

Introduction to HTML5: Part.2

Introduction to Internet and Web



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HTML IMAGES

HTML Images Syntax

❖ The HTML **** tag is used to embed an image in a web page.

❖ The **** tag is empty, it contains attributes only, and does not have a closing tag.

❖ The **** tag has two required attributes:

- **src** - Specifies the path to the image
- **alt** - Specifies an alternate text for the image

```

```

```
1 <!DOCTYPE html>
2 <html>
3 <body>
4
5 <h2>Alternative text</h2>
6
7 
10
11 </body>
12 </html>
```

Alternative text



Image Size

- ❖ You can use the style attribute to specify the width and height of an image.
- ❖ Alternatively, you can use the width and height attributes:
- ❖ The width and height attributes always define the width and height of the image in pixels.

```
1  <!DOCTYPE html>
2  <html>
3  <body>
4
5  <h2>Image Size</h2>
6
7  
11
12 
15
16 </body>
17 </html>
18
19
20
21
22
23
```

HTML FILE PATHS

HTML File paths

- ❖ A file path describes the location of a file in a web site's folder structure.
- ❖ File paths are used when linking to external files like:
 - Web pages
 - Images
 - Style sheets
 - JavaScripts

Path	Description
<code></code>	picture.jpg is located in the same folder as the current page
<code></code>	picture.jpg is located in the images folder in the current folder
<code></code>	picture.jpg is located in the images folder at the root of the current web
<code></code>	picture.jpg is located in the folder one level up from the current folder

Absolute File Paths

- ❖ An absolute file path is the full URL to an internet file:

Using a Full URL File Path



```
1  <!DOCTYPE html>
2  <html>
3  <body>
4
5  <h2>Using a Full URL File
6  Path</h2>
7
8  
12
13 </body>
14 </html>
15
16
17
18
19
20
21
22
23
```


Relative File Paths

- ❖ A relative file path points to a file relative to the current page.

Using a Relative File Path



```
1 <!DOCTYPE html>
2 <html>
3 <body>
4
5 <h2>Using a Relative File
6 Path</h2>
7
8 
11
12 </body>
13 </html>
14
15
```

Path	Description
	The "picture.jpg" file is located in the same folder as the current page
	The "picture.jpg" file is located in the images folder in the current folder
	The "picture.jpg" file is located in the images folder at the root of the current web
	The "picture.jpg" file is located in the folder one level up from the current folder

HTML ID AND CLASS

HTML Class

❖ The HTML class attribute is used to specify a class for an HTML element.

- to a class name in a style sheet
- to access and manipulate elements with the specific class name

❖ HTML elements can belong to more than one class.

- To define multiple classes, separate the class names with a space, e.g. <div class="city main">.

❖ Different HTML elements can point to the same class name.

❖ To create a class

- write a period (.) character, followed by a class name.
- Then, define the CSS properties within curly braces {}

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  .city {
6      background-color: tomato;
7      color: white;
8      padding: 10px;
9  }
10 .main {
11     text-align: center;
12 }
13 </style>
14 </head>
15 <body>
16
17 <h2 class="city">Paris</h2>
18 <p class="city main">Paris is the
19 capital of France.</p>
20 <h2 class="city">London</h2>
21
22 </body>
23 </html>
```

HTML ID

❖ The id attribute specifies a unique id for an HTML element.

- to point to a specific style declaration
- to access and manipulate the element with the specific id

❖ The value of the id attribute must be unique within the HTML document.

❖ The syntax for id is:

- write a hash character (#), followed by an id name.
- Then, define the CSS properties within curly braces {}.

```
1  <!DOCTYPE html>
2  <html>
3  <head>
4  <style>
5  #myHeader {
6      background-color: lightblue;
7      color: black;
8      padding: 40px;
9      text-align: center;
10 }
11 </style>
12 </head>
13 <body>
14
15 <h1 id="myHeader">My Header</h1>
16
17 </body>
18 </html>
19
20
21
22
23
```

HTML LINKS

HTML Links

❖ The HTML <a> tag defines a hyperlink. It has the following syntax:

- `Link text`

❖ The most important attribute of the <a> element is the **href** attribute, which indicates the link's destination.

❖ The **target** attribute specifies where to open the linked document.

- **_self** - Default. Opens the document in the same window/tab as it was clicked
- **_blank** - Opens the document in a new window or tab
- **_parent** - Opens the document in the parent frame
- **_top** - Opens the document in the full body of the window

