



Programmazione Web a.a. 2017/2018 *HTML5*

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17.12.17 #2

PW: HTML5

Introduzione HTML

HTML is the standard markup language for creating Web pages. HTML stands for Hyper Text Markup Language

- HTML describes the structure of Web pages using markup
- HTML elements are the building blocks of HTML pages
- HTML elements are represented by tags
- HTML tags label pieces of content such as "heading", "paragraph", "table", and so on
- Browsers do not display the HTML tags, but use them to render the content of the page

17.12.17 #2 2 PW: HTML5

Esempio

```
<!DOCTYPE html>
< html>
<head>
<title>Page Title</title>
</head>
<body>
<h1>My First Heading</h1>
My first paragraph.
</body>
</html>
```

- The <!DOCTYPE html> declaration defines this document to be HTML5
- The <html> element is the root element of an HTML page
- The <head> element contains meta information about the document
- The <title> element specifies a title for the document
- The <body> element contains the visible page content
- The <h1> element defines a large heading
- ▼ The element defines a paragraph

HTML Tags

HTML Tags

HTML tags are element names surrounded by angle brackets:

<tagname>content goes here...</tagname>

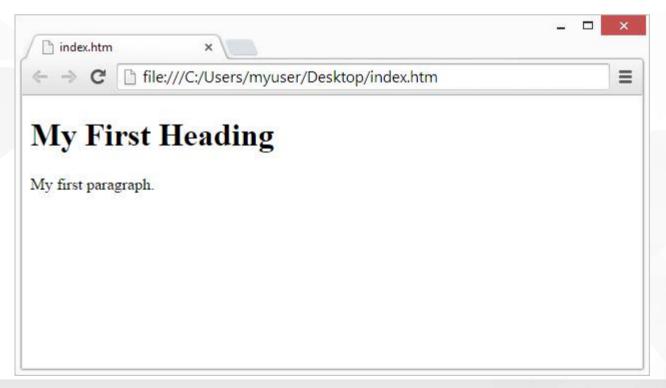
- HTML tags normally come in pairs like and
- The first tag in a pair is the start tag, the second tag is the end tag
- The end tag is written like the start tag, but with a forward slash inserted before the tag name

The start tag is also called the opening tag, and the end tag the closing tag.

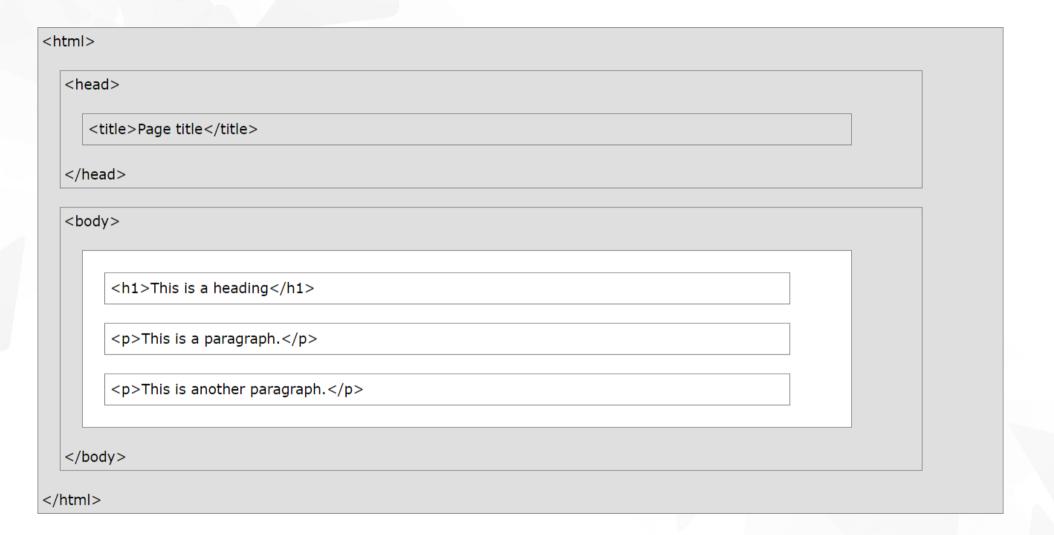
Web Browsers

The purpose of a web browser (Chrome, IE, Firefox, Safari) is to read HTML documents and display them.

The browser does not display the HTML tags, but uses them to determine how to display the document:



HTML Page Structure



The <!DOCTYPE> Declaration

The <!DOCTYPE> declaration represents the document type, and helps browsers to display web pages correctly.

