



```
1 <!DOCTYPE HTML PUBLIC "-//W3C//DTD
2      "http://www.w3.org/TR/html4/strict.
3 <html>
4   <head>
5     <title>Example</title>
6     <link rel="stylesheet" href="s
7   </head>
8   <body>
9     <div id="header">
10       <h1><a href="#" title="Back
11         </div>
12         <div id="toolbar">
13           <span class="left">Today <sp
14             <span class="right">
15               <span id="time">&ampnbsp</sp
16               <select id="timezone">
17                 <option value="-12">(GMT
18                 <option value="-11">(GMT
```

WEB SYSTEMS & TECHNOLOGIES

1. HTML Basics

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2. HTML in Details

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HTML – Past, Present, Future

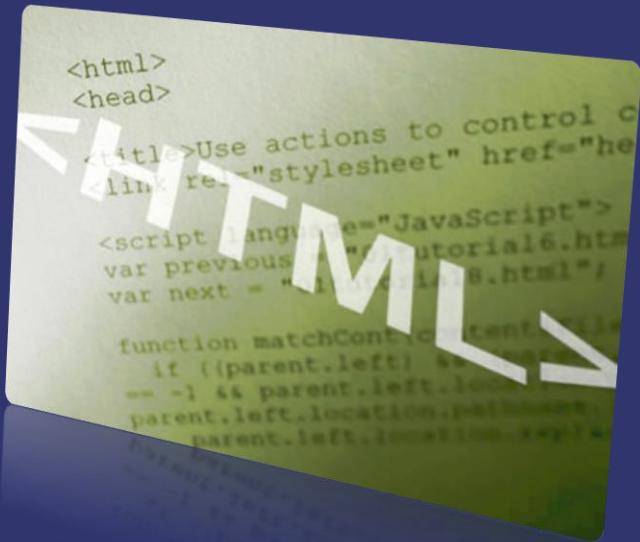
- ◆ 1991 – HTML first mentioned – Tim Berners-Lee
- ◆ 1993 – HTML (first public version, published at IETF)
- ◆ 1993 – HTML 2 draft
- ◆ 1995 – HTML 2 – W3C
- ◆ 1995 – HTML 3 draft
- ◆ 1997 – HTML 3.2 – “Wilbur”
- ◆ 1997 – HTML 4 – “Cougar” – CSS
- ◆ 1999 – HTML 4.01 (final)
- ◆ 2000 – XHTML draft
- ◆ 2001 – XHTML (final)
- ◆ 2008 – HTML5 / XHTML5 draft
- ◆ 2011 – feature complete HTML5

What is a Web Page?

- ◆ Web pages are text files containing HTML
- ◆ HTML – Hyper Text Markup Language
 - ◆ A notation for describing
 - ◆ document structure (semantic markup)
 - ◆ formatting (presentation markup)
 - ◆ Looks (looked?) like:
 - ◆ A Microsoft Word document
- ◆ The markup tags provide information about the page content structure

Creating HTML Pages

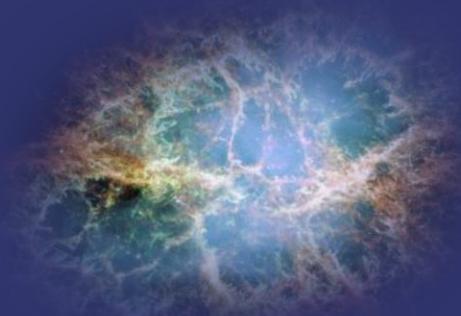
- ◆ An HTML file must have an .htm or .html file extension
- ◆ HTML files can be created with text editors:
 - ◆ NotePad, NotePad ++, PSPad
- ◆ Or HTML editors (WYSIWYG Editors):
 - ◆ Microsoft FrontPage
 - ◆ Macromedia Dreamweaver
 - ◆ Netscape Composer
 - ◆ Microsoft Word
 - ◆ Visual Studio



HTML Basics

Text, Images, Tables, Forms

ROW	RNDM. DATE	RNDM. NUMBER	RNDM. ALPHABET SUBSTRING
0	04/01/1994	367	abcdeghijklm
1	25/04/1993	382	abcdeghijklm
2	13/03/1991	5	351
3	15/05/1995	64	189
4	09/09/1983	300	300
5	22/05/1995	351	351
6	27/07/2004	300	300



Concepts in HTML

- ◆ Tags
 - ◆ Opening tag and closing tag
 - ◆ The smallest piece in HTML
- ◆ Attributes
 - ◆ Properties of the tag
 - ◆ Size, color, etc...
- ◆ Elements
 - ◆ Combination of opening, closing tag and attributes

HTML Structure

- ◆ HTML is comprised of “elements” and “tags”
 - ◆ Begins with `<html>` and ends with `</html>`
- ◆ Elements (tags) are nested one inside another:

```
<html> <head></head> <body></body> </html>
```

- ◆ Tags have attributes:

```

```

- ◆ HTML describes structure using two main sections:
`<head>` and `<body>`

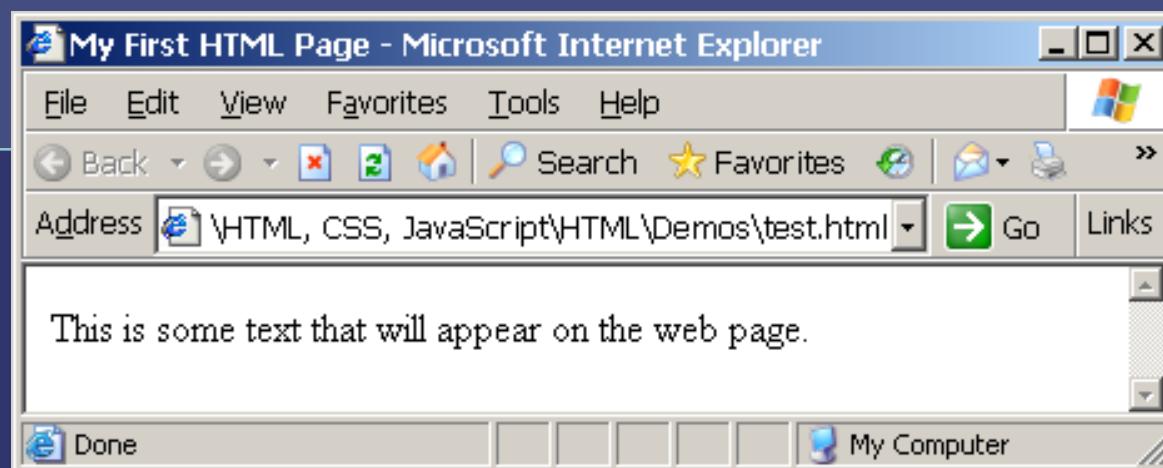
HTML Code Formatting

- ◆ The HTML source code should be formatted to increase readability and facilitate debugging.
 - ◆ Every block element should start on a new line.
 - ◆ Every nested (block) element should be indented.
 - ◆ Browsers ignore multiple whitespaces in the page source, so formatting is harmless.
- ◆ For performance reasons, formatting can be sacrificed

First HTML Page

test.html

```
<!DOCTYPE HTML>
<html>
  <head>
    <title>My First HTML Page</title>
  </head>
  <body>
    <p>This is some text...</p>
  </body>
</html>
```



First HTML Page: Tags

```
<!DOCTYPE HTML>
<html>
  <head>
    <title>My First HTML Page</title>
  </head>
  <body>
    <p>This is some text...</p>
  </body>
</html>
```

Opening tag

Closing tag

An HTML element consists of an opening tag, a closing tag and the content inside.

First HTML Page: Header

```
<!DOCTYPE HTML>
<html>
  <head>
    <title>My First HTML Page</title>
  </head>
  <body>
    <p>This is some text...</p>
  </body>
</html>
```

HTML header

First HTML Page: Body

```
<!DOCTYPE HTML>
<html>
  <head>
    <title>My First HTML Page</title>
  </head>
  <body>
    <p>This is some text...</p>
  </body>
</html>
```

HTML body

Tags Attributes

- ◆ Tags can have attributes
 - ◆ Attributes specify properties and behavior
 - ◆ Example:

Attribute alt with value "logo"

```

```

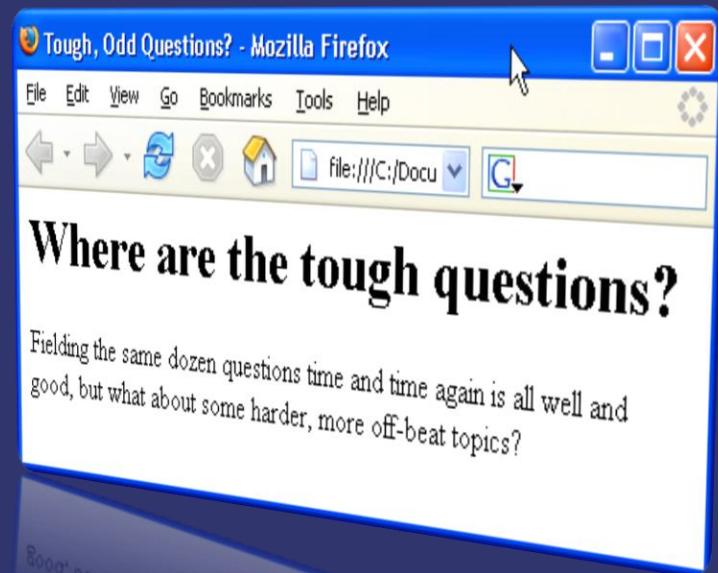
- ◆ Few attributes can apply to every element:
 - ◆ id, style, class, title
 - ◆ The id is unique in the document
 - ◆ Content of title attribute is displayed as hint when the element is hovered with the mouse
 - ◆ Some elements have obligatory attributes

Introduction to HTML

HTML Document Structure in Depth



```
1 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
2   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
3 <html xmlns="http://www.w3.org/1999/xhtml">
4   <head>
5     <title>Tabview - Demo</title>
6
7     <script src="prototype.js" type="text/javascript"></script>
8     <script src="tabview.js" type="text/javascript"></script>
9
10    <link href="tabview.css" rel="stylesheet" type="text/css" />
11
12  </head>
13  <body id="body">
14
15    <ul class="tab-collection">
16      <li class="tab" title="Tab1">
17        <h1>Tab 1</h1>
18        
19      </li>
20
21      <li class="tab" title="Tab2">
22        <h1>Tab 2</h1>
23        
24      </li>
25
26      <li class="tab" title="Tab3">
27        <h1>Tab 3</h1>
28        
29      </li>
30
31    <script type="text/javascript">
32      UI.Tabview.init('body', { width: 500px });
33    </script>
34
35  </body>
36  </html>
37
38
39  <!-- Pseudo Elements -->
40
41  <!-- Scripts -->
42
43  <!-- Updates -->
44  // UPDATE: THIS IS NOT A GOOD IDEA!
45  // DON'T USE IT!
46
```



- ◆ It is important to have the correct vision and attitude towards HTML
 - ◆ HTML is only about structure, not appearance
 - ◆ Browsers tolerate invalid HTML code and parse errors – you should not.

