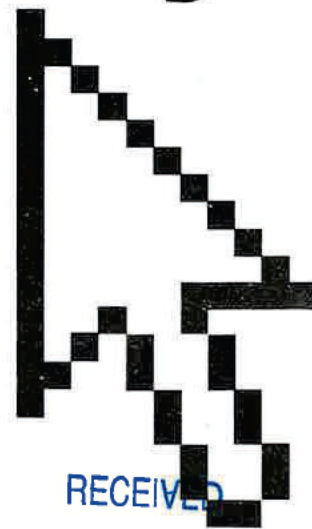


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Computer Dictionary

Fifth Edition



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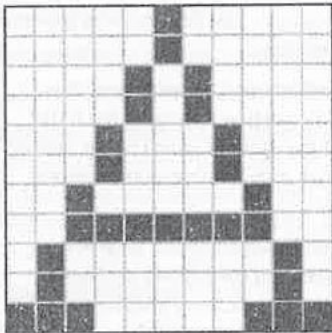
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C

character printer *n.* 1. A printer that operates by printing one character at a time, such as a standard dot-matrix printer or a daisy-wheel printer. *Compare* line printer, page printer. 2. A printer that cannot print graphics, such as a daisy-wheel printer or even a dot-matrix or laser printer that lacks a graphics mode. Such a printer simply receives character codes from the controlling system and prints the appropriate characters. *Compare* graphics printer.

character recognition *n.* The process of applying pattern-matching methods to character shapes that have been read into a computer to determine which alphanumeric characters or punctuation marks the shapes represent. Because different typefaces and text treatments, such as bold and italic, can make big differences in the way characters are shaped, character recognition can be prone to error. Some systems work only with known typefaces and sizes, with no text treatments. These systems achieve very high accuracy levels, but they can work only with text specifically printed for them. Other systems use extremely sophisticated pattern-matching techniques to learn new typefaces and sizes, achieving fairly good accuracy. *See also* magnetic-ink character recognition, optical character recognition, pattern recognition (definition 1).

character rectangle *n.* The space taken up by the graphical representation (bit map) of a character. *See the illustration.* *See also* bit map.



Character rectangle.

character set *n.* A grouping of alphabetic, numeric, and other characters that have some relationship in common. For example, the standard ASCII character set includes letters, numbers, symbols, and control codes that make up the ASCII coding scheme.

characters per inch *n.* A measurement for the number of characters of a particular size and font that can fit into a line one inch long. This number is affected by two attributes of the type: its point size and the width of the letters in the particular font being measured. In monospace fonts, characters have a constant width; in proportional fonts, characters have varying widths. Thus, measurements of the number of characters per inch must be averaged. *Acronym:* cpi. *See also* monospace font, pitch (definition 1), proportional font.

characters per second *n.* 1. A measure of the speed of a nonlaser printer, such as a dot-matrix or an ink-jet printer. 2. A measure of the rate at which a device, such as a disk drive, can transfer data. In serial communications, the speed of a modem in bits per second can generally be divided by 10 for a rough determination of the number of characters per second transmitted. *Acronym:* CPS.

character string *n.* A set of characters treated as a unit and interpreted by a computer as text rather than numbers. A character string can contain any sequence of elements from a given character set, such as letters, numbers, control characters, and extended ASCII characters. *Also called:* string. *See also* ASCII, control character, extended ASCII.

character style *n.* Any attribute, such as boldface, italic, underline, or small caps, applied to a character. Depending on the operating system or program considered, the range of character styles of text might or might not include the font, which refers to the design of a group of characters in a given size. *See also* font family.

character user interface *n.* A user interface that displays only text characters. *Acronym:* CUI. *See also* user interface. *Compare* graphical user interface.

charge *n.* A property of subatomic particles, which can have either a negative charge or a positive charge. In electronics, a charge consists of either an excess of electrons (a negative charge) or a deficiency of electrons (a positive charge). The unit of charge is the *coulomb*, which corresponds to 6.26×10^{18} electrons.

charge-coupled device *n.* A device in which individual semiconductor components are connected so that the electrical charge at the output of one device provides the input to the next. The light-detecting component of digital cameras and many video cameras is a charge-coupled device. *Acronym:* CCD.

cube *n.* An OLAP data structure. A cube contains dimensions (like Country/Region/City) and data fields (like Sales Amount). Dimensions organize types of data into hierarchies with levels of detail, and data fields measure quantities.

