

HTML/CSS

60-634

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Topics

○ Topics

- Introduction
- HTML Basics
 - Tags
 - Syntax
- HTML Forms
- CSS



What Is HTML?

- ◉ HTML is a markup language used to describe web pages.
 - HTML stands for **HyperText Markup Language**. When a web browser displays a webpage:
 - it is reading and interpreting a HTML document.
 - **HTML5**: The next major revision of the HTML standard.
 - Used for structuring and presenting content on the World Wide Web.
 - Consists of many new features
 - Some related standards include CSS3



Basic Structure

- *DOCTYPE*: Tells browsers *how* to read your document.
 - Forces browsers to use 'standard mode'.
 - Using standard mode, most browsers will read your document the same way.
- *<head>*: Contains information about your page.
- *<body>*: The actual content of your page.

```
<!DOCTYPE html>
<html>
  <head>
    <title>My first Webpage</title>
  </head>
  <body>
    <h1>This is a Heading</h1>
    <p>Hello World!</p>
  </body>
</html>
```



Elements

- **HTML elements are marked up using start tags and end tags.**
 - Tags are delimited using angle brackets with the tag name in between.
 - End tags include a slash before the tag name.
 - Some elements require only a single tag, e.g. `
`, ``
 - HTML tag names are case insensitive.
 - Recommended: use **lowercase**.
 - Most elements contain some content
 - e.g. `<p>...</p>`
 - Elements may contain **attributes**
 - Used to set various properties of an element.



Attributes

- ◉ **Attributes:** provide additional information about the specific element
 - Always specified in the opening tag.
 - The pattern for writing attributes:
attribute="value".
 - Examples:
 - `This is tag content`
 - ``
 - `<div class="example">...</div>`



Headings

- Headings are defined with the <h1> to <h6> elements.
 - Web browsers interpret the headings as the structure of your page.
 - Therefore headings should only be used for actual headings and not for making text bold or large.
 - Headings also increase the readability of your pages.

```
<!DOCTYPE html>
<html>
<head>
  <title> My Webpage</title>
</head>
<body>
  <h1>My Main Heading</h1>
  <p> My first paragraph of the page.</p>
  <h2>Secondary heading</h2>
  <p> My second paragraph.</p>
</body>
</html>
```



Links

◉ *Link*: Some text or image you can click to jump to another document or a specific part of the current document.

- `<a>`: element for links (internal and external).
- *href*: A required attribute that specifies the destination address
- *Link text*: The visible part.
 - Click on link text sends you to the specified address.

```
<a href="http://www.mypage.com">Link text</a>
```

- You can also use an image as a link.

```
<a href="default.html">
```

```
</a>
```



IDs and Classes

- *ID*: An **attribute** that assigns a name to your element.
 - The name must be **unique** and cannot be used anywhere else in your document.
- *Class*: An **attribute** used to assign some general properties to your element.
 - You can have several elements in your document with the same class-name.
 - You do this, because you want them to behave and look the same way.
- IDs and classes are normally used in combination with CSS



Local Links

- ◉ A local link (link to the same web site) is specified with a relative URL.
 - `HTML Images`
- ◉ Link to a specific part of the same doc:
 - Use in conjunction with **id** or **name** attribute.
 - # indicates it is a **fragment identifier**.

`<p id="para1">This is my first section</p>`

`<p name="my-para2" >This is another section</p>`

`Go to the first section`

`Go to the second section`



● HTML has 2 types of lists:

- Unordered (bulleted) lists: Use `` tags
 - list-style-type attribute used to change appearance of bullets. E.g. `<ul style="list-style-type:square">`
- Ordered (numbered) lists: Use `` tags
 - type attribute used to define type of marker. `<ol type="a">`
- Each item in a list is marked by `` tag.
- Lists are useful for menus, navigation etc.

```
<ol type="a">  
  <li>Math</li>  
  <li>History</li>  
  <li>English</li>  
</ol>
```

Block and Inline Elements

- *Block element*: normally start (and end) with a new line, when displayed in a browser.
 - Typically as wide as possible.
 - Example: `<div>`, `<h1>`, `<p>`, ``, `<table>`
 - The width and height of the element can be regulated.
 - May contain inline elements and other block-elements.
- *Inline element*: treated as a part of the document flow. Normally displayed without line breaks.
 - Example: ``, `<td>`, `<a>`, ``
 - The size should normally not be changed manually.
 - Only inline elements may be contained with inline-elements.



HTML Style

- Every HTML element has a **default style**
 - e.g. background color is white, text color is black, text-size is 12px ...
- Use **style attribute** to change the default style of an HTML element.
 - Syntax: **style="property:value"**
 - The **property** is a CSS property. The **value** is a CSS value.
 - `<body style="background-color:lightgrey">`
 - Each **property:value** separated by **‘;’**
 - `<h1 style="background-color:blue; color:red">This is a heading</h1>`



HTML Style

- ◉ Styles can be specified in:
- ◉ A separate CSS stylesheet.
 - Link to stylesheet given in `<head>` portion of html page.
 - Example: `<link rel="stylesheet" type="text/css" href="style3.css" />`
- ◉ Within `<style>` tags in the `<head>` portion of html page.
- ◉ Directly within the html element itself.
 - Example:
 - `<body style="background-color:lightgrey">`
 - `<h1 style="background-color:blue; color:red">This is a heading</h1>`



Formatting

- You can apply formatting e.g. **bold** or *italic* to words or sentences.
 - Can be used in conjunction with CSS.
 - Common formatting elements:
 - **** Defines **bold** text
 - **** Defines **emphasized** text
 - **<i>** Defines **italic** text
 - **<small>** Defines **smaller** text
 - **** Defines **important** text
 - **<sub>**(**<sup>**) Defines **subscripted** (**superscripted**) text
 - **<ins>** Defines **inserted** text
 - **** Defines **deleted** text
 - **<mark>** Defines **marked/highlighted** text



HTML Layout

- ◉ Various techniques can be used to achieve a desired layout.
 - Using **<table>** tags
 - Not recommended. Use tables to display table data only.
 - Using **<div>** tags
 - Using HTML5 **semantic elements**.