The <!DOCTYPE> Declaration

- ◆ HTML documents must start with a document type definition (DTD)
 - ◆ It tells web browsers what type is the served code
 - ◆ Possible versions: HTML 4.01, XHTML 1.0 (Transitional or Strict), XHTML 1.1, HTML 5
- ◆ Example:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"  
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

- ◆ See <http://w3.org/QA/2002/04/valid-dtd-list.html> for a list of possible doctypes

The <head> Section

- ◆ Contains information that doesn't show directly on the viewable page
- ◆ Starts after the <!doctype> declaration
- ◆ Begins with <head> and ends with </head>
- ◆ Contains mandatory single <title> tag
- ◆ Can contain some other tags, e.g.
 - ◆ <meta>
 - ◆ <script>
 - ◆ <style>
 - ◆ <!-- comments -->

<head> Section: <title> tag

- ◆ Title should be placed between <head> and </head> tags

```
<title>Telerik Academy - Winter Season 2009/2010</title>
```



- ◆ Used to specify a title in the window title bar
- ◆ Search engines and people rely on titles

<head> Section: <meta>

- ◆ Meta tags additionally describe the content contained within the page

```
<meta name="description" content="HTML  
tutorial" />
```

```
<meta name="keywords" content="html, web  
design, styles" />
```

```
<meta name="author" content="Chris Brewer" />
```

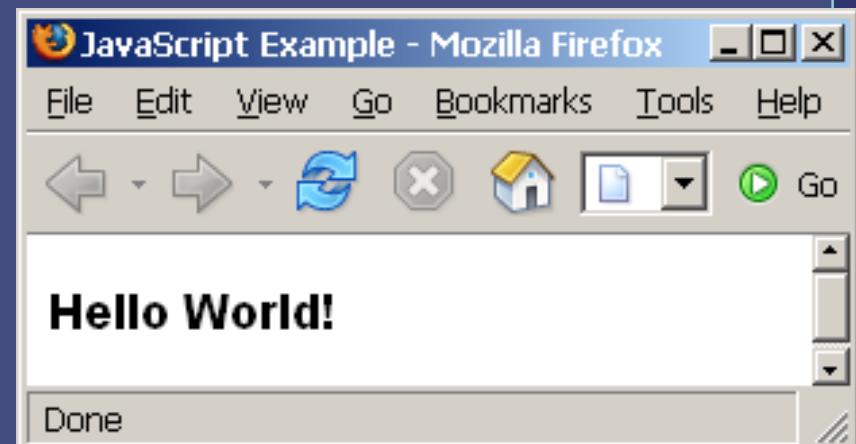
```
<meta http-equiv="refresh" content="5;  
url=http://www.telerik.com" />
```

`<head>` Section: `<script>`

- ◆ The `<script>` element is used to embed scripts into an HTML document
 - ◆ Script are executed in the client's Web browser
 - ◆ Scripts can live in the `<head>` and in the `<body>` sections
- ◆ Supported client-side scripting languages:
 - ◆ JavaScript (it is not Java!)
 - ◆ VBScript
 - ◆ JScript

The <script> Tag – Example

```
<!DOCTYPE HTML>                                         scripts-example.html
<html>
  <head>
    <title>JavaScript Example</title>
    <script type="text/javascript">
      function sayHello() {
        document.write("<p>Hello World!</p>");
      }
    </script>
  </head>
  <body>
    <script type=
      "text/javascript">
      sayHello();
    </script>
  </body>
</html>
```

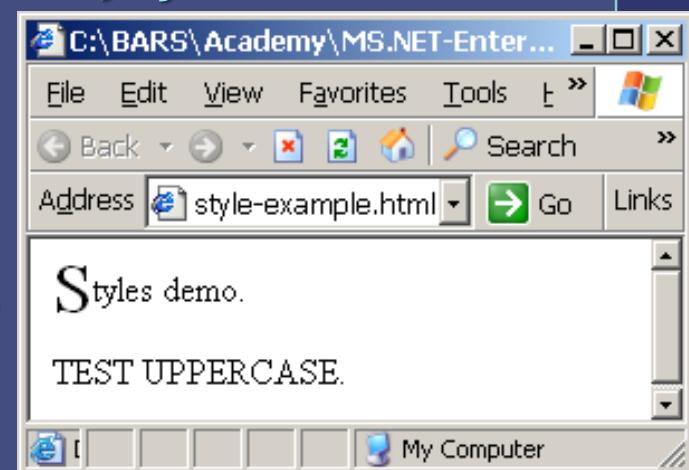


<head> Section: <style>

- ◆ The <style> element embeds formatting information (CSS styles) into an HTML page

```
<html>
  <head>
    <style type="text/css">
      p { font-size: 12pt; line-height: 12pt; }
      p:first-letter { font-size: 200%; }
      span { text-transform: uppercase; }
    </style>
  </head>
  <body>
    <p>Styles demo.<br />
      <span>Test uppercase</span>.
    </p>
  </body>
</html>
```

style-example.html



Comments: <!-- --> Tag

- ◆ Comments can exist anywhere between the <html></html> tags
- ◆ Comments start with <!-- and end with -->

```
<!-- Telerik Logo (a JPG file) -->

<!-- HyperLink to the web site -->
<a href="http://telerik.com/">Telerik</a>
<!-- Show the news table -->
<table class="newstable">
    ...

```

<body> Section: Introduction

- ◆ The <body> section describes the viewable portion of the page
- ◆ Starts after the <head> </head> section
- ◆ Begins with <body> and ends with </body>

```
<html>
  <head><title>Test page</title></head>
  <body>
    <!-- This is the Web page body -->
  </body>
</html>
```

Headings and Paragraphs

- ◆ Heading Tags (h1 – h6)

```
<h1>Heading 1</h1>
<h2>Sub heading 2</h2>
<h3>Sub heading 3</h3>
```

- ◆ Paragraph Tags

```
<p>This is my first paragraph</p>
<p>This is my second paragraph</p>
```

- ◆
new line

Text Formatting

- ◆ Text formatting tags modify the text between the opening tag and the closing tag
 - ♦ Ex. **Hello** makes “Hello” bold

	bold
<i></i>	<i>italicized</i>
<u></u>	<u>underlined</u>
	Sample ^{superscript}
	Sample _{subscript}
	strong
	<i>emphasized</i>
<pre></pre>	Preformatted text
<blockquote></blockquote>	Quoted text block
	Deleted text – strike through

Text Formatting – Example

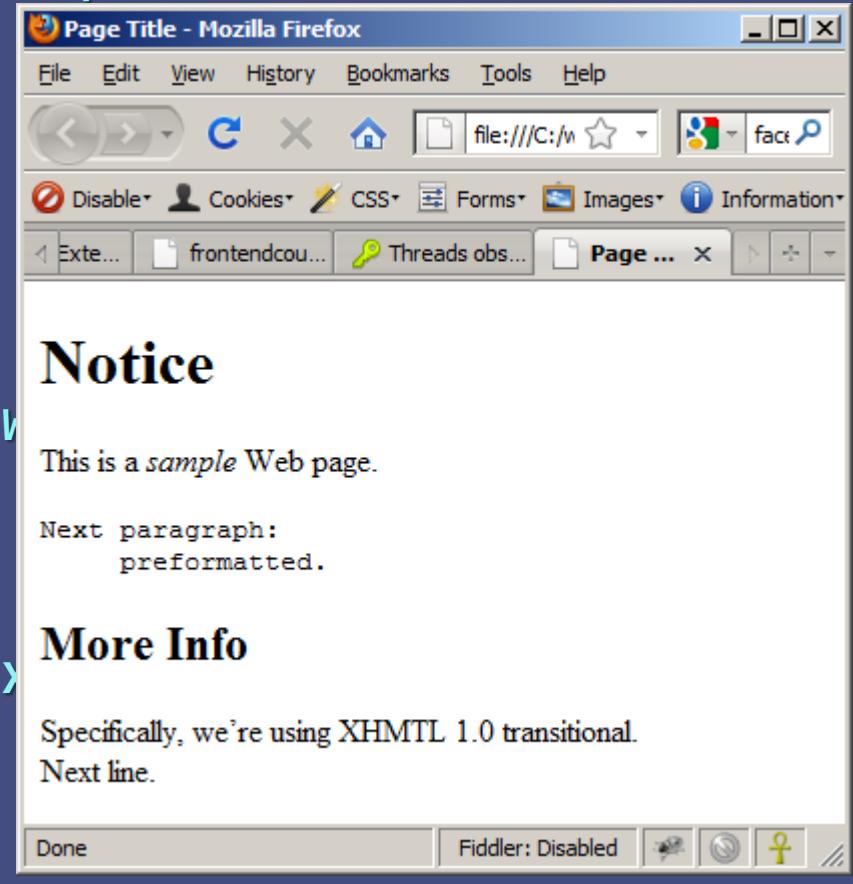
text-formatting.html

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
 "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <h1>Notice</h1>
    <p>This is a <em>sample</em> Web page.</p>
    <p><pre>Next paragraph:
      preformatted.</pre></p>
    <h2>More Info</h2>
    <p>Specifically, we're using XHTML 1.0 transitional.<br />
      Next line.</p>
  </body>
</html>
```

Text Formatting – Example (2)

text-formatting.html

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
 "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html>
  <head>
    <title>Page Title</title>
  </head>
  <body>
    <h1>Notice</h1>
    <p>This is a <em>sample</em> v
    <p><pre>Next paragraph:
      preformatted.</pre></p>
    <h2>More Info</h2>
    <p>Specifically, we're using >
      Next line.</p>
  </body>
</html>
```



Hyperlinks: <a> Tag

- ◆ Link to a document called `form.html` on the same server in the same directory:

```
<a href="form.html">Fill Our Form</a>
```

- ◆ Link to a document called `parent.html` on the same server in the parent directory:

```
<a href="../parent.html">Parent</a>
```

- ◆ Link to a document called `cat.html` on the same server in the subdirectory `stuff`:

```
<a href="stuff/cat.html">Catalog</a>
```

Hyperlinks: <a> Tag (2)

- ◆ Link to an external Web site:

```
<a href="http://www.devbg.org" target="_blank">BASD</a>
```

- ◆ Always use a full URL, including "http://", not just "www.somesite.com"
- ◆ Using the target="_blank" attribute opens the link in a new window
- ◆ Link to an e-mail address:

```
<a href="mailto:bugs@example.com?subject=Bug+Report">  
Please report bugs here (by e-mail only)</a>
```

Hyperlinks: <a> Tag (3)

- ◆ Link to a document called `apply-now.html`
 - ◆ On the same server, in same directory
 - ◆ Using an image as a link button:

```
<a href="apply-now.html"></a>
```

- ◆ Link to a document called `index.html`
 - ◆ On the same server, in the subdirectory `english` of the parent directory:

```
<a href="../english/index.html">Switch to  
English version</a>
```

Hyperlinks and Sections

- ◆ Link to another location in the same document:

```
<a href="#section1">Go to Introduction</a>
...
<h2 id="section1">Introduction</h2>
```

- ◆ Link to a specific location in another document:

```
<a href="chapter3.html#section3.1.1">Go to Section
3.1.1</a>

<!-- In chapter3.html -->
...
<div id="section3.1.1">
    <h3>3.1.1. Technical Background</h3>
</div>
```