Cube *n.* A personal computer design introduced by Apple in 2000. The Cube featured a unique 8-by-8-by-8-inch transparent curved cube shape with the power supply outside the chassis to create a small and extremely quiet computer. The Cube offered the same G4 processor and features available on other Macintosh computers, but with fewer expansion options. Although the unique design drew notice for innovation, Apple discontinued manufacture of the Cube in 2001 after only one year of production.

CUI *n.* See character user interface.

CUL8R *n.* A fanciful shorthand notation meaning "See you later," sometimes seen in Internet discussion groups as a farewell by a participant temporarily leaving the group.

curly quotes *n.* See smart quotes.

current *n.* The flow of electric charge through a conductor, or the amount of such flow. Current is measured in amperes. See also ampere, coulomb. Compare volt.

current cell *n.* See active cell.

current directory *n.* The disk directory at the end of the active directory path—the directory that is searched first for a requested file, and the one in which a new file is stored unless another directory is specified. See also path (definition 2).

current drain *n.* 1. The current taken from a voltage source by its load (the object receiving the current). Also called: drain. 2. The load itself. For example, a flashlight bulb takes current from the battery; this current is the drain on the battery, and the bulb itself may also be called the drain.

current location counter *n.* See program counter.

current-mode logic *n.* A type of circuit design in which the transistors operate in unsaturated (amplifying) mode.

cursor *n.* 1. A special on-screen indicator, such as a blinking underline or rectangle, that marks the place at which a keystroke will appear when typed. 2. In reference to digitizing tablets, the stylus (pointer or "pen"). 3. In applications and operating systems that use a mouse, the arrow or other on-screen icon that moves with movements of the mouse.

cursor blink speed *n.* The rate at which a cursor on a screen flashes on and off. See also cursor (definition 1).

cursor control *n.* The ability of a computer user to move the cursor to a specified location on the screen. Keys dedicated to cursor control include the left, right, up, and down arrow keys and certain others, such as Backspace, Home, and End. Pointing devices such as the mouse can also control cursor movements, often helping the user move the cursor long distances from place to place in a document.

cursor key *n.* See arrow key.

CUSEeMe *n.* A video conferencing program developed at Cornell University. It was the first program to give Windows and Mac OS users the ability to engage in real-time video conferencing over the Internet, but it requires a lot of bandwidth (at least 128 Kbps speed) to function properly.

custom control *n.* A control authored by a user or a third-party software vendor that does not belong to the .NET Framework class library. This is a generic term that includes user controls. A custom server control is used in Web Forms (ASP.NET pages). A custom client control is used in Windows Forms applications.

customize *vb.* To modify or assemble hardware or software to suit the needs or preferences of the user. Traditionally, hardware customizing ranges from designing an electronic circuit for a particular customer to putting together a computer facility tailored to a customer's special need. Software customizing usually means modifying or designing software for a specific customer.

custom queuing *n.* A form of queuing on Cisco routers where the wide area network (WAN) link is divided into micropipes based on a percentage of the total bandwidth available on the pipe. See also bandwidth reservation.

custom software *n.* Any type of program developed for a particular client or to address a special need. Certain products, such as dBASE and Lotus 1-2-3, are designed to provide the flexibility and tools required for producing tailor-made applications. See also CASE.

cut *vb.* To remove part of a document, usually placing it temporarily in memory so that the cut portion can be inserted (pasted) elsewhere. Compare delete.

cut and paste *n.* A procedure in which the computer acts as an electronic combination of scissors and glue for reorganizing a document or for compiling a document from different sources. In cut and paste, the portion of a document

C

EIDE or **E-IDE** *n.* Acronym for **Enhanced Integrated Drive Electronics**. An extension of the IDE standard, EIDE is a hardware interface standard for disk drive designs that house control circuits in the drives themselves. It allows for standardized interfaces to the system bus while providing for advanced features, such as burst data transfer and direct data access. EIDE accommodates drives as large as 8.4 gigabytes (IDE supports up to 528 megabytes). It supports the ATA-2 interface, which permits transfer rates up to 13.3 megabytes per second (IDE permits up to 3.3 megabytes per second), and the ATAPI interface, which connects drives for CD-ROMs, optical discs and tapes, and multiple channels. Most PCs have EIDE drives, which are cheaper than SCSI drives and provide much of the same functionality. *See also* IDE, SCSI.

