Lab 7 Introduction to Web Design

Agenda

- **∞** What is URL & Browser?
- Mow do web browsers work?
- **Introduction to HTML.**
- Let's create our first web page
- **Mathematical Methods** HTML body elements
- \bowtie Hands on (1/2)
- CSS Style sheets
- \mathfrak{m} Hands on (2/2)
- Assignment

What is URL & Browser?

- □ URL Uniform Resource Locator.
- □ Browser A software program which is used to show web pages.

How Do Web Browsers Work?

- 1. URL is typed in the browser.
- 2. DNS lookup to find the ip address of the server
- 3. Browser sends a HTTP request to the server.
- 4. Server handles the incoming request
- 5. Browser receives the HTTP response
- 6. Browsers displays the html content

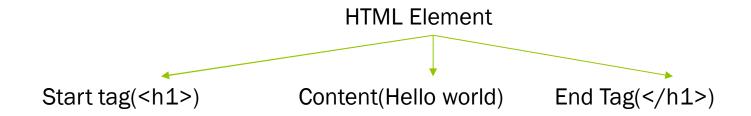
Introduction to HTML

What is HTML?

- □ HTML stands for Hyper Text Markup Language.
- ☐ HTML is **not** a programming language, it is a markup language.
- □ A markup language is a set of markup tags that describe web page.
- Pages end with ".htm" or ".html"
- □ HTML Editor A word processor that has been specialized to make the writing of HTML documents more effortless.
- □ HTML comment begins with "<!--", and ends with "-->".

HTML Element

- HTML documents are defined by HTML elements.
- HTML element is everything from the start tag to the end tag.
- □ E.g: <h1>Hello world</h1>



HTML Tags

- MTML tag is keyword surrounded by angle brackets like < > .
- » Not case sensitive
 - o <TITLE> = <title> = <TITLE>
- \bowtie HTML tags normally come in pairs like and .
- 50 The first tag in a pair is the start tag, the second tag is the end tag.

Choosing Text Editor

- There are many different programs that you can use to create web documents.
- by pushing a few buttons. Instead of entering all of the HTML codes by hand.
- 50 These programs will generate the HTML Source Code for you.
- MTML Editors are excellent tools for experienced web developers.
- Mowever; it is important that you learn and understand the HTML language so that you can edit code and fix "bugs" in your pages.
- For this Course, we will focus on using the standard Microsoft Windows text editors, NotePad. We may use also NotePad++.

Let's create our first page

Creating a Basic Starting Document

- Create a new text document.
- Change the file extension (from .txt to .html).
- Add the basic elements.html code.
- Open the file using the default browser.
- To edit the html code open the file with the text editor (RightClick->open with-> notepad++).

 \circ

HTML Page structure

head>		
<tit< th=""><th>le>Page title</th><th></th></tit<>	le>Page title	
/head	>	
body>	•	
<	<h1>This is a heading</h1>	
<	This is a paragraph.	
<	This is another paragraph.	

HTML Code

```
    <!DOCTYPE html>
    <html>
    <HEAD>
    <TITLE> my first html web page </TITLE>
    </HEAD>
    <BODY>
    <!-- Here we will put the page elements -->
    </BODY>
    </html>
```

Head Element

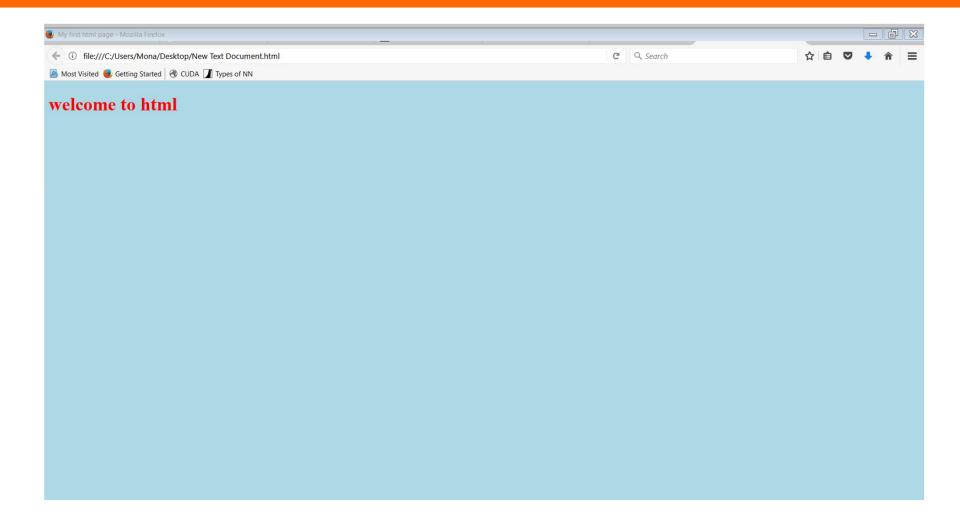
- The **<head>** element is a container for metadata (data about data) and is placed between the **<html>** tag and the **<body>** tag.
- MTML metadata is data about the HTML document. Metadata is not displayed.
- Metadata typically define the document title, character set, styles, links, scripts, and other meta information.
- The following tags describe metadata: <title>, <style>, <meta>, <link>, <script>, and <base>.

