Semantic HTML

Agenda

- **Recap**
- **Semantic HTML definition**
- **Semantic and Non-Semantic Elements Before HTML5**
- **Document Outline**
- **Semantic Elements**
- **A Semantic Page Example**

Recap

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Last session's topics

- **Text Styling (font & text-layout)**

- **Colors and Backgrounds (color and background-color, units and particularities)**

- **Box Model**

- **CSS Positioning (floats, position, display, z-index)**

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Semantic HTML

Semantic HTML

- **Semantic web** term - coined in 2001 by Sir Tim Berners-Lee
  - = a **web of data that can be processed by machines**
- W3C definition: "**a semantic element clearly describes its meaning to both the browser and the developer**"
- Simply put, **when a site's markup is semantic, the tags properly describe the content**
- Benefits:
  - more **searchable content** (better search engine ranking)
  - **increased accessibility** (screen readers can better interpret the meaning of the content)
  - **internationalization**
  - **interoperability** (make it easy for other developers to understand your code)

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Semantic and Non-Semantic Elements Before HTML5

- **Let's think about them together:**
  - **<img>**
  - **<form>**
  - **<table>**
  - **<ol>, **
  - **<p>**
  - **<h1>, <h2>, …, <h6>**
  - **<div>**
  - **<span>**

Divitis

- = the process of using too many nested/unnecessary divs to mark up a page
- Divs are grouping block elements
  - flow elements
  - have no special meaning, according to the specs
- If we include a div inside a div, it appears as though the outer div would be the parent element of the inner one, while in reality this is not the case

Document Outline

Document Outline

- **= the structure of an HTML document**, **that shows how elements are related to each other**
- **Starting from HTML5, it consists of a list of one or more (nested) sections**
- **Section**
  - **= a container that corresponds to some nodes in the original DOM tree**
  - **Each section can have one heading associated with it, and**
  - **can contain any number of further nested sections**
- **Chrome extension to view the document outline**

The Outlining Algorithm

- Takes into account 5 sectioning elements:
  - `<section></section>` - for sections grouped around a specific theme
  - `<article></article>` - for complete or self-contained compositions (a blog post or a widget)
  - `<nav></nav>` - for navigation blocks
  - `<aside></aside>` - for complementary content (sidebars)
  - `<body></body>`
- `<header>` and `<footer>` don't generate new sections in a document
- Every sectioning element can have its own header and footer

Rules for a Well-Structured Document Outline

1. The outermost sectioning element is always the **\<body\>** tag
2. Sections can be **nested**
3. Each **section** has its **own heading hierarchy**
4. The document outline needs **proper headings for each section**
5. The **first heading element defines the heading of a given section**. The other heading tags in the section need to be **relative** to this
6. Sections defined by **\<nav\>** and **\<aside\>** don't belong to the main outline of the HTML document (usually not rendered initially by the assistive technologies)
7. Each section can have their own **\<header\>** and **\<footer\>** tags

Semantic Elements

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<nav>

- **= a section of a page whose purpose is to provide navigation links, either within the current document or to other documents (MDN)**
- **Examples: menus, tables of contents, indexes**
- **It is intended only for major block of navigation links**
  - **The <footer> element often has a list of links that don't need to be in a <nav>**
- **A document may have several nav elements (for example, for site navigation and for intra-page navigation)**

<article>

- = **self-contained composition in a document, page, application, or site, which is intended to be independently distributable or reusable (e.g., in syndication)** (MDN)
- **Examples**: a forum post, a magazine or newspaper article, or a blog entry
- **Smell test: would this make sense in an RSS feed?**
- Must be identified by a **heading** within the article element
- When an <article> element is nested, **the inner element represents an article related to the outer element**
  - the comments of a blog post can be <article> elements nested in the <article> representing the blog post

<aside>

- = a section of a document with content connected tangentially to the main content of the document (MDN)
- Often presented as a sidebar
- When used within an article element, the contents should be specifically related to that article
  - a glossary
- When used outside of an article element, the contents should be related to the site
  - a blogroll, groups of additional navigation, and even advertising if that content is related to the page

<figure>

- **= self-contained content, frequently with a caption (<figcaption>), typically referenced as a single unit (MDN)**
- **Examples**: image, illustration, diagram, code snippet that is referenced in the main flow of a document, but that can be moved to another part of the document or to an appendix without affecting the main flow
- **The outline of the content of the <figure> element is excluded from the main outline of the document**
- **<aside> vs <figure>**
  - the content is simply related and not essential => <aside>
  - the content is essential but its position in the flow of content isn't important => <figure>

