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Acquisitions Editor: Alex Blanton
Project Editor: Sandra Haynes

Body Part No. X08-41929

Contributors

Peter Aiken
Bart Arenson
Janice Borzendowski
Jerome Colburn
Duane Hanson
Andrew Himes
Robert Howecton
Annette B. Jackson
Larry S. Jackson
Thomas A. Jackson
Chris Kinata
Ilana Kingsley
Robin Lombard
Thomas A. Long
William G. Madison
Thomas P. Magliery
David Mason
Terrence M. McLaren
Wallace Parker
Charles Petzold
Phil Rose
John Ross
David Rygmyr
Aimée Truchard
Michael Vose
Bruce Webster
Judson D. Weeks
Tom Winn
JoAnne Woodcock

Illustrators

Travis Beaven
David Holter
Alton Lawson
Rob Nance
Joel Panchot

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audio response *n.* Any sound produced by a computer; specifically, spoken output produced by a computer in response to some specific type of input. Such output may be generated using a combination of words from a digitized vocabulary or through the synthesis of words from tables of phonemes. *See also* frequency response, phoneme.

audiotex *n.* An application allowing users to send and receive information by telephone. Users typically call an audiotex system and are presented with a series of choices or a series of questions through a voice mail system. When users select choices by pressing the buttons on the phone (rotary dial phones cannot be used for audiotex) or by speaking aloud, a database host responds by sending information to the voice mail system, which then converts the data to a spoken message for the user, or it responds by receiving and storing the information entered by the user. *Also called:* audiotext. *See also* voice mail.

audiotext *n. See* audiotex.

Audio Video Interleaved *n. See* AVI.

audiovisual *adj.* Relating to or being any material that uses a combination of sight and sound to present information.

audit *n.* In reference to computing, an examination of equipment, programs, activities, and procedures to determine how efficiently the overall system is performing, especially in terms of ensuring the integrity and security of data.

auditing *n.* The process an operating system uses to detect and record security-related events, such as an attempt to create, to access, or to delete objects such as files and directories. The records of such events are stored in a file known as a security log, whose contents are available only to those with the proper clearance. *See also* security log.

audit policy *n.* A policy that determines the security events to be reported to the network administrator.

audit trail *n.* In reference to computing, a means of tracing all activities affecting a piece of information, such as a data record, from the time it is entered into a system to the time it is removed. An audit trail makes it possible to document, for example, who made changes to a particular record and when.

AUI *n.* **1.** Acronym for attachment unit interface. A 15-pin (DB-15) connector commonly used to connect a network interface card to an Ethernet cable. **2.** *See* aural user interface.

AUI cable *n.* Short for Attachment Unit Interface cable. A transceiver cable used to connect a host adapter within a computer to an Ethernet (10base5 or 10BaseF) network. *See also* 10Base5, 10Base-F, Ethernet (definition 1), transceiver cable.

AUP *n. See* acceptable use policy.

aural user interface *n.* Voice-activated interface that allows users to issue spoken commands to electronic devices. The aural user interface is used with features such as voice recognition for computers and voice-activated dialing for wireless phones. *Acronym:* AUI.

authentication *n.* In a multiuser or network operating system, the process by which the system validates a user's logon information. A user's name and password are compared against an authorized list, and if the system detects a match, access is granted to the extent specified in the permission list for that user. *See also* logon, password, permission, user account, user name.

authentication center *n.* Secure database used to identify and prevent wireless phone fraud. Authentication centers verify whether a wireless phone is registered with a wireless carrier's network.

Authentication Header *n. See* AH.

Authenticode *n.* A security feature of Microsoft Internet Explorer. Authenticode allows vendors of downloadable executable code (plug-ins or ActiveX controls, for example) to attach digital certificates to their products to assure end users that the code is from the original developer and has not been altered. Authenticode lets end users decide for themselves whether to accept or reject software components posted on the Internet before downloading begins. *See also* ActiveX control, Internet Explorer, security.

author[1] *vb.* **1.** To create a product for implementation via computer technology. **2.** To write a computer program. **3.** To assemble multimedia components, such as graphics, text, audio, and animation, in a publication or product, for delivery on a CD-ROM or DVD or on line, to be viewed on a computer. **4.** To create Web pages. Traditionally, to author meant to write a literary work or journalistic piece; in the cyberworld, to write is "to provide content"; thus, to author in the traditional sense is to be a "content provider."

author[2] *n. See* Web author.

authoring language *n.* A computer language or application development system designed primarily for creating programs, databases, and materials for computer-aided instruction (CAI). A familiar example in relation to microcomputers is PILOT, a language used to create lessons. *See also* CAI, PILOT.

authoring software *n.* A type of computer program used for creating Web pages and other hypertext and multimedia applications. Authoring software provides a way to define relationships between different types of objects, including text, graphics, and sound, and to present them in a desired order. This type of program is sometimes known as authorware, although the latter name is generally associated with a specific product from Macromedia. *Also called:* authoring tool.

