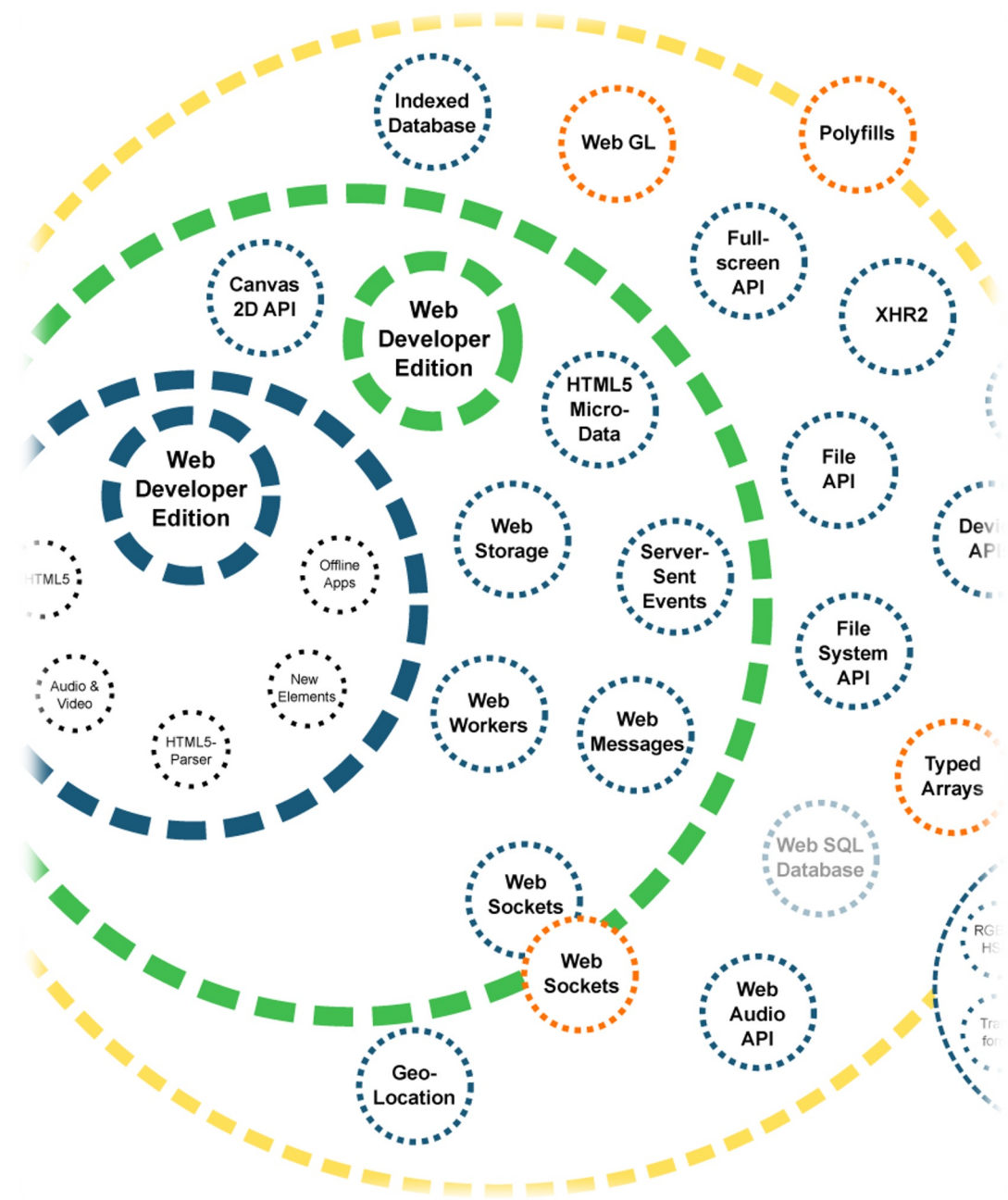


<WA1/>
<AW1/>
2023

(Modern) HTML

A fast-paced introduction to HTML5

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Goal

- Quick introduction to the essential features of HTML
 - Document structure and syntax
 - Essential elements
 - Semantic elements
 - Page structuring
- Aligned to what HTML 5 looks like in year 2020

