week::one
Browsers, Rendering Engines, & More HTML

A Quick History of Browsers

Mosaic, Netscape Navigator, Internet Explorer, Firefox, Safari, Chrome, and more...

Designing with Web Standards

Structure
- o HTML, HTML5

Presentation
- o CSS, CSS3

Behavior
- o ECMAScript (JavaScript; jQuery)
- o DOM (Document Object Model)

Rendering Engines

One Web; Many Different Ways to Render It:

Engine	Browser		Supported Platforms
Gecko		Firefox	macOS, Windows, UNIX/Linux, Android
WebKit		Apple Safari	macOS, Windows, iOS devices
		~~Chrome~~ Forked WebKit and moving to Blink	~~macOS, Windows, UNIX/Linux~~
		Any web browser on iOS	Apple requires all web browser activities on iOS to use WebKit
Blink		Google Chrome	macOS, Windows, UNIX/Linux, Android
Chromium *Open source version of Blink*		Many browsers	macOS, Windows
~~EdgeHTML~~ *Moved to Chromium early-2019*		Microsoft Edge	Windows 10; macOS
Trident		Internet Explorer	Windows (now discontinued, thankfully)

Browser Market Share (all platforms)
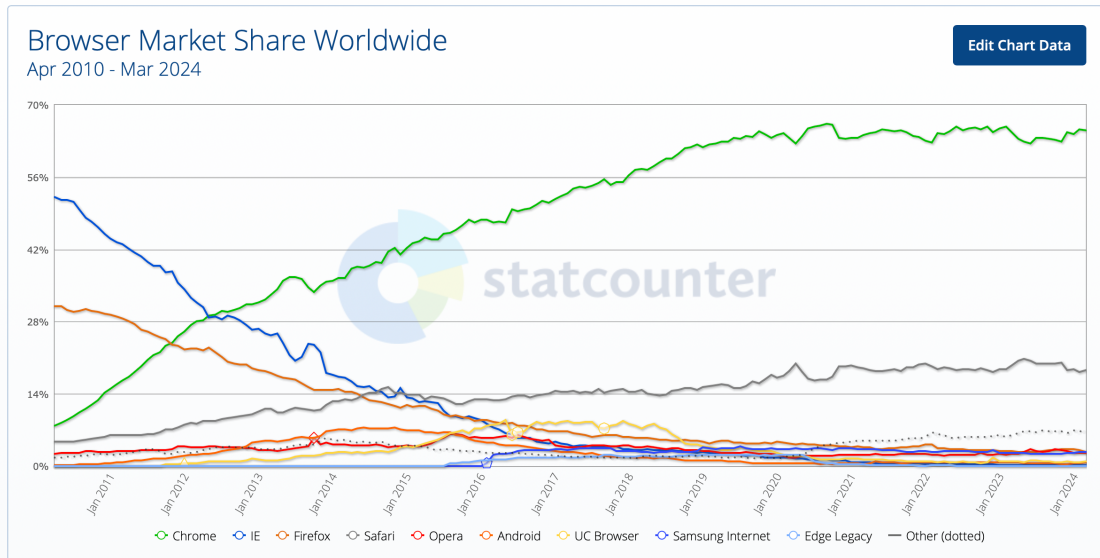
Web Inspectors

Safari

    o   To enable, in preferences select Advanced > Show Develop menu in menu bar

Block-level Elements

Defined

- o   Block-level elements create a new paragraph when closed.