authoring system *n.* Application software that enables the operator to create and format a document for a specific kind of computer environment. An authoring system, especially for multimedia work, often consists of several applications within the framework of a single, controlling application. *See also* authoring language.

authority *n.* A DNS server responsible for resolving names and IP addresses of sites and resources on the Internet at a particular level of authority: top-level domain, second-level domain, or subdomain.

authorization *n.* In reference to computing, especially remote computers on a network, the right granted an individual to use the system and the data stored on it. Authorization is typically set up by a system administrator and verified by the computer based on some form of user identification, such as a code number or password. *Also called:* access privileges, permission. *See also* network, system administrator.

authorization code *n. See* password.

autoanswer *n. See* answer mode.

autoassociative *adj.* In data reduction or clustering, autoassociative models use the same set of variables as both predictors and targets. In autoassociative neural networks, each pattern presented serves as both the input and output pattern. Autoassociative networks are typically used for tasks involving pattern completion. *See also* artificial intelligence, cluster analysis, neural networks, operator associativity, pattern recognition.

autoattendant *adj.* A term used to describe a store-and-forward computer system that replaces the traditional switchboard operator, directing telephone calls to their correct extensions or voice mail. Autoattendant systems may implement voice prompts, touch-tone menus, or voice recognition features to send calls to their proper destinations. *Compare* interactive voice response systems.

AutoCorrect *n.* A function in Microsoft Word for Windows that automatically corrects errors and makes other substitutions as soon as a user types text. For example, AutoCorrect can be set up to fix misspellings, such as *teh* for *the*, or to change "straight" (" ") quotation marks to "smart" (" ") quotation marks. The user can select which AutoCorrect features to enable. *See also* smart quotes.

autodial *n.* A feature enabling a modem to open a telephone line and initiate a call by transmitting a stored telephone number as a series of pulses or tones.

AUTOEXEC.BAT *n.* A special-purpose batch file (set of commands) that is automatically carried out by the MS-DOS operating system when the computer is started or restarted. Created by the user or (in later versions of MS-DOS) by the operating system at system installation, the file contains basic startup commands that help configure the system to installed devices and to the user's preferences.

AutoIP *n.* Short for **auto**matic **I**nternet **P**rotocol addressing. A technique used by a device to obtain a valid IP address without a DHCP server or other IP-configuration authority. With AutoIP, a device randomly chooses an IP address from a set of reserved addresses and queries the local network to determine whether another client already is using that address. The device repeats the steps of picking and verifying until an unused address is found. AutoIP, based on an Internet Engineering Task Force (IETF) Internet Draft, is used in Universal Plug and Play (UPnP) networking. *See also* UPnP networking.

autokey *n. See* typematic.

autoload *vb.* To make some type of resource available without it having to be specifically requested. A program, for example, might autoload fonts or files as they are needed. Similarly, a CD-ROM drive might autoload audio discs or automatically start a setup program on a software CD-ROM. *See also* AutoPlay.

autoloader *n.* A device that automatically prepares a diskette, CD, or other storage medium for use.

erence level for its operation. **4.** In communications, a type of distortion in the length of transmitted bits, caused by a lag that occurs as voltage builds up or falls off each time the signal changes from 0 to 1 or vice versa.

bidirectional *adj.* Operating in two directions. A bidirectional printer can print from left to right and from right to left; a bidirectional bus can transfer signals in both directions between two devices.

bidirectional parallel port *n.* An interface that supports two-way parallel communication between a device, such as a printer, and a computer. *See also* interface (definition 3), parallel port.

bidirectional printing *n.* The ability of an impact or inkjet printer to print from left to right and from right to left. Bidirectional printing improves speed substantially because no time is wasted returning the print head to the beginning of the next line, but it may lower print quality.

bi-endian *adj.* Of, pertaining to, or characteristic of processors and other chips that can be switched to work in big endian or little endian mode. The PowerPC chip has this ability, which allows it to run the little endian Windows NT or the big endian MacOS/PPC. *See also* big endian, little endian, PowerPC.

BIFF *n.* Short for **B**inary **I**nterchange **F**ile **F**ormat. The native file format used by Microsoft Excel.

biff *n.* **1.** A BSD utility that issues a signal when new mail has arrived. Biff was named after a University of California graduate student's dog who had a habit of barking at the mailman at the time the utility was developed. **2.** *See* B1FF.

biff *vb.* To provide notification of new (incoming) e-mail.

bifurcation *n.* A split that results in two possible outcomes, such as 1 and 0 or on and off.

Big 5 *n.* Traditional Chinese encoding.