HTML5 Semantic Elements

- ◉ *header* Defines a **header** for a document or a section
- ◉ *nav* Defines a **container** for navigation links
- ◉ *section* Defines a **section** in a document
- ◉ *article* Defines an **independent self-contained article**
- ◉ *aside* Defines **content aside** from the content (like a **sidebar**)
- ◉ *footer* Defines a **footer** for a document or a section
- ◉ *details* Defines additional details
- ◉ *summary* Defines a **heading** for the **details** element



Example

```
<!DOCTYPE html>
<html>

<head>
<style>
header {
    background-color:black;
    color:white;
    text-align:center;
    padding:5px;
}
nav {
    line-height:30px;
    background-color:#eeeeeee;
    height:300px;
    width:100px;
```



Example

```
float:left;
padding:5px;
}
section {
width:350px;
float:left;
padding:10px;
}
footer {
background-color:black;
color:white;
clear:both;
text-align:center;
padding:5px;
}
</style>
</head>
```



Example

```
<body>
<header>
  <h1>My Courses</h1>
</header>
<nav>
  Math<br>
  History<br>
  English<br>
</nav>
<section>
  <h1>Math</h1>
  <p>Math lectures are on Mondays.</p>
</section>
<footer>Copyright © W3Schools.com</footer>
</body>
</html>
```

* Example taken from [1]



HTML Forms

- HTML forms are used to collect user input.
 - The **<form>** tag is used to create an HTML form.
`<form>`
Form elements
`</form>`
 - HTML forms contain **form elements**.
 - The **<input>** element is the most important **form element**.
 - The **<input>** element has many variations, depending on the **type** attribute.



Common <input> Elements

- ◉ *text* Defines normal **text** input
 - Default width is 20 characters.
- ◉ *radio* Defines radio button input (for selecting **one** of many choices)
- ◉ *submit* Defines a submit **button** (for **submitting the form**)

<form>

First name: <input type="text" name="firstname">

Last name: <input type="text" name="lastname">

<input type="submit" value="Submit now" >

</form>



Radio Button

◉ **<input type="radio">** defines a **radio button**.

- Radio buttons let a user select ONE of a limited number of choices:

```
<form>
```

```
<input type="radio" name="gender" value="male" checked>
```

```
Male
```

```
<br>
```

```
<input type="radio" name="gender" value="female">Female
```

```
</form>
```



Submit Button

- ◉ **<input type="submit">** defines a button for **submitting** a form to a **form-handler**.
 - The form-handler is typically a server page with a script for processing input data.
 - The form-handler (url) is specified in the form's **action** attribute.
 - The **method** attribute specifies **the HTTP method** (**GET** or **POST**) to be used when submitting the forms.

```
<form action="register_page" method="GET">
```

```
First name: <input type="text" name="firstname" value="Bob">
```

```
<br>
```

```
Last name:<input type="text" name="lastname" value="Smith">
```

```
<br>
```

```
<input type="submit" value="Submit Now">
```

```
</form>
```



Reset Buttons

- *reset button*: is used to **clear all inputs** by the user
 - Example: `<input type="reset" value="Clear All" >`



Textarea Element

- ◉ `<textarea>`: Allows user to enter multiple lines of text – not just a few characters.
- ◉ Change the size of you textarea using the attributes: **rows** and **cols**.

```
<form method="post">
```

```
  <textarea cols="25" rows="7"></textarea>
```

```
  <br>
```

```
  <input type="submit" value="Submit now">
```

```
</form>
```



<label> Tag

- You can associate a **label** with an element.
 - Label associated with **id** of the element.
 - Label can be placed before or after the element.

```
<form method="post">  
  <label for="comments">Additional Info  
  (optional): </label><br>  
  <textarea cols="25" rows="7"  
  id="comments"></textarea>  
  <br>  
  <input type="submit" value="Submit now">  
</form>
```



Checkboxes

- **Checkbox:** Allows users to choose one or more units within a group of choices.
 - The **type** attribute must have the value "**checkbox**"
 - Every checkbox within the same group have the same **name**.
 - The **value** of the value attribute is the string that will be returned.

```
<form method="post">  
  <input type="checkbox" name="animal" value="Cat" />Cats <br />  
  <input type="checkbox" name="animal" value="Dog" />Dogs<br />  
  <input type="checkbox" name="animal" value="Bird" />Birds<br />  
  
  <input type="submit" value="Submit now" />  
</form>
```



Dropdown Lists

- **Dropdown List:** Another way to allow users choose just **one** of a set of choices.
 - Should only be used when the user **must** choose one the specified options.
 - does not allow user to not choose anything (as radio-buttons do).
 - Defined by the **<select>** element; the values being returned are defined by the **value** attribute.

```
<select name="Registration Term">  
  <option value="F2015">Fall Term</option>  
  <option value="W2016">Winter Term</option>  
  <option value="S2016">Summer Term</option>  
</select>
```



References

- ◉ [1]W3Schools.com