It must only appear once, at the top of the page (before any HTML tags).

The <!DOCTYPE> declaration is not case sensitive.

The <!DOCTYPE> declaration for HTML5 is:

<!DOCTYPE html>

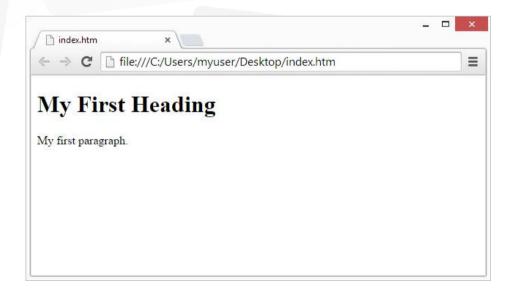
HTML Versions

Version	Year
HTML	1991
HTML 2.0	1995
HTML 3.2	1997
HTML 4.01	1999
XHTML	2000
HTML5	2014

Editors

Write HTML Using Notepad or TextEdit Web pages can be created and modified by using professional HTML editors.

Using a simple text editor is a good way to learn HTML Notepad++ (PC) or TextEdit (Mac).





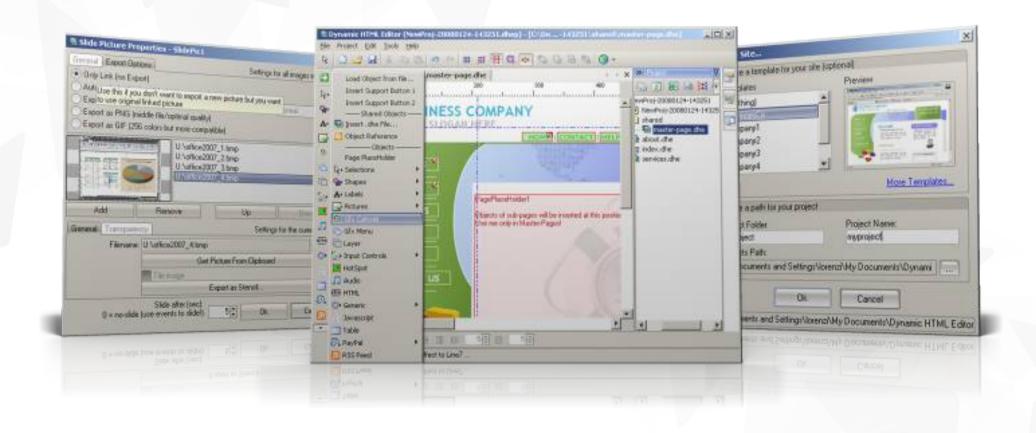
```
Untitled - Notepad - 

File Edit Format View Help

<!DOCTYPE html>
<html>
<body>
<h1>My First Heading</h1>
My first paragraph.
</body>
</html>
```

Editors: WYSIWYG

WYSIWYG: What You See Is What You Get



17.12.17 #2 10 PW: HTML5

HTML Paragraphs

HTML paragraphs are defined with the tag:

```
This is a paragraph.
This is another paragraph.
```

HTML Links

HTML links are defined with the <a> tag:

```
<a href="https://www.w3schools.com">This is a link</a>
```

The link's destination is specified in the href attribute.

Attributes are used to provide additional information about HTML elements.

17.12.17 #2 12

HTML Images

HTML images are defined with the tag.

The source file (src), alternative text (alt), width, and height are provided as attributes:

```
<img src="w3schools.jpg" alt="W3Schools.com" width="104" height="142">
```

17.12.17 #2 13

HTML Elements

An HTML element usually consists of a start tag and end tag, with the content inserted in between:

<tagname>Content goes here...</tagname>

The HTML element is everything from the start tag to the end tag:

My first paragraph.

Start tag	Element content	End tag
<h1></h1>	My First Heading	
	My first paragraph.	

HTML elements with no content are called empty elements. Empty elements do not have an end tag, such as the
 element (which indicates a line break).

17.12.17 #2 14 PW: HTML5

HTML Comment Tags

HTML <!--.-> Tag

The comment tag is used to insert comments in the source code. Comments are not displayed in the browsers.

You can use comments to explain your code, which can help you when you edit the source code at a later date. This is especially useful if you have a lot of code.

