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C

CAI *n.* Acronym for computer-aided (or computer-assisted) instruction. An educational program designed to serve as a teaching tool. CAI programs typically use tutorials, drills, and question-and-answer sessions to present a topic and to test the student's comprehension. CAI programs are excellent aids for presenting factual material and for allowing students to pace their learning speed. Subjects and complexity range from beginning arithmetic to advanced mathematics, science, history, computer studies, and specialized topics. *Also called:* CAL, CAT, computer-aided learning, computer-aided teaching, computer-assisted learning, computer-assisted teaching, computer-augmented learning. *See also* I-CASE. *Compare* CBT, CMI.

CAL *n.* 1. Acronym for computer-assisted (or computer-augmented) learning. *See* CAI. 2. Acronym for Common Application Language. An object-oriented communications language for controlling home-networking products. CAL, originally part of the CEBus (Consumer Electronic Bus) standard for home automation, can be implemented with various communication protocols, home-networking standards, and home electronic products. *See also* CEBus, home automation.

calculator *n.* Broadly, any device that performs arithmetic operations on numbers. Sophisticated calculators can be programmed for certain functions and can store values in memory, but they differ from computers in several ways: they have a fixed set of commands, they do not recognize text, they cannot retrieve values stored in a data file, and they cannot find and use values generated by a program such as a spreadsheet.

calendar program *n.* An application program in the form of an electronic calendar, commonly used for highlighting dates and scheduling appointments. Some calendar programs resemble wall calendars, displaying dates in blocks labeled with the days of the week; others display dates day by day and enable the user to enter appointments, notes, and other memoranda. A day-of-the-week type of calendar program could, for example, be used to find out that Christmas 2003 will be on a Saturday. Depending on its capabilities, such a program might cover only the current century, or it might cover hundreds of years and even allow for the change (in 1582) from the Julian to the Gregorian calendar. A calendar/scheduler program might show blocks of dates or, like an appointment book, single days divided into hours or half hours, with room for notes. Some programs allow the user to set an alarm to go off at

an important point in the schedule. Other programs can coordinate the calendars of different people on the same network so that a person entering an appointment into his or her calendar also enters the appointment into a colleague's calendar.

call¹ *n.* In a program, an instruction or statement that transfers program execution to some section of code, such as a subroutine, to perform a specific task. Once the task is performed, program execution resumes at the calling point in the program. *See also* calling sequence.

call² *vb.* 1. To establish a connection through a telecommunications network. 2. To transfer program execution to some section of code (usually a subroutine) while saving the necessary information to allow execution to resume at the calling point when the called section has completed execution. Some languages (such as FORTRAN) have an explicit CALL statement; others (such as C and Pascal) perform a call when the name of a procedure or function appears. In assembly language, there are various names for a CALL instruction. When a subroutine call occurs in any language, one or more values (known as arguments or parameters) are often passed to the subroutine, which can then use and sometimes modify these values. *See also* argument, parameter.

callback or callback security *n.* A security feature used to authenticate users calling in to a network. During callback, the network validates the caller's username and password, hangs up, and then returns the call, usually to a preauthorized number. This security measure usually prevents unauthorized access to an account even if an individual's logon ID and password have been stolen. *See also* authentication, preset-to callback, remote access server.

callback modem *n.* A modem that, instead of answering an incoming call, requires the caller to enter a touch-tone code and hang up so that the modem can return the call. When the modem receives the caller's code, it checks the code against a stored set of phone numbers. If the code matches an authorized number, the modem dials the number and then opens a connection for the original caller. Callback modems are used when communications lines must be available to outside users but data must be protected from unauthorized intruders.

calling sequence *n.* In a program when a subroutine call occurs, an agreement between the calling routine and the called routine on how arguments will be passed and in what order, how values will be returned, and which routine

unit of elements, or the elements can be accessed individually. *See also* array, data structure, type¹ (definition 1).

record² vb. To retain information, usually in a file.

record format n. *See* record structure.

record head n. The device in a tape machine that places data on the tape. In some tape machines, the record head is combined with the read head.

record layout n. The organization of data fields within a record. *See also* record¹.

record length n. The amount of storage space required to contain a record, typically given in bytes. *See also* record¹.

record locking n. A strategy employed in distributed processing and other multiuser situations to prevent more than one user at a time from writing data to a record. *See also* record¹.

record number n. A unique number assigned to a record in a database in order to identify it. A record number can identify an existing record by its position (for example, the tenth record from the beginning of a database), or it can be assigned to the record to serve as a key (for example, the number 00742 assigned to the tenth record from the beginning of the database). *See also* record¹.

record structure n. An ordered list of the fields that compose a record, together with a definition of the domain (acceptable values) of each field. *See also* record¹.

recover vb. 1. To return to a stable condition after some error has occurred. A program recovers from an error by stabilizing itself and resuming execution of instructions without user intervention. 2. To put back into a stable condition. A computer user may be able to recover lost or damaged data by using a program to search for and salvage whatever information remains in storage. A database may be recovered by restoring its integrity after some problem has damaged it, such as abnormal termination of the database management program.

recoverable error n. An error that can be successfully managed by software. For example, when the user enters a number when a letter is required, the program can simply display an error message and prompt the user again.

recovery n. The restoration of lost data or the reconciliation of conflicting or erroneous data after a system failure. Recovery is often achieved using a disk or tape backup and system logs. *See also* backup.