Big Blue *n.* The International Business Machines (IBM) Corporation. This nickname comes from the corporate color used on IBM's early mainframes and still used in the company logo.

big endian *adj.* Storing numbers in such a way that the most significant byte is placed first. For example, given the hexadecimal number A02B, the big endian method would cause the number to be stored as A02B, and the little endian method would cause the number to be stored as 2BA0. The big endian method is used by Motorola microprocessors; Intel microprocessors use the little endian method. The term *big endian* is derived from Jonathan Swift's *Gulliver's Travels*, in which the Big-Endians were a group of people who opposed the emperor's decree that eggs should be broken at the small end before they were eaten. *Compare* little endian.

bigint data type *n.* In an Access project, a data type of 8 bytes (64 bits) that stores whole numbers in the range of –2^63 (–9,223,372,036,854,775,808) through 2^63–1 (9,223,372,036,854,775,807).

big iron *n.* One or more large, fast, and expensive computers, such as a Cray supercomputer or a room-filling mainframe system.

big red switch *n.* The power on/off switch of a computer, thought of as a kind of interrupt or last resort. On the original IBM PC and many other computers, it was indeed big and red. Using the switch is an interrupt of last resort because it deletes all the data in RAM and can also damage the hard drive. *Acronym:* BRS.

billboard *n.* A primitive inserted into a 3-D scene that is oriented so that one face is toward the viewer. A texture, usually an animated sprite, is applied to the billboard to give the appearance of a 3-D object in the scene.

billion *n.* **1.** In American usage (as is usual with microcomputers), a thousand million, or 10^9. Computer terminology uses the prefixes *giga-* for 1 billion and *nano-* for 1 billionth. **2.** In British usage, a million million, or 10^{12}, which is a *trillion* in American usage.

billisecond *n.* *See* nanosecond.

bimodal virus *n.* *See* multipartite virus.

.bin *n.* A file name extension for a file encoded with MacBinary. *See also* MacBinary.

binary[1] *adj.* Having two components, alternatives, or outcomes. The binary number system has 2 as its base, so values are expressed as combinations of two digits, 0 and 1. These two digits can represent the logical values *true* and *false* as well as numerals, and they can be represented in an electronic device by the two states *on* and *off*, recognized as two voltage levels. Therefore, the binary number system is at the heart of digital computing. Although ideal for computers, binary numbers are usually difficult for people to interpret because they are repetitive strings of 1s

Web page, including such features as providing a form that users can fill out, image maps that contain links to other Web pages or resources, and links that users can click on to send e-mail to a specified address. ActiveX controls and Java applets can provide much the same functionality as CGI scripts, through different means. *See also* CGI (definition 1), cgi-bin, image map, Perl. *Compare* ActiveX control, Java applet.

CGM *n. See* Computer Graphics Metafile.

chad *n.* The paper removed when a hole is punched in a card, in a tape, or at the perforated edge of continuous-form paper—the computer equivalent of a doughnut hole.

chaining *n.* **1.** In computers, the linking of two or more entities so that they are dependent upon one another for operation. **2.** In programming, the linking of two or more programs so that the first program causes the second program to begin executing. **3.** In programming, linking program statements so that each statement, except for the first, relies on the previous statement for input. **4.** With batch files, linking two or more batch files so that the completion of the first batch file causes the second batch file to begin executing. **5.** With data storage, linking two or more individual units of storage. For example, a single file on a disk may actually be stored on several different sectors of the disk, each of which points to the next sector containing a piece of that file. These sectors are said to be chained together, or, more literally, to be a chain of clusters. **6.** *See* daisy chaining.

chain printer *n. See* line printer.

chalkware *n. See* vaporware.

Challenge Handshake Authentication Protocol *n.* An authentication scheme used by PPP servers to validate the identity of the originator of a connection, upon connection or any time later. *Acronym:* CHAP. *See also* authentication, PPP.

change directory *n. See* cd.

change file *n.* A file that records transactional changes occurring in a database, providing a basis for updating a master file and establishing an audit trail. *Also called:* transaction log. *See also* addition record.

change management *n.* **1.** The process of tracking and controlling updates, revisions, and other changes to a hardware or software product or project. **2.** The process of managing change during a company's restructuring or reengineering.

channel *n.* **1.** A path or link through which information passes between two devices. A channel can be either internal or external to a microcomputer. **2.** In communications, a medium for transferring information. Depending on its type, a communications channel can carry information (data, sound, and/or video) in either analog or digital form. A communications channel can be a physical link, such as the cable connecting two stations in a network, or it can consist of some electromagnetic transmission on one or more frequencies within a bandwidth in the electromagnetic spectrum, as in radio and television, or in optical, microwave, or voice-grade communication. *Also called:* circuit, line. *See also* analog, band, bandwidth, digital, electromagnetic spectrum, frequency. **3.** A single color within a digital color space. For example, the RGB color space contains three channels—red, green, and blue—and all colors within the RGB color space are created with a combination of one or more of those three color channels. In CMYK there are four channels—cyan, magenta, yellow, and black. Color management and graphics applications rely on control and manipulation of individual color channels. *See also* color space.

channel access *n.* **1.** A method used in networked systems to gain access to the data communication channel that links two or more computers. Common methods of channel access are contention, polling, and the token ring network. *See also* channel, contention, polling, token ring network. **2.** In wireless technology, an access method such as CDMA (Code Division Multiple Access). *See also* Code Division Multiple Access.

channel adapter *n.* A device that enables hardware using two different types of communications channelsto communicate.

channel aggregator *n. See* content aggregator.

channel capacity *n.* The speed at which a communications channel can transfer information, measured in bits per second (bps) or in baud.

