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# HTML (Hyper Text Markup Language)

Introduction Part 2

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# HTML Attributes

- HTML elements can have **attributes**
- Attributes provide **additional information** about an element
- Attributes are always specified in **the start tag**
- Attributes come in name/value pairs like: **name="value"**



# The lang Attribute

- The document language can be declared in the **<html>** tag.
- The language is declared in the **lang** attribute.
- Declaring a language is important for accessibility applications (screen readers) and search engines:

```
<!DOCTYPE html>
<html lang="en-US">
<body>

<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
</html>
```

# The title Attribute

- HTML paragraphs are defined with the **<p>** tag.
- In this example, the **<p>** element has a **title** attribute. The value of the attribute is "**About something**":

```
<p title="about something">Occaecat reprehenderit sint magna mollit  
fugiat consequat nulla enim fugiat  
exercitation qui. Exercitation sunt dolore sunt ullamco laboris nostrud  
pariatur voluptate eu. Ullamco aute ut laboris ex mollit qui.</p>
```

- When you move the mouse over the element, the title will be displayed as a tooltip.

# The href Attribute

- HTML links are defined with the `<a>` tag. The link address is specified in the **href** attribute:

```
<a href="https://google.com">this is a link.</a>
```



# Size Attributes

- HTML images are defined with the **<img>** tag.
- The filename of the source (**src**), and the size of the image (**width** and **height**) are all provided as **attributes**:

```

```

- The image size is specified in pixels: width="104" means 104 screen pixels wide.

# The alt Attribute

- The **alt** attribute specifies an alternative text to be used, when an image cannot be displayed.
- The value of the attribute can be read by screen readers. This way, someone "listening" to the webpage, e.g. a blind person, can "hear" the element.

```

```



# The HTML <head> Element

- The HTML **<head>** element has nothing to do with HTML headings.
- The HTML <head> element contains **meta data**. Meta data are not displayed.
- The HTML <head> element is placed between the <html> tag and the <body> tag:

```
<!DOCTYPE html>
<html>

<head>
  <title>My First HTML</title>
  <meta charset="UTF-8">
</head>

<body>
  .
  .
  .
```



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# The HTML **<title>** Element

- The HTML **<title>** element is meta data. It defines the HTML document's title.
- The title will not be displayed in the document, but might be displayed in the browser tab.



# The HTML Style Attribute

- Setting the style of an HTML element, can be done with the **style attribute**.
- The HTML style attribute has the following **syntax**:

`style="property.value;"`

- The ***property*** is a CSS property. The ***value*** is a CSS value.

# HTML Background Color

- The **background-color** property defines the background color for an HTML element:
- This example sets the background for a page to lightgrey:

```
<body style="background-color:lightgrey;">
```

```
<h1>This is a heading</h1>
```

```
<p>This is a paragraph.</p>
```

```
</body>
```

```
<h2 style="background-color:red">  
Background-color set by using red  
</h2>
```

```
<h2 style="background-color:orange">  
Background-color set by using orange  
</h2>
```

# HTML Text Color

- The **color** property defines the text color for an HTML element:

```
<h1 style="color:blue;">This is a heading</h1>  
<p style="color:red;">This is a paragraph.</p>
```



# Making Color Choices

- How to choose a color scheme?
  - Monochromatic
    - <http://meyerweb.com/eric/tools/color-blend>
  - Choose from a photograph or other image
    - <http://www.colr.org>
  - Begin with a favorite color
    - Use one of the sites below to choose other colors
      - <http://colorsontheweb.com/colorwizard.asp>
      - <https://color.adobe.com/create/color-wheel>
      - <http://paletton.com>



# Support Web Accessibility Verify Sufficient Contrast

- When you choose colors for text and background, sufficient contrast is needed so that the text is easy to read.
- Use one of the following online tools to verify contrast:
  - <http://webaim.org/resources/contrastchecker>
  - [http://snook.ca/technical/colour\\_contrast/colour.html](http://snook.ca/technical/colour_contrast/colour.html)
  - <http://juicystudio.com/services/luminositycontrastratio.php>