Tips and Notes

You can also use the comment tag to "hide" scripts from browsers without support for scripts (so they don't show them as plain text): Note: The two forward slashes at the end of comment line (//) is the JavaScript comment symbol. This prevents JavaScript from executing the --> tag

```
<script type="text/javascript">
<!--
function displayMsg() {
    alert("Hello World!")
}
//-->
</script>
```

Do Not Forget the End Tag

Example

Some HTML elements will display correctly, even if you forget

the end tag:

```
<html>
<body>
This is a paragraph
This is a paragraph
</body>
</html>
```

The example above works in all browsers, because the closing tag is considered optional.

Never rely on this. It might produce unexpected results and/or errors if you forget the end tag

Empty HTML Elements

HTML elements with no content are called empty elements.

 is an empty element without a closing tag (the
br> tag
defines a line break).

Empty elements can be "closed" in the opening tag like this:
.

HTML5 does not require empty elements to be closed. But if you want stricter validation, or if you need to make your document readable by XML parsers, you must close all HTML elements properly.

17.12.17 #2 17 PW: HTML5

Use Lowercase Tags

HTML tags are not case sensitive: <P> means the same as .

The HTML5 standard does not require lowercase tags, but W3C recommends lowercase in HTML, and demands lowercase for stricter document types like XHTML.

At W3Schools we always use lowercase tags.

Headings Are Important

Headings are defined with the <h1> to <h6> tags.

<h1> defines the most important heading. <h6> defines the least important heading.

Search engines use the headings to index the structure and content of your web pages.

Heading 1

Heading 2

Heading 3

Heading 4

Heading 5

Heading 6

Users skim your pages by its headings. It is important to use headings to show the document structure.

<h1> headings should be used for main headings, followed by <h2> headings, then the less important <h3>, and so on.

Note: Use HTML headings for headings only. Don't use headings to make text BIG or bold.

How to View HTML Source?

Have you ever seen a Web page and wondered "Hey! How did they do that?"

View HTML Source Code:

■ To find out, right-click in the page and select "View Page Source" (in Chrome) or "View Source" (in IE), or similar in other browsers. This will open a window containing the HTML source code of the page.

Inspect an HTML Element:

■ Right-click on an element (or a blank area), and choose "Inspect" or "Inspect Element" to see what elements are made up of (you will see both the HTML and the CSS). You can also edit the HTML or CSS on-the-fly in the Elements or Styles panel that opens.

> 17.12.17 #2 20 PW: HTML5

HTML Attributes

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

Examples

- This is a link
-
-
-

17.12.17 #2 21 PW: HTML5

The style Attribute

The style attribute is used to specify the styling of an element, like color, font, size etc.

```
I am a paragraph
```

The lang Attribute

The language of the document can be declared in the <html> tag.

The language is declared with the lang attribute.

Declaring a language is important for accessibility applications (screen readers) and search engines:

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

...

</body>
</html>
```

■ The first two letters specify the language (en). If there is a dialect, use two more letters (US).

The title Attribute

Here, a title attribute is added to the element. The value of the title attribute will be displayed as a **tooltip** when you mouse over the paragraph:

The title attribute

I'm a header

Mouse over this paragraph, to display the title attribute as a tooltip.

17.12.17 #2 24

Suggest

Use Lowercase Attributes

The HTML5 standard does not require lowercase attribute names.

The title attribute can be written with uppercase or lowercase like title or TITLE.

W3C recommends lowercase in HTML, and demands lowercase for stricter document types like XHTML.

Quote Attribute Values

The HTML5 standard does not require quotes around attribute values.

The href attribute, demonstrated above, can be written as:

```
<a href=https://www.w3schools.com>
```

W3C recommends quotes in HTML, and demands quotes for stricter document types like XHTML. Sometimes it is necessary to use quotes. This example will not display the title attribute correctly, because it contains a space:

Summary

- All HTML elements can have attributes
- ▼ The title attribute provides additional "tool-tip" information
- The href attribute provides address information for links
- The width and height attributes provide size information for images
- The alt attribute provides text for screen readers
- At W3Schools we always use lowercase attribute names
- At W3Schools we always quote attribute values with double quotes

17.12.17 #2 26

Color Names

In HTML, a color can be specified by using a color name:



17.12.17 #2 27 PW: HTML5

Color Names

In HTML, a color can be specified by using a color name:

Hello World

Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.

