

# **Introduction to HTML**

**Chapter 3**

# Chapter 3

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Where Did It  
Come from?

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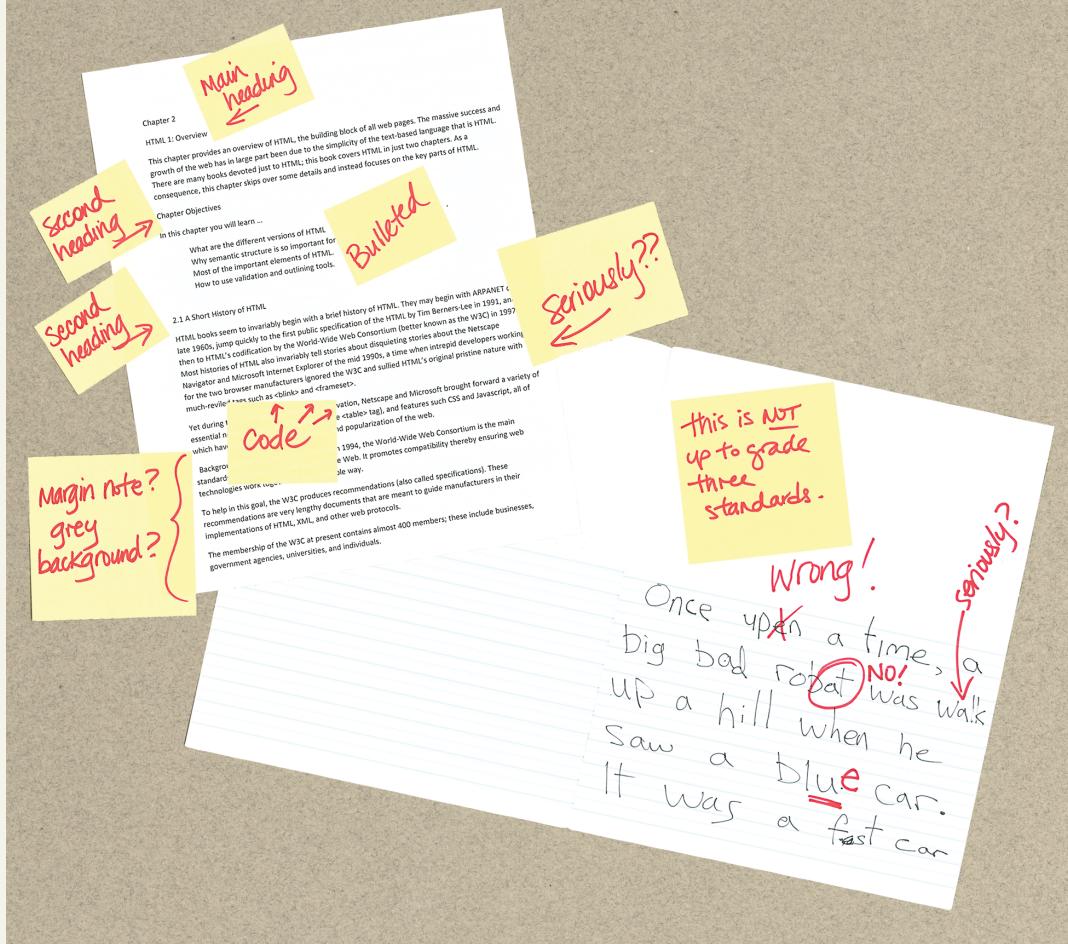
# What Is HTML and Where Did It Come from?

## HTML

- HTML is defined as a **markup language**.
- **markup** is a way to indicate information about the content that is distinct from the content
- HTML has been through many versions and branches, the details of which might matter if you ever see old HTML code.

# What Is HTML and Where Did It Come from?

## Markup



# What Is HTML and Where Did It Come from?

## XHTML and Validation

The image displays two side-by-side screenshots of web-based HTML validators. The left screenshot shows the **W3C Markup Validation Service** interface, which includes fields for "Address:" and a "Check" button. Below the form is a descriptive text block. The right screenshot shows the **Nu Html Checker** interface, featuring a code editor with HTML code and a results panel below it.

**Validator provides feedback on markup's validity according to W3C specification**

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](#).

**Nu Html Checker**

This tool is an ongoing experiment in better HTML checking, and its behavior remains subject to change

**Showing results for contents of text-input area**

**Checker Input**

Show  source  outline  image report  Options...

Check by **text input**

```
<!DOCTYPE html>
<html>
<head><title>sample document</title></head>
<body>
<p id="here">hello <span>there</span></p>
<ul>
<li>item 1</li>
<li>item 2</li>
<li>item 3</li>
</ul>
<div id="main">
<a href="somewhere.html">

</a>
```

Check

Use the Message Filtering button below to hide/show particular messages, and to see total counts of errors and warnings.

**Message Filtering**

1. **Error** An `img` element must have an `alt` attribute, except under certain conditions. For details, consult [guidance on providing text alternatives for images](#).

From line 14, column 5; to line 14, column 42

```

```

# **What Is HTML and Where Did It Come from?**

## **HTML 5**

- Widely implemented in modern browsers
- The current W3C recommendation for web development
- Still relatively new and not always taught.

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# HTML Syntax

## Elements and Attributes

- **HTML documents** are composed of textual content and **HTML elements**
- **HTML element** encompasses
  - the **element name** within angle brackets (i.e., the **tag**) and
  - HTML elements can also contain **attributes**.
  - **the content** within the tag.



# HTML Syntax

## Elements and Attributes

An **empty element** does not contain any text content; instead, it is an instruction to the browser to do something.

- In XHTML, empty elements had to be terminated by a trailing slash.
  - In HTML5, the trailing slash in empty elements is optional.

