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DAC ◊ DIGITAL TO ANALOG CONVERTER

Daisy chain a specific method of directing signals along a BUS. The devices not needing a signal pass it on to the next device which requires a signal. This technique facilitates the allocation of priorities between devices along the bus.

Damped a system to control oscillations down to required amplitude and frequency. Damped oscillation is sometimes termed 'ringing'.

Data information or signals to be processed, usually considered as binary WORDS.

Data acquisition the generic term for a system or device that captures data from various sources and converts it to BINARY code for subsequent use by the computer.

Data bank the combined contents of a number of separate data bases.

Data base the entire file or collection of data relevant to a company or organisation or an individual computer system or program.

Data bus a group of connecting paths which conveys data to and from the CPU, memory storage and peripheral devices.

Data communications the process of interconnecting computers over telephone line links.

Data link the device which undertakes the transmission of data in a data communications or teleprocessing network. The data link may be a computer in its own right or may have a limited capacity which merely enables it to transmit and receive data. Once data has been read by the input device on the data link, (for example a tape reader), the data is converted into a form where it can travel along a telephone line like voice signals. This is accomplished by means of a modem, or MODulator/DEMODulator, which converts digital input to digital signals analogous to voice signals. Modems and data links also perform 'receive' as well as 'send' functions.

Data logger a computer or electronics device which captures

and records data, often via sensors, for later analysis or computer processing.

Data pointer a register holding the address of data to be operated on by an instruction. The register points to the data's memory location.

Data processing (DP) relating to the computer activities of receiving data, performing the desired operation under stored program control and producing the desired results.

Data recording the process of converting data into a medium which can be used for input to a computer system, e.g. punch cards.

Data reduction the process of eliminating unnecessary detail from data and reducing it down to a manageable and simplified format or volume.

Data store memory that contains data.

Data word size the specific length of data word a particular processor is designed to handle. Thus the term 2, 4, 8 or 16 bit microprocessor refers to data word size.

The length of the data word affects data throughput, efficiency of storage and programming, programming language facilities, precision and many other factors. In general greater word length offers greater facilities but higher cost. Programs are not directly transferable from one word length machine to a different one.

DC ⇨ DIRECT CURRENT.

Dealer a sales agent. Generally not a stockist. Acts as a sales outlet for the manufacturer.

Debug a term used in connection with software or hardware. Debugging involves searching for and eliminating sources of error in the operation of a computer or its software.

Debug monitor a memory-resident debug program that provides real time BREAKPOINT potential, in order to examine and alter system memory locations and system variables. It enables user programs to call down operating system routines.

Decade a ten position device; the term is commonly applied to switching devices.

Decay the time taken for a signal to fall to a level below which it ceases to operate a circuit or system. Applied particularly to Cathode Ray Tube image creation and change.

Decimal a number system using the base 10.

Decimal arithmetic capability the ability to perform decimal arithmetic in one or two instructions; may be a hardware decimal adder or an instruction that 'corrects' a binary result.

Decision gates \diamond GATES. See appendix for LOGIC CIRCUITS.

Decision tables an array of data held in main memory which informs the main program of action to be taken when a branch or jump instruction is executed.

Decode to translate data or symbolic representation in order to decide how and where resultant signals are to be sent.

Decoder an electrical circuit for decoding ADDRESS signals.

Decrement the process of reducing the value held in a counter or register.

Dedicated a dedicated computer is one that has been specifically programmed for a single application.

Default a value assigned to a variable by a program if it does not have any associated value when read by the program.

DeMorgans theorem facilitates the expression of Boolean algebra in terms of AND and NOT. See appendix for LOGIC CIRCUITS.

Demultiplex the device that reconstructs multiplexed signals into a coherent stream. \diamond MULTIPLEXING

Density the measure of the number of GATES and INTEGRATED CIRCUITS present on a given surface area of a silicon chip. \diamond SSI, MSI, LSI, VLSI.

Depletion the region in a SEMICONDUCTOR that changes state under the application of externally applied voltage to facilitate the change from resistor to amplifier, or amplifier to resistor, is known as the depletion region. This phenomenon occurs at the junctions of the positive and negative regions of a BIPOLAR transistor.

Desk check the act of physically reading through a coded program or source listing prior to submitting it to the computer for compilation. The object is to shorten and simplify debugging by locating any logic and syntax errors.

Detect the process of recognising the presence or absence of a signal or specific item of data.

Development system a collection of printed circuit boards (PCB) and MODULES comprising central processor, memory, and peripherals to enable programs and hardware systems to be developed and tested. A development system also requires ASSEMBLER level programming tools and a software EDITOR. Often has a facility to program ROM and in circuit emulation facilities. † IN CIRCUIT EMULATION.

Device independent a method of writing programs which ignores any special characteristics of specific computers. In this way the computer is 'transparent' to the program, thus the program may be interchangeable between machines.

Diagnostic routine routines for helping a programmer or engineer locate faults in programs or hardware. Hardware in particular is now being developed to the point where it can run self-diagnostic routines which tell the engineer the potential sources for future malfunction.

Dice the plural noun for the completed chips cut from a silicon wafer.

Dicing the process of cutting a die from the silicon wafer.

Die the singular noun for the completed chip cut from a silicon wafer.

Difference machine Charles Babbage's first attempt at constructing a calculating machine based on the principle of mathematical first and second order differences.

