language (HTML), scripts, and reusable Microsoft ActiveX server components to create dynamically generated Web pages. |
| **active topology** | A network topology in which each node on the network is responsible for retransmitting the token, or the data, to other nodes. |
| **adapter card** | See *expansion card*. |
| **Adobe Flash** | A software product for developing Web-based multimedia. |
| **adware** | A program that downloads on your computer when you install a freeware program, game, or utility. Generally, adware enables sponsored advertisements to appear in a section of your browser window or as a pop-up ad box. |
| **affective computing** | A type of computing that relates to emotion or deliberately tries to influence emotion. |
| **aggregator** | A software program that goes out and grabs the latest update of Web material (usually podcasts) according to your specifications. |
| **AI** | See *artificial intelligence.* |
| **aircard** | A device that enables users to have wireless Internet access with mobile devices such as PDAs and notebooks. |
| **AJAX** | A 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. |
| **algorithm** | A set of specific, sequential steps that describe in natural language exactly what a computer program must do to complete its task. |
| **all-in-one computer** | A desktop system unit that houses the computer's processor, memory, and monitor in a single unit. |
| **all-in-one printer** | See *multifunction printer*. |
| **alphabetic check** | Confirms that only textual characters are entered in a database field. |
| **ALU** | See *arithmetic logic unit*. |
| **American Standard Code for Information Interchange (ASCII)** | A format for representing each letter or character as an 8-bit (or 1-byte) binary code. |
| **analog** | Waves that illustrate the loudness of a sound or the brightness of the colors in an image at a given moment in time. |
| **analog-to-digital converter chip** | Converts analog signals into digital signals. |
| **analytical data** | See *structured data.* |
| **antivirus software** | Software that is specifically designed to detect viruses and protect a computer and files from harm. |
| **applet** | A 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). |
| **application programming interface (API)** | A block of code in the operating system that software applications need to interact with. |
| **application server** | A server that acts as a repository for application software. |
| **application software** | The set of programs on a computer that helps a user carry out tasks such as word processing, sending e-mail, balancing a budget, creating presentations, editing photos, taking an online course, and playing games. |
| **arithmetic logic unit (ALU)** | The part of the central processing unit (CPU) that is designed to perform mathematical operations such as addition, subtraction, multiplication, and division, and comparison operations, such as greater than, less than, and equal to. |
| **arrow keys** | See *cursor control keys*. |
| **artificial intelligence (AI)** | The science that attempts to produce computers that display the same type of reasoning and intelligence that humans do. |
| **ASCII** | See *American Standard Code for Information Interchange*. |
| **ASP** | See *Active Server Pages*. |
| **assembly language** | A language that enables programmers to write their programs using a set of short, English-like commands that speak directly to the central processing unit (CPU) and give the programmer very direct control of hardware resources. |
| **Asynchronous JavaScript and XML** | See *AJAX*. |
| **audio editing software** | Programs that perform basic editing tasks on audio files such as cutting dead air space from the beginning or end of a song or cutting a portion from the middle. |
| **authentication** | The process of identifying a computer user, based on a login or username and password. The computer system determines whether the computer user is authorized and what level of access is to be granted on the network. |
| **authentication server** | A server that keeps track of who is logging on to the network and which services on the network are available to each user. |

**B**

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| **B2B** | See *business-to-business*. |
| **B2C** | See *business-to-consumer*. |
| **backdoor program** | A program that enables a hacker to take complete control of a computer without the legitimate user's knowledge or permission. |
| **Backup and Restore utility** | A Windows utility (found in the Control Panel) that allows the user to create a duplicate copy of all the data on a hard drive (or just the folders and files the user specifies) and copy it to another storage device, such as a DVD or external hard drive. |
| **backup utility** | A software application that creates a duplicate copy of selected data on the hard drive and copies it to another storage device. |
| **bandwidth (data transfer rate)** | The maximum speed at which data can be transmitted between two nodes on a network; usually measured in megabits per second (Mbps). See also *data transfer rate*. |
| **base 2 number system** | See *binary number system*. |
| **base 10 number system (decimal notation)** | A number system that uses 10 digits, 0 through 9, to represent any value. |
| **base class** | The original object class from which other classes derive. |
| **base transceiver station** | A large communications tower with antennas, amplifiers, and receivers/transmitters. |
| **basic input/output system (BIOS)** | A program that manages the data between a computer's operating system and all the input and output devices attached to the computer; also responsible for loading the operating system (OS) from its permanent location on the hard drive to random access memory (RAM). |
| **bastion host** | A heavily secured server located on a special perimeter network between a company's secure internal network and its firewall. |
| **batch processing** | The process of accumulating transaction data until a certain point is reached, then processing those transactions all at once. |
| **BD-ROM disc** | BD-ROM is defined as BluRay Disc Read Only Memory. BD-ROM is an optical disc storage media format for high-definition video and data storage. |
| **behavior** | See *method*. |
| **benchmark** | A measurement used in comparing software and hardware performance. Benchmarks are created using software applications that are specifically designed to push the limits of computer performance. |
| **binary decision** | A decision point that can be answered in one of only two ways: *yes* (true) or *no* (false). |
| **binary digit (bit)** | A digit that corresponds to the on and off states of a computer's switches. A bit contains a value of either 0 or 1. |
| **binary language** | The language computers use to process data into information, consisting of only the values 0 and 1. |
| **binary large object (BLOB)** | In databases, a type of object that holds extremely large chunks of data in binary form; this data is usually video clips, pictures, or audio clips. |
| **binary number system** | The number system used by computers to represent all data. Because it includes only two digits (0 and 1), the binary number system is also referred to as the *base 2 number system*. |
| **biometric authentication device** | A device that uses some unique characteristic of human biology to identify authorized users. |
| **bit** | See *binary digit*. |
| **bit depth** | The number of bits a video card uses to store data about each pixel on the monitor. |
| **black-hat hacker** | A hacker who uses his knowledge to destroy information or for illegal gain. |
| **BLOB** | See *binary large object.* |
| **blog** | See *Web log*. |
| **Blu-ray disc** | A method of optical storage for digital data, developed for storing high-definition media. It has the largest storage capacity of all optical storage options. |
| **Bluetooth technology** | A type of wireless technology that uses radio waves to transmit data over short distances (approximately 30 feet for Bluetooth 1 and 60 feet for Bluetooth 2). Often used to connect peripherals such as printers and keyboards to computers or headsets to cell phones. |
| **bomb software** | Software that destroys data on a computing device if someone continually tries to access information by guessing the password. |
| **bookmark** | A feature in some browsers that places a marker of a Web site's Uniform Resource Locator (URL) in an easily retrievable list. (Bookmarks are called Favorites in Microsoft Internet Explorer.) |
| **Boolean operator** | A word used to refine logical searches. For Internet searches, the words AND, NOT, and OR describe the relationships between keywords in the search. |
| **boot process** | The process for loading the operating system (OS) into random access memory (RAM) when the computer is turned on. |
| **boot-sector virus** | A virus that replicates itself into the master boot record of a flash drive or hard drive. |
| **botnet** | A large group of software applications (called *robots* or *bots*) that runs without user intervention on a large number of computers. |
| **breadcrumb list** | A list that shows the hierarchy of previously viewed Web pages within the Web site that you are currently visiting. Shown at the top of some Web pages, it aids Web site navigation. |
| **bridge** | A network device that is used to send data between two different local area networks (LANs) or two segments of the same LAN. |
| **brightness** | A measure of the greatest amount of light showing when a monitor is displaying pure white; measured as candelas per square meter (cd/m2) or *nits*. |
| **broadband** | A high-speed Internet connection such as cable, satellite, or digital subscriber line (DSL). |
| **browser** | See *Web browser*. |
| **browsing** | (1) The process of viewing database records. (2) The process of "surfing" the Web. |
| **brute force attack** | An attack delivered by specialized hacking software that tries many combinations of letters, numbers, and pieces of a user ID in an attempt to discover a user password. |
| **bus (linear bus) topology** | A system of networking connections in which all devices are connected to a central cable called the *bus* (or backbone). |
| **business-to-business (B2B)** | E-commerce transactions between businesses. |
| **business-to-consumer (B2C)** | E-commerce transactions between businesses and consumers. |
| **byte** | Eight binary digits (bits). |

