

## G l o s s a r y

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For background information and references for this book, please see <http://www.w3.org/People/Berners-Lee/Weaving>.

**access control** The ability to selectively control who can get at or manipulate information in, for example, a Web server.

**accessibility** The art of ensuring that, to as large an extent as possible, facilities (such as, for example, Web access) are available to people whether or not they have impairments of one sort or another.

**ACSS (Audio Cascading Style Sheets)** A language for telling a computer how to read a Web page aloud. This is now part of CSS2.

**Amaya** An open source Web browser editor from W3C and friends, used to push leading-edge ideas in Web client design.

**Apache** An open source Web server originally formed by taking all the "patches" (fixes) to the NCSA Web server and making a new server out of it.

**browser** A Web client that allows a human to read information on the Web.

**CERN** The European Particle Physics Laboratory, located on the French-Swiss border near Geneva, Switzerland.

**Click-stream** Information collected about where a Web user has been on the Web.

**client** Any program that uses the service of another program. On the Web, a Web client is a program, such as a browser, editor, or search robot, that reads or writes information on the Web.

**CSS (Cascading Style Sheets)** A W3C recommendation: a language for writing style sheets. *See also* style sheet.

**Cyc** A knowledge-representation project in which a tree of definitions attempts to express real-world facts in a machine-readable fashion. (Now a trademark of Cycorp Inc.)

**digital signature** A very large number created in such a way that it can be shown to have been done only by somebody in possession of a secret key and only by processing a document with a particular content. It can be used for the same purposes as a person's handwritten signature on a physical document. Something you can do with public key cryptography. W3C work addresses the digital signature of XML documents.

**DOM (Document Object Model)** Within a computer, information is often organized as a set of "objects." When transmitted, it is sent as a "document." The DOM is a W3C specification that gives a common way for programs to access a document as a set of objects.

**domain name** A name (such as "w3.org") of a service, Web site, or computer, and so on in a hierarchical system of delegated authority—the Domain Name System.

**DTD** In the SGML world, a DTD is a metadocument containing information about how a given set of SGML tags can be used. In the XML world this role will be taken over by a *schema*. Sometimes, but arguably, "document type definition." *See also* schema.

**Dublin Core** A set of basic metadata properties (such as title, etc.) for classifying Web resources.

**EBT (Electronic Book Technology)** A company started by Andries Van Dam and others to develop hypertext systems.

**EDI (Electronic Data Interchange)** A pre-Web standard for the electronic exchange of commercial documents.

**Enquire** A 1980 program, named after the Victorian book *Enquire Within upon Everything*.

**filtering** The setting up of criteria to select a subset of data from a broad stream of it. Filtering information is essential for everyone in daily life. Filtering by parents of small children may be wise. Filtering by others—ISPs or governments—is bad, and is called censorship.

**GIF (Graphics Interchange Format)** A format for pictures transmitted pixel by pixel over the Net. Created by CompuServe, the GIF specification was put into the public domain, but Unisys found that it had a patent on the compression technology used. This stimulated the development of PNG.

**GILC (Global Internet Liberty Campaign)** A group that has been laudably vocal in support of individual rights on the Net (though occasionally tending to throw out the baby with the bathwater).

**graphics** Two- or three-dimensional images, typically drawings or photographs. *See also* GIF, PNG, SVG, and VRML.

**HTML (Hypertext Markup Language)** A computer language for representing the contents of a page of hypertext; the language that most Web pages are currently written in.

**HTTP (Hypertext Transfer Protocol)** A computer protocol for transferring information across the Net in such a way as to meet the demands of a global hypertext system. Part of the original design of the Web, continued in a W3C activity, and now a HTTP 1.1 IETF draft standard.

**hypertext** Nonsequential writing; Ted Nelson's term for a medium that includes links. Nowadays it includes other media apart from text and is sometimes called hypermedia.

**information space** The abstract concept of everything accessible using networks: the Web.

**INRIA (Institut National de Recherche en Informatique et Automatique)** The French national research laboratory for computer science and control. Cohost of W3C and developers of Amaya.

**Internet** A global network of networks through which computers communicate by sending information in packets. Each network consists of computers connected by cables or wireless links.

**Intranet** A part of the Internet or part of the Web used internally within a company or organization.

**IP (Internet Protocol)** The protocol that governs how computers send packets across the Internet. Designed by Vint Cerf and Bob Khan. (IP may also stand for *intellectual property*; *see* IPR.)