Hyperlinks – Example

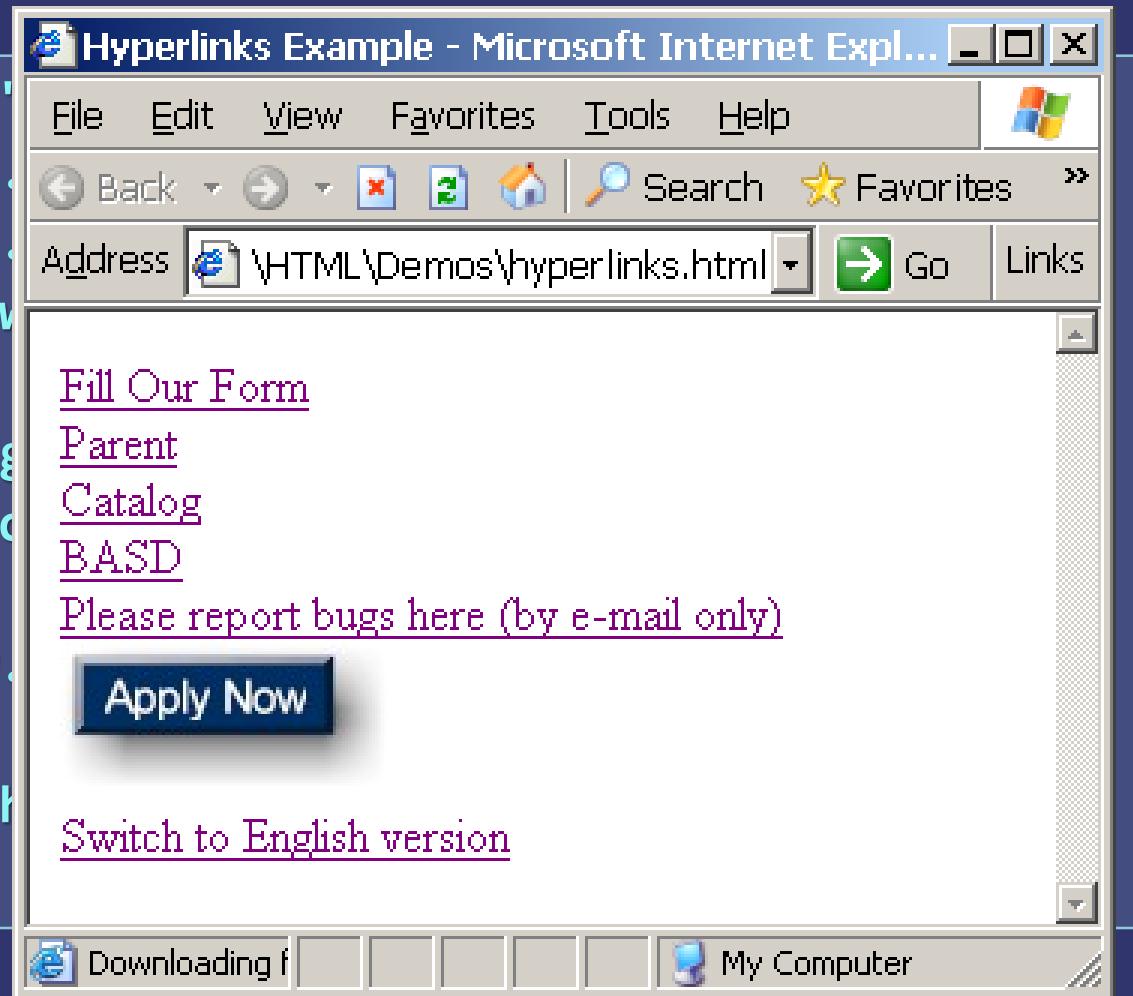
hyperlinks.html

```
<a href="form.html">Fill Our Form</a> <br />
<a href="../parent.html">Parent</a> <br />
<a href="stuff/cat.html">Catalog</a> <br />
<a href="http://www.devbg.org" target="_blank">BASD</a>
<br />
<a href="mailto:bugs@example.com?subject=Bug
Report">Please report bugs here (by e-mail only)</a>
<br />
<a href="apply-now.html"></a> <br />
<a href="../english/index.html">Switch to English
version</a> <br />
```

Hyperlinks – Example (2)

hyperlinks.html

```
<a href="form.html">
<a href="..../parent">
<a href="stuff/catalog">
<a href="http://www.basd.de">
<br />
<a href="mailto:bug-report@basd.de">Please report bugs here (by e-mail only)
<br />
<a href="apply-now.html">Apply Now</a> <br />
<a href="..../english-version">Switch to English version</a> <br />
```



Links to the Same Document – Example

links-to-same-document.html

```
<h1>Table of Contents</h1>

<p><a href="#section1">Introduction</a><br />
<a href="#section2">Some background</A><br />
<a href="#section2.1">Project History</a><br />
...the rest of the table of contents...

<!-- The document text follows here -->

<h2 id="section1">Introduction</h2>
... Section 1 follows here ...
<h2 id="section2">Some background</h2>
... Section 2 follows here ...
<h3 id="section2.1">Project History</h3>
... Section 2.1 follows here ...
```

Links to the Same Document – Example (2)

links-to-same-document.html

```
<h1>Table
```

```
<p><a href="#section1">
```

```
<a href="#section2">
```

```
<a href="#section3">
```

```
...the rest
```

```
<!-- The content -->
```

```
<h2 id="section1">
```

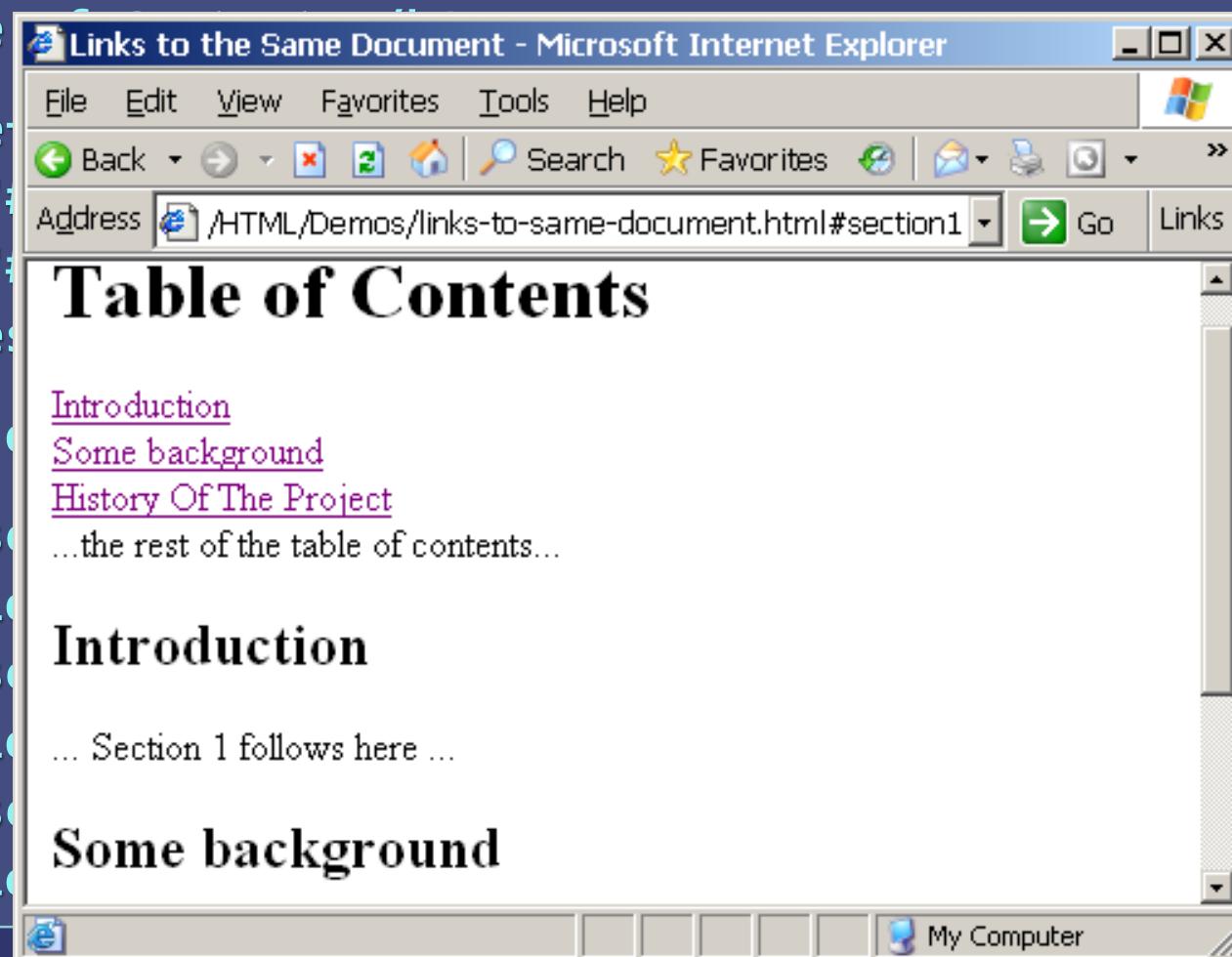
```
... Section 1
```

```
<h2 id="section2">
```

```
... Section 2
```

```
<h3 id="section3">
```

```
... Section 3
```



Images: tag

- ◆ Inserting an image with tag:

```

```

- ◆ Image attributes:

src	Location of image file (relative or absolute)
alt	Substitute text for display (e.g. in text mode)
height	Number of pixels of the height
width	Number of pixels of the width
border	Size of border, 0 for no border

- ◆ Example:

```

```

Image maps

- ◆ There are different areas that act as links in an image.
 - ◆ Map element
 - ◆ AREA element

Image maps

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<HTML><HEAD>

<TITLE>Search engines</TITLE>

<BODY>

<H2>Search engines</H2>

<MAP name="searchmap">

  <AREA href="http://www.google.com" alt="Google" shape="rect"
        coords="0,0,170,35"/>

  <AREA href="http://www.ask.com" alt="Ask" shape="rect"
        coords="0,28,170,70"/>

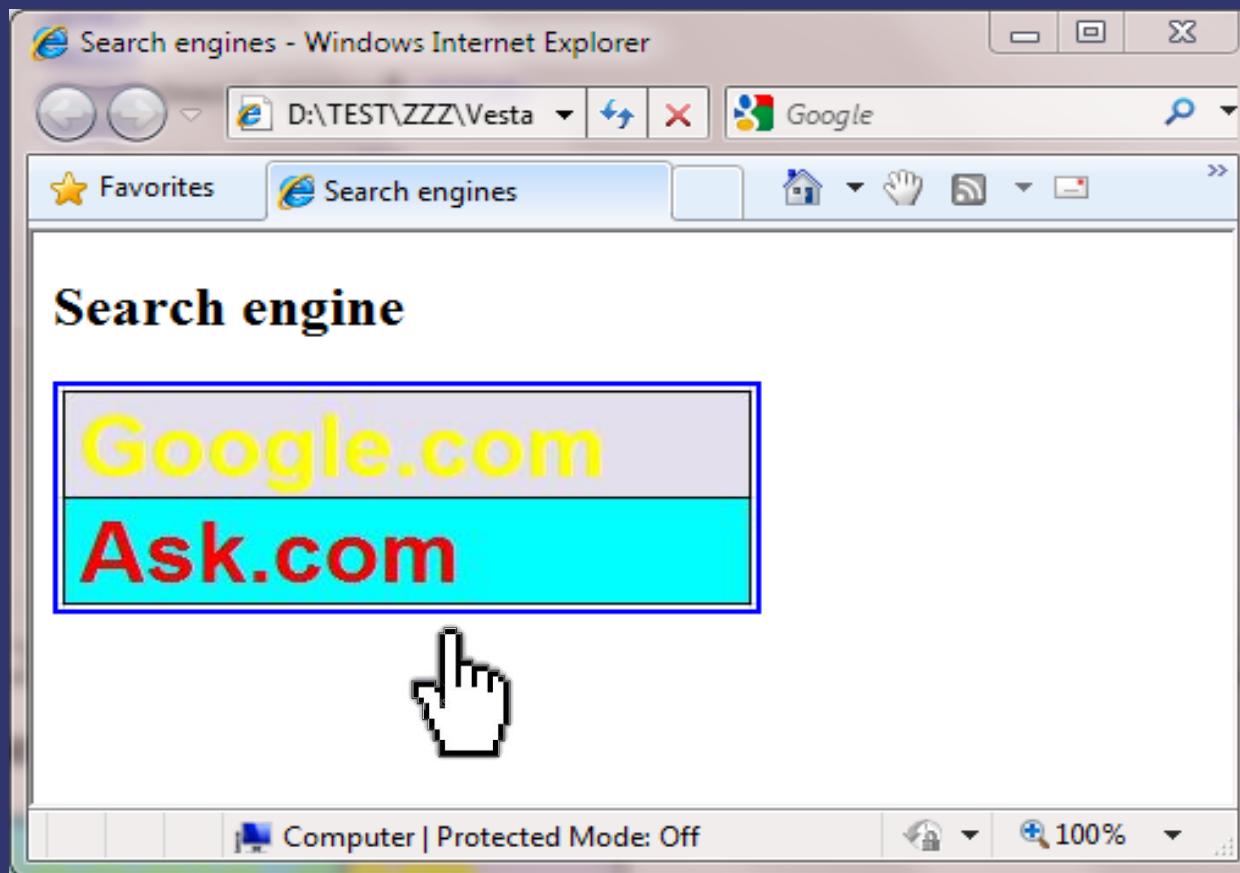
</MAP>



</BODY>

</HTML>
```

Image maps



OBJECT element

- ◆ DATA: url of the resource
- ◆ WIDTH
- ◆ HEGHT
- ◆ NAME
- ◆ TYPE: media type

Audio & Video

◆ Media Tags

- <**audio**>
 - Attributes: **autoplay, controls, loop, src**
- <**video**>
 - Attributes: **autoplay, controls, loop, height, width, src**