Eiffel *n.* An advanced object-oriented programming language with a syntax similar to C, developed by Bertrand Meyer in 1988. Eiffel runs on MS-DOS, OS/2, and UNIX. Its major design features are the ability to use modules in multiple programs and software extensibility.

Eiffel# *n.* Pronounced "Eiffel Sharp." A subset language of Eiffel specifically designed to target the .NET Framework and embody the full extent of Design by Contract. *See also* Design by Contract.

eight dot three *n.* *See* 8.3.

EIP *n.* *See* enterprise information portal.

EIS *n.* *See* executive information system.

EISA *n.* Acronym for **Extended Industry Standard Architecture**. A bus standard for the connection of add-on cards to a PC motherboard, such as video cards, internal modems, sound cards, drive controllers, and cards that support other peripherals. EISA was introduced in 1988 by a consortium of nine computer industry companies. The companies—AST Research, Compaq, Epson, Hewlett-Packard, NEC, Olivetti, Tandy, Wyse, and Zenith—were referred to collectively as "the Gang of Nine." EISA maintains compatibility with the earlier Industry Standard Architecture (ISA) but provides for additional features introduced by IBM in its Micro Chan-

nel Architecture bus standard. EISA has a 32-bit data path, and it uses connectors that can accept ISA cards. However, EISA cards are compatible only with EISA systems. EISA can operate at much higher frequencies than the ISA bus and provides much faster data throughput than ISA. *See also* ISA, Micro Channel Architecture.

EJB *n.* *See* Enterprise JavaBeans.

electroluminescent *adj.* Giving off light when electric current is applied. Electroluminescent panels are used in portable computers to backlight the liquid crystal displays. A thin phosphor layer is sandwiched between two thin electrode panels, one of which is nearly transparent. *See also* liquid crystal display.

electroluminescent display *n.* A type of flat-panel display used in laptops in which a thin phosphor layer is set between vertical and horizontal electrodes. These electrodes form xy-coordinates; when a vertical and a horizontal electrode are charged, the phosphor at their intersection emits light. Electroluminescent displays provide a sharp, clear image and a wide viewing angle. They were replaced by active matrix LCD screens. *See also* flat-panel display, liquid crystal display, passive-matrix display. *Compare* active-matrix display.

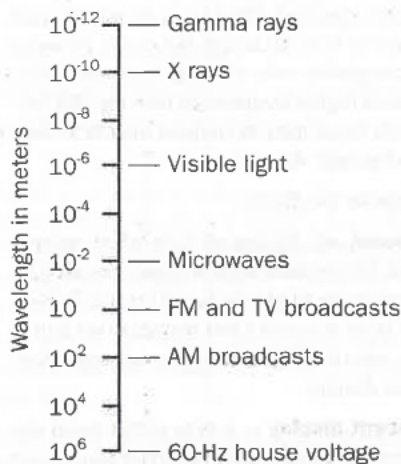
electrolysis *n.* A process in which a chemical compound is broken down into its constituent parts by passing an electric current through it.

electromagnet *n.* A device that creates a magnetic field when electric current passes through it. An electromagnet typically contains an iron or steel core with wire wrapped around it. Current is passed through the wire, producing a magnetic field. Electromagnets are used in disk drives to record data onto the disk surface.

electromagnetic radiation *n.* The propagation of a magnetic field through space. Radio waves, light, and X rays are examples of electromagnetic radiation, all traveling at the speed of light.

electromagnetic spectrum *n.* The range of frequencies of electromagnetic radiation. In theory, the spectrum's range is infinite. *See* the illustration.

E

**Electromagnetic spectrum.**

electromotive force *n.* The force that causes movement in charge carriers (the electrons) in a conductor. *Acronym:* EMF. *Also called:* potential, voltage. *See also* ampere, coulomb.

electron beam *n.* A stream of electrons moving in one direction. An electron beam is used in a cathode-ray tube (CRT) to produce an image as it is passed across the phosphor coating inside the tube. *See also* CRT.

electron gun *n.* A device that produces an electron beam, typically found in television or computer monitors. *See also* CRT.

electronic bulletin board *n.* *See* BBS (definition 1).

electronic cash *n.* *See* e-money.

electronic circuit *n.* *See* circuit.

electronic commerce *n.* *See* e-commerce.

