

# HTML (Hypertext Markup Language)

ITF Lesson 28

# History

- 1980 – Tim Berners-Lee
  - Contractor for CERN
  - Created a prototype so researchers could share documents
- 1989 – proposed an Internet-based hypertext system
- Late 1990 – specified HTML and wrote the browser and server software

# HTML

- Standard Language used to create Web pages
- Written using tags enclosed in angle brackets (like <html>)
- Used in pairs like <h1> to start and </h1> to end
- Web browsers purpose is to read HTML documents and output them in a form you recognize
- Tags are used to interpret the content
- It is a markup language NOT a programming language

# HTML form building block of all websites

- Allows images and objects to be embedded
- Can be used to create interactive forms
- Creates structure to forms
  - Headings
  - Paragraphs
  - List
  - Links
  - Quote
  - Can embed scripts written in programming languages

# Creating and Understanding HTML code

- Create in text-editor programs such as Notepad
- Document must be saved with .htm or html file extension. **Preference .htm**
- Example:
  - Save file as intro.htm

\*\*In Notepad, before you save the HTML document, you must change the **Save as type:** drop-down list box from **Text documents (\*.txt)** to **All Files**.

- HTML tags are **NOT** case-sensitive, meaning that you do not have to type all HTML tags in one specific case, such as uppercase or lowercase.
- It is recommended that you type all HTML tags in uppercase letters to differentiate information in code development.

# Elements

- HTML tags are made up of opening and closing angle brackets (<>) with text that represents an element of HTML between them.
- In order for the Internet to identify a document as an HTML document, the Web designer MUST type the following tag first at the top of the document screen: **<HTML>**

# Opening and Closing

- Tags are characterized as opening and closing. The symbol used to differentiate a closing tag from an opening tag is the forward slash (/).
- The forward slash goes in front of the text within the angle brackets. The closing tag for the `<HTML>` tag is `</HTML>`.



# Examples of HTML Tags

- As previously stated, the <HTML> tag should be typed first in creating a Web document.
- Here is a list of commonly-used HTML tags.
- Their purpose in creating HTML code will be explained on the next **2** slides.

<HEAD>	<OL>	<H1>
<TITLE>	<UL>	<H2>
<BODY>	<LI>	<H3>
<P>	<FONT>	<H4>
 	<EM>	<H5>
<CENTER>	<STRONG>	<H6>
<MARQUEE>	<A>	<IMG>