## Example empty element

```
Share Your <strong>Travels</strong></h1>
```

# HTML Syntax

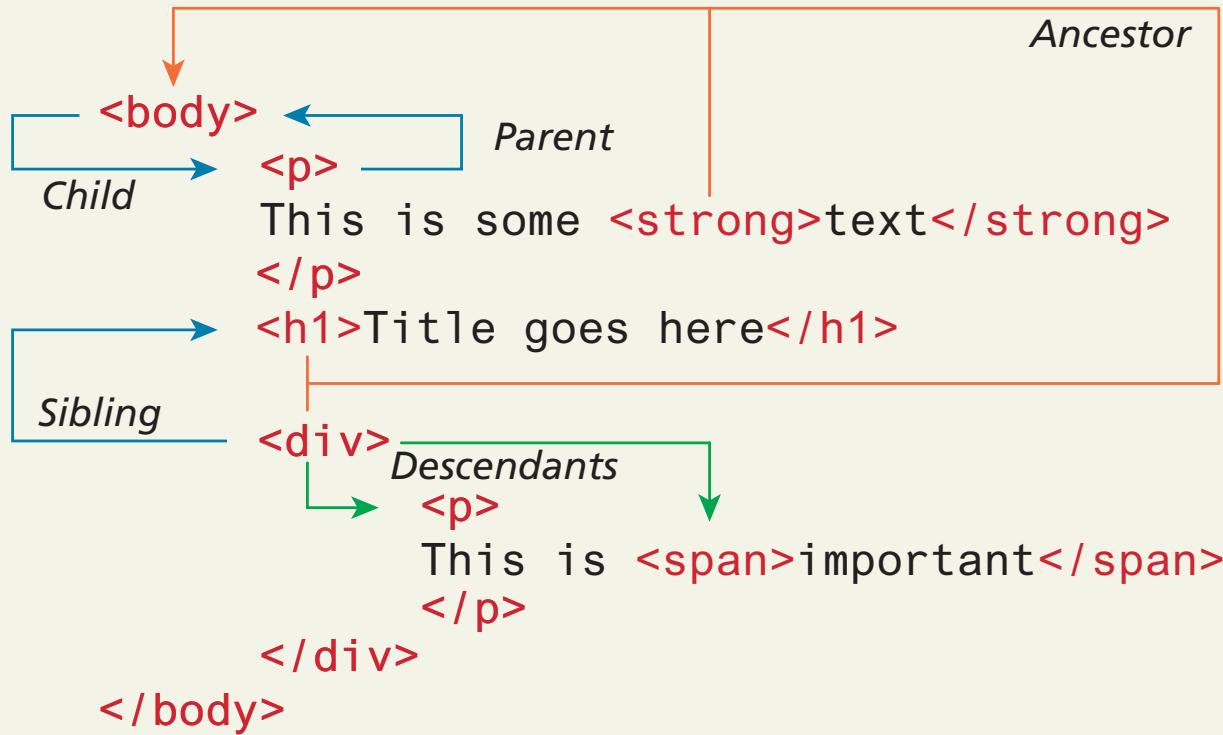
## Nesting HTML Elements

Incorrect nesting

```
<h1>Share Your <strong>Travels</h1></strong>
```

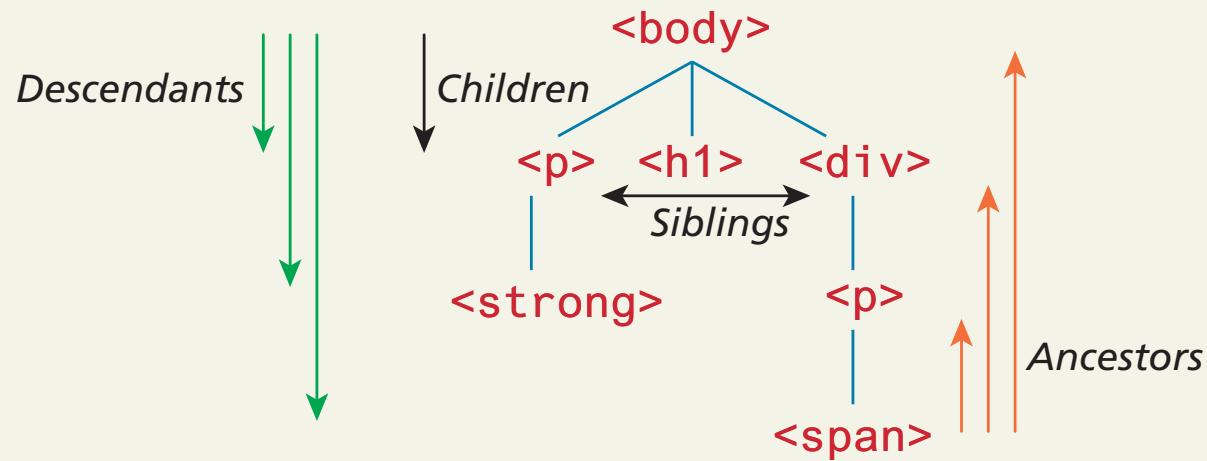
# HTML Syntax

## Nesting HTML Elements



# HTML Syntax

## Nesting HTML Elements



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# Semantic Markup

Focus on the structure of the document, not the visual

Advantages:

- Maintainability
- Performance
- Accessibility (<http://www.w3.org/WAI> )
- Search Engine Optimization

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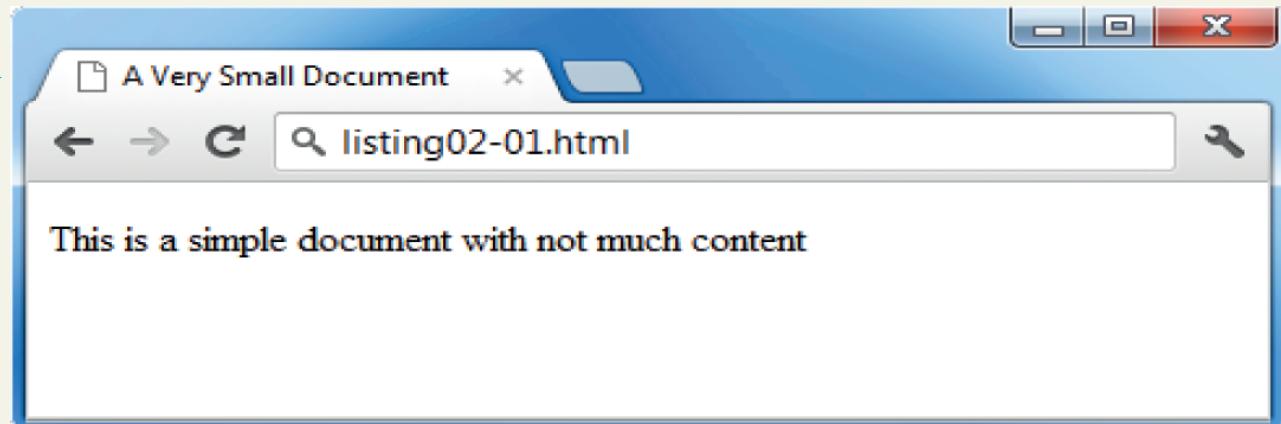
Summary

# Structure of HTML Documents

A simple example

1

```
<!DOCTYPE html>
<title>A Very Small Document</title>
<p>This is a simple document with not much content</p>
```



# Structure of HTML Documents

## DOCTYPE

DOCTYPE Short for **Document Type Definition** tells the browser what type of document it is about to process

```
<!DOCTYPE html>
```

# Structure of HTML Documents

A slightly more complex document



# Structure of HTML Documents

## Head and Body

HTML5 does not require the use of the **<html>** , **<head>** , and **<body>** elements (but most developers continue to use them).

