

91.113 Exploring the Internet, Fall 2011

Lecture 12. A Very Brief Introduction to HTML and XHTML



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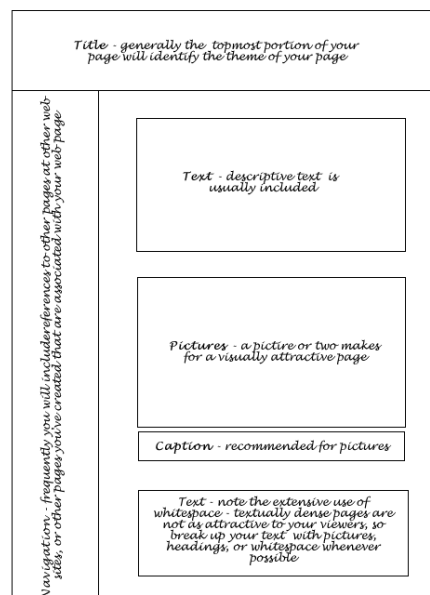
Taking Charge

- Anyone with access to the Internet can post a Web page.
- You *can* create a Web page with just a text editor.
- There are Web page construction tools available that allow you to create pages without understanding the underlying machinery.

Planning Your Web Page

- Think about the theme or purpose of your Web page.
- Think about what you want to place on your page, and the source of the material you will use.
- Ensure that your content is consistent with your theme.
- Then consider the *organization* of this content.

- Create a *storyboard*.
- The storyboard shows the layout of the material you plan to place on your Web page.



- **Basic Elements**

- Descriptive title
- Include your name and contact info (e-mail)
- Show the creation/modification date
- Use picture to highlight and emphasize the purpose of the page.
- Provide navigational content if multiple pages are used.

- **Design & Organization Recommendations**

- Put the most interesting/important info at the top of the page.
- Keep the image files small and few.
- Avoid excessive use of embedded multimedia content.
- Use browser-safe colors. Non-standard colors may appear differently on other systems.

- Design & Organization Recommendations
 - Use the default fonts. Specialty fonts may not be installed on the viewer's computer - so an alternate font will be used, potentially affecting the impact of your page.
 - Use only a few fonts. The display may become too "busy".
 - Preview/test your page. Nothing is more frustrating than a Web page that is incomplete because the author failed to fix display issues

Introduction

- You all know how to use Google sites to create a website
- There are other **WYSIWYG** (**What You See Is What You Get**) Web page editor tools, such as Nvu, or KompoZer.
- So, **why do we still learn HTML?**

- **It's helpful to delve deeper and see the underlying structure of a Web page.**
- Although those tools are mostly free, **they all have limitations**
- A thorough knowledge of Web page structure and its implementation allows the user to add many new features and perform simple fixes.

- Nvu lacks tools to insert many cool Web page features.
- But it's not that hard to insert them directly in the code if you know HTML - **HyperText Markup Language**.
- The Web page description language now used will eventually be supplanted by eXtensible markup language (XML) and cascading style sheets (CSS).

- XHTML (Extensible HyperText Markup Language)
 - markup language for creating web pages
- Based on HTML (HyperText Markup Language)
 - legacy technology of the World Wide Web Consortium (W3C)
- XHTML 1.0
 - Allows only a document's content and structure to appear in a valid XHTML document, and not its formatting
 - Formatting is specified with Cascading Style Sheets

