

Web Technologies

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Lecture 3,4



HTML 5

The past, the present, the future



- ◆ Hypertext Markup Language
- ◆ HTML Concepts
- ◆ HTML Document Structure
- ◆ HTML Common Elements
- ◆ Section Elements
- ◆ HTML Tables
- ◆ Semantic Structural Tags



Hypertext Markup Language

```
<!DOCTYPE html>
<html>
  <head>
    <title>Welcome</title>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <link rel="stylesheet" href="style.css" />
  </head>
  <body>
    <h1>Hello World!</h1>
    <p>This is my first web page.</p>
  </body>
</html>
```

Hypertext Markup Language

- ◆ 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
- ◆ A HTML document consists of many tags

Creating HTML Pages

- ◆ An HTML document must have an **.htm** or **.html** file extension
- ◆ HTML files can be created with **text editors:**
 - ◆ NotePad, NotePad ++, Sublime Text
- ◆ Or **HTML editors (WYSIWYG Editors):**
 - ◆ Microsoft WebMatrix
 - ◆ Microsoft Expression Web
 - ◆ Microsoft Visual Studio
 - ◆ Adobe Dreamweaver

HTML – Past, Present, Future

- ◆ 1991 – HTML first mentioned – Tim Berners-Lee – HTML tags
- ◆ 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
- ◆ 2022 – HTML5 – final specification



HTML Terminology

Tags, Attributes and Elements

- ◆ Concepts in HTML

- ◆ Tags

- ◆ Opening tag and closing tag
 - ◆ The smallest piece in HTML

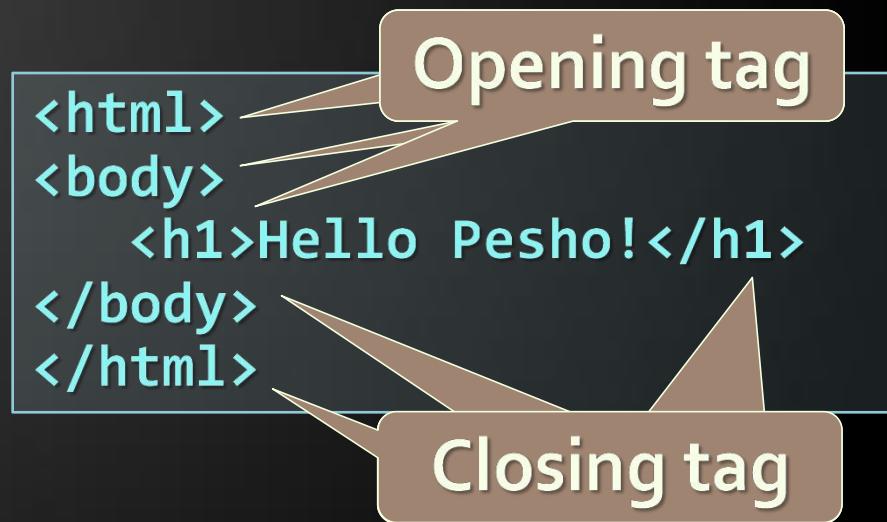
- ◆ Attributes

- ◆ Properties of the tag
 - ◆ Size, color, etc...

- ◆ Elements

- ◆ Combination of opening, closing tag and attributes

- ◆ Tags are the smallest piece in HTML Document
 - ◆ Start with "<" and end with ">"
- ◆ Two kinds of tags
 - ◆ Opening
 - ◆ Mark the start of an HTML element
 - ◆ Closing
 - ◆ Mark the end of an HTML element
 - ◆ Start in "</"



- ◆ Attributes are properties of HTML Elements
 - ◆ Used to set size, color, border, etc...
 - ◆ Put directly in the tags
 - ◆ Has value surrounded by "" or ''
 - ◆ The value is always a string

```
<!-- makes a hyperlink to Google -->  
<a href="http://google.com"> go to Google</a>  
  
<!-- makes a horizontal line -->  
<hr width="95%" size="3px"/>  
  
<!-- adds an image in the web page -->  

```

Some tags don't have closing tag

Most Common Attributes

- ◆ There are some attributes that are common for every HTML element
 - ◆ Id, class, name, style
- ◆ And some attributes are specific
 - ◆ For example the attribute src of the img element
 - ◆ Shows the path to the image to be shown

- ◆ HTML Elements are combination of tags and attributes
 - ◆ Opening tag with some or none attributes and a closing tag

```
<a href="http://google.com"> go to Google</a>
```

```
<html>...</html>
```

HTML Terminology

Live Demo



HTML Document Structure

HTML Document, Doctype, Head, Body

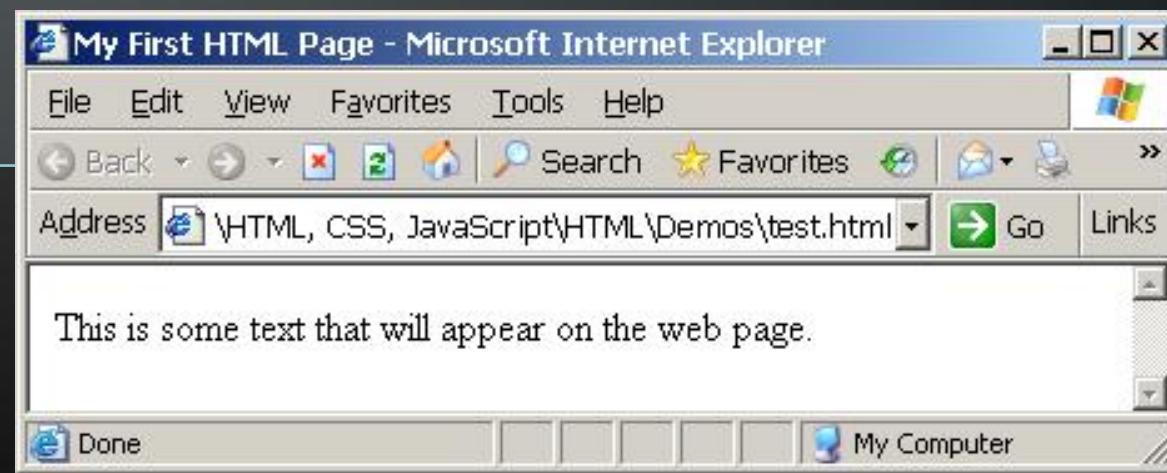


- ◆ Some elements are essential to each HTML Document:
 - ◆ **html, head, body, doctype**
- ◆ The **html** element
 - ◆ Used to mark the beginning and ending of a HTML document
 - ◆ All the content of the web page is inside this tag

```
<html>
  ...
</html>
```

test.html

```
<html>
  <head>
    <title>My First HTML Page</title>
  </head>
  <body>
    This is some text that will
    appear on the web page.
  </body>
</html>
```



First HTML Page: Tags

```
<html>
  <head>
    <title>My First HTML Page</title>
  </head>
  <body>
    This is some text that will
    appear on the web page.
  </body>
</html>
```

Opening tag

Closing tag

First HTML Page: Header

HTML header

```
<html>
  <head>
    <title>My First HTML Page</title>
  </head>
  <body>
    This is some text that will
    appear on the web page.
  </body>
</html>
```

```
<html>
  <head>
    <title>My First HTML Page</title>
  </head>
  <body>
    This is some text that will
    appear on the web page.
  </body>
</html>
```



HTML body

- ◆ The head tag contains markup that is not visible to the user (i.e. the person using the browser)
 - ◆ But helps the browser to render correctly the HTML document
- ◆ What is in there?
 - ◆ Styles, scripts
 - ◆ Declare encodings
 - ◆ Etc..
 - ◆ The title tag - the text in the tab of a browser

Body Element and Doctype

- ◆ **body element contains all the visible to the user markup**
 - Headings, text, hyperlinks, images, etc...
 - Textboxes, sliders, buttons...
- ◆ **Doctype is kind of the validator of the page**
 - Tells the browser in which version of HTML the page is written
 - **HTML 5 Doctype**

```
<!DOCTYPE html>
```

