



omputer Reference

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Microsoft Press Computer Dictionary Third

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Microsoft Press

PUBLISHED BY Microsoft Press A Division of Microsoft Corporation One Microsoft Way Redmond, Washington 98052-6399

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Library of Congress Cataloging-in-Publication Data pending.

ISBN 1-57231-743-4

Printed and bound in the United States of America.

1 2 3 4 5 6 7 8 9 QMQM 2 1 0 9 8 7

Distributed to the book trade in Canada by Macmillan of Canada, a division of Canada Publishing Corporation.

A CIP catalogue record for this book is available from the British Library.

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(right to left) and performs any stack cleanup; this permits a varying number of arguments to be passed to a given routine. In the Pascal calling sequence, the calling routine pushes any included arguments on the stack in the order in which they appear (left to right), and the called routine is expected to clean up the stack. *See also* argument, call, stack.

CALL instruction \vec{n} in-struk shan n. A type of programming instruction that diverts program execution to a new area in memory (sequence of directives) and also allows eventual return to the original sequence of directives.

CALS \kalz, C'A-L-S'\ n. Acronym for Computer-Aided Acquisition and Logistics Support. A Department of Defense standard for electronic exchange of data with commercial suppliers.

CAM \kam, C`A-M'\ n. 1. Acronym for **c**omputeraided **m**anufacturing. The use of computers in automating the fabrication, assembly, and control aspects of manufacturing. CAM applies to the manufacture of products ranging from small-scale production to the use of robotics in full-scale assembly lines. CAM relates more to the use of specialized programs and equipment than it does to the use of microcomputers in a manufacturing environment. *See also* CAD/CAM, I-CASE. 2. *See* Common Access Method.

camera-ready \kam´ər-ə-red`ē\ adj. In publishing, of or pertaining to the stage at which a document, with all typographic elements and graphics in place, is suitably prepared to be sent to a printing service. The printing service photographs the camera-ready copy and then uses the photograph to make plates for printing. Some applications are advertised as being able to bring documents to the camera-ready stage, eliminating the need for manual layout and pasteup of elements onto boards.

campuswide information system \kam`pus-wīd in-fər-mā'shən si stəm\ n. Information and services distributed on a college or university campus through computer networks. Campuswide information system services typically include student and faculty directories, calendars of campus events, and access to databases. *Acronym:* CWIS (C`W-I-S`).

cancel $\$ n. A control character used in communication with printers and other comput-

ers, commonly designated as CAN. It usually means that the line of text being sent should be canceled. In ASCII, which is the basis of character sets used by most microcomputers, this is represented internally as character code 24.

cancelbot \kan səl-bot \ n. Short for **cancel** ro**bot**. A program that identifies articles in newsgroups based on a set of criteria and cancels the distribution of those articles. Although the criteria for cancellation is set by the owner of the cancelbot, most cancelbots exist to identify and eliminate spam messages posted to dozens or hundreds of newsgroups. *See also* spam.

cancel message \kan səl mes əj\ n. A message sent to Usenet news servers indicating that a certain article is to be canceled, or deleted, from the server. *See also* article, news server, Usenet.

candidate key \kan´də-dāt kē`\ n. A unique identifier for a tuple (row) within a relation (database table). The candidate key may be either simple (a single attribute) or composite (two or more attributes). By definition, every relation must have at least one candidate key, but it is possible for a relation to have more than one candidate key. If there is only one candidate key, it automatically becomes the primary key for the relation. If there are multiple candidate keys, the designer must designate one as the primary key. Any candidate key that is not the designated primary key is an alternate key. See also key (definition 2), primary key.

canned program \kand` pro gram\ n. See canned software.

canned routine \kand` roo-ten'\ n. A previously written routine that is copied into a program and used as is, without modification. *See also* library routine.

canned software \kand` soft`wâr\ *n*. Off-the-shelf software, such as word processors and spreadsheet programs.

canonical form \kappa-non\approx-kapl form\\ n. In mathematics and programming, the standard or prototypical form of an expression or statement.

