

Introduction to HTML

Topics Covered

- Elements & Attributes
- HTML Document Structure
- `<head>` and `<body>`
- Common Elements
 - `<p>` `` `<input/>`
 - `<a>` `` `` `<hr/>`
 - `<table>`
- Developer Tools
- Intro to CSS

Introduction to HTML

- Hypertext Markup Language
- XML-based Language
- Elements (tags), Attributes, and Content

`<Element attribute="value">Content</Element>`

Open Tag

Close Tag

`<Element attribute="value" />` (no content)

Open Tag

Self-closing Tag

Common HTML Elements

`<p>` Paragraph

`` Image

`<hr />` Horizontal Rule

`
` Line Break

`` Unordered List

`<a>` anchor (hyperlink)

`<h1>,<h2>` Headers

`<table>` Table

`<form>` Form

`<input>` Input controls

Web Page Template

doctype: XML language specification

html: document container

head: header information

body: visible content

```
<!doctype html>
<html>
  <head>
    <title>Common HTML Elements</title>
  </head>
  <body>
    <!--
      The body tag holds the
      visible content of an HTML document.
    -->
  </body>
</html>
```

<head>

Child Elements:

- `<title>` title shown in browser's title bar
- `<base>` specifies base url for relative urls in the page
- `<link>` links to additional resources (style sheets)
- `<style>` defines CSS styles
- `<meta>` document metadata
- `<script>` contains embedded script or links to script (javascript)
- `<noscript>` alternative content for when scripts are disabled
- `<template>` unrendered **DOM** content accessible through javascript

<body>

Contains all visible content of an HTML document.

There can be only one <body> tag. It is the 2nd element of the <html> tag.

```
<body onload="initializePage()">
```

Common Usage: set background for entire page

Common Usage: run initial scripts when page loading is completed.

Common Usage: Container for page dialogs

<p>

Presents a block of text with vertical separation:

Lorem ipsum dolor sit amet, **consectetur adipiscing elit**. Integer nec odio. Praesent libero. Sed cursus ante dapibus diam. Sed nisi. Nulla quis sem at nibh elementum imperdiet. Duis sagittis ipsum. Praesent mauris. Fusce nec tellus sed augue semper porta. Mauris massa. Vestibulum lacinia arcu eget nulla.

Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Curabitur sodales ligula in libero. Sed dignissim lacinia nunc. Curabitur tortor. Pellentesque nibh. Aenean quam. In scelerisque sem at dolor. Maecenas mattis. Sed convallis tristique sem. Proin ut ligula vel nunc egestas porttitor. Morbi lectus risus, iaculis vel, suscipit quis, luctus non, massa. Fusce ac turpis quis ligula lacinia aliquet.

Mauris ipsum. Nulla metus metus, ullamcorper vel, tincidunt sed, euismod in, nibh. Quisque volutpat condimentum velit. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Nam nec ante. Sed lacinia, urna non tincidunt mattis, tortor neque adipiscing diam, a cursus ipsum ante quis turpis. Nulla facilisi. Ut fringilla. Suspendisse potenti. Nunc feugiat mi a tellus consequat imperdiet. Vestibulum sapien. Proin quam. Etiam ultrices.

Tags may contain other Tags

The rich structure of HTML (and XML in general) arises out of nesting of tags.

In the previous figure, several words were highlighted in **red text**.

In the HTML source, this was achieved by nesting a `` element within the `<p>` element's content and giving the `` a CSS attribute indicating red text:

```
<p>Lorem ipsum dolor sit amet, <span style="color:red">
consectetur adipiscing elit</span>. Integer nec odio.
Praesent libero. Sed cursus ante dapibus diam. Sed nisi.
Nulla quis sem at nibh elementum imperdiet. Duis sagittis
ipsum. Praesent mauris. Fusce nec tellus sed augue semper
porta. Mauris massa. Vestibulum lacinia arcu eget nulla. </p>
```