Some Simple Tags – Example

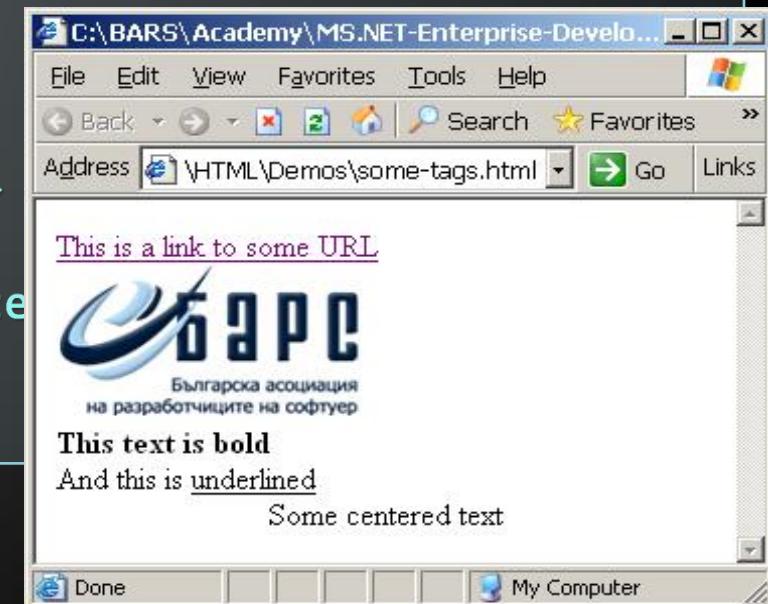
some-tags.html

```
<html>
  <body>
    <a href="http://www.devbg.org/" title=
      "BASD">This is a link to some URL</a>
    <br />
    
    <br />
    <b>This text is bold</b>
    <br />
    And this is <u>underlined</u>
    <br />
    <center>Some centered text</center>
  </body>
</html>
```

Some Simple Tags – Example (2)

some-tags.html

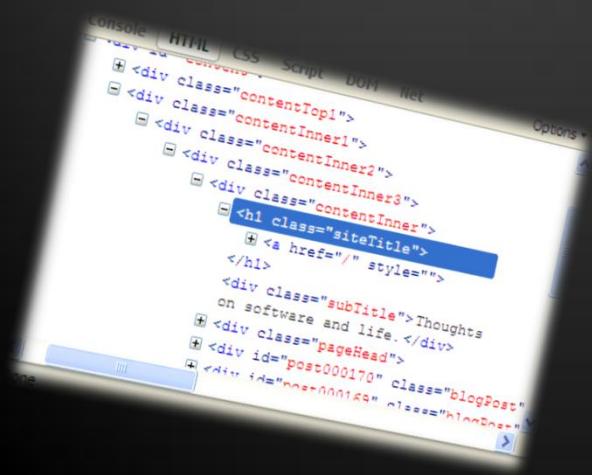
```
<html>
  <body>
    <a href="http://www.devbg.org/" title=
      "BASD">This is a link to some URL</a>
    <br />
    
    <br />
    <b>This text is bold</b>
    <br />
    And this is <u>underlined</u>
    <br />
    <center>Some centered text</center>
  </body>
</html>
```





Some HTML Tags

Live Demo



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


```

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

Headings and Paragraphs

- ◆ Heading Tags

```
<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>
```

- ◆ Sections: div and span

```
<div align="center" style=
"background: skyblue">This is a div</div>
```

Headings and Paragraphs – Example

headings.html

```
<html>
  <head><title>Headings and
    paragraphs</title></head>
  <body>
    <h1>Heading 1</h1>
    <h2>Sub heading 2</h2>
    <h3>Sub heading 3</h3>

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

    <div align="center"
      style="background:skyblue">
      This is a div</div>
  </body>
</html>
```

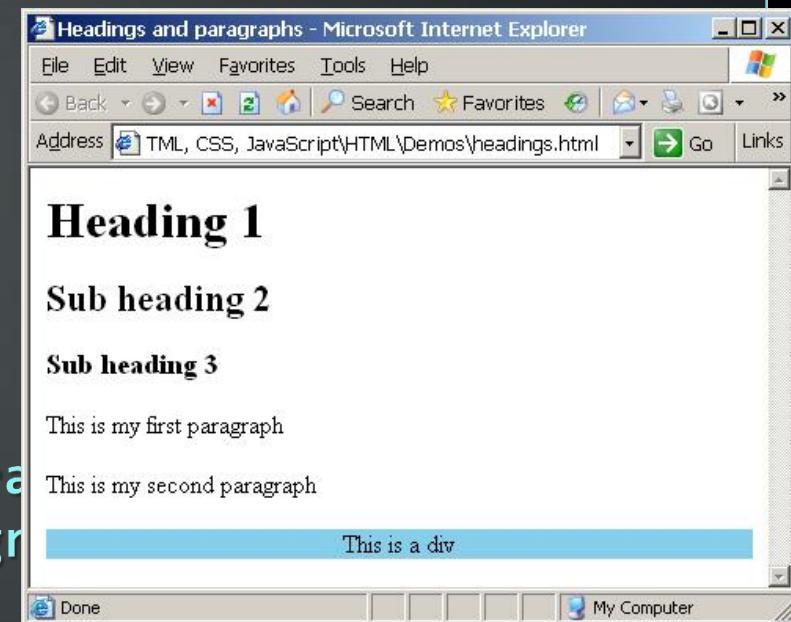
Headings and Paragraphs – Example (2)

headings.html

```
<html>
  <head><title>Headings and
    paragraphs</title></head>
  <body>
    <h1>Heading 1</h1>
    <h2>Sub heading 2</h2>
    <h3>Sub heading 3</h3>