- **<html>** contains all the other HTML elements in the document (Item 2 in previous slide)
- **<head>** contains descriptive elements about the document, such (title, style sheets, JavaScript files etc.) (Item 3)
- **<body>** contains content to be displayed by the browser (Item 4)

# Structure of HTML Documents

Some more common elements

- The **<meta>** element (Item 5) declares that the character encoding for the document is UTF-8.
- Item 6 specifies an external CSS style sheet file with **<link>** that is used with this document.
- Item 7 references an external JavaScript file using **<script>**

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# Quick Tour of HTML Elements

A document to walk through

```
<body>
  <h1>Share Your Travels</h1>
  <h2>New York - Central Park</h2>
  <p>Photo by Randy Connolly</p>
  <p>This photo of Conservatory Pond in
    <a href="http://www.centralpark.com/">Central Park</a> <span>3</span>
    New York City was taken on October 22, 2016 with a
    <strong>Canon EOS 30D</strong> camera.
  </p> <span>4</span>
  
  <span>5</span>

  <h3>Reviews</h3>
  <div>
    <p>By Ricardo on <time>2016-05-23</time></p>
    <p>Easy on the HDR buddy.</p>
  </div>
  <span>6</span> <span>7</span>
  <hr>
  <div>
    <p>By Susan on <time>2016-11-18</time></p>
    <p>I love Central Park.</p>
  </div>
  <span>8</span> <span>9</span>
  <p><small>Copyright © 2017 Share Your Travels</small></p>
</body> <span>10</span>
```

# Quick Tour of HTML Elements

A document to walk through

Share Your Travels -- New figure03-10.html

## Share Your Travels

### New York - Central Park

Photo by Randy Connolly



This photo of Conservatory Pond in [Central Park](#) New York City was taken on October 22, 2016 with a **Canon EOS 30D** camera.

#### Reviews

By Ricardo on 2016-05-23  
Easy on the HDR buddy.

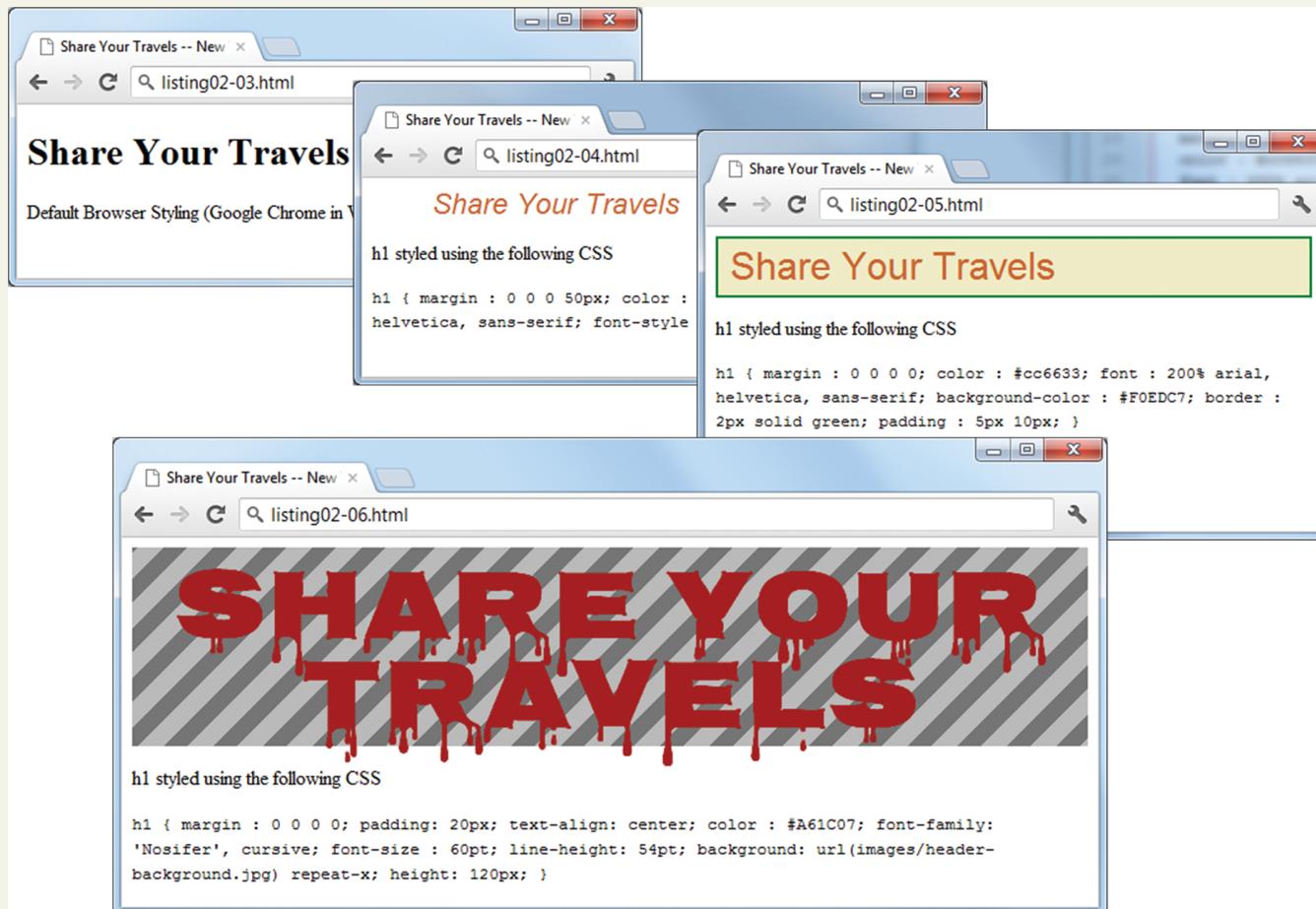
---

By Susan on 2016-11-18  
I love Central Park.