Channel Definition Format *n.* A file format based on XML that describes a channel—a collection of Web pages—on a server. The Channel Definition Format is used with the Active Channel feature in Microsoft Internet Explorer to deliver selected, often personalized, information to individuals on a subscription basis. *See also* Active Channel, webcasting.

channel hop *vb.* To switch repeatedly from one IRC channel to another. *See also* IRC.

(Web) server, is passed from one server to the next. *See also* news feed, newsgroup, server.

downstream[2] *adv.* **1.** The location of a client computer in relation to a server. **2.** The direction in which data moves from the server to the client.

downstream[3] *adj.* Refers to data that moves *from* a remote network *to* an individual computer. In some Internet-related communications technologies, data flows more quickly downstream than upstream; cable modems, for example, can transfer data as fast as 30 Mbps downstream but support much slower rates, from 128 Kbps to around 2 Mbps, upstream. *Compare* upstream.

downtime *n.* The amount or percentage of time a computer system or associated hardware remains nonfunctional. Although downtime can occur because hardware fails unexpectedly, it can also be a scheduled event, as when a network is shut down to allow time for maintenance.

downward compatibility *n.* The capability of source code or programs developed on a more advanced system or compiler version to be executed or compiled by a less advanced (older) version. *Compare* upward-compatible.

DP *n. See* data processing.

dpi *n. See* dots per inch.

DPMA *n.* Acronym for **D**ata **P**rocessing **M**anagement **A**ssociation. A trade organization of information systems (IS) professionals. DPMA was founded in 1951 as the National Machine Accountants Association.

DPMI *n. See* DOS Protected Mode Interface.

DPMS *n.* Acronym for VESA **D**isplay **P**ower **M**anagement **S**ignaling. A VESA standard for signals that put a video monitor into "standby" or suspend mode to reduce power consumption. *See also* green PC, VESA[2].

DPOF *n.* Short for **D**igital **P**rint **O**rder **F**ormat. A printing specification developed by Canon Computer Systems, Inc., Eastman Kodak Company, Fuji Photo Film Co., Ltd., and Matsushita Electric Industrial Co., Ltd. DPOF is intended to ease the process of printing images stored on digital camera memory cards by enabling users to select the images to print, as well as specify the number of copies desired, on the card. The images ordered can then be printed by a professional photofinishing service or on a home printer.

DPSK *n.* Acronym for **d**ifferential **p**hase-**s**hift **k**eying. *See* phase-shift keying.

draft mode *n.* A high-speed, relatively low-quality print mode offered by most dot-matrix printers. *See also* dot-matrix printer, draft quality, print quality.

draft quality *n.* A low grade of printing generated by the draft mode on dot-matrix printers. Draft quality varies among printers, ranging from suitable for most purposes to nearly useless. *See also* draft mode, print quality.

drag *vb.* In graphical user interface environments, to move an image or a window from one place on the screen to another by "grabbing" it and pulling it to its new location using the mouse. The mouse pointer is positioned over the object, and the mouse button is pressed and held while the mouse is moved to the new location.

drag-and-drop *vb.* **1.** In general, to delve into something in increasing detail. **2.** More specifically, to perform operations in a graphical user interface by dragging objects on the screen with the mouse. For example, to delete a document, a user can drag the document icon across the screen and drop it on the trashcan icon (Macintosh OS) or in the Recycle Bin (Windows). *See also* drag, graphical user interface.

drain *n.* **1.** In an FET, the electrode toward which charge carriers (electrons or holes) move from the source under control of the gate. *See also* FET, gate (definition 2), MOSFET, source (definition 2). **2.** *See* current drain.

DRAM *n. See* dynamic RAM.

DRAW *n.* Acronym for **d**irect **r**ead **a**fter **w**rite. A technique used with optical discs to verify the accuracy of information immediately after it has been recorded (written) on the disc. *Compare* DRDW.

drawer *n.* In the Mac OS X Aqua interface, small child windows containing extra information that slide out of the side of main parent windows. Drawers are intended to reduce clutter on the computer desktop by enabling more information to be displayed without opening additional full-sized windows. *Also called:* Drop Drawer.

drawing interchange format *n. See* DXF.

drawing program *n.* A program for manipulating object-oriented graphics, as opposed to manipulating pixel images. In a drawing program, for example, the user can manipulate an element, such as a line, a circle, or a block of text, as an independent object simply by selecting the object and moving it. *See also* object-oriented graphics, pixel image, vector graphics.