Recreational Software Advisory Council n. An independent, nonprofit organization established in the fall of 1994 by a group of six trade organizations, led by the Software Publishers Association. The Council's goal was to create a new, objective content-labeling rating system for recreational software and other media such as the Internet. *Acronym:* RSAC.

rectangle ad n. An Internet ad format that is larger than a traditional banner ad and is generally inserted directly into page content for greater visibility.

rectifier n. A circuit component that passes current flowing in one direction but stops current flowing in the other direction. Rectifiers are used to convert alternating current to direct current.

recto n. The right-hand page of two facing pages. A recto is characteristically an odd-numbered page. *Compare* verso.

recursion n. The ability of a routine to call itself. Recursion enables certain algorithms to be implemented with small, simple routines, but it does not guarantee speed or efficiency. Erroneous use of recursion can cause a program to run out of stack space during execution, causing the program, and sometimes the entire system, to crash. *See also* call¹ (definition 2), routine.

Recycle Bin n. A folder in Windows 9x, Windows CE, Windows NT, Windows 2000, and Windows XP represented by an icon on the screen resembling a basket decorated with the recycling logo. To remove a file, the user drags its icon to the Recycle Bin. However, a file in the Recycle Bin is not actually deleted from the disk until the user opens the Recycle Bin, selects the file, and presses the Delete key; until then, the user can retrieve it. *Compare* Trash.

Red Book n. 1. The standards documents of the U.S. National Security Agency entitled "Trusted Network Interpretation of the Trusted Computer System Evaluation Criteria (NCSC-TG-005)" and "Trusted Network Interpretation (NCS-TG-011)." These documents define a system of ratings from A1 (most secure) to D (nonsecure), indicating the ability of a computer network to protect sensitive information. *Compare* Orange Book (definition 1). 2. A specifications book written by the Sony Corporation and Philips Corporation and endorsed by ISO, covering audio compact discs. *Compare* Green Book, Orange Book (definition 2). 3. Telecommunications standards published by the CCITT.

red-green-blue n. *See* RGB.

R

continuing through referrals to name servers at lower levels of the hierarchy, the DNS is able to match a “friendly” Internet address, such as microsoft.com, with its numerical counterpart, the IP address. Root servers thus contain the data needed for referrals to name servers at the highest level of the hierarchy. There are 13 root servers in the world, located in the United States, the United Kingdom, Sweden, and Japan. *Also called:* root name server. *See also* DNS (definition 1), DNS server, top-level domain.

root web *n.* The default, top-level web provided by a Web server. To access the root web, you supply the URL of the server without specifying a page name or subweb.

ROT13 encryption *n.* A simple encryption method in which each letter is replaced with the letter of the alphabet 13 letters after the original letter, so that A is replaced by N, and so forth; N, in turn, is replaced by A, and Z is replaced by M. ROT13 encryption is not used to protect messages against unauthorized readers; rather, it is used in newsgroups to encode messages that a user may not want to read, such as sexual jokes or spoilers. Some newsreaders can automatically perform ROT13 encryption and decryption at the touch of a key.

rotary dialing *n.* The signaling system used in telephones with rotary dials, in which each digit is associated with a set number of pulses. During dialing, these pulses, which are audible as series of clicks, momentarily turn the current in the telephone wires on and off. *Also called:* pulse dialing. *Compare* touch tone dialing.

rotate *vb.* 1. To turn a model or other graphical image so that it is viewed at a different angle. 2. To move bits in a register to the left or to the right. The bit that moves out of the end position rotates to the newly vacated position at the opposite end of the register. *Compare* shift.

rotational delay *n.* The time required for a desired disk sector to rotate to the read/write head. *Also called:* rotational latency.

rotational latency *n.* *See* rotational delay.

RO terminal *n.* Short for read-only terminal. A terminal that can receive data but cannot send data. Nearly all printers can be classified as RO terminals.

ROTFL *n.* *See* ROFL.

round *vb.* To shorten the fractional part of a number, increasing the last remaining (rightmost) digit or not, according to whether the deleted portion was over or

under five. For example, 0.3333 rounded to two decimal places is 0.33, and 0.6666 is 0.67. Computer programs often round numbers, sometimes causing confusion when the resulting values do not add up “correctly.” Percentages in a spreadsheet can thus total 99 percent or 101 percent because of rounding.

round robin *n.* A sequential, cyclical allocation of resources to more than one process or device.

roundtripping *n.* The process of converting files from one format to another for viewing or editing and then converting the files back to the original format again. In some cases, roundtripping can involve repeated conversions of the file from one format to another and back. Frequent roundtripping may be a concern because each conversion has the potential to introduce unwanted changes to the file.

routable protocol *n.* A communications protocol that is used to route data from one network to another by means of a network address and a device address. TCP/IP is an example of a routable protocol.

router *n.* An intermediary device on a communications network that expedites message delivery. On a single network linking many computers through a mesh of possible connections, a router receives transmitted messages and forwards them to their correct destinations over the most efficient available route. On an interconnected set of LANs (local area networks)—including those based on differing architectures and protocols—using the same communications protocols, a router serves the somewhat different function of acting as a link between LANs, enabling messages to be sent from one to another. *See also* bridge, gateway.

routine *n.* Any section of code that can be invoked (executed) within a program. A routine usually has a name (identifier) associated with it and is executed by referencing that name. Related terms (which may or may not be exact synonyms, depending on the context) are *function*, *procedure*, and *subroutine*. *See also* function (definition 3), procedure, subroutine.

routing *n.* The process of forwarding packets between networks from source to destination. *See also* dynamic routing, static routing.

Routing Information Protocol *n.* *See* RIP (definition 1).

routing table *n.* In data communications, a table of information that provides network hardware (bridges and routers) with the directions needed to forward packets of data to locations on other networks. The information contained