Copyright © 2017 Share Your Travels

# Quick Tour of HTML Elements

CSS styles are coming soon, HTML is structural

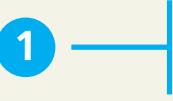


# Quick Tour of HTML Elements

## Headings

- HTML provides six levels of heading (h1 - h6)
- Headings are also used by the browser to create a document outline for the page.

```
<body>
```



1

```
    <h1>Share Your Travels</h1>
```

```
    <h2>New York - Central Park</h2>
```

# Quick Tour of HTML Elements

## Paragraphs and Divisions

- **<p>** tag is a container for text and other HTML elements
- **<div>** also a container element and is used to create a logical grouping of content

2

```
<p>Photo by Randy Connolly</p>
<p>This photo of Conservatory Pond in
  <a href="http://www.centralpark.com/">Cen
  New York City was taken on October 22, 20
    <strong>Canon EOS 30D</strong> camera.
</p>
```

# Quick Tour of HTML Elements

## Links

- Links are an essential feature of all web pages
- Links use the `<a>` element (the “a” stands for anchor).

```
<a href="http://www.centralpark.com">Central Park</a>
```



Destination

Label (text)

# Quick Tour of HTML Elements

## Links

Link to external site



```
<a href="http://www.centralpark.com">Central Park</a>
```

Link to resource on external site



```
<a href="http://www.centralpark.com/logo.gif">Central Park</a>
```

Link to another page on same site as this page



```
<a href="index.html">Home</a>
```

Link to another place on the same page



```
<a href="#top">Go to Top of Document</a>
```

...



```
<a name="top">
```

Defines anchor for a link to another place on same page

# Quick Tour of HTML Elements

## Links (continued)

Link to specific place on another page

```
<a href="productX.html#reviews">Reviews for product X</a>
```

Link to email

```
<a href="mailto:person@somewhere.com">Someone</a>
```

Link to JavaScript function

```
<a href="javascript:OpenAnnoyingPopup();">See This</a>
```

Link to telephone (automatically dials the number  
when user clicks on it using a smartphone browser)

```
<a href="tel:+18009220579">Call toll free (800) 922-0579</a>
```

# Quick Tour of HTML Elements

## URL Relative Referencing

Relative Link Type	Example
Same directory	<a href="example.html">
Child Directory	<a href="images/logo.gif">
Grandchild/Descendant Directory	<a href="css/images/background.gif">
Parent/Ancestor Directory	<a href="..../about.html"> <a href=".../../about.html">
Sibling Directory	<a href="..../images/about.html">
Root Reference	<a href="/images/background.gif">

# Quick Tour of HTML Elements

Inline Text Elements ... they do not disrupt the flow

- <a>
- <abbr>
- <br>
- <cite>
- <code>
- <em>
- <mark>
- <small>
- <span>
- <strong>
- <time>

# Quick Tour of HTML Elements

## Images

Specifies the URL of the image to display  
(note: uses standard relative referencing).

Text in title attribute will be displayed in a pop-up  
tool tip when user moves mouse over image.

```

```

Text in alt attribute provides a brief  
description of image's content for users who  
are unable to see it.

Specifies the width and height of  
image in pixels

# Quick Tour of HTML Elements

## Character Entities

These are special characters for symbols for which

- there is either no easy way to type them via a keyboard
- or which have a reserved meaning in HTML (like "<")

Entity	Description
&nbsp;	Nonbreakable space
&lt;	<
&gt;	>
&copy;	©
&trade;	™

# Quick Tour of HTML Elements

## Lists

- Unordered Lists <ul>
- Ordered Lists <ol>
- Description Lists <dl>

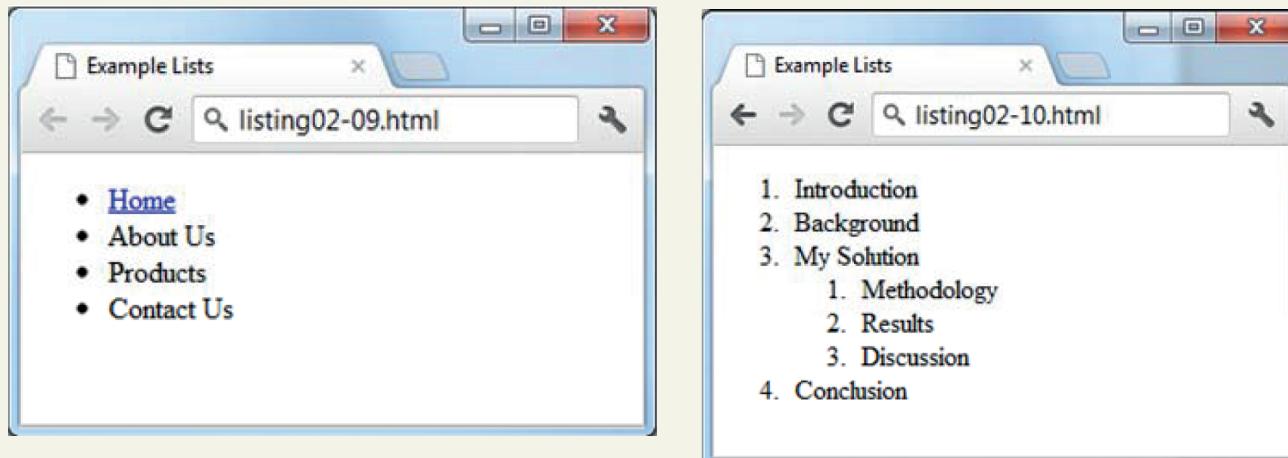
# Quick Tour of HTML Elements

## Lists

```
<ul>
  <li><a href="index.html">Home</a></li>
  <li>About Us</li>
  <li>Products</li>
  <li>Contact Us</li>
</ul>
```

Notice that the list item element can contain other HTML elements.

```
<ol>
  <li>Introduction</li>
  <li>Background</li>
  <li>My Solution</li>
  <li>
    <ol>
      <li>Methodology</li>
      <li>Results</li>
      <li>Discussion</li>
    </ol>
  </li>
  <li>Conclusion</li>
</ol>
```