InterNIC *n.* Short for NSFnet (**Internet**) Network Information Center. The organization that has traditionally registered domain names and IP addresses as well as distributed information about the Internet. InterNIC was formed in 1993 as a consortium involving the U.S. National Science Foundation, AT&T, General Atomics, and Network Solutions, Inc. (Herndon, Va.). The latter partner administers InterNIC Registration Services, which assigns Internet names and addresses.

interoperability *n.* Referring to components of computer systems that are able to function in different environments. For example, Microsoft's NT operating system is interoperable on Intel, DEC Alpha, and other CPUs. Another example is the SCSI standard for disk drives and other peripheral devices that allows them to interoperate with different operating systems. With software, interoperability occurs when programs are able to share data and resources. Microsoft Word, for example, is able to read files created by Microsoft Excel.

interpolate *vb.* To estimate intermediate values between two known values in a sequence.

interpret *vb.* **1.** To translate a statement or instruction into executable form and then execute it. **2.** To execute a program by translating one statement at a time into executable form and executing it before translating the next statement, rather than by translating the program completely into executable code (compiling it) before executing it separately. *See also* interpreter. *Compare* compile.

interpreted language *n.* A language in which programs are translated into executable form and executed one statement at a time rather than being translated completely (compiled) before execution. Basic, LISP, and APL are generally interpreted languages, although Basic can also be compiled. *See also* compiler. *Compare* compiled language.

interpreter *n.* A program that translates and then executes each statement in a program written in an interpreted language. *See also* compiler, interpreted language, language processor.

interprocess communication *n.* The ability of one task or process to communicate with another in a multitasking operating system. Common methods include pipes, semaphores, shared memory, queues, signals, and mailboxes. *Acronym:* IPC.

inter-record gap *n.* An unused space between data blocks stored on a disk or tape. Because the speed of disks and tapes fluctuates slightly during operation of the drives, a new data block may not occupy the exact space occupied by the old block it overwrites. The inter-record gap prevents the new block from overwriting part of adjacent blocks in such a case. *Acronym:* IRG.*Also called:* gap, interblock gap.

interrogate *vb.* To query with the expectation of an immediate response. For example, a computer may interrogate an attached terminal to determine the terminal's status (readiness to transmit or receive).

interrupt *n.* A signal from a device to a computer's processor requesting attention from the processor. When the processor receives an interrupt, it suspends its current operations, saves the status of its work, and transfers control to a special routine known as an interrupt handler, which contains the instructions for dealing with the particular situation that caused the interrupt. Interrupts can be generated by various hardware devices to request service or report problems, or by the processor itself in response to program errors or requests for operating-system services. Interrupts are the processor's way of communicating with the other elements that make up a computer system. A hierarchy of interrupt priorities determines which interrupt request will be handled first if more than one request is made. A program can temporarily disable some interrupts if it needs the full attention of the processor to complete a particular task. *See also* exception, external interrupt, hardware interrupt, internal interrupt, software interrupt.

interrupt-driven processing *n.* Processing that takes place only when requested by means of an interrupt. After the required task has been completed, the CPU is free to perform other tasks until the next interrupt occurs. Interrupt-driven processing is usually employed for responding to events such as a key pressed by the user or a floppy disk drive that has become ready to transfer data. *See also* interrupt. *Compare* autopolling.

interrupt handler *n.* A special routine that is executed when a specific interrupt occurs. Interrupts from different causes have different handlers to carry out the corresponding tasks, such as updating the system clock or reading the keyboard. A table stored in low memory contains pointers, sometimes called vectors, that direct the processor to the various interrupt handlers. Programmers can create interrupt handlers to replace or supplement existing handlers,

K

K[1] *n.* Short for kilobyte.

K[2] *prefix* *See* kilo-.

K&R C *n.* Short for (Brian W.) Kernighan and (Dennis M.) Ritchie C. The version of the C programming language, defined by those two authors, that was the informal C standard until a more formal standard was developed by an ANSI committee. *See also* C.

Kalman filter *n.* An adaptive filter used to estimate the state of a system from measurements that contain random errors. This recursive adaptive filter determines the correct parameters of a process model. Each new measurement allows the parameters of a model to be predicted and adjusted, thus providing an estimate of error at each update. The Kalman filter's computational structure and its ability to incorporate the effects of noise (from both measurement and modeling) recommends itself for use in computer vision tracking applications. *See also* active vision, distortion, modeling, noise.

kamikaze packet *n.* *See* Chernobyl packet.

kashidas *n.* Special characters that are used to extend the joiner between two Arabic characters. Kashidas are used to improve the appearance of justified text by visually lengthening words rather than increasing the spacing between words. See the illustration.

Kashidas.

Kb *n.* *See* kilobit.

KB *n.* **1.** *See* kilobyte. **2.** Short for Knowledge Base. Primary source of product information for Microsoft support engineers and customers. This comprehensive collection of articles, updated daily, contains detailed how-to information, answers to technical-support questions, and known issues. *Also called:* Microsoft Knowledge Base.

Kbit *n.* *See* kilobit.

Kbps *n.* *See* kilobits per second.

Kbyte *n.* *See* kilobyte.

kc *n.* *See* kilocycle.