Rough timeline of web technologies



HTML

- CERN
- 1991

HTML 2.0

- IETF
- 1995

W3C®

HTML 3.2

- W3C
- 1997

W3C: World Wide
Web Consortium

HTML 4.01

- 1999

XHTML 1.0

- W3C
- 2000
- XML-based;
discontinued

HTML5

- WHATWG
- and W3C
- 2014



WHATWG: Web Hypertext
Application Technology
Working Group



<https://html.spec.whatwg.org/multipage/>

<https://html.spec.whatwg.org/dev/>

A different approach

HTML 4.01



web pages



design

HTML 5

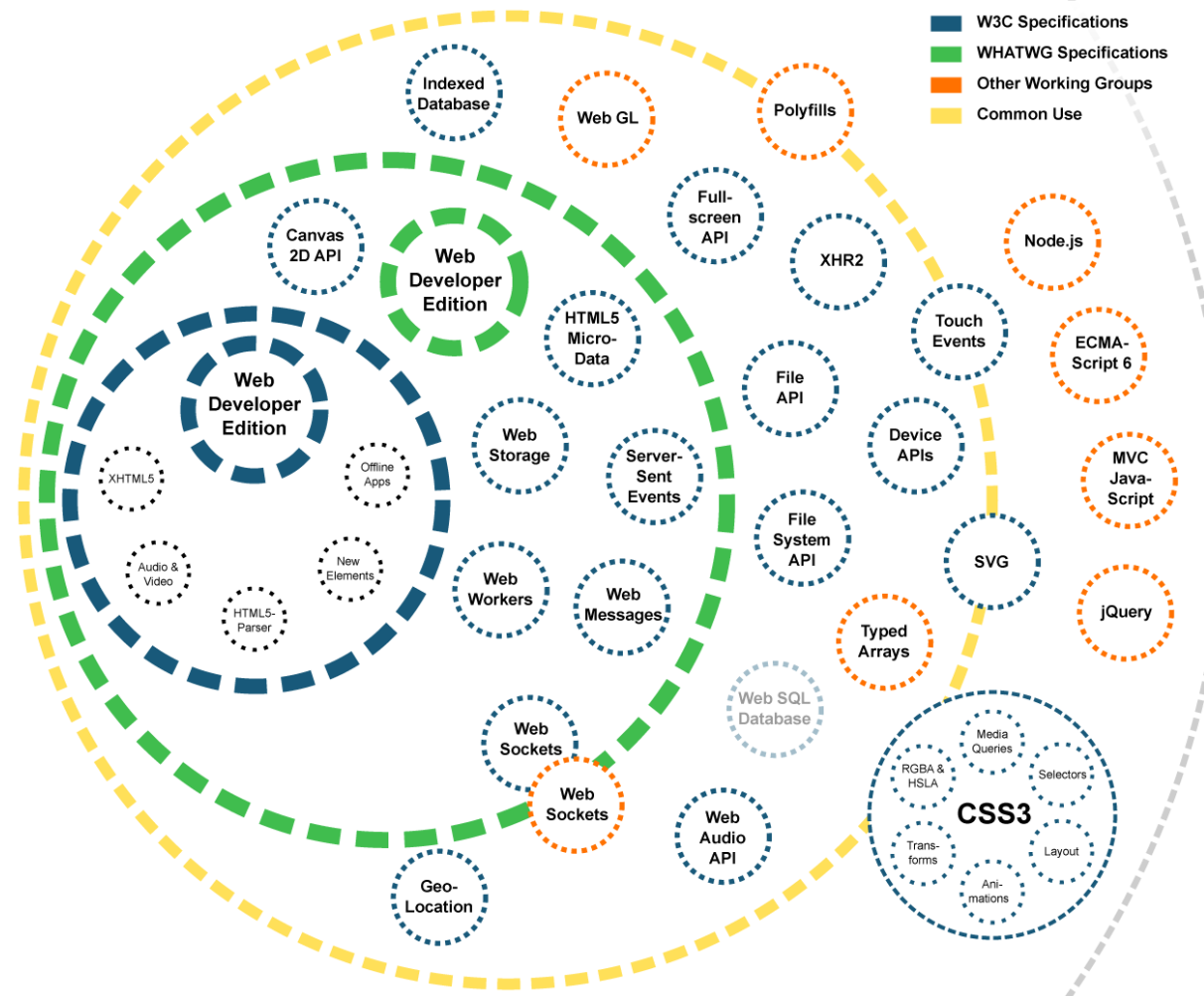


web applications



user interaction

HTML 5 is a family of standards



Live standard: Browser Compatibility?

- <https://caniuse.com/>

Drag and Drop - LS

Usage: Global, % of all users: 76.86% + 1.9% = 78.77%

Method of easily dragging and dropping elements on a page, requiring minimal JavaScript.

Current aligned | Usage relative | Date relative | Apply filters | Show all | ?