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

    <div align="center"
      style="background:skyblue">
      This is a div</div>
  </body>
</html>
```

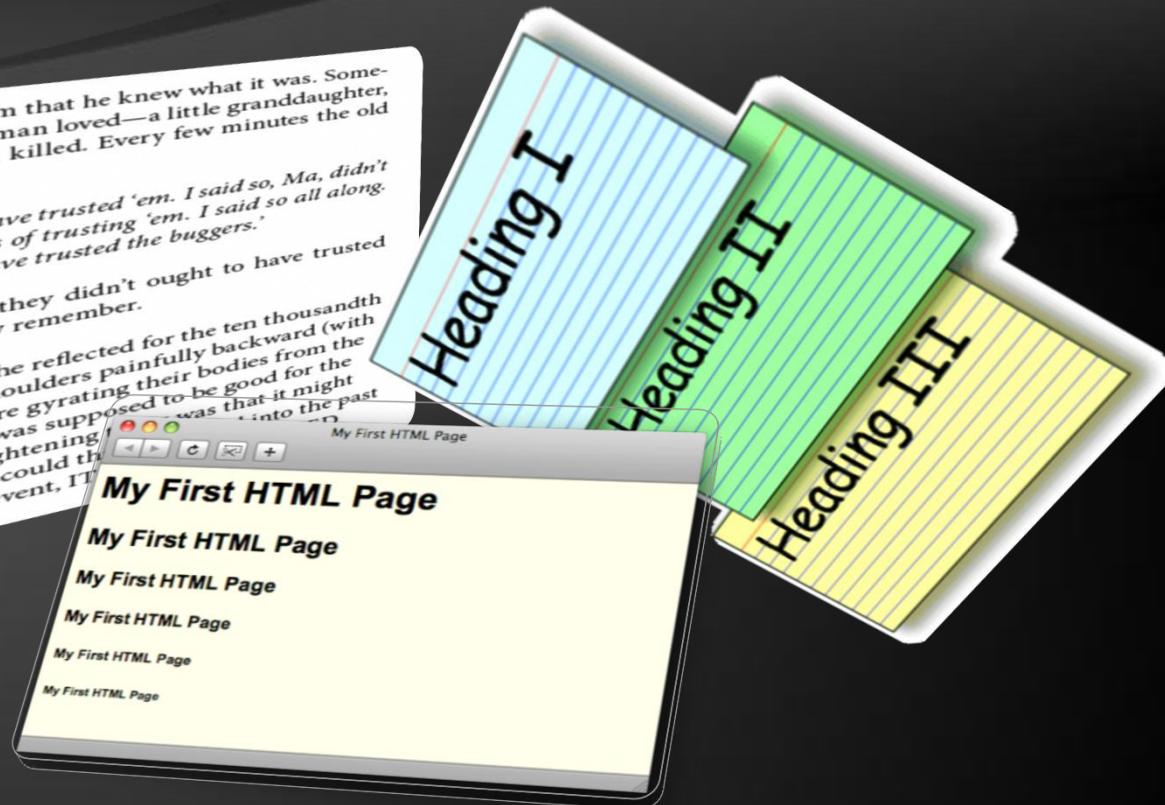


It also seemed to him that he knew what it was. Someone whom the old man loved—a little granddaughter, perhaps—had been killed. Every few minutes the old man kept repeating:

'We didn't ought to 'ave trusted 'em. I said so, Ma, didn't I? That's what comes of trusting 'em. I said so all along. We didn't ought to 'ave trusted the buggers.'

But which buggers they didn't ought to have trusted Winston could not now remember.

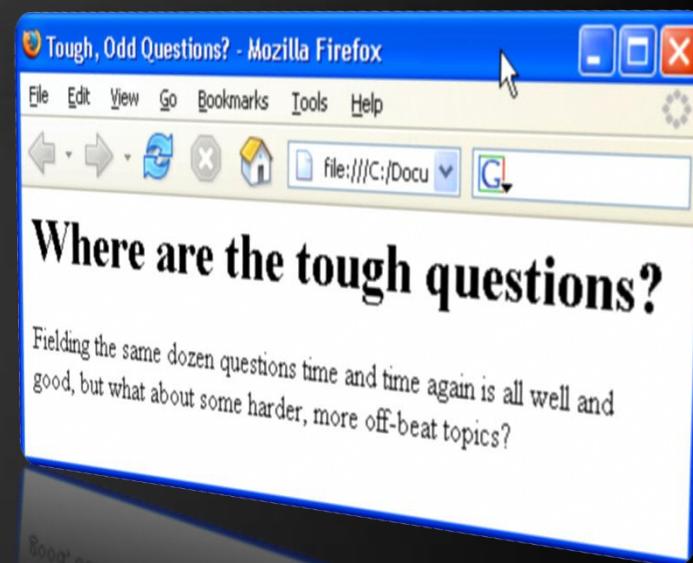
The frightening thing, he reflected for the tenthousandth time as he forced his shoulders painfully backward (with hands on hips, they were gyrating their bodies from the waist, an exercise that was supposed to be good for the back muscles)—the frightening was that it might all be true. If the Party could th and say of this or that event, IT



Headings and Paragraphs

Live Demo

```
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    </ul>
31
32    <script type="text/javascript">
33      UI.Tabview.init('body', { width: 500px });
34    </script>
35
36  </body>
37  </html>
```



Introduction to HTML

HTML Document Structure in Depth

The <!DOCTYPE> Declaration

- ◆ At their beginning HTML documents must have a document type declaration
 - ◆ It tells the Web browsers how to handle the HTML data
 - ◆ Possible versions: HTML 2.0, HTML 3.2, HTML 4.01, XHTML 1.0, XHTML 1.1, ...
- ◆ Example:

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

- ◆ See <http://www.w3.org/QA/2002/04/Web-Quality> for a list of possible doctypes

- ◆ HTML is comprised of elements called “tags”
 - ◆ Begins with `<html>` and ends with `</html>`
 - ◆ When writing XHTML, must define a namespace

```
<html xmlns="http://www.w3.org/1999/xhtml">
```

- ◆ 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>`

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 multiple nested 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 to the Web page window
- ◆ 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> </script> tag is used to embed scripts into an HTML document
 - ◆ Scripts 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

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





Using Scripts

Live Demo

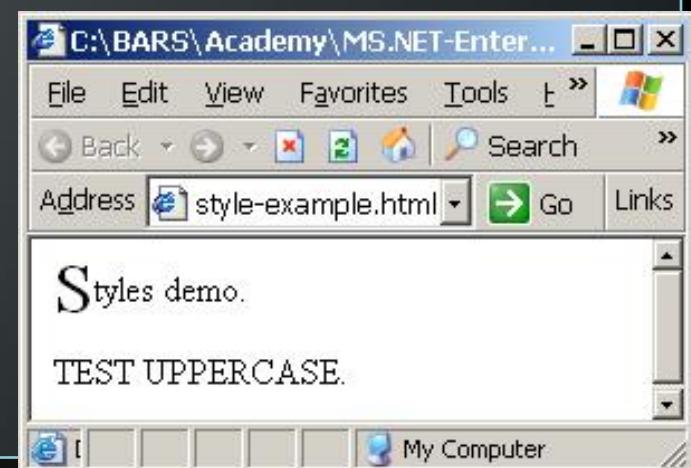


<head> Section: <style>

- The <style> </style> tag embeds formatting information (CSS styles) into a HTML page

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

style-example.html



CSS Example

```
body
{
background-color:#d0e4fe;
}
h1
{
color:orange;
text-align:center;
}
p
{
font-family:"Times New Roman";
font-size:20px;
}
```



Embedding CSS Styles

Live Demo



Comments: <!-- --> Tag

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

```
<!-- BASD Logo (it is a GIF file with  
transparent background) -->  
  
<!-- Hyperlink to BASD official Web site -->  
<a href="http://www.devbg.org/">BASD Home</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>
```

<body> Section: Attributes

- ◆ The <body> tag has the following attributes:

background	Background image file	= "URL"
bgcolor	Background color	= "color"
text	Default text color	= "color"
link	Hyperlink color	= "color"
vlink	Visited hyperlink color	= "color"

- ◆ Example:

```
<body background="texture.gif" text="#238E23">
```

* For color codes, see www.webreference.com/html/tools/colorizer/

Text Styling without CSS

- ◆ Text can be formatted as headings or regular paragraph text
 - ◆ Use these consistently!
- ◆ `<p></p>` by default doubles the spaces after each paragraph
- ◆ `
` is weird: the trailing “/” makes it XHTML compliant
- ◆ Different styles of heading are available:

<code><h1></h1></code>	Heading 1
<code><h2></h2></code>	Heading 2
<code><h3></h3></code>	Heading 3
<code><h4></h4></code>	Heading 4
<code><h5></h5></code>	Heading 5
<code><h6></h6></code>	Heading 6
<code><p></p></code>	Paragraph
<code>
</code>	Line break

HTML Common Elements

Used in 90% of all the sites

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

<code></code>	bold
<code><i></i></code>	<i>italicized</i>
<code><u></u></code>	<u>underlined</u>
<code><sup></sup></code>	Sample ^{superscript}
<code><sub></sub></code>	Sample _{subscript}
<code></code>	strong
<code></code>	<i>emphasized</i>
<code><pre></pre></code>	Preformatted text

- ◆ Many of the formatting tags are deprecated
 - ◆ Use CSS instead

- ◆ **Hyperlink Tags**

```
<a href="http://www.telerik.com/"  
    title="Telerik">Link to Telerik Web site</a>
```

- ◆ **Image Tags**

```

```

- ◆ **Text formatting tags**

```
This text is <em>emphasized.</em>  
<br />new line<br />  
This one is <strong>more emphasized.</strong>
```

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>
```

- ◆ Sections: div and span

```
<div style="background: skyblue;">
    This is a div</div>
```

