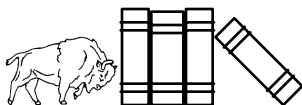


# ClassNotes

*A series for classroom learning.*



HTM 101 - Intro to HTML

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                      Computing and Information Technology  
                      Computing Center  
                      University at Buffalo

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## Introduction

### Objectives

The objective of this workshop is to present the basic fundamentals of creating a web page using the Hypertext Markup Language, HTML. Editing will be done on the Unix system using a simple Unix editor, Pico. Topics that will be covered include the World Wide Web, basic HTML and creation of two web pages available on the University's Unix servers.

### Prerequisites

Participants MUST have an active UB IT Name, access to their accounts to save and publish a homepage on the web, and must have familiarity with the web. Each participant must also be willing to work in the Unix editor Pico or be able to work independently in an editor of their choice.

### Examples

Online examples of the code discussed in this document are available online at the following URL:

**`http://wings.buffalo.edu/computing/workshops/htm101`**

## World Wide Web

The World Wide Web (WWW) is a network of computers around the world that store documents which can be viewed via a web browser from anywhere on the Internet. Web browsers, such as Netscape, Lynx and Internet Explorer, request web documents from the remote server using a protocol called HyperText Transfer Protocol (http).

### HTML

The language in which web documents are written is called HyperText Markup Language, HTML. This language consists of HTML tags that format the layout and appearance of the page's text and images. These tags do not appear when the page is viewed with a web browser.

### Web Addresses

Each file on the Internet has a unique address called a Uniform Resource Locator, URL. It is what is entered into the address field of web browsers to access a specified web page. The syntax of a URL takes the form (the individual components are explained in the table below):

**`protocol://remote_server_name/directory_path/filename`**

The URL for your home page will be:

**`http://www.buffalo.edu/~UB-IT-Name`**

Component	Description	Example
Protocol	The protocol or language in which the browser communicates with the remote server	<b><code>http://</code></b> <b><code>ftp://</code></b>
Server Name	Name or address of the server where the file resides	<b><code>wings.buffalo.edu</code></b> <b><code>www.buffalo.edu</code></b>
Directory Path	Path to a directory on the remote server	<b><code>~UB-IT-Name</code></b>
File Name	File name of the document	<b><code>index.html</code></b>
Location	A specific location within the document itself (Web Only!)	<b><code>index.html#intro</code></b>

## Home Page Setup

### Turning Your Home Page On/Off

By default your personal home page is not viewable on the web; to enable your web site you must access a web-based form that will turn it on. Open a web browser such as Internet Explorer or Netscape Navigator and go to the following web site:

**<http://wings.buffalo.edu/computing/ubfs/>**

Click on the “Turn on/off home page” link on the left-hand side of this web page. Enter your UB IT Name and password when prompted. Click OK.

On the new page that is displayed will be a message indicating whether your web page is enabled or disabled. If it is disabled, click on the button labeled “Turn Internet access ON.”

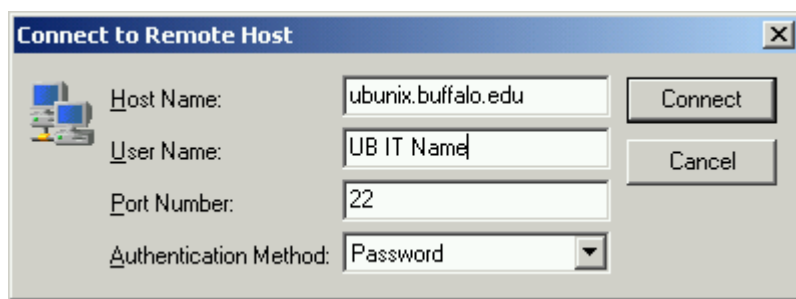
*Note: If the button is labeled “Turn Internet access OFF” then your web page is already enabled. Do not take further action.*

### Exercise 1 – Getting Ready to Work

1. Open up a web browser via the Start Menu.
2. To edit your page we will connect to UBUnix. We will use the ssh secure protocol that encrypts all information communicated between you and the remote machine, helping to protect you from intrusion.