**C**

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| **C** | The predecessor language of C++; developed originally for system programmers by Brian Kernighan and Dennis Ritchie of AT&T Bell Laboratories in 1978. It provides higher-level programming language features (such as if statements and for loops) but still allows programmers to manipulate the system memory and central processing unit (CPU) registers directly. |
| **C#** | A programming language released by Microsoft to compete with Java. Pronounced *see sharp*. |
| **C++** | The successor language to C. Developed by Bjarne Stroustrup, C++ uses all of the same symbols and keywords as C but extends the language with additional keywords, better security, and more support for the reuse of existing code through object-oriented design. |
| **C2C** | See *consumer-to-consumer*. |
| **cable** | A type of broadband Internet connection that uses a television's cable service provider to connect to the Internet. |
| **cache memory** | Small blocks of memory, located directly on and next to the central processing unit (CPU) chip, that act as holding places for recently or frequently used instructions or data that the CPU accesses the most. When these instructions or data are stored in cache memory, the CPU can more quickly retrieve them than if it had to access the instructions or data from random access memory (RAM). |
| **CAD** | See *computer-aided design*. |
| **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. |
| **Cat 6 cable** | A UTP cable type that provides more than 1 GB of throughput. |
| **cathode ray tube (CRT)** | A picture tube device found in old-style "boxy" monitors. |
| **CD** | See *compact disc*. |
| **cellular phone (cell phone)** | A telephone that operates over a wireless network. Cell phones can also offer Internet access, text messaging, personal information management (PIM) features, and more. |
| **central processing unit (CPU or processor)** | The part of the system unit of a computer that is responsible for data processing (the "brains" of the computer); it is the largest and most important chip in the computer. The CPU controls all the functions performed by the computer's other components and processes all the commands issued to it by software instructions. |
| **centralized** | A type of network design in which users are not responsible for creating their own data backups or providing security for their computers; instead, those tasks are handled by a centralized server, software, and a system administrator. |
| **CGI** | See *Common Gateway Interface*. |
| **CGI script** | A 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-bin** | A directory where Common Gateway Interface (CGI) scripts are normally placed. |
| **chat room** | An area on the Web where people come together to communicate online. The conversations are in real time and are visible to everyone in the chat room. |
| **chip** | See *integrated circuit*. |
| **CIDR** | See *classless inter-domain routing*. |
| **circuit switching** | A 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. |
| **class** | A collection of descriptive variables and active functions that together define a set of common properties. Actual examples of the class are known as *objects*. |
| **clickstream data** | Information captured about each click that users make as they navigate a Web site. |
| **client** | A computer that requests information from a server in a client/server network (such as your computer when you are connected to the Internet). |
| **client/server model** | A 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/server network** | A network, consisting of client and server computers, in which the clients make requests of the server and the server returns the response. |
| **client-side program** | A computer program that runs on the client computer and requires no interaction with a Web server. |
| **clock cycle** | The "ticks," or base time unit, of the system clock; one cycle equals one "tick." |
| **clock speed** | The steady and constant pace at which a computer goes through machine cycles, measured in hertz (Hz). |
| **cloud computing** | The process of using the Internet to deliver business, entertainment, or other services that were previously delivered by conventional means. |
| **coaxial cable** | A single copper wire surrounded by layers of plastic insulation and sheathing; used mainly in cable television and cable Internet service. |
| **codec** | A rule, implemented in either software or hardware, which squeezes a given amount of audio and video information into less space. |
| **code editing** | The step in which programmers actually type code into the computer. |
| **coding** | The process of translating an algorithm into a programming language. |
| **cold boot** | The process of starting a computer from a powered-down or off state. |
| **collaboration tool** | A product that allows you to connect easily with other individuals, often in remote locations, for the purposes of communicating or working together on a project. |
| **command-driven interface** | Interface between user and computer in which the user enters commands to communicate with the computer system. |
| **comment (remark)** | A plain English notation inserted into program code for documentation. The comment is not ever seen by the compiler. |
| **commerce server** | A 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. |
| **communications server** | A server that handles all communications between the network and other networks, including managing Internet connectivity. |
| **compact disc (CD)** | A method of optical storage for digital data; originally developed for storing digital audio. |
| **compilation** | The process by which code is converted into machine language, or the language the central processing unit (CPU) can understand. |
| **compiler** | The program that understands both the syntax of the programming language and the exact structure of the central processing unit (CPU) and its machine language. It can "read" the source code and translate the source code directly into machine language. |
| **completeness check** | A process that ensures that all database fields defined as "required" have data entered into them. |
| **computational field (computed field)** | A numeric field in a database that is filled as the result of a computation. |
| **computed field** | See *computational field.* |
| **computer** | A data-processing device that gathers, processes, outputs, and stores data and information. |
| **computer forensics** | The application of computer systems and techniques to gather potential legal evidence; a law enforcement specialty used to fight high-tech crime. |
| **computer literate** | Being familiar enough with computers that you understand their capabilities and limitations and know how to use them. |
| **computer protocol** | A set of rules for accomplishing electronic information exchange. If the Internet is the information superhighway, then protocols are the driving rules. |
| **computer-aided design (CAD)** | A 3D modeling program used to create automated designs, technical drawings, and model visualizations. |
| **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. |
| **connectivity port** | A port that enables the computer (or other device) to be connected to other devices or systems such as networks, modems, and the Internet. |
| **consistency check** | The process of comparing the value of data in a database field against established parameters to determine whether the value is reasonable. |
| **consumer-to-consumer (C2C)** | E-commerce transactions between consumers through online sites such as eBay.com. |
| **contrast ratio** | A measure of the difference in light intensity between the brightest white and the darkest black colors that a monitor can produce. If the contrast ratio is too low, colors tend to fade when the brightness is adjusted to a high or low setting. |
| **control structure** | The general term used for keywords in a programming language that allow the programmer to control, or redirect, the flow of the program based on a decision. |
| **control unit** | A component that controls the switches inside the central processing unit (CPU). |
| **cookie** | A small text file that some Web sites automatically store on a client computer's hard drive when a user visits the site. |
| **copyleft** | A simplified licensing scheme that enables copyright holders to grant certain rights to a work while retaining other rights. |
| **core** | A complete processing section from a CPU, embedded into one physical chip. |
| **course management software** | A program that provides traditional classroom tools, such as calendars and grade books, over the Internet, as well as areas for students to exchange ideas and information in chat rooms, discussion forums, and e-mail. |
| **CPU** | See *central processing unit*. |
| **CPU usage** | The percentage of time a central processing unit (CPU) is working. |
| **CRM software** | See *customer relationship management (CRM) software*. |
| **CSMA/CD** | A method of data collision detection in which a node connected to the network listens (that is, has carrier sense) to determine that no other nodes are currently transmitting data signals; short for Carrier Sense Multiple Access with Collision Detection. |
| **CSS** | See *cascading style sheets*. |
| **custom installation** | The process of installing only those features of a software program that a user wants on the hard drive. |
| **customer relationship management (CRM) software** | A business program used for storing sales and client contact information in one central database. |
| **cybercrime** | Any criminal action perpetrated primarily through the use of a computer. |
| **cybercriminal** | An individual who uses computers, networks, and the Internet to perpetrate crime. |
| **cyberloafing** | Doing anything with a computer that is unrelated to a job (such as playing video games), while one is supposed to be working. Also called *cyberslacking*. |

**D**

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| **data** | Numbers, words, pictures, or sounds that represent facts, figures, or ideas. |
| **data centralization** | Having all data in one central location (usually a database). Data centralization helps ensure data integrity by requiring data to be updated only in one place if the data changes. |
| **data collision** | When two computers send data at the same time and the sets of data collide somewhere in the media. |
| **data dictionary (database schema)** | A file that defines the name, data type, and length of each field in the database. |
| **data file** | File that contains stored data. |
| **data inconsistency** | Any difference in data in lists caused when data exists in multiple lists and not all lists are updated when a piece of data changes. |
| **data integrity** | The process of ensuring that data contained in a database is accurate and reliable. |
| **data line surge suppressor** | A device that protects lines carrying data (such as phone or cable modem lines) from power surges. |
| **data mart** | Small slices of a data warehouse. |
| **data mining** | The process by which great amounts of data are analyzed and investigated to spot significant patterns or trends within the data that would otherwise not be obvious. |
| **data packet** | See *packet*. |
| **data plan** | A connectivity plan or text messaging plan in which data charges are separate from cell phone calling charges and are provided at rates different from those for voice calls. |
| **data redundancy** | When the same data exists in more than one place in a database. |
| **data staging** | A three-step process: extracting data from source databases, transforming (reformatting) the data, and storing the data in a data warehouse. |
| **data transfer rate (bandwidth)** | The maximum speed at which data can be transmitted between two nodes on a network; usually measured in megabits per second (Mbps). |
| **data type (field type)** | An attribute of a data field that determines what type of data can be stored in the database field or memory location. |
| **data warehouse** | A large-scale electronic repository of data that contains and organizes in one place all the data related to an organization. |
| **database** | A collection of related data that can be easily stored, sorted, organized, and queried. |
| **database administrator (database designer)** | An individual trained in the design, construction, and maintenance of databases. |
| **database designer** | See *database administrator.* |
| **database management system (DBMS)** | A type of specially designed application software (such as Oracle or Microsoft Access) that interacts with the user, other applications, and the database to capture and analyze data. |
| **database query** | An inquiry the user poses to a database to extract a meaningful subset of data. |
| **database schema** | See *data dictionary.* |
| **database server** | A server that provides client computers with access to information stored in a database. |
| **database software** | An electronic filing system best used for larger and more complicated groups of data that require more than one table and the ability to group, sort, and retrieve data and generate reports. |
| **date field** | A field in a database that holds date data such as birthdays, due dates, and so on. |
| **DBMS** | See *database management system.* |
| **DDoS attack** | See *distributed denial of service (DDoS) attack*. |
| **debugger** | A tool that helps programmers step through a program as it runs to locate errors. |
| **debugging** | The process of repeatedly running a program to find errors and to make sure the program behaves in the way it should. |
| **decentralized** | A type of network in which users are responsible for creating their own data backups and for providing security for their computers. |
| **decimal notation** | See *base 10 number system*. |
| **decision point** | A point at which a computer program must choose from a set of different actions based on the value of its current inputs. |
| **decision support system (DSS)** | A system designed to help managers develop solutions for specific problems. |
| **decode** | To translate the program's instructions into commands the CPU can understand. |
| **dedicated server** | A server used to fulfill one specific function (such as handling e-mail). |
| **default value** | The value a database will use for a field unless the user enters another value. |
| **denial of service (DoS) attack** | An attack that occurs when legitimate users are denied access to a computer system because a hacker is repeatedly making requests of that computer system that tie up its resources and deny legitimate users access. |
| **derivative work** | Intellectual property that is based on an original work but is modified in some way. |
| **derived class** | A class created based on a previously existing class (i.e., a base class). Derived classes inherit all of the member variables and methods of the base class from which they are derived. |
| **desktop** | As its name implies, the computer's desktop puts at your fingertips all of the elements necessary for a productive work session and that are typically found on or near the top of a traditional desk, such as files and folders. |
| **desktop computer** | A computer that is intended for use at a single location. A desktop computer consists of a case that houses the main components of the computer, plus peripheral devices. |
| **desktop publishing (DTP) software** | Programs for incorporating and arranging graphics and text to produce creative documents. |
| **detail report** | A report generated with data from a database that shows the individual transactions that occurred during a certain time period. |
| **device driver** | Software that facilitates the communication between a device and the operating system. |
| **Device Manager** | A feature in the Windows operating system that lets individuals view and change the properties of all hardware devices attached to the computer. |
| **DHCP** | See *Dynamic Host Configuration Protocol*. |
| **DHTML** | See *Dynamic HyperText Markup Language*. |
| **dial-up connection** | A connection to the Internet using a standard telephone line. |
| **dial-up modem** | A device that converts (modulates) the digital signals the computer understands to analog signals that can travel over phone lines. The computer on the other end also must have a modem to translate (demodulate) the received analog signal back to a digital signal that the receiving computer can understand. |
| **digital divide** | The discrepancy between those who have access to the opportunities and knowledge computers and the Internet offer and those who do not. |
| **digital home** | A home that has a computer(s) and other digital devices that are all connected to a home network. |
| **digital media receiver (DMR)** | A specialized entertainment device that is specifically designed to retrieve digital media (music, movies, or pictures) from computers or storage devices on a network and display them on televisions or home theater systems. Also called a *media extender* or a *media adapter*. |
| **digital signal processor** | A specialized chip that processes digital information and transmits signals very quickly. |
| **digital subscriber line (DSL)** | A type of connection that uses telephone lines to connect to the Internet and that allows both phone and data transmissions to share the same line. |
| **digital video disc (DVD)** | A method of optical storage for digital data that has greater storage capacity than compact discs. |
| **digital video editing software** | A program for editing digital video. |
| **digital video interface (DVI)** | Video interface technology that newer LCD monitors, as well as other multimedia devices such as televisions, DVD players, and projectors, use to connect to a PC. |
| **directory** | A hierarchical structure that include files, folders, and drives used to create a more organized and efficient computer. |
| **Disk Cleanup** | A Windows utility that removes unnecessary files from the hard drive. |
| **disk defragmenter** | A utility that regroups related pieces of files on the hard drive, enabling faster retrieval of the data. |
| **distributed denial of service (DDoS) attack** | An automated attack that is launched from more than one zombie computer at the same time. |
| **DMR** | See *digital media receiver*. |
| **DNS server** | See *Domain Name System (DNS) server*. |
| **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. |
| **documentation** | A description of the development and technical details of a computer program, including how the code works and how the user interacts with the program. |
| **DOM** | See *Document Object Model*. |
| **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. |
| **DoS attack** | See *denial of service (DoS) attack*. |
| **dotted decimal number (dotted quad)** | One of the numbers in an Internet Protocol (IP) address. |
| **DRAM** | See *dynamic RAM*. |
| **drawing software (illustration software)** | Programs for creating or editing two-dimensional line-based drawings. |
| **drive bay** | A special shelf inside a computer that is designed to hold storage devices. |
| **DSL** | See *digital subscriber line (DSL)*. |
| **DSL/cable router** | A router that is specifically designed to connect to digital subscriber line (DSL) or cable modems. |
| **DSS** | See *decision support system.* |
| **DTP software** | See *desktop publishing software*. |
| **dual-processor design** | A design that has two separate central processing unit (CPU) chips installed on the same system. |
| **DVD drive** | A drive that enables the computer to read (play) digital video discs (DVDs) and compact discs (CDs). |
| **DVD-RAM** | One of three competing technologies for rewritable DVDs. |
| **DVD-ROM** | DVD format in which data can only be read and not written. |
| **DVD-R/RW** | One of two recognized DVD formats that enable you to read, record (R), and rewrite (RW) data on the disc. |
| **DVD-R/RW** | One of two recognized DVD formats that enables you to both read, record (R), and rewrite (RW) data on the disc. |
| **DVI** | See *digital video interface*. |
| **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 decision making** | A mechanism that allows a Web page to decide how to display itself, based on the choices the reader makes as he or she looks at the page. |
| **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. |
| **dynamic RAM (DRAM)** | The most basic type of random access memory (RAM); used in older systems or in systems for which cost is an important factor. DRAM offers access times on the order of 60 nanoseconds. |