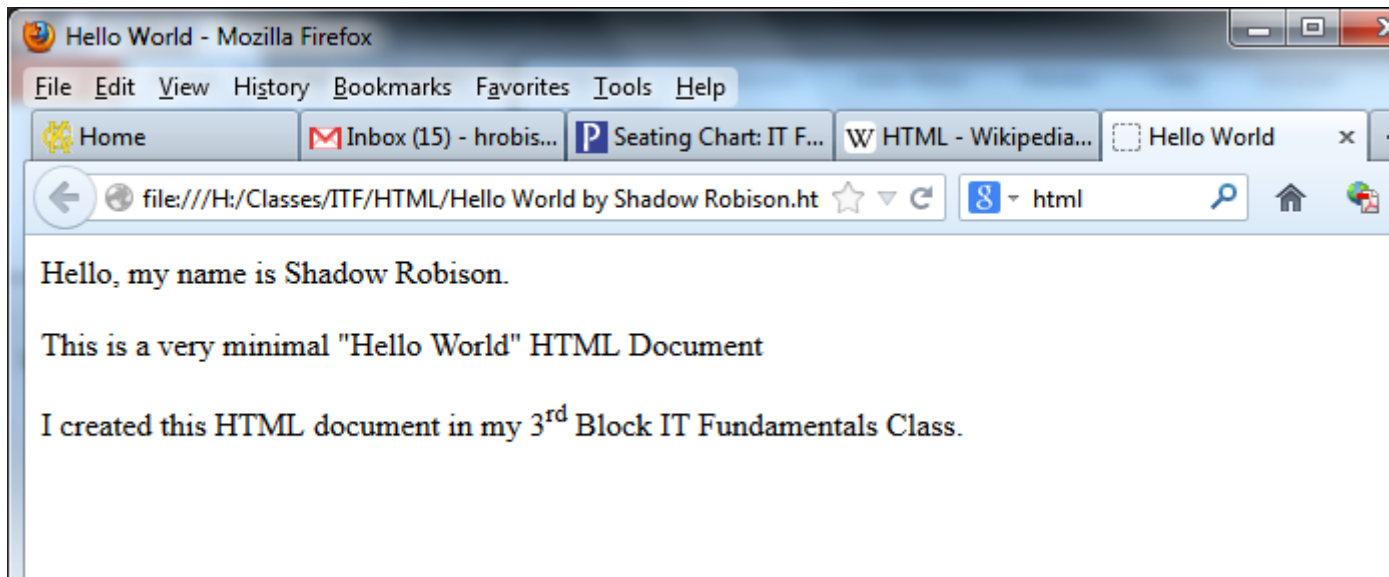
# Description of HTML Tags

- The **<HEAD>** tag refers to the section that provides descriptive information, such as the title.
- The **<TITLE>** tag refers to the section where the title of the HTML document is entered. After the title of the HTML document is typed, the title section must be closed with the **</TITLE>** tag. After the title section is closed, the head section must be closed with the **</HEAD>** tag
- The **<BODY>** tag refers to the bulk of the page, where the body of the document is noted. The tags that will be explained next are usually located within the BODY section of the HTML document.

Tag	Description	Tag	Description
<P>	Paragraph (put a double space between text on page)	<EM>... </EM>	Emphasis (emphasized text, usually displayed as <i>italic</i> )
 	Line break (provides a single carriage return)	<STRONG>...</STRONG>	Strongly emphasized text (usually displayed as bold)
<CENTER>... </CENTER>	Centers text and images	<A>...</A>	Anchor tag (used to link text and graphics)
<OL>...</OL>	Ordered list (list with numbered items)	<HR>	Horizontal Rule (provides a horizontal line)
<UL>...</UL>	Unordered list (list with bulleted items)	<FONT>... </FONT>	Font tag (allows you to change the size, color, or style of text)
<LI>	List item (indicates an item on the list)	<MARQUEE>... </MARQUEE>	scrolling text (IE only)

# HTML Activity #1 Hello World

Work together as a class



# HTML Heading Tags

- Headings are displayed using a larger size of the default font. There are six levels of heading, each using a slightly smaller font size.
- Heading 1, or **<H1>**, is the largest heading tag, while Heading 6, or **<H6>**, is the smallest heading tag. As the heading number increases by **1**, such as **<H1>** to **<H2>**, the font size of text becomes smaller.

# HTML Heading Tags (Cont.)

Tag	Description
<code>&lt;H1&gt;...&lt;/H1&gt;</code>	Largest heading tag.
<code>&lt;H2&gt;...&lt;/H2&gt;</code>	Smaller than Heading 1, but larger than Headings 3, 4, 5, and 6.
<code>&lt;H3&gt;...&lt;/H3&gt;</code>	Smaller than Headings 1 and 2, but larger than Headings 4, 5, and 6.
<code>&lt;H4&gt;...&lt;/H4&gt;</code>	Smaller than Headings 1, 2, and 3, but larger than Headings 5 and 6.
<code>&lt;H5&gt;...&lt;/H5&gt;</code>	Smaller than Headings 1, 2, 3, and 4, but larger than Heading 6
<code>&lt;H6&gt;...&lt;/H6&gt;</code>	Smallest heading tag.

# Common HTML Mistakes/Errors

- As a beginner Web designer, mistakes and errors will occur. Such errors include:
  - Typing the HTML tag incorrectly. For example, you typed <HMTL> instead of <HTML>.
  - Accidentally deleting a bracket (<) or a (>).
  - Saving your HTML document file as a text document instead of following the steps on how to save an HTML document in Notepad or Textpad.
  - Forgetting to apply the forward slash (/) in an HTML tag to close a specific section of code.