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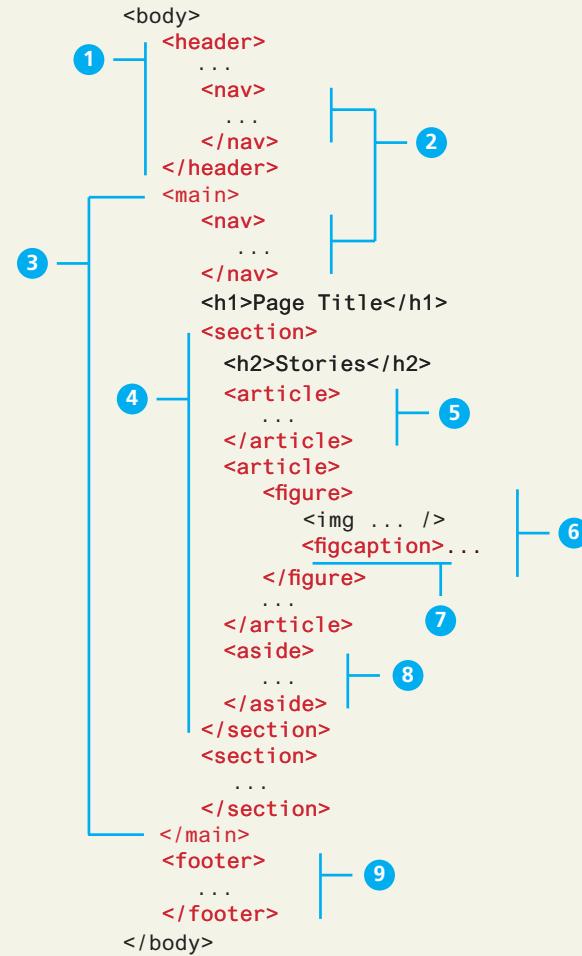
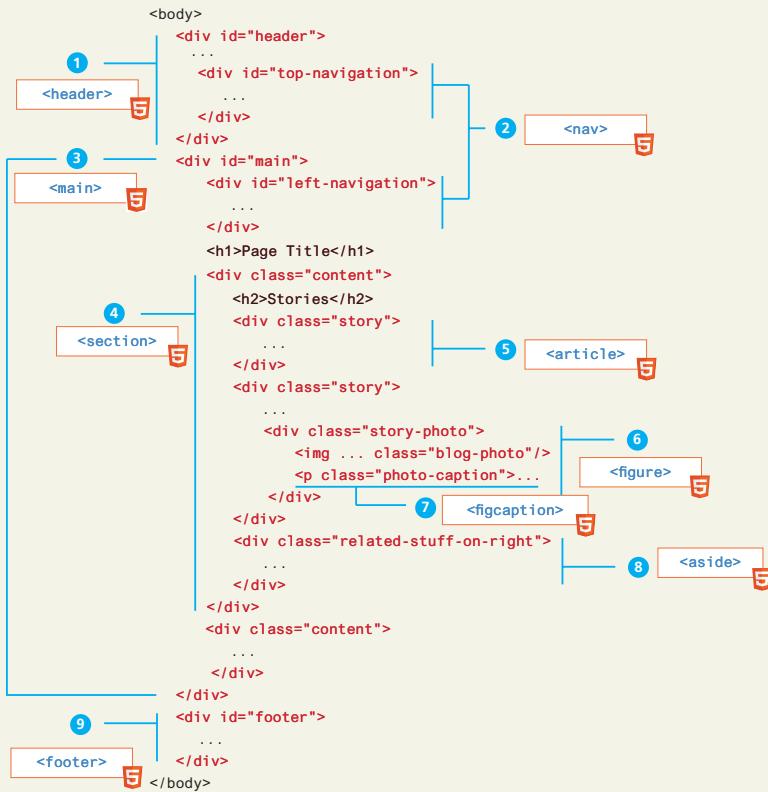
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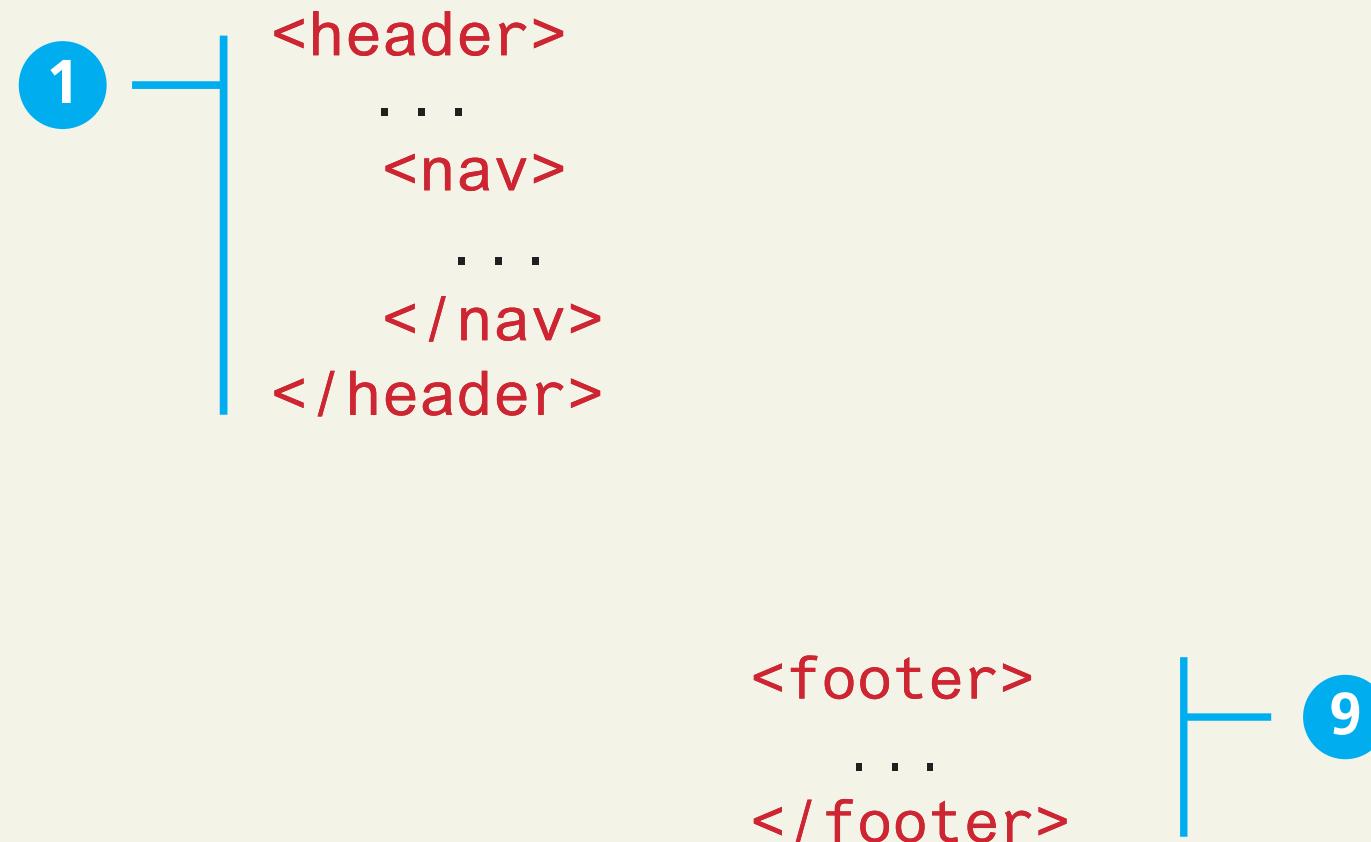
Summary