capacitance \kə-pas´ə-təns`\ *n*. The ability to store an electric charge. Capacitance is measured in farads. A capacitance of 1 farad will hold 1 coulomb of charge at a potential of 1 volt. In practical use, a farad is an extremely large amount of

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IDLC lique series of bits 01111110, used to start and end a transmission frame (message unit). See also HDLC.

flame 1 \flam\ n. An abusive or personally insulting e-mail message or newsgroup posting.

flame² \flām\ vb. 1. To send an abusive or personally insulting e-mail message or newsgroup posting. 2. To criticize personally by means of e-mail messages or newsgroup postings.

flame bait \flām´ bāt\ n. A posting to a mailing list, newsgroup, or other online conference that is likely to provoke flames, often because it expresses a controversial opinion on a highly emotional topic. See also flame¹, flame war. Compare troll.

flamefest \flam'fest\ n. A series of inflammatory messages or articles in a newsgroup or other online conference.

flamer \flamer \ n. A person who sends or posts abusive messages via e-mail, in newsgroups and other online forums, and in online chats. *See also* chat¹ (definition 1), newsgroup.

flame war $\fint{flam'}$ wor\ n. A discussion in a mailing list, newsgroup, or other online conference that has turned into a protracted exchange of flames. See also flame¹.

flash memory \flash mem ər-ē\ n. A type of nonvolatile memory. Flash memory is similar to EEPROM memory in function but it must be erased in blocks, whereas EEPROM can be erased one byte at a time. Because of its blockoriented nature, flash memory is commonly used as a supplement to or replacement for hard disks in portable computers. In this context, flash memory either is built into the unit or, more commonly, is available as a PC Card that can be plugged into a PCMCIA slot. A disadvantage of the block-oriented nature of flash memory is that it cannot be practically used as main memory (RAM) because a computer needs to be able to write to memory in single-byte increments. See also EEPROM, nonvolatile memory, PC Card, PCMCIA slot.

flash ROM \flash´rom, R-O-M`\ n. See flash mem-

flat address space \flat` a dres spas`, ə-dres´\ n. An address space in which each location in memory is specified by a unique number. (Memory addresses start at 0 and increase sequentially by 1.)

The Macintosh operating system, OS/2, and Windows NT use a flat address space. MS-DOS uses a segmented address space, in which a location must be accessed with a segment number and an offset number. *See also* segmentation. *Compare* segmented address space.

flatbed plotter \flat bed plot or \ n. A plotter in which paper is held on a flat platform and a pen moves along both axes, traveling across the paper to draw an image. This method is slightly more accurate than that used by drum plotters, which move the paper under the pen, but requires more space. Flatbed plotters can also accept a wider variety of media, such as vellum and acetate, because the material does not need to be flexible. See also plotter. Compare drum plotter, pinchroller plotter.

flatbed scanner \flat'bed skan`ər\ n. A scanner with a flat transparent surface that holds the image to be scanned, generally a book or other paper document. A scan head below the surface moves across the image. Some flatbed scanners can also reproduce transparent media, such as slides. See the illustration. *Compare* drum scanner, handheld scanner, sheet-fed scanner.



Flatbed scanner.

flat file \flat fil\ n. A file consisting of records of a single record type in which there is no embedded structure information that governs relationships between records.

flat-file database \flat fil da tə-bās\ n. A database that takes the form of a table, where only one table can be used for each database. A flat-file database can only work with one file at a time. Compare relational database.

flat file directory \flat fīl' dər-ek\tər- \flat n. A directory that cannot contain subdirectories but

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ing part of adjacent blocks in such a case. Acronym: IRG (I'R-G'). Also called gap, interblock gap.

interrogate \in-tar'ə-gāt\ *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 in tər-upt n. A request for 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 \in`tər-upt-driv-ən pros´es-ēng\ 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 \in´tər-upt hand`lər\ 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, such

as by making a clicking sound each time the keyboard is pressed.

interrupt priority \in´tər-upt prī-ōr`ə-tē\ *n. See* interrupt.