# Important Web Terms

1. **Web page** – also called a Web document, is any page created in HTML that can be placed on the World Wide Web.
2. **Home page** – the main or primary Web page for a corporation, organization, or for an individual. The home page is the first page you see as you start up your Web browser.
3. **Welcome page** – a page designed especially for new visitors to a Web site.
4. **HTML page** – also called an HTML document, is any document created in HTML that can be displayed on the World Wide Web.
5. **Web site** – a collection of many interconnected Web pages organized by a specific company, organization, college, or university, government agency, or by an individual. Web sites are stored on Web servers. There may be many Web sites and thousands of HTML pages on each Web site.

# HTML Activity #2 Using Headings

Try on your own



Using Headings in HTML Code by Your Name - Mozilla Firefox

File Edit View History Bookmarks Fgvorites Tools Help

Home Inbox (15) - hr... Seating Chart... W HTML - Wikip... Hello World Using Hea... x +

file:///H:/Classes/ITF/Units/HTML Answers/Activity2.htm

# Creating HTML code

**Learning to create HTML tags can help you in many ways:**

- You will develop a deeper understanding of how HTML really works:**
- You will be able to troubleshoot Web pages when errors occur.**
- You will be able to view other pages and learn how certain effects are created.**
- You will understand how HTML has transformed the way we communicate on the Internet today.**

I created this HTML document in my 7th period IT Fundamentals class.

# List

- Unordered List – random list
- Ordered List – Numbered
- Bulleted

Tag	Description
<ol>	Defines an ordered list
<ul>	Defines an unordered list
<li>	Defines a list item
<dl>	Defines a description list
<dt>	Defines a term/name in a description list
<dd>	Defines a description of a term/name in a description list

# HTML Unordered List

- An unordered list starts with the `<ul>` tag. Each list item starts with the `<li>` tag.
- The list items are marked with bullets (typically small black circles).

```
<ul>  
<li>Coffee</li>  
<li>Milk</li>  
</ul>
```

How the HTML code above looks in a browser:

- Coffee
- Milk

# HTML Ordered List

- An ordered list starts with the `<ol>` tag. Each list item starts with the `<li>` tag.
- The list items are marked with numbers.

```
<ol>  
<li>Coffee</li>  
<li>Milk</li>  
</ol>
```

How the HTML code above looks in a browser:

1. Coffee
2. Milk

# HTML Description Lists

- A description list is a list of terms/names, with a description of each term/name.
- The <dl> tag defines a description list.
- The <dl> tag is used in conjunction with <dt> (defines terms/names) and <dd> (describes each term/name):

```
<dl>
  <dt>Coffee</dt>
  <dd>- black hot drink</dd>
  <dt>Milk</dt>
  <dd>- white cold drink</dd>
</dl>
```

How the HTML code above looks in a browser:

Coffee

- black hot drink

Milk

- white cold drink

# HTML Activity #3 Bulleted List & #4 Numbered List

Try on your own

**DO NOT type Morning routine #1**  
**tell me what is your routine**



# What are Attributes and Values?

- HTML tags can be enhanced by giving them attributes and values.
- Take the <BODY> tag, for example. You can add elements to the body tag that will dramatically change the look of your Web page.
- For example, to change the background color of your Web page, you can add the background attribute command and give the tag a color value.

- Look at the example below:

**<BODY BGCOLOR=YELLOW>**

- **BGCOLOR** is an attribute (characteristic) of the **<BODY>** tag, and **YELLOW** is the value given to the BGCOLOR attribute. When the HTML document is viewed in a Web browser, the background color of the document will be **yellow**.

- **Values** are entered after the equal sign, which is entered after the tag and attribute in a line of HTML code. They can be entered with or without quotation marks (“ ”) around them, depending on the value entered. Look at the color below:

```
<FONT FACE="arial,Helvetica,sans serif">
```

- The value **arial,Helvetica,sans serif** is the font face that will be applied to the text entered between the opening and closing <FONT> tags.

# Hexadecimal Color Values & Color Names

- Computers speak only in numbers.
- Values are expressed as numbers that the computer understands.
- Color values can be carefully controlled and changed to match virtually every color in the rainbow by using the hexadecimal values for certain colors.
- Hexadecimal digits operate on a base-16 number system rather than the base-10 number system we humans normally use.