The Body Element

- 50 The <body> tag defines the document's body.
- The <body> element contains all the contents of an HTML document, such as text, hyperlinks, images, tables, lists, etc.
- 50 The body element contains a set of attributes:

Attribute	Value	Description
alink	color	Specifies the color of an active link in a document
background	URL	Specifies a background image for a document
bgcolor	color	Specifies the background color of a document
link	color	Specifies the color of unvisited links in a document
<u>text</u>	color	Specifies the color of the text in a document
<u>vlink</u>	color	Specifies the color of visited links in a document

Example(1)



Solution

```
<!DOCTYPE html>
 ≈ <HTML>
<head>
<title> My first html page </title>
% </head>
<h1>welcome to html</h1>

SOURCE
SOUR
```

Representing colors in HTML

∞ Colors in HTML can be represented using:

- Names(e.g "Tomato")
- o RGB(e.g "rgb(255, 99, 71)").
- Hexa values(e.g. "#ff6347").
- MTML Supports 140 standared color names.

HTML Body Elements

HTML Headers

```
<HTML>
<HFAD>
<TITLE> Example Page</TITLE>
</HEAD>
<BODY>
<H1> Heading 1 </H1>
<H2> Heading 2 </H2>
<H3> Heading 3 </H3>
<H4> Heading 4 </H4>
<H5> Heading 5 </H5>
<H6> Heading 6 </H6>
</BODY>
</HTML>
```

Heading 1
Heading 2
Heading 3
Heading 4
Heading 5
Heading 6



Heading 1

Heading 2

Heading 3

Heading 4

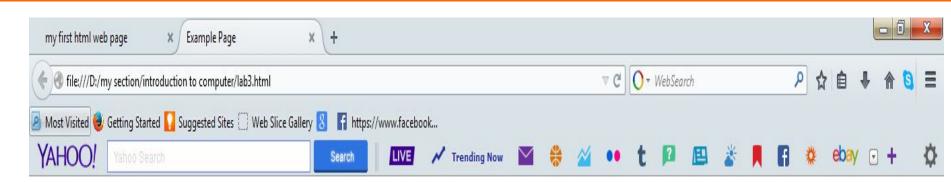
Heading 5

Heading 6

Paragraphs <P> </P>

- Paragraphs are managed using the paragraph element, represented by an opening and closing tag ..., with text content in between .
- introduction to computer course lab ,Introduction to HTML

Example(2)



introduction to computer course

introduction to computer course lab ,Introduction to HTML introduction to computer course lab ,Introduction to HTML introduction to HTML introduction to Computer course lab ,Introduction to HTML introduction to HTML int

Solution

- <HEAD>
- <TITLE> Example Page</TITLE>
- </HEAD>
- <H1> introduction to computer course </H1>
- introduction to computer course lab ,Introduction to HTML introduction to computer course lab ,Introduction to HTML
- </HTML>

Character formatting tags

» Font:

- o Two sizes bigger

- <U> Underline </U>
- Emphasis Browsers usually display this as italics.
- STRONG Browsers display this as bold.

Example(3)



five Size Larger - Normal - three Size Smaller

Bold - italics - <u>Underlined</u> - <u>Colored</u> Emphasized - <u>Strong</u>

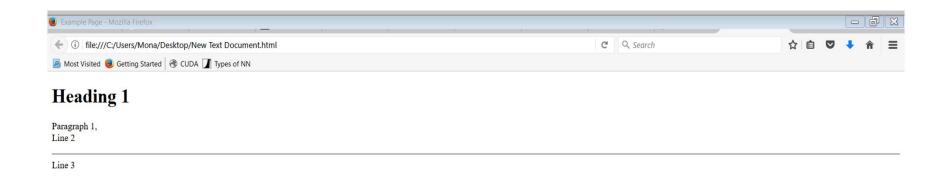
Solution

```
<HTML>
<head>
   <title> My first html page </title>
</head>
<BODY>
   introduction to computer course<P>
   <FONT SIZE="+5"> five Size Larger </FONT> - Normal -
   <FONT SIZE="-3"> three Size Smaller </FONT> <BR>
   <B> Bold</B> - <I> italics</I> - <U> Underlined </U> -
   <FONT COLOR="#FF0000"> Colored </FONT> <BR>
   <EM> Emphasized</EM> -
   <STRONG> Strong </STRONG>
   </BODY>
</HTML>
```

< BR > && < HR >

-
=new line
- <HR>=horizontal line
- Both Elements do not have a closing tag.

