

WEBSTER'S NEW WORLD™

COMPUTER DICTIONARY

FIFTH EDITION

The Best Computer Dictionary Anywhere

Revised and updated

Contains extensive coverage of Internet and multimedia terms

Over 4,750 words, phrases, abbreviations, and acronyms

BRYAN PFAFFENBERGER

WE DEFINE YOUR WORLD™

Webster's New World™ Computer Dictionary, 10th Edition

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open tag In markup languages such as SGML, XML, and HTML, the series of characters that demarcates the beginning of a markup element. In HTML, `<blockquote>` is the open tag for the blockquote element; `</blockquote>` is the closing tag. See *HTML, markup language, SGML, XML*.

OpenWindows A graphical user interface (GUI) developed by Sun Microsystems that is based on the X Window System standard for Unix computers. See *Motif*.

operand The argument that is appended to an operator, such as a spreadsheet program's built-in function. For example, in the Excel expression `AVERAGE(D10:D24)`, the cell range D10 to D24 is the operand of the AVERAGE function.

operating environment The total context in which applications function, including the operating system and hardware platform.

Operating System/2 See *OS/2*.

operating system (OS) A master control program that manages the computer's internal functions, such as accepting keyboard input, and that provides a means to control the computer's operations and file system. Typically, a computer's operating system is automatically loaded into memory when the computer is powered on; this operation is called booting.

Most operating systems are designed to run on a specific hardware platform. Still, it is possible to write operating systems in such a way that they can be ported (translated) so that they run on different hardware platforms. This is done by creating the operating system in such a way that most of the components are designed to function at a level of abstraction beyond the hardware level. Although operating systems vary, almost all of the features that are today regarded as essential to an operating system have their origin in Unix, which was developed at AT&T's Bell Laboratories (and subsequently by university professors and graduate students) during the 1970s

and 1980s, as well as its ill-fated predecessor, Multics, and certain other early systems. By the mid-1980s, Unix had successfully incorporated preemptive multitasking, multithreading, multiuser capabilities, interprocess communication, application programming interfaces (API), multiprocessing, and other key innovations. With these features, Unix enables two or more applications to run simultaneously without interfering with each other's use of the memory (preemptive multitasking), permits applications to run two or more of its tasks simultaneously (multithreading), enables two or more users to use the system as if each of them had sole control (multiuser capabilities), enable applications to exchange data and give each other instructions (interprocess communication), provides a standardized set of system calls by which programmers can access operating system functions (application programming interface), and exploits the capabilities of computer systems that have two or more CPUs (multiprocessing). Today, most leading operating systems emulate Unix's advanced features or directly incorporate Unix code; Mac OS X, for example, is built on BSD Unix; in addition, several versions of Microsoft's Windows NT-derived operating systems (including Windows 2000) are known to incorporate BSD code. Gaining market share more rapidly than any other operating system at this writing is Linux, a Unix-like operating system that is under development by a worldwide programming team.

Operating systems vary according to their intended function. Server operating systems (such as Unix, Unix-related operating systems such as Linux and FreeBSD, and Microsoft Windows XP Server) are designed to make data and applications available to other applications on a local area network or the Internet. Other operating systems (such as Microsoft Windows XP Home) are designed with the end user in mind, and do not burden the user with a server operating system's complexity. Still other operating systems, called embedded operating systems, are designed to be

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installed in small, dedicated devices, including cellular phones and personal digital assistants (PDAs). See *application programming interface (API)*, *BSD Unix*, *interprocess communication (IPC)*, *multiprocessing*, *multitasking*, *multithreading*, *Plan 9*, *preemptive multitasking*.

operating voltage The electrical voltage at which a microprocessor operates. Most microprocessors have operating voltages of 5 volts—a mostly arbitrary specification decided upon when the transistor was invented—but some chips run at 3.3 volts to save electricity (a real concern in portable computers) and reduce heat output.

operator In programming, a code name or symbol that is used to describe a command or function, such as multiplying or dividing.

optical character recognition See *OCR*.

optical disc A large-capacity data storage medium for computers on which information is stored at extremely high density in the form of tiny pits. The presence or absence of pits is read by a tightly focused laser beam. CD-ROMs and DVDs offer an increasingly economical medium for storing data and programs. Write-once, read-many (WORM) drives enable organizations to create their own huge, in-house databases. Erasable optical disc drives combine good storage capacity with the convenience of removable CDs; however, they are still more expensive and slower than hard drives. See *interactive videodisk*.

optical fiber See *fiber optics*.

optical mouse Instead of using a rubber ball to communicate its movement, an optical mouse shines a beam of light onto the surface beneath it and reads the changes in that surface when the mouse moves. An optical mouse is more convenient because it does not require cleaning.

optical resolution A measure of the sharpness with which a scanner can digitize an image without help from software. The more charge-coupled devices (CCDs) in a scanner (1200 is about average, and 4800 is very good), the better its optical resolution. By means of software interpolation, output can be improved, but software interpolation is a poor substitute for high optical resolution.

optical scanner See *scanner*.

optimal recalculation In Lotus 1-2-3 and other advanced spreadsheet programs, a method that speeds automatic recalculation by recalculating only those cells that have changed since the last recalculation.

optimizing compiler A compiler that translates source code into machine language optimized to run as efficiently as possible on a particular microprocessor. Optimizing compilers are virtually essential when preparing programs to run on any microprocessor equipped with superscalar architecture.

option button See *radio button*.

OR 1. In programming, a Boolean function that returns an expression as true if any of its arguments are true. 2. In computer database searching, a Boolean operator that retrieves a document if it contains any of the specified search terms.

Oracle Corporation The leading manufacturer of relational database management systems (RDMS) for multiuser enterprise computing, and the first major database firm to adopt SQL as its standard query language.

ORB Acronym for object request broker. A standard for requesting services from objects in a distributed object architecture, a cross-platform computer network in which program modules can be written in any computer language but still supply needed functions to other applications. The standard is the work of the Object Management Group (OMG), an industry consortium that is developing standards for