# HTML Fonts

- The **font-family** property defines the font to be used for an HTML element:

```
<h1 style="font-family:verdana;">This is a heading</h1>  
<p style="font-family:courier;">This is a paragraph.</p>
```



# HTML Text Size

- The **font-size** property defines the text size for an HTML element:

```
<h1 style="font-size:300%;">This is a heading</h1>  
<p style="font-size:160%;">This is a paragraph.</p>
```





# HTML Text Alignment

- The **text-align** property defines the horizontal text alignment for an HTML element:

```
<h1 style="text-align:center;">Centered Heading</h1>  
<p>This is a paragraph.</p>
```

# HTML **<abbr>** for Abbreviations

- The HTML **<abbr>** element defines an abbreviation or an acronym.
- Marking abbreviations can give useful information to browsers, translation systems and search-engines.

```
<p>The <abbr title="World Health Organization">WHO</abbr> was founded in 1948.</p>
```



# HTML <address> for Contact Information

- The HTML **<address>** element defines contact information (author/owner) of a document or article.
- The <address> element is usually displayed in italic. Most browsers will add a line break before and after the element.

```
<address>  
Written by John Doe.<br>  
Visit us at:<br>  
Example.com<br>  
Box 564, Disneyland<br>  
USA  
</address>
```



# HTML Comment Tags

- You can add comments to your HTML source by using the following syntax:

`<!-- Write your comments here -->`

- Comments are not displayed by the browser, but they can help document your HTML.
- With comments you can place notifications and reminders in your HTML:

# HTML Links - The target Attribute

- The **target** attribute specifies where to open the linked document.
- This example will open the linked document in a new browser window or in a new tab:

```
<a href="https://google.com" target="_blank">this is a link.</a>
```



## HTML Links - Colors

- When you move the mouse over a link, two things will normally happen:
  - The mouse arrow will turn into a little hand
  - The color of the link element will change
- By default, a link will appear like this (in all browsers):
  - An unvisited link is underlined and blue
  - A visited link is underlined and purple
  - An active link is underlined and red
- + + ▪ You can change the default colors, by using styles:

# Example

```
<style>
a:link    {color:green; background-color:transparent; text-decoration:none}
a:visited {color:pink; background-color:transparent; text-decoration:none}
a:hover   {color:red; background-color:transparent; text-decoration:underline}
a:active  {color:yellow; background-color:transparent; text-decoration:underline}
</style>
```



# HTML Links - Image as Link

- It is common to use images as links:

Example:

```
<a href="http://www.google.com">  
    
</a>
```





# HTML Links - Create a Bookmark

- HTML bookmarks are used to allow readers to jump to specific parts of a Web page.
- Bookmarks are practical if your website has long pages.
- To make a bookmark, you must first create the bookmark, and then add a link to it.
- When the link is clicked, the page will scroll to the location with the bookmark.

# Example

First, create a bookmark with the id attribute:

```
<h2 id="tips">Useful Tips Section</h2>
```

Then, add a link to the bookmark ("Useful Tips Section"), from within the same page:

```
<a href="#tips">Visit the Useful Tips Section</a>
```

Or, add a link to the bookmark ("Useful Tips Section"), from another page:

## Example

```
<a href="html_tips.html#tips">Visit the Useful Tips Section</a>
```

# Embedded Styles Example



```
<style>
```

```
body { background-color: #E6E6FA;  
       color: #191970;  
       font-family: Arial, Verdana, sans-serif; }
```

```
h1 { background-color: #191970;  
      color: #E6E6FA;  
      line-height: 200%;  
      font-family: Georgia, "Times New Roman", serif; }
```

```
h2 { background-color: #AEAED4;  
      color: #191970; text-align: center;  
      font-family: Georgia, "Times New Roman", serif; }
```

```
p { font-size: .90em; text-indent: 3em; }
```

```
ul { font-weight: bold; }
```

```
</style>
```

# HTML Tables

- Tables are defined with the **<table>** tag.
- Tables are divided into **table rows** with the **<tr>** tag.
- Table rows are divided into **table data** with the **<td>** tag.
- A table row can also be divided into **table headings** with the **<th>** tag.