Example(4)



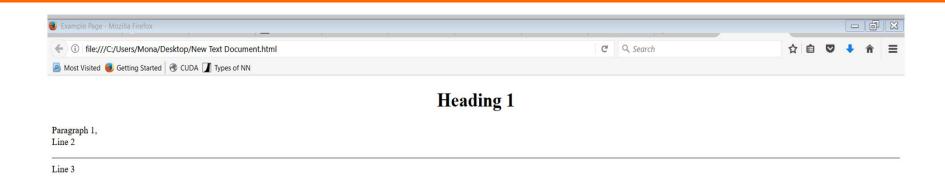
Solution

```
<html>
<head>
  <title> example page</title>
</head>
<body>
  <h1> heading 1 </h1>
  paragraph 1, <br>
  line 2 <br>
  <hr>line 3 <br>
  </body>
</html>
```

Alignment

- Some elements have attributes for alignment (ALIGN) e.g. Headings, Paragraphs and Horizontal Rules.
- The Three alignment values are: LEFT, RIGHT, CENTER.
- Example:
- <H1 align="center"> Heading 1 </H1>

Example(5)

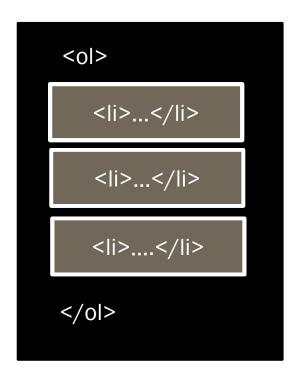


Creating Lists in HTML

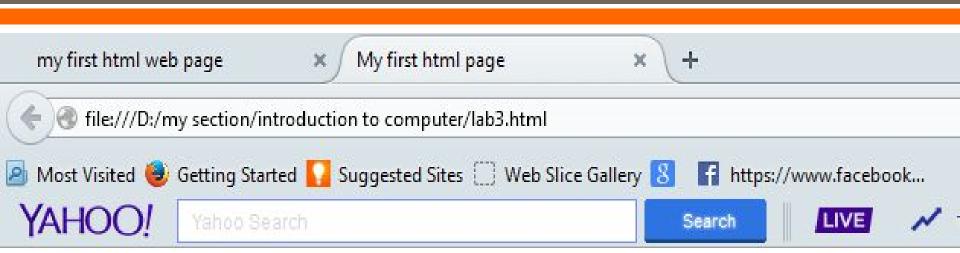
- There are three types of lists
 - An ordered list.
 - An unordered list.
 - Nest Lists.

1.0rdered List

- Two elements are required to create an ordered list.
- The first is the ... (ordered list) element.
- so the second is the ... (list item)



Example(6)



introduction to computer

- 1. element1
- 2 element2
- 3. element3
- 4. element4
- element5

Solution

```
%<html>
<head>
 <title> My first html page </title>
</head>
 <body>
  introduction to computer
so 
  o element1 
  o element2 
  o element3 
  o element4 
  o element5
```

List Numbering Styles

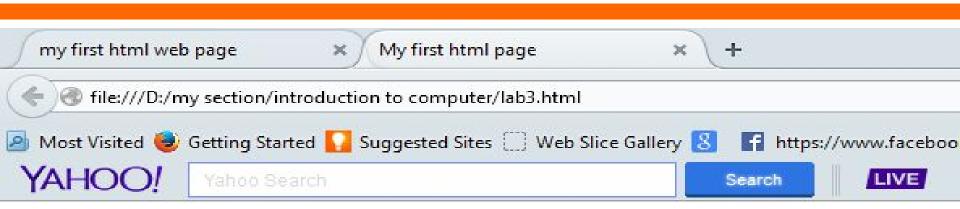
TYPE	Numbering Styles	
1	Arabic numbers	1,2,3,
а	Lower alpha	a, b, c,
Α	Upper alpha	A, B, C,
i	Lower roman	i, ii, iii,
I	Upper roman	I, II, III,

2.Unordered List

An unordered list works exactly the same way that an ordered list does, but it simply uses the ...
(unordered list) element instead of the ordered list element.



Example(7)



introduction to computer

- element 1
- element 2
- element 3
- element 4
- element 1
- o element 2
- o element 3
- o element 4

Solution

- <html>
- >> <head>
- <title> My first html page </title>
- </head>
- introduction to computer
- - li>element 1

 - li>element 4

- - li>element 1
 - o element 2
 - li>element 3
 - o element 4
- </body>
- %

3. Nesting Lists

- you can nest lists by inserting a UL, OL, etc., inside a list item (LI).
- Example
- < <UL TYPE = "square">
 - List item ...
 - List item ...
 - <OL TYPE="i" START="3">
 - List item ...
 - </0L>
 - o
- <> List item ...
-

- List item ...
- List item ...
 - iii. List item ...
 - iv. List item ...
 - v. List item ...
 - vi. List item ...
 - vii. List item ...
- List item ...