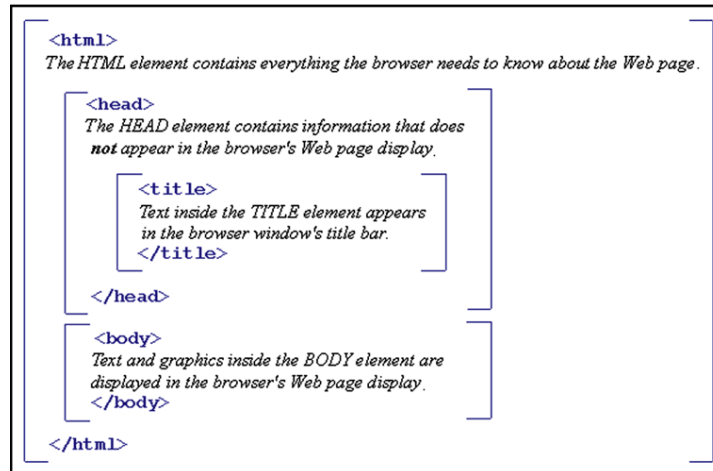
HTML and XHTML

- HyperText Markup Language is a type of *page description language*.
- An HTML file is a simple ASCII text file with "markup language" inserted into it.
- The "markups" provide information to the browser regarding how the associated content should be displayed.
- The "markups" are formally known as *elements*.

- There are four basic elements that *should* be included in every *displayable* Web page:
 - html
 - head
 - title
 - body

- There are 2 general types of HTML *elements*:
 - container
 - empty
- Elements are formed using *two types of tags*:
 - Start tag
 - End tag
- All tags are formed using a pair of left and right angle brackets and the forward slash:
 <this is a start tag>
 This is the content
 </this is an end tag>
- Container elements use both start and end tags.
- Empty elements use only the start tag.
- The 4 elements define basic Web page layout:

HTML and XHTML



Your First Web Page

- Create a new folder and name it “webpage”.
- Go to Start>Programs>Accessories>notepad
- Type in the following:

```

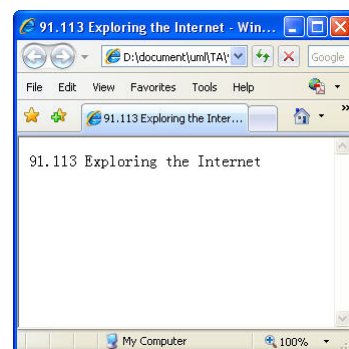
<html>
<head>
  <title>
    91.113 Exploring the Internet
  </title>
</head>
<body>
  <p>
    91.113 Exploring the Internet
  </p>
</body>
</html>

```

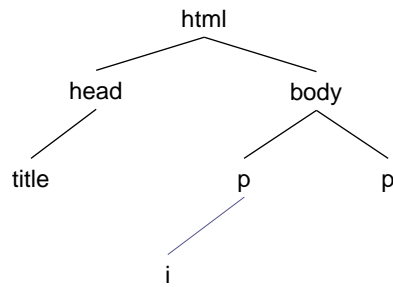

- From notepad,
 - go to “File>Save As”,
 - follow the folder hierarchy to the folder “webpage”,
 - **pick “All Files” in “Save as Type,”**
 - and enter “hello.html” in the “File Name” field
 - This should result in a file in ~\webpage\hello.html.
- From My Computer,
 - Go to folder webpage, and double click on hello.html
 - This should bring up a web browser with “91.113 Exploring the Internet” (this is your 1st web page !)

```
<html>
<head>
  <title>
    91.113 Exploring the Internet
  </title>
</head>
<body>
  <p>
    91.113 Exploring the Internet
  </p>
</body>
</html>
```

See what it
looks like:



- Regard it as a **tree**



```

<html>
<head>
  <title>
    91.113 Exploring the Internet
  </title>
</head>
<body>
  <p>
    91.113 Exploring the <i>Internet</i>
  </p>
  <p>
    Hello!
  </p>
</body>
</html>

```

- All *viewable* Web pages have this basic structure.
- Note that relationship between *start* and *end* tags - they're identical except for the forward slash character in the end tag.
- The indentation shown is not required, but it helps to distinguish one element from another.
- Text placed *between* the start and tags of an element are the *contents*, hence the name *container element*.
- Start tags *may* include *attributes*, to provide further details regarding the display of the element.
- End tags *never* have attributes.