- Hexadecimal numbers use the letters **A, B, C, D, E, and F** along with the numbers **0 to 9** to create their different digits.
- Look at the hexadecimal color setup table to the right:  
**ND** – Numeric Digit  
**HV** – Hexadecimal value

<b>ND</b>	<b>HV</b>
0	1
1	2
2	3
3	4
4	5
5	6
6	7
7	8
8	9
9	10

<b>ND</b>	<b>HV</b>
11	A
12	B
13	C
14	D
15	E
16	F

- Hexadecimal color values use the **RGB** color setup, where **R** stand for **red**, **G** stands for **green**, and **B** stands for **blue**. Look at the following color values expressed as numbers:

	<u>Red</u>	<u>Green</u>	<u>Blue</u>	
White	= # FF	FF	FF	= #FFFFFF
Black	= # 00	00	00	= #000000
Red	= # FF	00	00	= #FF0000
Green	= # 00	FF	00	= #00FF00
Blue	= # 00	00	FF	= #0000FF
Yellow	= # FF	FF	00	= #FFFF00

- To apply a hexadecimal color value to the background of a Web page, add the BGCOLOR attribute to the BODY tag and type the code below:

```
<BODY BGCOLOR = "0000FF">
```

This code applies the color **blue** to the background of the Web page.

- To apply a hexadecimal color value to specific text in the body of a Web page, apply the COLOR attribute to the FONT tag, type the text that you want changed by its color, and apply the closing </FONT> tag. Refer to the code below:

```
<FONT COLOR="00FF00">King George HS</FONT>
```

- This code applies the color **green** to the text "King George HS" in the body of the Web page.

# List of HTML Tags with Attributes

Tag	Attribute(s)	Tag	Attribute(s)
<BODY>	bgcolor, text, link, alink, vlink, background	<P>	align
<FONT>	color, face, size	<TABLE>	align, bgcolor, border, width
<FORM>	Action, name	<A>	href, target
<HR>	align, size, width	<INPUT>	name, size, type, value
<IMG>	alt, src	<MAP>	id, name



# Hyperlinks in HTML

- Web pages became popular because they could link easily to other pages, or to various sections inside a document. Hyperlinks are easy to use, but a little more difficult to understand at first.
- To use a hyperlink, you just click on the link. Links may be pictures or words that are underlined and appear in a different color.

- Hyperlinks are created with special tags called **anchor tags**. The tag has several parts. The opening and closing tags are called the anchor or link tags and look like this:

<A HREF="insert location of file" </A>

- Link or anchor tags are fairly useless unless you define a place to which you are linking. There are several ways to use link tags. You can:
  - Link to another spot within your own document.
  - Link to a URL or Web page anywhere on the WWW.
  - Link to another Web page on your own computer.

- Before learning how to use hyperlinks to jump from one page to another, you must know about **URLs**. URLs are **Uniform Resource Locators**. They allow a Web browser to pinpoint an exact file on the Web.
- When you enter a URL into your HTML Web page, you are identifying a path to a specific HTML file located somewhere on your computer or on the Web.

- **HTTP** stands for **HyperText Transfer Protocol**.
- A **protocol** is a communications system that is used to transfer data over networks. It is like a secret digital language that Web servers use to communicate with Web browsers.

- Check out the following Web address below:  
<http://www.myspace.com>
- The **http://** tells your network how to transfer or move the file you are requesting.
- The second part of the address ([www.myspace.com](http://www.myspace.com)) is the actual name of the server that hosts the Web page for which you are looking.
  - The .myspace part is the name of the company that maintains the Web server.
  - The .com part says this is a commercial or business site.

# Top-Level Domains

- Top-level domains are used to identify type of Web sites on the Internet

.com	Commercial or business
.org	Non-profit organization
.edu	College or university
.net	Network provider
.mil	Military organization
.gov	Government agency

- When creating your Web pages, consider these guidelines:

**R** = Responsibility

**E** = Everybody

**S** = Simplicity

**P** = Purpose

**E** = Ethical

**C** = Correct

**T** = Totally worth visiting



- **Responsibility**: Assume personal responsibility, and create only ethical & appropriate pages.
- **Everybody**: Try to create Web pages that everybody will enjoy, appreciate, and consider of value.
- **Simplicity**: Make your Web pages easy to navigate. Make information simple to find.