```
<h1 style="background-color:DodgerBlue;">Hello World</h1>
Lorem ipsum...
<h1 style="color:Tomato;">Hello World</h1>
Lorem ipsum...
Ut wisi enim...
```

17.12.17 #2 28 PW: HTML5

Color Names

In HTML, a color can be specified by using a color name:

Hello World

Hello World

Hello World

```
<h1 style="border:2px solid Tomato;">Hello World</h1>
<h1 style="border:2px solid DodgerBlue;">Hello World</h1>
<h1 style="border:2px solid Violet;">Hello World</h1></h1></h1>
```

Color Values

In HTML, colors can also be specified using RGB values, HEX values, HSL values, RGBA values, and HSLA values.

Same as color name "Tomato":

rgb(255, 99, 71)

#ff6347

hsl(9, 100%, 64%)

rgba(255, 99, 71, 0.5)

hsla(9, 100%, 64%, 0.5)

```
<h1 style="background-color:rgb(255, 99, 71);">...</h1>
<h1 style="background-color:#ff6347;">...</h1>
<h1 style="background-color:hsl(9, 100%, 64%);">...</h1>
<h1 style="background-color:rgba(255, 99, 71, 0.5);">...</h1>
<h1 style="background-color:rgba(255, 99, 71, 0.5);">...</h1>
<h1 style="background-color:hsla(9, 100%, 64%, 0.5);">...</h1></h1>
```

A color can be specified as:

■ RGB value rgb(red, green, blue)

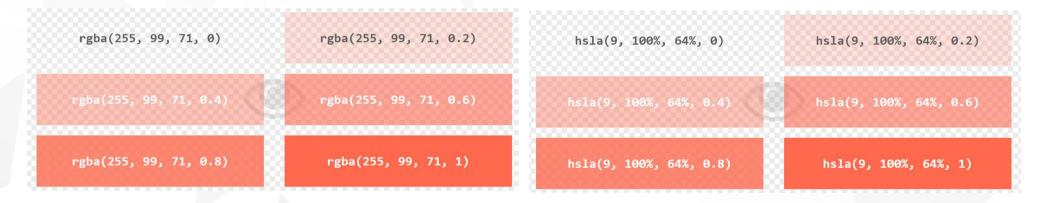
■ HEX Value #rrggbb

■ HSL Value hsl(hue, saturation, lightness)

17.12.17 #2 31

HTML Colors: alpha parameter

The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (not transparent at all)



- RGBA Value
- HSLA Value
- rgba(red, green, blue, alpha)
- hsla(hue, saturation, lightness, alpha)

17.12.17 #2 32 PW: HTML5

HTML Styles - CSS

CSS: Cascading Style Sheets.

- CSS describes how HTML elements are to be displayed on screen, paper, or in other media.
- CSS saves a lot of work. It can control the layout of multiple web pages all at once.



CSS can be added to HTML elements in 3 ways:

- Inline by using the style attribute in HTML elements
- Internal by using a <style> element in the <head> section
- ▼ External by using an external CSS file

The most common way to add CSS, is to keep the styles in separate CSS files. However, here we will use inline and internal styling, because this is easier to demonstrate, and easier for you to try it yourself.

Internal CSS

An internal CSS is used to define a style for a single HTML page.

An internal CSS is defined in the <head> section of an HTML page, within a <style> element:

```
<!DOCTYPE html>
<html>
<head>
<style>
body {background-color: powderblue;}
h1 {color: blue;}
    {color: red;}
</style>
</head>
<body>
<h1>This is a heading</h1>
This is a paragraph.
</body>
</html>
```

External CSS

An external style sheet is used to define the style for many HTML pages.

With an external style sheet, you can change the look of an entire web site, by changing one file!

To use an external style sheet, add a link to it in the <head> section of the HTML page:

External CSS

An external style sheet can be written in any text editor. The file must not contain any HTML code, and must be saved with a .css extension.

```
body {
    background-color: powderblue;
}
h1 {
    color: blue;
}
p {
    color: red;
}
```

17.12.17 #2 36

The id Attribute

■ To define a specific style for one special element, add an id attribute to the element:

```
I am different
```

then define a style for the element with the specific id:

```
#p01 {
    color: blue;
}
```

17.12.17 #2 37

HTML Links - Colors

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

```
<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:
```

HTML Links - The target Attribute

The target attribute specifies where to open the linked document.

The target attribute can have one of the following values:

- blank Opens the linked document in a new window or tab
- self Opens the linked document in the same window/tab as it was clicked (this is default)
- _parent Opens the linked document in the parent frame
- top Opens the linked document in the full body of the window

framename - Opens the linked document in a named frame

This example will open the linked document in a new browser window/tab:

```
<a href="https://www.w3schools.com/" target="_blank">Visit W3Schools!</a>
```

17.12.17 #2 39

HTML Links - Create a Bookmark

HTML bookmarks are used to allow readers to jump to specific parts of a Web page.

Bookmarks can be useful if your webpage is very long.

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.

