PV219, spring 2022

Bit of History

- HTML 3.0 was developed in 1995
- HTML 3.2 was completed by 1997
- HTML 4 was developed in the year 1998

- Ian "Hixie" Hickson – March 2004 (Netscape)

- HTML5 was first started by Mozilla, Apple, and Opera under a group called the **WHATWG** (*Web Hypertext Application Technology Working Group).* In 2006 W3C showed an interest in HTML5 and in 2007 they created a working group to work in HTML5 project.

- Still under development / evolving instead of reinventing

Defining what HTML5 is

- Most recent iteration of HTML
- New semantic and functional enhancements
- **HTML5** combined with other technologies like **CSS3** and **JavaScript/APIs** create the **modern web stack**

Syntax

```
<!DOCTYPE html>
<html>
    <head>
        <meta charset="utf-8">
```

- **Not that strict** as HTML4 (no always lowercase tags, closing elements, empty attributes, double quotes)
- Detailed rules for parsing, no more *tag soup*

Comparing HTML5 to HTML 4.01

- Added over **25 new elements**
- Several other elements have been un-depreciated from HTML 4.01

- Over **38 new global attributes**

- One can now define its own attributes, and still have valid markup ...syntactically.

What’s missing

- Frames
- *acronym*, *basefont*, *big*, *center*, *font*, *s*, *strike*, *tt*, *u*
- *language* attribute on *script*
- Loads of presentational attributes: *cellpadding*, *cellspacing*, *clear*, *size*, …

Do you know some
new HTML5 elements?

HTML5 Strict 1

New **semantic, behavior, and application tags**:

section, nav, article, aside, hgroup, header, footer, address, figure, figcaption, time, code, var, samp, kbd, output, progress, meter, details, summary, command, menu, keygen

HTML5 Strict 2

- *video* tag, API, and events
- *audio* tag, API, and events

- New form **input types**: *telephone, search, url, email, date, time, month, week, number, range, color*

- New form **abilities**: multiple file upload; placeholder text; directing focus on initial page load; constraint validation by input type and properties

HTML5 Strict 3

- New **link rel types**: *alternate, archives, author, bookmark, external, help, icon, license, nofollow, noreferrer, pingback, prefetch, search, sidebar, tag, index, up, first, last, next, prev*

- **UndoManager** for consistent undos

Semantic/Structural Elements - 1

<article>
Defines an article

<aside>
Defines content aside from the page content

<bdi>
Isolates a part of text that might be formatted in a different direction from other text outside it

<details>
Defines additional details that the user can view or hide

<dialog>
Defines a dialog box or window

Semantic/Structural Elements - 2

<summary>
Defines a visible heading for a <details> element

<figure>
Specifies self-contained content, like illustrations, photos, code listings, etc.

<figcaption>
Defines a caption for a <figure> element

<footer>
Defines a footer for a document or section

<header>
Defines a header for a document or section

<hgroup>
Groups a set of <h1> to <h6> elements when a heading has multiple levels

Semantic/Structural Elements - 3

<mark>
Defines marked/highlighted text

<meter>
Defines a scalar measurement within a known range (a gauge)

<nav>
Defines navigation links

<progress>
Represents the progress of a task

<ruby>
Defines a ruby annotation (for East Asian typography)

Semantic/Structural Elements - 4

<rt>
Defines an explanation/pronunciation of characters (for East Asian typography)

<rp>
Defines what to show in browsers that do not support ruby annotations

<section>
Defines a section in a document

<time>
Defines a date/time

<wbr>
Defines a possible line-break

Media Elements

<audio>
Defines sound content

<video>
Defines a video or movie

<source>
Defines multiple media resources for <video> and <audio>

<embed>
Defines a container for an external application or interactive content (a plug-in)

<track>
Defines text tracks for <video> and <audio>

<canvas>
Used to draw graphics, on the fly, via scripting (usually JavaScript)

Form Elements

<datalist>

Specifies a list of pre-defined options for input controls

<keygen> - deprecated

Defines a key-pair generator field (for forms). When the form is submitted, the private key is stored locally, and the public key is sent to the server.

<output>

Defines a container to inject the result of a calculation or user action

Broken out of HTML5 - 1

- Web Sockets
- Local Persistent Storage (localStorage and sessionStorage)
- SQL Storage
- Specific HTML5 Video codec: H.264, Ogg/Theora, WebM
- Specific HTML5 Audio codec (MP3)

Broken out of HTML5 - 2

- Microdata and Microdata Vocabularies
- Cross-document messaging (vs. JS, iFrame)
- Channel messaging
- W3C XMLHttpRequest specification
- Server-Sent Events (Push)
- Ajax Session History

Technologies introduced - 1

- CSS3
- Flex Box Layout / Grid
- Multi-Column Layout
- Animations
- Transforms (2D and 3D)
- Transitions
- Masking and Effects (rounded corners, shadows, etc.)
- Gradients

Technologies introduced - 2

- Web Fonts - CSS 2.1 @font-face + OpenType/WOFF (Web Open Font Format)
- W3C Geolocation
- Web workers
- ARIA
- EcmaScript 5-8, means faster JavaScript
- GPU acceleration of HTML, Canvas, SVG, and CSS3 Animations / Transitions / Transforms

Compatibility

- **All modern browsers**
- IE sucks (IE10+ / Edge just fine)
- Shims, Polyfills, Fallbacks, “Progressive Enhancements”
- Modernizr

- HTML5 is designed so that old HTML4 browsers can safely ignore new constructs

Examples

www.html5rocks.com

html5demos.com

www.chromeexperiments.com

https://digital.com/tools/html-cheatsheet/