IE	Edge *	Firefox	Chrome	Safari	Opera	iOS Safari *	Opera Mini *	Android Browser *	Opera Mobile *	Chrome for Android	Firefox for Android	UC Browser for Android	Samsung Internet	QQ Browser	Baic Brow
1-3 6-9	2 12-17	2-3			10-11.5				12						
2-3 10	18-79	3.5-73	4-79	3.1-12.1	12.1-65	3.2-13.2		2.1-4.4.4	12.1				4-10.1		
2-3 11	80	74	80	13	66	13.3	all	4 80	4 46	4 80	68	12.12	11.1	1.2	7.1
		75-76	81-83	13.1-TP		13.4									

Notes | Known issues (9) | Resources (9) | Feedback

`dataTransfer.items` only supported by Chrome.
Currently no browser supports the `dropzone` attribute.
Firefox supports any kind of DOM elements for `.setDragImage`. Chrome must have either an `HTMLImageElement` or any kind of DOM Element attached to the DOM *and within the viewport* of the browser for `.setDragImage`.

A basic HTML document

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <title>Sample page</title>
  </head>
  <body>
    <h1>Sample page</h1>
    <p>This is a <a href="demo.html">simple</a> sample.</p>
    <!-- this is a comment -->
  </body>
</html>
```

- *Unicode* Text File
- DOCTYPE declaration
- Nested tree of Elements
 - Strict nesting
- **Element:**
 - Start tag: <a>
 - **Attribute:** href="demo.html"
 - Name=value pairs
 - End tag:
 - Inner text: simple

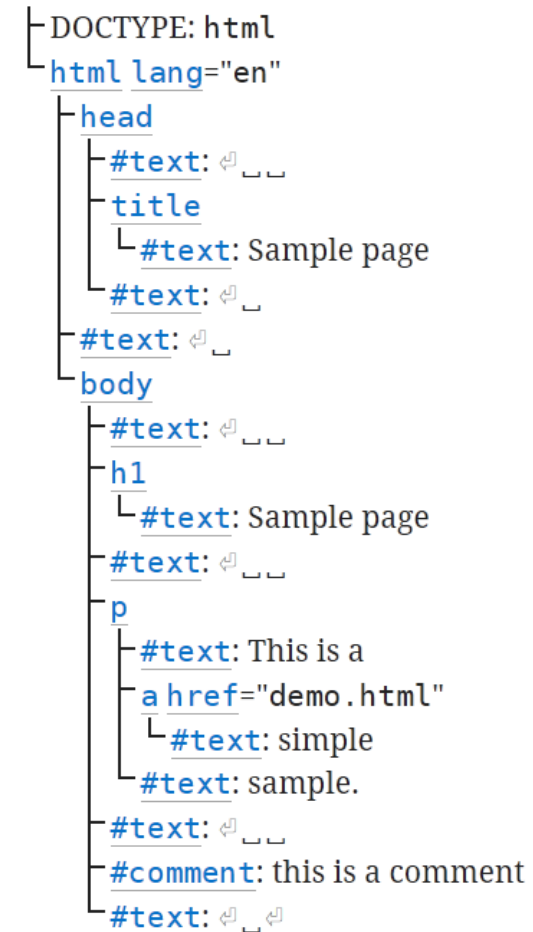
Mandatory structure

- First line: `<!DOCTYPE html>`
- `<html>` root element, contains the whole file
 - `<head>` (title, other metadata, load style sheets, load JavaScript code)
 - `<body>` (actual page content)

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <title>Sample page</title>
  </head>
  <body>
    <h1>Sample page</h1>
    <p>This is a <a href="demo.html">simple</a> sample.</p>
    <!-- this is a comment -->
  </body>
</html>
```


HTML parsing into a DOM tree

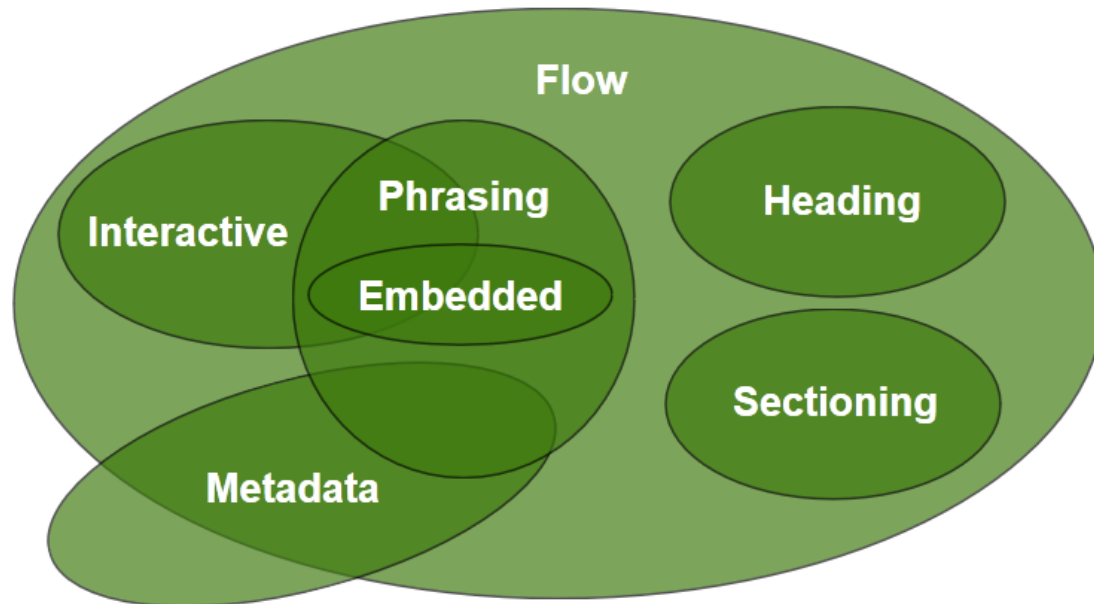
```
<!DOCTYPE html>
<html lang="en">
  <head>
    <title>Sample page</title>
  </head>
  <body>
    <h1>Sample page</h1>
    <p>This is a <a href="demo.html">simple</a> sample.</p>
    <!-- this is a comment -->
  </body>
</html>
```