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

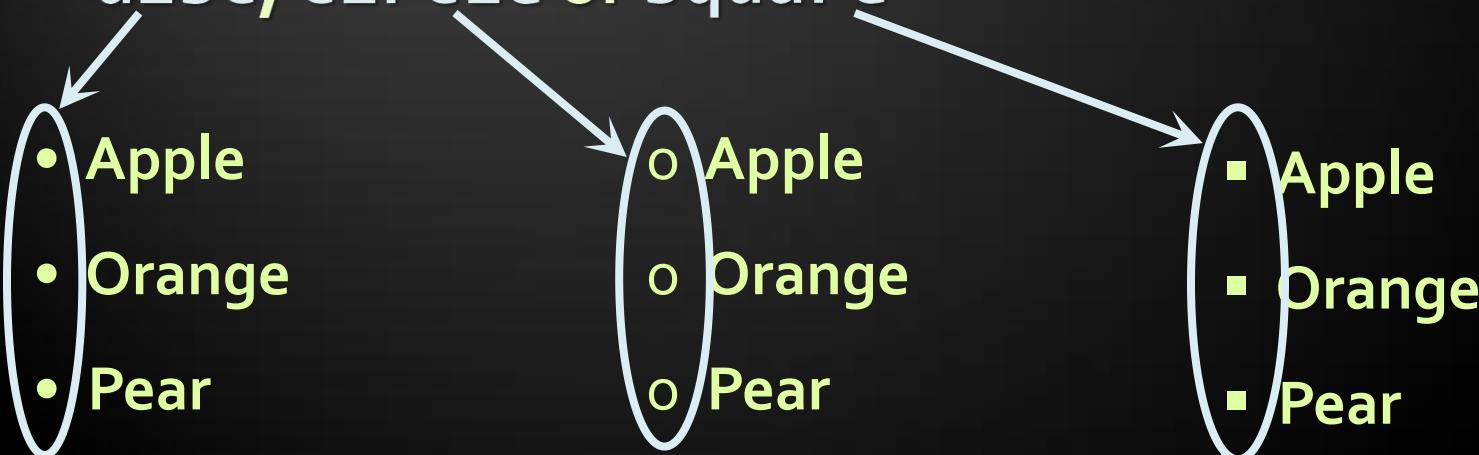
Unordered Lists: Tag

- ◆ Create an Unordered List using :

```
<ul type="disc">
  <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>
```

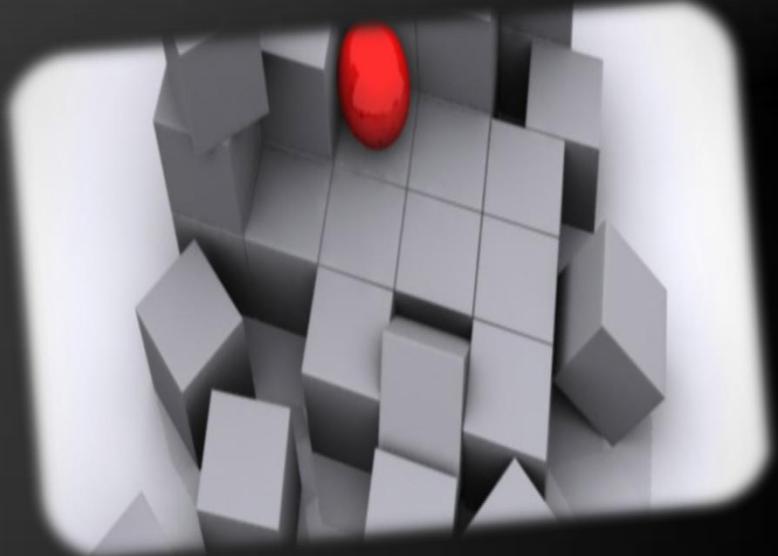
- ◆ Renders without bullets
- ◆ Definition is indented

HTML Common Elements

Live Demo

```
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>
```

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Section Elements

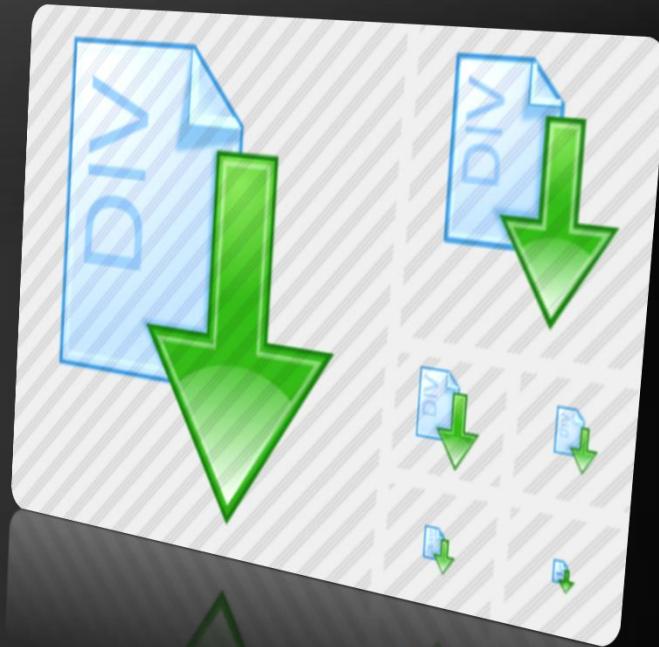
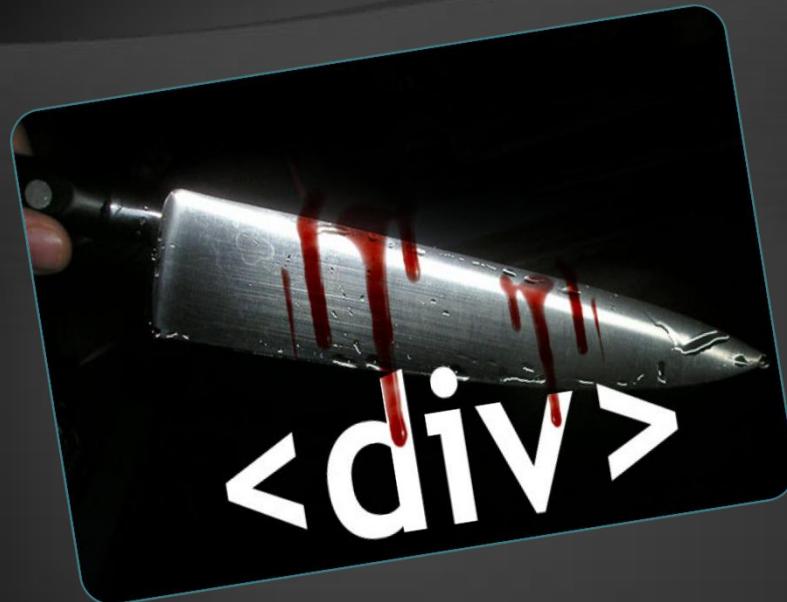
The `<div>` and The ``

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



```
<div style="font-size:24px; color:red">DIV  
example</div>
```

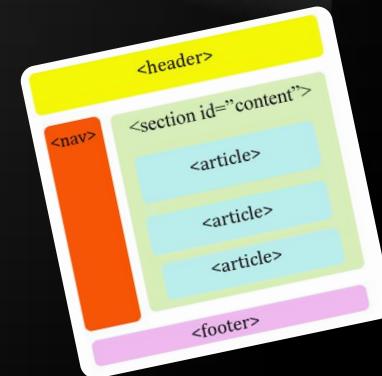
```
<p>This one is <span style="color:red; font-  
weight:bold">only a test</span>.</p>
```



<div>

<DIV>

Live Demo



- ◆ Inline style element
- ◆ Useful for modifying a specific portion of text
 - ◆ Don't create a separate area (paragraph) in the document
 - ◆ Mainly used to style parts of a text



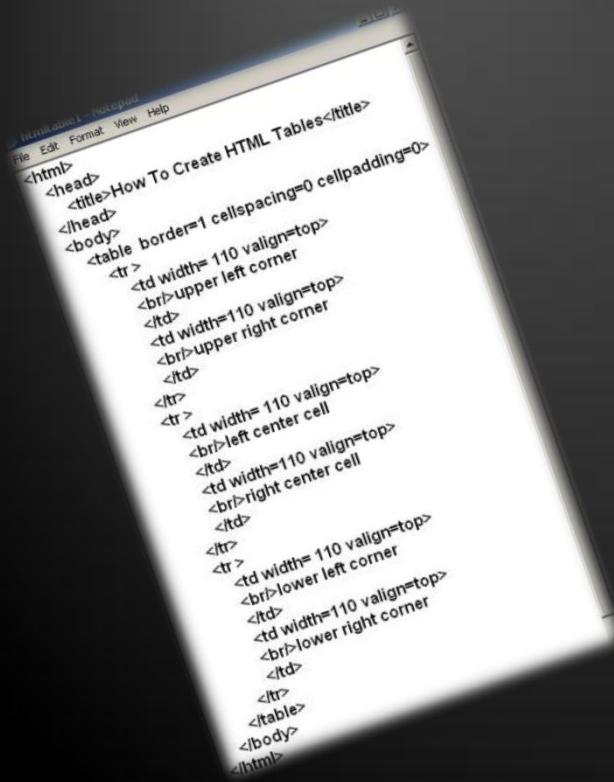
```
<p>This one is <span style="color:red; font-weight:bold">only a test</span>.</p>  
<p>This one is another <span style="font-size:32px; font-weight:bold">TEST</span>.</p>
```