interrupt request line \in`tər-upt rē-kwest´ līn\
n. A hardware line over which a device such as an input/output port, the keyboard, or a disk drive can send interrupts (requests for service) to the CPU. Interrupt request lines are built into the computer's internal hardware and are assigned different levels of priority so that the CPU can determine the sources and relative importance of incoming service requests. They are of concern mainly to programmers dealing with low-level operations close to the hardware. Acronym: IRQ (\(\Gamma\)R-Q').

interrupt vector \in`tər-upt vek´tər\ n. A memory location that contains the address of the interrupt handler routine that is to be called when a specific interrupt occurs. See also interrupt.

interrupt vector table \in`tər-upt vek´tər tā`bl\ *n. See* dispatch table.

intersect \in`tər-sekt'\ n. An operator in relational algebra, used in database management. Given two relations (tables), A and B, that have corresponding fields (columns) containing the same types of values (that is, they are union-compatible), then INTERSECT A, B builds a third relation containing only those tuples (rows) that appear in both A and B. See also tuple.

intranet \in´trə-net`\ n. A network designed for information processing within a company or organization. Its uses include such services as document distribution, software distribution, access to databases, and training. An intranet is so called because it usually employs applications associated with the Internet, such as Web pages, Web browsers, FTP sites, e-mail, newsgroups, and mailing lists, accessible only to those within the company or organization.

intraware \in'trə-wâr'\ n. Groupware or middle-ware for use on a company's private intranet. Intraware packages typically contain e-mail, database, workflow, and browser applications. *See also* groupware, intranet, middleware.

intrinsic font \in-trin zik font \ n. A font (type size and design) for which a bit image (an exact pattern) exists that can be used as is, without such modification as scaling. *Compare* derived font.

Java Developer's Kit

programming language built into it. Most current Web browsers are Java-compliant. *See also* Java, Web browser.

Java Developer's Kit \jä`və də-vel´ə-pərz kit`\ n. A set of software tools developed by Sun Microsystems, Inc., for writing Java applets or applications. The kit, which is distributed free, includes a Java compiler, interpreter, debugger, viewer for applets, and documentation. Acronym: JDK (ʃ`D-K´). See also applet, Java, Java applet.

Java Management Application Programming Interface \jä'və man'əj-mənt a-plə-kā'shən programming in'tər-fās\ n. A set of application programming interface specifications, proposed by Sun Microsystems, Inc., to enable the Java language to be used for network management. Acronym: JMAPI (J'map'ē, J'M-A-P-I'). See also application programming interface, Java.

JavaScript \jä´və-skript`\ n. A scripting language developed by Netscape Communications and Sun Microsystems, Inc. that is loosely related to Java. JavaScript, however, is not a true object-oriented language, and it is limited in performance compared with Java because it is not compiled. Basic online applications and functions can be added to Web pages with JavaScript, but the number and complexity of available application programming interface functions are fewer than those available with Java. JavaScript code, which is included in a Web page along with the HTML code, is generally considered easier to write than Java, especially for novice programmers. A JavaScript-compliant Web browser, such as Netscape Navigator, is necessary to run JavaScript code. See also application programming interface, HTML, scripting language. Compare Java.

Java terminal \jä və tər mə-nəl\ n. A type of personal computer with a reduced number of components that is built primarily to provide an access terminal to the Web, including downloadable Java applets. Typically, such machines will not have locally addressable hard disks or installable programs but will obtain any necessary materials, including Java applets, for the user from somewhere on the network. Centrally obtained software is generally less expensive to administer but usually requires some download delay before usage may begin. Java terminals, currently under

development by Sun Microsystems, Inc., are similar in concept to NetPCs. *See also* Java, Java applet, network computer. *Compare* NetPC.

JCL \J`C-L`\ n. Acronym for **J**ob **C**ontrol **L**anguage. A command language used in IBM OS/360 mainframe systems. JCL is used to launch applications and specifies information on running time, program size, and the program files used for each application. *See also* command language.

JDK \\ \ \ \ \ \ n. See \ \ Java Developer's Kit. \ \ \ \ jewel box \\ \ \ joo \ \ a \ \ lear plastic \ \ container used to package and store a compact \ \ \ disc. See the illustration. \ \ Also \ called \ \ jewel \ \ case. \end{aligned}



Jewel box.