The img tag renders an image.

```

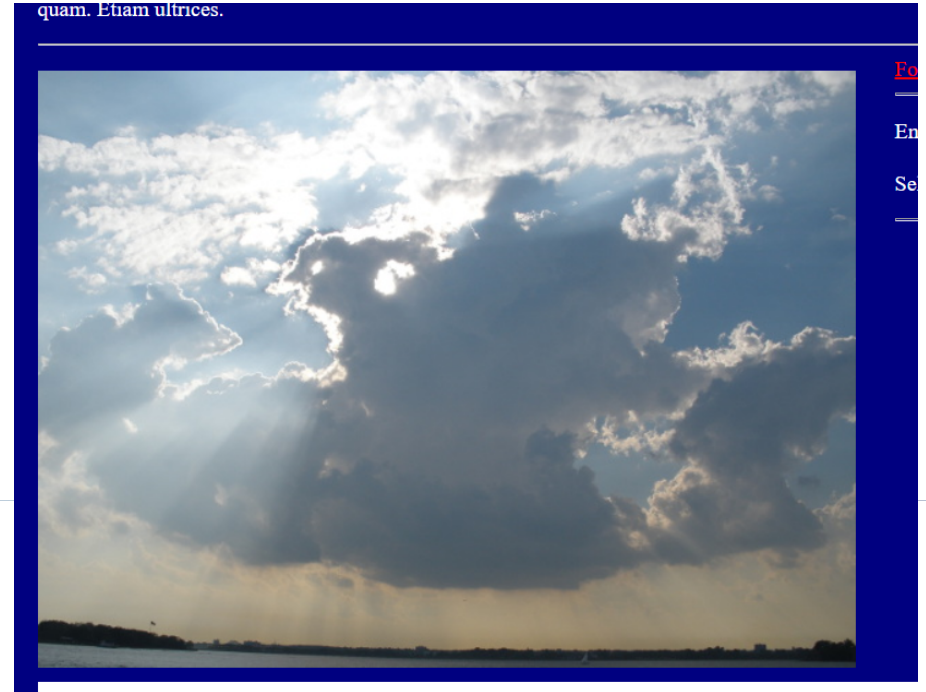
```

Supported formats are:

- jpg
- gif
- png
- svg
- bmp

img tags are
always self-closing

The image size can be adjusted using CSS.



Forms and Input Controls

HTML allows us to create forms for user-input. The types of controls that can be defined are:

- Buttons
- Checkboxes
- Drop-down lists
- Color-pickers
- Date-pickers
- Email Inputs
- File-uploads
- List boxes
- Numeric Entry
- Radio buttons
- Sliders
- Telephone # entry
- Textboxes
- Multi-line textboxes
- Time-entry
- Url entry
- Week/year

Enter your email address:

Select your preferred color: ☐ Red ☐ Green ☐ Blue or pick your own:

Tell me everything you know
(250 characters or less)

Tags for Input

Most of the input controls are defined using the `<input />` tag and specifying a type attribute:

`<input type="radio" />`

`<input type="file"/>`

`<input type="password"/>`

Other input controls are defined with:

`<select>` Creates a ComboBox or ListBox. Used with `<option>` for the items.

`<textarea>` Creates a multi-line textbox.

Hyperlinks

[Follow Me!](#)

Hyperlinks (anchor tags) can be defined to navigate to locations within the current document or to other documents.

Hyperlinks can be defined to open in the current browser window (or tab) or in a new browser window (or tab).

Hyperlinks can be defined to download content instead of navigating to content.

Ordered and Unordered Lists

The ``, `` and `` tags allow us to define ordered and unordered lists.

Unordered lists render with bullets, while ordered lists render with numbers.

CSS allows us to apply custom-rendering to these lists, including custom bullets and horizontal layout.

- Item #1
- Item #2
- Item #3
- Item #4

<table>

The table element allows child elements to be arranged in rows and columns. This is achieved with child elements:

<tr> A table-row
<th> A header table-cell
<td> A table-cell

The <th> and <td> elements are always children of a <tr> element.

Category	Hunger	Aggression
Rapacious	Intense	Savage
Worried	Searching	Wild
Sated	Fullfilled	Tame
Glutton	Overfull	Incapable