KDE *n.* Acronym for K Desktop Environment. A popular open-source desktop environment originally intended for UNIX workstations and now developed for the Linux operating system. KDE provides a graphical user interface (GUI) and basic applications that correspond to those found with Microsoft Windows or the Macintosh operating system. By providing a mainstream environment and familiar desktop appearance, KDE is intended to make Linux easier for users. KDE and GNOME are leading contenders for consideration as a Linux desktop standard. *See also* GNOME, GUI.

Kerberos *n.* A network authentication protocol developed by MIT. Kerberos authenticates the identity of users attempting to log on to a network and encrypts their communications through secret-key cryptography. A free implementation of Kerberos is available from MIT, although it is also available in many commercial products. *Also called:* Kerberos v5 authentication protocol. *See also* authentication, cryptography, IPSec.

Kermit *n.* A file transfer protocol used in asynchronous communications between computers. Kermit is a very flexible protocol used in many software packages designed for communications over telephone lines. *Compare* Xmodem, Ymodem, Zmodem.

fonts, their use may cause text problems in font substitution situations.

light-emitting diode *n.* A semiconductor device that converts electrical energy into light, used, for example, for the activity lights on computer disk drives. Light-emitting diodes work on the principle of electroluminescence and are highly efficient, producing little heat for the amount of light output. *Acronym:* LED.

light guide *n.* A structure, such as a fiberoptic filament, designed to transmit light over distances with minimal attenuation or loss.

lightmap *n.* A basic lighting scheme used in 3D computer game rendering and other digital animation applications. A lightmap generates a precalculated 3D grid for lighting all objects in a game but cannot be adjusted for player-initiated changes within the scene.

light pen *n.* An input device consisting of a stylus that is connected to a computer's monitor. The user points at the screen with the stylus and selects items or chooses commands either by pressing a clip on the side of the light pen or by pressing the light pen against the surface of the screen (the equivalent of performing a mouse click). *See also* absolute pointing device. *Compare* touch screen.

light source *n.* **1.** The device that provides the luminescence (for example, a bulb or laser) in any technology based on the use and interpretation of light, such as a scanner or CRT. **2.** In computer graphics, the imaginary location of a source of light, which determines the shading in an image.

lightwave system *n.* A system that transmits information by means of light.

Lightweight Directory Access Protocol *n.* A network protocol designed to work on TCP/IP stacks to extract information from a hierarchical directory such as X.500. This gives users a single tool to comb through data to find a particular piece of information, such as a user name, an e-mail address, a security certificate, or other contact information. *Acronym:* LDAP. *See also* CCITT X series.

Lightweight Internet Person Schema *n.* In Lightweight Directory Access Protocol directories, a specification for the retrieval of such information as names and e-mail addresses. *Acronym:* LIPS. *See also* Lightweight Directory Access Protocol.

LIM EMS *n.* Acronym for Lotus/Intel/Microsoft Expanded Memory Specification. *See* EMS.

limit check *n.* In programming, a test that checks specified information to verify that it is within acceptable limits. *See also* array.

limiting operation *n.* Any routine or operation that constrains the performance of a larger process in which it is included; a bottleneck.

line *n.* **1.** Any wire or wires, such as power lines and telephone lines, used to transmit electrical power or signals. **2.** In communications, a connection, usually a physical wire or other cable, between sending and receiving (or calling and called) devices, including telephones, computers, and terminals. **3.** In a SONET network, a segment that runs between two multiplexers. *See also* SONET. **4.** In word processing, a string of characters displayed or printed in a single horizontal row. **5.** In programming, a statement (instruction) that occupies one line of the program. In this context, the common reference is to a "program line" or a "line of code."

line adapter *n.* A device, such as a modem or network card, that connects a computer to a communications line and converts a signal to an acceptable form for transmission.

line analyzer *n.* A monitoring device used to verify the integrity of a communications line and to assist in troubleshooting.

linear *adj.* **1.** Having the characteristics of a line. **2.** Proceeding sequentially. For example, a linear search is one that moves from A to B to C. **3.** In mathematics and electronics, having a direct and proportional relationship among characteristics or variables. For example, the output of a linear amplifier is directly proportional to the input. *See also* linear programming.

linear addressing architecture *n.* An architecture that allows a microprocessor to access any individual memory location by means of a single address value. Thus, each memory location within the entire range of addressable memory has a unique, specified address. *See also* flat address space, segmented address space.

linear bus *n.* *See* bus network.

linear inferences per second *n.* *See* LIPS (definition 2).

linear list *n.* A simple ordered list of elements in which each element except the first immediately succeeds one other element, and each except the last immediately precedes one other. *Compare* linked list.

linear memory *n.* *See* flat memory.

options commonly offered by a programming language, such as single-precision versus double-precision. *See also* floating-point notation, precision (definition 2). *Compare* double-precision.

single-sided *adj.* Of or pertaining to a floppy disk in which data can be stored on only one side.