Tables in HTML

№ Why tables ?????

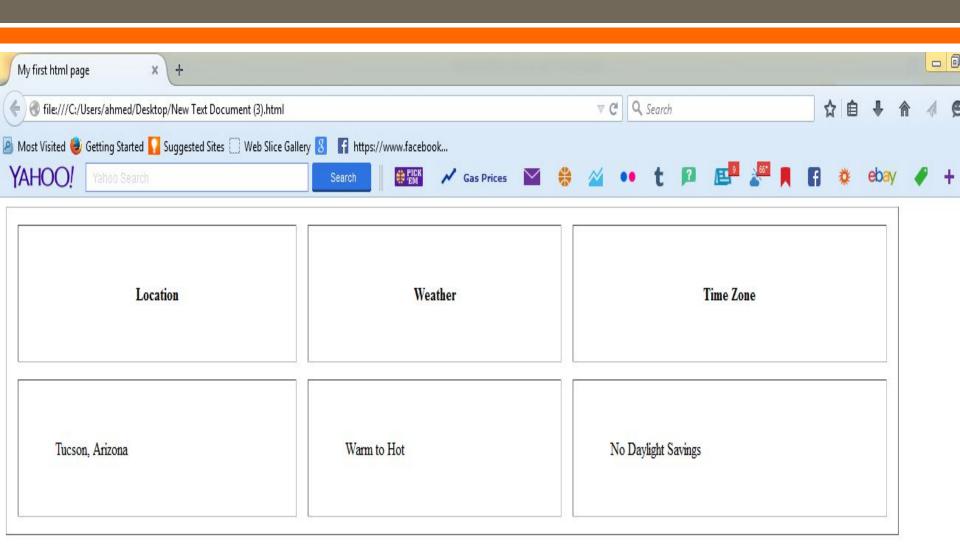
- Display the names of students and their data.
- Organize the web page.
- ™ The tag defines an HTML table.
- An HTML table consists of the element and one or more , , and elements.
- The element defines a table row, the element defines a table header, and the element defines a table cell.

Tables Attributes

™ Tables attributes:

- Width
- Height
- o Align
- Border
- Cell spacing :the distance between the cells.
- Cell padding: the distance between cell and its content.

Example(8)



Solution

```
<html>
                              <head>
                                 Tucson, Arizona
                            80
  <title> My first html page
                                 Warm to Hot
                            80
  </title>
                                 No Daylight
                            80
                              Savings
  </head>
  <BODY>
                                80
  <table width="90%" border="1"
  cellspacing="15" cellpadding="50"
                              </BODY>
   80
                            Location
80
     Weather
80
     Time Zone
80
   80
80
80
```

Table Cells Attributes

- 1. Column span attribute:
 - o E.g: Warm to Hot

Location	Weather	Time Zone
Tucson, Arizona	Warm to Hot	

- 2. Row span attribute:
 - E.g: Tucson,Arizona

Location	Weather	Time Zone
Tucson, Arizona	Warm to Hot	Warm to Hot
Tucson, Arizona	Warm to Hot	Warm to Hot

Links in HTML

- Standard links are generated using the anchor element <a>....
- The hypertext reference attribute (href) is used to denote the link address.
- Text content within the opening and closing tags will appear as linked text.

Example(9)



introduction to computer course

open google web site

Solution

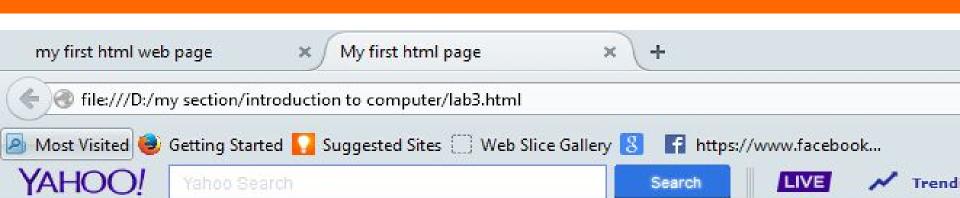
```
% <html>
<head>
   o <title> My first html page </title>
% </head>
   <BODY BGCOLOR="#FFFFFF" TEXT="#FF0000" >
   o introduction to computer course
   <a href="http://www.google.com"> open Google web site </a>
```

Image Element

- The tag defines an image in an HTML page.
- The tag has two required attributes: src and alt.
 - E.g:
- Note: Images are not technically inserted into an HTML page, images are linked to HTML pages. The tag creates a holding space for the referenced image.
- Tip: To link an image to another document, simply nest the tag inside <a> tags.

```
    E.g:
    <a href="deser.html">
    <img src="Desert.jpg" width="250" height="188" alt="Desert image" />
    </a>
</a>
```

Example(10)