## Example

```
<table style="width:100%">
  <tr>
    <td>Jill</td>
    <td>Smith</td>
    <td>50</td>
  </tr>
  <tr>
    <td>Eve</td>
    <td>Jackson</td>
    <td>94</td>
  </tr>
</table>
```

# CSS Selectors

- 
- 
- 
- 
- CSS style rules can be configured for an:
  - HTML element selector
  - class selector
  - id selector
  - descendant selector



# More CSS TEXT Properties

- line-height
  - Configures the height of the line of text (use the value 200% to appear double-spaced)
- text-align
  - Configures alignment of text within a block display element
- text-indent
  - Configures the indentation of the first line of text
- text-decoration
  - Modifies the appearance of text with an underline, overline, or line-through
- text-transform
  - Configures the capitalization of text
- letter-spacing
  - Configures space between text characters
- word-spacing
  - Configures space between words
- text-shadow
  - Configures a drop shadow on text

# The <div> Element

- The <div> element is a **block-level element** that is often used as a container for other HTML elements.
- The <div> element has no required attributes, but **style** and **class** are common.

```
<div style="background-color:black; color:white; padding:20px;">
```

```
<h2>London</h2>
```

```
<p>London is the capital city of England. It is the most populous city in the United Kingdom,  
with a metropolitan area of over 13 million inhabitants.</p>
```

```
</div>
```



# HTML The class Attribute

- The **class** attribute specifies one or more class names for an HTML element.
- The class name can be used by CSS and JavaScript to perform certain tasks for elements with the specified class name.
- In CSS, to select elements with a specific class, write a period (.) character, followed by the name of the class:



# Example

```
<style>
.city {
  background-color: tomato;
  color: white;
  padding: 10px;
}
</style>

<h2 class="city">London</h2>
<p>London is the capital of England.</p>

<h2 class="city">Paris</h2>
<p>Paris is the capital of France.</p>

<h2 class="city">Tokyo</h2>
<p>Tokyo is the capital of Japan.</p>
```

# HTML The id Attribute

- The **id** attribute specifies a unique id for an HTML element (the value must be unique within the HTML document).
- The id value can be used by CSS and JavaScript to perform certain tasks for a unique element with the specified id value.
- In CSS, to select an element with a specific id, write a hash (#) character, followed by the id of the element:

# Example

```
<style>
#myHeader {
  background-color: lightblue;
  color: black;
  padding: 40px;
  text-align: center;
}
</style>
```

```
<h1 id="myHeader">My Header</h1>
```

---

# Classing Block Elements

- The HTML class attribute makes it possible to define equal styles for "equal" <div> elements:



## Example

```
<!DOCTYPE html>
<html>
<head>
<style>
div.cities {
    background-color:black;
    color:white;
    margin:20px;
    padding:20px;
}
</style>
</head>
<body>

<div class="cities">
<h2>London</h2>
<p>London is the capital city of England. It is the most populous city in the United Kingdom, with a metropolitan area of over 13
million inhabitants.</p>
</div>

<div class="cities">
<h2>Paris</h2>
<p>Paris is the capital and most populous city of France.</p>
</div>

<div class="cities">
<h2>Tokyo</h2>
<p>Tokyo is the capital of Japan, the center of the Greater Tokyo Area,
and the most populous metropolitan area in the world.</p>
</div>

</body>
</html>
```

# Classing Inline Elements

- The HTML class attribute also makes it possible to define equal styles for "equal" <span> elements:

```
<!DOCTYPE html>
<html>
<head>
<style>
span.note {font-size:120%;color:red;}
</style>
</head>
<body>

<h1>My <span class="note">Important</span> Heading</h1>
<p>This is some <span class="note">important</span> text.</p>

</body>
</html>
```

