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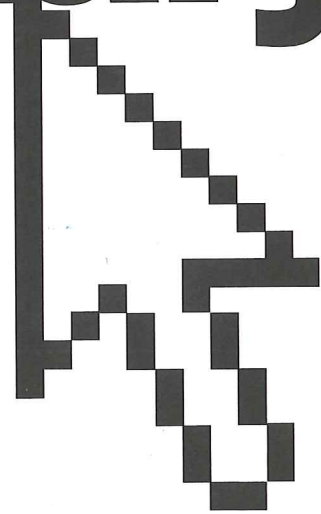
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# Computer Dictionary

Fourth  
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software package on that computer. The use of the hardware key permits backup copying of software but prevents its unlicensed use on additional computers. *Also called* dongle. **2.** Any physical device used to secure a computer system from unauthorized access, such as the lock on the front of the cabinet of some personal computers.

**hardware monitor** *n.* A separate board-level circuit used to oversee the performance of a hardware/software system. A hardware monitor can detect the cause of a fatal error such as a system crash, whereas a software monitor or debugger cannot. *Compare* debugger.

**hardware profile** *n.* A set of data that describes the configuration and characteristics of a given piece of computer equipment. Such data is typically used to configure computers for use with peripheral devices.

**hardware tree** *n.* In Windows 9x, a data structure containing information about the configuration and requirements of a system's hardware devices. Consisting of nodes that point to active devices, the hardware tree is dynamic and is reconstructed every time the operating system is started or refreshed. The hardware tree facilitates the Plug and Play capability of Windows 9x.

**hardwired** *adj.* **1.** Built into a system using hardware such as logic circuits, rather than accomplished through programming. **2.** Physically connected to a system or a network, as by means of a network connector board and cable.

**Harvard architecture** *n.* A processor architecture that uses separate address buses for code and for data. This increases throughput by allowing the system to fetch instructions at the same time that it reads and writes data. This architecture also allows optimization of memory system design because instructions tend to be fetched sequentially, whereas data reads and writes are more random.

**Harvard Mark I** *n.* *See* Mark I.

**hash<sup>1</sup>** *n.* In many FTP client programs, a command that instructs the FTP client to display a pound sign (#) each time it sends or receives a block of data. *See also* FTP client.

**hash<sup>2</sup>** *vb.* To be mapped to a numerical value by a transformation known as a hashing function. Hashing is used to convert an identifier or key, meaningful to a user, into a value for the location of the corresponding

the key MOUSE and a hashing function that added up the ASCII values of the characters, divided the total by 127, and took the remainder, MOUSE would hash to 12, and the data identified by MOUSE would be found among the items in entry 12 in the table.

**hash coding** *n.* *See* hash<sup>2</sup>.

**hash search** *n.* A search algorithm that uses hashing to find an element of a list. Hash searches are highly efficient because the hashing enables direct or almost direct access to the target element. *See also* binary search, hash<sup>2</sup>, linear search, search algorithm.

**hash total** *n.* An error-checking value derived from the addition of a set of numbers taken from data (not necessarily numeric data) that is to be processed or manipulated in some way. After processing, the hash total is recalculated and compared with the original total. If the two do not match, the original data has been changed in some way.

**Hayes-compatible** *adj.* Responding to the same set of commands as the modems manufactured by Hayes Microcomputer Products. This command set has become the de facto standard for microcomputer modems.

**HDBMS** *n.* *See* hierarchical database management system.

**HDF** *n.* *See* Hierarchical Data Format.

**HDLC** *n.* Acronym for **High-level Data Link Control**. A protocol for information transfer adopted by the ISO. HDLC is a bit-oriented, synchronous protocol that applies to the data-link (message-packaging) layer (layer 2 of the ISO/OSI reference model) for computer-microcomputer communications. Messages are transmitted in units called frames, which can contain differing amounts of data but which must be organized in a particular way. *See also* frame (definition 1), ISO/OSI reference model.