# HTML5 Semantic Structure Elements



# HTML5 Semantic Structure Elements

## Header and Footer



# HTML5 Semantic Structure Elements

## Header and Footer

- *A header element is intended to usually contain the section's heading (an h1– h6 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.*

```
<header>

<h1>Fundamentals of Web Development</h1>
...
</header>
<article>
<header>
<h2>HTML5 Semantic Structure Elements</h2>
<p> By <em>Randy Connolly</em></p>
</header>
...
</article>
```

# HTML5 Semantic Structure Elements

## Navigation

```
<header>
    
    <h1>Fundamentals of Web Development</h1>
    <nav>
        <ul>
            <li><a href="index.html">Home</a></li>
            <li><a href="about.html">About Us</a></li>
            <li><a href="browse.html">Browse</a></li>
        </ul>
    </nav>
</header>
```

# HTML5 Semantic Structure Elements

## Main

- `<main>` is meant to contain the main unique content of the document.
- `<main>` provides a semantic replacement for markup such as `<div id="main">` or `<div id="main-content">`

# HTML5 Semantic Structure Elements

## Articles and Sections

**<section>** is a much broader element, while the **<article>** element is to be used for blocks of content that could potentially be read or consumed independently of the other content on the page

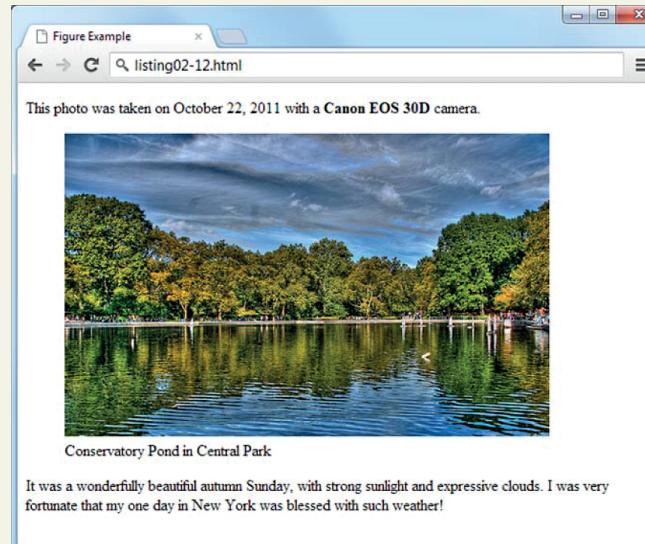
# HTML5 Semantic Structure Elements

## Figure and Figure Captions

Figure could  
be moved to  
a different  
location in  
document  
...

But it has to  
exist in the  
document  
(i.e., the  
figure isn't  
optional).

```
<p>This photo was taken on October 22, 2011 with a Canon EOS 30D camera.</p>
<figure>
  <br/>
  <figcaption>Conservatory Pond in Central Park</figcaption>
</figure>
<p>
  It was a wonderfully beautiful autumn Sunday, with strong sunlight and
  expressive clouds. I was very fortunate that my one day in New York was
  blessed with such weather!
</p>
```



# HTML5 Semantic Structure Elements

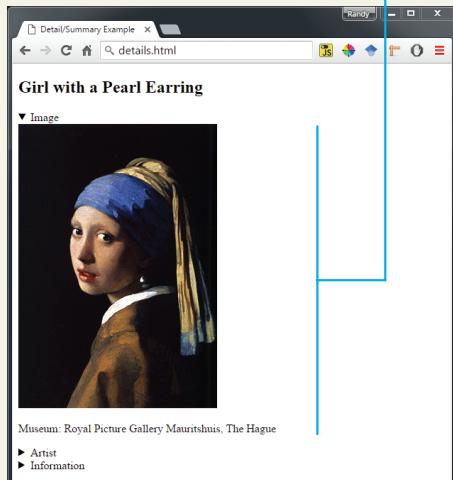
## Aside

The **<aside>** element can be used for sidebars, pull quotes, groups of advertising images, or any other grouping of nonessential elements

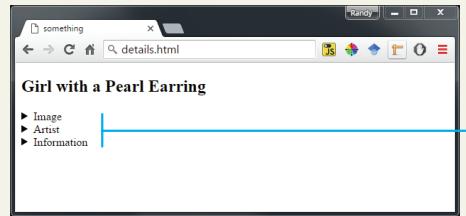
# HTML5 Semantic Structure Elements

## Details and Summary

Clicking on the summary label reveals the rest of the content with the `<details>` container

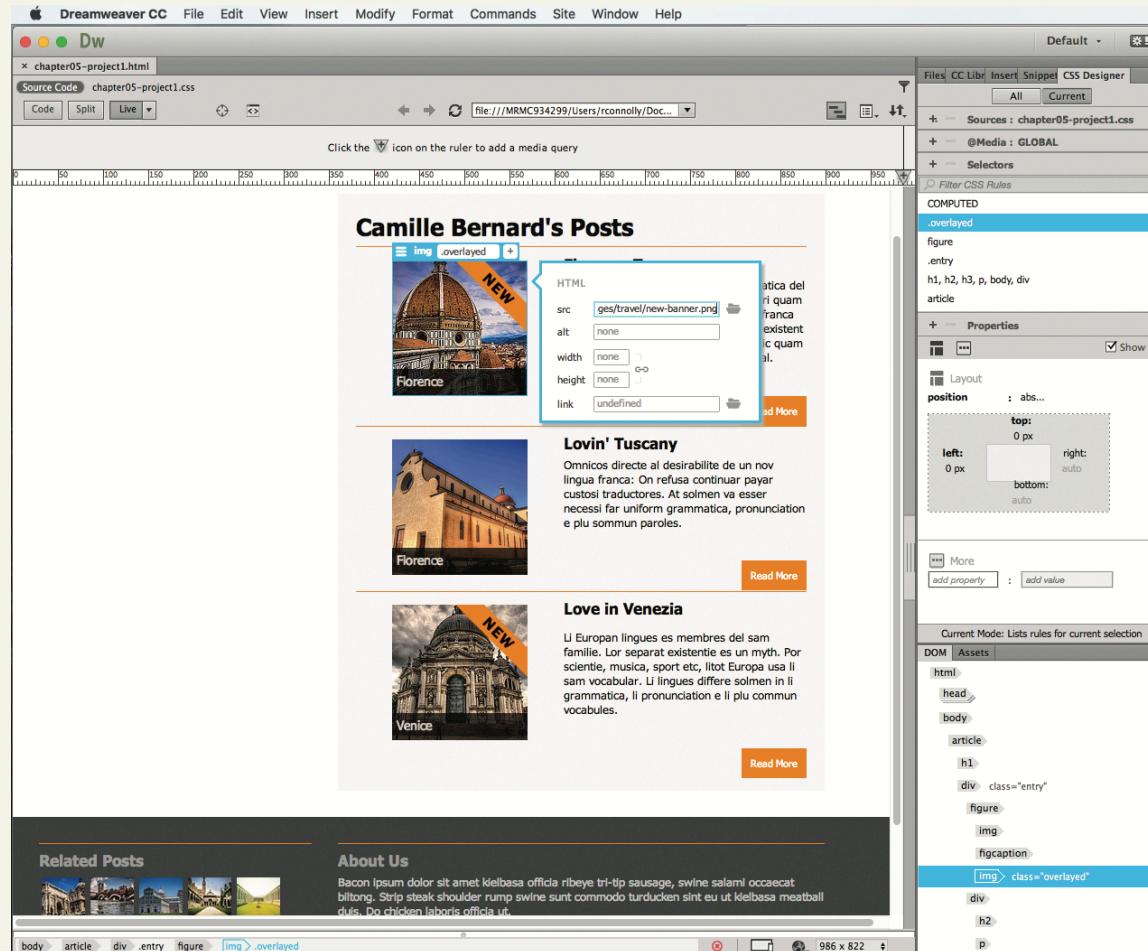


```
<body>
  <h2>Girl with a Pearl Earring</h2>
  <details>
    <summary>Image</summary>
    <br>
    <p>Museum: Royal Picture Gallery Mauritshuis ...</p>
  </details>
  <details>
    <summary>Artist</summary>
    <p><strong>Jan Vermeer</strong> was a Dutch ...</p>
  </details>
  <details>
    <summary>Information</summary>
    <p>
      Date: 1665<br>
      Medium: Oil on Canvas
    </p>
  </details>
</body>
```