HTML elements

- Elements are used to define the *meaning* of a portion of a document
 - Semantic markup
- The meaning will be rendered graphically, according to the style sheets
 - No HTML code should deal with presentation issues
- Each element has a default *display* value
 - `display:block`
 - Full-width
 - Starts on a new line
 - Top-to-bottom layout
 - `display:inline`
 - Does not start a new line
 - Occupies just the necessary space
 - Left-to-right layout
 - Wraps around at the end of line

Categories of HTML elements



- *Sectioning* content defines headings and footers
- *Heading content* defines the header of a section
- *Phrasing* content is the *text* of the document, as well as elements that mark up that text *at the intra-paragraph level*.
 - Runs of phrasing content form paragraphs.
- *Flow* content includes most types of elements

<https://html.spec.whatwg.org/dev/dom.html#kinds-of-content>

Sections and Headings (block)

Sectioning content

- `article`
- `aside`
- `nav`
- `section`

- `header`
- `footer`

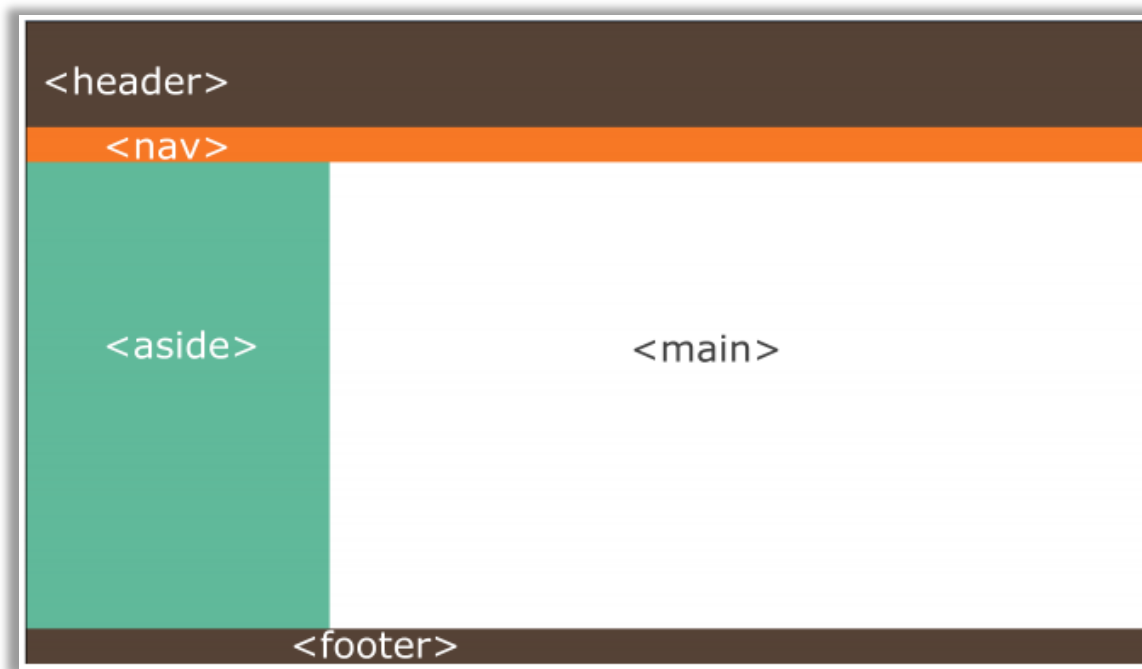
Heading content

- `h1`
- `h2`
- `h3`
- `h4`
- `h5`
- `h6`
- `hgroup`

Usage guide

Element	Usage
<code><article></code>	complete, or self-contained, composition in a document, page, application, or site and that is, in principle, independently distributable or reusable
<code><section></code>	A generic section of a document or application. A thematic grouping of content, typically with a heading
<code><nav></code>	A section of a page that links to other pages or to parts within the page: a section with navigation links
<code><aside></code>	A section of a page that consists of content that is tangentially related to the content around the aside element, and which could be considered separate from that content (such as sidebars)
<code><h1></code> - <code><h6></code>	A section heading
<code><hgroup></code>	The heading of a section, that groups multiple h1-h6 elements, e.g., in case of subheadings
<code><header></code>	A group of introductory or navigational aids
<code><footer></code>	typically contains information about its section such as who wrote it, links to related documents, copyright data, and the like