- General form of a START tag:
`<TAG-NAME ATTRIBUTE1="value1"
ATTRIBUTE2="value2" ...
ATTRIBUTEn="valuen">`
- General form of an END tag:
`</TAG-NAME>`
- Put no characters (like a space or return character) between an attribute, the equal sign, and its value.
- A start tag can be spread across more than one line if desired, but don't split an attribute from its value.
- Each attribute/value pair must be separated by at least one space or return character.
- Attribute values should be quoted unless it's a *single* numerical value. (Some attributes are assigned several numbers as their value).

- Attributes always have *values*.

For example:

```
<body style="color: rgb(0,0,0);" alink="#000099"  
link="#000099" vlink="#990099">
```

- This body element has 4 attributes that describe the text color (style element), active link text color (alink), link text color (link), and visited link text color (vlink).

```

1 <?xml version = "1.0" encoding = "utf-8"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 4.1: main.html -->
6 <!-- First XHTML example. -->
7 <html xmlns = "http://www.w3.org/1999/xhtml">
8   <head>
9     <title>Welcome</title>
10  </head>
11
12  <body>
13    <p>Welcome to XHTML!</p>
14  </body>
15 </html >

```

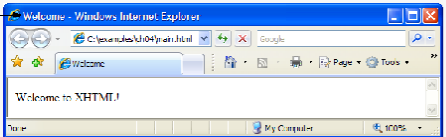
XHTML comments, not interpreted by the browser

Creates a head element

Creates a title element, which contains the text Welcome

Creates a p element within the body, which displays welcome text

Title bar shows contents of title element



First XHTML example.

HTML and XHTML

- HTML is *case insensitive*.
- XHTML is *case sensitive*.
- **<P>**Hello World**</P>** is *correct* in *HTML*
- **<P>**Hello World**</P>** is *wrong* in *XHTML*
 - Correction: **<p>**Hello World**</p>**

- Use the browser “View - Page Source” selection to see the HTML (text) view of a Web page.

```

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
<html>
<head>
  <meta content="text/html; charset=ISO-8859-1"
http-equiv="content-type">
  <title>All About Apples</title>
  <meta content="Richard L. Kopec" name="author">
</head>
<body style="color: rgb(0, 0, 0);" alink="#000099" link="#000099"
vlink="#990099">
<h1 style="text-align: center;"><a name="top"></a>All About Apples</h1>
<big>Apples </big>are one of nature's most perfect foods.<br> Apples
contain <span style="text-decoration: underline;">calcium </span>and <span
style="text-decoration: underline;">Vitamin A</span> with a <span
style="text-decoration: underline;">high fiber content</span>, <span
style="text-decoration: underline;">no sodium</span> (salt) and <span
style="font-weight: bold;">few calories</span>.<br> The <span
style="font-style: italic;">phytochemicals </span>found primarily in
the skin
(which accounts for the <span style="color: rgb(255, 0, 0);"><span
style="font-weight: bold;">red</span> </span>color common to apples)
have been shown to
have <span style="text-decoration: underline;">cancer-fighting
properties</span> as well.<br>
<br>
<div style="text-align: center;"><br>
</div>
Common apple varieties.<br> Shown in the picture above is a picture
of the three most common varieties of apples, the green Granny Smith,
the red Delicious, and the yellow Golden Delicious apple, along with 4
Gala apples, two each on the left and the right with the mottled
red/yellow skin.<br>
<br>
There are many varieties of apples in colors ranging from green to yellow
to red, but the most common varieties are <span
style="background-color: rgb(255, 102, 102);">Delicious</span> (<small><span
style="color: rgb(255, 0, 0); font-weight: bold;">red</span></small>),
<span style="background-color: rgb(255, 255, 153);">Golden
Delicious</span> (<small style="font-weight: bold;"><span
style="color: rgb(255, 204, 0);">yellow</span></small>), and <span

```

- The head element contains the title element and other elements that provide information about the page but do not affect the display of the page.
- The body element contains all the viewable content.