Live Demo

```
<SPAN>some text</span>
```

HTML Tables



```

<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 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>

```

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

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	bochhai dychai	-191.45E-05
Monday, May 30, 1994 4:47:31 PM	06/09/05 05:11:16 AM			YMB 33.16		dydy balie	-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 1:05:02 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

- ◆ Tables represent tabular data
 - ◆ A table consists of one or several rows
 - ◆ Each row has one or more columns
- ◆ Tables are comprised of several core tags:
 - ◆ `<table></table>`: begin/end table definition
 - ◆ `<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

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>
```

Important Birthdays		
Name	Age	Date of Birthday
Emily	8 years	3 September
Jack	12 years	28 April



Simple HTML Tables

Live Demo



First Name	Last Name	Date of Birth	Account Balance	Gender
A	B	20-Feb-1962	12,345.87	<input checked="" type="checkbox"/>
C	D	6-Jan-1987	23,456.779	<input checked="" type="checkbox"/>
E	F	31-Aug-1989	34,567.891	<input type="checkbox"/>
G	H	16-Jan-1945	-456.7	<input type="checkbox"/>
I	J	2-Aug-1907	567	<input type="checkbox"/>

Data Cells and Header Cells

- ◆ Two kinds of cells in HTML tables
 - ◆ Data cells – containing the table data
 - ◆ Header cells – used for the column names or some more important cells
- ◆ Why two kinds of cells?
 - ◆ Used to semantically separate the cells

```
<tr>    <th>Full Name</th> <th>Mark</th>
</tr>
<tr>
    <td>Doncho Minkov</td> <td>Very good (5)</td>
</tr>
<tr>
    <td>Georgi Georgiev</td> <td>Excellent (6)</td>
</tr>
```

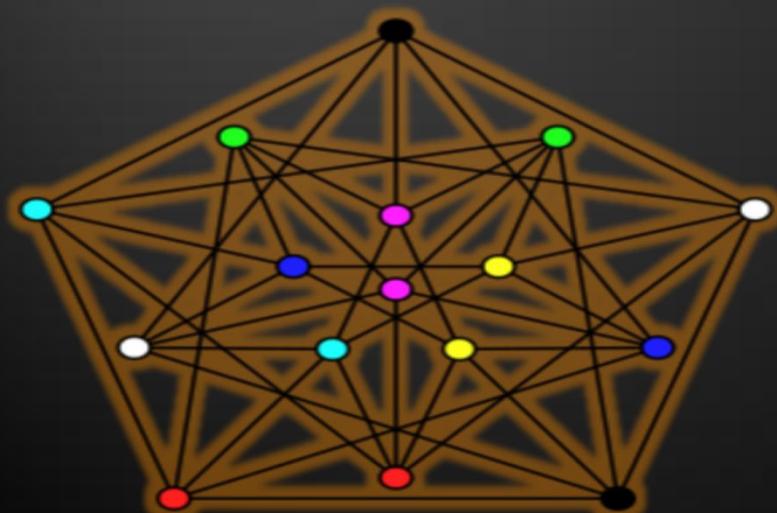
Data and Header Cells

Live Demo



Complete HTML Tables

With Header, Footer and Body



- ◆ 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 (used to set column widths)

Complete HTML Table: Example

```
<table>
  <colgroup>
    <col style="width:100px" /><col />
  </colgroup>
  <thead>
    <tr><th>Column 1</th><th>Column 2</th></tr>
  </thead>
  <tfoot>
    <tr><td>Footer 1</td><td>Footer 2</td></tr>
  </tfoot>
  <tbody>
    <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>
```

columns

header

th

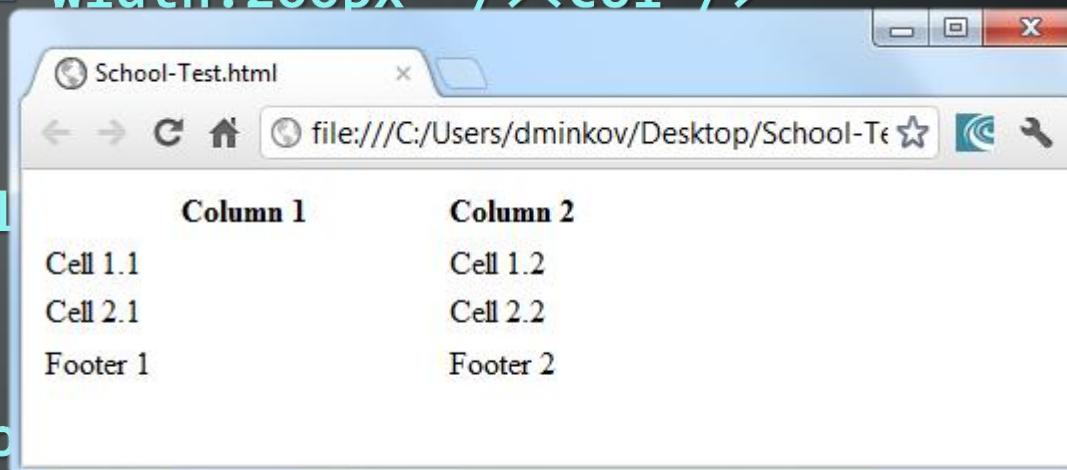
footer

Last comes the body (data)

Complete HTML Table: Example (2)

