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The Complete Illustrated Dictionary

Ninth Edition

Alan Freedman

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processing. However, if you buy something and immediately add the amount to a running total, that's transaction processing.

transceiver

A transmitter and receiver of analog or digital signals. It comes in many forms; for example, a transponder or network adapter.

transcribe

To copy data from one medium to another; for example, from one source document to another, or from a source document to the computer. It often implies a change of format or codes.

transducer

A device that converts one energy into another; for example, a read/write head converts magnetic energy into electrical energy and vice versa. In process control applications, it is used to convert pressure into an electrical reading.

transfer

To send data over a computer channel or bus. "Transfer" generally applies to transmission within the computer system, and "transmit" refers to transmission outside the computer over a line or network.

Transfers are actually copies, since the data is in both locations at the end of the transfer. Input, output and move instructions activate data transfers in the computer.

transfer rate

Also called "data rate," the transmission speed of a communications or computer channel. Transfer rates are measured in bits or bytes per second.

transfer time

The time it takes to transmit or move data from one place to another. It is the time interval between starting the transfer and the completion of the transfer.

transformer

A device that changes AC voltage. Also called a "power adapter." It is made of steel laminations wrapped with two coils of wire. The coil ratio derives the voltage change. For example, if the input coil has 1,000 windings, and the output has 100, 120 volts is changed to 12. In order to create direct current (DC), the output is passed through a rectifier.

transient

A malfunction that occurs at random intervals; for example, a rapid fluctuation of voltage in a power line or a memory cell that intermittently fails.

transient area

An area in memory used to hold application programs for processing. The bulk of a computer's main memory is used as a transient area.

transient state

The exact point at which a device changes modes, for example, from transmit to receive or 0 to 1.

transistor

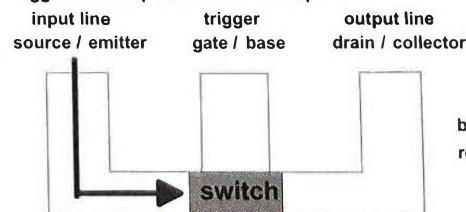
A semiconductor device used to amplify a signal or open and close a circuit. In a computer, it functions as an electronic switch. In its normal state, it is non-conductive. When voltage is applied at the gate, it becomes conductive and current flows from

The Transistor Concept

The transistor is an electronic switch. The switching element is made of semiconductor material which conducts electricity when it is pulsed.

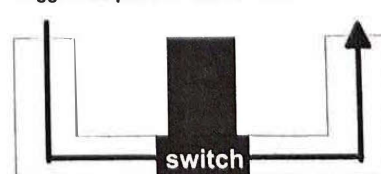
If there is no pulse on the trigger line, the semiconductor element is in a non-conductive state. When it is pulsed, it becomes conductive and current flows from the input to the output.

Trigger line not pulsed. Switch is open.



blue = FET transistor
red = bipolar transistor

Trigger line pulsed. Switch closes.



translate

source to drain.

Transistors, resistors, capacitors and diodes, make up logic gates. Logic gates make up circuits, and circuits make up electronic systems.

translate

(1) To change one language into another; for example, assemblers, compilers and interpreters translate source language into machine language.

(2) In computer graphics, to move an image on screen without rotating it.

(3) In telecommunications, to change the frequencies of a band of signals.

transmission

The transfer of data over a communications channel.

transmission channel

A path between two nodes in a network. It may refer to the physical cable, the signal transmitted within the cable or to a subchannel within a carrier frequency. In radio and TV, it refers to the assigned carrier frequency.

transmit

To send data over a communications line. See *transfer*.

transmitter

A device that generates signals. Contrast with *receiver*.

transparent

Refers to a change in hardware or software that, after installation, causes no noticeable change in operation.

transparent bridging

A communications protocol in which the stations are unaware of bridges in the network. Ethernet uses this method. Contrast with *source routing*.

transparent cache

A computer system or software within a computer system that determines if a requested page or file has already been stored in memory or on its hard disk. If it has not, the request is sent upstream to its normal destination.

transponder

A receiver/transmitter on a communications satellite. It receives a microwave signal from earth (uplink), amplifies it and retransmits it back to earth at a different frequency (downlink). A satellite has several transponders.

transport protocol (transport layer)

A communications protocol responsible for establishing a connection and ensuring that all data has arrived safely. It is defined in layer 4 of the OSI model. Often, the term transport protocol implies transport services, which includes the lower level data link protocol that moves packets from one node to another. See *OSI* and *transport services*.

transport services

The collective functions of layers 1 through 4 of the OSI model.

transputer

(TRANSistor comPUTER) A computer that contains a CPU, memory and communications capability on a single chip. Chips are strung together in hypercube or grid-like patterns to create large parallel processing machines, used in scientific, realtime control and AI applications.

trap

To test for a particular condition in a running program; for example, to "trap an interrupt" means to wait for a particular interrupt to occur and then execute a corresponding routine. An error trap tests for an error condition and provides a recovery routine. A debugging trap waits for the execution of a particular instruction in order to stop the program and analyze the status of the system at that moment.

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