Start -> Programs -> Internet Tools -> SSH Secure Shell -> Secure Shell Client

3. Click on the button in the upper left labeled “Quick Connect.”
4. Enter the information as displayed below (substituting your UB IT Name in the second field):



5. When finished entering information, click on the button labeled “Connect.”
6. If prompted to save a host key click “Yes.”
7. Enter your UB IT Password when prompted and press “OK.”

## HTML – The Language of the Web

### General Syntax

An HTML file contains all the text displayed when it is viewed by a web browser. Unlike a word processor document, you are unable to see how the page will look in a browser as you are editing it. Formatting of text and insertion of images into a web page is accomplished via insertion of HTML tags throughout a web document. All HTML tags consist of the descriptive name of the tag between the angled brackets, < and >, such as <HTML>. Most tags, though not all, need a corresponding tag with a slash preceding the tag’s descriptive name, such as </HTML>. For these tags the <descriptive name> is called an opening tag, and the respective tag </descriptive name> is called the closing tag. The tag will then modify anything between the opening and closing tags according to the behavior described by the tag.

### Exercise 2 – Viewing the Source Code of a Web Page

1. In your browser, open the URL:

```
http://wings.buffalo.edu/computing/workshops/htm101/index.html
```

2. View the source code by selecting the *View* menu and then *Source* or *Page Source*.

### Sections of an HTML Document

Each HTML file begins and ends with the `<HTML>` and `</HTML>` tags. Between these two tags are two sections, a header and a body. Information for the header goes between the `<HEAD>` and `</HEAD>` tags. This includes information that is useful for search engines such as author name and keywords. Methods to include this extra information will be discussed in the *Extra Topics* section. Most content contained within the header is not displayed on the screen by the web browser.

The title tags however, are an exception; text between the `<TITLE>` and `</TITLE>` tags, when placed in the header, will be displayed as the page's title in the title bar of the web browser's window.

The content of a page does not begin until one starts the body section with the `<BODY>` tag. There is only need for one set of `<BODY>` and `</BODY>` tags in an HTML document. After this point the content written in the file between the `<BODY>` and `</BODY>` tags shall be displayed by the web browser.

Tag (in order of appearance)	Meaning
<code>&lt;HTML&gt;</code>	Every HTML document begins with this tag
<code>&lt;HEAD&gt;</code>	Begins the section that contains header information
<code>&lt;TITLE&gt; ... &lt;/TITLE&gt;</code>	A brief, descriptive title should be contained between these tags
<code>&lt;/HEAD&gt;</code>	Closing tag to close the header section
<code>&lt;BODY&gt; ... &lt;/BODY&gt;</code>	The body section contains the content displayed by the web browser
<code>&lt;/HTML&gt;</code>	The last tag in all HTML documents, properly closing the file

## Your Home on the Web

### Creating Your Default Homepage

#### Exercise 3 – Creating Your Default Homepage

1. View your newly created web page in your browser by opening the following URL (substituting your UB IT Name at the end):

```
http://www.buffalo.edu/~UB-IT-Name
```

2. Your default homepage resides in a directory named `public_html` in your account. You must change from your home directory to that directory every time you login and wish to edit your web page. To change to that directory type:

```
cd public_html
```

3. We will start from scratch on a new file, rather than working from your existing web page. Thus we will rename your current default page (always `index.html`) and begin work on a new copy:

```
mv index.html index.html.old
pico index.html
```

## Editing Your Homepage

When connecting using ssh or telnet, your mouse will not be recognized and should not be used. The cursor can be moved using the arrow keys. To delete text, use the backspace or delete keys. To save a file without exiting Pico, use the key combination Ctrl-O, the Control key and the letter O at the same time. It is easiest to hit and hold Control and then press 'O'. To exit and save in Pico, use the key combination Ctrl-X.

### Exercise 4 – Editing Your Page for the First Time

1. In your Pico window, enter the following HTML segment. These tags consist of the bare minimum that will be needed in every web page you create:

```
<HTML>
<HEAD>
<TITLE>My Home Page</TITLE>
</HEAD>
<BODY>
Hi, this is my first home page on the web.
It may be small now but it will be growing.
Come back soon and see what's happening!
</BODY>
</HTML>
```

2. Save your changes! They will not be visible when you reopen the web page unless your changes are saved. To save, press the key combination Ctrl-O. To see the latest changes and version of the file, you will always need to click on the refresh or reload button on the top of your browser.

