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COMPUTER DICTIONARY

SECOND EDITION

COMPLETELY
REVISED AND
UPDATED, WITH NEW
DEFINITIONS AND
ILLUSTRATIONS

THE COMPREHENSIVE
STANDARD FOR
BUSINESS, SCHOOL,
LIBRARY, AND HOME

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software. This type of program enables the user to lay out text and graphics on the screen and see what the results will be; for refining parts of the document, these programs often include word-processing and graphics features in addition to layout capabilities. As a final step, the finished document is printed either on a laser printer or, for the best quality, by typesetting equipment.

destructive read Sometimes abbreviated DRO (destructive readout). An attribute of certain memory systems, notably core systems. In a destructive read of a memory location, the data is passed on to the processor, but the copy in memory is destroyed by the process of reading. Destructive memory systems require special logic to rewrite data back to a memory location after it is read.

detail file *See* transaction file.

detection Discovery of a certain condition that affects a computer system or the data with which it works. Some detection methods are based on routine functions; for example, a microprocessor detects signals (interrupts) that indicate that a program or device requires attention. Other detection methods are designed to uncover flaws or errors in operation; for example, error detection in communications uses sampling, calculation, and comparison to determine whether information is received in the same form in which it was transmitted.

determinant In database design theory, any attribute or combination of attributes on which any other attribute or combination of attributes is functionally dependent. For example, if a database contains address information, the combination of the attributes ADDRESS + CITY + STATE determines the value for ZIPCODE. That is, any given address (as fully defined by ADDRESS, CITY, and STATE) can have one and only one ZIPCODE. ZIPCODE is functionally dependent on ADDRESS + CITY + STATE. Likewise, in a collection of information about employees, the attribute SOCIAL-SECURITY-NUMBER is most likely a determinant of LASTNAME. LASTNAME is functionally dependent on SOCIAL-SECURITY-NUMBER.

determinism In computing, the ability to predict

an outcome or to know in advance how data will be manipulated by a processing system. A deterministic simulation, for example, is one in which a certain input always produces the same output; a deterministic algorithm is one whose functionality is always the same.

developer's toolkit A set of routines (usually in one or more libraries) designed to allow developers to more easily write programs for a given computer, operating system, or user interface. *See also* library, toolbox.

device A generic term for a computer subsystem. Printers, serial ports, and disk drives are often referred to as devices; such subsystems frequently require their own controlling software, called device drivers. *See also* device driver.

device address A location within the address space of a computer's random access memory (RAM) that can be altered either by the microprocessor or by an external device. Device addresses are different from other locations in RAM, which can be altered only by the microprocessor. To the microprocessor, the incoming information appears as data stored at a location in RAM. To the device, the location appears simply as a register to which it can send data or from which it can read data put there by the microprocessor. *See also* device, input/output, RAM.

device control character *See* control character.

device dependence The requirement that a particular device be present or available for the use of a program, interface, or protocol. Device dependence in a program is often considered unfortunate because the program either is limited to one system or requires adjustments for every other type of system on which it is to run. *Compare* device independence.

device driver A software component that permits a computer system to communicate with a device. A printer driver is a device driver that translates computer data into a form understood by the intended printer. In most cases, the driver also manipulates the hardware in order to transmit the data to the device. However, device drivers associated with application packages typically perform only the data translation; these