```
<a href=https://pusan.ac.kr/ target="_blank">Visit PNU!</a>
```

HTML Links - Bookmark

- ❖ HTML bookmarks are used to allow readers to jump to specific parts of a Web page.
- ❖ Bookmarks can be useful if a webpage is very long.
- ❖ To create a bookmark - **first** create the bookmark, **then** add a link to it.
- ❖ When the link is clicked, the page will scroll down or up to the location with the bookmark.

Create a Bookmark

- ❖ First, create a bookmark with the id attribute:

```
<h2 id="C4">Chapter 4</h2>
```

- ❖ Then, add a link to the bookmark ("Jump to Chapter 4"), from within the same page:

```
<a href="#C4">Jump to Chapter 4</a>
```

- ❖ You can also add a link to a bookmark on another page:

```
<a href="html_demo.html#C4">Jump to Chapter 4</a>
```


HTML Links - Bookmark

[Jump to Chapter 4](#)

[Jump to Chapter 2](#)

Chapter 1

This chapter explains ba bla bla

Chapter 2

This chapter explains ba bla bla

Chapter 3

This chapter explains ba bla bla

Chapter 4

This chapter explains ba bla bla

```
1 <p><a href="#C4">Jump to Chapter
2 4</a></p>
3
4 <p><a href="#C2">Jump to Chapter
5 2</a></p>
6
7 <h2>Chapter 1</h2>
8 <p>This chapter explains ba bla
9 bla</p>
10
11 <h2 id="C2">Chapter 2</h2>
12 <p>This chapter explains ba bla
13 bla</p>
14
15 <h2>Chapter 3</h2>
16 <p>This chapter explains ba bla
17 bla</p>
18
19 <h2 id="C4">Chapter 4</h2>
20 <p>This chapter explains ba bla
21 bla</p>
22
23
```

HTML SEMANTIC ELEMENTS

Semantic elements

❖ A semantic element clearly describes its meaning to both the browser and the developer.

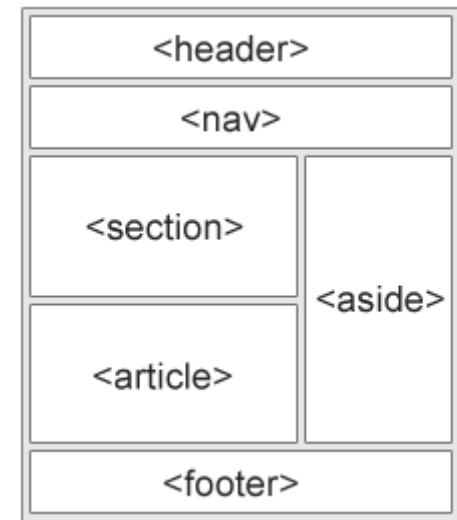
- Examples of non-semantic elements: `<div>` and ``
- Tells nothing about its content.
- Examples of semantic elements: `<form>`, `<table>`, and `<article>` - Clearly defines its content.

❖ Many web sites contain HTML code like:

- `<div id="nav">` `<div class="header">` `<div id="footer">`
to indicate navigation, header, and footer.

❖ In HTML there are some semantic elements that can be used to define different parts of a web page:

- `<article>` `<aside>` `<details>` `<figcaption>` `<figure>`
`<footer>` `<header>` `<main>` `<mark>` `<nav>` `<section>`
`<summary>` `<time>`



HTML <section> Element

- ❖ The **<section>** element defines a section in a document.
- ❖ According to W3C's HTML documentation:
 - "A section is a thematic grouping of content, typically with a heading."
- ❖ A home page could normally be split into sections for introduction, content, and contact information.

WWF

The World Wide Fund for Nature (WWF) is an international organization working on issues regarding the conservation, research and restoration of the environment, formerly named the World Wildlife Fund. WWF was founded in 1961.

WWF's Panda symbol

The Panda has become the symbol of WWF. The well-known panda logo of WWF originated from a panda named Chi Chi that was transferred from the Beijing Zoo to the London Zoo in the same year of the establishment of WWF.