## HTML – Basic Formatting Commands

### Separating Text into Lines and Paragraphs

When you reload your web page in your web browser, you may notice that the text does not appear exactly as you typed it. Although you may have typed your text on separate lines, the browser does not skip a line until it has run out of horizontal space in the browser window. When a web browser interprets HTML files it ignores white spaces in documents other than a single space between words and lines. HTML does, however, provide several tags to explicitly separate text on the screen.

Tag	Meaning
 	Line break: forces text following the tag to begin on the next line
<P>	Paragraph separator; inserts a blank line after the tag
<HR>	Inserts a visible horizontal line on the next line

We will see these tags again later when we introduce ways to enhance and alter their effect on the content of the web page.

### Exercise 5 – Using Text Dividers

1. Add some <P>, <BR> and <HR> tags (noted in bold) to your file in Pico:

```
<HR>
Hi, this is my first home page on the web.<BR>
It may be small now but it will be growing.
<P>
Come back soon and see what's happening!
```

2. Save (Ctrl-O) the file in Pico and reload your page in your web browser.



## Typography – Text Font, Size, Style and Color

### Text Style

Just as in word processing programs such as Microsoft Word or Corel WordPerfect, you may wish to emphasize text using styles such as bold, italics and underlining. They can be produced using the following HTML tags:

Tag	Result
<B> ... </B>	<b>Bold</b>
<I> ... </I>	<i>Italics</i>
<U> ... </U>	<u>Underline</u>

### Font Face, Size and Color

These tags, however, do not change the font type (Times New Roman, Arial, etc) nor do they change the text size and color. To format these the <FONT> tag proves useful. Unlike previous tags, <FONT> will require the use of tag attributes that modify the behavior of the tag itself. Without attributes the font tag will do nothing.

<FONT> Attribute	Purpose and options
face	Changes the font of the affected text; options include the name of any font installed on the viewer's computer; it is not recommended that you use non-standard fonts as they will not display properly if the font is not installed. Multiple fonts can be specified separated by commas.
size	Changes the size of the affected text; options include absolute values in the range 1-7 (3 = 12pt) or relative values compared to the size of the text around it. (+/- 1 will raise/lower the text size by one point compared to the rest of the text.
color	Changes the color of the affected text; options include color names (red, orange, etc.) or hexadecimal values representing a color. Hex values are explained in detail in the section on <BODY> tag attributes.

To use an attribute(s) on any tag you simply add in the attribute and its value in quotes on the opening tag. The closing tag does not require similar attributes.

Ex:

```
<FONT> ... </FONT>
<FONT size="5"> ... </FONT>
<FONT size="5" color="red"> ... </FONT>
<FONT size="5" color="red" face="arial, verdana"> ... </FONT>
```

### Superscript – Subscript

With the use of the <SUP> or <SUB> tags you can make text superscript or subscript respectively.

Ex:

```
r<SUP>2</SUP>           produces r2
H<SUB>2</SUB>SO<SUB>4</SUB> produces H2SO4
```

### Text Headings

Heading tags can be used to provide titles for certain sections of a web page. They make the affected text a given size and insert a blank space before any more text. There is no need to use the <P> paragraph tag. HTML provides six size levels for headings. Each heading tag is represented by <H#>, where # is anything from 1-6, 1 giving the largest header size.

## Exercise 6 – Changing Your Text's Font, Size, Style and Color

1. In Pico edit your text to reflect the following changes.

```
<H1> Your Name </H1>

<FONT size="5" color="red">Hi</FONT>,
this is my <B>first</B> home page on the web.<BR>
It may be <FONT size="-1">small</FONT> now but it will be
<FONT size="+1">growing</FONT>.
<P>
<I>Come back soon</I> and see what's happening!
```

2. Save the file and reload in your web browser.

### Text Alignment

By default all text and images are aligned with the left margin, but there are many ways to alternatively align text or images in an HTML document. The simplest is through the use of the <CENTER> tag. When using this tag all text, images, etc. between the opening and closing tags will be aligned in the center of the page.