Typical layout



```
1 <body>
2   <header>
3     <nav>
4
5     </nav>
6   </header>
7   <aside>
8
9   </aside>
10  <main>
11
12  </main>
13  <footer>
14
15  </footer>
16 </body>
```

Grouping content (block)

Element	Usage
<code><p></code>	a paragraph of text
<code><hr></code>	horizontal rule (represents a paragraph-level thematic break)
<code><pre></code>	block of preformatted text
<code><blockquote></code>	a section that is quoted from another source
<code></code>	a list of items, where the items have been intentionally ordered. The items of the list are <code></code> elements
<code></code>	a list of items, where the order of the items is not important. The items of the list are <code></code> elements
<code><menu></code>	an unordered list <code></code> , whose elements are commands that may be executed
<code><dl></code>	a list of definitions. Each definition has a name (<code><dt></code> , definition term) and a value (<code><dd></code> , definition description)
<code><figure></code>	a sectioning element that can be used to annotate illustrations, diagrams, photos, code listings, etc. May include <code></code> or other content. May include <code><figcaption></code>
<code><main></code>	represents the dominant contents of the document
<code><div></code>	the <code><div></code> element has no special meaning at all. It can be used with the <code>class</code> , and <code>title</code> attributes to mark up semantics common to a group of consecutive elements. Use as a last resort.

Phrasing content (inline)

- **a**
- abbr
- audio
- **b**
- br
- button
- canvas
- cite
- code
- data
- datalist
- del
- dfn
- **em**
- embed
- **i**
- **img**
- input
- ins
- kbd
- label
- mark
- output
- picture
- progress
- q
- s
- samp
- select
- slot
- small
- **span**
- **strong**
- sub
- sup
- template
- textarea
- time
- var
- video
- wbr
- Insert content or format content inside a single paragraph
- Normally formatted left-to-right, and wrap at the end of line

<https://html.spec.whatwg.org/dev/text-level-semantic.html>

Interactive content (inline)

- `a`
 - `audio`
 - `button`
 - `details`
 - `embed`
 - `iframe`
 - `input`
 - `label`
 - `select`
 - `textarea`
 - `video`
- Elements specifically intended for user interaction
 - May be used to compose a form
 - May include multimedia interactive content
 - In the simplest form, they may just be a link
 - `anchor`

Tabular data

- `<table>` container
- `<thead>` groups header rows, `<tbody>` groups data rows, `<tfoot>` groups summary rows
- `<tr>` table row, includes
 - `<td>` cell with table data
 - `<th>` cell with table heading
- May have a `<caption>`
- `<colgroup>` may apply common attributes to a set of `<col>` columns
- `rowspan` and `colspan` attributes for creating complex grids

Data about the planets of our solar system (Planetary facts taken from [Nasa's Planetary Fact Sheet - Metric](#).)

	Name	Mass (10 ²⁴ kg)	Diameter (km)	Density (kg/m ³)	Gravity (m/s ²)	Length of day (hours)	Distance from Sun (10 ⁶ km)	Mean temperature (°C)	Number of moons	Notes	
Terrestrial planets	Mercury	0.330	4,879	5427	3.7	4222.6	57.9	167	0	Closest to the Sun	
	Venus	4.87	12,104	5243	8.9	2802.0	108.2	464	0		
	Earth	5.97	12,756	5514	9.8	24.0	149.6	15	1	Our world	
	Mars	0.642	6,792	3933	3.7	24.7	227.9	-65	2	The red planet	
Jovian planets	Gas giants	Jupiter	1898	142,984	1326	23.1	9.9	778.6	-110	67	The largest planet
		Saturn	568	120,536	687	9.0	10.7	1433.5	-140	62	
	Ice giants	Uranus	86.8	51,118	1271	8.7	17.2	2872.5	-195	27	
		Neptune	102	49,528	1638	11.0	16.1	4495.1	-200	14	
Dwarf planets	Pluto	0.0146	2,370	2095	0.7	153.3	5906.4	-225	5	Declassified as a planet in 2006, but this remains controversial.	

