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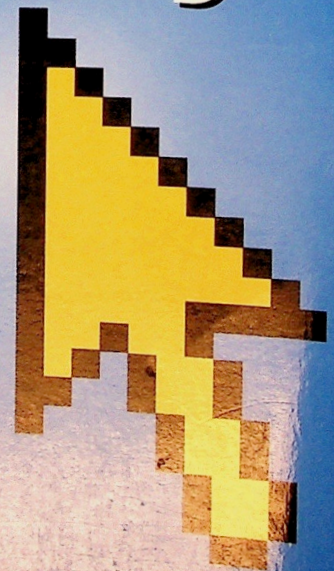
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Microsoft

Computer Dictionary

Fifth Edition

- Fully updated with the latest technologies, terms, and acronyms
- Easy to read, expertly illustrated
- Definitive coverage of hardware, software, the Internet, and more!



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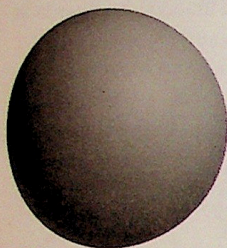
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3-D-rendered
sphere3-D-rendered sphere
with bump mapping

Bump mapping. A 3-D-rendered sphere showing bump mapping.

bundle *vb.* To combine products for sale as a lot. Frequently, operating system software and some widely used applications are bundled with a computer system for sale.

bundled software *n.* 1. Programs sold with a computer as part of a combined hardware/software package. 2. Smaller programs sold with larger programs to increase the latter's functionality or attractiveness.

burn *vb.* 1. To write data electronically into a programmable read-only memory (PROM) chip by using a special programming device known variously as a PROM programmer, PROM blower, or PROM blaster. *Also called:* blast, blow. *See also* PROM. 2. To create read-only memory compact discs (CD-ROMs). 3. To write data electronically on a flash memory chip or a PC Card Type III. Unlike PROM chips or CD-ROM, flash memory media can be burned, or flashed, repeatedly with new information. *Also called:* flash.

burn in *vb.* 1. To keep a new system or device running continuously so that any weak elements or components will fail early and can be found and corrected before the system becomes an integral part of the user's work routine. Such a test is often performed at the factory before a device is shipped. 2. To make a permanent change in the phosphor coating on the inside of a monitor screen by leaving the monitor on and keeping a bright, unchanging image on the screen for extended periods. Such an image will remain visible after the monitor is turned off. Burning in was a danger with older PC monitors; it is no longer a concern with most new PC monitors. *Also called:* ghosting.

burst¹ *n.* Transfer of a block of data all at one time without a break. Certain microprocessors and certain buses have features that support various types of burst transfers. *See also* burst speed (definition 1).

burst² *vb.* To break fanfold continuous-feed paper apart at its perforations, resulting in a stack of separate sheets.

burster *n.* A device used to burst, or break apart at the perforations, fanfold continuous-feed paper.

burst extended-data-out RAM *n.* *See* BEDO DRAM.

burst mode *n.* A method of data transfer in which information is collected and sent as a unit in one high-speed transmission. In burst mode, an input/output device takes control of a multiplexer channel for the time required to send its data. In effect, the multiplexer, which normally merges input from several sources into a single high-speed data stream, becomes a channel dedicated to the needs of one device until the entire transmission has been sent. Burst mode is used both in communications and between devices in a computer system. *See also* burst¹.

burst rate *n.* *See* burst speed (definition 1).

burst speed *n.* 1. The fastest speed at which a device can operate without interruption. For example, various communications devices (as on networks) can send data in bursts, and the speed of such equipment is sometimes measured as the burst speed (the speed of data transfer while the burst is being executed). *Also called:* burst rate. 2. The number of characters per second that a printer can print on one line without a carriage return or linefeed. Burst speed measures the actual speed of printing, without consideration of the time taken to advance paper or to move the print head back to the left margin. Almost always, the speed claimed by the manufacturer is the burst speed. By contrast, *throughput* is the number of characters per second when one or more entire pages of text are being printed and is a more practical measurement of printer speed in real-life situations.

bursty *adj.* Transmitting data in spurts, or bursts, rather than in a continuous stream.

bus *n.* A set of hardware lines (conductors) used for data transfer among the components of a computer system. A bus is essentially a shared highway that connects different parts of the system—including the processor, disk-drive controller, memory, and input/output ports—and enables them to transfer information. The bus consists of specialized groups of lines that carry different types of information. One group of lines carries data; another carries memory addresses (locations) where data items are to be found; yet another carries control signals. Buses are characterized by the number of bits they can transfer at a single

Table E.1 Exclusive OR.