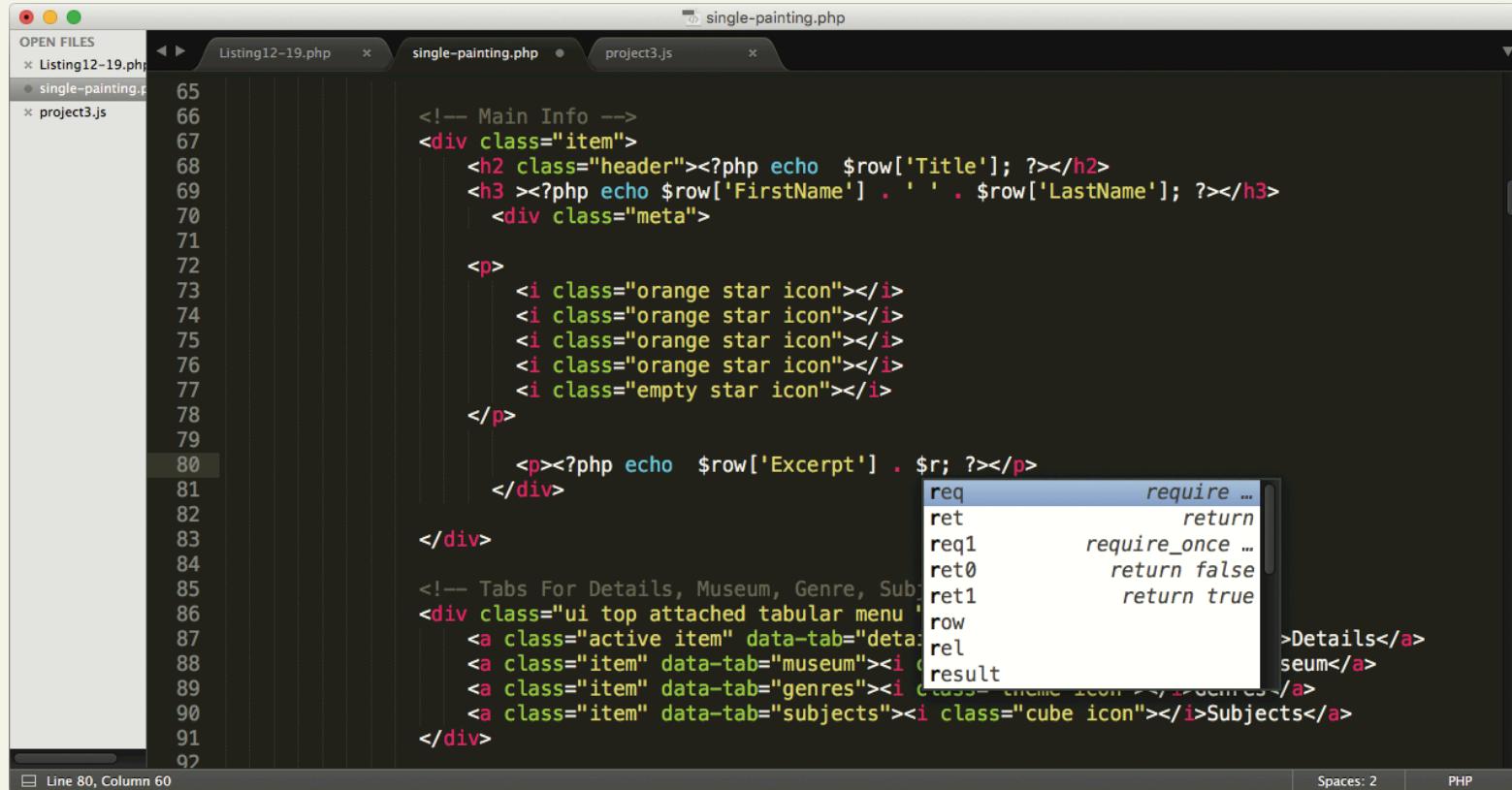
# Tools Insight

WYSIWYG Editors



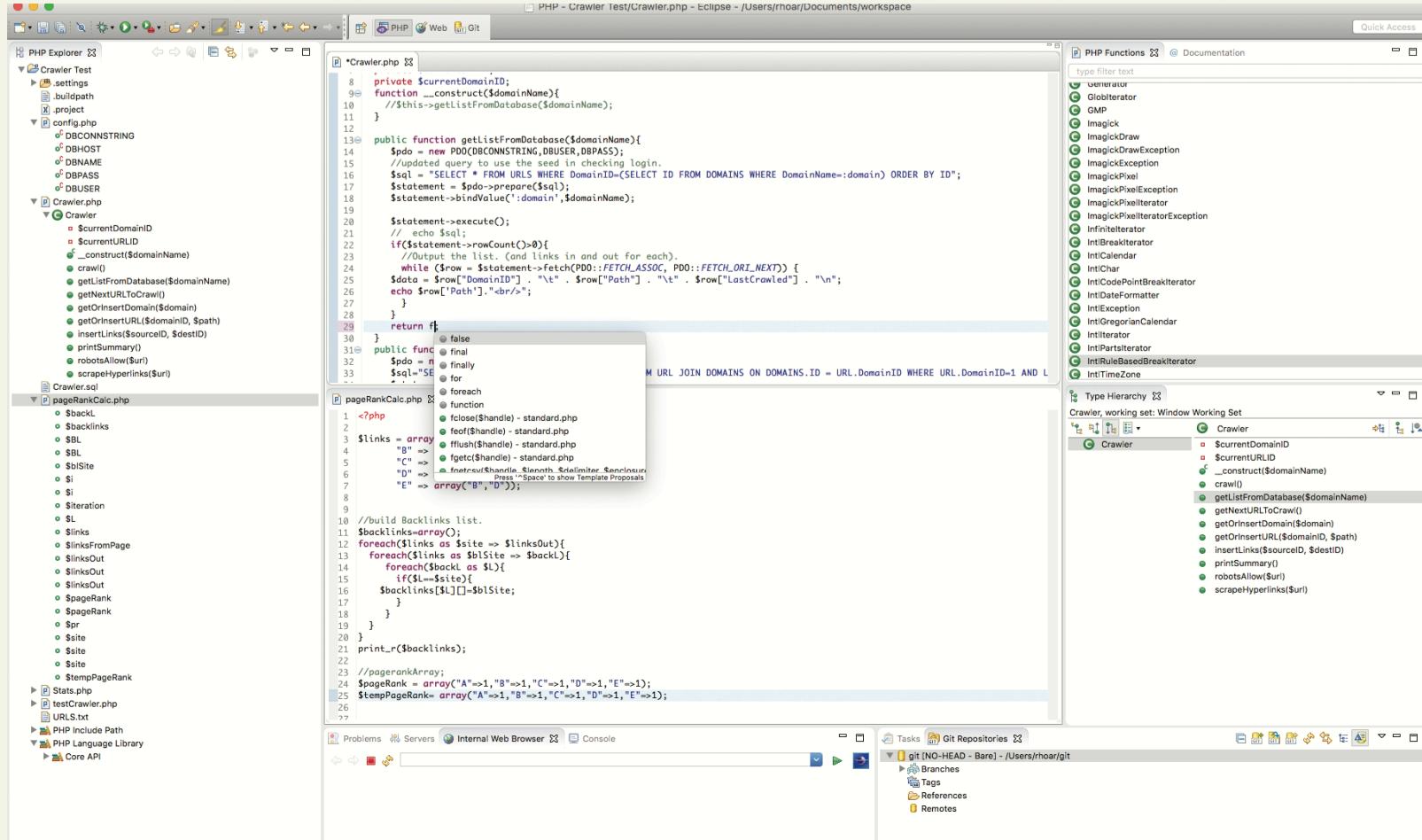
# Tools Insight

## Code Editors



# Tools Insight

## Integrated Development Environments



# Tools Insight

## Cloud-Based Environments

Screenshot of Codeanywhere IDE showing the file structure and code editor for a web application.

The file structure on the left shows:

- Chapter17-project2
- vendor
- webroot
- css
- assets
- fonts
- \_styles.css
- icon.css
- semantic.css
- semantic.js
- styles.css
- images
- includes
- js
- \* empty
- misc.js
- lib
- .htaccess
- browse-paintings.php
- detail.html
- favicon.ico
- index.php
- list.html
- single-painting.php
- testdb-classes.php
- testdb-pdo.php

The code editor shows detail.html with the following content:

```
<i class="user icon"></i>
Account
  <i class="dropdown icon"></i>
  <div class="menu">
    <a class="item"><i class="sign in icon"></i> Login</a>
    <a class="item"><i class="edit icon"></i> Edit Profile</a>
    <a class="item"><i class="globe icon"></i> Choose Language</a>
    <a class="item"><i class="settings icon"></i> Account Settings</a>
  </div>
<a class=" item">
  <i class="heartbeat icon"></i> Favorites
</a>
<a class=" item">
  <i class="shop icon"></i> Cart
</a>
</nav>
</div>
</div>

<div class="ui attached stackable borderless huge menu" >
  <div class="ui container">
    <h2 class="header item">
      
    </h2>
    <a class="item">
      <i class="home icon"></i> Home
    </a>
    <a class="item">
      <i class="mail icon"></i> About Us
    </a>
    <a class="item">
      <i class="home icon"></i> Blog
    </a>
  </div>
</div>
```

A context menu is open over the logo image, showing options: alt and accesskey.

Bottom status bar: Chapter17-project2 > webroot > detail.html | 46.67 | Tab Size: 2 | HTML

# Tools Insight

## Code Playgrounds

The screenshot shows the CodePen interface with the following details:

- Title:** Panels and Transparency
- Author:** Randy Connolly
- Code Structure:**