- IPR (Intellectual Property Rights)** The conditions under which the information created by one party may be appreciated by another party.
- ISO (International Standards Organization)** An international group of national standards bodies.
- ISP (Internet service provider)** The party providing one with connectivity to the Internet. Some users have a cable or some sort of wireless link to their ISP. For others, their computer may dial an ISP by phone and send and receive Internet packets over the phone line; the ISP then forwards the packets over the Internet.
- Java** A programming language developed (originally as "Oak") by James Gosling of Sun Microsystems. Designed for portability and usability embedded in small devices, Java took off as a language for small applications ("applets") that ran within a Web browser.
- Jigsaw** Open source Web server of great modularity, written in Java. From W3C and friends.
- JPEG (Joint Photographic Experts Group)** This group defined a format for encoding photographs that uses fewer bytes than the pixel-by-pixel approaches of GIF and PNG, without too much visible degradation in quality. The format (JFIF) is casually referred to as JPEG.
- Keio University** Near Tokyo, Japan. Cohost of W3C.
- LCS (Laboratory for Computer Science)** A laboratory at the Massachusetts Institute of Technology. Cohost of W3C.
- LEAD (Live Early Adoption and Demonstration)** A W3C policy to eat our own cooking to find out how it can be better.
- libwww** The library (collection) of WWW-related program modules available for free use by anyone since the start of the Web.
- line-mode** In high and far-off times, people did not see computer programs through windows. They typed commands on a terminal, and the computer replied with text, which was displayed on the screen (or printed on a roll of paper) interleaved with the commands, much as though the person were in a chat ses-

- sion with the computer program. If you have seen a "DOS window," then you have some idea of how people did their communicating with computers in those days, before they learned how to drag and drop. Line-mode is still a very respectable way to communicate with a computer.
- line-mode browser** A Web client that communicated with the user in line-mode and could run all kinds of computers that did not have windows or mice.
- link** A reference from one document to another (external link), or from one location in the same document to another (internal link), that can be followed efficiently using a computer. The unit of connection in hypertext.
- MARC record** A standard for machine-readable library catalogue cards.
- meta-** A prefix to indicate something applied to itself; for example, a *metameeting* is a meeting about meetings.
- metadata** Data about data on the Web, including but not limited to authorship, classification, endorsement, policy, distribution terms, IPR, and so on. A significant use for the Semantic Web.
- micropayments** Technology allowing one to pay for Web site access in very small amounts as one browses.
- minimal constraint, principle of** The idea that engineering or other designs should define only what they have to, leaving other aspects of the system and other systems as unconstrained as possible.
- MIT (Massachusetts Institute of Technology)** See LCS. Cohost of W3C.
- mobile devices** Pagers, phones, handheld computers, and so on. All are potentially mobile Internet devices and Web clients.
- Mosaic** A Web browser developed by Marc Andreessen, Eric Bina, and their colleagues at NCSA.
- NCSA (National Center for Supercomputing Applications)** A center at the University of Illinois at Urbana-Champaign whose software development group created Mosaic.

**Nelson, Ted** Coiner of the word *hypertext*; guru and visionary.  
**Net** Short for *Internet*.

**NeXT** Name of the company started by Steve Jobs, and of the computer it manufactured, that integrated many novelties such as the Mach kernel, Unix, NeXTStep, Objective-C, drag-and-drop application builders, optical disks, and digital signal processors. The development platform I used for the first Web client.

**NNTP (Network News Transfer Protocol)** A protocol that defines how news articles are passed around between computers. Each computer passes an article to any of its neighbors that have not yet got it.

**node** Thing joined by links. In the Web, a node is a Web page, any resource with a URI.

**open source** Software whose source code is freely distributed and modifiable by anyone. W3C sample code is open source software. A trademark of [opensource.org](http://opensource.org).

**packet** A unit into which information is divided for transmission across the Internet.

**partial understanding** The ability to understand part of the import of a document that uses multiple vocabularies, some but not all of which are understood.

**PGP (Pretty Good Privacy)** An e-mail security system that uses public key cryptography and has the philosophy that individuals can choose whom they trust for what purpose—the “web of trust.”

**PICS (Platform for Internet Content Selection)** W3C’s technology that allows parents to select content for their children on the basis of an open set of criteria, as opposed to government censorship. *See* filtering.

**PKC (public key cryptography)** A very neat bit of mathematics on which is based a security system in which there is no need to exchange secret keys; instead, people have one “private” key that only they know and one “public” key that everyone knows.

**PKI (Public Key Infrastructure)** A hierarchy of “certification authorities” to allow individuals and organizations to identify each other for the purpose (principally) of doing business electronically.