```
<audio width="360" height="240" controls= "controls" >
<source src="someSong.mp3" type="audio/mp3">
</source>
Audio tag is not supported
</audio>
```

Embed Tag – New Syntax

- ◆ <embed>
 - ◆ Defines embedded content, such as a plug-in
- ◆ Attributes
 - ◆ src="url", type="type"

```
<embed src="helloworld.swf" />
```

Miscellaneous Tags

- ◆ <hr />: Draws a horizontal rule (line):

```
<hr size="5" width="70%" />
```

- ◆ <center></center>: Deprecated!

```
<center>Hello World!</center>
```

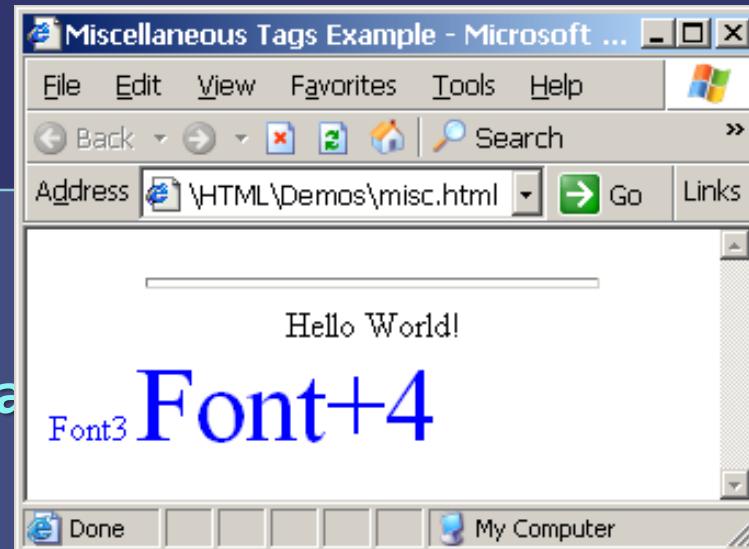
- ◆ : Deprecated!

```
<font size="3" color="blue">Font3</font>
<font size="+4" color="blue">Font+4</font>
```

Miscellaneous Tags – Example

misc.html

```
<html>
  <head>
    <title>Miscellaneous Ta
  </head>
  <body>
    <hr size="5" width="70%" />
    <center>Hello World!</center>
    <font size="3" color="blue">Font3</font>
    <font size="+4" color="blue">Font+4</font>
  </body>
</html>
```



Ordered Lists: Tag

- ◆ Create an Ordered List using :

```
<ol type="1">
  <li>Apple</li>
  <li>Orange</li>
  <li>Grapefruit</li>
</ol>
```

- ◆ Attribute values for type are 1, A, a, I, or i

1. Apple
2. Orange
3. Grapefruit

A. Apple
B. Orange
C. Grapefruit

a. Apple
b. Orange
c. Grapefruit

I. Apple
II. Orange
III. Grapefruit

i. Apple
ii. Orange
iii. Grapefruit

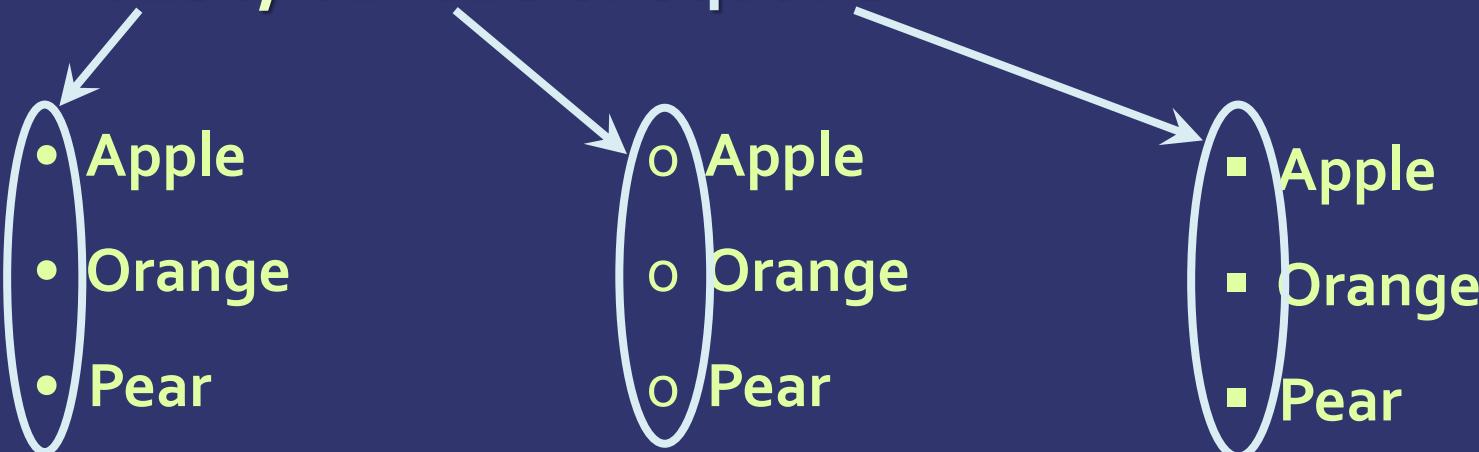
Unordered Lists: Tag

- ◆ Create an Unordered List using :

```
<ul type="disk">
  <li>Apple</li>
  <li>Orange</li>
  <li>Grapefruit</li>
</ul>
```

- ◆ Attribute values for type are:

- disc, circle or square



Definition lists: <dl> tag

- ◆ Create definition lists using <dl>
 - ◆ Pairs of text and associated definition; text is in <dt> tag, definition in <dd> tag

```
<dl>
  <dt>HTML</dt>
  <dd>A markup language ...</dd>
  <dt>CSS</dt>
  <dd>Language used to ...</dd>
</dl>
```

- ◆ Renders without bullets
- ◆ Definition is indented

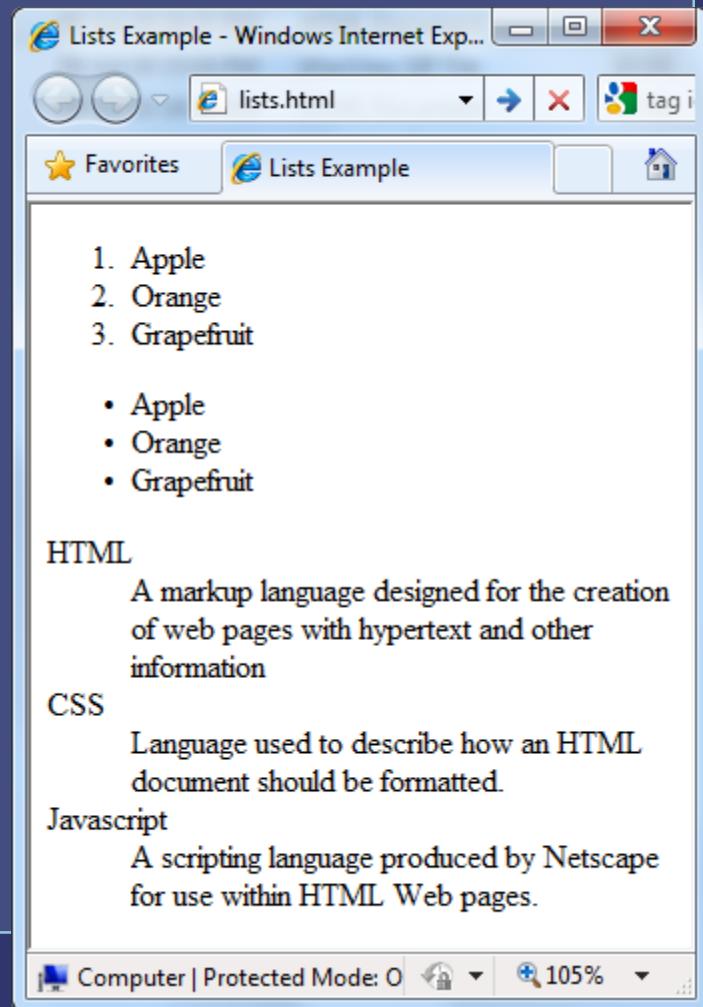
Lists – Example

```
<ol type="1">
  <li>Apple</li>
  <li>Orange</li>
  <li>Grapefruit</li>
</ol>

<ul type="disc">
  <li>Apple</li>
  <li>Orange</li>
  <li>Grapefruit</li>
</ul>

<dl>
  <dt>HTML</dt>
  <dd>A markup lang...</dd>
</dl>
```

lists.html



HTML Special Characters

Symbol Name	HTML Entity	Symbol
Copyright Sign	©	©
Registered Trademark Sign	®	®
Trademark Sign	™	™
Less Than	<	<
Greater Than	>	>
Ampersand	&	&
Non-breaking Space	 	
Em Dash	—	—
Quotation Mark	"	"
Euro	€	€
British Pound	£	£
Japanese Yen	¥	¥

Special Characters – Example

```
<p>[&gt;&gt;&ampnbsp&ampnbspWelcome    special-chars.html  
     &ampnbsp&ampnbsp&lt;&lt;]</p>  
<p>I have following cards:  
    A&#9827;, K&#9830; and 9&#9829;. </p>  
<p>I prefer hard rock &#9835;  
    music &#9835;</p>  
<p>&copy; 2006 by Svetlin Nakov & his  
team</p>  
<p>Telerik Academy™</p>
```

Special Chars – Example (2)

```
<p>[&gt;&gt;&ampnbsp&ampnbspWelcome    special-chars.html  
    &ampnbsp&ampnbsp&lt;&lt;]</p>
```

