

Chapter 3 — Semantic HTML Tags

In the early days of HTML, tags were used to define how the information was to be displayed on the browser. With XHTML1 and especially with HTML5, formatting was to be handled with the CSS and the HTML tags were to be used to add meaning to the text. The meaning of structure is called semantic meaning.

There are two main groups of tags used in the body of a document: flow and phrasing. Flow statements are used to section the page into meaningful chunks, where phrasing elements add meaning to individual words or groups of words.

Learning Outcomes for this Chapter

Upon completion of the reading of this chapter and assignments found at the end, a student should be able to:

- explain the difference between flow and phrasing elements,
- understand that HTML tags are to be used to add semantic meaning to the content of a page, not format,
- implement nested flow elements to format an article or collection of articles,
- use phrasing elements to mark text, within flow, to add additional meaning,
- recall that flow elements should not be inside phrasing elements,
- create properly nested, semantically meaningful, Web pages.

What Are Semantics?

Semantics in an HTML document refer to the meaning of the tags in relation to the content of your webpage.⁴⁸ Though it may not seem important now, using proper semantics can make it much easier for other people and yourself to read your HTML.

HTML Introduced several tags to replace the old `<div> . . . </div>` and ` . . . ` tags in previous versions of HTML. These include: `<section> . . . </section>`, `<article> . . . </article>`, `<aside> . . . </aside>`, and many others.

They allow you to organize your page to add a new understanding of how each part of your HTML fits into the whole. Remember, tags are used to denote what is inside of them rather than how they should be displayed. This is the **semantic** way.

Flow, Phrasing, and Metadata Elements

Though there are many HTML tags, each one will fall into one of three categories: 1) Flow

48 <http://www.merriam-webster.com/dictionary/semantic>



elements; 2) Phrasing elements, and 3) Metadata elements.⁴⁹ Flow and Phrasing elements are displayed in the browser and the Metadata elements tell the browser how to display elements of your page.

Flow elements are usually displayed as blocks on the webpage.⁵⁰ These elements take up their own space and will stack on your page vertically with one on top of another. For example, each `<p> . . . </p>` tag will stack one after the other much like the paragraphs in this book.

In comparison, Phrasing elements go inside the Flow elements and consist of text and other visible content.⁵¹ These elements will appear right next to other elements on your HTML page. For example, you may use the Phrasing element `` to place a picture inside or right against a `<p> . . . </p>` tag. Some Phrasing elements change how the text or other elements inside them appear. We should not rely upon the default display behavior, but use the Phrasing elements to describe and separate the content.

For more information on Flow/block and Phrasing/inline elements, see the HTML "Content Model" in Appendix A.

Flow in the Body

There are many types of semantic sectioning (flow) tags that can be used to properly organize your HTML document. Using the correct tags will make it easier for you to read and understand your documents and allow them to be read by everybody. This is especially important when your pages begin to become larger and more complicated. Developing good habits early will reduce unnecessary stress in the long-term. The following list describes some of the more commonly used flow tags.⁵² Keep in mind that each of these tags requires an ending tag.

- `<header> . . . </header>`⁵³ - Not to be confused with the `<head> . . . </head>` tag. The header describes the page header or banner on the top of the page. It can also be used as a place for introductory or navigational links for a single section of a page. For example, if you were writing an HTML document for a store, you might use the header to contain the store's name, logo, and the links for home, catalog, and store location.
- `<footer> . . . </footer>`⁵⁴ A footer is typically found on the bottom of a webpage and contains information about copyright, attribution, privacy policy, and other legal information. Every webpage should contain a footer that contains contact and copyright information.

49 <https://html.spec.whatwg.org/multipage/dom.html#phrasing-content>

50 https://developer.mozilla.org/en-US/docs/HTML/Block-level_elements

51 https://developer.mozilla.org/en-US/docs/HTML/Inline_elements

52 http://www.w3schools.com/html/html5_semantic_elements.asp

53 <https://html.spec.whatwg.org/multipage/sections.html#the-header-element>

54 <https://html.spec.whatwg.org/multipage/sections.html#the-footer-element>



- `<main>...</main>`⁵⁵ The main element is used as a container for the central part of the body of a page. Usually it comes after the header and is followed by the footer. You should not put a main inside any other element than the `<body>...</body>` of your document.
- `<nav>...</nav>`⁵⁶ — The navigation tag should contain links that help the user navigate the website. Not all of the links on a page are required to be in a navigation tag, but it is helpful to organize them into this tag if there is a group of them in the same area. Many HTML pages will include a `<nav>...</nav>` in the page header that contains the main menu for the page.
- `<article>...</article>`⁵⁷ — The article tag describes a section that can stand alone, like an article in a magazine or a story in a newspaper. Articles are generally placed inside of a `<section>...</section>`, which can hold as many articles as needed. If there is only one article It may be places directly in the `<main>...</main>`.
- `<section>...</section>`⁵⁸ — A section describes a group of content that usually starts with a header. This section is the most ambiguous of the semantic tags and can be used for nearly any part of your page that needs to be sectioned off.
- `<aside>...</aside>`⁵⁹ - The aside tag can also be used inside of a section and refers to content that is not directly related to the main content of the page/section. You can think of an aside as the smaller side story on the page of a magazine.