<section>

- **= a standalone section of functionality contained within an HTML document, typically with a heading, which doesn't have a more specific semantic element to represent it (MDN)**
- **Examples: a list of search results, a map display and its controls**
- **Must be identified by a heading within the article element**
- **A section should logically appear in the outline of a document**
- **<article> vs <section> vs <div>**
  - **the content makes sense on its own in a feed reader => <article>**
  - **the content is related => <section>**
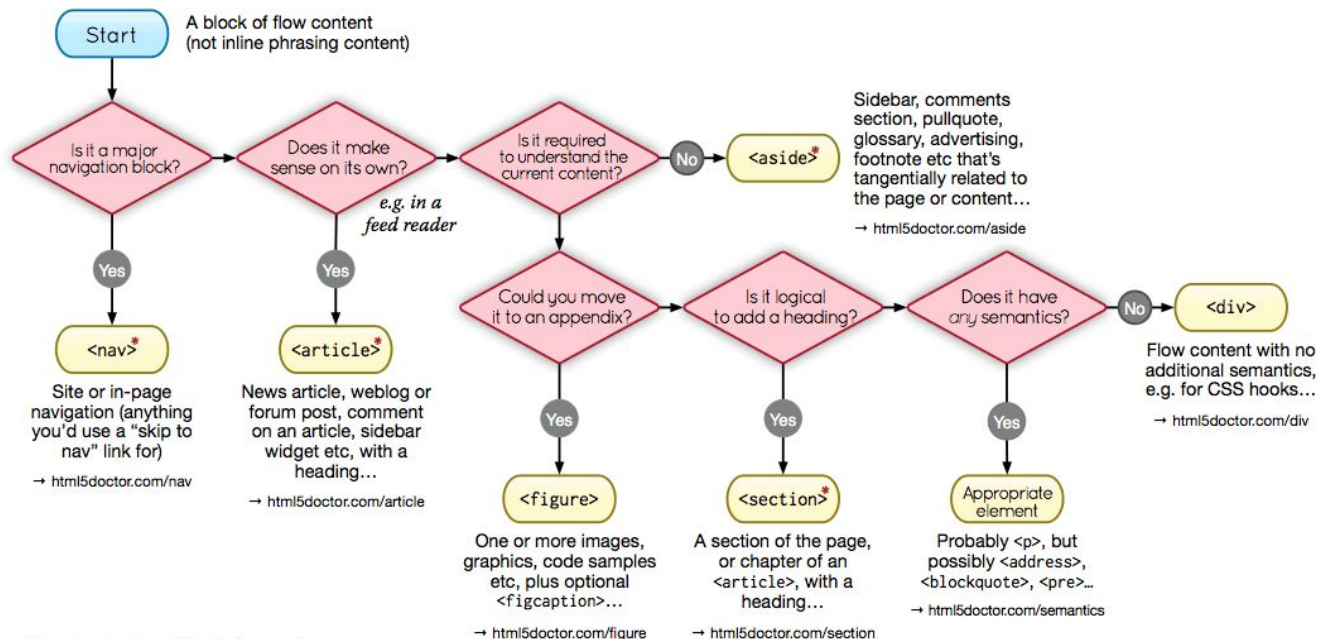 - **no semantic relationship => <div>**

Element Flowchart

html5 Doctor — HTML5 Element Flowchart
Sectioning content elements and friends

By @riddle & @boblet
www.html5doctor.com

Start — A block of flow content (not inline phrasing content)

Is it a major navigation block?
— Yes → `<nav>`*
Site or in-page navigation (anything you'd use a "skip to nav" link for)
→ html5doctor.com/nav

Does it make sense on its own? *e.g. in a feed reader*
— Yes → `<article>`*
News article, weblog or forum post, comment on an article, sidebar widget etc, with a heading...
→ html5doctor.com/article

Is it required to understand the current content?
— No → `<aside>`*
Sidebar, comments section, pullquote, glossary, advertising, footnote etc that's tangentially related to the page or content...
→ html5doctor.com/aside

Could you move it to an appendix?
— Yes → `<figure>`
One or more images, graphics, code samples etc, plus optional `<figcaption>`...
→ html5doctor.com/figure

Is it logical to add a heading?
— Yes → `<section>`*
A section of the page, or chapter of an `<article>`, with a heading...
→ html5doctor.com/section

Does it have any semantics?
— Yes → Appropriate element
Probably `<p>`, but possibly `<address>`, `<blockquote>`, `<pre>`...
→ html5doctor.com/semantics

— No → `<div>`
Flow content with no additional semantics, e.g. for CSS hooks...
→ html5doctor.com/div

*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

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For more information:
www.html5doctor.com/semantics