```
<p>&#9835;
```

```
A&#9835;
```

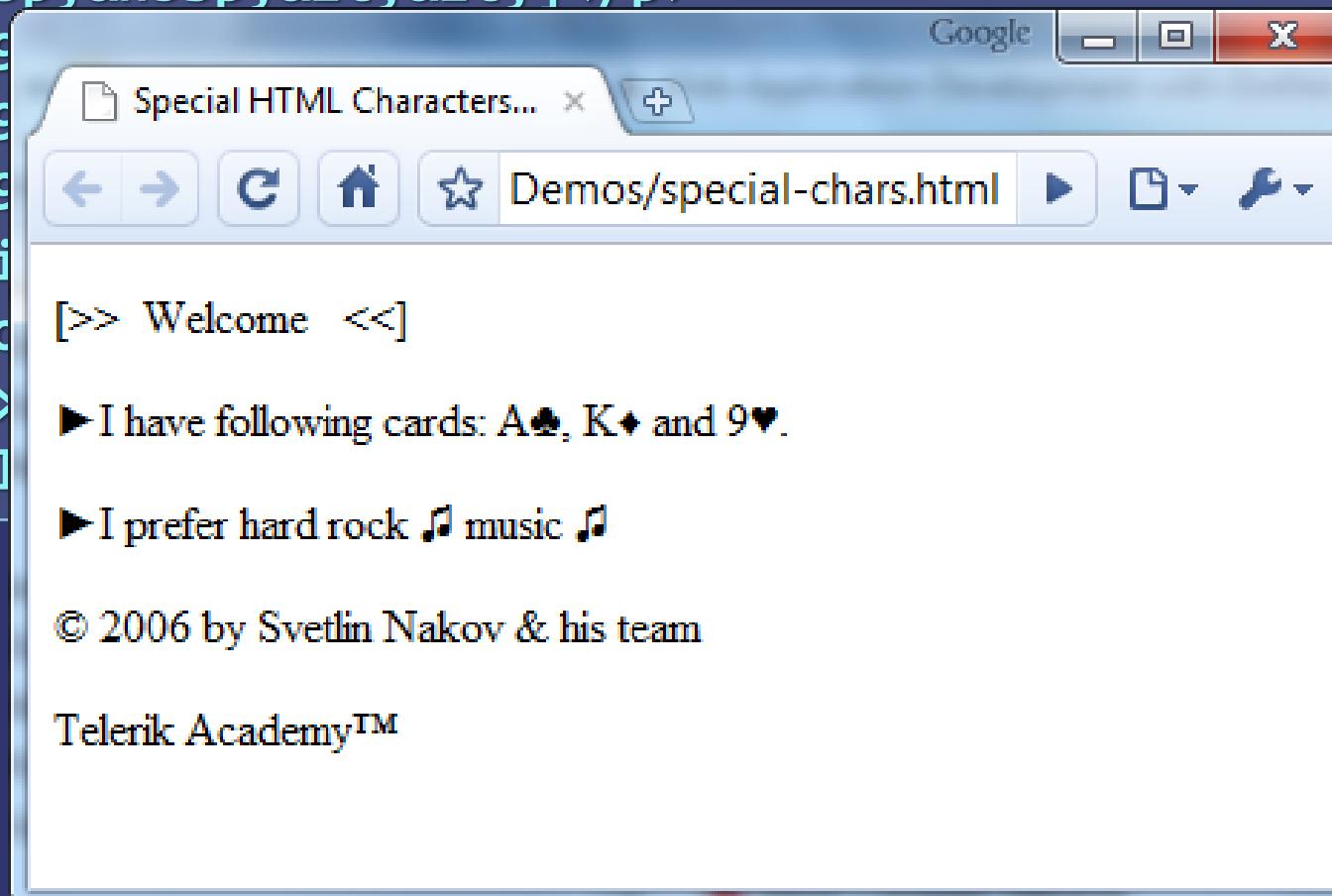
```
<p>&#9633;
```

```
musi
```

```
<p>&cc
```

```
team</p>
```

```
<p>Te]
```



```
4 <head>
5 <meta http-equiv="Content-Type"
6 <title>Home</title>
7 <link rel="stylesheet" href="sty
8 <style type="text/css">
9 .style1 {
10   color: #FF0000;
11 }
12 </style>
13 </head>
```

You will have to purchase a separate license to use the OpenCube mesh



Using <DIV> and Block and Inline Elements

Block and Inline Elements

- ◆ Block elements add a line break before and after them
 - ◆ `<div>` is a block element
 - ◆ Other block elements are `<table>`, `<hr>`, headings, lists, `<p>` and etc.
- ◆ Inline elements don't break the text before and after them
 - ◆ `` is an inline element
 - ◆ Most HTML elements are inline, e.g. `<a>`

The <div> Tag

- ◆ <div> creates logical divisions within a page
- ◆ Block style element
- ◆ Used with CSS
- ◆ Example:

div-and-span.html

```
<div style="font-size:24px; color:red">DIV  
example</div>  
  
<p>This one is <span style="color:red; font-  
weight:bold">only a test</span>.</p>
```

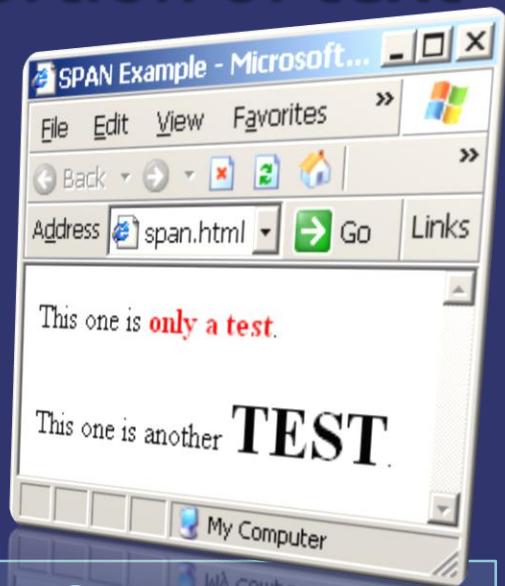


The Tag

- ◆ Inline style element
- ◆ Useful for modifying a specific portion of text
 - ◆ Don't create a separate area (paragraph) in the document
- ◆ Very useful with CSS

span.html

```
<p>This one is <span style="color:red; font-weight:bold">only a test</span>.</p>  
<p>This one is another <span style="font-size:32px; font-weight:bold">TEST</span>.</p>
```



DIV with The Structure of a Web Page

- ◆ A sample layout structure of a Web Page



The "HTML 4 and Before" Way

- ◆ Using divs with IDs
 - ◆ The IDs are needed for styling

```
<html>
<head> ... </head>
<body>
  <div id="header"> ... </div>
  <div id="navigation"> ... </div>
  <div id="sidebar"> ... </div>
  <div id="content"> ... </div>
  <div id="footer"> ... </div>
</body>
</html>
```

The HTML 5 Way

- ◆ In HTML 5 there are semantic tags for layout
 - ◆ <nav>, <header>, <footer>, <section>

```
<html>
<head> ... </head>
<body>
  <header> ... </header>
  <nav> ... </nav>
  <aside> ... </aside>
  <section> ... </section>
  <footer> ... </footer>
</body>
</html>
```

HTML Tables

htmltable1 - Notepad

```

<html>
<head>
<title>How To Create HTML Tables</title>
</head>
<body>
<table border=1 cellspacing=0 cellpadding=0>
<tr>
<td width=110 valign=top>
<br><upper left corner>
</td>
<td width=110 valign=top>
<br><upper right corner>
</td>
</tr>
<tr>
<td width=110 valign=top>
<br><left center cell>
</td>
<td width=110 valign=top>
<br><right center cell>
</td>
</tr>
<tr>
<td width=110 valign=top>
<br><lower left corner>
</td>
<td width=110 valign=top>
<br><lower right corner>
</td>
</tr>
</table>
</body>
</html>

```

US time	European date (D/M/Y) & time	Y-M-D date & time	Dollar	Chinese money	IP addresses	Names	Numbers
	29/10/1965	83-03-24		YMB 4	98.176.35.80		26.32 E +03
Fri Mar 22 21:48:49 UTC+0200 1957		1967-08-22 06:07:16 PM		YMB -81.38	162.117.253.34	dyse chidi	
Fri, 14 Feb 2002 04:24:20 UTC	06/07/99 06:46:01 AM	81-02-04 09:09:54 AM		YMB -108.83	122.205.50.6	bochai dychai	-191.45E-05
Monday, May 30, 1994 4:47:31 PM	06/09/05 05:11:16 AM			YMB 33.16		dydy bale	-131.20E+01
09/28/2000	24/11/1957		\$-38.77	YMB 112.42	15.192.151.209		
		97-08-13 00:01:33 AM	\$14.5	YMB -1.75	99.93.147.150	dychai tonchai	-187.28E-05
Mon, 29 Oct 1979 00:44:03 UTC		87-10-16	\$14.66	YMB 61.14		chite malie	- 125.19 E -03
Sat, 9 Jan 1982 05:45:06 UTC	04/06/68	74-10-20	\$20.47		121.169.225.22	dyma bama	138.11E+02
04/05/75		2000-03-20	\$68.84	YMB 88.19	239.133.227.68	made liete	195.44 E +03
Monday, July 15, 2002 10:05:02 AM	01/02/1961 09:40:16 AM		\$97.9	YMB 44.28	223.66.228.116	mava sete	-107
this is footer	row	number	ONE!	adsf	adsf	adsf	adsf

Title	Title	Title	Title	Title	Title
Data	Data	Data	Data	Data	Data
Data	Data	Data	Data	Data	Data
Data	Data	Data	Data	Data	Data
Data	Data	Data	Data	Data	Data
Data	Data	Data	Data	Data	Data

HTML Tables

- ◆ Tables represent tabular data
 - ◆ A table consists of one or several rows
 - ◆ Each row has one or more columns
- ◆ Tables comprised of several core tags:
 - <table></table>: begin / end the table
 - <tr></tr>: create a table row
 - <td></td>: create tabular data (cell)
- ◆ Tables should not be used for layout. Use CSS floats and positioning styles instead

HTML Tables (2)

- ◆ Start and end of a table

```
<table> ... </table>
```

- ◆ Start and end of a row

```
<tr> ... </tr>
```

- ◆ Start and end of a cell in a row

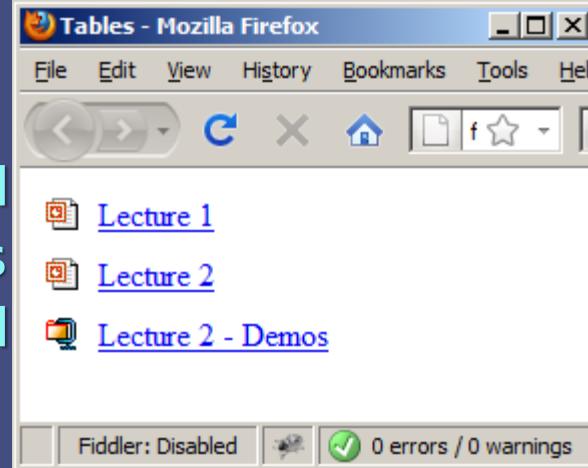
```
<td> ... </td>
```

Simple HTML Tables – Example

```
<table cellspacing="0" cellpadding="5">
<tr>
  <td></td>
  <td><a href="lecture1.ppt">Lecture 1</a></td>
</tr>
<tr>
  <td></td>
  <td><a href="lecture2.ppt">Lecture 2</a></td>
</tr>
<tr>
  <td></td>
  <td><a href="lecture2-demos.zip">
    Lecture 2 - Demos</a></td>
</tr>
</table>
```

Simple HTML Tables – Example (2)