Differential amplifier a device or circuit deriving an output signal based on the differential of two input signals.

Diffusion a process by which selected chemicals, called dopants, are enabled to enter the crystalline structure of semiconductor materials in order to change their electrical characteristics. † DOPANT.

Digital a system that handles information as numbers.

Digital computer a system that requires information to be transmitted in the form of separate signals, as distinct from an analog computer which receives a continuous signal. Each separate signal is regarded as a BINARY digit in a digital computer.

Digital to Analog converter (DAC) a device for converting discrete digital signals to a single continuous signal.

Digitise the conversion of analog input signals into digital

output signals. Scanning an irregular shape to produce XY coordinates on a plotter is a typical use of the technique.

Diode a two terminal device which conducts electricity easily in one direction and with difficulty in the other. It can be used to inhibit current flow in one direction.

Diode-Transistor Logic (DTL) a convention for the construction of logic circuits before the advent of the cheap transistor. Diodes were used as resistors and conductors, transistors as amplifiers and switches in this convention. Was superseded by TTL, Transistor-Transistor Logic.

Direct addressing an addressing mode characterised by the ability to reach directly any point in memory storage.

Direct Current (dc or DC) a stream of current flowing at a constant rate, in one direction.

Direct Memory Access (DMA) a method of gaining direct access to main storage or other high speed storage devices, without involving the processor. ◊ CYCLE STEALING.

Directory a library of files or programs, generally held on a magnetic storage medium.

DIP/DIL Dual In line Package. A device on which a chip can be mounted to connect it directly to a printed circuit board (PCB). It includes packaging and parallel connection pins. ◊ SIP/SIL.

Disassembler a program that reverses the assembly process, i.e. it converts machine language to the original higher level language. It is normally only an approximate conversion.

Disc ◊ DISK.

Discrete device a single-function packaged component; for example, a diode or transistor.

Disk (disc) a magnetic storage device which rotates on a spindle and can be accessed by a RECORDING (read/write) head. Models range from the mass storage variety capable of storing over 1 billion characters down to the single sided floppy disk, storing 250,000 characters. The disks are known as packs, cartridges, drums and by various other supplied-originated names.

Disk drive the peripheral device containing motor, enclosure, etc., to permit use of the magnetic disk and its read/write functions.

Display the face of a cathode ray tube or monitor, on which

output may be viewed.

Dissipation loss of power due to resistances, leakages, etc.
 ◇ATTENUATION.

Distributed intelligence a system where the devices capable of being programmed are spread around the system user's premises. Formerly only the central computer was capable of being programmed. With the advent of the microcomputer many terminals, printers and other devices are capable of being programmed independently of the central computer.

Distributor a sales agent for a system manufacturer who also holds stock of finished products and spares. Typically also employs support staff to ensure successful installations. A distributor is normally appointed only if the system supplier does not manufacture the product in the country where the distributor is based.

There is a different pattern for semiconductors where it is the normal practice to buy from distributors in all countries unless the customer has very significant purchasing power.

DMA ◇ DIRECT MEMORY ACCESS.

Documentation the generic term for any set of drawings, parts lists, flow diagrams, operating instructions and so on concerning a system or part of a system.

Domain the term given to the area of magnetisation on the face of the material from which bubble memories are fabricated.

Dopant an impurity which is deliberately introduced into a SEMICONDUCTOR, to achieve a known level of conductivity.
 ◇DIFFUSION.

DOS (Disk Operating System) an operating system for disk based machines.

Dot matrix a type of printer that uses a similar process to the way characters are represented on CRT screens, by building them up with dots. Any character to be printed occupies an area defined by the supplier as a matrix, e.g. 16×11 , 9×7 , 7×5 . This means in the case of a 7×5 matrix, 7 vertical dots and 5 horizontal dots. Any commonly used character can be fabricated from this array.

The action of selecting the dots to form a character, from data held in ROM in the printer, causes selected print heads, or elements, to impact the character outline onto paper.

34 *Double precision (extended precision)*

Double precision (extended precision) the use of two words for arithmetic functions, thus doubling the accuracy of the results.

DP ◊ DATA PROCESSING.

Drain a semiconductor's electrode. ◊ ELECTRODE.

Driver a circuit controller or one that provides the input for a device or another circuit.

Drop in foreign objects on a disk causing the read head to sense information that was not recorded.

Drop out when the voltage level falls below minimum design requirements. The result can be to stall a system. Drop-out also refers to a disk's reading head failing to read data. ◊ SPIKE.

Drum printer a computer output printer similar in operation to an impact or line printer except that the characters are presented to the printer hammer at the printing position, rotating vertically on a horizontally mounted drum of printer characters. Compare this to the horizontal chain on a CHAIN or LINE printer.

Dry joint a faulty electrical connection caused by inadequate soldering. A chemical condition.

DTL ◊ DIODE-TRANSISTOR LOGIC.

Dump a deposit of all preselected data, or programs, onto a printed output. Dumping of data can take place via other media but the principle remains the same.

Dynamic Memory Dynamic RAM (Random Access Memory) can only hold data for a few milliseconds, therefore it has to be constantly refreshed by having its contents rewritten. Dynamic RAM is the cheapest type of random access memory available at the moment so the refreshing process can be an economic saving but a technical drawback.
