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Computer Dictionary

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instruction time *n.* The number of clock ticks (pulses of a computer's internal timer) required to retrieve an instruction from memory. Instruction time is the first part of an instruction cycle; the second part is the execution (translate and execute) time. *Also called:* I-time.

instruction word *n.* **1.** The length of a machine language instruction. **2.** A machine language instruction containing an operation code identifying the type of instruction, possibly one or more operands specifying data to be affected or its address, and possibly bits used for indexing or other purposes. *See also* assembler, machine code.

insulator *n.* **1.** Any material that is a very poor conductor of electricity, such as rubber, glass, or ceramic. *Also called:* nonconductor. *Compare* conductor, semiconductor. **2.** A device used to separate elements of electrical circuits and prevent current from taking unwanted paths, such as the stacks of ceramic disks that suspend high-voltage power lines from transmission towers.

integer *n.* **1.** A positive or negative "whole" number, such as 37, -50, or 764. **2.** A data type representing whole numbers. Calculations involving only integers are much faster than calculations involving floating-point numbers, so integers are widely used in programming for counting and numbering purposes. Integers can be signed (positive or negative) or unsigned (positive). They can also be described as long or short, depending on the number of bytes needed to store them. Short integers, stored in 2 bytes, cover a smaller range of numbers (for example, -32,768 through 32,767) than do long integers (for example, -2,147,483,648 through 2,147,483,647), which are stored in 4 bytes. *Also called:* integral number. *See also* floating-point notation.

integral modem *n.* A modem that is built into a computer, as opposed to an internal modem, which is a modem on an expansion card that can be removed. *See also* external modem, internal modem, modem.

integral number *n.* *See* integer (definition 2).

integrated circuit *n.* A device consisting of a number of connected circuit elements, such as transistors and resistors, fabricated on a single chip of silicon crystal or other semiconductor material. Integrated circuits are categorized by the number of elements they contain. *See the table.* *Acronym:* IC. *Also called:* chip. *See also* central processing unit.

Table 1.2 *Types of Integrated Circuits.*

<i>Category</i>	<i>Elements</i>
small-scale integration (SSI)	in the 10s
medium-scale integration (MSI)	in the 100s
large-scale integration (LSI)	in the 1000s
very-large-scale integration (VLSI)	in the 100,000s
ultra-large-scale integration (ULSI)	1,000,000 or more

integrated development environment *n.* A set of integrated tools for developing software. The tools are generally run from one user interface and consist of a compiler, an editor, and a debugger, among others. *Acronym:* IDE.

Integrated Device Electronics *n.* *See* IDE (definition 1).

integrated injection logic *n.* A type of circuit design that uses both NPN and PNP transistors and does not require other components, such as resistors. Such circuits are moderately fast, consume little power, and can be manufactured in very small sizes. *Acronym:* I²L, IIL. *Also called:* merged transistor logic. *See also* NPN transistor, PNP transistor.

Integrated Services Digital Network *n.* *See* ISDN.

Integrated Services LAN *n.* *See* isochronous network.

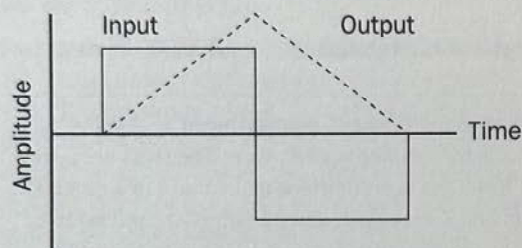
integrated software *n.* A program that combines several applications, such as word processing, database management, and spreadsheets, in a single package. Such software is "integrated" in two ways: it can transfer data from one of its applications to another, helping users coordinate tasks and merge information created with the different software tools; and it provides the user with a consistent interface for choosing commands, managing files, and otherwise interacting with the programs so that the user will not have to master several, often very different, programs. The applications in an integrated software package are often not, however, designed to offer as much capability as single applications, nor does integrated software necessarily include all the applications needed in a particular environment.

integration *n.* **1.** In computing, the combining of different activities, programs, or hardware components into a functional unit. *See also* integral modem, integrated software, ISDN. **2.** In electronics, the process of packing multiple electronic circuit elements on a single chip. *See also* integrated circuit. **3.** In mathematics, specifically calculus, a procedure performed on an equation and related to finding

the area under a given curve or the volume within a given shape.

Integrator *n.* A circuit whose output represents the integral, with respect to time, of the input signal—that is, its total accumulated value over time. See the illustration.

Compare differentiator.



Integrator. An example of the action of an integrator circuit.

Integrity *n.* The completeness and accuracy of data stored in a computer, especially after it has been manipulated in some way. *See also* data integrity.

Intel Architecture 64 *n.* *See* IA-64.

Intellectual property *n.* Content of the human intellect deemed to be unique and original and to have marketplace value—and thus to warrant protection under the law. Intellectual property includes but is not limited to ideas; inventions; literary works; chemical, business, or computer processes; and company or product names and logos. Intellectual property protections fall into four categories: copyright (for literary works, art, and music), trademarks (for company and product names and logos), patents (for inventions and processes), and trade secrets (for recipes, code, and processes). Concern over defining and protecting intellectual property in cyberspace has brought this area of the law under intense scrutiny.

Intelligence *n.* **1.** The ability of hardware to process information. A device without intelligence is said to be dumb; for example, a dumb terminal connected to a computer can receive input and display output but cannot process information independently. **2.** The ability of a program to monitor its environment and initiate appropriate actions to achieve a desired state. For example, a program waiting for data to be read from disk might switch to another task in the meantime. **3.** The ability of a program to simulate human thought. *See also* artificial intelligence. **4.** The ability of a machine such as a robot to respond appropriately to changing stimuli (input).

Intelligent *adj.* Of, pertaining to, or characteristic of a device partially or totally controlled by one or more processors integral to the device.

Intelligent agent *n.* *See* agent (definition 2).

Intelligent cable *n.* A cable that incorporates circuitry to do more than simply pass signals from one end of the cable to the other, such as to determine the characteristics of the connector into which it is plugged. *Also called:* smart cable.

Intelligent Concept Extraction *n.* A technology owned by Excite, Inc., for searching indexed databases to retrieve documents from the World Wide Web. Intelligent Concept Extraction is like other search technologies in being able to locate indexed Web documents related to one or more key words entered by the user. Based on proprietary search technology, however, it also matches documents conceptually by finding relevant information even if the document found does not contain the key word or words specified by the user. Thus, the list of documents found by Intelligent Concept Extraction can include both documents containing the specified search term and those containing alternative words related to the search term. *Acronym:* ICE.

Intelligent database *n.* A database that manipulates stored information in a way that people find logical, natural, and easy to use. An intelligent database conducts searches relying not only on traditional data-finding routines but also on predetermined rules governing associations, relationships, and even inferences regarding the data. *See also* database.

Intelligent hub *n.* A type of hub that, in addition to transmitting signals, has built-in capability for other network chores, such as monitoring or reporting on network status. Intelligent hubs are used in different types of networks, including ARCnet and 10Base-T Ethernet. *See also* hub.

Intelligent Input/Output *n.* *See* I2O.

Intelligent terminal *n.* A terminal with its own memory, processor, and firmware that can perform certain functions independently of its host computer, most often the rerouting of incoming data to a printer or video screen.

Intelligent Transportation Infrastructure *n.* A system of automated urban and suburban highway and mass transit control and management services proposed in 1996 by U.S. Secretary of Transportation Federico Peña. *Acronym:* ITI.