**E**

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| **e-commerce (electric commerce)** | The process of conducting business online for purposes ranging from fund-raising to advertising to selling products. |
| **e-mail (electronic mail)** | Internet-based communication in which senders and recipients correspond. |
| **e-mail client** | A software program that runs on a computer and is used to send and receive e-mail through the ISP's server. |
| **e-mail server** | A server that processes and delivers incoming and outgoing e-mail. |
| **e-mail virus** | A virus transmitted by e-mail that often uses the address book in the victim's e-mail system to distribute itself. |
| **editor** | A tool that helps programmers as they enter code, highlighting keywords and alerting the programmers to typos. |
| **EISA bus** | See *Extended Industry Standard Architecture (EISA) bus*. |
| **electrical switch** | A device inside the computer that can be flipped between two states: 1 or 0, signifying *on* or *off*. |
| **electronic commerce** | See *e-commerce*. |
| **electronic mail** | See *e-mail*. |
| **element** | The tags and the text between the tags in HyperText Markup Language (HTML). |
| **embedded computer** | A specially designed computer chip that resides inside another device, such as a car. These self-contained computer devices have their own programming and typically neither receive input from users nor interact with other systems. |
| **encryption** | The 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. |
| **encryption virus** | A malicious program that searches for common data files and compresses them into a file using a complex encryption key, thereby rendering the files unusable. |
| **Enterprise Resource Planning (ERP) system** | A large-scale software system that accumulates data from all parts of an organization for the purpose of providing key information as needed to efficiently manage all key business operations. |
| **entertainment software** | Programs designed to provide users with entertainment. Computer games make up the vast majority of entertainment software. |
| **Entertainment Software Rating Board (ESRB)** | A self-regulatory body established in 1994 by the Entertainment Software Association that rates computer and video games according to the age appropriateness of content. |
| **ergonomics** | How a user sets up his or her computer and other equipment to minimize risk of injury or discomfort. |
| **ERP system** | See *Enterprise Resource Planning (ERP) system*. |
| **error handling** | In programming, the instructions that a program runs if the input data is incorrect or another error is encountered. |
| **Error-Checking** | A Windows utility that checks for lost files and fragments as well as physical errors on a hard drive. |
| **eSATA** | A fast data transfer point where a user can easily add peripheral devices. Short for *external SATA*. |
| **ESRB** | See *Entertainment Software Rating Board*. |
| **Ethernet network** | A network that uses the Ethernet protocol as the means (or standard) by which the nodes on the network communicate. |
| **Ethernet port** | A port that is slightly larger than a standard phone jack and transfers data at speeds of up to 10,000 Mbps; used to connect a computer to a DSL or cable modem or a network. |
| **event** | The result of an action, such as a keystroke, mouse click, or signal to the printer, in the respective device (keyboard, mouse, or printer) to which the operating system responds. |
| **exception report** | A report that shows conditions that are unusual or that need attention by users of a system. |
| **executable program** | The binary sequence (code) that instructs the central processing unit (CPU) to perform certain calculations. |
| **expansion bus** | An electrical pathway that expands the capabilities of a computer by enabling a range of different expansion cards, such as video cards and sound cards, to communicate with the motherboard. |
| **expansion card (adapter card)** | A circuit board with specific functions that augment the computer's basic functions and provide connections to other devices; examples include the sound card and the video card. |
| **expansion hub** | A device that connects to one port, such as a universal serial bus (USB) port, to provide additional new ports; similar to a multiplug extension cord for electrical appliances. |
| **expert system** | A system designed to replicate the decision-making processes of human experts to solve specific problems. |
| **export** | The process of putting data into an electronic file in a format that another application can understand. |
| **Express Card** | An electronic card that, when plugged into a notebook computer, provides functionality such as wireless network connections, USB ports, or FireWire ports. |
| **Extensible HyperText Markup Language (XHTML)** | A standard established by the World Wide Web Consortium (W3C) that combines elements from both Extensible Markup Language (XML) and HyperText Markup Language (HTML). XHTML has much more stringent rules than HTML does regarding tagging. |
| **Extensible Markup Language (XML)** | A language that enables designers to define their own tags, making it much easier to transfer data between Web sites and Web servers. |
| **extension (file type)** | In a file name, the three letters that follow the user-supplied file name after the dot (.); the extension identifies what kind of family of files the file belongs to, or which application should be used to read the file. |
| **external data source** | Any source not owned by the company that owns a decision support system, such as customer demographic data purchased from third parties. |
| **external hard drive** | An internal hard drive that is enclosed in a protective case to make it portable; the drive is connected to the computer with a data transfer cable and is often used to back up data. |
| **external SATA** | See *eSata*. |
| **extranet** | The portion of a company's intranet that is used to share business information with business partners such as vendors, suppliers, and customers. |

**F**

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| **FAQ** | See *frequently asked questions*. |
| **FAT** | See *file allocation table.* |
| **Favorites** | A feature in Microsoft Internet Explorer that places a marker of a Web site's Uniform Resource Locator (URL) in an easily retrievable list in the browser's toolbar. (Called Bookmarks in some browsers.) |
| **fiber-optic cable** | A cable that transmits data at close to the speed of light along glass or plastic fibers. |
| **Fiber-Optic Service (FiOS)** | Internet access that is enabled by transmitting data at the speed of light through glass or plastic fibers. |
| **field** | A field where a category of information in a database is stored. Fields are displayed in columns. |
| **field constraint** | Any property that must be satisfied for an entry to be accepted into the database field. |
| **field name** | An identifying name assigned to each field in a database. |
| **field size** | The maximum number of characters (or numbers) that a field in a database can contain. |
| **field type** | See *data type*. |
| **fifth-generation language (5GL)** | A computer language that uses natural language processing or expert systems to make the programming experience better matched to human thinking processes. |
| **file** | A collection of related pieces of information stored together for easy reference; in database terminology, a file or *table* is a group of related records. |
| **file allocation table (FAT)** | An index of all sector numbers that the hard drive stores in a table to keep track of which sectors hold which files. |
| **file compression utility** | A program that takes out redundancies in a file to reduce the file size. |
| **file management** | The process by which humans or computer software provide organizational structure to a computer's contents. |
| **file name** | The first part of the label applied to a file; it is generally the name a user assigns to the file when saving it. |
| **file path** | The exact location of a file, starting with the drive in which the file is located, and including all folders, subfolders (if any), the file name, and the extension. (Example: C:\Users\username\Documents\Illustrations\EBronte.jpg) |
| **file server** | A 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. |
| **financial planning software** | Programs for managing finances, such as Intuit's Quicken and Microsoft Money, which include electronic checkbook registers and automatic bill payment tools. |
| **FiOS** | See *Fiber-Optic Service*. |
| **firewall** | A software program or hardware device designed to prevent unauthorized access to computers or networks. |
| **FireWire (previously called IEEE 1394)** | An interface based on a standard developed by the Institute of Electrical and Electronics Engineers (IEEE) with transfer rates of 400 and 800 megabits per second (Mbps). Today, it is most commonly used to connect digital video devices such as digital cameras to the computer. |
| **FireWire 400 (IEEE 1394)** | An interface port that transfers data at 400 Mbps. |
| **FireWire 800** | One of the fastest ports available, moving data at 800 Mbps. |
| **firmware** | System software that controls hardware devices. |
| **first-generation language (1GL)** | The actual machine language of a central processing unit (CPU); the sequence of bitsÑ1s and 0sÑthat the CPU understands. |
| **Flash** | A software product from Adobe for developing Web-based multimedia. |
| **flash drive** | A drive that plugs into a universal serial bus (USB) port on a computer and stores data digitally. Also called *USB drive*, *jump drive*, or *thumb drive*. |
| **flash memory** | Portable, nonvolatile memory. |
| **flash memory card** | A form of portable storage; this removable memory card is often used in digital cameras, portable media players, and personal digital assistants (PDAs). |
| **flat-panel monitor** | A type of monitor that is lighter and more energy-efficient than a CRT monitor; often used with portable computers such as notebooks. |
| **flowchart** | A visual representation of the patterns an algorithm comprises. |
| **folder** | A collection of files stored on a computer. |
| **For** | Keyword in Visual Basic used with the Next keyword to implement a loop. |
| **foreign key** | The primary key of another database table that is included for purposes of establishing relationships with another table. |
| **fourth-generation language (4GL)** | A sophisticated level of programming language such as a report generator or database query language. |
| **frame** | A container designed to hold multiple data packets. |
| **freeware** | Any copyrighted software that can be used for free. |
| **frequently asked questions (FAQ)** | A list of answers to the most common questions. |
| **front side bus (FSB)** | See *local bus*. |
| **FTP** | See *File Transfer Protocol*. |
| **full backup** | A type of file backup that will back up all files on a device. |
| **full installation** | The process of installing all the files and programs from the distribution CD to the computer's hard drive. |
| **fuzzy logic** | A type of logic that allows the interjection of experiential learning into an equation by considering probabilities. |

**G**

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| **gadget** | A mini-application that runs on the desktop, offering easy access to a frequently used tool such as weather or a calendar item. |
| **gateway** | See *wireless router*. |
| **GHz** | See *gigahertz*. |
| **gigabyte (GB)** | About a billion bytes. |
| **gigahertz (GHz)** | One billion hertz. |
| **Global Positioning System (GPS)** | A system of 21 satellites (plus 3 working spares), built and operated by the U.S. military, that constantly orbit the earth. They provide information to GPS-capable devices to pinpoint locations on the earth. |
| **graphical user interface (GUI)** | Unlike the command- and menu-driven interfaces used in earlier software, GUIs display graphics and use the point-and-click technology of the mouse and cursor, making them much more user-friendly. |
| **graphics processing unit (GPU)** | A specialized logic chip that is dedicated to quickly displaying and calculating visual data such as shadows, textures, and luminosity. |

**H**

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| **hacker** | Anyone who unlawfully breaks into a computer system (whether an individual computer or a network). |
| **HAN** | See *home area network*. |
| **handshaking** | The process of two computers exchanging control packets that set up the parameters of a data exchange. |
| **hard drive** | A device that holds all permanently stored programs and data; can be located inside the system unit or attached to the system unit via a USB port. |
| **hardware** | Any part of the computer you can physically touch. |
| **head crash** | Impact of read/write head against magnetic platter of the hard drive; often results in data loss. |
| **hexadecimal notation** | A number system that uses 16 digits to represent numbers; also called a *base 16 number system*. |
| **Hibernate mode** | A power-saving mode that puts the computer in a state of deep sleep. Pushing the power button awakens the computer from hibernation, at which time the computer reloads everything to the desktop exactly as it was before it went into hibernation. |
| **hoax** | An e-mail message or Web site that contains information that is untrue, and is published with the purpose of deceiving others. |
| **home area network (HAN)** | A network located in a home that is used to connect all of its digital devices. |
| **home page** | The main or opening page of a Web site. |
| **host** | The portion of a domain name that identifies who maintains a given Web site. For example, *berkeley.edu* is the domain name for the University of California at Berkeley, which maintains that site. |
| **hot spot** | A place where users can connect to the Internet wirelessly. |
| **HTML** | See *HyperText Markup Language*. |
| **HTML tag** | The 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 language** | A client-side method of embedding programming language code directly within the HTML/XHTML code of a Web page. |
| **HTTP** | See *HyperText Transfer Protocol*. |
| **hub** | A simple amplification device that receives data packets and retransmits them to all nodes on the same network (not between different networks). |
| **hybrid topology** | A topology comprised of several topologies and combined into one network. |
| **hyperlink** | A type of specially coded text that, when clicked, enables a user to jump from one location, or Web page, to another within a Web site or to another Web site altogether. |
| **hyperlink field** | A field in a database that stores hyperlinks to Web pages. |
| **hypertext** | Text that is linked to other documents or media (such as video clips or pictures). |
| **HyperText Markup Language (HTML)** | A set of rules for marking up blocks of text so that a Web browser knows how to display them. It uses a series of tags that defines the display of text on a Web page. |
| **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. |
| **hyperthreading** | A technology that permits quicker processing of information by enabling a new set of instructions to start executing before the previous set has finished. |