  - HTML:**

```
<html>
  <head>
    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/font-awesome/4.5.0/css/font-awesome.min.css">
    <link rel="stylesheet" href="css/exercise1.css">
    <script type="text/javascript" src="js/exercise1.js"></script>
  </head>
  <body>
    <main>
```
  - CSS:**

```
.alert {
  margin: 20px 0px;
  padding: 12px;
}
.info {
  color: #105B63;
  background-color: #FFD34E;
}
.success {
  color: #FFFAD5;
  background-color: #105B63;
}
.warning {
  color: #105B63;
```
  - JS:**

```
window.addEventListener("load", init);

function init() {
  // select all the buttons
  var closeButtons =
    document.querySelectorAll("main div.alert i");

  // loop through them and add listener
  // that will fade panel when button clicked
  for (var i = 0; i < closeButtons.length; i++) {
    closeButtons[i].addEventListener("click",
```
- Content Area:** Contains three panels with yellow, teal, and orange backgrounds, each containing a yellow 'X' icon and placeholder text about labor rights.
- Bottom Navigation:** Includes links for Collections, Console, Assets, Embed, Comments, Delete, Shortcuts, and sharing/export options.
- Status Bar:** Shows "Last saved less than a minute ago" and sharing/export buttons.

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# Summary

## Key Terms

absolute referencing	folder	root reference
accessibility	head	schemas
ancestors	HTML attribute	search engine optimization
body	HTML validators	semantic HTML
Cascading Style Sheets (CSS)	inline HTML elements	specifications
character entity	maintainability	standards mode
description lists	markup	syndication
descendants	markup language	syntax errors
directory	ordered lists	tags
document outline	pathname	unordered lists
Document Object Model	polyfill	UTF-8
Document Type	quirks mode	WHATWG
Definition	Recommendations	W3C
empty element	relative referencing	XHTML 1.0 Strict
	root element	XHTML 1.0 Transitional

# Questions

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