Key attributes (applicable to all elements)

`class="aa bb cc"`

- Space-separated list of class identifiers
- Represents all the classes that this element belongs to
- Heavily used in CSS and JS for matching portions of contents

`id="unique"`

- Represents an element's unique identifier
- Must be unique within this specific HTML document
- Heavily used in CSS and JS for finding/matching this specific element

Key attributes (applicable to all elements)

`style="css fragment"`

- Apply a set of CSS declarations to this specific HTML element
- Use sparingly, prefer CSS rules that map to element `id` and `class`

“Wildcard” elements

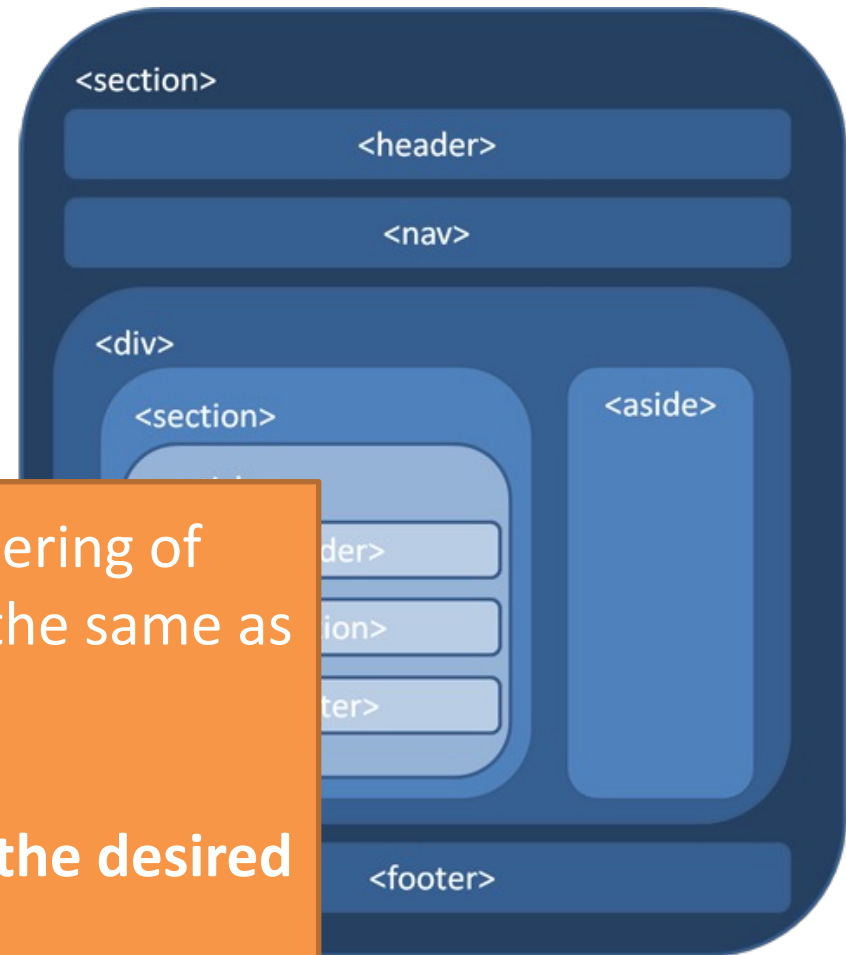
`<div>...</div>`

- Block-level container element
- No predefined semantics
- Invisible layout
- Used to mark-up blocks or groups of blocks, with specific classes

`...`

- Inline-level container element
- No predefined semantics
- Invisible layout
- Used to mark-up parts of a paragraph, with specific classes