Electronic Commerce Modeling Language *n.* A computer language developed by leading e-commerce companies as a standard for inputting e-wallet information into the payment fields of Web sites. This allows for one-click transfer of e-wallet information at compatible Web sites. *Acronym:* ECML.

electronic credit *n.* A form of electronic commerce involving credit card transactions carried out over the Internet. *Also called:* e-credit. *See also* e-commerce.

electronic data interchange *n.* *See* EDI.

electronic data processing *n.* *See* data processing.

electronic form *n.* *See* e-form.

Electronic Frontier Foundation *n.* A public advocacy organization dedicated to the defense of civil liberties for computer users. The organization was founded in 1990 by Mitchell Kapor and John Perry Barlow as a response to U.S. Secret Service raids on hackers. *Acronym:* EFF.

electronic funds transfer *n.* The transfer of money via automated teller machine, telephone lines, or Internet connection. Examples of electronic fund transfers include using a credit card to make purchases from an e-commerce site, or using an automated teller machine or automated telephone banking system to move funds between bank accounts. *Acronym:* EFT.

Electronic Industries Association *n.* *See* EIA.

electronic journal *n.* *See* journal.

electronic mail *n.* *See* e-mail¹.

electronic mail services *n.* Services that allow users, administrators, or daemons to send, receive, and process e-mail. *See also* daemon.

electronic mall *n.* A virtual collection of online businesses that affiliate with the intention of increasing the exposure of each business through the fellow businesses.

electronic money *n.* *See* e-money.

electronic music *n.* Music created with computers and electronic devices. *See also* MIDI, synthesizer.

electronic office *n.* A term used especially in the late 1970s to mid-1980s to refer to a hypothetical paperless work environment to be brought about by the use of computers and communications devices.

electronic paper *n.* Technology allowing a computer display to imitate the look and feel of traditional paper media. Electronic paper consists of thin, flexible sheets of plastic containing millions of small beads called microcapsules. Each microcapsule contains both a black and a white pigment and displays the proper color in response to an electrical charge. It retains this pattern until a new screen of text or images is requested.

electronic photography *n.* *See* digital photography.

Electronic Privacy Information Center *n.* *See* EPIC.

electronic publishing *n.* A general term for distributing information via electronic media, such as communications networks or CD-ROM.

ratings for computer games and other interactive products such as Web sites, online games, and interactive chat.

e-tail *n.* See e-commerce.

e-text *n.* Short for **electronic text**. A book or other text-based work that is available on line in an electronic media format. An e-text can be read online or downloaded to a user's computer for offline reading. See also e-zine.

Ethernet *n.* **1.** The IEEE 802.3 standard for contention networks. Ethernet uses a bus or star topology and relies on the form of access known as Carrier Sense Multiple Access with Collision Detection (CSMA/CD) to regulate communication line traffic. Network nodes are linked by coaxial cable, by fiberoptic cable, or by twisted-pair wiring. Data is transmitted in variable-length frames containing delivery and control information and up to 1500 bytes of data. The Ethernet standard provides for baseband transmission at 10 megabits (10 million bits) per second and is available in various forms, including those known as Thin Ethernet, Thick Ethernet, 10Base2, 10Base5, 10Base-F, and 10Base-T. The IEEE standard dubbed 802.3z, or Gigabit Ethernet, operates at 10 times 100 Mbps speed. See also ALOHAnet, baseband, bus network, coaxial cable, contention, CSMA/CD, Gigabit Ethernet, IEEE 802 standards, twisted-pair cable. **2.** A widely used local area network system developed by Xerox in 1976, from which the IEEE 802.3 standard was developed.

Ethernet/802.3 *n.* The IEEE standard for 10- or 100-Mbps transmissions over an Ethernet network. Ethernet/802.3 defines both hardware and data packet construction specifications. See also Ethernet.

E-time *n.* See execution time.

etiquette *n.* See netiquette.

ETX *n.* See end-of-text.

Eudora *n.* An e-mail client program originally developed as freeware for Macintosh computers by Steve Dorner at the University of Illinois, now maintained in both freeware and commercial versions for both Macintosh and Windows by Qualcomm, Inc.

EULA *n.* See End-User License Agreement.

Euphoria *n.* Acronym for End User Programming with Hierarchical Objects for Robust Interpreted Applications. An interpreted programming language intended for general application development and game programming on MS-DOS, Windows, and Linux platforms.

European Computer Manufacturers Association *n.* See ECMA.

European Laboratory for Particle Physics *n.* See CERN.