.jfif \dot J-F-I-F \n . The file extension that identifies graphic image files in the JPEG File Interchange Format. *See also* JPEG.

JIT $\backslash J \cap T \cap n$. See just-in-time.

jitter \jit´ər\ n. 1. Small vibrations or fluctuations in a displayed video image caused by irregularities in the display signal. Jitter is often visible in the form of horizontal lines that are of the same thickness as scan lines. 2. A rough appearance in a fax caused by dots that are incorrectly recorded during the scanning process and thus wrongly positioned in the output. 3. In digital communication, distortion caused by lack of synchronization of signals.

.jm $\dot J-M \ n$. On the Internet, the major geographic domain specifying that an address is located in Jamaica.

JMAPI \J'map`ē, J'M-A-P-I'\ *n. See* Java Management Application Programming Interface.

.jo \dot J-O \ n. On the Internet, the major geographic domain specifying that an address is located in Jordan.

job \job\ n. A specified amount of processing performed as a unit by a computer. On early

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local loop \lō kəl lōop \ n. A telephone connection that runs from the subscriber to the local telephone exchange.

local memory \lō`kəl mem´ər-ē\ n. In multiprocessor systems, the memory on the same card or high-speed bus as a particular processor. Typically, memory that is local to one processor cannot be accessed by another without some form of permission.

local newsgroups \lo`kəl nooz groops\ n. Newsgroups that are targeted toward a geographically limited area such as a city or educational institution. Posts to these newsgroups contain information that is specific to the area, concerning such topics as events, meetings, and sales. *See also* newsgroup.

local reboot \lo`kəl re boot\ n. A reboot of the machine that one is directly working on, rather than a remote host. *See also* reboot.

LocalTalk \localTalk \localTalk \ \n. An inexpensive cabling scheme used by AppleTalk networks to connect Apple Macintosh computers, printers, and other peripheral devices. *See also* AppleTalk.

local variable \lō`kəl vâr´ē-ə-bl\ *n*. A program variable whose scope is limited to a given block of code, usually a subroutine. *See also* scope (definition 1). *Compare* global variable.

location $\location \location \location \location 1).$ *See* address¹ (definition 1).

lock \lok\ n. 1. A software security feature that requires a key or dongle in order for the application to run correctly. See also dongle. 2. A mechanical device on some removable storage medium (for example, the write-protect notch on a floppy disk) that prevents the contents from being overwritten. See also write-protect notch.

locked file \lokd fil'\ n. 1. A file on which one or more of the usual types of manipulative operation cannot be performed—typically, one that cannot be altered by additions or deletions. 2. A file that cannot be deleted or moved or whose name cannot be changed.

locked volume \lokd` vol'y \overline{oo} m\ n. On the Apple Macintosh, a volume (storage device, such as a disk) that cannot be written to. The volume can be locked either physically or through software.

lockout \lok´out\ n. The act of denying access to a given resource (file, memory location, I/O port),

usually to ensure that only one program at a time uses that resource.

lock up \lok´ up\ n. A condition in which processing appears to be completely suspended and in which the program in control of the system will accept no input. *See also* crash¹.

 $\log \log n$. 1. A record of transactions or activities that take place on a computer system. 2. See logarithm.

logarithm \log'ər-idh'əm\ *n*. Abbreviated log. In mathematics, the power to which a base must be raised to equal a given number. For example, for the base 10, the logarithm of 16 is (approximately) 1.2041 because 10^{1.2041} equals (approximately) 16. Both natural logarithms (to the base *e*, which is approximately 2.71828) and common logarithms (to the base 10) are used in programming. Languages such as C and Basic include functions for calculating natural logarithms.

logic \loj'ik\ n. In programming, the assertions, assumptions, and operations that define what a given program does. Defining the logic of a program is often the first step in developing the program's source code. See also formal logic.