<i>a</i>	<i>b</i>	<i>a XOR b</i>
0	0	0
0	1	1
1	0	1
1	1	0

.exe *n.* In MS-DOS, a filename extension that indicates that a file is an executable program. To run an executable program, the user types the filename without the .exe extension at the prompt and presses Enter. *See also* executable program.

executable¹ *adj.* Of, pertaining to, or being a program file that can be run. Executable files have extensions such as .bat, .com, and .exe.

executable² *n.* A program file that can be run, such as file0.bat, file1.exe, or file2.com.

executable program *n.* A program that can be run. The term usually applies to a compiled program translated into machine code in a format that can be loaded into memory and run by a computer's processor. In interpreter languages, an executable program can be source code in the proper format. *See also* code (definition 1), compiler (definition 2), computer program, interpreter, source code.

execute *vb.* To perform an instruction. In programming, execution implies loading the machine code of the program into memory and then performing the instructions.

execute in place *n.* The process of executing code directly from ROM, rather than loading it from RAM first. Executing the code in place, instead of copying the code into RAM for execution, saves system resources. Applications in other file systems, such as on a PC Card storage device, cannot be executed in this way. *Acronym:* XIP.

execution time *n.* The time, measured in clock ticks (pulses of a computer's internal timer), required by a microprocessor to decode and carry out an instruction after it is fetched from memory. *Also called:* E-time. *See also* instruction time.

executive *n.* The set of kernel-mode components that form the base operating system for Microsoft Windows NT or later. *See also* operating system.

executive information system *n.* A set of tools designed to organize information into categories and reports. Because it emphasizes information, an executive information system differs from a decision support system

(DSS), which is designed for analysis and decision making. *Acronym:* EIS. *Compare* decision support system.

exerciser *n.* A program that exercises a piece of hardware or software by running it through a large set of operations.

exit *vb.* In a program, to move from the called routine back to the calling routine. A routine can have more than one exit point, thus allowing termination based on various conditions.

expanded *adj.* A font style that sets characters farther apart than the normal spacing. *Compare* condensed.

expanded memory *n.* A type of memory, up to 8 MB, that can be added to IBM PCs. Its use is defined by the Expanded Memory Specification (EMS). Expanded memory is not accessible to programs in MS-DOS, so the Expanded Memory Manager (EMM) maps pages (blocks) of bytes from expanded memory into page frames in accessible memory areas. Expanded memory is not needed in Windows 9x, all versions of Windows NT, and Windows 2000. *See also* EEMS, EMS, Expanded Memory Manager, page frame.

Expanded Memory Manager *n.* A driver that implements the software portion of the Expanded Memory Specification (EMS) to make expanded memory in IBM and compatible PCs accessible. *Acronym:* EMM. *See also* EMS, expanded memory, extended memory.

Expanded Memory Specification *n.* *See* EMS.

expansion *n.* A way of increasing a computer's capabilities by adding hardware that performs tasks that are not part of the basic system. Expansion is usually achieved by plugging printed circuit boards (expansion boards) into openings (expansion slots) inside the computer. *See also* expansion board, expansion slot, open architecture (definition 2), PC Card, PCMCIA slot.

expansion board *n.* A circuit board that is plugged into a computer's bus (main data transfer path) to add extra functions or resources to the computer. Typical expansion boards add memory, disk drive controllers, video support, parallel and serial ports, and internal modems. For laptops and other portable computers, expansion boards come in credit card-sized devices called PC Cards that plug into a slot in the side or back of the computer. *Also called:* expansion board, extender board. *See also* expansion slot, PC Card, PCMCIA slot.

expansion bus *n.* A group of control lines that provide a buffered interface to devices. These devices can be located

soft patch *n.* A fix or modification performed only while the code being patched is loaded into memory, so that the executable or object file is not modified in any way. *See also patch¹.*

soft return *n.* A line break inserted in a document by a word processor when the next word in the current line of text would cause the line to overflow into the margin—a movable line break. *See also wordwrap. Compare hard return.*

soft-sectored disk *n.* A disk, especially a floppy disk, whose sectors have been marked with recorded data marks rather than punched holes. *See also index hole. Compare hard-sectored disk.*

software *n.* Computer programs; instructions that make hardware work. Two main types of software are system software (operating systems), which controls the workings of the computer, and applications, such as word processing programs, spreadsheets, and databases, which perform the tasks for which people use computers. Two additional categories, which are neither system nor application software but contain elements of both, are network software, which enables groups of computers to communicate, and language software, which provides programmers with the tools they need to write programs. In addition to these task-based categories, several types of software are described based on their method of distribution. These include packaged software (canned programs), sold primarily through retail outlets; freeware and public domain software, which are distributed free of charge; shareware, which is also distributed free of charge, although users are requested to pay a small registration fee for continued use of the program; and vaporware, software that is announced by a company or individuals but either never makes it to market or is very late. *See also application, canned software, freeware, network software, operating system, shareware, system software, vaporware. Compare firmware, hardware, liveware.*

Software & Information Industry Association *n.* *See SIIA.*

software-based modem *n.* A modem that uses a general-purpose, reprogrammable digital signal processor chip and RAM-based program memory rather than a dedicated chip with the modem functions burned into the silicon. A software-based modem can be reconfigured to update and change the modem's features and functions.