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<main>

- **<main> = consists of content that is directly related to, or expands upon the central topic of a document or the central functionality of an application (MDN)**
- **The content of a <main> element should be unique to the document, excluding any content that is repeated across a set of documents such as:**
  - **sidebars,**
  - **navigation links,**
  - **copyright information,**
  - **site logos, and**
  - **search forms (unless the document's main function is as a search form).**
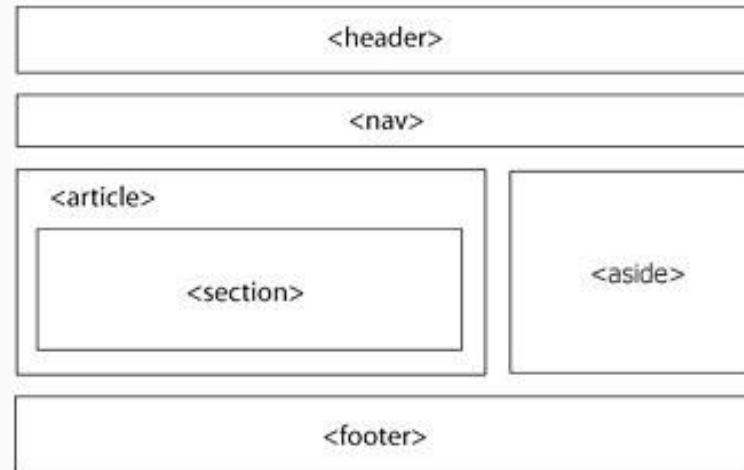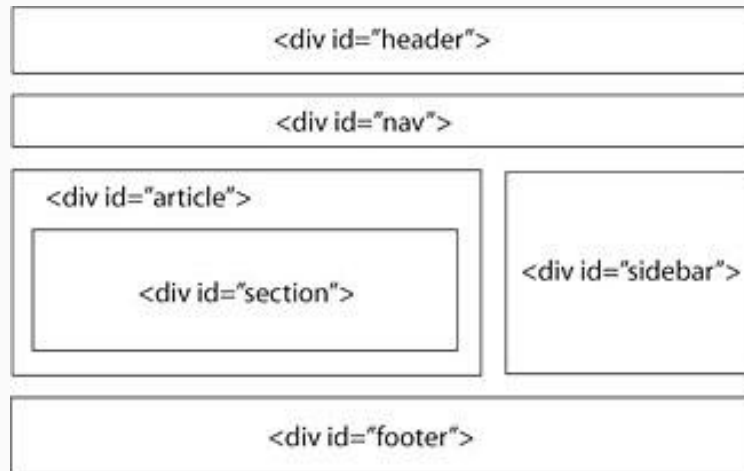
<header> and <footer>

- **<header> = a group of introductory or navigational aids (MDN)**
  - **May contain: heading elements, a logo, a search form, the <nav> element etc.**
- **<footer> = represents a footer for its nearest sectioning content or sectioning root element (MDN)**
  - **May contain: information about the author of the section, copyright data or links to related documents**
- **<header> and <footer> are not sectioning elements, so they don't appear in the outline**
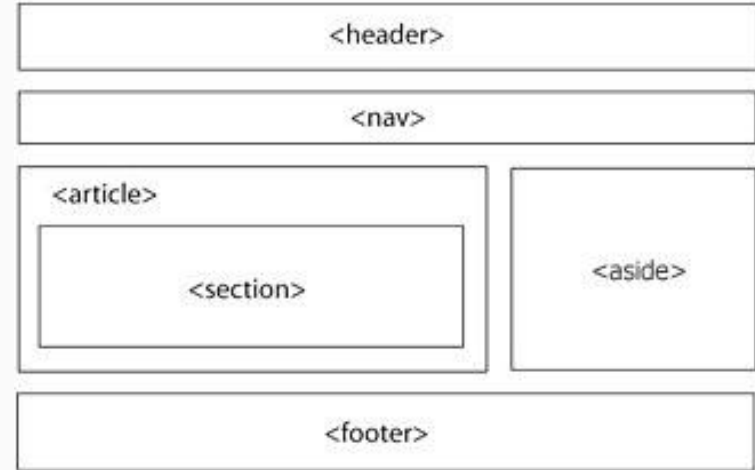
A Semantic Page Example

Semantic Page Structure

`<div id="header">`	`<header>`
`<div id="nav">`	`<nav>`
`<div id="article">` `<div id="section">` · `<div id="sidebar">`	`<article>` `<section>` · `<aside>`
`<div id="footer">`	`<footer>`

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Workshop

- **Implement this structure together, following the rules for a well structured document**
- **Test how the outline looks like for that page**

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Homework

- Update your HTML blog page to use the semantic elements that you learned about today.
- Use in your code as many **elements** of the following: article, aside, section, header, footer, nav
- Make sure the document outline meets the intention of the content on the page

Resources

- **Semantics (MDN)**
- **HTML Sections and Outline (MDN)**
- **CodeSchool: What semantic elements are and why they're important**
- **HTML 5 Doctor: Let's talk about semantics** (great article!)
- **A Look Into Proper HTML5 Semantics**
- **W3 Outline Algorithm**
- **Divitis articles: CSS Creator & Smashing Magazine**

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