Common Black-level Elements

- o   **Header** elements contain header or sub-header copy
    - ▪ Header elements are ranked in order of importance (<h1> is first, <h2> is second, etc.).
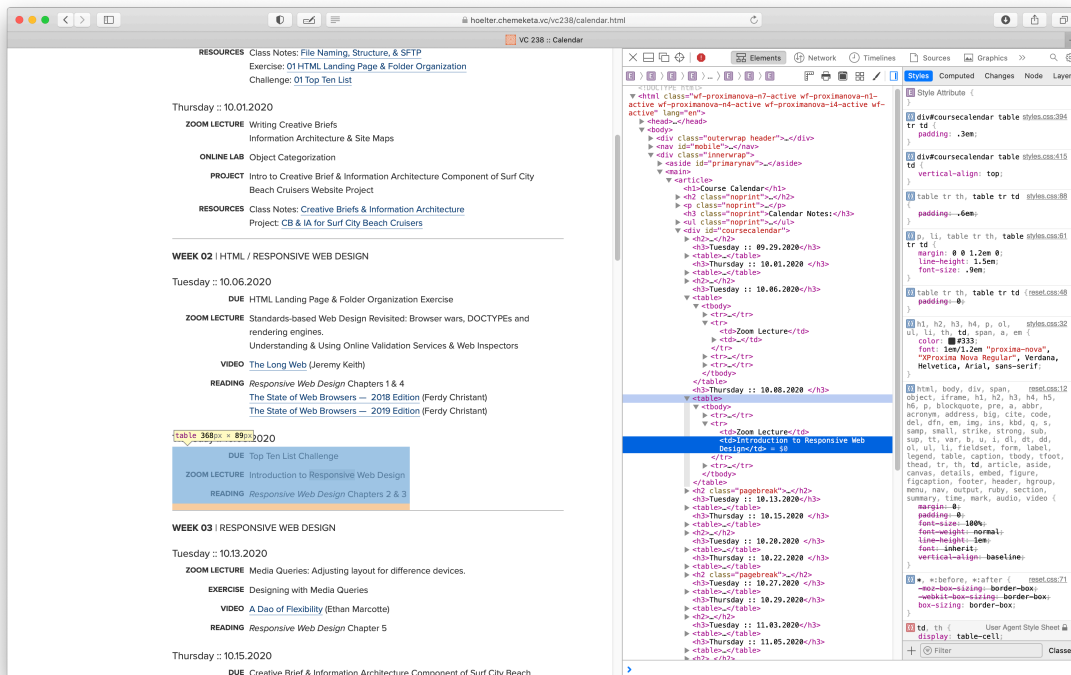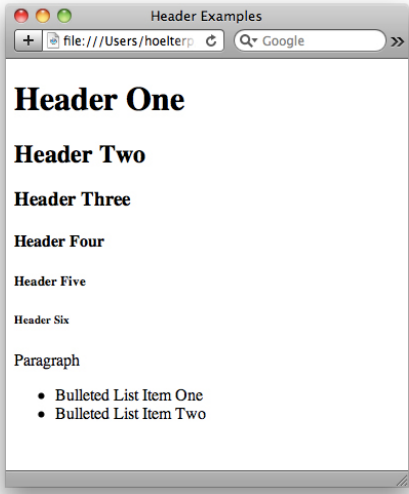- o   **Paragraph** elements contain body copy
- o   **List** elements contain lists of items (ordered, unordered, term/definition)
- o   **DIV** elements (`<div> </div>`) have no inherent meaning, but are used to group other block-level element that share a set of properties (header items, footer item, etc.).
- o   **HTML5 semantic** tags are similar to DIVs, but with the advantage of having some intrinsic meaning.
    - ▪ Some of these are called Sectioning *Content Elements*, including `article`, `aside`, and `nav`.

Why use block-level elements?

- o   Create clear divisions within your content
- o   Allow you to contain content within boxes that can be manipulated and styled with CSS.
- o   Allow you to establish the structural hierarchy of a page.
- o   Search engines index content better when proper block-level elements (like HTML5 semantic tags) are used.

Block-level Elements	HTML

	`<h1>Heading One</h1>`
	`<h2>Heading Two</h2>`
	`<h3>Heading Three</h3>`
	`<h4>Heading Four</h4>`
	`<p>Paragraph</p>`
	`<ul>`
	`    <li>Bulleted List Item One </li>`
	`    <li>Bulleted List Item One </li>`
	`</ul>`

Inline Elements

Defined

- o   Inline elements live within block-level elements.
- o   These elements *do not* create a new paragraph after they are closed.
- o   Inline elements include:
    - ▪ Span tags (`<span>`)
    - ▪ Anchor links (`<a>`)
    - ▪ Tags for bold and italic (`<strong>` and `<em>`).

HTML for Common Typographic Structure

Unordered and Ordered Lists

- o Allows you to create formatted and intended lists.
- o Similar to outlines in word processing programs.
- o List Types:
    - ▪ Unordered List — aka Bulleted List (•; `<ul></ul>`)
    - ▪ Ordered Lists (1, 2, 3, *n*; `<ol></ol>`)
- o List can have multiple levels of indentation.
- o Each item in the list must be contained within a `<li></li>` tag (Line item tag).

