XHTML 5

Presentation to LUV Beginners Workshop

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http://levlafayette.com
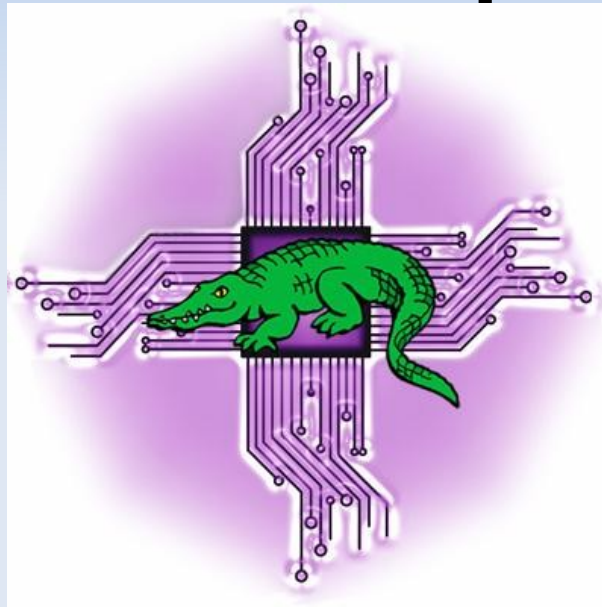
Some HTML History

(Extensible) HyperText Markup Language ((X)HTML) is the main markup language for displaying web pages on a web browser. As a result, it is the most important inventions of the 20th century. It was first proposed by Tim Berners-Lee in 1989, and the first public documentation was released in October 1991 through CERN. It is heavily deriviative of SGML (Standard Generlised Markup Language, ISO 8879:1986 SGML). The main standards organisation that governs HTML, and indeed, standards for the World-Wide Web as a whole is the World Wide Web Consortium or W3C.

In mid-1993 a draft specification was published ("HTML 1.0" available at http://www.w3.org/MarkUp/draft-ietf-iiir-html-01.txt). In 1994 the IETF created an HTML Working Group. In November 1995 this Workig Group completed "HTML 2.0" (IETF RFC 1866) which became the first specification. This was followed by form-based file upload (RFC 1867) a day later, tables (RFC 1942) in May 1996, client-side image maps (RFC 1980) in August 1996, internationalisation (RFC 2070) in January 1997. Version 3 of HTML was released in September 1996 and version 4 in December 1997, and became an ISO standard in May 2000 (ISO/IEC 15445:2000).

Some HTML History

Early version of HTML were highly subject to "browser wars", proprietary expansions to the core HTML stack. For example, Netscape developed JavaScript, replicated by Microsoft as Jscript to add dynamic features to the static html code. Other examples include the <blink> (Netscape) and <marquee> (Microsoft) element tags. Dynamic HTML (DHTML) code is now encapsulated in standard presentation markup (Cascading Style Sheets, CSS) and dynamic scripting languages for HTML, XHTML, and XML documents known as the Document Object Model (DOM).

XHTML is a separate - but extremely similar - markup that began as a reformulation of HTML 4.01 using XML 1.0. The first version was published in January 2000. XHTML5, is being defined alongside HTML5 in the HTML5 draft. The most important difference is that XHTML is an application of XML, a restrictive subset of SGML, and requires that documents follow strong syntax rules. XHTML can be used by XML parsers and provides more interoperable data and modularised code, unlike HTML.

Basic Implementation of XHTML

The core structure of XHTML is the inclusion of content within mark-up tags which is parsed by the layout engine of a webbrowser. i.e,. <xhtml tag>content</xhtml tag>. A <!DOCTYPE> declaration provides indications to the layout engine to dispaly a web page according to rules. Nesting of some tags determines page structure (e.g., <html></html>, <head></head>, <body></body>). An HTML element is everything from the beginning of a tag, the content, and the end of the tag. In XHTML, all elements must be closed. Comments may be inserted as follows: <!-- This is a comment -->

Elements can have attributes specified in the start tag, which provide additional information to the layout information. They are expressed in name/value pairs: name="value" (e.g., The Linux Republic of Victoria, Email Le Président.

The most well-known content mark-up tags include headings (e.g., <h1></h1>), paragraphs (<p></p>), links (<a>), images (<img></img>), line-breaks (<br />). In the HTML past formatting tags (e.g., , <i></i>, <s></s>, <u></u>, <code></code>, <q></q>) were common; some of these have been superceded by cascading style sheets or generic names (e.g., ,).

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Basic Implementation of XHTML

Finally there are entities within XHTML such as the greater than and less than signs (< for <, > for >, and © for ©). Not all elements have been covered in this summary; and certainly nor have stylesheets, client-side scripting, or web-hosting issues. But it should be enough to build a webpage and to ground an introduction to XHTML5.g style sheets or generic names (e.g., ,).

An Example...

Go to http://levlafayette.com/files/remy.html and view the page in your favourite browser. Download the file and open in your text editor. Investigate and make changes to improve, alter, or otherwise have fun with the code.

The code is XHTML1.0 Transitional compliant. However, as an exercise, try it out on different browsers (Firefox, Chrome, Konqueror, etc), research and find out how it can be improved.

XHTML5: Some History

XHTML5 seeks to improve web markup language to provide better support for multimedia tools and device independence and was initiated by a joint paper to the W3C by the Mozilla Foundation and Opera Softwware in June 2004. Instead of working on XHTML 2.0, or continuing development on HTML, the W3C decided to develop (X)HTML5.

Currently the specification is being developed in two streams; W3C will continue the HTML5 specification work, focusing on a single standard. The WHATWG organization will continue its as a "Living Standard". XHTML 5 will be a recommended standard by 2014; and XHTML 5.1 by 2016. There are different working groups for each modular area.

Warning! XHTML5 is not yet an official standard, and no browsers have full HTML5 support. But all major browsers continue to add new HTML5 features with each new version.

HTML 5

XHMTL 5: Some Examples

New structure and semantic elements include: The <article></article> element defines an article. The <aside></aside> element defines "sidebar" content. The <footer></footer> element and <header></header> defines a footer or header for a document or section. The <figure></figure> and <figcaption></figcaption> elements define content (illustrations, diagram, etc) and a caption. The dialog element <dialog></dialog> represents a conversation. It contains <dt></dt> elements which identify the speaker, and dd elements which represent the speakers' quotes<dt></dt>.

New media elements include: The <audio></audio> element defines sound content. The <video></video> element defines video content. Whereas <source></source> defines multimedia sound and video. The <embed></embed> element defines a container for an external application. The <track></track> defines tracks for audio and video.

XHMTL 5: Some Examples

There is a great number of new input types for forms. These include color, data, datetime, datetime-local, email, month, number, range, search, tel, time, url and week. Their format is fairly simple (e.g., Select your favorite color: <input type="color" name="favcolor" />. There is also new form elements, including <datalist>, <keygen>, and <output>. The <datalist> element simply specifies a list of pre-defined options for an <input> element.

The <keygen> element specifies a key-pair generator field in a form, with the private key stored locally, and the public key sent to the server; the public key can be used to generate a client certificate for authentication. Finally, the <output> element represents the result of a calculation. Forms also have autocomplete and novalidate attributes which specify whether these options should be implemented on a form.

c.f., http://xkcd.com/792/

Go to http://levlafayette.com/files/xhtml5.html, view the source code and work through the examples. Try some modifcations with a local installation. Try it out on different browsers and see if there's a difference.