```
<table>
  <colgroup>
    <col style="width:200px" /><col />
  </colgroup>
  <thead>
    <tr><th>Col
  </thead>
  <tfoot>
    <tr><td>Footer 1
  </tfoot>
  <tbody>
    <tr><td>Cell 1.1
    <tr><td>Cell 2.1
    <tr><td>Footer 2
  </tbody>
</table>
```

table-full.html



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

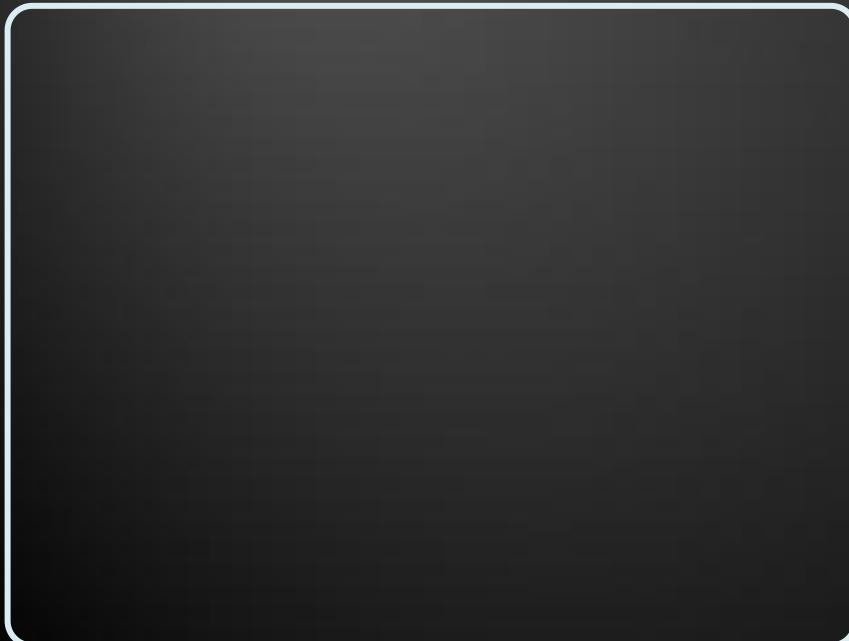


Complete HTML Tables

Live Demo

Nested Tables

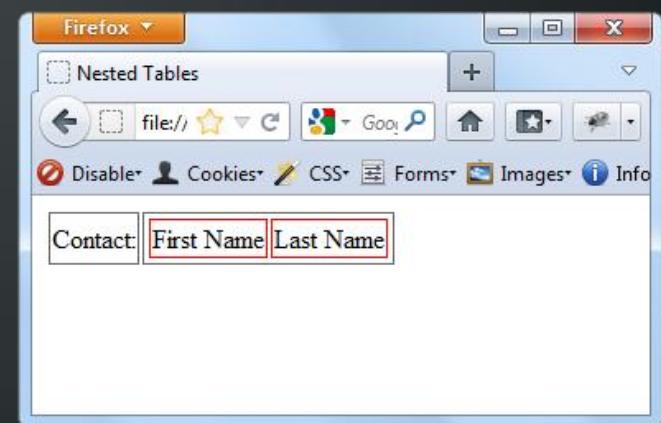
Tables in Tables in Tables in Tables...



- ◆ Table "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

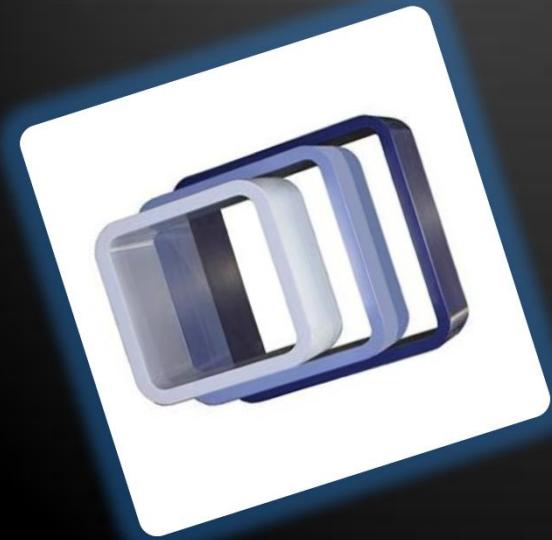


Order ID	Customer ID	Employee ID	Order Date	Ship Via	Freight
*	FRANS	6	No date is s...	3	4.45
10000	FRANS	6	Friday, May...	3	
*	MEREP	8	27	Monday, M...	79.45
10001	MEREP	8		3	
Order ID	Product ID	Unit Price	Quantity		
*	10001	25	9.8	30	
10001	40	12.8	40		
10001	59	38.5	8		
10001	64	23	15		
10002	FOULK	3	Tuesday, M...	3	36.18
10003	SIMOB	8	Wednesday...	1	18.59



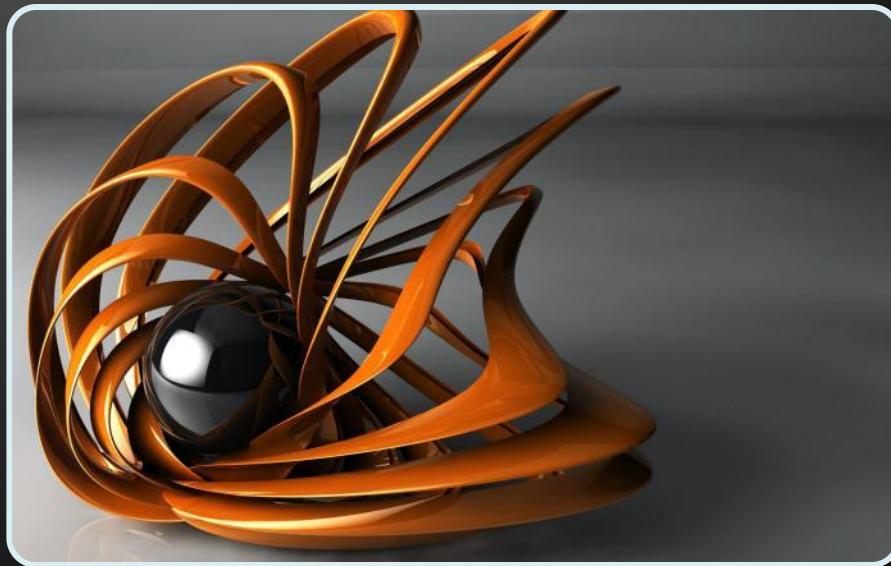
Nested Tables

Live Demo



Complex Tables

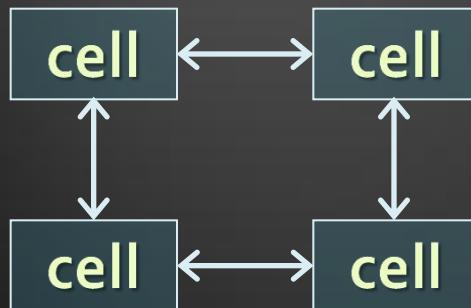
With Padding, Spacing and Stuff



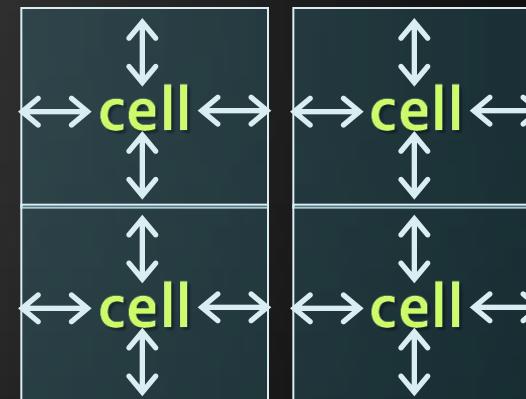
Cell Spacing and Padding

- ◆ Tables have two attributes related to space

- ◆ **cellspacing**



- ◆ **cellpadding**



- ◆ Defines the empty space between cells

- ◆ Defines the empty space around the cell content

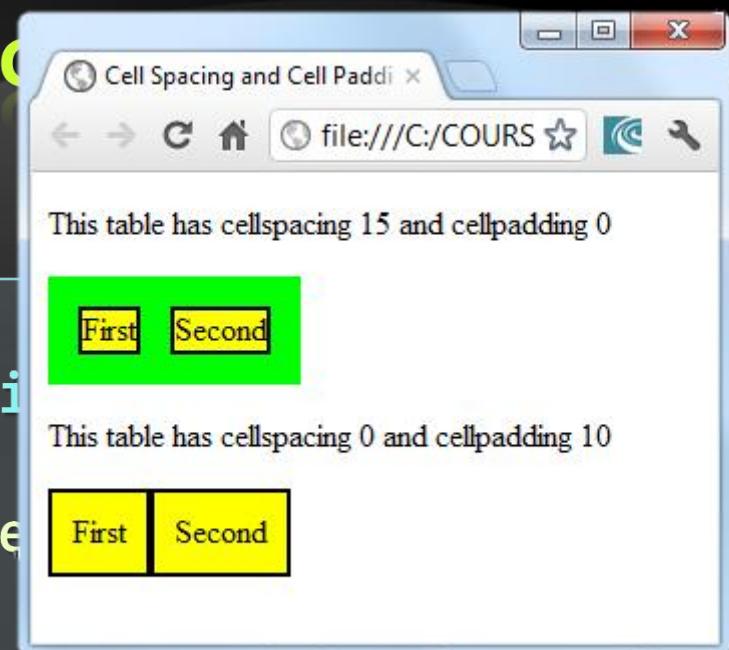
Cell Spacing and Padding – Example

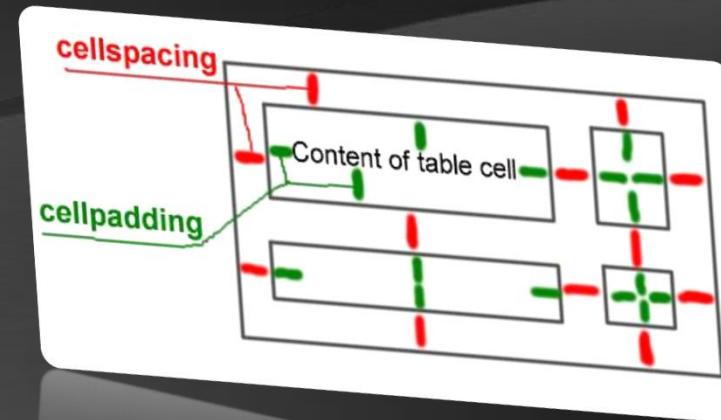
table-cells.html