software bloat *n.* A software condition caused by the addition of excessive number of possibly unnecessary features and functions as new versions of the software are released. Software bloat is generally assumed to result in long loading times and inordinate resource (memory and storage) requirements. *See also bloatware, creeping featurism.*

software conversion *n.* Changing or moving a program designed to run on one computer to run on another. Usually this involves detailed (professional) work on the program itself.

software-dependent *adj.* Of, pertaining to, or being a computer or device that is tied to a particular program or set of programs developed for it.

software development kit *n.* *See developer's kit.*

software engineer *n.* **1.** In general, one who works at the code level with software. Although such engineering can be considered to encompass everything from software design to management and testing, the term is generally considered more or less synonymous with *programmer*—one who actually writes the code. **2.** *See developer.*

software engineering *n.* The design and development of software. *See also programming.*

software handshake *n.* A handshake that consists of signals transmitted over the same wires used to transfer the data, as in modem-to-modem communications over telephone lines, rather than signals transmitted over special wires. *See also handshake.*

software house *n.* An organization that develops and supports software for its customers.

software IC *n.* *See software integrated circuit.*

software integrated circuit *n.* An existing software module that can be designed into a program, much as an integrated circuit can be designed into a logic board. *Abbreviation:* software IC. *See also abstract data type, module (definition 1), object-oriented programming.*

software interrupt *n.* A program-generated interrupt that stops current processing in order to request a service provided by an interrupt handler (a separate set of instructions designed to perform the task required). *Also called:* trap.

software package *n.* A program sold to the public, ready to run and containing all necessary components and documentation.

software piracy *n.* *See piracy.*

S

T

T prefix *See* **tera-**.

T1 or T-1 *n.* A high-speed communications line that can handle digital communications and Internet access at the rate 1.544 Mbps (megabits per second). Although originally designed by AT&T to carry multiple voice calls over standard twisted-pair telephone wiring, this high-bandwidth telephone line can also transmit text and images. T1 speed is attained through multiplexing 24 separate 64 Kbps channels into a single data stream. T1 lines are commonly used by larger organizations for Internet connectivity. *Also called:* T-1 carrier. *See also* T-carrier. *Compare* fractional T1, T2, T3, T4.

T.120 standard *n.* A family of International Telecommunications Union (ITU) specifications for multipoint data communications services within computer applications, such as conferencing and multipoint file transfer.

T2 or T-2 *n.* A T-carrier that can handle 6.312 Mbps (megabits per second) or 96 voice channels. *See also* T-carrier. *Compare* T1, T3, T4.

T3 or T-3 *n.* A T-carrier that can handle 44.736 Mbps (megabits per second) or 672 voice channels. *See also* T-carrier. *Compare* T1, T2, T4.

T4 or T-4 *n.* A T-carrier that can handle 274.176 Mbps (megabits per second) or 4032 voice channels. *See also* T-carrier. *Compare* T1, T2, T3.

TA *n.* *See* terminal adapter.

tab character *n.* A character used to align lines and columns on screen and in print. Although a tab is visually indistinguishable from a series of blank spaces in most programs, the tab character and the space character are different to a computer. A tab is a single character and therefore can be added, deleted, or overtyped with a single keystroke. The ASCII coding scheme includes two codes for tab characters: a horizontal tab for spacing across the screen or page and a vertical tab for spacing down the screen or page. *See also* Tab key.

Tab key *n.* A key, often labeled with both a left-pointing and a right-pointing arrow, that traditionally (as in word processing) is used to insert tab characters into a docu-

ment. In other applications, such as menu-driven programs, the Tab key is often used to move the on-screen highlight from place to place. Many database and spreadsheet programs allow the user to press the Tab key to move around within a record or between cells. The word *tab* is short for "tabulator," which was the name given to this key on typewriters, where it was used in creating tables. *See also* tab character.

table *n.* **1.** In programming, a data structure usually consisting of a list of entries, each entry being identified by a unique key and containing a set of related values. A table is often implemented as an array of records, a linked list, or (in more primitive languages) several arrays of different data types, all using a common indexing scheme. *See also* array, list, record¹. **2.** In relational databases, a data structure characterized by rows and columns, with data occupying or potentially occupying each cell formed by a row-column intersection. The table is the underlying structure of a relation. *See also* relational database. **3.** In word processing, desktop publishing, and in HTML documents, a block of text formatted in aligned rows and columns.

table lookup *n.* The process of using a known value to search for data in a previously constructed table of values—for example, using a purchase price to search a tax table for the appropriate sales tax. *See also* lookup.

tablet *n.* *See* graphics tablet.

Tablet PC *n.* A touch-sensitive computer screen tablet designed by Microsoft for the entry of handwritten text using a stylus or digital pen. The Tablet PC runs Windows applications and can function as a primary personal computer as well as a note-taking device.

tabulate *vb.* **1.** To total a row or column of numbers. **2.** To arrange information in table form.

TACACS *n.* Acronym for **Terminal Access Controller Access Control System**. A network access technique in which users log into a single centralized server that contains a database of authorized accounts. After the access server authenticates the user, it forwards the login information to the data server requested by the user. *See also* authentication, server (definition 2).

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