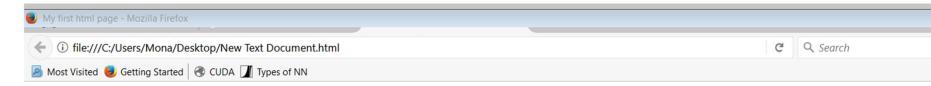


```
<html>
<head>
   <title> My first html page </title>
</head>
<BODY>
   <a href="desert.html">
   <img src="Desert.jpg" width="250" height="188" alt="Desert</pre>
   image" />
   </a>
</BODY>
</HTML>
```

Document Division

- The <div> tag defines a division or a section in an HTML document.
- The <div> tag is often used to group block-elements to format them with styles.
- o The div element is very often used with CSS to layout a web page.
- o Browsers usually place a line break before and after the div element.

Hands on



Introduction to computers

Week	Content	
1	Introduction to computers	
2	Microsoft office	
3	Microsoft excel sheet	

For course Materials follow this Link

Solution

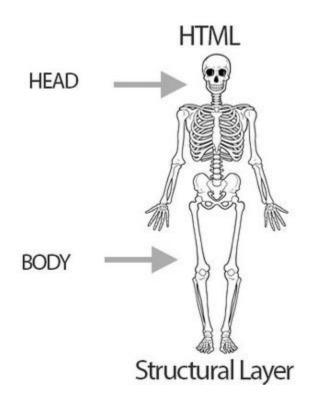
```
<!DOCTYPE html>
80
  <html>
80
  <head>
  <title> My first html page </title>
  </head>
  <BODY >
80
  <h1 align="center"> Introduction to computers
  </h1>
  80
       Week
80
       Content
       >
       1
80
       Introduction to computers
80
       80
       80
       2
80
       Microsoft office
ଉ
       80
       >
80
       3
       Microsoft excel sheet
80
       80
```

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- For course Materials follow this Link
- </BODY>

2. Cascading style sheets (CSS)

HTML V.s. CSS





What does CSS mean?

- **Solution** CSS stands for Cascading Style Sheets
- A CSS file allows you to separate your web sites HTML content from its style.
- Styles define how to display HTML elements.
- MTML file is used to arrange the contents of the document.
- But all of the presentation (fonts, colors, background, borders, text formatting, link effects & so on...) are accomplished within a CSS.
- so Comments are ignored by browsers.
- CSS saves a lot of work. It can control the layout of multiple web pages all at once
- ∞ CSS comment begins with "/*", and ends with "*/".

Linking CSS to a web document

Ways to link CSS to a web document:

- 1. External style sheet: With an external style sheet, you can change the look of an entire website by changing just one file!.
- 2. <u>Internal style sheet.</u>: An internal style sheet may be used if one single page has a unique style.
- 3. <u>Inline style sheet.</u> An inline style may be used to apply a unique style for a single element. To use inline styles, add the style attribute to the relevant element. The style attribute can contain any CSS property.

Linking CSS to a web document

1.External style sheet:

- You can link to the file externally by **including a reference to the external style sheet file inside the link> element** of every
 HTML document.
- 50 The 11 The 12 The 13 The 14 The 15 The 16 The 17 The 18 The

Example

```
<head>
k rel="stylesheet" type="text/css" href="mystyle.css">
</head>
```

Linking CSS to a web document (cont.)

Html file

```
<html>
<head>
<title> My first html page </title>
k rel="stylesheet"
type="text/css" href = "style.css"/>
</head>
<BODY>
<h1> introduction to HTML </h1>
</BODY>
</HTML>
```

CSS file

```
h1,h2,h3{
color :red;
background-color
:black;
}
```

Linking CSS to a web document (cont.)

2.Internal style sheet

You can define internal styles in the head section of an HTML page, by using the <style> tag

```
<head>
<style>
Css contents

</style>
</head>
```

Linking CSS to a web document (cont.)

```
<html>
<head>
<title> My first html page </title>
<style type="text/css">
h1,h2,h3{
                                            My first html page
color:blue;
                                                                                               ♥ C Q Search
background-color:black;
                                            🕙 file:///D:/my section/web development diploma/week 2/page1.html
                                                                                                                    公自↓
                                          🔊 Most Visited 🔮 Getting Started 🚺 Suggested Sites 🗍 Web Slice Gallery  📅 https://www.facebook...
</style>
                                                                             🚟 🖊 Trending Now 💟 👙 🏄 🐽 🏌 🔞 📳 🚜 🖪 😭 🌣 eb3y 🖸 🕂
                                           YAHOO! Yahoo Search
</head>
<BODY>
<h1 align="center"> introduction to HTML </h1>
</BODY>
```

</HTML>

Linking CSS to a web document (cont.)

3.Inline style sheet

To use inline styles, add the style attribute to the relevant **element.** The style attribute can contain any CSS property.

