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Microsoft

Computer Dictionary

Fifth Edition

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Backspace key.

backtracking *n.* The ability of an expert system to try alternative solutions in an attempt to find an answer. The various alternatives can be viewed as branches on a tree: in backtracking, the program follows one branch and, if it reaches the end without finding what it seeks, backs up and tries another branch.

back up *vb.* **1.** To make a duplicate copy of a program, a disk, or data. *See also* backup. **2.** To return to a previous stable state, such as one in which a database is known to be complete and consistent.

backup *n.* A duplicate copy of a program, a disk, or data, made either for archiving purposes or for safeguarding valuable files from loss should the active copy be damaged or destroyed. A backup is an "insurance" copy. Some application programs automatically make backup copies of data files, maintaining both the current version and the preceding version on disk. *Also called:* backup copy, backup file.

backup and recovery *n.* A strategy available in many database management systems that allows a database to be restored to the latest complete unit of work (transaction) after a software or hardware error has rendered the database unusable. The process starts with the latest backup copy of the database. The transaction log, or change file, for the database is read, and each logged transaction is recovered through the last checkpoint on the log. *See also* backup, checkpoint, log (definition 1).

backup and restore *n.* The process of maintaining backup files and putting them back onto the source medium if necessary.

backup copy *n. See* backup.

backup file *n. See* backup.

Backus-Naur form *n.* A metalanguage used for defining the syntax of formal languages, both for the developer of the language and for the user. A language is defined by a set of statements, in each of which a language element known as a metavariable, written in angle brackets, is defined in terms of actual symbols (called terminals) and other metavariables (including itself if necessary). See the illustration. *Acronym:* BNF. *See also* metalanguage, normal form (definition 2).

```
<number>::=<unsigned number> |
            <sign> <unsigned number>
<unsigned    number>::=<digit>|<digit>
<unsigned
                 number>
<digit>::=0|1|2|3|4|5|6|7|8|9
<sign>::=+|-
```

Backus-Naur form.

backward chaining *n.* In expert systems, a form of problem solving that starts with a statement and a set of rules leading to the statement and then works backward, matching the rules with information from a database of facts until the statement can be either verified or proved wrong. *Compare* forward chaining.

bacterium *n.* A type of computer virus that repeatedly replicates itself, eventually taking over the entire system. *See also* virus.

BAD *adj.* Acronym for **b**roken **a**s **d**esigned. Derogatory jargon for a product or device that consistently fails to work.

bad block *n.* A faulty memory location. A bad block is identified by the computer's memory controller in the self-test procedure when the computer is turned on or is rebooted. *See* bad sector.

bad sector *n.* A disk sector that cannot be used for data storage, usually because of media damage or imperfections. Finding, marking, and avoiding bad sectors on a disk is one of the many tasks performed by a computer's operating system. A disk-formatting utility can also find and mark the bad sectors on a disk.

bad track *n.* A track on a hard disk or floppy disk that is identified as containing a faulty sector and consequently is bypassed by the operating system. *See also* bad sector.

.bak *n.* An auxiliary file, created either automatically or upon command, that contains the second-most-recent version of a file and that bears the same file name, with the extension .bak. *See also* backup.

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Usually a combination of hardware and software, a firewall prevents computers in the organization's network from communicating directly with computers external to the network and vice versa. Instead, all communication is routed through a proxy server outside of the organization's network, and the proxy server decides whether it is safe to let a particular message or file pass through to the organization's network. *See also* proxy server.

firewall sandwich *n.* The use of load-balancing appliances on both sides of Internetworked firewalls to distribute both inbound and outbound traffic among the firewalls. The firewall sandwich architecture helps to prevent firewalls from degrading network performance and creating a single point of network failure. *See also* firewall, load balancing.

FireWire *n.* A high-speed serial bus from Apple that implements the IEEE 1394 standard. *See also* IEEE 1394.

firmware *n.* Software routines stored in read-only memory (ROM). Unlike random access memory (RAM), read-only memory stays intact even in the absence of electrical power. Startup routines and low-level input/output instructions are stored in firmware. It falls between software and hardware in terms of ease of modification. *See also* RAM, ROM.

FIR port *n.* Short for fast infrared port. A wireless I/O port, most common on a portable computer, that exchanges data with an external device using infrared light. *See also* infrared, input/output port.

FIRST *n.* Acronym for Forum of Incident Response and Security Teams. An organization within the Internet Society (ISOC) that coordinates with CERT in order to encourage information sharing and a unified response to security threats. *See also* CERT, Internet Society.

first-generation computer *n. See* computer.

first in, first out *n.* A method of processing a queue, in which items are removed in the same order in which they were added—the first in is the first out. Such an order is typical of a list of documents waiting to be printed. *Acronym:* FIFO. *See also* queue. *Compare* last in, first out.

first normal *n. See* normal form (definition 1).

fishbowl *n.* A secure area within a computer system in which intruders can be contained and monitored. A fishbowl is typically set up by a security administrator to impersonate important applications or information so that the system administrator can learn more about hackers who have broken into the network without the hacker learning more about or damaging the system. *See also* honeypot.

fitting *n.* The calculation of a curve or other line that most closely approximates a set of data points or measurements. *See also* regression analysis.

five-nines availability *n.* The availability of a system 99.999 percent of the time. *See* also high availability.