Opaque vs. Semantic elements

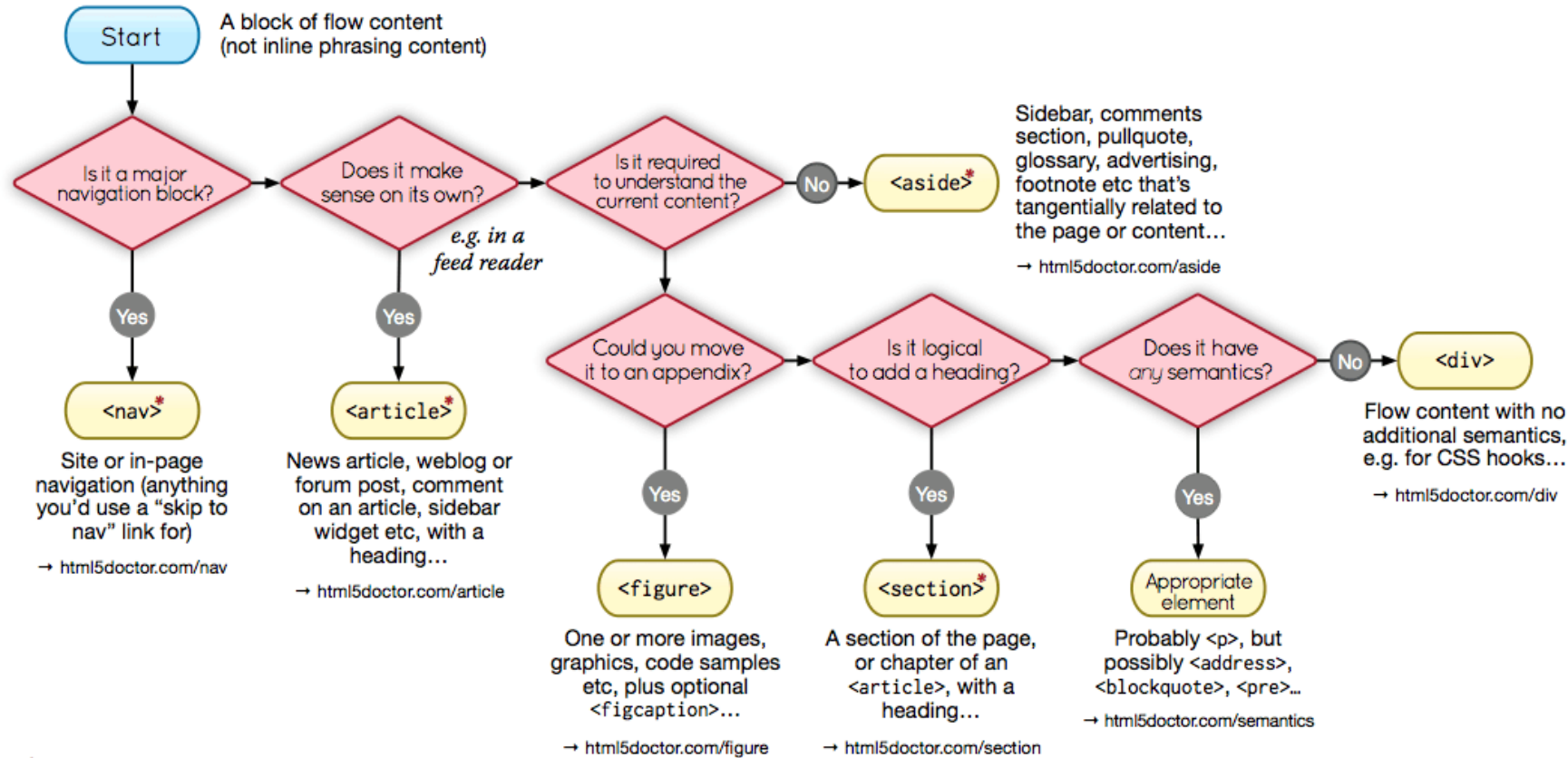


Note: the default rendering of `<section>`, `<article>`, ... is the same as `<div>`

Only CSS rules will apply the desired layout.



By @riddle & @boblet
www.html5doctor.com



* Sectioning content element
These four elements (and their headings) are used by HTML5's outlining algorithm to make the document's outline
→ html5doctor.com/outline

2011-07-22 v1.5
For more information:
www.html5doctor.com/semantics

- DOCTYPE**
HTML5 has the best DOCTYPE ever.
- TITLE**
Title of the site is simple and clean. Purpose of page is first, a separator is used, and ends with title of the site.
- CSS**
Only one single stylesheet is used (media types are declared inside stylesheet), and only served to good browsers. IE 6 is served a universal stylesheet. Below IE 6 gets nothing.
- BODY**
ID applied to body to allow for unique page styling without any additional markup.
- DESCRIPTIVE BLOCKS**
header, section, article, aside... all appropriately describe the content they contain better than the divs of old.
- HEIRARCHY**
Title tags are reserved for real content, and follow a clear hierarchy.
- IMAGE ATTRIBUTES**
Images include alternate text, mostly for visually impaired users but also for validation. Height and width applied for rendering efficiency.
- APPROPRIATE TAGS**
Lists are marked up as lists, depending on the needs of the list: unordered, ordered, and the underserved definition list.
- SEMANTIC CLASSES**
Beyond appropriate element names, classes and IDs are semantic: they describe without specifying. (e.g. "col" is much better than "left")
- CLASSES**
Are used any time similar styling needs to be applied to multiple elements (reusability).
- IDS**
Are used any time an element appears only once on the page and cannot be targeted reasonably any other way.
- JAVASCRIPT**
jQuery (the most beautiful JavaScript library) is served from Google. Only a single JavaScript file is loaded. Both scripts are referenced at the bottom of the page.