```
<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>
```

table-cells.html

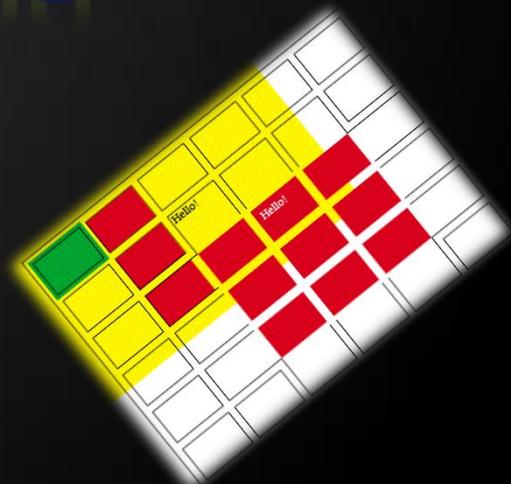
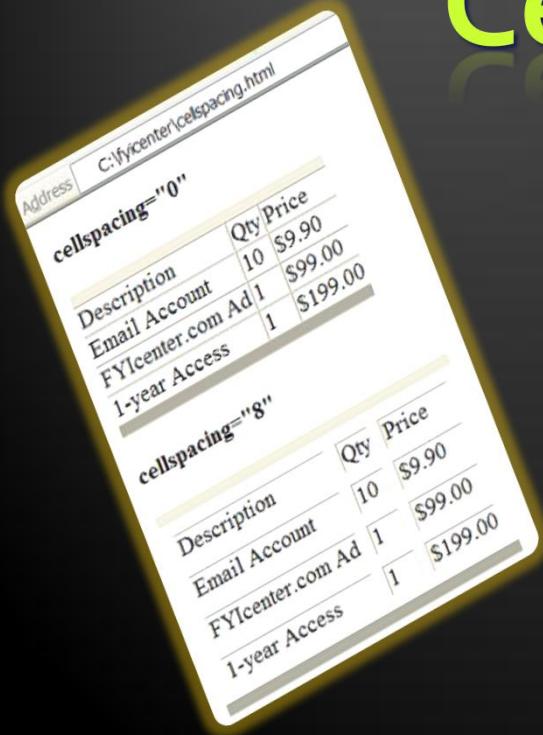
```
<html>
  <head><title>Table Cells</title>
  <body>
    <table cellspacing="15" cellpadding="0">
      <tr><td>First</td>
          <td>Second</td></tr>
    </table>
    <br/>
    <table cellspacing="0" cellpadding="10">
      <tr><td>First</td><td>Second</td></tr>
    </table>
  </body>
</html>
```





Cell Spacing and Cell Padding

Live Demo





Row and Column Spans

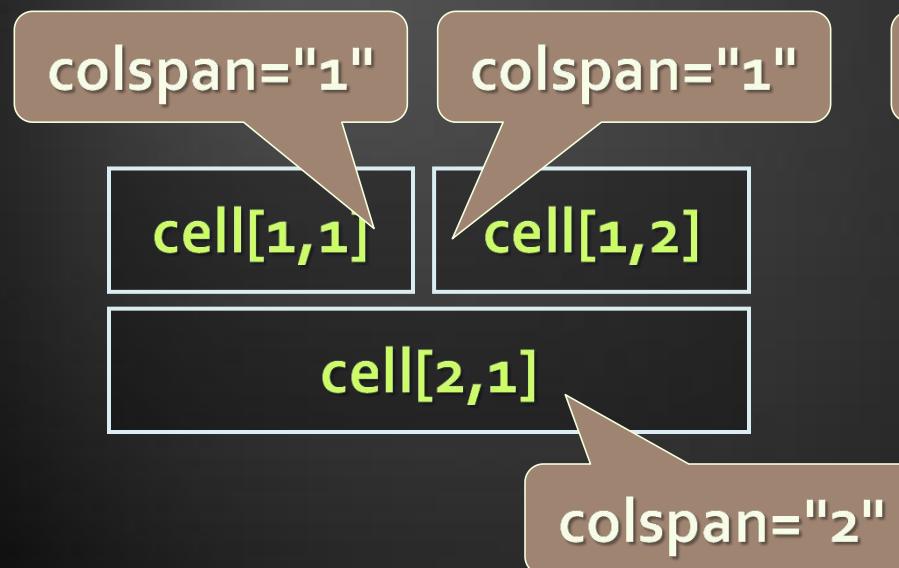
How to Make a Two-Cells
Column or Row?



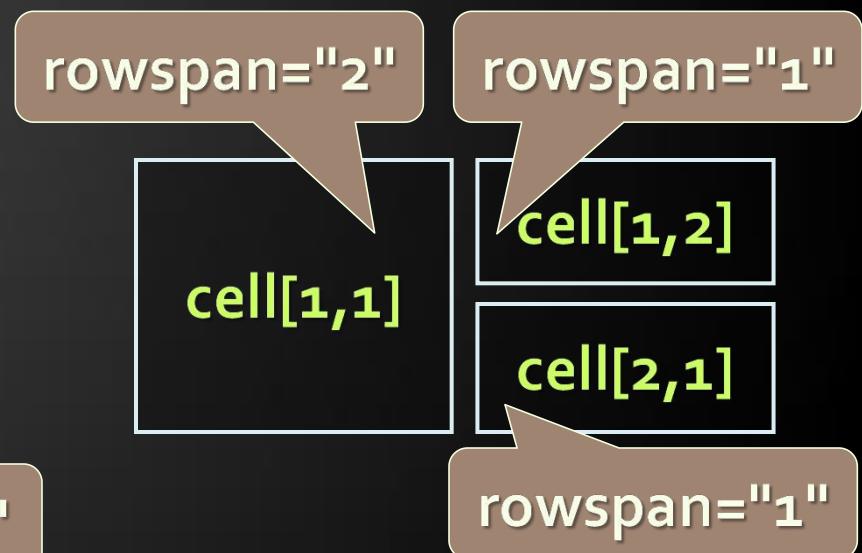
Column and Row Span

- ◆ Cells have two attributes related to merging

- ◆ **colspan**



- ◆



- ◆ Defines how many columns the cell occupies

- ◆ Defines how many rows the cell occupies

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[1,1]</td>
    <td rows="2">Cell[1,2]</td>
    <td>Cell[1,3]</td>
  </tr>
  <tr class="3">
    <td>Cell[2,1]</td>
    <td>Cell[2,2]</td>
    <td>Cell[2,3]</td>
  </tr>
</table>
```