FIX *n.* Acronym for Federal Internet Exchange. A connection point between the U.S. government's various internets and the Internet. There are two Federal Internet Exchanges: FIX West, in Mountain View, California; and FIX East, in College Park, Maryland. Together, they link the backbones of MILNET, ESnet (the TCP/IP network of the Department of Energy), and NSInet (NASA Sciences Internet) with NSFnet. *See also* backbone (definition 1), MILNET, NSFnet, TCP/IP.

fixed disk *n. See* hard disk.

fixed-length field *n.* In a record or in data storage, a field whose size in bytes is predetermined and constant. A fixed-length field always takes up the same amount of space on a disk, even when the amount of data stored in the field is small. *Compare* variable-length field.

fixed-pitch spacing *n. See* monospacing.

fixed-point arithmetic *n.* Arithmetic performed on fixed-point numbers. *See also* fixed-point notation.

fixed-point notation *n.* A numeric format in which the decimal point has a specified position. Fixed-point numbers are a compromise between integral formats, which are compact and efficient, and floating-point numeric formats, which have a great range of values. Like floating-point numbers, fixed-point numbers can have a fractional part, but operations on fixed-point numbers usually take less time than floating-point operations. *See also* floating-point notation, integer.

fixed space *n.* A set amount of horizontal space used to separate characters in text—often, the width of a numeral in a given font. *See also* em space, en space, thin space.

fixed spacing *n. See* monospacing.

fixed storage *n.* Any nonremovable storage, such as a large disk that is sealed permanently in its drive.

fixed-width font *n. See* monospace font.

fixed-width spacing *n. See* monospacing.

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language translation program *n.* A program that translates statements written in one programming language into another programming language (usually from one high-level language into another). *See also* high-level language.

LAN Manager *n.* An older LAN (local area network) technology developed by Microsoft and distributed by Microsoft, IBM (as IBM LAN Server), and other original equipment manufacturers. Superseded by TCP/IP networking protocols in Windows 9x, LAN Manager implemented the NetBEUI protocol and was notable for its small stack size. It was used to connect computers running the MS-DOS, OS/2, or UNIX operating systems to allow users to share files and system resources and to run distributed applications using a client/server architecture. *See also* client/server architecture, LAN, NetBEUI.

LANtastic *n.* A network operating system from Artisoft designed to support both peer-to-peer and client/server networks consisting of PCs running a mix of MS-DOS and Windows operating systems.

laptop *n.* A small, portable personal computer that runs on either batteries or AC power, designed for use during travel. Laptops have flat LCD or plasma screens and small keyboards. Most can run the same software as their desktop counterparts and can accept similar peripherals, such as sound cards, internal or external modems, floppy disks, and CD-ROM drives. Some laptops are designed to be plugged into a docking station, effectively making them desktop computers. Most have connectors for plugging in external keyboards and full-sized monitors. Older laptops weighed as much as 15 pounds; current laptops can weigh as little as 5 pounds without peripherals. While *notebook* is the current term for ultralight portable computers, these machines are also commonly referred to as laptops. *See also* portable computer. *Compare* subnotebook computer.

large model *n.* A memory model of the Intel 80x86 processor family. The large model allows both code and data to exceed 64 kilobytes, but the total of both must generally be less than 1 megabyte. Each data structure must be less than 64 kilobytes in size. *See also* memory model.

large-scale integration *n.* A term describing a chip on which circuit elements number in the thousands. *Acronym:* LSI. *See also* integrated circuit. *Compare* medium-scale integration, small-scale integration, super-large-scale integration, ultra-large-scale integration, very-large-scale integration.

laser or **LASER** *n.* Acronym for light amplification by stimulated emission of radiation. A device that uses certain quantum effects to produce coherent light, which travels with greater efficiency than noncoherent light because the beam diverges only slightly as it travels. Lasers are used in computer technology to transmit data through fiberoptic cables, to read and write data on CD-ROMs, and to place an image on a photosensitive drum in laser printers.

laser engine *n.* *See* printer engine.

laser printer *n.* An electrophotographic printer that is based on the technology used by photocopiers. A focused laser beam and a rotating mirror are used to draw an image of the desired page on a photosensitive drum. This image is converted on the drum into an electrostatic charge, which attracts and holds toner. A piece of electrostatically charged paper is rolled against the drum, which pulls the toner away from the drum and onto the paper. Heat is then applied to fuse the toner to the paper. Finally, the electrical charge is removed from the drum, and the excess toner is collected. By omitting the final step and repeating only the toner-application and paper-handling steps, the printer can make multiple copies. The only serious drawback of a laser printer is that it offers less paper-handling flexibility than do dot-matrix printers. Both multipart forms and wide-carriage printing, for example, are better handled by line printers or dot-matrix printers. *See also* electrophotographic printers, nonimpact printer, page printer. *Compare* dot-matrix printer, ion-deposition printer, LCD printer, LED printer.

laser storage *n.* The use of optical read/write technology with metallic discs for information storage. *See also* compact disc.

LaserWriter 35 *n.* The standard set of 35 PostScript fonts for the Apple LaserWriter family of laser printers. *See also* laser printer, PostScript font.

last in, first out *n.* A method of processing a queue in which items are removed in inverse order relative to the order in which they were added—that is, the last in is the first out. *Acronym:* LIFO. *See also* stack. *Compare* first in, first out.

last mile *n.* The connection (which may in fact be more or less than one mile) between an end user's system and that of a service provider, such as a telephone company. The "last mile" connection historically has referred to the twisted-pair copper wires used between a home and the

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