**I**

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| **ICANN** | See *Internet Corporation for Assigned Names and Numbers*. |
| **icon** | A picture on a computer display that represents an object such as a software application or a file or folder. |
| **IDE** | See *integrated development environment*. |
| **identity theft** | The process by which someone uses personal information about someone else (such as the victim's name, address, and Social Security number) to assume the victim's identity for the purpose of defrauding others. |
| **IE** | See *Internet Explorer*. |
| **IEEE 1394** | See *FireWire 400*. |
| **if else** | In the programming language C++, keywords for a binary decision within an algorithm. |
| **illustration software** | See *drawing software*. |
| **IM** | See *instant messaging*. |
| **image backup** | A copy of an entire computer system, created for restoration purposes. |
| **image editing software (photo editing software)** | Programs for editing photographs and other images. |
| **impact printer** | A printer that has tiny hammer-like keys that strike the paper through an inked ribbon, thus making a mark on the paper. The most common impact printer is the dot-matrix printer. |
| **incremental backup** | A type of backup that only backs up files that have changed since the last time those files were backed up. |
| **index** | See *sort*. |
| **information** | Data that has been organized or presented in a meaningful fashion. |
| **information assurance** | As defined by the NSA, "the set of measures intended to protect and defend information and information systems by ensuring their availability, integrity, authentication, confidentiality, and non-repudiation." |
| **information system** | A system that includes data, people, procedures, hardware, and software and that is used to gather and analyze information. |
| **information technology (IT)** | The set of techniques used in processing and retrieving information. |
| **inheritance** | The ability of a new class of objects to pick up all of the data and methods of an existing class automatically and then extend and customize those to fit its own specific needs. |
| **initial value** | A beginning point in a loop. |
| **inkjet printer** | A nonimpact printer that sprays tiny drops of ink onto paper. |
| **inoculation** | A process used by antivirus software; compares old and current qualities of files to detect viral activity. |
| **input device** | A hardware device used to enter, or input, data (text, images, and sounds) and instructions (user responses and commands) into a computer. Some input devices are keyboards and mice. |
| **input form** | A form that provides a view of the data fields to be filled in a database, with appropriate labels to assist database users in populating the database. |
| **instant messaging (IM)** | A program that enables users to communicate online in real time with others who are also online. |
| **instruction set** | The collection of commands a specific central processing unit (CPU) can run. |
| **integrated circuit (chip)** | A tiny region of semiconductor material such as silicon that supports a huge number of transistors. |
| **integrated development environment (IDE)** | A development tool that helps programmers write, compile, and test their programs. |
| **integrated help** | Documentation for a software product that is built directly into the software. |
| **integrated software application** | A single software program that incorporates the most commonly used tools of many productivity software programs. |
| **internal hard drive** | A hard drive that is installed inside the system unit. |
| **Internet** | A network of networks that is the largest network in the world, connecting millions of computers from more than one hundred countries. |
| **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** | A device that allows different Internet service providers to exchange information between networks. |
| **Internet Explorer (IE)** | A popular graphical browser from Microsoft Corporation for displaying different Web sites, or locations, on the Web; it can display pictures (graphics) in addition to text, as well as other forms of multimedia such as sound and video. |
| **Internet Protocol (IP)** | A protocol for sending data between computers on the Internet. |
| **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. |
| **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 service provider (ISP)** | A company that connects individuals, groups, and other companies to the Internet. |
| **Internet tablet** | A very light, portable computing device without a keyboard. |
| **interpreter** | A software program that translates source code into an intermediate form line by line. Each line is then executed as it is translated. |
| **interrupt** | A signal that tells the operating system that it is in need of immediate attention. |
| **interrupt handler** | A special numerical code that prioritizes requests from various devices. These requests then are placed in the interrupt table in the computer's primary memory. |
| **intranet** | A private corporate network that is used exclusively by company employees to facilitate information sharing, database access, group scheduling, videoconferencing, and other employee and customer collaborations. |
| **IP address** | See *Internet Protocol address*. |
| **ISP** | See *Internet service provider*. |
| **IT** | See *information technology*. |

**J**

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| **jam signal** | A special signal sent to all network nodes, alerting them that a data collision has occurred. |
| **Java** | A platform-independent programming language that Sun Microsystems introduced in the early 1990s. It quickly became popular because its object-oriented model enables Java programmers to benefit from its set of existing classes. |
| **Java applet** | A small Java-based program. |
| **Java Server Pages (JSP)** | An extension of the Java servlet technology with dynamic scripting capability. |
| **JavaScript** | A scripting language often used to add interactivity to Web pages. JavaScript is not as fully featured as Java, but its syntax, keywords, data types, and operators are a subset of Java's. |
| **join query** | A database query that links (or joins) two database tables using a common field in both tables and extracts the relevant data from each. |
| **JSP** | See *Java Server Pages*. |
| **jump drive** | See *flash drive*. |

**K**

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| **KB** | See *kilobyte*. |
| **kernel (supervisor program)** | The essential component of the operating system that is responsible for managing the processor and all other components of the computer system. Because it stays in random access memory (RAM) the entire time the computer is powered on, the kernel is called *memory resident*. |
| **kernel memory** | The memory that the computer's operating system uses. |
| **key field** | See *primary field*. |
| **key pair** | A public and a private key used for coding and decoding encrypted messages. |
| **keyboard** | A hardware device used to enter typed data and commands into a computer. |
| **keystroke logger** | A type of spyware program that monitors keystrokes with the intent of stealing passwords, login IDs, or credit card information. |
| **keyword** | (1) A specific word a user wishes to query (or look for) in an Internet search. (2) A specific word that has a predefined meaning in a particular programming language. |
| **kilobyte (KB)** | A unit of computer storage equal to approximately one thousand bytes. |
| **knowledge-based system** | A support system that provides additional intelligence that supplements the user's own intellect and makes a decision support system (DSS) more effective. |

**L**

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| **LAN** | See *local area network*. |
| **laptop computer** | See *notebook computer*. |
| **large-scale networking (LSN)** | A program created by the U.S. government, the objective of which is to fund the research and development of cutting-edge networking technologies. Major goals of the program are the development of enhanced wireless technologies and increased network throughput. |
| **laser printer** | A nonimpact printer known for quick and quiet production and high-quality printouts. |
| **Last Known Good Configuration** | A Windows feature that starts the computer by using the registry information that was saved during the last shutdown. |
| **latency** | The process that occurs after the read/write head of the hard drive locates the correct track, and then waits for the correct sector to spin to the read/write head. |
| **LCD** | See *liquid crystal display*. |
| **LCD monitor** | See *flat-panel monitor*. |
| **legacy technology** | Comprises computing devices, software, or peripherals that use techniques, parts, and methods from an earlier time that are no longer popular. |
| **Level 1 cache** | A block of memory that is built onto the central processing unit (CPU) chip for the storage of data or commands that have just been used. |
| **Level 2 cache** | A block of memory that is located either on the central processing unit (CPU) chip or on a separate chip near the CPU. It takes somewhat longer to access than the CPU registers. Level 2 cache contains more storage area than Level 1 cache. |
| **Level 3 cache** | On computers with Level 3 cache, the central processing unit (CPU) checks this area for instructions and data after it looks in Level 1 and Level 2 cache, but before it looks in random access memory (RAM); often designed to hold between 2 megabytes (MB) and 4 MB of data. |
| **library** | In Windows 7, a folder that is used to display files from different locations as if they were all saved in a single folder, regardless of where they are actually stored in the file hierarchy. |
| **linear bus topology** | See *bus (linear bus) topology*. |
| **Linux** | An open source operating system based on UNIX. Because of the stable nature of this operating system, it is often used on Web servers. |
| **liquid crystal display (LCD)** | The technology used in flat-panel computer monitors. |
| **listserv** | An electronic mailing list of e-mail addresses of people who are interested in a certain topic or area of interest. |
| **live bookmark** | A bookmark that delivers updates to you as soon as they become available, using Really Simple Syndication (RSS). |
| **local area network (LAN)** | A network in which the nodes are located within a small geographic area. |
| **logic bomb** | A computer virus that runs when a certain set of conditions is met, such as when specific dates are keyed off the computer's internal clock. |
| **logical error** | A mistake in the design and planning of the algorithm itself rather than in the use of syntax in the coding. |
| **logical port** | A virtual communications gateway or path that enables a computer to organize requests for information (such as Web page downloads and e-mail routing) from other networks or computers. |
| **logical port blocking** | A condition in which a firewall is configured to ignore all incoming packets that request access to a certain port so that no unwanted requests will get through to the computer. |
| **loop** | An algorithm that performs a repeating set of actions. A logical yes/no expression is evaluated. As long as the expression evaluates to TRUE (yes), the algorithm will perform the same set of actions and continue to loop around. When the answer to the question is FALSE (no), the algorithm breaks free of the looping structure and moves on to the next step. |
| **loop topology** | See *ring (loop) topology*. |
| **LSN** | See *large-scale networking*. |