Many tags support the use of an align attribute on the tag itself. For example:

```
<P align="right"> ... </P>
```

Note that the <P> tag requires a closing </P> tag when used with attributes. Alignment attributes will take precedence over a <CENTER> tag.

## Exercise 7 – Text Alignment

1. In Pico edit your text to reflect the following changes.

```
<H1 align="center"> Your Name </H1>

<FONT size="5" color="red">Hi</FONT>,
this is my <B>first</B> home page on the web.<BR>

<CENTER>
It may be <FONT size="-1">small</FONT> now but it will be
<FONT size="+1">growing</FONT>.
</CENTER>

<P align="right">
<I>Come back soon</I> and see what's happening!
</P>
```

2. Save the file and reload/refresh in your web browser.

## The Body Revisited

### Body Attributes

The <BODY> tag is able to do more than indicate the beginning of content in an HTML file. It can set up many page attributes such as text, link and background colors. There is only need for one <BODY> tag; all attribute changes can be made on the one already present.

<BODY> Attribute	Purpose; options
background	Sets a background image (jpg, gif, bmp) for a web page. If the image is not large enough to take the entire screen it will be tiled

bgcolor	Sets a uniform background color for the page. Values can include color names or a hexadecimal number as explained below. bgcolor and background should not be used in conjunction
text	Sets the default text color
link	Sets the color for links before they are visited
alink	Sets the color for a link while it is being clicked
vlink	Sets the color of a link which has been previously visited

A body tag may look like:

```
<BODY background="http://wings.buffalo.edu/images/sky3.jpg" text="#23238E"
link="blue" alink="green" vlink="red">
```

Wings has an archive of background images which the University encourages you to use. It can be accessed by pointing your web browser to:

**<http://wings.buffalo.edu/images/backgrounds>**

Visit that page and find an image you would like to put on your own page.

### Hexadecimal Color Values

The colors of your page background, images, text and links should always be considered for proper presentation and consistency of appearance of your web site. When designing a page it is imperative the color combinations, while expressive, work well and are easy to read and pleasant. As previously discussed many tags have color attributes which can accept both common color names and a hexadecimal value.

A hexadecimal value is composed of 6 characters; the first two characters represent the value of the color's red component; the second two represent the green contribution to the color; the last two represent blue's contribution. By specifying the amount of each color one can mix the three colors to represent all colors in the spectrum.

Each individual value contains two out of a set of 16 characters. They are 0-9 and A-F. Think of the color code as a continuum starting at the lowest point, 0, and ending at the highest, F. Remember that white is the presence of all colors and that black is the absence of any color. Some colors and their hex values are listed below.

Color	Red	Green	Blue	Hex Code
black	00	00	00	#000000
red	FF	00	00	#FF0000
green	00	FF	00	#00FF00
blue	00	00	FF	#0000FF
white	FF	FF	FF	#FFFFFF
purple	45	00	55	#450055

### Exercise 8 – Color Values

We recommend two sites on the web which can help you find the hex code for a color you would like:

**<http://www-students.biola.edu/~brian/csapplet.html>**

**<http://www.hypersolutions.org/pages/rgbhex.html>**

## Lists

### List Types

Lists can be good way of organizing content on a page. They provide a simple way of organizing your content into an easy-to-see hierarchy. HTML provides two types of lists for your use: ordered and unordered lists.

Unordered lists are similar to bulleted lists in word processing documents; they do not provide an ordering system, but instead place an icon or “bullet” next to each list item. Ordered lists on the other hand provide an ordering system, be it numerical (Roman and Arabic) or alphabetical. Each type of list uses similar HTML coding which shall be discussed.