logical \loj 'ə-kəl\ adj. 1. Based on true and false alternatives as opposed to arithmetic calculation of numeric values. For example, a logical expression is one that, when evaluated, has a single outcome, either true or false. See also Boolean algebra. Compare fuzzy logic. 2. Of or pertaining to a conceptual piece of equipment or frame of reference, regardless of how it may be realized physically. Compare physical.

logical decision \loj`ə-kəl də-sizh´ən\ *n*. Any decision that can have one of two outcomes (true/false, yes/no, and so on). *Compare* fuzzy logic.

logical device \loj \(\perp - \text{kel}\) də-vīs \(\cap n\). A device named by the logic of a software system, regardless of its physical relationship to the system. For example, a single floppy disk drive can simultaneously be, to the MS-DOS operating system, both logical drive A and drive B.

logical drive \loj`ə-kəl drīv´\ n. See logical device. logical error \loj`ə-kəl âr´ər\ n. See logic error. logical expression \loj`ə-kəl eks-presh´ən\ n. See

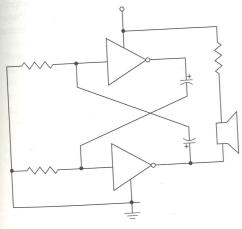
Boolean expression.

logical file \logical file \logical file \logical file \logical seen from a conceptual standpoint, without reference to and as

play them without causing stutter or disruptions. See also algorithm.

schema \ske mə\ n. A description of a database to a database management system (DBMS) in the language provided by the DBMS. A schema defines aspects of the database, such as attributes (fields) and domains and parameters of the attributes.

schematic \ski-mat´ik\ n. A diagram that shows a circuit's components and the connections between them using lines and a set of standard symbols to represent various electronic components. See the illustration.



Schematic.

Schottky diode \shot'k\(\bar{e}\) d\(\bar{1}\)\ \odd{n}. A type of diode (device that passes current in one direction) in which a semiconductor layer and a metal layer are brought into contact. It is characterized by very fast switching speeds. Also called hot carrier diode, Schottky barrier diode.

scientific notation \si ən-tif ik nō-tā shən\ n. A floating-point method of representing a number, especially a very large or very small one, in which numbers are expressed as products consisting of a number between 1 and 10 multiplied by a power of 10. See also floating-point notation.

sci. newsgroups \sī dot-nooz groops\ n. Usenet newsgroups that are part of the sci. hierarchy and begin with "sci." These newsgroups are devoted to discussions of scientific research and applications, except computer science, which is discussed in

the comp. newsgroups. See also newsgroup, traditional newsgroup hierarchy, Usenet. Compare comp. newsgroups, misc. newsgroups, news. newsgroups, rec. newsgroups, soc. newsgroups, talk. newsgroups.

scissoring \siz^ər-\text{eng}\ n. See clip.

scope $\skop\ n$. **1.** In programming, the extent to which an identifier, such as a constant, data type, variable, or routine, can be referenced within a program. Scope can be global or local. Scope can also be affected by redefining identifiers, such as by giving the same name to both a global variable and a local variable. See also block (definition 3), global, local. 2. In electronics, slang for oscilloscope. See also oscilloscope.

SCR \S`C-R'\ n. See silicon-controlled rectifier.

scrambler \skram'blər\ n. A device or program that reorders a signal sequence in order to render it indecipherable. See also encryption.

scrap \skrap\ n. An application or system file maintained for storing data that has been marked for movement, copying, or deletion. See also clipboard (definition 1).

scrapbook \skrap book\ n. 1. A file in which a series of text and graphical images can be saved for subsequent use. 2. A Macintosh system file that can hold a number of text and graphical images for later use. Compare clipboard (definition 1).