Some red text



Some red text

CSS Syntax

```
Selector {property :value; property: value;....etc. }
» Ex:
   body {
   background: #eeeee;
   color: blue;
Multiple selectors with the same properties you can
  combine the selector.
   h1, h2, h3, h4, h5, h6 {
   background: #eeeeee;
   color: blue;
```

CSS Selectors

1. Element Selector:

o The Element Selector selects all elements of a specific type such as <body>, <h1>, <div>, <a> and it is written as

HTMLElement{property:value}

Ex:

Div {background:#eeeeee}

CSS Selectors (cont.)

2. ID Selector (#)

• The id selector is used to specify a style for a single, unique element.

```
<div id="container"></div>
#container{width: 70%; background: #ffffff;}
```

3. Class selector (.)

- The class selector is used to specify a style for a group of elements.
- Unlike the id selector, the class selector is most often used on several elements.
- o **EX**:

```
.greenboldtext{font-size: small;color: #008080;font-weight: bold;}
```

CSS Background Properties

Background Images

- You can set an image for the background of an element using the background-image property values : url
- Ex:

```
Body{background-image:url("image-path");}
```

Background Repeat

- You can set if an image set as a background of an element is to repeat across vertical or horizontal on the screen using the background-repeat property and the values are no-repeat, repeat, repeat-x, repeat-y
- Ex: Body{background-repeat:repeat-x;}

Background Attachment:

- If you are using an image as a background you can set whether the background scrolls with the page or is fixed when the user scrolls down and the page with the background-attachment property values are fixed or scroll.
- Ex: Body{background-attachment:fixed;}

CSS Background Properties

(cont.)

Background Color:

Body{background-color:black;}

Background Position

- You can position an image used for the background of an element using the background-position property and the values of this property are top left, top center, top right, center left, center center, center right, bottom left, bottom center, bottom right.
- o Ex:

Body{background-position:top left;}

CSS Lists Properties

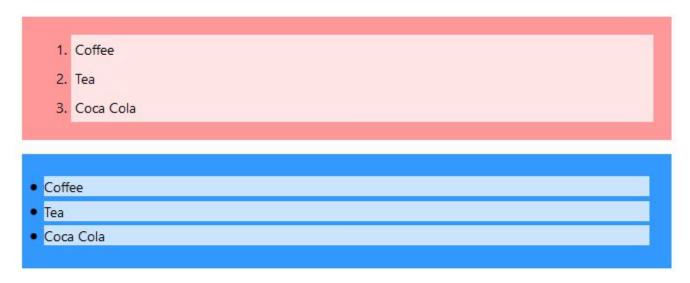
You can control the appearance of ordered and unordered lists in one declaration with the list-style property and values are image, position and type

□ Ex:

```
<html>
<head>
<style>
                                                 Coffee
    list-style: square inside url("sqpurple.gif");
                                                 Tea
</st<del>vle></del>
                                                 Coca Cola
</head>
<body>
<l
 Coffee
 Tea
 Coca Cola
</body>
</html>
```

Example(11)

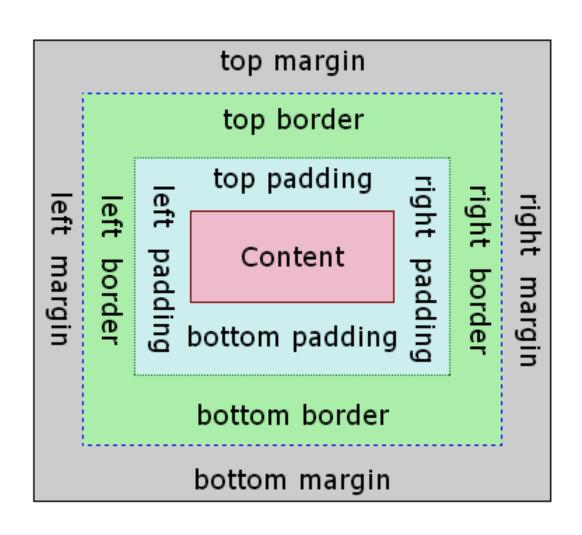
Styling Lists With Colors:



Solution

```
<html>
<head>
<style>
ol {
   background: #ff9999;
   padding: 20px;
}
ul {
   background: #3399ff;
   padding: 20px;
}
ol li {
                            <body>
   background: #ffe5e5;
   padding: 5px;
                            <h1>Styling Lists With Colors:</h1>
   margin-left: 35px;
}
                            Coffee
ul li {
                             Tea
   background: #cce5ff;
                             Coca Cola
   margin: 5px;
                            </style>
                            <u1>
</head>
                             Coffee
                             Tea
                             Coca Cola
                            </body>
                            </html>
```