EUV lithography *n.* Acronym for Extreme UltraViolet lithography. Manufacturing process allowing smaller circuits to be etched onto chips than is possible with traditional lithographic techniques. With this process, it is possible to economically produce chips that are much faster than those that are created using traditional processes. In EUV lithography, the image of a map of circuits to appear on a chip is bounced off a series of mirrors that condense the image. The condensed image is projected onto wafers containing layers of metal, silicon, and photo-sensitive material. Because EUV light has a short wavelength, extremely intricate circuit patterns can be created on the wafers.

evaluation *n.* The determination, by a program, of the value of an expression or the action that a program statement specifies. Evaluation can take place at compile time or at run time.

even parity *n.* See parity.

event *n.* An action or occurrence, often generated by the user, to which a program might respond—for example, key presses, button clicks, or mouse movements. See also event-driven programming.

event-driven *adj.* Of, pertaining to, or being software that accomplishes its purpose by responding to externally caused events, such as the user pressing a key or clicking a button on a mouse. For example, an event-driven data entry form will allow the user to click on and edit any field at any time rather than forcing the user to step through a fixed sequence of prompts.

event-driven processing *n.* A program feature belonging to more advanced operating-system architectures such as the Apple Macintosh operating system, Windows, and UNIX. In times past, programs were required to interrogate, and effectively anticipate, every device that was expected to interact with the program, such as the keyboard, mouse, printer, disk drive, and serial port. Often, unless sophisticated programming techniques were used, one of two events happening at the same instant would be lost. Event processing solves this problem through the creation and maintenance of an event queue. Most common events that occur are appended to the event queue for the program to process in turn; however, certain types of events can preempt others if they have a higher priority.

guage, PostScript uses English-like commands to control page layout and to load and scale outline fonts. Adobe Systems is also responsible for Display PostScript, a graphics language for computer displays that gives users of both PostScript and Display PostScript absolute WYSIWYG (what-you-see-is-what-you-get), which is difficult when different methods are used for displaying and printing. *See also* outline font, page-description language.

PostScript font *n.* A font defined in terms of the PostScript page-description language rules and intended to be printed on a PostScript-compatible printer. PostScript fonts are distinguished from bitmapped fonts by their smoothness, detail, and faithfulness to standards of quality established in the typographic industry. *See also* PostScript. *Compare* screen font.

pot *n.* *See* potentiometer.

potential *n.* *See* electromotive force.

potentiometer *n.* A circuit element that can be adjusted to provide varying amounts of resistance. The twist-knob and slider-type volume controls on many radios and television sets are potentiometers. *Also called:* pot.

POTS *n.* Acronym for Plain Old Telephone Service. Basic dialup telephone connections to the public switched network without any added features or functions. A POTS line is nothing but a phone line connected to a simple, single-line telephone instrument.

pour *vb.* To send a file or the output from a program to another file or to a device using a pipe. *See also* pipe (definition 1).

power *n.* **1.** In mathematics, the number of times a value is multiplied by itself—for example, 10 to the third power means 10 times 10 times 10. **2.** In computing, the electricity used to run a computer. **3.** The speed at which a computer performs and the availability of various features. *See also* computer power.

PowerBook *n.* Any of several computers in the family of portable Macintosh computers made by Apple.

power conditioning *n.* A feature of uninterruptible power supply (UPS) that removes spikes, surges, sags, and

noise from the power supply. *Also called:* line conditioning. *See also* UPS.

power down *vb.* To shut down (a computer); to turn off the power.

power failure *n.* Loss of electricity, which causes a loss of unsaved data in a computer's random access memory (RAM) if no backup power supply is connected to the machine. *Compare* surge.

Power Mac *n.* *See* Power Macintosh.

Power Macintosh *n.* A Macintosh computer based on the PowerPC processor. The first Power Macintoshes, 6100/60, 7100/66, and 8100/80, were unveiled in 1994. Several upgraded versions followed, and in early 1999 the G3, a PowerPC 750, was released. This was followed later in the year with the unveiling of the Power Macintosh G4. The Power Mac G4 uses the PowerPC 7400 processor and features significant boosts in processing speed. The Power Mac G4 uses Apple's Velocity Engine to process information in 128-bit chunks, allowing sustained performance in excess of one gigaflop. *Also called:* Power Mac. *See also* PowerPC.

power management *n.* The regulation of power consumption on a computer, especially a portable battery-operated device such as a laptop. Power management reduces power to certain components, such as the screen and CPU, to use power efficiently and extend battery life. *See also* ACPI, Advanced Power Management.