single sign-on *n.* A system enabling a user to enter one name and password to log on to different computer systems or Web sites. Single sign-on is also available for enterprise systems so a user with a domain account can log on to a network once, using a password or smart card, and thereby gain access to any computer in the domain. *See also* domain, smart card (definition 1).

single step *vb.* To execute a program one step at a time, usually within the context of a debugger. *See also* debugger.

single switch device *n.* An assistive computer technology for people with mobility impairments. A single switch device allows users to interact with a computer by using slight body movements.

single threading *n.* **1.** Within a program, the running of a single process at a time. **2.** A condition in which each leaf node of a tree data structure contains a pointer to its parent. *See also* node (definition 3), pointer (definition 1), threading.

single-user computer *n.* A computer designed for use by a single individual; a personal computer. *Compare* multiuser system.

sink *n.* A device or part of a device that receives something from another device. *See also* data sink, heat sink.

SIP *n.* Acronym for single inline package. A type of housing for an electronic component in which all leads (connections) protrude from one side of the package. *Also called:* single inline pinned package. *Compare* DIP.

SIPP *n.* Acronym for single inline pinned package. *See* SIP.

SIR *n.* *See* Serial Infrared.

SirCam worm *n.* A malicious worm that combines fast infection with the potential to deliver multiple malicious payloads. SirCam spreads through multiple means, both by mailing infected personal files from a compromised disk to other potential victims and through Windows network shares on unprotected machines. One time in 20 SirCam deletes the contents of the infected drive, and one time in 50 it fills all free space on the disk with trash data. SirCam was discovered in mid-2001 and has reappeared regularly since that time.

SIRDS *n.* Acronym for Single Image Random Dot Stereogram. *See* autostereogram.

SIS *n.* Acronym for Single Image Stereogram. *See* autostereogram.

.sit *n.* The file extension for a Macintosh file compressed with StuffIt. *See also* StuffIt.

site *n.* *See* Web site.

site license *n.* A purchase agreement for using multiple copies of the same software at a business or an institution, usually at a volume discount.

size box *n.* A control in the upper right corner of the frame of a window on the Macintosh screen. When the user clicks the size box, the window toggles between the size the user has set for it by dragging and the maximum size. *Compare* Maximize button.

skew *n.* The difference between what is and what should be—for example, the misalignment of a page that prevents accurate reproduction, or the difference between input and output when circuits do not respond evenly to a propagated signal.

skin *n.* An alternative graphical interface for an operating system (OS) or a software program. A skin customizes the look of the OS or program but does not affect its functionality. Programs that allow the use of skins usually make standards available for the creation and distribution of new skins. *See also* graphical user interface.

skin mode *n.* An operational state of various media players, including RealPlayer, Winamp, and Windows Media Player, in which the user interface is customized and displayed as a skin. Often some features of the player are not accessible in skin mode. Skin mode was called compact mode in Windows Media Player 7. *See also* full mode.

Skutch box *n.* A slang term for a device manufactured by Skutch Electronics, Inc., that simulates the functioning of a telephone line with a good connection. Telephone line simulators are used to test telecommunications systems and devices.

skyscraper *n.* One of several larger formats for online ads developed to replace traditional banner ads on the Internet. *See* avalanche ad.

tems. *See also* application programming interface, speech recognition.

SSA *n.* Acronym for Serial Storage Architecture. An interface specification from IBM in which devices are arranged in a ring topology. In SSA, which is compatible with SCSI devices, data can be transferred at up to 20 megabytes per second in each direction. *See also* SCSI device.

SSD *n.* Acronym for solid-state disk. *See* solid-state disk drive.

SSE *n.* Short for Streaming SIMD Extensions. A set of 70 new instructions implemented in Intel's Pentium III microprocessor. SSE, more formally called Internet SSE (ISSE), uses SIMD (single-instruction, multiple-data) operations to accelerate floating point calculations. Designed to improve performance in visual areas such as real-time 3-D and graphics rendering, SSE also provides support for development of such applications as real-time video and speech recognition. *See also* SIMD.

SSI *n.* **1.** *See* small-scale integration. **2.** *See* server-side include.

SSL *n.* Acronym for Secure Sockets Layer. A protocol developed by Netscape Communications Corporation for ensuring security and privacy in Internet communications. SSL supports authentication of client, server, or both, as well as encryption during a communications session. While primary purpose of SSL is to enable secure electronic financial transactions on the World Wide Web, it is designed to work with other Internet services as well. This technology, which uses public key encryption, is incorporated into the Netscape Navigator Web browser and Netscape's commerce servers. *See also* commerce server, open standard, public key encryption, PCT. *Compare* S-HTTP.

SSO *n.* *See* single sign-on.