### Unordered Lists

Each item in an unordered list is indented slightly and is preceded by a bullet (icon). An unordered list starts with the `<UL>` tag and ends with the `</UL>` tag. Within, each individual list item is separated by `<LI>` tags. Each separate item starts on a separate line and does not require a `<BR>` or a `</LI>` tag. The default bullet in an html tag is a filled circle called a disc, however you may choose which type of bullet you desire by using the `<UL>` tag’s `type` attribute. Valid types are `disc`, `circle` (a hollow circle) and `square`.

```
<UL type="square">
  <LI>Hello!
  <LI>How are you?
  <LI>Just fine. Thank you.
</UL>
```

It is worth noting that the preceding code is much easier to read because the items are slightly indented the same distance right of the `<UL>` tags. Thus it is clear that the items all belong to the same unordered list and the code even looks similar to how the list will actually be displayed in a browser. This will become especially important when exploring more complex lists in the *Nested Lists* section.

### Ordered Lists

The format for ordered lists is highly similar to that for unordered lists. An ordered list begins with the `<OL>` tag and ends with its corresponding closing tag. List items are again separated by use of the `<LI>` tag. Ordered lists also make use of the `type` attribute. The types supported are Arabic numbers (default), upper or lower case letters and upper or lower case Roman numerals.

Type	Attribute Value	Type	Attribute Value
Arabic (default)	1	Upper Case Letter	A
Upper Case Roman	I	Lower Case Letter	a
Lower Case Roman	i		

For example, the following code will result in an ordered list numbered sequentially by lower case Roman numerals.

```
<OL type="i">
  <LI>Augustus
  <LI>Tiberius
  <LI>Caligula
</OL>
```

Another important attribute on the `<OL>` tag is “start.” One can use this to modify the number at which the list starts counting. For example:

```
<OL type="1" start="3">
```

**List Nesting**

Lists (of all types) can be nested within one another by placing the nested list between list items of the parent list. Each nested list must close with its ending tag before continuing on the parent list. Note the use of indentation to clarify to what list each item corresponds.

```
<UL>
  <LI>UL Item 1
    <OL>
      <LI> OL Item 1
      <LI> OL Item 2
    </OL>
  <LI>UL Item 2
  <LI>UL Item 3
</UL>
```

The previous code results in:

- UL Item 1
  - 1) OL Item 1
  - 2) OL Item 2
- UL Item 2
- UL Item 3

**Exercise 9 – Ordered and Unordered Lists**

1. Insert the following code into your HTML file.

```
<H1>New York State Sports Teams</H1>
<UL>
  <LI>Baseball - New York Mets<BR>
  New York Yankees
  <LI>Basketball - New York Knickerbockers
  <LI>Football - New York Giants<BR>
  New York Jets<BR>
  <LI>Hockey - Buffalo Sabres<BR>
  New York Islanders<BR>
  New York Rangers
</UL>
```

2. Save the file and reload in the web browser.
3. Insert the following changes. You will need to delete <BR> tags no longer shown.

```
<H1>New York State Sports Teams</H1>
<UL>
  <LI>Baseball
  <OL>
    <LI>New York Mets
    <LI>New York Yankees
  </OL>
  <LI>Basketball
  <OL>
    <LI>New York Knickerbockers
  </OL>
  <LI>Football
  <OL>
    <LI>New York Giants
    <LI>New York Jets
  </OL>
```

```

<LI>Hockey
<OL>
  <LI>Buffalo Sabres
  <LI>New York Islanders
  <LI>New York Rangers
</OL>
</UL>

```

## Links

### Links to Other Pages

You need not limit yourself to a single page on your web site. To create a link on your page you need only the URL of the page to which you would like to go. This page can be a page you have written yourself or it can be one on another server. Both make the same use of the anchor tag, <A>:

```
<A HREF="URL">Text that becomes link</A>
```

Links can be created in an absolute fashion, in which the entire URL is explicitly written, or a relative fashion, where only the path relative to your current location is written. Relative links can only be used when the page to which you are linking is on the same server. For example:

```

Absolute link:   <A HREF="http://wings.buffalo.edu">Wings</A>
Relative link:  <A HREF="friends.html">Friends of mine</A>

```

The absolute link will work regardless of the location of your web page. However, the relative link will work only if there is another file in the same directory named `friends.html`

### Links within a Page

It is often useful to have a link on a page that goes to another section of the current page. Often web designers put a navigation menu on the top of the page so that one click of the mouse can replace tedious scrolling. To accomplish this, one needs only to “name” a section of their document with the <A> tag and then point to it with another link:

```
<A HREF="#intro">Introduction</A>
```

will point to the following location in the same file:

```
<A NAME="intro">Introduction
```

Note that the naming tag does not require a closing tag and will create no visible output on the web browser screen. Section naming is case sensitive so the link <A HREF="#Intro"> would not work properly. Name links can also work on pages other than the current page:

```
<A HREF="http://www.usconstitution.net/const.html#A1Sec3">The Senate</A>
```

This link would take you to Article I, Section 3 of an online version of the United States Constitution.