HTML Tags

- Regions of text
 - `<div></div>`
 - `<p></p>`
 - All text placed between the `<p>` and `</p>` tags forms one paragraph
 - ``

- Specific Attributes
 - Horizontal lines - an *empty* element:
`<hr style =“width: 100%; height: 2px; color: rgb(0,0,0)”>`
 - `
` --- line break
 - `<i> </i>` --- italicize
 - `` or `` -- bold
 - `<u></u>` --- underline
 - `` and `` -- super or subscript
 - `<big></big>` and `<small></small>` --- font size
 - `<body style=“background-color:lavender”>`

- Style=“text-align:right”
- Style=“font-family:Arial”
 - Basic font types
 - Sans-serif: Plain --- arial and helvetica
 - Serif: embellishments called serifs at tips of letters
 --- times and times new roman
 - Monospaced: characters with equal widths ---
 courier and courier new
 - From a list, the first available font will be used
 - “arial, helvetica, sans-serif”
- Style=“font-size:12pt”
- Style=“font_weight:bold”
- Style=“color:blue”

Headings

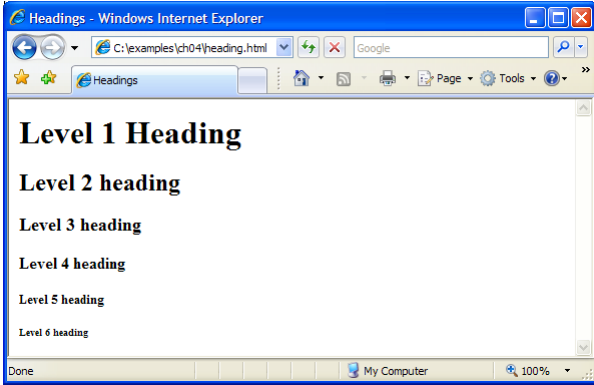
- XHTML provides six headings (h1 through h6) for specifying the relative importance of information
 - Heading element h1 is considered the most significant heading and is rendered in the largest font
 - Each successive heading element (i.e., h2, h3, etc.) is rendered in a progressively smaller font

- The text size used to display each heading element can vary significantly between browsers. In CSS, we discuss how to control the text size and other text properties.
- Placing a heading at the top of every XHTML page helps viewers understand the purpose of each page.
- Use larger headings to emphasize more important sections of a web page.


```
1 <?xml version = "1.0" encoding = "utf-8"?>
2 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
3   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
4
5 <!-- Fig. 4.2: heading.html -->
6 <!-- Heading elements h1 through h6. -->
7 <html xmlns = "http://www.w3.org/1999/xhtml">
8   <head>
9     <title>Headings</title>
10  </head>
11
12  <body>
13    <h1>Level 1 Heading</h1>
14    <h2>Level 2 heading</h2>
15    <h3>Level 3 heading</h3>
16    <h4>Level 4 heading</h4>
17    <h5>Level 5 heading</h5>
18    <h6>Level 6 heading</h6>
19  </body>
20 </html >
```

Creates six headings, each with decreasing significance

Heading elements **h1** through **h6**.



Further Reading

- Wikipedia's explanation of HTML:
 - <http://en.wikipedia.org/wiki/HTML>
- W3schools.com XHTML Tutorial
 - <http://www.w3schools.com/xhtml/>
- W3schools.com CSS Tutorial
 - <http://www.w3schools.com/css/default.asp>
- W3schools.com JavaScript Tutorial
 - <http://www.w3schools.com/js/default.asp>
- HTML Color Codes:
 - <http://www.computerhope.com/htmlcolor.htm>
 - <http://html-color-codes.info/>
- HTML Tag Quick Reference Guide
 - <http://www.devx.com/projectcool/Article/19816>