```
<table cellspacing="0" cellpadding="5">
<tr>
  <td></td>
  <td><a href="lecture1.ppt">Lecture 1</a></td>
</tr>
<tr>
  <td></td>
  <td><a href="lecture2.ppt">Lecture 2</a></td>
</tr>
<tr>
  <td></td>
  <td><a href="lecture2-demos">
    Lecture 2 - Demos</a></td>
</tr>
</table>
```



Complete HTML Tables

- ◆ Table rows split into three semantic sections: header, body and footer
 - ◆ <thead> denotes table header and contains <th> elements, instead of <td> elements
 - ◆ <tbody> denotes collection of table rows that contain the very data
 - ◆ <tfoot> denotes table footer but comes BEFORE the <tbody> tag
 - ◆ <colgroup> and <col> define columns (most often used to set column widths)

Complete HTML Table: Example

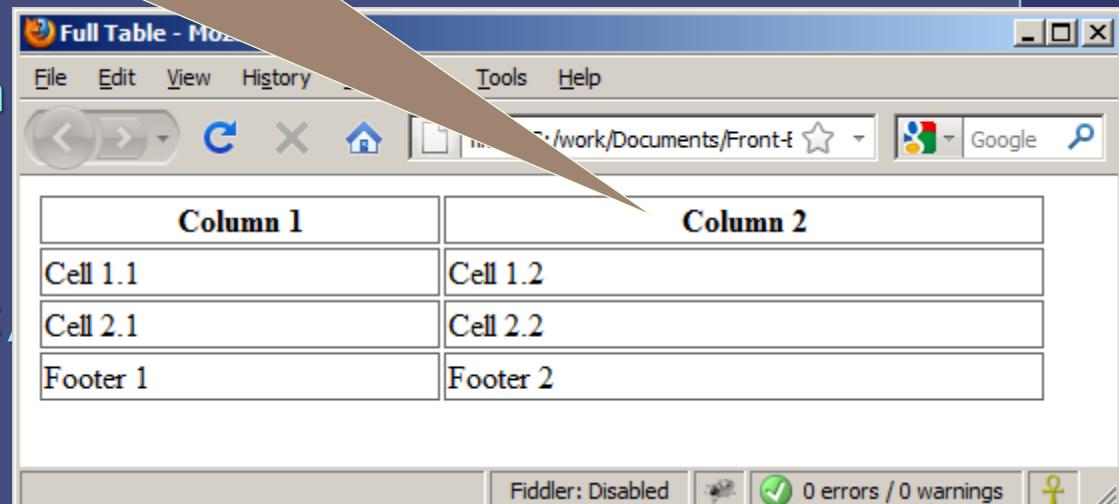
```
<table>
<colgroup>           columns
  <col style="width:100px" /><col />
</colgroup>
<thead>             header
  <tr><th>Column 1</th><th>Column 2</th></tr>
</thead>
<tfoot>             footer
  <tr><td>Footer 1</td><td>Footer 2</td></tr>
</tfoot>
<tbody>           Last comes the body (data)
  <tr><td>Cell 1.1</td><td>Cell 1.2</td></tr>
  <tr><td>Cell 2.1</td><td>Cell 2.2</td></tr>
</tbody>
</table>
```

Complete HTML Table: Example (2)

By default, header text
is bold and centered.

```
<table>
  <colgroup>
    <col style="width:
  </colgroup>
  <thead>
    <tr><th>Column 1</th>
  </thead>
  <tfoot>
    <tr><td>Footer 1</td><td>Footer 2</td></tr>
  </tfoot>
  <tbody>
    <tr><td>Cell 1.1</td>
    <tr><td>Cell 2.1</td>
    <tr><td>Footer 1</td>
      <td>Footer 2</td>
    </tr>
  </tbody>
</table>
```

table-full.html



A screenshot of a web browser window titled "Full Table - Mozilla Firefox". The browser interface includes a menu bar (File, Edit, View, History, Tools, Help), a toolbar with icons for back, forward, search, and home, and a status bar at the bottom indicating "Fiddler: Disabled" and "0 errors / 0 warnings". The main content area displays a 2x2 table with two columns labeled "Column 1" and "Column 2". The first row contains "Cell 1.1" in the first column and "Cell 1.2" in the second column. The second row contains "Cell 2.1" in the first column and "Cell 2.2" in the second column. The third row, which is a footer, contains "Footer 1" in the first column and "Footer 2" in the second column. All header cells ("Column 1" and "Column 2") are displayed in bold black font.

Column 1	Column 2
Cell 1.1	Cell 1.2
Cell 2.1	Cell 2.2
Footer 1	Footer 2

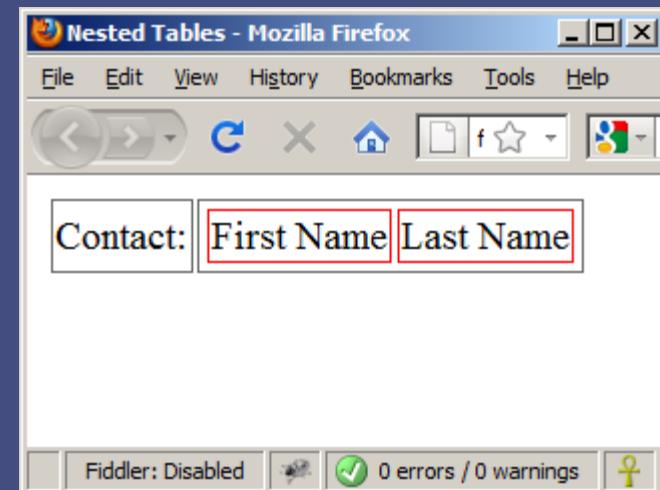
Although the footer is
before the data in the
code, it is displayed last

Nested Tables

- ◆ Table data “cells” (`<td>`) can contain nested tables (tables within tables):

```
<table>
  <tr>
    <td>Contact:</td>
    <td>
      <table>
        <tr>
          <td>First Name</td>
          <td>Last Name</td>
        </tr>
      </table>
    </td>
  </tr>
</table>
```

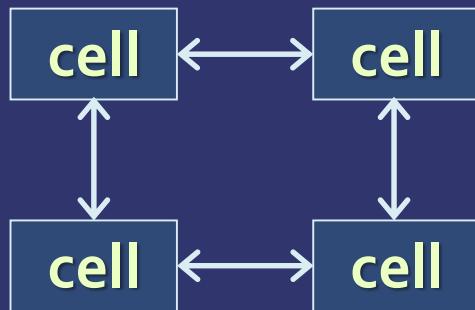
nested-tables.html



Cell Spacing and Padding

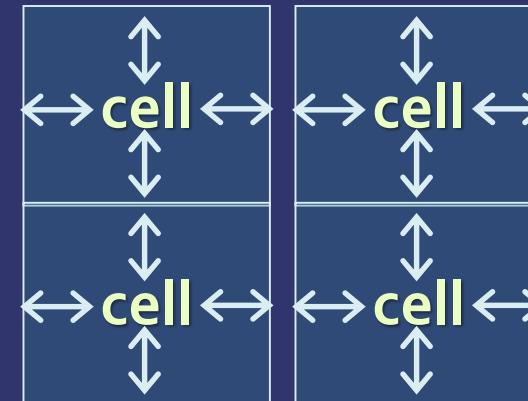
- ◆ Tables have two important attributes:

- ◆ cellspacing



- ◆ Defines the empty space between cells

- ◆ cellpadding



- ◆ Defines the empty space around the cell content

Cell Spacing and Padding – Example

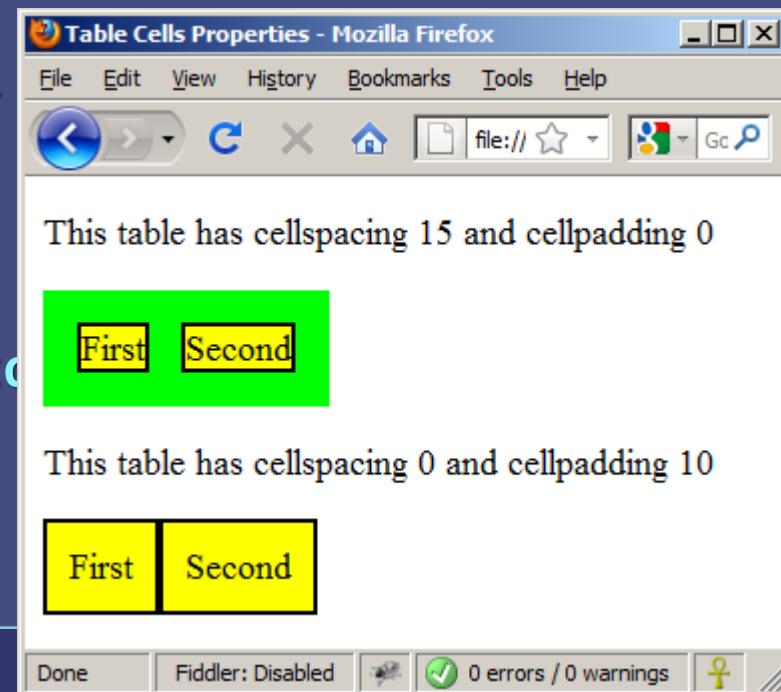
table-cells.html

```
<html>
  <head><title>Table Cells</title></head>
  <body>
    <table cellspacing="15" cellpadding="0">
      <tr><td>First</td>
      <td>Second</td></tr>
    </table>
    <br/>
    <table cellspacing="0" cellpadding="10">
      <tr><td>First</td><td>Second</td></tr>
    </table>
  </body>
</html>
```

Cell Spacing and Padding – Example (2)

table-cells.html

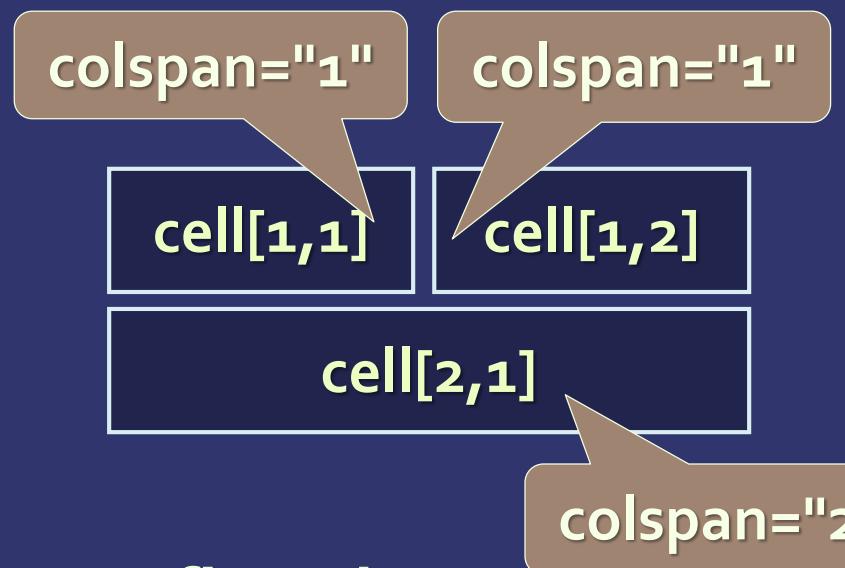
```
<html>
  <head><title>Table Cells</title></head>
  <body>
    <table cellspacing="15" cellpadding="0">
      <tr><td>First</td>
      <td>Second</td></tr>
    </table>
    <br/>
    <table cellspacing="0" cellpadding="10">
      <tr><td>First</td><td>Second</td></tr>
    </table>
  </body>
</html>
```



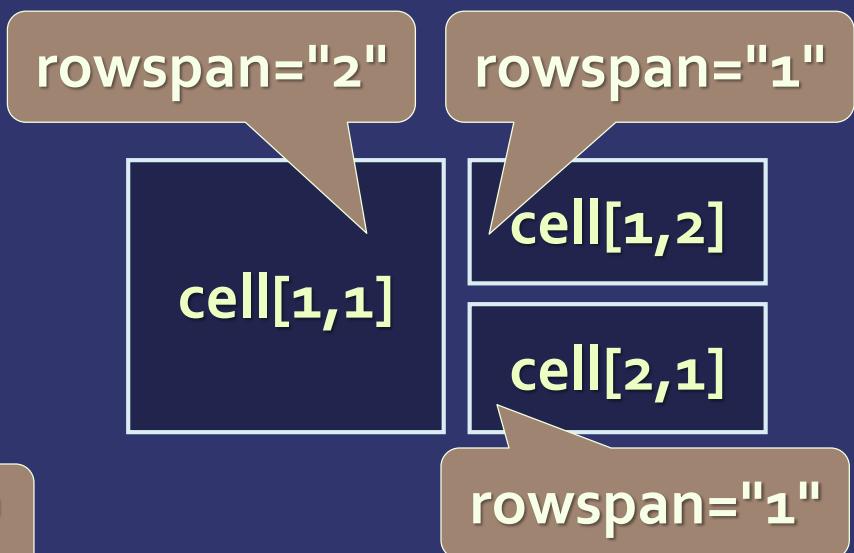
Column and Row Span

- ◆ Table cells have two important attributes:

- ◆ **colspan**



- ◆



- ◆ Defines how many columns the cell occupies

- ◆ Defines how many rows the cell occupies

Column and Row Span – Example

table-colspan-rowspan.html