### E-Mail Links

Links can also be used to open an e-mail client and start composing a message to a specified the address. The computer with which you are browsing must have an installed e-mail client for this to function properly. This is also done with the <A> tag:

```
<A HREF="mailto:email address">Link text</A>
```

### Exercise 11 – Links

Insert the following links into your document.

```

<H1>Links</H1>
<A HREF="http://cit-helpdesk.buffalo.edu">Help Desk</A><BR>
<A HREF="http://www.usconstitution.net/const.html#A1Sec3">The Senate</A><BR>
<A HREF="mailto:UBITName@acsu.buffalo.edu">E-mail me</A>

```

## Images

### Putting Images on your Homepage

Web pages would be tedious and boring to read if only text could be displayed. Images can help to provide detailed content for your page and also make it more lively and appealing. For a web browser to display your image it must be in one of the four following formats: jpeg, gif, png or bmp. Nearly all images you will find will be in one of these formats.

The JPEG image format (jpg) offers several advantages over the other formats. For photographs they are significantly smaller and can contain many more colors (16.7 million!). However, for smaller images with only few colors the gif or png formats are likely your best choice. Windows bitmaps (bmp) files are not recommended as they are uncompressed and usually generate very large file sizes.

Be careful with your use of images. They are there to add visually pleasing content to your page, but they should not be the primary content. Images also take more room in your Unix account and take longer to load when opening the page. When connecting over a phone line one of the most irritating experiences can be waiting for images on a web page to load. If the images on a single page total to more than 150 kilobytes considering removing some or splitting the page.

The <IMG> tag has several modifiable attributes:

Attribute	Value
src (required)	URL for the image file you wish to display
align	Image and text wrapping options are discussed below in <i>Aligning Text with Images</i>
alt	A text name for non-graphical browsers to display or when one hovers the mouse above the image.
border	Modifies the border around the image if that image is made a link. By default the value, in pixels, is zero.
height or width	The height or width, in pixels, of the image. If only one of these attributes is used then the other will be changed proportionally. When used together they may warp the image if the values are inaccurate.
hspace or vspace	Amount of horizontal (or vertical) space, in pixels, of an image where text will not be displayed

### Aligning Text with Images

The align attribute on the <IMG> tag can be used in a variety of ways to wrap text around an image and to align an image on the page itself. If align is not used, an image is treated as though it were an extremely large character.

Be warned that when you wrap text around an image you may not see what you expect. To have your text start below the image use the <BR clear="all"> tag.

To view examples of the various alignments listed below open up the following URL:

<http://wings.buffalo.edu/computing/workshops/htm101/imgalign.html>

Align Value	Result
left	Aligns image with the left margin allowing text to wrap to the right of the image
right	Aligns image with the right margin allowing text to wrap to the left of the image
absbottom	Aligns image with the bottom of the lowest character
baseline	Aligns image with the baseline of the text. The difference between baseline and absbottom is that certain letters such as j go beneath the baseline of text:  j- <u>baseline</u>
absmiddle	Aligns middle of the image with the middle of the text
texttop	Aligns top of the image with the top of the tallest character in the text

### Exercise 12 – Putting an Image in Your Page

1. Open up the following URL in your web browser:

<http://wings.buffalo.edu/images>

2. Find an image which you like and click on the link to its lower right. Note the URL address.
3. Insert the following code (replacing the text and image URL with something of your choice):

```
<P><IMG src="URL_of_Image" align=left>
Text wrapping to right of image.
<BR clear="all">
Text that has cleared below the image.
```

4. For a list of web addresses to find images please visit the appendix available on the class website.

## Extra Topics

### Special Characters

Just as in word processors there often arises a need to insert special symbols such as a copyright symbol or a foreign letter not available on the standard keyboard. When this occurs, one needs to use a special character set called ISO 8859-1. ISO 8859-1 codes are of the form `&#XX;` where XX is the number assigned to the character. HTML provides some aliases for these codes that are more easily recognized. It is recommended that you use the ISO codes since these are standard, whereas the HTML aliases can often be browser dependent.