**M**

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| **MAC address** | See *media access control (MAC) address*. |
| **Mac OS Snow Leopard** | Apple Inc.'s operating system. In 1984, Mac OS became the first operating system to incorporate the user-friendly point-and-click technology, based on the UNIX operating system, in a commercially affordable computer. |
| **machine cycle (processing cycle)** | The time it takes the central processing unit (CPU) to fetch and execute a single machine-level instruction. |
| **machine language** | A set of instructions executed directly by the central processing unit (CPU). |
| **macro** | A small program that groups a series of commands to run as a single command. |
| **macro virus** | A virus that is distributed by hiding it inside a macro. |
| **mainframe** | A large, expensive computer that supports hundreds or thousands of users simultaneously and executes many different programs at the same time. |
| **malware** | Software that is intended to render a system temporarily or permanently useless or to penetrate a computer system completely for purposes of information gathering. Examples include spyware, viruses, worms, and Trojan horses. |
| **MAN** | See *metropolitan area network*. |
| **management information system (MIS)** | A system that provides timely and accurate information that enables managers to make critical business decisions. |
| **many-to-many relationship** | A database relationship in which one record in a database table (A) can have many related records in another table (B), and any record in table B can have many related records in table A. |
| **mapping program** | Software that provides street maps and written directions to locations. |
| **master boot record (MBR)** | A small program that runs whenever a computer boots up. |
| **MB** | See *megabyte*. |
| **MBR** | See *master boot record*. |
| **media access control (MAC) address** | A physical address, similar to a serial number on an appliance, that is assigned to each network adapter; it is made up of six 2-digit characters such as 01:40:87:44:79:A5. |
| **megabyte (MB)** | A unit of computer storage equal to approximately 1 million bytes. |
| **megahertz (MHz)** | A measure of processing speed equal to 1 million hertz. |
| **memo field** | A text field in a database that is used to hold long pieces of text. |
| **memory bound** | A system that is limited in how fast it can send data to the central processing unit (CPU) because there is not enough random access memory (RAM) installed. |
| **memory card** | See *memory module*. |
| **memory module (memory card)** | A small circuit board that holds a series of random access memory (RAM) chips. |
| **menu** | A list of commands that displays on the screen. |
| **menu-driven interface** | A user interface in which the user chooses a command from menus displayed on the screen. |
| **meta search engine** | A search engine that searches other search engines rather than individual Web sites. |
| **metadata** | Data that describes other data. |
| **method (behavior)** | An action associated with a class of objects. |
| **metropolitan area network (MAN)** | A wide area network (WAN) that links users in a specific geographic area (such as within a city or county). |
| **MHz** | See *megahertz*. |
| **microbrowser** | Software that makes it possible to access the Internet from a PDA/smartphone. |
| **microphone (mic)** | A device that allows you to capture sound waves, such as those created by your voice, and transfer them to digital format on your computer. |
| **microprocessor** | A chip that contains a central processing unit (CPU). |
| **Microsoft Disk Operating System (MS-DOS)** | A single-user, single-task operating system created by Microsoft. MS-DOS was the first widely installed operating system in personal computers. |
| **Microsoft Windows** | A proprietary operating system (OS) developed by Microsoft based on a visual interface. Windows is the most popular OS for desktop computers. |
| **MIME** | See *multipurpose Internet mail extensions*. |
| **MIS** | See *management information system*. |
| **MMS** | See *multimedia message service*. |
| **mobile switching center** | A central location that receives cell phone requests for service from a base station. |
| **model management system** | A type of software that assists in building management models in decision support systems (DSSs). |
| **modem card** | An expansion card that provides the computer with a connection to the Internet via conventional phone lines. |
| **modem port** | A port that uses a traditional telephone signal to connect a computer to the Internet. |
| **monitor (display screen)** | A common output device that displays text, graphics, and video as soft copies (copies that can be seen only on screen). |
| **Moore's Law** | A prediction, named after Gordon Moore, the cofounder of Intel; states that the number of transistors on a CPU chip will double every two years. |
| **motherboard** | A special circuit board in the system unit that contains the central processing unit (CPU), the memory (RAM) chips, and the slots available for expansion cards; all of the other boards (video cards, sound cards, and so on) connect to it to receive power and to communicate. |
| **mouse** | A hardware device used to enter user responses and commands into a computer. |
| **multi-core technology** | When a chip uses two or more processors on the same chip to enable the execution of two sets of instructions at the same time. |
| **multidimensional database** | A database that stores data in multiple dimensions and is organized in a cube format. |
| **multimedia** | Anything that involves one or more forms of media plus text. |
| **multimedia message service (MMS)** | An extension of short message service (SMS) that enables messages that include text, sound, images, and video clips to be sent from a cell phone or PDA to other phones or e-mail addresses. |
| **multimedia software** | Programs that include image, video, and audio editing software, animation software, and other specialty software required to produce computer games, animations, and movies. |
| **multipartite virus** | Literally meaning "multipart" virus; a type of computer virus that attempts to infect both the boot sector and executable files at the same time. |
| **multiplayer online game** | An online game in which play occurs among hundreds or thousands of other players over the Internet in a persistent or ever-on game environment. In some games, players can interact with other players through trading, chatting, or playing cooperative or combative mini-games. |
| **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. |
| **multitasking** | The capability of the operating system to allow a user to perform more than one task at a time. |
| **multiuser operating system (network operating system)** | An operating system (OS) that enables more than one user to access the computer system at one time by efficiently juggling all the requests from multiple users. |

**N**

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| **NAK** | See *negative acknowledgment*. |
| **nanoscience** | The study of molecules and nanostructures whose size ranges from 1 to 100 nanometers (one billionth of a meter). |
| **nanotechnology** | The science of using nanostructures to build devices on an extremely small scale. |
| **NAT** | See *network address translation*. |
| **natural language processing (NLP) system** | A system that enables users to communicate with computer systems using a natural spoken or written language as opposed to using computer programming languages. |
| **negative acknowledgment (NAK)** | What computer Y sends to computer X if a packet is unreadable, indicating the packet was not received in understandable form. |
| **netbook** | A computing device that runs a full-featured operating system but weighs two pounds or less. |
| **netiquette** | The general rules of etiquette for Internet chat rooms and other online communication. |
| **network** | A group of two or more computers (or nodes) that are configured to share information and resources such as printers, files, and databases. |
| **network adapter** | A device that enables the computer (or peripheral) to communicate with the network using a common data communication language, or protocol. |
| **network address translation (NAT)** | A process that firewalls use to assign internal Internet Protocol (IP) addresses on a network. |
| **network administrator** | Someone who has training in computer and peripheral maintenance and repair, network design, and the installation of network software; installs new equipment, configures computers for users, repairs equipment, and assigns network access to users. |
| **network architecture** | The design of a computer network; includes both physical and logical design. |
| **network attached storage (NAS) device** | A specialized device attached to a network whose sole function is to store and disseminate data. |
| **network interface card (NIC)** | An expansion card that enables a computer to connect other computers or to a cable modem to facilitate a high-speed Internet connection. |
| **network navigation device** | A device on a network such as a router, hub, and switch that moves data signals around the network. |
| **network operating system (NOS)** | Software that handles requests for information, Internet access, and the use of peripherals for the rest of the network nodes. |
| **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. |
| **network topology** | The layout and structure of the network. |
| **network-ready device** | A device (such as a printer or external hard drive) that can be attached directly to a network instead of needing to attach to a computer on the network. |
| **newsgroup** | A method of communication, similar to a discussion group or forum, in which people create threads, or conversations. In a thread, a newsgroup member will post messages and read and reply to messages from other members of the newsgroup. |
| **Next** | In the Visual Basic programming language, the keyword used to implement a loop. |
| **NIC** | See *network interface card*. |
| **NLP** | See *natural language processing system*. |
| **node** | A device connected to a network such as a computer, a peripheral (such as a printer), or a communications device (such as a modem). |
| **nonimpact printer** | A printer that sprays ink or uses laser beams to make marks on the paper. The most common nonimpact printers are inkjet and laser printers. |
| **nonvolatile storage** | Permanent storage, as in read-only memory (ROM). |
| **normalization** | The process of recording data only once in a database to reduce data redundancy. |
| **NOS** | See *network operating system*. |
| **notebook computer (laptop computer)** | A powerful mobile computing solution that offers a large display and all of the computing power of a full desktop system. |
| **number system** | A set of rules for representing integer numbers with symbols. |
| **numeric check** | A data validation routine that confirms that only numbers are entered in a database field. |
| **numeric field** | A field in a database that stores numbers. |

**O**

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| **object** | A variable in a program that is an example of a class. Each object in a specific class is constructed from similar data and methods. |
| **object field** | A field in a database that holds objects such as pictures, video clips, or entire documents. |
| **object-oriented analysis** | An approach to software design that differs from the traditional "top-down" design. In object-oriented (OO) analysis, programmers first identify all of the classes (collections of data and methods) that are required to describe completely the problem the program is trying to solve. |
| **object-oriented database** | A database that stores data in objects, not in tables. |
| **object query language (OQL)** | A query language that is used to extract information from an object-oriented database. |
| **OC (optical carrier) line** | A transmission channel consisting of high-speed fiber optic lines. |
| **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. |
| **office support system (OSS)** | A system (such as Microsoft Office) designed to assist employees in accomplishing their day-to-day tasks and to improve communications. |
| **offshore** | To have work performed in a country other than the home country of the business. |
| **OLTP** | See *online transaction processing*. |
| **omnidirectional microphone** | A microphone that picks up sounds from all directions at once; best for recording more than one voice. |
| **one-to-many relationship** | A database relationship in which one record in a data table can have many related records in another data table. |
| **one-to-one relationship** | A database relationship in which one record in a data table has only one related record in another data table. |
| **online mapping service** | An alternative to more traditional mapping software programs; easily accessible with any Internet connection and updated more frequently than offline services. Examples include MapQuest, Yahoo! Maps, Google Maps, and Google Earth. |
| **online transaction processing (OLTP)** | The immediate processing of user requests or transactions. |
| **open source software** | Program code made publicly available for free; it can be copied, distributed, or changed without the stringent copyright protections of proprietary software products. |
| **open system** | A system whose designs are public, enabling access by any interested party. |
| **operating system (OS)** | The system software that controls the way in which a computer system functions, including the management of hardware, peripherals, and software. |
| **operator** | Any of the coding symbols that represent the fundamental actions of a computer language. |
| **optical carrier line** | See *OC (optical carrier) line*. |
| **optical drive** | A hardware device that uses lasers or light to read from, and maybe even write to, CDs, DVDs, or Blu-ray discs. |
| **optical media** | Portable storage devices, such as CDs, DVDs, and Blu-ray discs, that use a laser to read and write data. |
| **optical mouse** | A mouse that uses an internal sensor or laser to control the mouse's movement. The sensor sends signals to the computer, telling it where to move the pointer on the screen. |
| **OQL** | See *object query language*. |
| **OS** | See *operating system*. |
| **output device** | A device that sends processed data and information out of a computer in the form of text, pictures (graphics), sounds (audio), or video. |