Definition Lists

- o HTML provides simple structure for term/definition pairings
- o `<dl>` begins a list; `<dt>` structures the term, and `<dd>` structures the definition.
- o Example:

```
<dl>
    <dt>Unicorn</dt>
    <dd>A person who excels at both visual design and HTML/CSS coding.</dd>
</dt>
```

Special Characters & Breaks

- o About the non-breaking space:
    - ▪ Web browsers ignore any occurrence of two or more spaces in a row.
    - ▪ Multiple spaces are treated and displayed as a single space.
- o There are a couple of common break characters:
    - ▪ <hr> stands for horizontal rule and by defaults draws a horizontal line.
    - ▪
 is a soft break (like in print typesetting) that create a line return without starting a new paragraph.
- o Select special characters:

CHARACTER	HTML
< >	`< >`
Non-breaking Space	` `
Horizontal Rule	`<hr />`
Line Break	` `

DIV Tags

Defined & Usage

- o DIV tags (`<div> </div>`) are used to provide **element grouping** beyond what is possible with semantic HTML tags.
    - ▪ DIV is short for "division"—a way to "divide" up page content.
- o DIV tags have no inherent meaning.
- o DIV tags can enclose any type of content, and almost all content on a page is contained within a DIV tag.

HTML5 Semantic Tags

DOCTYPE

- o `<!DOCTYPE html>`
- o In your HTML file, add this to the very top of the HTML document.
- o *What's the DOCTYPE?* A method of telling a Web browser which *layout mode* to use when displaying a page.

Semantic Tags

- o HTML5 semantic tags allow you to divide content in a more meaningful manner.

`<section>`	The **section** element represents a generic document or application section. A section, in this context, is a thematic grouping of content, typically with a heading. Examples of sections would be chapters, the tabbed pages in a tabbed dialog box, or the numbered sections of a thesis. A Web site's home page could be split into sections for an introduction, news items, contact information.
`<header>`	The **header** element represents a group of introductory or navigational aids. A header element is intended to usually contain the section's heading (an h1–h6 element or an hgroup element), but this is not required. The header element can also be used to wrap a section's table of contents, a search form, or any relevant logos.
`<footer>`	The **footer** element represents a footer for its nearest ancestor sectioning content or sectioning root element. A footer typically contains information about its section such as who wrote it, links to related documents, and the like. Footers don't necessarily have to appear at the end of a section, though they usually do.
`<aside>`	The **aside** element represents 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 sections are often represented as sidebars in printed typography.
`<nav>`	The **nav** element represents a section of a page that links to other pages or to parts within the page: a section with navigation links. Not all groups of links on a page need to be in a nav element — only sections that consist of major navigation blocks are appropriate for the nav element.
`<article>`	The **article** element represents a component of a page that consists of a self-contained composition in a document, page, application, or site and that is intended to be independently distributable or reusable, e.g. in syndication. This could be a forum post, a magazine or newspaper article, a Web log entry, a user-submitted comment, or any other independent item of content.
`<main>`	Represents the **main content** of the <body> of a document. The content of a <main> element should be unique to the document. Note: Only one <main> element should be used in an HTML page.

- o Source: `http://diveintohtml5.info/semantics.html`

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\<header\>

\<nav\>

Today's Hours | Location (map) | Purchase
9:30am | Water Ave. | Tickets ▶

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Kids Educators Professionals

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ON VIEW
EMPIRICAL THEATER
PLANETARIUM
SUB **\<nav\>**
EVENTS
CAMPS & CLASSES
SUPPORT
CONTACT

General Info: 800.955.6674

\<main\>

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RAIDERS OF THE LOST ARK
With DR. VIRGINIA BUTLER

\<article\>

REEL SCIENCE ON APRIL 9　　▶ Learn More

\<div\>

\<section\>
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APR 5 Animal Behavior
Visitors will learn and practice skills by observing feeding behaviors…
▶ More Info

APR 6 $2 Days at OMSI
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ALL EVENTS ▶

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— Lecture Outline —