55 <https://html.spec.whatwg.org/multipage/grouping-content.html#the-main-element>

56 <https://html.spec.whatwg.org/multipage/sections.html#the-nav-element>

57 <https://html.spec.whatwg.org/multipage/sections.html#the-article-element>

58 <https://html.spec.whatwg.org/multipage/sections.html#the-section-element>

59 <https://html.spec.whatwg.org/multipage/sections.html#the-aside-element>



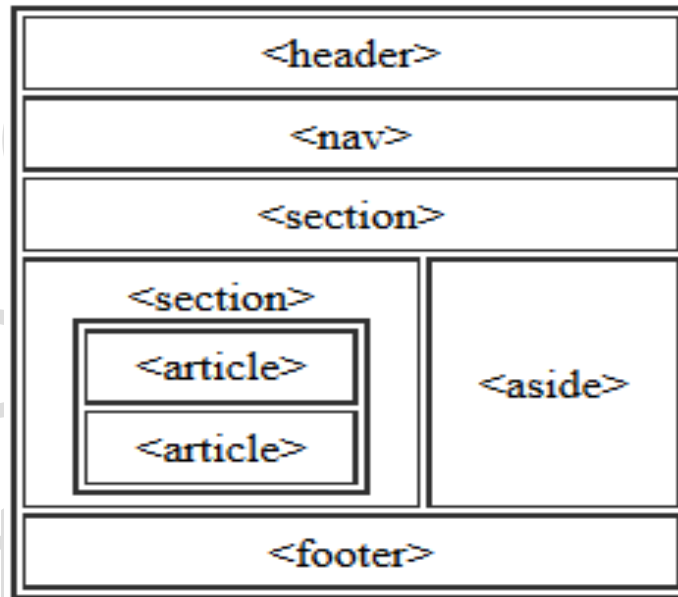


Illustration 9: Semantic Blocks

Here is an example of a properly written semantic HTML document with sections. Future chapters will describe how to format the sections with CSS, but for now they will all be displayed as blocks that fill the browser window. Notice in the example that the `<p>...</p>`, `<h1>...</h1>`, and `<h2>...</h2>` tags are also flow tags.

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <title>Chapter 3 - Blocks</title>
  </head>
  <body>
    <header>
      <h1 style="color:white; background-color: rgb(0,0,90);">Page
        with Semantic Structure</h1>
    </header>

    <section>
      <h2>Stories</h2>
      <article>
        <h2>A story about foo:</h2>
        <p>There once was a young foo from the land of Foo. He
          went in search of the mystical foo but he forgot his foo
```



```
        back with his family in the land of Foo.</p>
    </article>
    <article>
        <h2>A story about bar:</h2>
        <p>While our foo was looking for the other foo, he stumbled
        upon a single bar. The bar asked him "Why in such a rush?"
        The foo did not know how to answer and so he just walked
        away.</p>
        <p>He was a rude foo.</p>
    </article>
</section>

<footer>
    <p>&copy; 2015 The SYW2L Project
        <a href="http://www.syw2l.org">http://www.syw2l.org</a></p>
</footer>
</body>
</html>
```

Page with Semantic Structure

Stories

A story about foo:

There once was a young foo from the land of Foo. He went in search of the mystical foo but he forgot his foo back with his family in the land of Foo.

A story about bar:

While our foo was looking for the other foo, he stumbled upon a single bar. The bar asked him "Why in such a rush?" The foo did not know how to answer and so he just walked away.

He was a rude foo.

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Illustration 10: Page with Flow



Phrasing in Flow

In addition to dividing your pages into flow (semantic blocks), you may also want to mark parts of your text to denote additional meaning for enhanced organization.⁶⁰ The following list of tags are some commonly used phrasing elements.

- `...`⁶¹ — This tag adds **emphasis** to text, and is to be used when you want to stress a particular word or phrase. Without any CSS, emphasized text will display in italics.