```
1 <section>
2 <h1>WWF</h1>
3 <p>The World Wide Fund for Nature
4 (WWF) is an international
5 organization working on issues
6 regarding the conservation,
7 research and restoration of the
8 environment, formerly named the
9 World Wildlife Fund. WWF was
10 founded in 1961.</p>
11 </section>
12
13 <section>
14 <h1>WWF's Panda symbol</h1>
15 <p>The Panda has become the
16 symbol of WWF. The well-known
17 panda logo of WWF originated from
18 a panda named Chi Chi that was
19 transferred from the Beijing Zoo
20 to the London Zoo in the same
21 year of the establishment of
22 WWF.</p>
23 </section>
```

HTML <article> Element

- ❖ The **<article>** element specifies independent, self-contained content.
- ❖ An article should make sense on its own, and it should be possible to read it independently from the rest of the web site.
- ❖ Examples of where an **<article>** element can be used:
 - Forum post
 - Blog post
 - Newspaper article

Google Chrome

Google Chrome is a web browser developed by Google, released in 2008. Chrome is the world's most popular web browser today!

Mozilla Firefox

Mozilla Firefox is an open-source web browser developed by Mozilla. Firefox has been the second most popular web browser since January, 2018.

```
1 <article>
2 <h2>Google Chrome</h2>
3 <p>Google Chrome is a web browser
4 developed by Google, released in
5 2008. Chrome is the world's most
6 popular web browser today!</p>
7 </article>
8
9 <article>
10 <h2>Mozilla Firefox</h2>
11 <p>Mozilla Firefox is an open-
12 source web browser developed by
13 Mozilla. Firefox has been the
14 second most popular web browser
15 since January, 2018.</p>
16 </article>
17
18
19
20
21
22
23
```

Nesting <article> in <section> or Vice Versa?

- ❖ The <article> element specifies **independent, self-contained content**.
- ❖ The <section> element defines **section in a document**.
- ❖ Can we use the definitions to decide how to nest those elements? No, we cannot!
- ❖ You will also find pages with <section> elements containing <section> elements, and <article> elements containing <article> elements.

HTML <header> Element

- ❖ The **<header>** element represents a container for introductory content or a set of navigational links.
- ❖ A **<header>** element typically contains:
 - one or more heading elements (<h1> - <h6>)
 - logo or icon
 - authorship information
- ❖ **Note:** You can have several **<header>** elements in one HTML document. However, **<header>** cannot be placed within a **<footer>**, **<address>** or another **<header>** element.

What Does WWF Do?

WWF's mission:

WWF's mission is to stop the degradation of our planet's natural environment, and build a future in which humans live in harmony with nature.

```
1 <article>
2
3   <header>
4     <h1>What Does WWF Do?</h1>
5     <p>WWF's mission:</p>
6   </header>
7
8   <p>WWF's mission is to stop the
9 degradation of our planet's
10 natural environment,
11   and build a future in which
12 humans live in harmony with
13 nature.</p>
14
15 </article>
16
17
18
19
20
21
22
23
```

HTML <footer> Element

- ❖ The **<footer>** element specifies a footer for a document or section.
- ❖ A **<footer>** element typically contains:
 - authorship information
 - copyright information
 - contact information
 - sitemap
 - back to top links
 - related documents
- ❖ You may have several **<footer>** elements in one document.

Author: Hege Refsnes

hege@example.com

```
1 <footer>
2
3     <p>Author: Hege Refsnes</p>
4
5     <p><a href="mailto:hege@example
6 .com">hege@example.com</a></p>
7
8 </footer>
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
```


HTML <nav> Element

- ❖ The <nav> element defines a set of navigation links.

[HTML](#) | [CSS](#) | [JavaScript](#) | [jQuery](#)

```
1 <nav>
2
3   <a href="/html/">HTML</a> |
4   <a href="/css/">CSS</a> |
5   <a href="/js/">JavaScript</a> |
6   <a href="/jquery/">jQuery</a>
7
8 </nav>
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
```

T

Notice that NOT all links of a document should be inside a <nav> element. The <nav> element is intended only for major block of navigation links.

HTML <aside> Element

- ❖ The <aside> element defines some content aside from the content it is placed in (like a sidebar).
- ❖ The <aside> content should be related to the surrounding content.

My family and I visited The Epcot center this summer. The weather was nice, and Epcot was amazing! I had a great summer together with my family!

Epcot Center

Epcot is a theme park at Walt Disney World Resort featuring exciting attractions, international pavilions, award-winning fireworks and seasonal special events.

```
1  <p>My family and I visited The
2  Epcot center this summer. The
3  weather was nice, and Epcot was
4  amazing! I had a great summer
5  together with my family!</p>
6
7  <aside>
8  <h4>Epcot Center</h4>
9  <p>Epcot is a theme park at Walt
10 Disney World Resort featuring
11 exciting attractions,
12 international pavilions, award-
13 winning fireworks and seasonal
14 special events.</p>
15 </aside>
16
17
18
19
20
21
22
23
```

HTML <figure> and <figcaption> Elements

- ❖ The **<figure>** tag specifies self-contained content, like illustrations, diagrams, photos, code listings, etc.
- ❖ The **<figcaption>** tag defines a caption for a <figure> element. The <figcaption> element can be placed as the first or as the last child of a <figure> element.



Fig.1 - Trulli, Puglia, Italy.