CSS Box Modeling

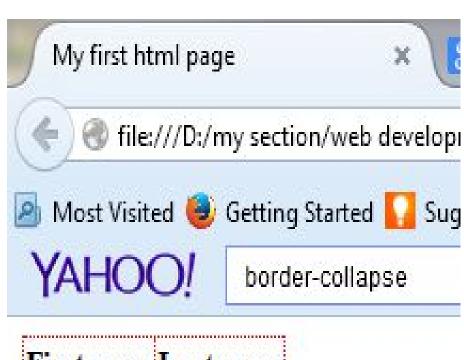


1- CSS Border

- The CSS border properties allow you to specify the style, size, and color of an element's border.
- **border-width**: Specifies the border width.
 - Example : border-width: 10px;
- **border-color:**
 - Example: border-color: #ffffff;
- **border -style**: Possible values: none, dotted, dashed, solid, double, groove, ridge, inset and outset.
 - Example: border-style: solid;
- **border-collapse**: The border-collapse property sets whether the table borders are collapsed into a single border or separated;
 - Example : border-collapse: collapse;

Example(12)

```
table,td,Th {
border-width : 1px;
border-color: red;
border-style: dotted;
border-collapse:
collapse;
}
```



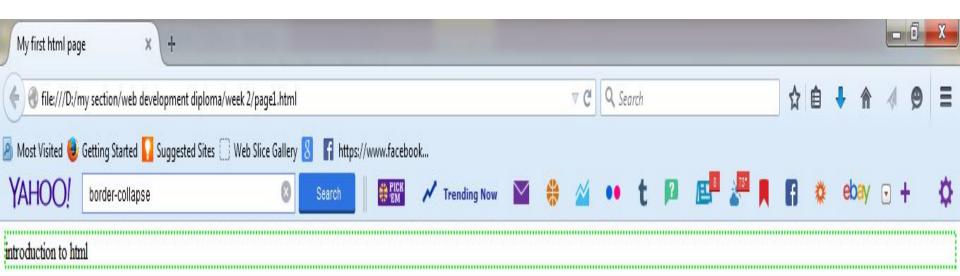
Firstname	Lastname
Peter	Griffin
Lois	Griffin

2- CSS Outline

- An outline is a line that is drawn around elements (outside the borders) to make the element "stand out".
- 50 The outline properties specify the style, color, and width of an outline.
- Example: p{outline:#00FF00 dotted;}
- An outline is similar to a border in that a line is drawn around the element
- Unlike borders, outlines won't allow us to set each edge to a different width, or set different colors and styles for each edge.
 - o outline-color
 p{outline-color:#ooffoo;}
 - o outline-style
 p{outline-style:dotted;}
 - o outline-width
 p{outline-width:10px;}

Example(13)

```
p{outline-color: #00ff00;
outline-style: dotted;
outline-width: 2px;
}
```



3- CSS Margin

- The CSS margin properties define the space around elements.
 - o margin-top
 - Example:p{margin-top:20px;}
 - o margin-right
 - Example: p{margin-right:20px;}
 - o margin-bottom
 - Example: p{margin-bottom:10px;}
 - o margin-left
 - Example: p{margin-left:10px;}

3- CSS Margin (cont.)

- All the margin properties can have the following values:
 - auto the browser calculates the margin
 - length specifies a margin in px, pt, cm, etc.
 - % specifies a margin in % of the width of the containing element
 - inherit specifies that the margin should be inherited from the parent element

Example(14)

This div element has a top margin of 100px, a right margin of 150px, a bottom margin of 100px, and a left margin of 80px.

The margin properties set the size of the white space outside the border.

Solution

```
<html>
<head>
<style>
div {
   border: 1px solid black;
   margin-top: 100px;
   margin-bottom: 100px;
   margin-right: 150px;
   margin-left: 80px;
   background-color: lightblue;
</style>
</head>
<body>
<h2>Using individual margin properties</h2>
<div>This div element has a top margin of 100px, a right margin of 150px, a bottom margin of
100px, and a left margin of 80px.</div>
</body>
</html>
```

4- CSS Padding

- The CSS padding properties define the space between the element border and the element content.
 - padding-top
 - Example: p{padding-top:30px;}
 - padding-right
 - Example: p{padding-right:20px;}
 - padding-bottom
 - Example: p{padding-bottom:30px;}
 - o padding-left.
 - Example: p{padding-left:30px;}

Example(15)

50 The padding clears an area around the content (inside the border) of an element.

This div element has a top padding of 50px, a right padding of 30px, a bottom padding of 50px, and a left padding of 80px.

```
<html>
<head>
<style>
div {
    border: 1px solid black;
    background-color: lightblue;
    padding-top: 50px;
    padding-right: 30px;
    padding-bottom: 50px;
    padding-left: 80px;
}
</style>
</head>
```

