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Alan Freedman

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Computer Desktop Encyclopedia, Ninth Edition

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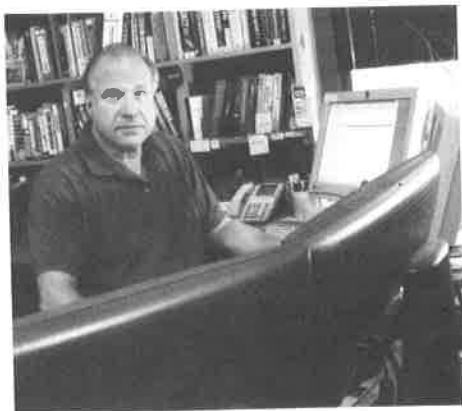
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About the Author

Alan Freedman is president of The Computer Language Company, an organization devoted to computer education training for business and non-technical people. With more than 40 years of experience in the field and 20 years of writing the *Computer Glossary* and *Computer Desktop Encyclopedia*, Freedman is the most noted computer lexicographer in the country. Deemed both "comprehensive and authoritative" by *PC Magazine*, Freedman's work is widely recognized for making abstract computing concepts easily understandable to non-technical people.

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Alphabetical Entries

(twisted pair, coax and optical fiber) and can bridge between Ethernet, Token Ring, FDDI and ATM topologies. Switching hubs provide Ethernet and ATM switching.

Hubs have become intelligent and modular, allowing for the insertion of bridging, routing and switching modules within the same unit. A hub can even host a CPU board and network operating system, turning the hub into a file server or network control processor. See *LAN*.

(2) See *Web hub*.

hub and spoke Any architecture that uses a central connecting point. It is the same as a star topology in a network. A network hub is hardware that functions as a central hub to all nodes. See *hub*.

hub ring A flat ring pressed around the hole in a 5.25" floppy disk for rigidity. The drive's clamping ring presses the hub ring onto the spindle.

hue The dominant wavelength of a color. A color system, or model, measures color by hue, saturation and luminance. The hue is the predominant color, the saturation is the color intensity, and the luminance is the brightness. See *HSB*.

Huffman coding A statistical compression method that converts characters into variable-length bit strings. Most-frequently occurring characters are converted to shortest bit strings; least frequent, the longest. Compression takes two passes. The first pass analyzes a block of data and creates a tree model based on its contents. The second pass compresses the data via the model. Decompression decodes the variable-length strings via the tree. See *LZW*.

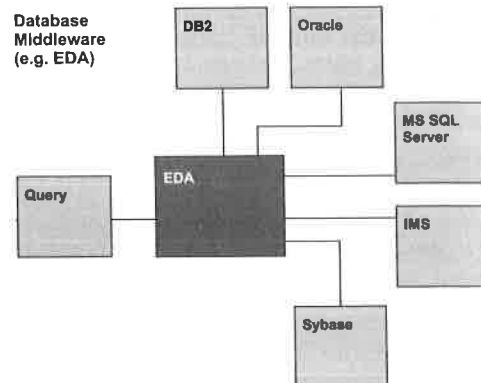
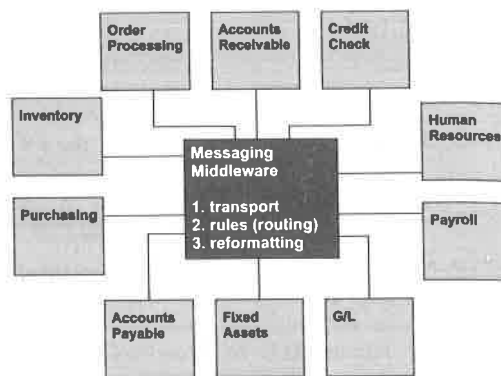
Human Genome Project A bioinformatics project that has identified the 30,000 genes in human DNA. Coordinated by the U.S. Department of Energy and the National Institutes of Health, the U.S. Human Genome Project started in 1990 and released its findings in February 2001, along with findings from a separate project by Celera Genomics Group. There are similar projects in other countries as well. The purpose is to store the three billion chemical base pairs (the DNA sequence) derived from these analyses in databases for use in biomedical research.

This information is not a blueprint of the human being, rather it is a dictionary of components. Once believed that each gene made only one protein, it is now believed that each gene creates numerous proteins, although this information is expected to take years to determine. Part of the U.S. government project is to study the ethical and legal impact that this information will have on society.

Hungarian notation In programming, the use of standard prefixes in naming variables. For example, "p" means pointer, hence, pTEXTBUF is a pointer to a buffer called TEXTBUF.

hunt A telephony term for switching to a second line if the first one is busy. The system can "hunt" in a preset order from line 1 to 2, and then from 2 to 3, and so on.

h/w See *hardware*.



Hub and Spoke Architectures

Messaging middleware is always configured in a hub and spoke configuration, and most database middleware is also available in this topology. See *EDA* and *DQbroker*.

(2) (.NET) A wide-reaching initiative from Microsoft that provides an operating environment for Web-based applications. Introduced in 2000, elements of .NET are expected over a period of several years. In Microsoft's ultimate vision, .NET will transform the Internet into a single computing experience. Applications will be hosted on the Internet and made available to the user via desktop and handheld devices that employ voice and handwriting recognition as optional interfaces.

.NET relies on HTTP, XML, SOAP and UDDI. Although HTTP and XML are fundamental elements of the Internet, SOAP provides a distributed object system that enables an application to call the services of other applications. UDDI provides the discovery mechanism that will enable applications to search for functions all over the world turning the Internet into a global processing system (see *HTTP, XML, SOAP* and *UDDI*).

.NET applications can run on intranets as well as public Internet sites, thus .NET is an all-inclusive Web-based software architecture for internal and external use. Microsoft browsers, applications and new versions of Windows will be .NET enabled.

.NET supports programming languages that are compiled into a Common Intermediate Language (CIL) which is executed on the fly or compiled into machine language by the Common Language Runtime (CLR) software in the target computer. This is similar to Java's intermediate bytecode, except that Java is one language, whereas .NET lets all programming languages be compiled into intermediate code. CLRs can also be developed to run under any operating system, not just Windows.

Microsoft has enhanced its programming languages to support the .NET platform (Visual Studio.NET, Visual Basic.NET, etc.). It also introduced the .NET-enabled C Sharp (C#) programming language. For backward compatibility, .NET supports existing Windows structures such as DLLs and COM objects. See *C#* and *CLI*.

ASPs and ASPs One of the features of the .NET platform is ASP.NET, which is the .NET version of Microsoft's Active Server Page (ASP) technology. ASP pages are processed by the Web server and enable the development of dynamic, interactive sessions with the user. Since .NET is based on the Web, it is very appropriate for programs to be hosted by application service providers, another A-S-P acronym. Better know which ASP is which. See *ASP*.

.NET SDK (.NET Software Development Kit) The developer's toolkit for Microsoft's .NET platform. It includes all the routines necessary to create and test .NET applications. See *.NET*.

.org (ORGanization) A top-level Internet domain used by associations and non-profit organizations mostly in the U.S. and Canada. See *Internet domain name*.

.tv See *dotTV*.

.zip file See *ZIP file*.

**** See *backslash*.

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