Power-on key *n.* A special key on the Apple ADB and Extended keyboards used for turning on a Macintosh II. The Power-on key is marked with a left-pointing triangle and is used in lieu of the on/off switch. There is no Power-off key; the system is shut down by choosing the Shut Down command from the Special menu.

power-on self test *n.* A set of routines stored in a computer's read-only memory (ROM) that tests various system components such as RAM, the disk drives, and the keyboard to see whether they are properly connected and operating. If problems are found, these routines alert the user by sounding a series of beeps or displaying a message, often accompanied by a diagnostic numeric value, to

P

volatile memory *n.* 1. Memory, such as RAM, that loses its data when the power is shut off. *Compare* nonvolatile memory. 2. Memory used by a program that can change independently of the program, such as memory shared by another program or by an interrupt service routine.

volt *n.* The unit used to measure potential difference or electromotive force. One volt is defined as the potential across which 1 coulomb of charge will do 1 joule of work, or the potential generated by 1 ampere of current flowing through 1 ohm of resistance. *See also* electromotive force.

voltage *n.* *See* electromotive force.

voltage regulator *n.* A circuit or circuit component that maintains a constant output voltage despite variations in input voltage.

volts alternating current *n.* The measure of the peak-to-peak voltage swing of an electrical signal. *Acronym:* VAC.

volume *n.* 1. A disk or tape that stores computer data. Sometimes, large hard disks are divided into several volumes, each of which is treated as a separate disk. 2. The loudness of an audio signal.

volume label *n.* A name for a disk or tape. MS-DOS systems, which seldom use disk names except in directory listings, use the term *volume label*. Apple Macintosh systems, which often refer to disks by name, use the term *volume name*.

volume name *n.* *See* volume label.

volume reference number *n.* *See* volume serial number.

volume serial number *n.* The optional identifying volume number of a disk or tape. MS-DOS systems use the term *volume serial number*. Apple Macintosh systems use the term *volume reference number*. A volume serial number is not the same as a volume label or volume name. *Compare* volume label.

VON *n.* Acronym for voice on the net. A broad category of hardware and software technology for real-time voice and video transmission over the Internet. The term was coined by Jeff Pulver, who formed a group called the VON Coalition, which opposes regulation of VON technology and promotes VON to the public.

von Neumann architecture *n.* The most common structure for computer systems, attributed to the mathematician John von Neumann. It uses the concept of a program that can be permanently stored in a computer and manipulated or made self-modifying through machine-based instructions. Sequential processing is characteristic of von Neu-

mann architecture. Parallel architectures have evolved to improve on the encumbrances of sequential instructions. *See also* parallel computer.

von Neumann bottleneck *n.* Competition between data and instructions for CPU time. Mathematician John von Neumann was the first to show that a computer based on architecture linking a single processor with memory will actually spend more time retrieving data from memory than processing it. The bottleneck arises when the processor has to trade off between executing a large number of instructions per second and reading in a large amount of data in the same time. *See also* CPU.

VPD *n.* Acronym for virtual printer device driver. *See* virtual device driver.

VPN *n.* *See* virtual private network.

VR *n.* *See* virtual reality.

VRAM *n.* *See* video RAM.

VRC *n.* Acronym for vertical redundancy check. A method for checking the accuracy of transmitted data. VRC generates an extra bit (parity bit) for each character transmitted. The parity bit indicates whether the character contains an odd or an even number of 1 bits. If its value does not match the type of the character, that character is assumed to be incorrectly transmitted. *See also* parity. *Compare* LRC.

VRML *n.* Acronym for Virtual Reality Modeling Language. A scene description language for creating 3-D interactive Web graphics similar to those found in some video games, allowing the user to "move around" within a graphic image and interact with objects. VRML, a subset of Silicon Graphics' Inventor File Format (ASCII), was created by Mark Pesce and Tony Parisi in 1994. VRML files can be created in a text editor, although CAD packages, modeling and animation packages, and VRML authoring software are the tools preferred by most VRML authors. VRML files reside on an HTTP server; links to these files can be embedded in HTML documents, or users can access the VRML files directly. To view VRML Web pages, users need a VRML-enabled browser or a VRML plug-in for Internet Explorer or Netscape Navigator. *See also* 3-D graphic, HTML document, HTTP server (definition 1).

v-root *n.* *See* virtual root.

V series *n.* The series of ITU-T (formerly CCITT) recommendations relating to modems and modem communications over the public phone system, including signaling, coding, and circuit characteristics. *See* the table.