**HDSL** *n.* Acronym for **High-bit-rate Digital Subscriber Line**. A form of DSL, HDSL is a protocol for digital transmission of data over standard copper telecommunications lines (as opposed to fiber-optic lines) at rates of 1.544 Mbps in both directions. *Also called* High-data-rate Digital Subscriber Line. *See also* DSL.

**HDTV** *n.* Acronym for **high-definition television**. A method of transmitting and receiving television signals that produces a picture with much greater resolution and clarity than does standard television

types, and variables, that usually performs a single task. A procedure can usually be called (executed) by other procedures, as well as by the main body of the program. Some languages distinguish between a procedure and a function, with the latter (the function) returning a value. *See also* function, parameter, procedural language, routine, subroutine.

**procedure call** *n.* In programming, an instruction that causes a procedure to be executed. A procedure call can be located in another procedure or in the main body of the program. *See also* procedure.

**process**<sup>1</sup> *n.* A program or part of a program; a coherent sequence of steps undertaken by a program.

**process**<sup>2</sup> *vb.* To manipulate data with a program.

**process-bound** *adj.* Limited in performance by processing requirements. *See also* computation-bound.

**process color** *n.* A method of handling color in a document in which each block of color is separated into its subtractive primary color components for printing: cyan, magenta, and yellow (as well as black). All other colors are created by blending layers of various sizes of halftone spots printed in cyan, magenta, and yellow to create the image. *See also* color model, color separation (definition 1). *Compare* spot color.

**processing** *n.* The manipulation of data within a computer system. Processing is the vital step between receiving data (input) and producing results (output)—the task for which computers are designed.

**processor** *n.* *See* central processing unit, microprocessor.

**Processor Direct Slot** *n.* *See* PDS (definition 1).

**Processor Input/Output** *n.* *See* PIO.

**Prodigy Information Service** *n.* An online information service founded by IBM and Sears. Like its competitors America Online and CompuServe, Prodigy offers access to databases and file libraries, online chat, special interest groups, e-mail, and Internet connectivity. *Also called* Prodigy.

**product** *n.* **1.** An operator in the relational algebra used in database management that, when applied to two existing relations (tables), results in the creation of a new table containing all possible ordered concatenations (combinations) of tuples (rows) from the first relation with tuples from the second. The number of rows in the resulting relation is the product of the number of rows in the two source relations. *Also*

*called* Cartesian product. *Compare* inner join. **2.** In mathematics, the result of multiplying two or more numbers. **3.** In the most general sense, an entity conceived and developed for the purpose of competing in a commercial market. Although computers are products, the term is more commonly applied to software, peripherals, and accessories in the computing arena.

**production system** *n.* In expert systems, an approach to problem solving based on an "IF this, THEN that" approach that uses a set of rules, a database of information, and a "rule interpreter" to match premises with facts and form a conclusion. Production systems are also known as rule-based systems or inference systems. *See also* expert system.

**Professional Graphics Adapter** *n.* A video adapter introduced by IBM, primarily for CAD applications. The Professional Graphics Adapter is capable of displaying 256 colors, with a horizontal resolution of 640 pixels and a vertical resolution of 480 pixels. *Acronym:* PGA.

**Professional Graphics Display** *n.* An analog display introduced by IBM, intended for use with their Professional Graphics Adapter. *See also* Professional Graphics Adapter.

**profile**<sup>1</sup> *n.* *See* user profile.

**profile**<sup>2</sup> *vb.* To analyze a program to determine how much time is spent in different parts of the program during execution.

**Profiles for Open Systems Internetworking Technology** *n.* *See* POSIT.

**program**<sup>1</sup> *n.* A sequence of instructions that can be executed by a computer. The term can refer to the original source code or to the executable (machine language) version. *Also called* software. *See also* program creation, routine, statement.

**program**<sup>2</sup> *vb.* To create a computer program, a set of instructions that a computer or other device executes to perform a series of actions or a particular type of work.

**program card** *n.* *See* PC Card, ROM card.

**program cartridge** *n.* *See* ROM cartridge.

**program counter** *n.* A register (small, high-speed memory circuit within a microprocessor) that contains the address (location) of the instruction to be executed next in the program sequence.