**P**

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| **P2P network** | See *peer-to-peer network*. |
| **P2P sharing** | See *peer-to-peer sharing*. |
| **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 filtering** | A feature found in firewalls that filters out unwanted data packets sent to specific logical ports. |
| **packet screening** | A process that involves examining incoming data packets to ensure they originated from, or are authorized by, valid users on the internal network. |
| **packet sniffer** | A program that looks at (sniffs) each data packet as it travels on the Internet. |
| **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. |
| **page file** | The file the operating system builds on the hard drive to enable processing to continue when it is using virtual memory. |
| **paging** | The process of swapping data or instructions that have been placed in the swap file for later use back into active random access memory (RAM). The contents of the hard drive's swap file then become less active data or instructions. |
| **PAN** | See *personal area network*. |
| **parallel port** | A port that sends data between devices in groups of bits at speeds of 92 kilobits per second (Kbps). This legacy technology was commonly used to connect printers to computers. |
| **parallel processing** | A network computer environment in which each computer works on a portion of the same problem simultaneously. |
| **Pascal** | The only modern computer language that was specifically designed as a teaching language; it is seldom taught now at the college level. |
| **passive topology** | When data merely travels the entire length of the communications medium and is received by all network devices. |
| **passive-matrix display** | A screen that uses computer monitor technology in which electrical current passes through a liquid crystal solution and charges groups of pixels, either in a row or a column, causing the screen to brighten with each pass of electrical current and subsequently to fade. |
| **path** | The information following the slash or colon in a Uniform Resource Locator (URL). Also called a *subdirectory*. |
| **path separator** | The backslash mark (\) used by Microsoft Windows and DOS in file names. Mac files use a colon (:), and UNIX and Linux use the forward slash (/) as the path separator. |
| **patient simulator** | A computer-controlled mannequin that simulates human body functions and reactions. Patient simulators are used in training doctors, nurses, and emergency services personnel by simulating dangerous situations that would put live patients at risk. |
| **PC card (or PCMCIA, short for Personal Computer Memory Card International Association)** | A credit cardÐsized card that enables users to add fax modems, network connections, wireless adapters, USB 2.0 and FireWire ports, and other capabilities; primarily used with notebook computers. |
| **PCMCIA** | See *PC card*. |
| **PDA** | See *personal digital assistant*. |
| **PDLC** | See *program development life cycle*. |
| **peer-to-peer (P2P) network** | A network in which each node connected to the network can communicate directly with every other node on the network. |
| **peer-to-peer (P2P) sharing** | The process of users transferring files between computers. |
| **peripheral device** | A device such as a monitor, printer, or keyboard that connects to the system unit through ports. |
| **personal area network (PAN)** | A network used to connect wireless devices (such as Bluetooth-enabled devices) in close proximity to each other. |
| **Personal Computer Memory Card International Association** | See *PC card*. |
| **personal digital assistant (PDA)** | A small device that enables a user to carry digital information. Often called *palm computers* or *handhelds*, PDAs are about the size of a hand and usually weigh less than 5 ounces. |
| **personal firewall** | A firewall specifically designed for home networks. |
| **personal information manager (PIM) software** | Programs such as Microsoft Outlook or Lotus Organizer that strive to replace the various management tools found on a traditional desk such as a calendar, address book, notepad, and to-do lists. |
| **PGP** | See *Pretty Good Privacy*. |
| **pharming** | Planting malicious code on a computer that alters the browser's ability to find Web addresses and directs users to bogus Web sites. |
| **phishing** | The process of sending e-mail messages to lure Internet users into revealing personal information such as credit card or Social Security numbers or other sensitive information that could lead to identity theft. |
| **photo editing software** | See *image editing software*. |
| **PHP (Hypertext Preprocessor)** | A scripting language used to produce dynamic Web pages. |
| **physical memory** | The amount of random access memory (RAM) that is installed in a computer. |
| **piggybacking** | The process of connecting to a wireless network without the permission of the owner of the network. |
| **PIM software** | See *personal information manager (PIM) software*. |
| **pipelining** | A technique that enables the central processing unit (CPU) to work on more than one instruction (or stage of processing) at a time, thereby boosting CPU performance. |
| **pixel** | A single point that creates the images on a computer monitor. Pixels are illuminated by an electron beam that passes rapidly back and forth across the back of the screen so that the pixels appear to glow continuously. |
| **platform** | The combination of a computer's operating system and processor. The two most common platform types are the PC and the Apple Macintosh. |
| **platter** | A thin, round, metallic storage plate stacked onto the hard drive spindle. |
| **player** | See *plug-in*. |
| **plotter** | A large printer that uses a computer- controlled pen to produce oversize pictures that require precise continuous lines to be drawn, such as maps and architectural plans. |
| **Plug and Play (PnP)** | The technology that enables the operating system, once it is booted up, to recognize automatically any new peripherals and configure them to work with the system. |
| **plug-in (player)** | A small software program that "plugs in" to a Web browser to enable a specific functionÑfor example, to view and hear certain multimedia files on the Web. |
| **PMP** | See *portable media player*. |
| **PnP** | See *Plug and Play*. |
| **podcast** | A clip of audio or video content that is broadcast over the Internet using compressed audio or video files in formats such as MP3. |
| **point of presence (POP)** | A bank of modems through which many users can connect to an Internet service provider (ISP) simultaneously. |
| **polymorphic virus** | A virus that changes its virus signature (the binary pattern that makes the virus identifiable) every time it infects a new file. This makes it more difficult for antivirus programs to detect the virus. |
| **POP** | See *point of presence*. |
| **pop-up window** | A small box that opens up automatically on a computer screen, often displaying unwanted advertisements or other promotional information. |
| **port** | An interface through which external devices are connected to the computer. |
| **portability** | The capability to move a completed solution easily from one type of computer to another. |
| **portable media player (PMP)** | A small portable device (such as an iPod) that enables you to carry your MP3s or other media files around with you. |
| **positive acknowledgment (ACK)** | What computer Y sends when it receives a data packet that it can read from computer X. |
| **possessed object** | Any object that a user carries to identify him- or herself and that grants the user access to a computer system or computer facility. |
| **power supply** | A power supply regulates the wall voltage to the voltages required by computer chips; it is housed inside the system unit. |
| **power-line network** | A network that uses the electrical wiring in a building to connect the nodes in the network. |
| **power-on self-test (POST)** | The first job the basic input/output system (BIOS) performs, ensuring that essential peripheral devices are attached and operational. This process consists of a test on the video card and video memory, a BIOS identification process (during which the BIOS version, manufacturer, and data are displayed on the monitor), and a memory test to ensure memory chips are working properly. |
| **preemptive multitasking** | When the operating system processes the task assigned a higher priority before processing a task that has been assigned a lower priority. |
| **presentation software** | An application program for creating dynamic slide shows such as Microsoft PowerPoint or Apple Keynote. |
| **pretexting** | The act of creating an invented scenario (the pretext) to convince someone to divulge information. |
| **Pretty Good Privacy (PGP)** | A popular public-key encryption package. |
| **primary key (key field)** | The unique field that each database record in a table must have. |
| **print queue** | A software holding area for printing jobs. |
| **print server** | A server that manages all client-requested printing jobs for all printers on the network. |
| **printer** | A common output device that creates tangible or hard copies of text and graphics. |
| **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 system** | See *proprietary system*. |
| **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. |
| **problem statement** | A clear description of which tasks the computer program must accomplish and how the program will execute these tasks and respond to unusual situations. It is the starting point of programming work. |
| **processing** | Manipulating or organizing data into information. |
| **processing cycle** | See *machine cycle*. |
| **processor** | See *central processing unit*. |
| **processor speed** | The number of operations (or cycles) the processor completes each second, measured in hertz (Hz). |
| **productivity software** | Programs that enable a user to perform various tasks generally required in home, school, and business. Examples include word processing, spreadsheet, presentation, personal information management (PIM), and database programs. |
| **program** | A series of instructions to be followed by a computer to accomplish a task. |
| **program development life cycle (PDLC)** | A number of stages, from conception to final deployment, which a programming project follows. |
| **program file** | A file that is used in the running of software programs and does not store data. |
| **programming** | The process of translating a task into a series of commands a computer will use to perform that task. |
| **programming language** | A kind of "code" for the set of instructions the central processing unit (CPU) knows how to perform. |
| **project management software** | An application program, such as Microsoft Project, that helps project managers generate charts and tables used to manage aspects of a project. |
| **proprietary (private) system** | A system whose design is not made available for public access. |
| **protocol** | (1) A set of rules for exchanging data and communication. (2) The first part of the Uniform Resource Locator (URL) indicating the set of rules used to retrieve the specified document. The protocol is generally followed by a colon; two forward slashes; *www* (indicating World Wide Web); and then the domain name. |
| **prototype** | A small model of a computer program, often built at the beginning of a large project. |
| **proprietary software** | Custom software application that is owned and controlled by the company that created it. |
| **proxy server** | Acts as a go-between for computers on the internal network and the external network (the Internet). |
| **pseudocode** | A text-based approach to documenting an algorithm. |
| **public domain** | The status of software (or other created works) that are not protected by copyright. |
| **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. |

**Q**

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| **quarantining** | The placement (by antivirus software) of a computer virus in a secure area on the hard drive so that it won't spread infection to other files. |
| **query** | The process of requesting information from a database. |
| **query language** | A language used to retrieve and display records. A query language consists of its own vocabulary and sentence structure, used to frame the requests. |
| **QWERTY keyboard** | A keyboard that gets its name from the first six letters on the top-left row of alphabetic keys on the keyboard. |

**R**

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| **RAD** | See *rapid application development*. |
| **radio frequency identification tag (RFID tag)** | A tag that looks like a sticker or label, is attached to a batch of merchandise, and contains a microchip that holds a unique sequence of numbers used to identify the product to which it is attached. |
| **random access memory (RAM)** | The computer's temporary storage space or short-term memory. It is located in a set of chips on the system unit's motherboard, and its capacity is measured in megabytes or gigabytes. |
| **range check** | A type of data validation used in databases to ensure that a value entered falls within a specified range (such as requiring a person's age to fall in a range of between 1 and 120). |
| **rapid application development (RAD)** | A method of system development in which developers create a prototype first, generating system documents as they use and remodel the product. |
| **read/write head** | The mechanism that retrieves (reads) and records (writes) the magnetic data to and from a data disk. They move from the outer edge of the spinning platters to the center, up to 50 times per second. |
| **read-only memory (ROM)** | A set of memory chips, located on the motherboard, which stores data and instructions that cannot be changed or erased; it holds all the instructions the computer needs to start up. |
| **real-time operating system (RTOS)** | A program with a specific purpose that must guarantee certain response times for particular computing tasks, or else the machine's application is useless. Real-time operating systems are found in many types of robotic equipment. |
| **real-time processing** | The process of updating a database (or information system) immediately as changes are made. |
| **Really Simple Syndication (RSS) technology** | An XML-based format that allows frequent updates of content on the World Wide Web. |
| **record** | A collection of related fields in a database. |
| **Recycle Bin** | A folder on a Windows desktop in which deleted files from the hard drive are held until permanently purged from the system. |
| **referential integrity** | For each value in the foreign key of one table, there is a corresponding value in the primary key of the related table. |
| **register** | A special memory storage area built into the central processing unit (CPU). |
| **registry** | A portion of the hard drive containing all the different configurations (settings) used by the Windows operating system (OS) as well as by other applications. |
| **relation** | A database table that contains related data. |
| **relational algebra** | The use of English-like expressions that have variables and operations, much like algebraic equations. |
| **relational database** | A database that organizes data in table format by logically grouping similar data into relations (or tables) that contain related data. |
| **relationship** | In relational databases, the link between tables that defines how the data are related. |
| **remark** | See *comment*. |
| **repeater** | A device that is installed on a long cable run to amplify a signal. |
| **resolution** | The clearness or sharpness of an image, which is controlled by the number of pixels displayed on the screen. |
| **response time** | The measurement (in milliseconds) of the time it takes for a pixel to change color; the lower the response time, the smoother moving images will appear on the monitor. |
| **restore point** | The snapshot of the entire system's settings that Windows creates every time the computer is started, or when a new application or driver is installed. |
| **reusability** | The ability to reuse existing classes of objects from other projects, enabling programmers to produce new code quickly. |
| **RFID tag** | See *radio frequency identification tag*. |
| **ribbon** | A group of icons collected for easy access. |
| **ring topology** | A network layout in which computers and peripherals are laid out in a logical circle and data is passed using a special data packet called a *token*. |
| **ROM** | See *read-only memory*. |
| **root directory** | The top level of the filing structure in a computer system. In Windows computers, the root directory of the hard drive is represented as C:\. |
| **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. |
| **router** | A device that routes packets of data between two or more networks. |
| **RSS** | See *Really Simple Syndication (RSS) technology*. |
| **RTOS** | See *real-time operating system.* |
| **runtime error** | An error in the problem logic that is only caught when the program executes. |

