

# HTML



PV219, spring 2024

# 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](http://www.html5rocks.com)

[html5demos.com](http://html5demos.com)

[www.chromeexperiments.com](http://www.chromeexperiments.com)

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