**PNG (Portable Network Graphics)** A format for encoding a picture pixel by pixel and sending it over the Net. A recommendation of the W3C, replacing GIF.

**protocol** A language and a set of rules that allow computers to interact in a well-defined way. Examples are FTP, HTTP, and NNTP.

**RDF (Resource Description Framework)** A framework for constructing logical languages that can work together in the Semantic Web. A way of using XML for data rather than just documents.

**RPC (remote procedure call)** When one part of a program calls on another part to do some work, the action is called a *procedure call*. RPC is a set of tools that allow you to write a program whose different parts are on different computers, without having to worry about how the communication happens. A generic technique, not a specific product.

**RSA** A public key encryption system invented by Ron Rivest, Adi Shamir, and Leonard Adleman. RSA algorithms have been patented, and so its inventors have licensed its deployment.  
**schema (pl., schemata)** A document that describes an XML or RDF vocabulary.

**Semantic Web** The Web of data with meaning in the sense that a computer program can learn enough about what the data means to process it.

**separation of form from content** The principle that one should represent separately the essence of a document and the style with which it is presented. An element in my decision to use SGML and an important element in the drive for accessibility on the Web.

**server** A program that provides a service (typically information) to another program, called the *client*. A Web server holds Web pages and allows client programs to read and write them.

- SGML (Standard Generalized Markup Language)** An international standard in markup languages, a basis for HTML and a precursor to XML.
- SMIL (Synchronized Multimedia Integration Language)** A language for creating a multimedia presentation by specifying the spatial and temporal relationships between its components. A W3C recommendation.
- style sheet** A document that describes to a computer program (such as a browser) how to translate the document markup into a particular presentation (fonts, colors, spacing, etc.) on the screen or in print. *See also* CSS, XSL, separation of form from content.
- SVG (Scalable Vector Graphics)** A language for describing drawings in terms of the shapes that compose them, so that these can be rendered as well as possible.
- Tangle** A program I wrote for playing with the concept of information as consisting only of the connections.
- TCP (Transmission Control Protocol)** A computer protocol that allows one computer to send the other a continuous stream of information by breaking it into packets and reassembling it at the other end, resending any packets that get lost in the Internet. TCP uses IP to send the packets, and the two together are referred to as TCP/IP.
- URI (Universal Resource Identifier)** The string (often starting with *http:*) that is used to identify anything on the Web.
- URL (Uniform Resource Locator)** A term used sometimes for certain URIs to indicate that they might change.
- Viola** An interpreted computer language (like Java) developed by Pei Wei at the University of Berkeley. Also, a Web browser built using Viola.
- virtual hypertext** Hypertext that is generated from its URI by a program, rather than by recourse to a stored file.
- VRML (Virtual Reality Modeling Language)** An idea for 3D compositional graphics on the Web, proposed by Dave Raggett as "Vir-

- tual Reality Markup Language," and implemented by Mark Pesce as a variant of Silicon Graphics's "Inventor" format; later managed by the VRML consortium, now "Web 3D" consortium.
- W3C (World Wide Web Consortium)** A neutral meeting of those to whom the Web is important, with the mission of leading the Web to its full potential.
- WAI (Web Accessibility Initiative)** A domain of W3C that attempts to ensure the use of the Web by anyone regardless of disability.
- WAIS (Wide Area Information Servers)** A distributed information system designed by Brewster Kahle while at Thinking Machines. WAIS was like a Web of search engines, but without hypertext.
- Web** Short for *World Wide Web*.
- World Wide Web (three words; also known as WWW)** The set of all information accessible using computers and networking, each unit of information identified by a URI.
- WorldWideWeb (one word; no spaces)** The name of the first Web client, a browser/editor that ran on a NeXT machine.
- X** The X Window system, invented by Bob Scheifler; a standard interface between a program and a screen that was ubiquitous on Unix systems. Unlike Microsoft's Windows, from the beginning X allowed programs running on one machine to display on another, across the Internet. Scheifler ran the X Consortium from MIT/LCS for many years, then spun it off, and eventually closed it.
- Xanadu** Ted Nelson's planned global hypertext project.
- XML (Extensible Markup Language)** A simplified successor to SGML. W3C's generic language for creating new markup languages. Markup languages (such as HTML) are used to represent documents with a nested, treelike structure. XML is a product of W3C and a trademark of MIT.
- XSL (Extensible Style Sheet Language)** A style sheet language, like CSS, but also allowing document transformation.

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