```
1 <figure>
2
3     
5     <figcaption>
6         Fig1. - Trulli, Puglia, Italy.
7     </figcaption>
8
9 </figure>
```

HTML FORM BASIC

HTML Form

❖ <form> element

- The HTML <form> element is used to create an HTML form for user input.
- The **action** attribute defines the action to be performed when the form is submitted.
- The **target** attribute specifies where to display the response that is received after submitting the form
 - _self, _blank, _parent, _top, framename
- The **method** attribute specifies the HTTP method to be used when submitting the form data.
 - get, post

First name:

Last name:

fname=John&lname=Doe

```
1  <!DOCTYPE html>
2  <html>
3  <body>
4
5  <form action="/action_page.php"
6  target="_blank" method="get">
7    <label for="fname">First
8    name:</label><br>
9    <input type="text" id="fname"
10   name="fname" value="John"><br>
11    <label for="lname">Last
12    name:</label><br>
13    <input type="text" id="lname"
14   name="lname" value="Doe"><br><br>
15    <input type="submit"
16   value="Submit">
17 </form>
18
19 </body>
20 </html>
21
22
23
```

HTML Form

❖ <label> element

- The <label> tag defines a label for many form elements.
- **for** attribute of the <label> tag should be equal to the **id** attribute of the <input> element to bind them together.
 - read out loud the label when the user focus on the input element.
 - help users who have difficulty clicking on very small regions.

First name:

Last name:

fname=John&lname=Doe

```
1  <!DOCTYPE html>
2  <html>
3  <body>
4
5  <form action="/action_page.php"
6  target="_blank" method="get">
7    <label for="fname">First
8  name:</label><br>
9    <input type="text" id="fname"
10  name="fname" value="John"><br>
11    <label for="lname">Last
12  name:</label><br>
13    <input type="text" id="lname"
14  name="lname" value="Doe"><br><br>
15    <input type="submit"
16  value="Submit">
17  </form>
18
19 </body>
20 </html>
21
22
23
```

HTML Form

❖ <input> element

- An <input> element can be displayed in many ways, depending on the **type** attribute.
 - text, radio, checkbox, submit, button, ...
- Notice that each input field must have a **name** attribute to be submitted
- The <input type="text"> defines a single-line input field for text input.
- The <input type="submit"> defines a button for submitting the form data to a form-handler.

First name:

Last name:

fname=John&lname=Doe