```
<table cellspacing="0">
  <tr class="1"><td>Cell[1,1]</td>
    <td colspan="2">Cell[2,1]</td></tr>
  <tr class="2"><td>Cell[1,2]</td>
    <td rowspan="2">Cell[2,2]</td>
    <td>Cell[3,2]</td></tr>
  <tr class="3"><td>Cell[1,3]</td>
    <td>Cell[2,3]</td></tr>
</table>
```

Column and Row Span – Example (2)

table-colspan-rowspan.html

```
<table cellspacing="0">
  <tr class="1"><td>Cell[1,1]</td>
    <td colspan="2">Cell[2,1]</td></tr>
  <tr class="2"><td>Cell[1,2]</td>
    <td rowspan="2">Cell[2,2]</td>
    <td>Cell[3,2]</td></tr>
  <tr class="3">
    <td>Cell[1,3]</td>
    <td>Cell[2,3]</td>
  </tr>
</table>
```

Cell[1,1]	Cell[2,1]
Cell[1,2]	Cell[2,2]
Cell[1,3]	Cell[2,3]



HTML Forms

Entering User Data from a Web Page

Send me an application now!

First Name: _____

Last Name: _____

Age:

1-17 yrs
 18 yrs and over

I would like to learn to work with:

acrylics
 watercolors
 pastels

I am interested in art lessons because:

What are HTML Forms?

- ◆ The primary method for gathering data from site visitors
- ◆ HTML Forms can contain
 - ◆ Text fields for the user to type
 - ◆ Buttons for interactions like "Register", "Login", "Search"
 - ◆ Menus, Sliders, etc...
- ◆ Check Google, Yahoo, Facebook
 - ◆ Google search field is a simple Text field

How to Create Forms?

- ◆ Create a form block with

```
<form></form>
```

The "method" attribute tells how the form data should be sent – via GET or POST request

- ◆ Example:

```
<form name="myForm" method="post"  
action="path/to/some-script.php">  
  ...  
</form>
```

The "action" attribute tells where the form data should be sent

Text Fields

- ◆ Single-line text input fields:

```
<input type="text" name="FirstName" value="This  
is a text field" />
```

- ◆ Multi-line text input fields (textarea):

```
<textarea name="Comments">This is a multi-line  
text field</textarea>
```

- ◆ Password input – a text field which masks the entered text with * signs

```
<input type="password" name="pass" />
```

Buttons

- ◆ Reset button – brings the form to its initial state

```
<input type="reset" name="resetBtn"  
value="Reset the form" />
```

- ◆ Submit button:

```
<input type="submit" value="Apply Now" />
```

- ◆ Image button – acts like submit but image is displayed and click coordinates are sent

```
<input type="image" src="submit.gif"  
name="submitBtn" alt="Submit" />
```

- ◆ Ordinary button – no default action, used with JS

```
<input type="button" value="click me" />
```

Checkboxes and Radio Buttons

- ◆ Checkboxes:

```
<input type="checkbox" name="fruit"  
value="apple" />
```

- ◆ Radio buttons:

```
<input type="radio" name="title" value="Mr." />
```

- ◆ Radio buttons can be grouped, allowing only one to be selected from a group:

```
<input type="radio" name="city" value="Lom" />  
<input type="radio" name="city" value="Ruse" />
```

Select Fields

- ◆ Dropdown menus:

```
<select name="gender">
  <option value="Value 1"
    selected="selected">Male</option>
  <option value="Value 2">Female</option>
  <option value="Value 3">Other</option>
</select>
```

- ◆ Multiple-choice menus

```
<select name="products" multiple="multiple">
  <option value="Value 1"
    selected="selected">keyboard</option>
  <option value="Value 2">mouse</option>
</select>
```

Hidden Fields

- ◆ Hidden fields contain invisible data

```
<input type="hidden" name="Account" value="This  
is a hidden text field" />
```

- ◆ Not shown to the user
- ◆ Used by JavaScript and server-side code
 - ◆ ViewState, SessionState, etc..

File input

- ◆ File input – a field used for uploading files

```
<input type="file" name="photo" />
```

- ◆ When used, it requires the form element to have a specific attribute:

```
<form enctype="multipart/form-data">  
...  
  <input type="file" name="photo" />  
...  

```

Labels

- ◆ Labels are used to associate an explanatory text to a form field using the field's ID.

```
<label for="fn">First Name</label>
<input type="text" id="fn" />
```

- ◆ Clicking on a label focuses its associated field (checkboxes are toggled, radio buttons are checked)
- ◆ Labels are both a usability and accessibility feature and are required in order to pass accessibility validation.

Fieldsets

- ◆ Fieldsets are used to enclose a group of related form fields:

```
<form method="post" action="form.aspx">
  <fieldset>
    <legend>Client Details</legend>
    <input type="text" id="Name" />
    <input type="text" id="Phone" />
  </fieldset>
  <fieldset>
    <legend>Order Details</legend>
    <input type="text" id="Quantity" />
    <textarea cols="40" rows="10"
              id="Remarks"></textarea>
  </fieldset>
</form>
```

- ◆ The <legend> is the fieldset's title.

HTML Forms – Example

form.html

```
<form method="post" action="apply-now.php">
  <input name="subject" type="hidden" value="Class" />
  <fieldset><legend>Academic information</legend>
    <label for="degree">Degree</label>
    <select name="degree" id="degree">
      <option value="BA">Bachelor of Art</option>
      <option value="BS">Bachelor of Science</option>
      <option value="MBA" selected="selected">Master of
          Business Administration</option>
    </select>
    <br />
    <label for="studentid">Student ID</label>
    <input type="password" name="studentid" />
  </fieldset>
  <fieldset><legend>Personal Details</legend>
    <label for="fname">First Name</label>
    <input type="text" name="fname" id="fname" />
    <br />
    <label for="lname">Last Name</label>
    <input type="text" name="lname" id="lname" />
```

HTML Forms – Example (2)

form.html (continued)

```
<br />
    Gender:
        <input name="gender" type="radio" id="gm" value="m" />
        <label for="gm">Male</label>
        <input name="gender" type="radio" id="gf" value="f" />
        <label for="gf">Female</label>
<br />
    <label for="email">Email</label>
    <input type="text" name="email" id="email" />
</fieldset>
<p>
    <textarea name="terms" cols="30" rows="4"
        readonly="readonly">TERMS AND CONDITIONS...</textarea>
</p>
<p>
    <input type="submit" name="submit" value="Send Form" />
    <input type="reset" value="Clear Form" />
</p>
</form>
```

HTML Forms – Example (3)

form.html (continued)

HTML Forms Example - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Academic information

Degree Master of Business Administration

Student ID

Classes attended Geography
Mathematics
English

Personal Details

First Name

Last Name

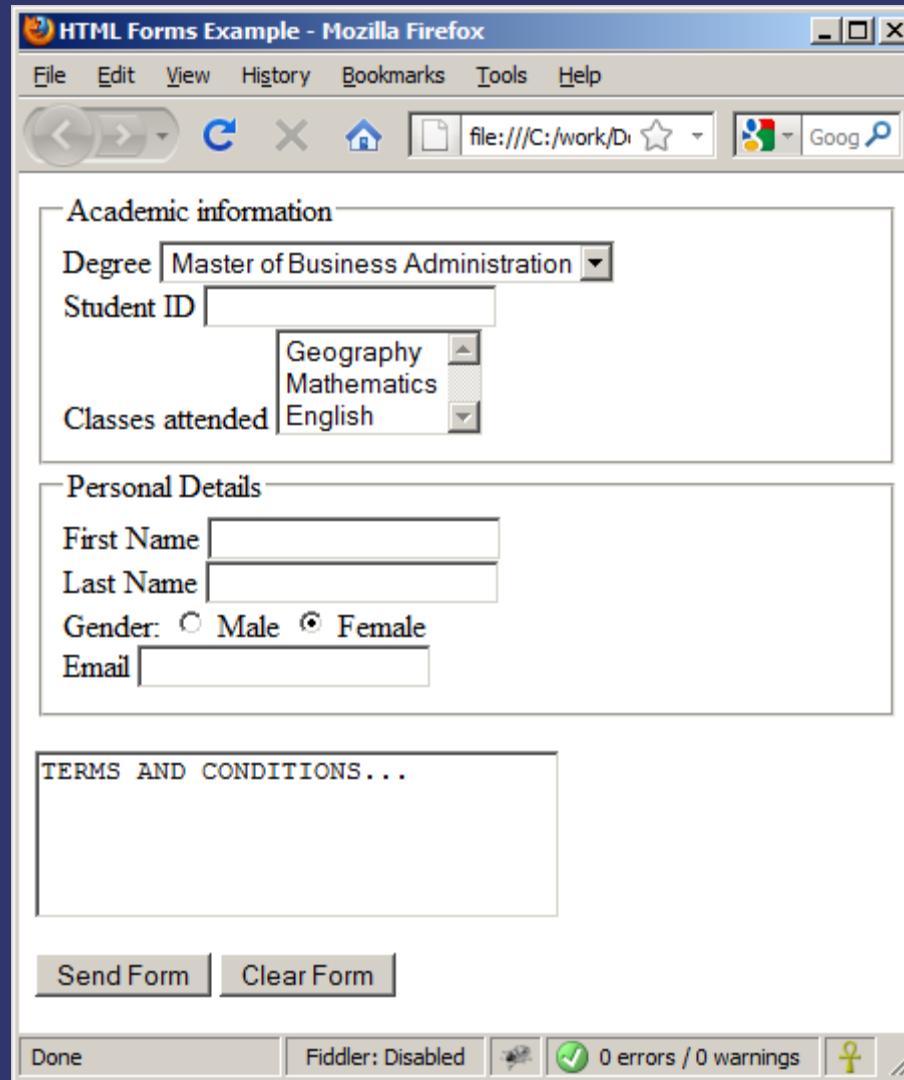
Gender: Male Female

Email

TERMS AND CONDITIONS...

Send Form Clear Form

Done Fiddler: Disabled 0 errors / 0 warnings



HTML 5 Forms Inputs Fields

Live Demo



Sliders and Spinboxes

Lets make it spin



Range and Spinbox

- ◆ Restricts users to enter only numbers
 - ◆ Additional attributes min, max and step and value
 - ◆ Can become Spinbox or Slider, depending on the input type