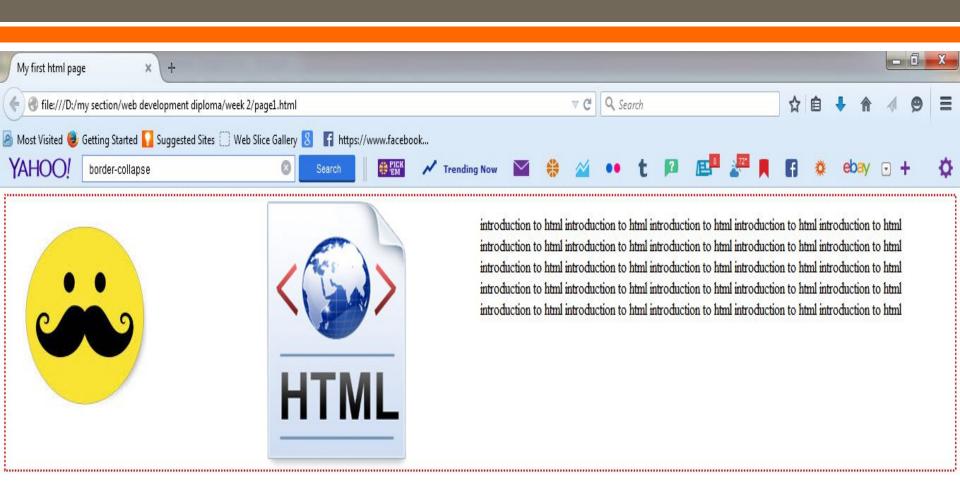
CSS floating

- The float property changes <u>how text and or images</u> within an element are displayed and it has different values like:
 - left makes the element generate a block box that is floated to the left
 - right makes the element generate a block box that is floated to the right
 - o none makes the element generate a box that is not floated
 - The following example specifies that an image should float to the

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Phasellus imperdiet, nulla et dictum interdum, nisi lorem egestas odio, vitae scelerisque enim ligula venenatis dolor. Maecenas nisl est, ultrices nec conque eget, auctor vitae massa. Fusce luctus vestibulum augue ut aliquet. Mauris ante ligula, facilisis sed ornare eu, lobortis in odio. Praesent convallis urna a lacus interdum ut hendrerit risus conque. Nunc sagittis dictum nisi, sed ullamcorper ipsum dignissim ac. In at libero sed nunc venenatis imperdiet sed ornare turpis. Donec vitae dui eget tellus gravida venenatis. Integer fringilla conque eros non fermentum. Sed dapibus pulvinar nibh tempor porta. Cras ac leo purus. Mauris quis diam velit.



Hands on



```
<html>
<head>
<title> My first html page </title>
k rel="stylesheet" type="text/css" href="style.css">
</head>
<BODY>
<div class="container">
<div class="div1">
 introduction to html <br/> introduction to html introduction to html introduction to html <br/> introduction to html introduction to html introduction to html <br/> introduction to html introduc
 introduction to html introduction to html
 introduction to html introduction to html introduction to html introduction to html introduction to html <br/>
</div>
<div class="div2">
<img src="img/index.jpg"/>
</div>
<div class="div3">
<img src="img/Picture1.png"/>
</div>
</div>
</BODY>
```

</HTML>

```
.div1{
width:50%;
float :right;
.div2{
width:25%;
float :left;
.div3{
width:25%;
float :left;
.container{
width: 100%;
outline-width: 2px;
outline-color: red;
outline-style : dotted;
```

0r

```
<html>
<head>
<title> My first html page </title>
<link rel="stylesheet" type="text/css" href="style.css">
</head>
<BODY>
<div>
 introduction to html introduction to html
introduction to html introduction to html introduction to html
<br>
introduction to html introduction to html introduction to html
introduction to html introduction to html <br/> <br/> 
introduction to html introduction to html introduction to html
introduction to html introduction to html <br/> <br/>br>
introduction to html introduction to html introduction to html
introduction to html introduction to html <br/> <br/>br>
introduction to html introduction to html introduction to html
introduction to html introduction to html <br/> <br/> 
<img class="div2" src="img/index.jpg"/>
<img class="div3" src="img/Picture1.png"/>
</div>
</BODY>
</HTML>
```

```
.div1{
width:50%;
float:right;
}
.div2{
width:25%;
float:left;
}
.div3{
width:25%;
float:left;
}
```

Assignment

Stanford Performing Arts

Autumn 2012 Edition

Bing Concert Hall



The Bing Concert Hall at Stanford will play a vital role on campus and in the local community. The hall's exceptional acoustics and state-of-the-art technical capabilities will showcase the world's finest performers.

The hall is scheduled to open

early in 2013. The concert hall will have 844 seats in an intimate vineyard-style configuration, with terraced sections wrapping all the way around the stage.

Calendar

Harmony for Humanity: Daniel Pearl World Music Concert

Sundays with the St. Lawrence String Quartet

Merce Cunningham Dance Company

Juilliard String Quartet

Thank You!