```
1 <!DOCTYPE html>
2 <html>
3 <body>
4
5 <form action="/action_page.php"
6 target="_blank" method="get">
7   <label for="fname">First
8   name:</label><br>
9   <input type="text" id="fname"
10  name="fname" value="John"><br>
11   <label for="lname">Last
12   name:</label><br>
13   <input type="text" id="lname"
14   name="lname" value="Doe"><br><br>
15   <input type="submit"
16   value="Submit">
17 </form>
18
19 </body>
20 </html>
21
22
23
```

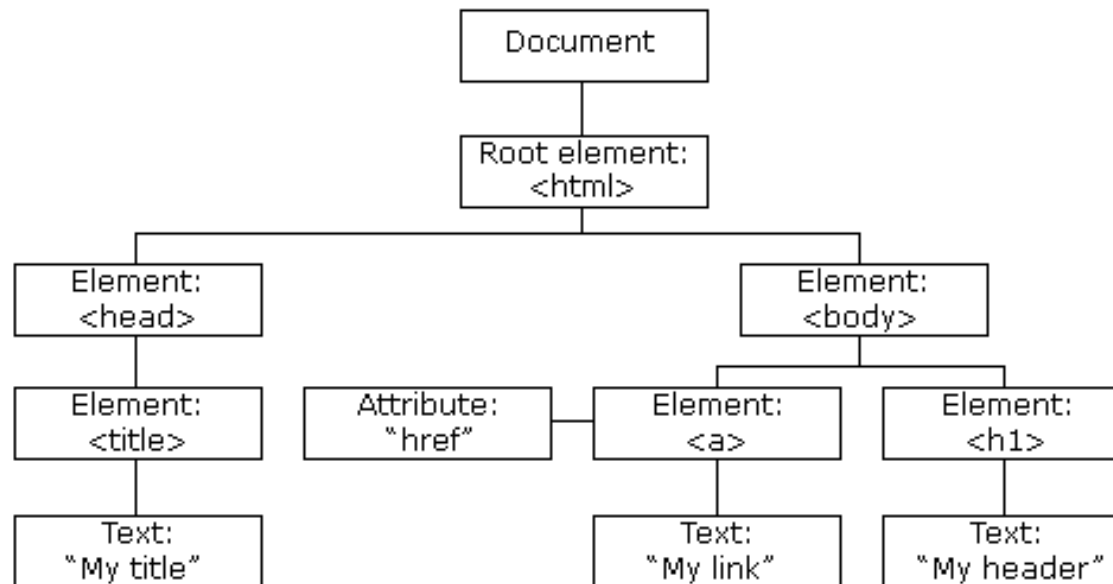
HTML DOM

HTML DOM

❖ DOM (Document Object Model)

- When a web page is loaded, the browser creates a Document Object Model of the page
- The HTML model is constructed as a tree of Objects

The HTML DOM Tree of Objects

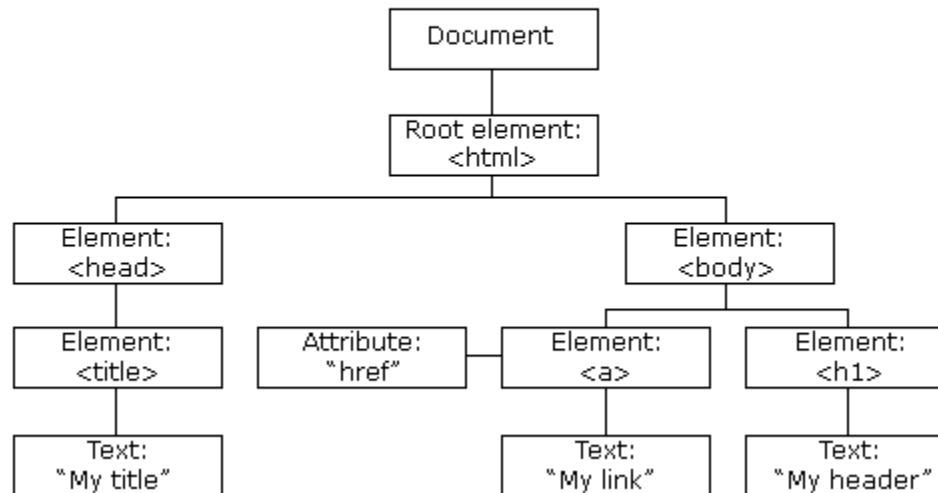


DOM Nodes

❖ According to the W3C HTML DOM standard, everything in an HTML document is a node.

- The entire document is a **document node**
- Every HTML element is an **element node**
- The text inside HTML elements are **text nodes**
- Every HTML attribute is an **attribute node**
- All comments are **comment nodes**

The HTML DOM Tree of Objects



Node Relationships

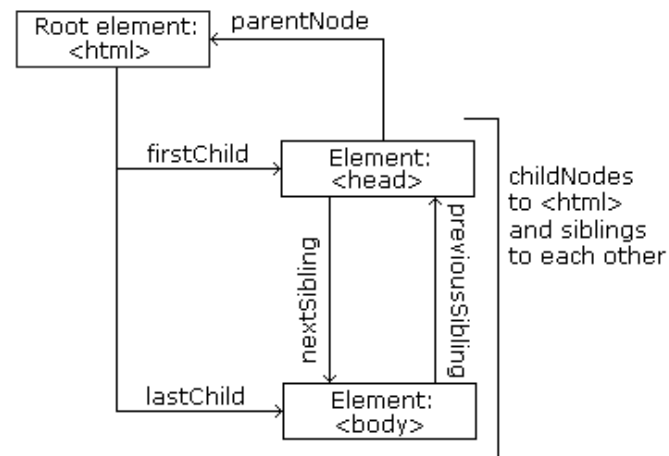
- ❖ The nodes in the node tree have a hierarchical relationship to each other.
- ❖ The terms parent, child, and sibling are used to describe the relationships.
 - In a node tree, the top node is called the root (or root node)
 - Every node has exactly one parent, except the root (which has no parent)
 - A node can have a number of children
 - Siblings (brothers or sisters) are nodes with the same parent

```
<html>

  <head>
    <title>DOM Tutorial</title>
  </head>

  <body>
    <h1>DOM Lesson one</h1>
    <p>Hello world!</p>
  </body>

</html>
```



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- HTML Forms Basic
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