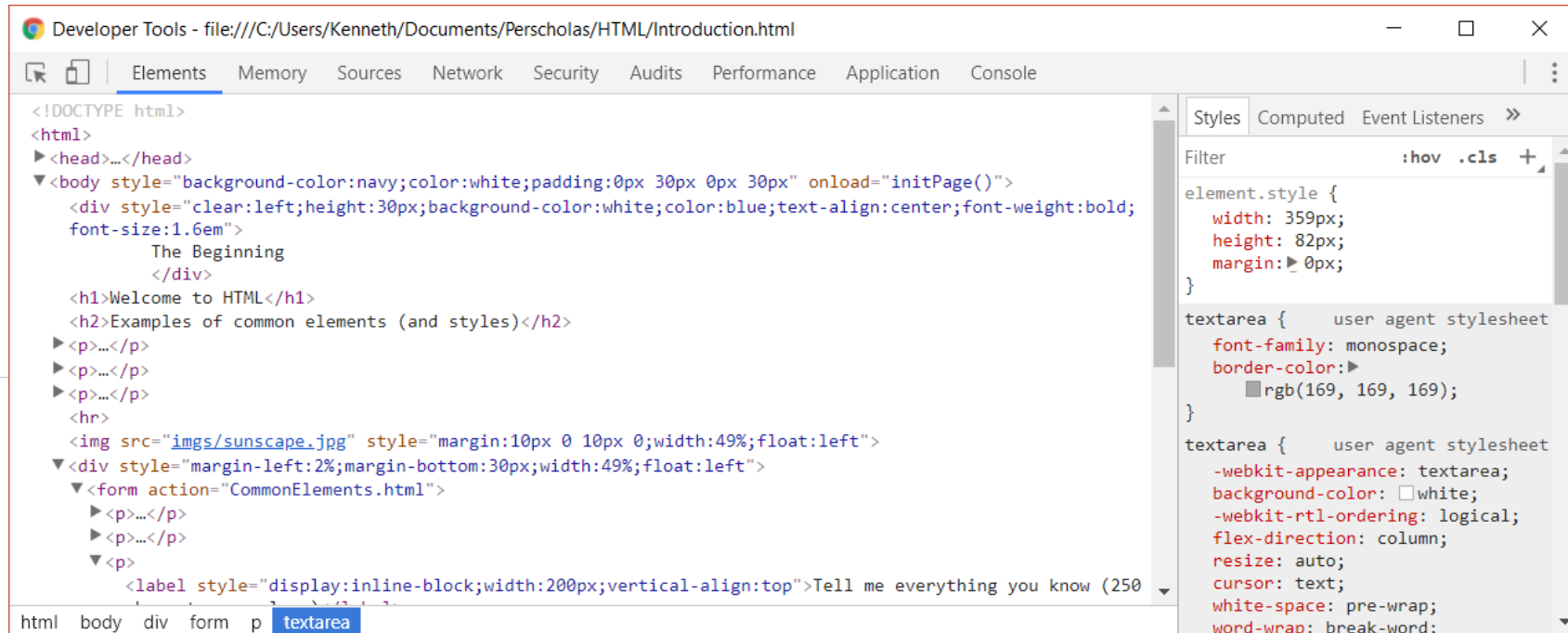
Common *Invisible* HTML Elements

Some HTML elements are not actually visible, but are essential for layout and styling. They can also be used invisibly to organize a complex HTML document.

Element	Properties
<code><div></code>	Content Division Element. It is a block container that has no effect on layout until given content and/or styled with CSS.
<code></code>	Generic inline container for phrasing content. It is used to group content for styling purposes.

Browser Developer Tools

All modern browsers provided “Developer Tools” for examining the DOM and CSS styling. These are essential tools for the web developer!

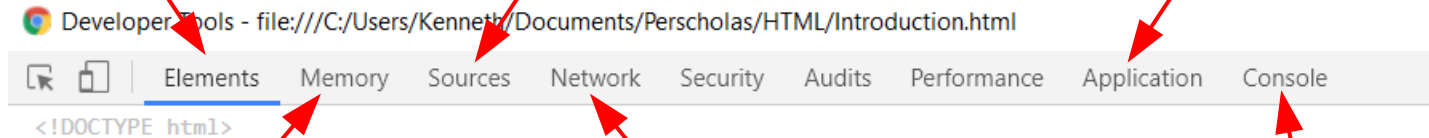


Developer Tools

Allows inspection and alteration of the document elements and their styles.

Allows inspection and debugging of HTML, CSS and javascript sources.

Inspect local storage, session storage, and cookies.



Tools for inspecting memory usage by the browser.

Inspect network activities. Identify page-load bottlenecks.

Inspect javascript console output.

Cascading Style Sheets (CSS)

```
<link href="https://fonts.googleapis.com/css?family=Bubblegum+Sans" rel="stylesheet">
```

```
<body style="background-color:navy;color:white;padding:0px 30px 0px 30px" onload="initPage()">  
  <div style="clear:left;height:30px;background-color:white;color:blue;text-align:center;font-weight:bold;font-size:1.6em">
```

```
<style>  
  table {  
    border-collapse: collapse;  
    margin: 16px 0px;  
  }  
  th, td {  
    width: 100px;  
    text-align: left;  
    border: 1px solid white;  
    padding: 2px;  
  }  
  th {  
    background-color: white;  
    color: navy;  
  }  
  tr:nth-child(odd) {  
    background-color: blue;  
  }  
</style>
```

CSS styles can be:

- Linked
- Inline
- Embedded

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