**S**

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| **SaaS** | See *Software as a Service*. |
| **Safe mode** | A special diagnostic mode designed for troubleshooting errors that occur during the boot process. |
| **sampling rate** | The number of times per second a signal is measured and converted to a digital value. Sampling rates are measured in kilobits per second. |
| **satellite Internet** | A way to connect to the Internet using a small satellite dish, which is placed outside the home and is connected to a computer with coaxial cable. The satellite company then sends the data to a satellite orbiting the Earth. The satellite, in turn, sends the data back to the satellite dish and to the computer. |
| **scalable network** | A type of network that enables the easy addition of users without affecting the performance of the other network nodes (computers or peripherals). |
| **screen saver** | An animated image that appears on a computer monitor when no user activity has been sensed for a certain time. |
| **script** | A list of commands (mini-programs or macros) that can be executed on a computer without user interaction. |
| **script kiddy** | An amateur hacker who lacks sophisticated computer skills. These individuals are typically teenagers, who don't create programs used to hack into computer systems but instead use tools created by skilled hackers that enable unskilled novices to wreak the same havoc as professional hackers. |
| **scripting language** | A simple programming language that is limited to performing a specific set of specialized tasks. |
| **scrollbar** | On the desktop, the bar that appears at the side or bottom of the window and controls which part of the information is displayed on the screen. |
| **SDLC** | See *system development life cycle*. |
| **search engine** | A set of programs that searches the Web for specific words (or keywords) you wish to query (or look for) and then returns a list of the Web sites on which those keywords are found. |
| **second-generation language (2GL)** | Also known as an assembly language. Second-generation languages deal directly with system hardware but provide acronyms that are easier for human programmers to work with. |
| **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. |
| **sector** | A section of a hard drive platter, wedge-shaped from the center of the platter to the edge. |
| **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. |
| **seek time** | The time it takes for the hard drive's read/write heads to move over the surface of the disk, between tracks, to the correct track. |
| **select query** | A query that displays a subset of data from a table based on the criteria the user specifies. |
| **semiconductor** | Any material that can be controlled to either conduct electricity or act as an insulator (not allowing electricity to pass through). |
| **Serial Advanced Technology Attachment (Serial ATA)** | A type of hard drive that uses much thinner cables, and can transfer data more quickly, than IDE drives. |
| **serial port** | A port that enables the transfer of data, one bit at a time, over a single wire at speeds of up to 56 kilobits per second (Kbps); this legacy technology was used to connect external modems to the computer. |
| **server** | A computer that provides resources to other computers on a network. |
| **server-side program** | A program that is run on a Web server as opposed to inside a Web browser. |
| **service set identifier (SSID)** | A network name that wireless routers use to identify themselves. |
| **service packs** | See *software updates*. |
| **shareware** | Software that enables users to "test" the software by running it for a limited time free of charge. |
| **shielded twisted pair (STP) cable** | Twisted pair cable that contains a layer of foil shielding to reduce interference. |
| **short message service (SMS)** | Technology that enables short text messages (up to 160 characters) to be sent over mobile networks. |
| **Sidebar** | In Windows Vista, the pane on the right side of the desktop that organizes gadgets for easy access. |
| **sign bit** | In the binary (base 2) system, the representation of a negative number; usually the left-most bit. |
| **simple mail transfer protocol (SMTP)** | A protocol for sending e-mail along the Internet to its destination. |
| **simulation software** | Software, often used for training purposes, which allows the user to experience or control an event as if it is reality. |
| **single-user, multitask operating system** | An operating system that allows only one person to work on a computer at a time, but that can perform a variety of tasks simultaneously. |
| **single-user, single-task operating system** | An operating system that allows only one user to work on a computer at a time to perform just one task at a time. |
| **sleep mode** | A low-power mode for electronic devices such as computers that saves electric power consumption and saves your computer settings where you left off. When the computer is "woken up," you can resume working more quickly than when cold booting the computer. |
| **smartphone** | A device that combines the functionality of a cell phone, a PMP, and a PDA into one unit. |
| **SMS** | See *short message service*. |
| **SMTP** | See *simple mail transfer protocol*. |
| **social bookmark (tag)** | A keyword or term that Internet users assign to a Web resource such as a Web page, digital image, or video. |
| **social engineering** | Any technique that uses social skills to generate human interaction for the purpose of enticing individuals to reveal sensitive information. |
| **social networking site** | A system of personal networks where individuals are invited or allowed to join and that are supported by electronic tools such as e-mail, instant messaging, and file transfer. Members create personal profiles, exchange information, and find others with similar interests. |
| **software** | The set of computer programs or instructions that tells the computer what to do and enables it to perform different tasks. |
| **Software as a Service (SaaS)** | Software that is delivered on demand over the Internet. |
| **software license** | An agreement between the user and the software developer that must be accepted before installing the software on a computer. |
| **software piracy** | Violating a software license agreement by copying an application onto more computers than the license agreement permits. |
| **software suite** | A collection of software programs that have been bundled together as a package. |
| **software update (service pack)** | A downloadable software module that repairs errors identified in commercial program code. |
| **solid state drive (SSD)** | A drive that uses the same kind of memory that flash drives use, but can reach data in only a tenth of the time a flash drive requires. |
| **sort (index)** | The process of organizing a database into a particular order. |
| **sound card** | An expansion card that attaches to the motherboard inside the system unit and that enables the computer to produce sounds by providing a connection for the speakers and microphone. |
| **source code** | The instructions programmers write in a higher-level language. |
| **spam** | Unwanted or junk e-mail. |
| **spam filter** | An option you can select in your e-mail account that places known or suspected spam messages into a folder other than your inbox. |
| **speaker** | An output device for sound. |
| **speech-recognition software (voice- recognition software)** | Software that translates spoken words into typed text. |
| **spider** | A program that constantly collects information on the Web, following links in Web sites and reading Web pages. Spiders get their name because they crawl over the Web using multiple "legs" to visit many sites simultaneously. |
| **spooler** | A program that helps coordinate all print jobs being sent to the printer at the same time. |
| **spreadsheet software** | An application program such as Microsoft Excel or Lotus 1-2-3 that enables a user to do calculations and numerical analyses easily. |
| **spyware** | An unwanted piggyback program that downloads with the software you want to install from the Internet and then runs in the background of your system. |
| **SQL** | See *structured query language*. |
| **SRAM** | See *static RAM*. |
| **SSD** | See *solid state drive*. |
| **SSID** | See *service set identifier*. |
| **SSL** | See *Secure Sockets Layer*. |
| **star topology** | An active topology (meaning that data is retransmitted) in which the nodes connect to a central communications device called a *switch*. The switch receives a signal from the sending node and retransmits it to the node that should receive it. |
| **statement** | A sentence in programming code. |
| **static addressing** | A means of assigning an Internet Protocol (IP) address that never changes and is most likely assigned manually by a network administrator. |
| **static RAM (SRAM)** | A type of random access memory that is faster than DRAM. In SRAM, more transistors are used to store a single bit, but no capacitor is needed. |
| **stealth virus** | A virus that temporarily erases its code from the files where it resides and hides in the active memory of the computer. |
| **streaming audio** | Technology that enables audio files to be fed to a browser continuously. This lets users avoid having to download an entire file before listening. |
| **streaming video** | Technology that enables video files to be fed to a browser continuously. This lets users avoid having to download the entire file before viewing. |
| **structured (analytical) data** | Data that can be identified and classified as discrete bits of information (such as a name or phone number). Unstructured data includes nontraditional data such as audio clips (including MP3 files), video clips, and pictures that must be viewed in their entirety rather than in discrete segments. |
| **structured query language (SQL)** | The most popular database query language today. |
| **stylus** | A pen-shaped device used to tap or write on touch-sensitive screens. |
| **subdirectory** | See *path*. |
| **subject directory** | A structured outline of Web sites organized by topics and subtopics. |
| **summary report** | A report that summarizes data in some fashion (such as a total of the day's concession sales at an amusement park). Also known as a *summary data report*. |
| **super video** | See S-*video*. |
| **supercomputer** | A specially designed computer that can perform complex calculations extremely rapidly; used in situations in which complex models requiring intensive mathematical calculations are needed (such as weather forecasting or atomic energy research). |
| **surge protector** | A device that protects computers and other electronic devices from power surges. |
| **surround sound** | A type of audio processing that makes the listener experience sound as if it were coming from all directions. |
| **surround-sound speakers** | Speaker systems set up in such a way that they surround an entire area (and the people in it) with sound. |
| **S-video (super video)** | A type of technology used to transmit video signals; used on newer LCD monitors, as well as other multimedia devices such as televisions, DVD players, and projectors. |
| **swap file (page file)** | A temporary storage area on the hard drive where the operating system "swaps out" or moves the data or instructions from random access memory (RAM) that have not recently been used. This process takes place when more RAM space is needed. |
| **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. |
| **synchronizing** | The process of updating data so that the files on different systems are the same. |
| **syntax** | An agreed-upon set of rules defining how a programming language must be structured. |
| **syntax error** | An error that violates the strict, precise set of rules that defines a programming language. |
| **system clock** | The computer's internal clock. |
| **system development life cycle (SDLC)** | An organized process (or set of steps) for developing an information processing system. |
| **system evaluation** | The process of looking at a computer's subsystems, what they do, and how they perform to determine whether the computer system has the right hardware components to do what the user ultimately wants it to do. |
| **system file** | Any of the main files of an operating system. |
| **system requirements** | The set of minimum storage, memory capacity, and processing standards recommended by the software manufacturer to ensure proper operation of a software application. |
| **System Restore** | A utility in Windows that restores system settings to a specific previous date when everything was working properly. |
| **system software** | The set of programs that enables a computer's hardware devices and application software to work together; it includes the operating system and utility programs. |
| **system unit** | The metal or plastic case that holds all the physical parts of the computer together, including the computer's processor (its brains), its memory, and the many circuit boards that help the computer function. |

**T**

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| **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. |
| **table** | In database terminology, a group of related records. Also called a *file*. |
| **Tablet PC** | A notebook computer designed specifically to work with handwriting recognition technology. |
| **tag** | A keyword or label that you use to categorize your favorite Web sites. |
| **Task Manager utility** | A Windows utility that shows programs currently running and permits you to exit nonresponsive programs when you click End Task. |
| **Task Scheduler utility** | A Windows utility that enables you to schedule tasks to run automatically at predetermined times with no interaction necessary on your part. |
| **tax preparation software** | An application program, such as Intuit's TurboTax or H&R Block's TaxCut, for preparing state and federal taxes. Each program offers a complete set of tax forms and instructions as well as expert advice on how to complete each form. |
| **TCP/IP** | The main suite of protocols used on the Internet. |
| **telephony** | The use of equipment to provide voice communications over a distance. |
| **template** | A form included in many productivity applications that provides the basic structure for a particular kind of document, spreadsheet, or presentation. |
| **terabyte** | 1,099,511,627,776 bytes or 240 bytes. |
| **terminator** | A device that absorbs a signal so that it is not reflected back onto parts of the network that have already received it. |
| **test condition** | A check to see whether a loop is completed. |
| **testing plan** | In the problem statement, a plan that lists specific input numbers that the program would typically expect the user to enter. It then lists the precise output values that a perfect program would return for those input values. |
| **text field** | A database field that can hold any combination of alphanumeric data (letters or numbers) and is most often used to hold text. |
| **thermal printer** | A printer that works either by melting wax-based ink onto ordinary paper (in a process called *thermal wax transfer printing*) or by burning dots onto specially coated paper (in a process called *direct thermal printing*). |
| **third-generation language (3GL, or high-level language)** | A computer language that uses symbols and commands to help programmers tell the computer what to do. |
| **thrashing** | A condition of excessive paging in which the operating system becomes sluggish. |
| **three-way handshake** | A process used by the Transmission Control Protocol (TCP) to establish a connection. |
| **throughput** | The actual speed of data transfer that is achieved. It is usually less than the data transfer rate and is measured in megabits per second (Mbps). |
| **thumb drive** | See *flash drive*. |
| **time bomb** | A virus that is triggered by the passage of time or on a certain date. |
| **time-variant data** | Data that doesn't all pertain to one period in timeÑfor example, data in a data warehouse. |
| **TLD** | See *top-level domain*. |
| **token** | A special data packet used to pass data in a token-ring network. |
| **token method** | The access method that ring networks use to avoid data collisions. |
| **token-ring topology** | See *ring topology*. |
| **toolbar** | A group of icons collected for easy access. |
| **top-down design** | A systematic approach in which a programming problem is broken down into a series of high-level tasks. |
| **top-level domain (TLD)** | The suffix, often of three letters, in the domain name (such as .com or .edu) that indicates the kind of organization the host is. |
| **touch screen** | A type of monitor (or display in a notebook or PDA) that accepts input from a user touching the screen. |
| **touchpad** | A small, touch-sensitive screen at the base of a notebook keyboard. To use the touchpad, you simply move your finger across the pad to direct the cursor. |
| **TPS** | See *transaction processing system*. |
| **track** | A concentric circle that serves as a storage area on a hard drive platter. |
| **trackball mouse** | A mouse with a rollerball on top instead of on the bottom. Because you move the trackball with your fingers, it doesn't require much wrist motion, so it's considered healthier for your wrists than a traditional mouse. |
| **trackpoint device** | A small, joystick-like nub that enables you to move the cursor with the tip of your finger. |
| **transaction processing system (TPS)** | A system used to keep track of everyday business activities (such as sales of products). |
| **transceiver** | In a wireless network, a device that translates the electronic data that needs to be sent along the network into radio waves and then broadcasts these radio waves to other network nodes. |
| **transistor** | An electrical switch that is built out of layers of a special type of material called a *semiconductor*. |
| **Transmission Control Protocol (TCP)** | A protocol that prepares data for transmission and provides for error checking and resending lost data. |
| **transmission media** | The radio waves or cable that transport data on a network. |
| **Transport Layer Security (TLS)** | A protocol that provides data integrity and security for transmissions over the Internet. |
| **Trojan horse** | A computer program that appears to be something useful or desirable (such as a game or a screen saver), but at the same time does something malicious in the background without the user's knowledge. |
| **twisted pair cable** | Cables made of copper wires that are twisted around each other and are surrounded by a plastic jacket (such as traditional home phone wire). |