```
<h2 id="C4">Chapter 4</h2>
<a href="#C4">Jump to Chapter 4</a>
<a href="html_demo.html#C4">Jump to Chapter 4</a>
```

HTML Lists

```
<!DOCTYPE html>
<html>
<body>
<h2>An Unordered HTML List</h2>
<l
 Coffee
 Tea
 Milk
<h2>An Ordered HTML List</h2>
Coffee
 Tea
 Milk
</body>
</html>
```

An Unordered List:

- Item
- Item
- Item
- Item

An Ordered List:

- 1. First item
- 2. Second item
- 3. Third item
- 4. Fourth item

Unordered HTML List

An unordered list starts with the tag. Each list item starts with the tag.

The list items will be marked with bullets (small black circles) by default:

```
CoffeeTeaMilk
```

The CSS list-style-type property is used to define the style of the list item marker:

Value	Description
disc	Sets the list item marker to a bullet (default)
circle	Sets the list item marker to a circle
square	Sets the list item marker to a square
none	The list items will not be marked

```
     Coffee
     Tea
     Milk
```

- Coffee
- Tea
- Milk

Ordered HTML List

An ordered list starts with the tag. Each list item starts with the tag.

The list items will be marked with numbers by default:

```
          Coffee
          Tea
          Milk
```

The Type Attribute:

Туре	Description
type="1"	The list items will be numbered with numbers (default)
type="A"	The list items will be numbered with uppercase letters
type="a"	The list items will be numbered with lowercase letters
type="I"	The list items will be numbered with uppercase roman numbers
type="i"	The list items will be numbered with lowercase roman numbers

```
  Coffee
  Tea
  Milk
  Coffee
  Coffee
  Tea
    C. Milk

    i. Coffee
    ii. Tea
    iii. Milk
```

HTML Description Lists

HTML also supports description lists.

A description list is a list of terms, with a description of each term.

The <dl> tag defines the description list, the <dt> tag defines the term (name), and the <dd> tag describes each term:

17.12.17 #2 44 PW: HTML5

Horizontal Lists

HTML lists can be styled in many different ways with CSS.

One popular way is to style a list horizontally, to create a menu:

```
ul {
    list-style-type: none;
    margin: 0px;
    padding: 0px;
    overflow: hidden;
    background-color: #333333;
li {
    float: left;
li a {
    display: block;
    color: white:
    text-align: center;
    padding: 16px;
    text-decoration: none;
li a:hover {
    background-color: #111111;
```



HTML Tables

Company	Contact	Country
Alfreds Futterkiste	Maria Anders	Germany
Centro comercial Moctezuma	Francisco Chang	Mexico
Ernst Handel	Roland Mendel	Austria
Island Trading	Helen Bennett	UK
Laughing Bacchus Winecellars	Yoshi Tannamuri	Canada
Magazzini Alimentari Riuniti	Giovanni Rovelli	Italy •

An HTML table is defined with the tag.

Each table row is defined with the tag. A table header is defined with the tag. By default, table headings are bold and centered. A table data/cell is defined with the table data/cell is defined with the tag.

```
(tr>
 Firstname
 Lastname
 Age
(tr>
 Jill
 Smith
 50
(tr>
 Eve
 Jackson
 94
```

Every HTML element has a default display value depending on what type of element it is. The default display value for most elements is block or inline.

Block-level Elements

A block-level element always starts on a new line and takes up the full width available (stretches out to the left and right as far as it can).

The <div> element is a block-level element.

17.12.17 #2 47

Every HTML element has a default display value depending on what type of element it is. The default display value for most elements is block or inline.

Block-level Elements