WHAT *Beautiful* HTML LOOKS LIKE

HTML5 and it's new elements make for the most beautiful HTML yet.

```

<!DOCTYPE HTML>
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
<title>Portfolio | Chris Coyier</title>
<!-- [if IE] -->
<link rel="stylesheet" type="text/css" href="/css/main.css" />
<!-- [endif] -->
<!-- [if gte IE 7] -->
<link rel="stylesheet" type="text/css" href="/css/main.css" media="screen, projection" />
<!-- [endif] -->
<!-- [if IE 6] -->
<link rel="stylesheet" type="text/css" href="http://universal-ie6-css.googlecode.com/files/ie6.0.3.css" media="screen, projection" />
<!-- [endif] -->
</head>
<body id="home">
<div id="logo" href="">Site Title</div>
<div id="slogan">web craftsman, blogger, author, speaker</div>
<nav>
<?php include("inc/main-menu.php"); ?>
</nav>
</div>
<section class="container">
<article>
<h1>Hipsters</h1>

<p>You can&#217;t dress up as a hipster for Halloween. Their attire is already so bizarre that there isn&#217;t an exaggeration of it that looks like a costume. It would just look like you are another hipster about to read a poem about reading poems.</p>
<h2>Secondary Title</h2>
<p>Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.</p>
</article>
<!-- Additional Article -->
</article>
</section>
<aside>
<h3>My Major Projects</h3>
<ul>
<li><a href="http://aremysitesup.com">Are My Sites Up?</a></li>
<li>Monitor your sites</li>
<li><a href="http://css-tricks.com">CSS-Tricks</a></li>
<li>A web design community</li>
<li><a href="http://dgmw.com">Digging Into WordPress</a></li>
<li>Learn about WordPress</li>
</ul>
</aside>
<div class="container">
<h4>People I Enjoy</h4>
<ul class="col">
<li><a href="http://fastfoodreviewed.com">Jesse Lynch</a></li>
<li><a href="http://jeffcampana.com">Jeff Campana</a></li>
<li><a href="http://perishablepress.com">Jeff Starr</a></li>
</ul>
<ul class="col">
<li><a href="http://davidwalsh.name">David Walsh</a></li>
<li><a href="http://the-strategic-treat.com">Jeff Penman</a></li>
<li><a href="http://shiftdfrequency.com">Richard Felix Jr.</a></li>
</ul>
<h4>Sandwiches</h4>
<ul class="col container" id="sandwich-list">
<li><a href="http://jimjohns.com">Jim Johns</a></li>
<li><a href="http://subway.com">Subway</a></li>
<li><a href="http://patbelly.com">Patbelly</a></li>
</ul>
<?php echo data("Y"); ?> Chris Coyier
</div>
<script type="text/javascript" src="http://ajax.googleapis.com/ajax/libs/jquery/1.3.2/jquery.min.js?ver=1.3.2"></script>
<script type="text/javascript" src="/js/main.js"></script>
<!-- Google Analytics Code -->
<?php include("inc/analytcs.php"); ?>
</body>
</html>


```

- INDENTATION**
Tabs or spaces are used to indent the code to properly indicate parent-child relationship of tags.
- FILE PATHS**
Site resources use relative file paths for efficiency. Content file paths are absolute, assuming content is syndicated.
- INCLUDES**
Things common across multiple pages are inserted via server side includes. Doesn't have to be PHP of course, any type of include is fine.
- CHARACTERS ENCODED**
If it's a special character, it's encoded.
- DYNAMIC**
Things that need to be dynamic, are dynamic.
- COMMENTS**
Comments are included for things that may not be immediately obvious upon reviewing the code.
- FREE FROM STYLING**
Nothing on the page applies styling or even implies what the styling might be. Everything on the page is either a required site resource, content, or describing
- VALID**
The markup adheres to W3C validation. Tags are closed, required attributes used, etc.



<https://css-tricks.com/what-beautiful-html-code-looks-like/>

HTML Validator

**Markup Validation Service**
Check the markup (HTML, XHTML, ...) of Web documents

Validate by URI Validate by File Upload Validate by Direct Input

Validate by URI

Validate a document online:

Address:

▼ More Options

Character Encoding Only if missing

Document Type Only if missing

List Messages Sequentially Group Error Messages by Type

Show Source Clean up Markup with HTML-Tidy

Show Outline Validate error pages Verbose Output

This validator checks the [markup validity](#) of Web documents in HTML, XHTML, SMIL, MathML, etc. If you wish to validate specific content such as [RSS/Atom feeds](#) or [CSS stylesheets](#), [MobileOK content](#), or to [find broken links](#), there are [other validators and tools](#) available. As an alternative you can also try our [non-DTD-based validator](#).



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<https://validator.w3.org/>



References

- HTML: The Living Standard, Developer's Edition — Last Updated 20 March 2020 - <https://html.spec.whatwg.org/dev/>
- MDN: HTML: Hypertext Markup Language - <https://developer.mozilla.org/en-US/docs/Web/HTML>
- A Modern HTML Introductory Tutorial - <http://fastwebstart.com/modern-html-tutorial/> (and linked resources)
- <https://css-tricks.com/what-beautiful-html-code-looks-like/>



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