 $\mathbf{scratch}^1 \setminus \mathbf{skrach} \setminus n$. A memory region or file used by a program or operating system to hold work in progress temporarily. Created and maintained usually without the end user's knowledge, the scratch is needed only until the current session is terminated, at which time the data is saved or discarded. Also called scratch file. See also temporary file. Compare scrap.

scratch² \skrach\ vb. To erase or discard data. **scratch file** $\$ skrach´ fīl $\$ *n. See* scratch¹.

scratchpad \skrach´pad\ n. **1.** A temporary stor-

age area used by a program or operating system for calculations, data, and other work in progress. See also scratch¹, temporary file. 2. A high-speed memory circuit used to hold small items of data for rapid retrieval. See also cache.

scratchpad memory \skrach`pad mem´ər-ē\ n.

scratchpad RAM \skrach´pad ram`, R-A-M`\ n. Memory used by a central processing unit (CPU) **streaming tape** \stre\u00edmeng tap\u00edn n. See tape (definition 1).

stream-oriented file \strēm or ē-ent-əd fil \ n. A file used to store a fairly continuous series of bits, bytes, or other small, structurally uniform units.

street price \street pris\ n. The actual retail or mail-order price of a consumer hardware or software product. In most cases, the street price is somewhat lower than the "suggested retail price."

stress test \stres´ test\ n. A test of a software or hardware system's functional limits, performed by subjecting the system to extreme conditions, such as peak volumes of data or extremes in temperature.

strikethrough \strik' throo\ n. One or more lines drawn through a selected range of text, usually to show deletion or the intent to delete, as in strikethrough.

string $\$ *n*. A data structure composed of a sequence of characters usually representing human-readable text.

string variable \streng` $var^2 - b \cdot n$. An arbitrary name assigned by the programmer to a string of alphanumeric characters and used to reference that entire string. *See also* string.

strobe $\$ *n*. A timing signal that initiates and coordinates the passage of data, typically through an input/output (I/O) device interface, such as a keyboard or printer.

stroke \strōk\ n. 1. In data entry, a keystroke—a signal to the computer that a key has been pressed.
2. In typography, a line representing part of a letter.
3. In paint programs, a "swipe" of the brush made with the mouse or keyboard in creating a graphic.
4. In display technology, a line created as a vector (a path between two coordinates) on a vector graphics display (as opposed to a line of pixels drawn dot by dot on a raster graphics display).

stroke font $\$ strok font $\$ *n*. A font printed by drawing a combination of lines rather than by filling a shape, as with an outline font. *Compare* outline font.

stroke weight \strok' wāt\ *n*. The width, or thickness, of the lines (strokes) that make up a character. *See also* font.

stroke writer \strōk´ rī tər\ n. In video, a display unit that draws characters and graphic images as sets of strokes—lines or curves connecting

points—rather than as sets of dots, as on a typical raster-scan monitor. *See also* vector graphics.

strong typing \strong` $t\bar{i}$ peng\ n. A characteristic of a programming language that does not allow the program to change the data type of a variable during program execution. *See also* data type, variable. *Compare* weak typing.

structure $\int \frac{1}{n} ds$ of a program, including program flow, hierarchy, and modularity. **2.** A collection of data elements. *See also* data structure.

structured graphics \struk\churd graf\'iks\ *n. See* object-oriented graphics.

structured programming \struk`churd prō´-gram-ēng\ n. Programming that produces programs with clean flow, clear design, and a degree of modularity or hierarchical structure. See also modular programming, object-oriented programming. Compare spaghetti code.

structured query language \struk`churd kwēr´ē lang-wəj, kwâr´ē\ n. A database sublanguage used in querying, updating, and managing relational databases—the de facto standard for database products. *Acronym:* SQL (sē´kwəl, S`Q-L´).

structured walkthrough \struk churd wäk-throo\ n. 1. A meeting of programmers working on different aspects of a software development project, in which the programmers attempt to coordinate the various segments of the overall project. The goals, requirements, and components of the project are systematically reviewed in order to minimize the error rate of the software under development. 2. A method for examining a computer system, including its design and implementation, in a systematic fashion.

STT \S`T-T\ n. See Secure Transaction Technology. **stub** \stub\ n. A routine that contains no executable code and that generally consists of comments describing what will eventually be there; it is used as a placeholder for a routine to be written later. Also called dummy routine. See also top-down programming.

Stuffit \stuf'it\ n. A file compression program originally written for the Apple Macintosh, used for storing a file on one or more disks. Originally shareware, Stuffit is now a commercial product for Macs and PCs that supports multiple compression techniques and allows file viewing. Stuffit files can