ST506 interface *n.* The hardware signal specification developed by Seagate Technologies for hard-disk-drive controllers and connectors. The ST506/412 version of this interface has become a de facto standard.

stack *n.* A region of reserved memory in which programs store status data such as procedure and function call addresses, passed parameters, and sometimes local variables. *See also* pop, push (definition 1). *Compare* heap (definition 1).

stacking order *n.* The order in which layers in a digital graphic file are arranged. Foreground elements are typically stacked on top of background elements. Changes in stacking order can affect the way the final graphic is seen by the viewer. *See also* layering.

stack pointer *n.* A register that contains the current address of the top element of the stack. *See also* pointer (definition 1), stack.

stackware *n.* A HyperCard application consisting of a HyperCard data stack and HyperCard programming. *See also* HyperCard.

staging web *n.* A local Web site maintained on a file system or local Web server that currently cannot be browsed by site visitors. These Web sites allow authors and workgroups to make changes or updates to Web sites before they are published.

staging Web server *n.* A Web server where you publish and test your Web site before putting it on a production server. A staging Web server cannot be browsed by an Internet or intranet audience.

stairstepping *n.* A rough outline like the steps of a stair in a graphic line or curve that should be smooth. *Also called:* aliasing, jaggies.

stale link *n.* A hyperlink to an HTML document that has been deleted or moved, rendering the hyperlink useless. *See also* HTML document, hyperlink.

stale pointer bug *n.* *See* aliasing bug.

stand-alone or **standalone** *adj.* Of, pertaining to, or being a device that does not require support from another device or system, for example, a computer that is not connected to a network.

standard *n.* **1.** A de jure technical guideline advocated by a recognized noncommercial or government organization that is used to establish uniformity in an area of hardware or software development. The standard is the result of a formal process, based on specifications drafted by a cooperative group or committee after an intensive study of existing methods, approaches, and technological trends and developments. The proposed standard is later ratified or approved by a recognized organization and adopted over time by consensus as products based on the standard become increasingly prevalent in the market. Standards of this type are numerous, including the ASCII character set, the RS-232-C standard, the SCSI interface, and ANSI-standard programming languages, such as C and FORTRAN. *See also* ANSI, convention, RS-232-C standard,

XSDL *n.* Acronym for XML Schema Description Language. A World Wide Web Consortium (W3C) recommendation for representing XML structure. XSDL is capable of describing complex XML-based data structures, and provides options not available with Document Type Definitions (DTDs), including namespace support, XML datatypes, and improved extensibility and data type support.

X series *n.* A set of recommendations adopted by the International Telecommunication Union Telecommunication Standardization Sector (ITU-T), formerly the CCITT, and International Organization for Standardization (ISO) for standardizing equipment and protocols used in both public access and private computer networks. See the table.

Table X.1 Recommendations in X Series for Network Communications.

Recommendation Number	*What It Covers*
X.25	Interface required to connect a computer to a packet-switched network such as the Internet
X.75	Protocols for connecting two public data networks
X.200	Seven-layer set of protocols known as the ISO/OSI reference model for standardizing computer-to-computer connections
X.400	Format at the ISO/OSI application layer for e-mail messages over various network transports, including Ethernet, X.25, and TCP/IP. Gateways must be used to translate e-mail messages between the X.400 and Internet formats
X.445	Asynchronous Protocol Specification, which governs the transmission of X.400 messages over dial-up telephone lines
X.500	Protocols for client/server systems that maintain and access directories of users and resources in X.400 form
X.509	Digital certificates

XSL *n.* Acronym for Extensible Stylesheet Language. A World Wide Web Consortium (W3C) standard stylesheet language for XML documents. XSL determines how data in an XML document is displayed on the Web. XSL controls what data will be displayed, in what format, and in what type size and style. XSL contains two major extensions: XSL Transformations (XSLT), a language used to convert XML documents to HTML or other document types, and XSL Formatting Objects (XSL-FO), a language for specifying formatting semantics. *See also* XSL-FO, XSLT.

XSL-FO *n.* Acronym for Extensible Stylesheet Language Formatting Objects. An XML-based markup language for specifying formatting semantics. XSL-FO allows format and style information to be applied to an XML document and can be used with XSLT to produce source documents. *See also* XSL.

XSLT *n.* Acronym for Extensible Stylesheet Language Transformations. A language used in transforming an existing XML document into a restructured XML document. Formalized as a W3C Recommendation in 1999, XSLT is primarily intended for use as part of XSL. XSL describes the styling of a document in terms of XSLT transformations into an XML document. *See also* XML, XSL.

X terminal *n.* An intelligent display device, connected to an Ethernet network, that performs operations on request from client applications in an X Window System. *See also* Ethernet (definition 1), X Window System.

XT keyboard *n. See* PC/XT keyboard.

XUL *n.* A standards-based interface description language that provides a standard way to exchange data describing a program's user interface. XUL balances simplicity, flexibility, and ease of use with precise layout control. XUL was developed by Netscape and Mozilla and is used with XML, CSS, DOM, and HTML.

X Windows *n. See* X Window System.

X Window System *n.* A nonproprietary standardized set of display-handling routines, developed at MIT. Most often encountered on UNIX workstations, the X Window System is independent of hardware and operating system. An X Window System client calls on the server, which is located on the user's workstation, to provide a window in which the client can generate a display of text or graphics. *Also called:* X Windows. *See also* X Consortium.