To use a code, simply place it among the text as you would any normal letter. Some ISO 8859-1 codes are listed below, but a complete list is attached in the appendix.

Character	ISO Code	HTML alias
Copyright (©)	<code>&amp;#169;</code>	<code>&amp;copy;</code>
Trademark (™)	<code>&amp;#174;</code>	<code>&amp;reg;</code>
Ampersand (&)	<code>&amp;#38;</code>	<code>&amp;amp;</code>
One character of blank space	<code>&amp;#160;</code>	<code>&amp;nbsp;</code>



For example:

```
This page &#169; Procter & Gamble, 2002.
```

Would produce:

```
This page © Procter & Gamble, 2002.
```

### Putting Comments in your File

It is helpful to add comments in your file to help a person viewing the file directly. Comments are ignored by the web browser but can include any information such as what one intends to do with a section of HTML code. To insert a comment in your HTML file simply place the appropriate text within the following tags:

```
<!-- ... -->
```

### Page Counters

Many people include a counter on their home page indicating how many times it has been accessed. The University provides a page counter for you. To add a counter to your page simply add in the code below. Make sure to change UBITName to your actual UB IT Name.

```
This page has been accessed

times.
```

Any of the normal image attributes (align, vspace, etc.) can be used in conjunction.

### Header Information

The header, as discussed earlier, can contain information that is useful to such web search engines as Lycos, Infoseek and Alta Vista. This can be done through use of the <META> tag, whose form and attributes are shown below:

```
<META name="attribute" content="value">
```

or

```
<META http-equiv="command" content="value">
```

Examples:

```
<META name="author" content="Your Name">
<META name="generator" content="pico">
<META name="description" content="My first home page">
<META name="keywords" content="HTML, home page">
<META http-equiv="refresh" content="3;
URL=http://www.cse.buffalo.edu/~UBITName">
<META http-equiv="pragma" content="nocache">
```

Attribute	HTTP-equiv	Options; purpose
Author	--	Name of page author(s)
Generator	--	Tools used to create the page; often inserted by such HTML editors as FrontPage Editor or Netscape Composer
Description	--	A short paragraph describing the page
Keywords	--	A comma delimited list of key words used by search engines

--	refresh	Used to forward the web browser automatically to another URL. One must enter in the number of seconds to wait, followed by a semicolon and the the URL of the new page.
--	pragma	<i>Nocache</i> ; indicates that the browser should not save this page in its memory

### Exercise 13 – Extra Topics

1. Put any or all of the following tags in between the <HEAD> tag and the </HEAD> tag. Replace the proper areas with more appropriate information.

```
<META name="author" content="Your Name">
<META name="generator" content="pico">
<META name="description" content="My first home page">
<META name="keywords" content="HTML, home page">
```

2. Put the following HTML segment at the end of your document but before the </BODY></HTML> tags.

```
<!-- Page counter -->
This page has been accessed

times.
<P>
&copy; 1999 Your Name
```

## Conclusion

There is a lot more to HTML; although you can create the essentials of a home page we encourage you to take further HTML workshops. These include HTML 201, which covers the basics of Tables, a powerful page layout tool, and Forms, with which you can obtain information from visitors to your page.

Please visit the following URL to evaluate this document and the workshop:

**[http://wings.buffalo.edu/computing/workshop\\_eval.html](http://wings.buffalo.edu/computing/workshop_eval.html)**

For further help you may contact the CIT Help Desk or any of the web pages listed in the appendix.

CIT Help Desk, 216 Computing Center  
<http://cit-helpdesk.buffalo.edu>  
[cit-helpdesk@buffalo.edu](mailto:cit-helpdesk@buffalo.edu)  
 716-645-3542