```
<address>
              <article>
                            <aside>
                                           <blookguote>
                                                                        <dd>>
                                                                                      <div>
                                                                                                     <d1>
                                                          <canvas>
              <fieldset>
                             <figcaption>
                                           <figure>
<dt>
                                                          <footer>
                                                                        <form>
                                                                                      <h1>-<h6>>
                                                                                                     <header>
              <
                             <main>
                                                         <noscript>
                                                                        <01>
                                                                                      <output>
<hr>>
                                           <nav>
                                                                                                     >
              <section>
                            <video>
                                           <tfoot>
                                                          culs.
```

17.12.17 #2

PW: HTML5

Every HTML element has a default display value depending on what type of element it is. The default display value for most elements is block or inline.

Inline Elements

An inline element does not start on a new line and only takes up as much width as necessary.

This is an inline element inside a paragraph.

17.12.17 #2 49

Every HTML element has a default display value depending on what type of element it is. The default display value for most elements is block or inline.

Inline Elements

<a>>	<abbr></abbr>	<acronym></acronym>		<bdo></bdo>	<big></big>		<button></button>
<cite></cite>	<code></code>	<dfn></dfn>		<i>></i>		<input/>	<kbd></kbd>
<label></label>	<map></map>	<object></object>	<q></q>	<samp></samp>	<script></td><td><select></td><td><small></td></tr><tr><td></td><td></td><td><sub></td><td><sup></td><td><textarea></td><td><time></td><td><tt></td><td><var></td></tr></tbody></table></script>		

17.12.17 #2 50 PW: HTML5

The <div> Element

The <div> element is often used as a container for other HTML elements.

The <div> element has no required attributes, but both style and class are common.

When used together with CSS, the <div> element can be used to style blocks of content:

```
<div style="background-color:black;color:white;padding:20px;">
  <h2>London</h2>
  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.
</div>
```

The Element

The element is often used as a container for some text.

The element has no required attributes, but both style and class are common.

When used together with CSS, the element can be used to style parts of the text:

```
<h1>My <span style="color:red">Important</span> Heading</h1>
```

17.12.17 #2 52 PW: HTML5

Using 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.

```
<script>
function myFunction() {
  var x = document.getElementsByClassName("city");
  for (var i = 0; i < x.length; i++) {
    x[i].style.display = "none";
  }
}
</script>
```

```
<style>
.city {
   background-color: tomato;
   color: white:
   padding: 10px;
</style>
<h2 class="city">London</h2>
London is the capital of England.
<h2 class="city">Paris</h2>
Paris is the capital of France.
<h2 class="city">Tokyo</h2>
Tokyo is the capital of Japan.
```

The HTML <script> Tag

The <script> tag is used to define a client-side script (JavaScript).

The <script> element either contains scripting statements, or it points to an external script file through the src attribute.

To select an HTML element, JavaScript very often use the **document.getElementByld(id)** method.

This JavaScript example writes "Hello JavaScript!" into an HTML element with id="demo":

```
document.getElementById("demo").innerHTML = "Hello JavaScript!";
</script>

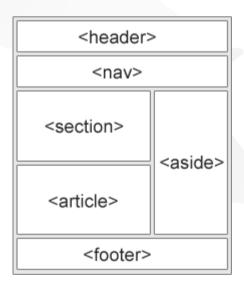
document.getElementById("demo").style.fontSize = "25px";
document.getElementById("demo").style.color = "red";
document.getElementById("demo").style.backgroundColor = "yellow";

document.getElementById("image").src = "picture.gif";
```

HTML Layout Elements

Websites often display content in multiple columns (like a magazine or newspaper).

HTML5 offers new semantic elements that define the different parts of a web page:



- <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

17.12.17 #2 55 PW: HTML5

HTML Layout Elements

Websites often display content in multiple columns (like a magazine or newspaper).

HTML5 offers new semantic elements that define the different parts of a web page:



17.12.17 #2 56 PW: HTML5

HTML Forms

First name:

Mickey

Last name:

Mouse

Submit

HTML Forms

Attribute Description

- accept-charset Specifies the charset used in the submitted form (default: the page charset).
- action Specifies an address (url) where to submit the form (default: the submitting page).
- autocomplete Specifies if the browser should autocomplete the form (default: on).
- enctypeSpecifies the encoding of the submitted data (default: is url-encoded).
- method Specifies the HTTP method used when submitting the form (default: GET).
- name Specifies a name used to identify the form (for DOM usage: document.forms.name).
- novalidate Specifies that the browser should not validate the form.
- ▼ target Specifies the target of the address in the action attribute (default: _self).

17.12.17 #2 58 PW: HTML5

HTML Form Elements

- <input name="firstname" type="text">
 - Text
 - Password
 - **▼** Submit
 - Reset
 - Radio
 - Checkbox
 - **■** Button
- <select> and <option>
- <textarea>
- <button>

HTML5

- •color
- •date
- datetime-local
- •email
- •month
- •number
- •range
- •search
- •tel
- •time
- •url
- •week

<button type="button" onclick="alert('Hello World!')">Click Me!</button>

HTML5 added the following form elements:

- <datalist>
- <output>

17.12.17 #2 59 PW: HTML5

Fine



17.12.17 #2 60 PW: HTML5