- **Ethical**: Make sure all the content on every Web page you post corresponds to your values and has a beneficial purpose.
- **Correct**: Make sure all the words on your page are spelled correctly, all the sentences are written correctly, and that all the hyperlinks work.
- **Totally worth visiting**: Try to create pages that others will think are totally worth someone's time to visit.

# HTML Activity #5 Colors & #6 Links

Try on your own

# Incorporating Graphics in

- The Web is full of pictures, sounds, and movies that add interest to Web pages. Generally, there are two kinds of pictures (called **graphics** or **images**) on the WWW.

# The Exciting Web (Cont.)

- Below are the different types of graphics/image files available on the World Wide Web:

<b>.gif</b>	Graphics Interchange Format
<b>.jpg or .jpeg</b>	Joint Photographic Expert Group
<b>.bmp</b>	Bitmap
<b>.png</b>	Portable Network Graphics

- The file extensions **.gif**, **.jpg**, and **.png** help tell your browser that these files are pictures, not **.html** text files, and require special handling.

# Downloading & Inserting Graphics

- The first type of graphics or image format, **.gif**, was originally created by CompServe to provide a compressed graphics format that could transfer easily over low-speed modems.
- The second commonly-used image format is **.jpg** or **.jpeg**. It is pronounced J-Peg by Webmasters in the know. This format adheres to an international set of graphics standards. JPEG graphics, like GIF pictures, are compact enough for Internet use.

# Downloading & Inserting Graphics (Cont.)

- The third type of image format, **.bmp**, is an image file format used to store bitmap digital images, especially on Microsoft Windows and OS/2 operating systems.
- The last used image format, **.png**, is a bitmap image format that employs lossless data compression.

# The <IMG> Tag & SRC Attribute

- IMG SRC is short for **IMaGe SourRCe**.
- The **<IMG>** tag is used to insert images into a Web page. This tag requires a closing **</IMG>** tag at the end of the HTML code.
- The **SRC** attribute is an attribute of the **<IMG>** tag that is used to define the location of the image file on your computer. Here is an example of how the **<IMG>** tag and SRC attribute work together:

```
<IMG SRC = “graphics/ITFund.jpg” >
```



# NET TIPS

- **A Common Error in the <IMG SRC> Tag**

One common error is misusing the <IMG SRC>. tag. Many people misuse this tag by transposing the **R** and the **C**, and they enter IMG SCR. If you forget the tag, just spell out the words “ImaGe” and “SouRCe” to get the letters in the correct order.

- **Inserting a Background**

To have a picture become your background, insert the **BACKGROUND** attribute in the <BODY> tag like this:

```
<BODY BACKGROUND="graphics/ITFund.jpg">
```

# Pictures of All Sizes

- Pictures can be altered in a variety of ways by changing a tag's values. Pictures can be used as wallpaper that cover the entire background of a Web page.
- You can also change the size of the picture by using the HEIGHT and WIDTH attributes.

# NET ETHICS: Picture Piracy

- One of the big problems on the Web is picture piracy. Since it is so easy to pull pictures off the Web, many people do so without permission. Many pictures are copyrighted; that is, someone owns them. To use them, you need to obtain permission or pay a fee to the artist.

# Pictures as Hyperlinks

- Use the same tag structure you used to create hypertext links, but use the IMG SRC tag to replace the words you normally enter. Check out the code below:

```
<P><A HREF="One.html">
```

```
<IMG SRC="graphics/ITFund.gif">
```

```
HEIGHT=50
```

```
WIDTH=50></A>
```

# Downloading Too Many Pictures

- It is considered impolite to download pictures to the school network that you don't intend to use. Graphics take up a great deal of space on a computer. Downloading hundreds and hundreds of pictures and not using them is a waste of network server drive space. Consider deleting any pictures you are not actually using.

# How Many lines of code?

- King George High School web page
  - Go to web page
  - Right click on web page
  - View Page Source
  - Scroll and look

# HTML Activity #7 Inserting Graphics

Try on your own

Final Project

My Favorites