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

Row and Column Spans

Live Demo

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

Semantic Structural Tags

The Structure of a Web Page

- ◆ A sample layout structure of a Web Page



- ◆ 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 4 Way

Live Demo

- ◆ 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>
```

- ◆ Work only on newer browsers

Semantic Structural Tags

Live Demo



HTML5
Unleashed

- ◆ 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
 - Always think about semantics
- ◆ The W3C HTML Validator is a way to validate your HTML
 - <http://validator.w3.org/>

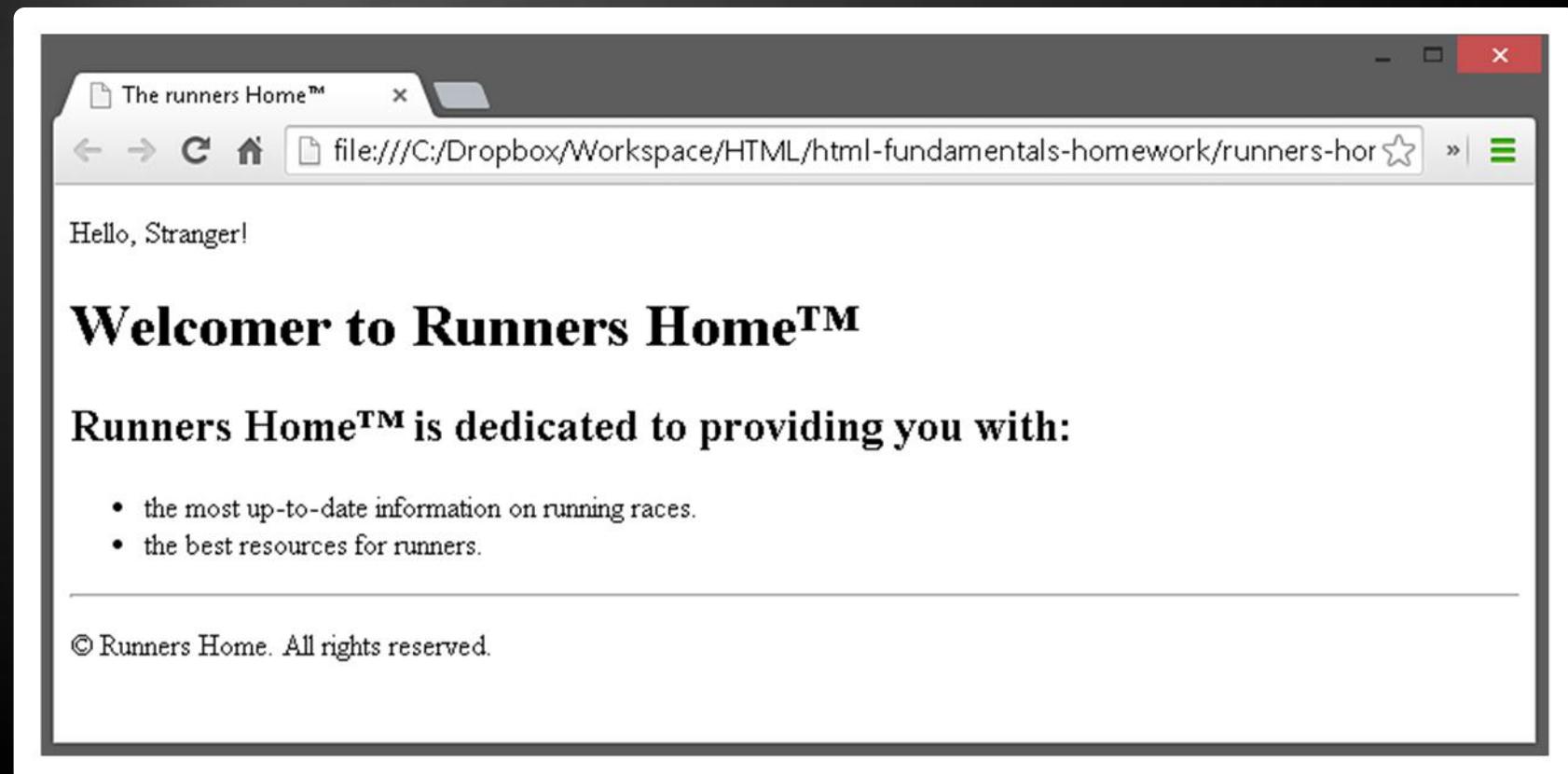
Questions?

Lab Assignment#1

Due Date 26-September-2022

1. Write an HTML page like the following:

* Use headings, divs, paragraphs and ul

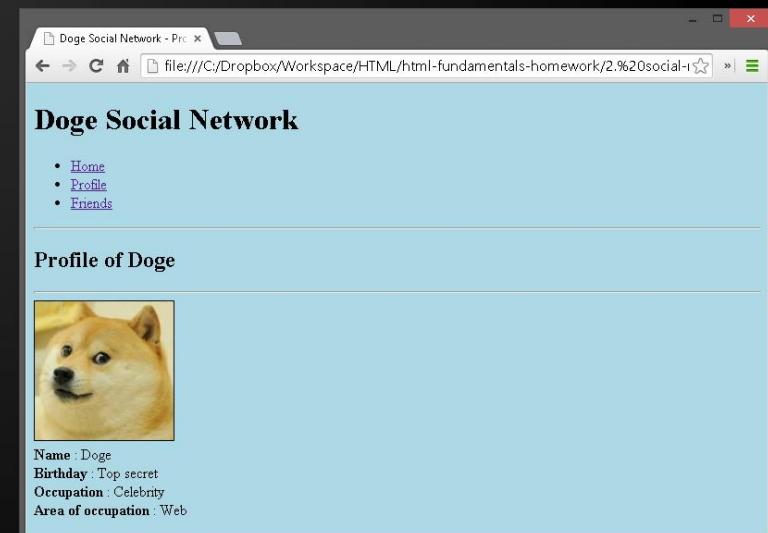
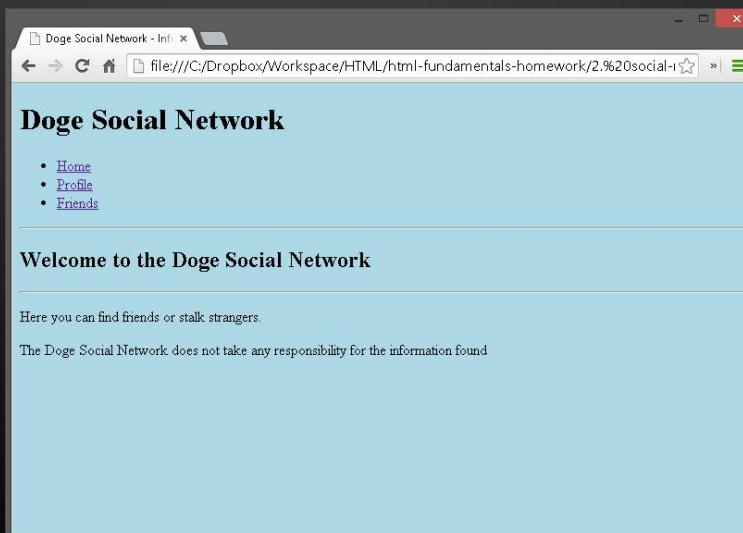
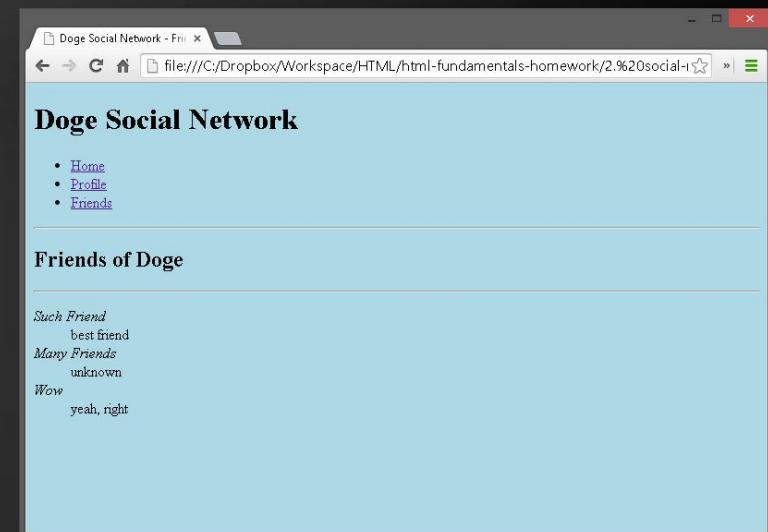


2. Write an HTML page like the following:

Preceding Text

- I. List Item 1
 - a. Nested Item 1.1
 - b. Nested Item 1.2
- II. List Item 2
 - 1. Nested Item 2.1
 - 2. Nested Item 2.2
 - o Nested Item 2.2.1
 - o Nested Item 2.2.2
 - Nested Item 2.2.2.1
 - Nested Item 2.2.2.2
 - o Nested Item 2.2.3
 - 3. Nested Item 2.3
- III. List Item 3
 - Nested Item 3.1
 - Nested Item 3.1
 - Nested Item 3.1

3. Create an user profile Web page `profile.html`, friends page named `friends.html` and info page named `home.html`. Link them to one another using `<a>` tag



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

3. 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	.		/