```
<input type="range" min="0" max="100" />  
<input type="number" min="0" max="100" />
```

- ◆ Have some differences on different browsers
- ◆ Sliders and Spinboxes do not work on Firefox
 - ◆ Shown as regular textboxes

Sliders and Spinboxes

Live Demo



Attributes from HTML 5

- ◆ Autocomplete

- ◆ The browser stores the previously typed values
 - ◆ Brings them back on a later visit on the same page

- ◆ Autofocus

- ◆ The field becomes on focus on page load

- ◆ Required

- ◆ The field is required to be filled/selected

Input Fields with Validation

- ◆ Email – provides a simple validation for email
 - ◆ Can be passed a pattern for validation
 - ◆ On a mobile device brings the email keyboard

```
<input type="email" required="true"  
pattern="[^ @]*@[^ @].[^ @]"/>
```

- ◆ URL – has validation for url
 - ◆ On a mobile device brings the url keyboard

```
<input type="url" required="true" />
```

- ◆ Telephone
 - ◆ Brings the numbers keyboard

```
<input type="tel" required="true" />
```

HTML Forms Validation

Live Demo



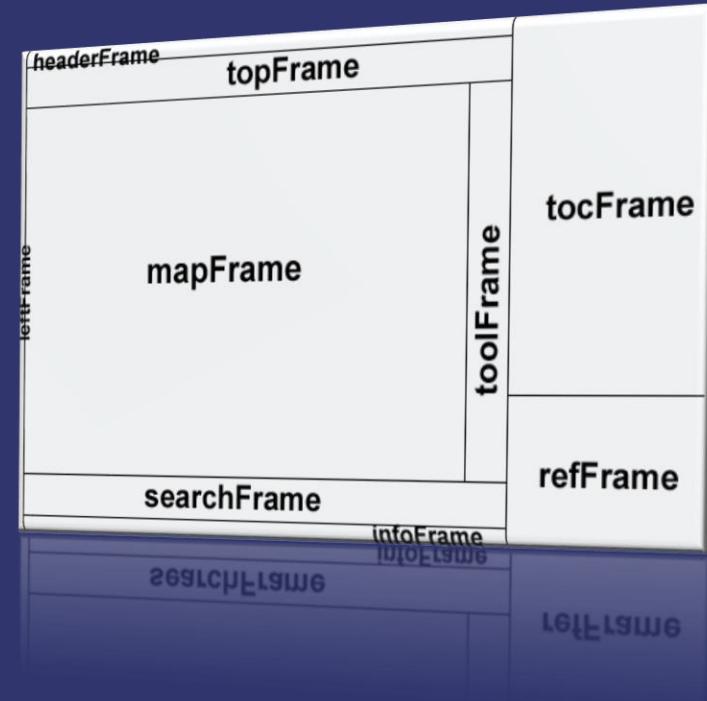
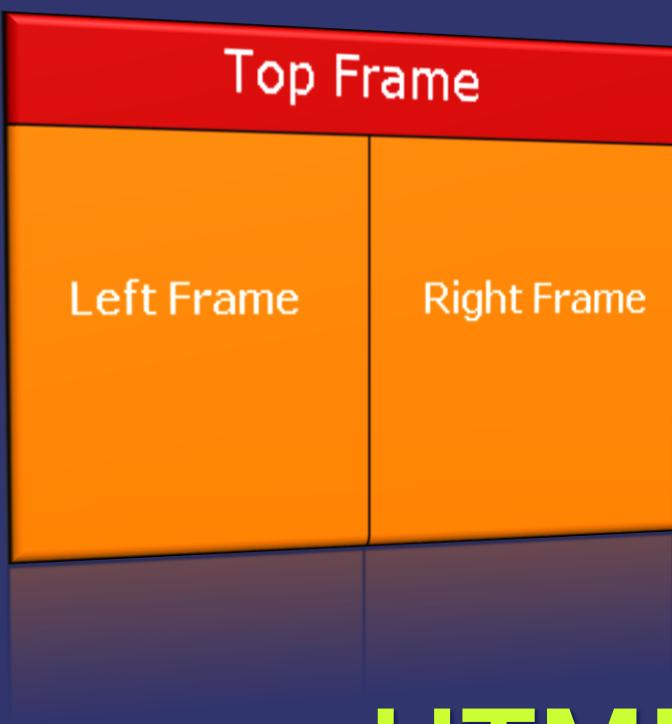
- ◆ The **tabindex** HTML attribute controls the order in which form fields and hyperlinks are focused when repeatedly pressing the TAB key
 - ◆ **tabindex="0"** (zero) - "natural" order
 - ◆ If $X < Y$, then elements with **tabindex="X"** are iterated before elements with **tabindex="Y"**
 - ◆ Elements with negative **tabindex** are skipped, however, this is not defined in the standard

```
<input type="text" tabindex="10" />
```

Tab Index

Live Demo





HTML Frames

<frameset>, <frame> and <iframe>

HTML Frames

- ◆ Frames provide a way to show multiple HTML documents in a single Web page
- ◆ The page can be split into separate views (frames) horizontally and vertically
- ◆ Frames were popular in the early ages of HTML development, but now their usage is rejected
- ◆ Frames are not supported by all user agents (browsers, search engines, etc.)
 - ◆ A <noframes> element is used to provide content for non-compatible agents.

HTML Frames – Demo

frames.html

```
<html>

  <head><title>Frames Example</title></head>

  <frameset cols="180px,* ,150px">
    <frame src="left.html" />
    <frame src="middle.html" />
    <frame src="right.html" />
  </frameset>

</html>
```

- ◆ Note the target attribute applied to the elements in the left frame.

Inline Frames: <iframe>

- ◆ Inline frames provide a way to show one website inside another website:

iframe-demo.html

```
<iframe name="iframeGoogle" width="600" height="400"  
src="http://www.google.com" frameborder="yes"  
scrolling="yes"></iframe>
```

NORAME Element

- ◆ One of the limitations of using frames is that the frames are not supported by all browser.
- ◆ The “NOFRAME” element specifies the text to be displayed in the browser if the browser does not support frame

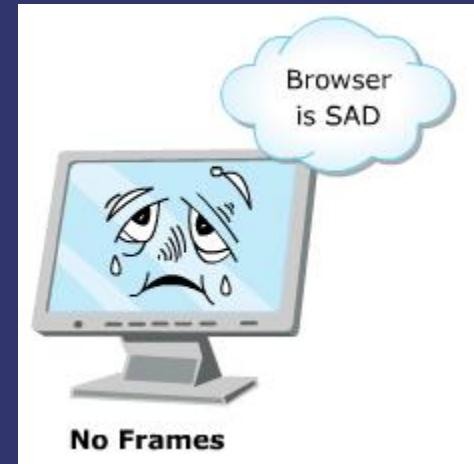
```
<noframes>
```

```
  <body>
```

```
    <p>This browser does not support  
frames.</p>
```

```
  </body>
```

```
</noframes>
```



HTML Basics

Questions?

Homework

1. Create Web Pages like the following using tables:

Fresh Fruits

It has long been known that a diet that includes at least a few servings of fresh fruit every day will help keep you healthy, fit and trim.



Title goes here		A	B
	D	E	F
C	H	I	G
	K	L	M
N	O		J

2. Create a Web Page like the following using forms:

Member name : *req

Email : *req

School : *req

Homework (2)

3. Create a Web form
that looks like this
sample:

Last Name - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

Back Forward Stop Home /sample-form.htm Go

Last Name	Nakov		
First Name	Svetlin		
Address	17 Hristo Botev Str. floor 3, apt. 12		
City	Kaspichan	State	
Zip/Postal Code	9325		
Country	Bulgaria		
Phone (country code, area code, number)	(+359) 88 - 8334343		
E-mail	nakov@kaspichan.org		
Birth date	Month 06 Day 14 Year (4 digit) 1980		
Gender	Male		
Starting date	<input checked="" type="radio"/> Spring 2006 <input type="radio"/> Summer 2006		
Comments/Questions	Please send me mor information about the lodging.		
<input type="button" value="Submit"/> <input type="button" value="Clear This Form"/>			

Done

Homework (3)

4. Create a Calculator-like table.

You should use a HTML 5
form for the Calculator

- Buttons for all the numbers and operators (+, -, etc.)
- Textbox for the result
- Do not make the same styles as the example.

123			
1	2	3	+
4	5	6	-
7	8	9	*
0	.		/

Homework (4)

5. Create the following using tables and forms:

The screenshot shows a Firefox browser window with the title bar "Firefox" and the address bar "file:///C:/Telerik%20Samples/frames/students.html". The page content displays a table of student marks. The table has two main sections: "Personal Info" and "University Marks".

Order	Personal Info			University Marks				
	First Name	Last Name	Faculty Number	English	Math	Biology	Physics	Total
1	Pesho	Yordanov	123456	2	3	4	5	3.50
2	Pesho	Yordanov	123456	2	3	4	5	3.50
3	Pesho	Yordanov	123456	2	3	4	5	3.50
4	Pesho	Yordanov	123456	2	3	4	5	3.50
5	Pesho	Yordanov	123456	2	3	4	5	3.50
6	Pesho	Yordanov	123456	2	3	4	5	3.50
7	Pesho	Yordanov	123456	2	3	4	5	3.50
8	Pesho	Yordanov	123456	2	3	4	5	3.50
9	Pesho	Yordanov	123456	2	3	4	5	3.50
10	Pesho	Yordanov	123456	2	3	4	5	3.50

At the bottom of the table, there are navigation links: "Previous", "1, 2, 3, 4, ..., 10", and "Next".

Homework (5)

6. Construct the following Grid component:

Drag a column header and drop it here to group by that column

ProductID	Product name	Unit price	Quantity per unit	Units in stock	Discontinued
1	Chai	\$18.00	10 boxes x 20 bags	39	<input type="checkbox"/>
2	Chang	\$19.00	24 - 12 oz bottles	17	<input type="checkbox"/>
3	Aniseed Syrup	\$10.00	12 - 550 ml bottles	13	<input type="checkbox"/>
4	Chef Anton's Cajun Seasoning	\$22.00	48 - 6 oz jars	53	<input type="checkbox"/>
5	Chef Anton's Gumbo Mix	\$21.35	36 boxes	0	<input checked="" type="checkbox"/>
6	Grandma's Boysenberry Spread	\$25.00	12 - 8 oz jars	120	<input type="checkbox"/>
7	Uncle Bob's Organic Dried Pears	\$30.00	12 - 1 lb pkgs.	15	<input type="checkbox"/>
8	Northwoods Cranberry Sauce	\$40.00	12 - 12 oz jars	6	<input type="checkbox"/>
9	Mishi Kobe Niku	\$97.00	18 - 500 g pkgs.	29	<input checked="" type="checkbox"/>
10	Ikura	\$31.00	12 - 200 ml jars	31	<input type="checkbox"/>

1 2 3 4 5 6 7 8 9 10 ... Page size: 10 335104 items in 33511 pages

- Try to make a HTML page, that looks just like the example
- Not required to style for the homework

Homework (7)

7. Create the following HTML 5 Page

- Hint: Use Fieldsets and Nested tables

[Apple](#) [Toshiba](#) [Lenovo](#) [Dell](#) [Asus](#) [Hacer](#) [HP](#)

Apple MacBook Air	Apple MacBook Air
 64GB SSD 2GB DDR 1300 USD Intel Core i5	 64GB SSD 2GB DDR 1300 USD Intel Core i5
 64GB SSD 2GB DDR 1300 USD Intel Core i5	 64GB SSD 2GB DDR 1300 USD Intel Core i5
 64GB SSD 2GB DDR 1300 USD Intel Core i5	 64GB SSD 2GB DDR 1300 USD Intel Core i5

Min price: 500 USD

Max price: 1500 USD

Min RAM: 4 GB

Max RAM: 16 GB