# An HTML Table with a Border Attribute

- If you do not specify a border for the table, it will be displayed without borders.
- A border can be added using the border attribute:

```
<table border="1" style="width:100%">
  <tr>
    <td>Jill</td>
    <td>Smith</td>
    <td>50</td>
  </tr>
  <tr>
    <td>Eve</td>
    <td>Jackson</td>
    <td>94</td>
  </tr>
</table>
```

# HTML Table Headings

- Table headings are defined with the **<th>** tag.
- By default, all major browsers display table headings as bold and centered:

```
<table style="width:100%">
  <tr>
    <th>Firstname</th>
    <th>Lastname</th>
    <th>Points</th>
  </tr>
  <tr>
    <td>Eve</td>
    <td>Jackson</td>
    <td>94</td>
  </tr>
</table>
```



# HTML Table - Cells that Span Many Columns

- To make a cell span more than one column, use the **colspan** attribute:

```
<table style="width:100%">
  <tr>
    <th>Name</th>
    <th colspan="2">Telephone</th>
  </tr>
  <tr>
    <td>Bill Gates</td>
    <td>55577854</td>
    <td>55577855</td>
  </tr>
</table>
```

# HTML Table - Cells that Span Many Rows

- To make a cell span more than one row, use the **rowspan** attribute:

```
<table style="width:100%">
  <tr>
    <th>Name:</th>
    <td>Bill Gates</td>
  </tr>
  <tr>
    <th rowspan="2">Telephone:</th>
    <td>55577854</td>
  </tr>
  <tr>
    <td>55577855</td>
  </tr>
</table>
```

# HTML Table - Adding a Caption

- To add a caption to a table, use the **<caption>** tag:

```
<table style="width:100%">
  <caption>Monthly savings</caption>
  <tr>
    <th>Month</th>
    <th>Savings</th>
  </tr>
  <tr>
    <td>January</td>
    <td>$100</td>
  </tr>
  <tr>
    <td>February</td>
    <td>$50</td>
  </tr>
</table>
```

# HTML Iframes

- An iframe is used to display a web page within a web page.
- The syntax for adding an iframe is:

```
<iframe src=" URL"></iframe>
```

- The **src** attribute specifies the URL (web address) of the iframe page.

# Iframe - Set Height and Width

- Use the **height** and **width** attributes to specify the size.
- The attribute values are specified in pixels by default, but they can also be in percent (like "80%").

```
<iframe src="demo_iframe.htm" width="200" height="200"></iframe>
```



# Iframe - Remove the Border

- By default, an iframe has a black border around it.
- To remove the border, add the style attribute and use the CSS border property:

```
<iframe src="demo_iframe.htm" style="border:none"></iframe>
```



# The HTML **<video>** Element

- To show a video in HTML, use the **<video>** element:

```
<video src="test.mp4" width="320" height="240" control> </video>
```

```
<video width="320" height="240" controls>  
  <source src="movie.mp4" type="video/mp4">  
  <source src="movie.ogv" type="video/ogg">  
  Your browser does not support the video tag.  
</video>
```



# How it Works

- The **controls** attribute adds video controls, like play, pause, and volume.
- It is a good idea to always include **width** and **height** attributes.
- If height and width are not set, the browser does not know the size of the video. The effect will be that the page will change (or flicker) while the video loads.
- Text between the <video> and </video> tags will only display in browsers that do not support the <video> element.
- Multiple **<source>** elements can link to different video files. The browser will use the first recognized format.



# HTML <video> Autoplay

- To start a video automatically use the **autoplay** attribute:

```
<video src="test.mov" width="320" height="240" control> </video>
```

```
<video width="320" height="240" autoplay>  
  <source src="movie.mp4" type="video/mp4">  
  <source src="movie.ogv" type="video/ogg">  
Your browser does not support the video tag.  
</video>
```

# The HTML `<audio>` Element

- To play an audio file in HTML, use the `<audio>` element:

```
<audio controls>  
  <source src="horse.ogg" type="audio/ogg">  
  <source src="horse.mp3" type="audio/mpeg">  
Your browser does not support the audio element.  
</audio>
```

