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will power portable devices such as laptop computers and cellular phones, to generate electricity and heat, and to replace automotive combustion engines.

full adder *n.* A logic circuit used in a computer to add binary digits. A full adder accepts three digital inputs (bits): 2 bits to be added and a carry bit from another digit position. It produces two outputs: a sum and a carry bit. Full adders are combined with two-input circuits called *half adders* to enable computers to add 4 or more bits at a time. *See also* carry bit, half adder.

full-duplex *adj.* *See* duplex¹.

full-duplex transmission *n.* *See* duplex² (definition 1).

full justification *n.* In typesetting, word processing, and desktop publishing, the process of aligning text evenly along both the left and right margins of a column or page. *See also* justify (definition 2).

full-motion video *n.* Digital video that is displayed at 30 frames per second (fps). *Compare* freeze-frame video.

full-motion video adapter *n.* An expansion card for a computer that can convert motion video from devices such as a video cassette recorder to a digital format that a computer can use such as AVI, MPEG, or Motion JPEG. *See also* AVI, Motion JPEG, MPEG.

full name *n.* A user's complete name, usually consisting of last name, first name, and middle initial. The full name is often maintained by the operating system as part of the information that identifies and defines a user account. *See also* user account.

full-page display *n.* A video display with sufficient size and resolution to show at least one 8½-by-11-inch image. Such displays are useful for desktop publishing applications. *Acronym:* FPD. *See also* portrait monitor.

full path *n.* In a hierarchical filing system, a pathname containing all the possible components of a pathname, including the network share or drive and root directory, as well as any subdirectories and the file or object name. For example, the MS-DOS full path `c:\book\chapter\myfile.doc` indicates that `myfile.doc` is located in a directory called *chapter*, which in turn is located in a directory called *book* in the root directory of the C: drive. *Also called* full pathname. *See also* path (definition 2), root directory, subdirectory. *Compare* relative path.

full pathname *n.* *See* full path.

full-screen *adj.* Capable of using or being displayed on the full area of a display screen. Applications running in windowing environments, although they might use the entire area of the screen, commonly allocate different areas to different windows, any of which can be enlarged to fill the entire screen.

full-text search *n.* A search for one or more documents, records, or strings based on all of the actual text data rather than on an index containing a limited set of keywords. For example, a full-text search can locate a document containing the words "albatrosses are clumsy on land" by searching files for just those words without the need of an index containing the keyword "albatross." *See also* index.

fully formed character *n.* A character formed by striking an inked ribbon with a molded or cast piece of type in the manner of a typewriter. Impact printers that produce fully formed characters use letters attached to wheels (daisy wheels), balls, thimbles, bands, or chains, rather than dot-matrix wires. *See also* daisy wheel, near-letter-quality, thimble.

fully populated board *n.* A printed circuit board whose integrated circuit (IC) sockets are all occupied. Memory boards in particular may have fewer than the maximum possible number of memory chips, leaving some IC sockets empty. Such a board is said to be *partially populated*.

function *n.* 1. The purpose of, or the action carried out by, a program or routine. 2. A general term for a subroutine. 3. In some languages, such as Pascal, a subroutine that returns a value. *See also* function call, procedure, routine, subroutine.

functional design *n.* The specification of the relationships between working parts of a computer system, including details of logical components and the way they work together. Functional design is shown graphically in a functional diagram, which uses special symbols to represent the elements of the system.

functional programming *n.* A style of programming in which all facilities are provided as functions (subroutines), usually without side effects. Pure functional programming languages lack a traditional assignment statement; assignment is usually implemented by copy and modify operations. Functional programming is thought to offer advantages for parallel-processing computers. *See also* side effect.

functional redundancy checking *n.* A method of preventing errors by having two processors execute



the same instructions on the same data at the same time. If the results produced by the two processors do not agree, an error has occurred. The Intel Pentium and higher processors have built-in support for functional redundancy checking. *Acronym: FRC.*

functional specification *n.* A description of the scope, objectives, and types of operations that are to be considered in the development of an information-handling system.

function call *n.* A program's request for the services of a particular function. A function call is coded as the name of the function along with any parameters needed for the function to perform its task. The function itself can be a part of the program, be stored in another file and brought into the program when the program is compiled, or be a part of the operating system. *See also* function (definition 2).

function key *n.* Any of the 10 or more keys labeled F1, F2, F3, and so on, that are placed along the left side or across the top of a keyboard (or both) and are used for special tasks by different programs. The meaning of a function key is defined by a program or, in some instances, by the user. Function keys are used in application programs or the operating system to provide either a shortcut for a series of common instructions (such as calling up a program's on-screen help facility) or a feature that is not otherwise available. *See also* key (definition 1). *Compare* Command key, Control key, Escape key.

function library *n.* A collection of routines compiled together. *See also* function (definition 2), library (definition 1), toolbox.

function overloading *n.* The capability of having several routines in a program with the same name. The different functions are distinguished by their parameter types, return value types, or both; the compiler automatically selects the correct version, based on parameter types and return types. For example, a program might have one trigonometric sine function that uses a floating-point parameter to represent an angle in radians, and another that uses an integer parameter to represent an angle in degrees. In such a program, $\sin(3.14159/2.0)$ would return the value 1.0 (because the sine of $\pi/2$ radians is 1), but $\sin(30)$ would return

the value 0.5 (because the sine of 30 degrees is 0.5). *See also* operator overloading.

fuse *n.* A circuit element that burns out or breaks when the current passing through it exceeds a certain level. A fuse protects a circuit from damage caused by excess current. It performs the same function as a circuit breaker, but it cannot be reset, so it must be replaced if it breaks. A fuse consists of a short length of wire of a specific composition and thickness; the thicker the wire, the more current it can pass before the wire melts and breaks the circuit.

fusible link *n.* A circuit component, often part of an integrated circuit, that is designed to break, or burn like a fuse, when a relatively high current is applied. Rather than protecting against excessive current flow, fusible links allow intentional circuit modification in the field. Fusible links were used in PROM chips, and they form the foundation of a kind of integrated circuit known as a field-programmable logic array. One can customize such a circuit "in the field," after it has been made in the factory, by selectively programming high current through certain fusible links and breaking them. *See also* field-programmable logic array, PROM.

fuzzy logic *n.* A form of logic used in some expert systems and other artificial-intelligence applications in which variables can have degrees of truthfulness or falsehood represented by a range of values between 1 (true) and 0 (false). With fuzzy logic, the outcome of an operation can be expressed as a probability rather than as a certainty. For example, an outcome might be probably true, possibly true, possibly false, or probably false. *See also* expert system.

FWIW *adv.* Acronym for for what it's worth. An expression used in e-mail and newsgroups.

FYI *n.* 1. Acronym for for your information. An expression used in e-mail and newsgroups to introduce information that is thought to be useful to the reader. 2. An electronic document distributed through InterNIC like a request for comments (RFC), but intended to explain an Internet standard or feature for users rather than to define it for developers, as the RFC does. *See also* InterNIC. *Compare* RFC.