**U**

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| **ubiquitous computing** | The condition in which computing is so woven into the fabric of everyday life that it becomes indistinguishable from it. |
| **UDP** | See *User Datagram Protocol*. |
| **Unicode** | An encoding scheme that uses 16 bits instead of the 8 bits used in ASCII. Unicode can represent more than 65,000 unique character symbols, enabling it to represent the alphabets of all modern languages and all historic languages and notational systems. |
| **Uniform Resource Locator (URL)** | A Web site's unique address; an example is microsoft.com. |
| **uninterruptible power supply (UPS)** | A device designed to power a computer from large batteries for a brief period during a loss of electrical power. |
| **universal serial bus (USB) port** | A port that can connect a wide variety of peripheral devices to the computer, including keyboards, printers, mice, smartphones, PDAs, flash drives, and digital cameras. |
| **UNIX** | An operating system originally conceived in 1969 by Ken Thompson and Dennis Ritchie of AT&T's Bell Labs. In 1974, the UNIX code was rewritten in the standard programming language C. Today there are various commercial versions of UNIX. |
| **unshielded twisted pair (UTP) cable** | The most popular transmission media option for Ethernet networks. UTP cable is composed of four pairs of wires that are twisted around each other to reduce electrical interference. |
| **unstructured data** | Nontraditional database data such as audio clips (including MP3 files), video clips, pictures, and extremely large documents. Data of this type is known as a *binary large object* (BLOB) because it is actually encoded in binary form. |
| **UPS** | See *uninterruptible power supply*. |
| **urban legend** | A hoax that becomes so well known that it is accepted by society as true even though it is false. Also known as an *urban myth*. |
| **URL** | See *Uniform Resource Locator*. |
| **USB 2.0 port** | An external bus that supports a data throughput of 480 Mbps; these buses are backward compatible with buses using the original universal serial bus (USB) standard. |
| **USB drive** | See *flash drive*. |
| **USB port** | See *universal serial bus (USB) port*. |
| **User Datagram Protocol (UDP)** | A protocol that prepares data for transmission but that has no resending capabilities. |
| **user interface** | Part of the operating system that enables individuals to interact with the computer. |
| **utility program** | A small program that performs many of the general housekeeping tasks for the computer, such as system maintenance and file compression. |
| **UTP cable** | See *unshielded twisted pair (UTP) cable*. |

**V**

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| **vacuum tube** | Used in early computers, a vacuum tube acts as a computer switch by allowing or blocking the flow of electrical current. |
| **validation** | The process of ensuring that data entered into a database is correct (or at least reasonable) and complete. |
| **validation rule** | A rule that is set up in a database to alert the user to possible wrong entries. |
| **variable** | A name or symbol that stands for a value. |
| **variable declaration** | A line of programming code that alerts the operating system that the program needs to allocate storage space in random access memory (RAM) for the variable. |
| **VB** | See *Visual Basic*. |
| **VBScript** | A subset of Visual Basic; also used to introduce interactivity to Web pages. |
| **vertical market software** | Software that is developed for and customized to a specific industry's needs (such as a wood inventory system for a sawmill) as opposed to software that is useful across a range of industries (such as word processing software). |
| **VGA** | See *video graphics array*. |
| **video adapter** | See *video card*. |
| **video blog** | See *video log*. |
| **video card (video adapter)** | An expansion card that is installed inside a system unit to translate binary data (the 1s and 0s the computer uses) into the images viewed on the monitor. |
| **video graphics array (VGA) port** | A port to which a CRT monitor connects. |
| **video log (vlog** or **video blog)** | A personal online journal that uses video as the primary content in addition to text, images, and audio. |
| **video memory** | RAM that is included as part of a video card. |
| **virtual memory** | The space on the hard drive where the operating system stores data if there isn't enough random access memory (RAM) to hold all of the programs you're currently trying to run. |
| **virtual private network (VPN)** | A network that uses public communication pathways (usually the Internet) to provide branch offices or employees who are not at the office with secure access to the company network. VPNs maintain privacy by using secure data communication protocols. |
| **virtual reality program** | Software that turns an artificial environment into a realistic experience. |
| **virus** | A computer program that attaches itself to another computer program (known as the host program) and attempts to spread itself to other computers when files are exchanged. |
| **virus signature** | A portion of the virus code that is unique to a particular computer virus and makes it identifiable by antivirus software. |
| **Visual Basic (VB)** | A programming language used to build a wide range of Windows applications quickly. |
| **visual programming** | A technique for automatically writing code when the programmer says the layout is complete. It helps programmers produce a final application much more quickly. |
| **vlog** | See *video log*. |
| **Voice over Internet Protocol (VoIP)** | The transmission of phone calls over the same data lines and networks that make up the Internet. Also called *Internet telephony*. |
| **voice-recognition software** | See *speech-recognition software*. |
| **VoIP** | See *Voice over Internet Protocol*. |
| **volatile storage** | Temporary storage, such as in random access memory (RAM). When the power is off, the data in volatile storage is cleared out. |
| **VPN** | See *virtual private network*. |

**W**

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| **WAN** | See *wide area network*. |
| **WAP** | See *wireless access point; Wireless Application Protocol*. |
| **warm boot** | The process of restarting the system while it's powered on. |
| **Web** | See *World Wide Web*. |
| **Web 2.0** | Tools and Web-based services that emphasize online collaboration and sharing among users. |
| **Web browser (browser)** | Software installed on a computer system that allows individuals to locate, view, and navigate the Web. |
| **Web page authoring software** | Programs you can use to design interactive Web pages without knowing any HyperText Markup Language (HTML) code. |
| **Web server** | A computer running a specialized operating system that enables it to host Web pages (and other information) and provide requested Web pages to clients. |
| **Web service** | A program used by a Web site to make information available to other Web sites. |
| **Web site** | A location on the Web. |
| **Web-based application software** | A program that is hosted on a Web site and does not require installation on the computer. |
| **webcam** | A small camera that sits on top of a computer monitor (connected to the computer by a cable) or is built into a notebook computer and is usually used to transfer live video. |
| **webcast** | The broadcast of audio or video content over the Internet. Unlike a podcast, a webcast is not updated automatically. |
| **Weblog** | A personal log, or collection of journal entries, that is posted on the Web; also called a *blog*. |
| **white-hat hacker** | A hacker who breaks into systems just for the challenge of it (and who doesn't wish to steal or wreak havoc on the systems). Such hackers tout themselves as experts who are performing a needed service for society by helping companies realize the vulnerabilities that exist in their systems. |
| **whole-house surge protector** | A surge protector that is installed on (or near) the breaker panel of a home and protects all electronic devices in the home from power surges. |
| **wide area network (WAN)** | A network made up of local area networks (LANs) connected over long distances. |
| **widget** | A mini-application developed for the Macintosh platform. |
| **WiFi (Wireless Fidelity)** | The 802.11 standard for wireless data transmissions established by the Institute of Electrical and Electronics Engineers (IEEE). |
| **wiki** | A type of Web site that allows anyone visiting the site to change its content by adding, removing, or editing the content. |
| **wildcard** | A symbol used in an Internet search when the user is unsure of a keyword's spelling or when a word can be spelled in different ways or can contain different endings. The asterisk (\*) is used to replace a series of letters and the percent sign (%) to replace a single letter in a word. |
| **window** | In a graphical user interface, a rectangular box that contains programs displayed on the screen. |
| **Windows 7** | Microsoft operating system that builds upon the security and user interface upgrades that the Windows Vista release provided, and gives users with touch-screen monitors the ability to use touch commands to scroll, resize windows, pan, and zoom. |
| **Windows Explorer** | The main tool for finding, viewing, and managing the contents of your computer by showing the location and contents of every drive, folder, and file. |
| **wired Ethernet network** | A popular type of home network that connects computers with physically wired media. |
| **wireless access point (WAP)** | A device similar to a switch in an Ethernet network. It takes the place of a wireless network adapter and helps relay data between network nodes. |
| **Wireless Application Protocol (WAP)** | The standard that dictates how handheld devices will access information on the Internet. |
| **wireless Ethernet network** | A network based on the 802.11 standard. (The 802.11 standard is also known as *WiFi*.) |
| **wireless Internet service provider (wireless ISP)** | An ISP that provides service to wireless devices such as PDA/smartphones. |
| **Wireless Markup Language (WML)** | A format for writing content viewed on a cellular phone or personal digital assistant (PDA) that is text-based and contains no graphics. |
| **wireless media** | Communications media that do not use cables but instead rely on radio waves to communicate. |
| **wireless network** | A network that uses radio waves instead of wires or cable as its transmission medium. |
| **wireless network adapter** | A device that is required for each node on a wireless network for the node to be able to communicate with other nodes on the network. |
| **wireless network interface card (wireless NIC)** | A card installed in a system that connects with wireless access points on the network. |
| **wireless router (gateway)** | A device that combines the capabilities of a wired router with the ability to receive wireless signals. |
| **wizard** | A step-by-step guide that walks you through the necessary steps to complete a complicated task. |
| **WML** | See *Wireless Markup Language*. |
| **word size** | The number of bits a computer can work with at a time. |
| **word processing software** | Programs used to create and edit written documents such as papers, letters, and rŽsumŽs. |
| **World Wide Web (WWW or Web)** | The part of the Internet used the most. What distinguishes the Web from the rest of the Internet are (1) its use of common communication protocols (such as Transmission Control Protocol/Internet Protocol, or TCP/IP) and special languages (such as the HyperText Markup Language, or HTML) that enable different computers to talk to each other and display information in compatible formats; and (2) its use of special links (called hyperlinks) that enable users to jump from one place to another in the Web. |
| **worm** | A program that attempts to travel between systems through network connections to spread infections. Worms can run independently of host file execution and are active in spreading themselves. |
| **WWW** | See *World Wide Web*. |

**X**

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| **XHTML** | See *Extensible HyperText Markup Language*. |
| **XML** | See *Extensible Markup Language*. |

**Z**

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| **zombie** | A computer that is controlled by a hacker who uses it to launch attacks on other computer systems. |