```
<p>He said "<em>Fire!</em>"</p>
```

- `...`⁶² — This tag denotes a word or phrase that is of **extra emphasis**. You may be tempted to use the extra emphasis tag just to bold text but that should be avoided as is it not semantic.

- `...`⁶³ — This tag denotes a word or phrase that needs **strong importance**. Like the extra emphasis tag this text is also typically display as bold text.

- `<mark>...</mark>`⁶⁴ — This tag will *mark* or highlight the selected text.

- `<cite>...</cite>`⁶⁵ — The citation tag is used to denote a title of a book or the title of a work.

- `<dfn>...</dfn>`⁶⁶ — Similar to the citation tag, this tag will display the definition of a word when the user hovers their mouse over the word. There are two different ways to use it depending on the surrounding text.

- If the surrounding text does not define the word in question, the title attribute can be included to describe a short definition. For example, this would be written as:

```
<dfn title="describe exactly">define</dfn>
```

60 <https://html.spec.whatwg.org/multipage/text-level-semantics.html#text-level-semantics>

61 <https://html.spec.whatwg.org/multipage/text-level-semantics.html#the-em-element>

62 <https://html.spec.whatwg.org/multipage/text-level-semantics.html#the-b-element>

63 <https://html.spec.whatwg.org/multipage/text-level-semantics.html#the-strong-element>

64 <https://html.spec.whatwg.org/multipage/text-level-semantics.html#the-mark-element>

65 <https://html.spec.whatwg.org/multipage/text-level-semantics.html#the-cite-element>

66 <https://developer.mozilla.org/en-US/docs/Web/HTML/Element/dfn>



- If the surrounding text does describe the definition of the term, the definition tag can be used to signal the user that the text is in fact the definition of the word. For example:

```
<p>To <dfn>define</dfn> a term is to describe it exactly.</p>
```

- `<small>...</small>`⁶⁷ — This tag is used for legal disclaimers, copyright statements, or other information, and is typically placed in the footer or at the bottom of an article/section or in the footer of the page.
- `<abbr>...</abbr>`⁶⁸ — The *abbreviation* tag will display the full title of an abbreviation when the user hovers over it with their mouse. Like the definition tag, the abbreviation comes with a title attribute for the non-abbreviated text.

```
<abbr title="Hyper Text Markup Language">HTML</abbr>
```

- `<i>...</i>`⁶⁹ — This tag should be used to mark text as **offset** from the text around it but not needing emphasis. Typically, this tag will make text appear in italics.
- `<q>...</q>`⁷⁰ — This tag is used when you want to specify that a piece of information is being quoted from another source. The **cite** attribute may be included and should have the full URL to the source of the quotation.

```
<q cite="http://www.brainyquote.com/quotes/quotes/c/charlesdic101118.html">It was the best of times, it was the worst of times.</q>
```

Here is an example of semantic inline text modifiers being used properly in an HTML document. Be sure to note how each tag is nested within others.

```
<!DOCTYPE html>  
<html lang="en">  
  <head>
```

67 <https://html.spec.whatwg.org/multipage/text-level-semantics.html#the-small-element>

68 <https://developer.mozilla.org/en-US/docs/Web/HTML/Element/abbr>

69 <https://html.spec.whatwg.org/multipage/text-level-semantics.html#the-i-element>

70 <https://html.spec.whatwg.org/multipage/text-level-semantics.html#the-q-element>



```
<meta charset="utf-8">
<title>Chapter 3 - Inline</title>
</head>
<body>
  <header>
    <h1 style="color:white; background-color:
rgb(0,0,90);">Paragraphs with Inline Semantics</h1>
  </header>

  <section>
    <h2>A Note about HTML Development.</h2>
    <p><abbr title="Hyper Text Markup Language">HTML</abbr> is
the markup language used to
    <dfn title="describe exactly">define</dfn> the content of a
    <i>Webpage</i>. For browser interoperability you <em>must</em>
    closely follow the standards as defined in the
    <cite>HTML5 documentation found at the
    <abbr title="World Wide Web Consortium">W3C</abbr></cite>.</p>
  </section>

  <footer>
    <p>&copy; 2015 The SYW2L Project
    <a href="http://www.syw2l.org">http://www.syw2l.org</a></p>
  </footer>
</body>
</html>
```

Paragraphs with Inline Semantics

A Note about HTML Development.

HTML is the markup language used to *define* the content of a *Web page*. For browser interoperability you *must* closely follow the standards as defined in the *HTML5 documentation found at the W3C*.

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Illustration 11: Page with Phrasing

Edition



Advanced Topics for Exploration

Vocabulary

- abbr
- article
- aside
- b
- cite
- dfn
- em
- flow
- footer
- header
- i
- mark
- metadata
- nav
- phrasing
- section
- semantics
- small
- strong
- u

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Exercises

Word Search

```
a b b r h e a d e r g i t  
e e a t b f e d f n l e a  
s e m a s s l t i s r s m  
i d s p e e i o e s s e a  
n m e h h m c s w i t a r  
a m c r c a e n m m r g k  
v i t a s n s r m e o t e  
f a i s m t a i f t n c t  
s s o i a i m n s a g i r  
c i n n l c s a f d e t f  
k d r g l s r f e a d e h  
a e a r t i c l e t o r l  
a f o o t e r l s a o n a
```

abbr, article, aside, cite, dfn, emphasis, flow, footer,
header, mark, metadata, nav, phrasing, section, semantics,
small, strong

Problems

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