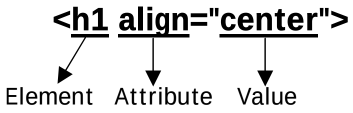
HTML and XHTML Quick Reference

HTML Fundamentals

- Tags are element names enclosed inside angle brackets, like **<h1>**
- Most tags come in pairs (called containers) and surround the content they affect, like **<h1>**Main Heading**</h1>**
- Closing tags **always** have a forward slash preceding the element name, like **</h1>**
- Some tags are empty and do not have a closing tag, like **<hr>**

Tag Components

Optional attributes and values are used to modify default characteristics of elements



XHTML Rules

- All nonempty elements must have a closing tag, like **</h1>**
- All empty elements must be closed with a space and a forward slash, like **<hr />**
- All elements, attributes and values must be in lowercase
- All attribute values must be enclosed in quotes, like <h1 align=**"center"**>
- Nested tags must follow **First Open Last Close** convention. If you open a tag within another tag container, you must close the inner tag before closing the outer tag. For example, **<p>**Hello **<em>**World.**</em></p>**

Global Structure Elements (all are required)

<html>…</html>	Identifies page as HTML file, and contains all other HTML tags
<head> </head>	Identifies the head section and contains tags that describe aspects of the page (not visible inside the browser window)
<body>…</body>	Identifies the body section and contains all tags that display content inside the browser window

Head Elements and Attributes

<base href="url" /> (required attribute)	Specifies original URL of page (used to generate relative URLs)
<base target="value" />	Sets default target for hyperlinks _**blank** opens in new window _**self** opens in same frame/window that contains link _**top** opens in current window, replacing frameset _**parent** opens in frame containing current frameset
<link />	Specifies relationship to other resources, most commonly to external style sheets <link rel="stylesheet" type="text/css" href="url" />
<meta />	Defines meta-information for search engines <meta name="keywords" content="kwd, kwd, kwd" /> <meta name="description" content="One sentence summary." />

Other Head Elements

<script>…</script>	Defines block of script (JavaScript, VBScript)
<style>…</style>	Defines embedded style sheet rules
<title>…</title> (required)	Specifies title of page (displayed in title bar of browser, names bookmarks and shortcuts, prints in header or footer)

Body Element Attributes

<body bgcolor="#rrggbb">	Sets solid background color of page
<body background="image.xxx">	Sets image that is tiled (repeated) to fill page background (wallpaper)
<body text="#rrggbb">	Sets color of normal text
<body link="#rrggbb">	Sets color of unvisited hyperlinks
<body alink="#rrggbb">	Sets color of hyperlinks when clicked
<body vlink="#rrggbb">	Sets color of followed (visited) hyperlinks

Heading and Paragraph Elements

<h1>…</h1> <h2>…</ h2> <h3>…</ h3> <h4>…</ h4> <h5>…</ h5> <h6>…</ h6>	Renders content as bold text in one of six heading levels. Level 1 is the largest; level 6 is the smallest. Level 4 is same size as normal paragraph text.
<h*n* align="value">	Aligns heading in browser window (left | center | right)
<p>…</p>	Specifies a paragraph of text
<p align="value">	Aligns paragraph in browser window (left | center | right)

Terminology

- **HTML** (**H**yper**t**ext **M**arkup **L**anguage) uses tags to identify the structural elements on a web page (text, images, hyperlinks)
- A **web page** is a plain text file formatted with HTML tags
- A **web site** is a collection of related web pages that are stored on a computer called a **web server** (because it runs special software)
- A **web browser** is a program installed on a client computer that reads the web pages stored on a web server, interprets the tags and renders the display of web content
- The **W3C** (World Wide Web Consortium), the rule-making body, puts together the **web standards** (specifications) that define what web browsers should support
- The **URL** (**U**niform **R**esource **L**ocator) is the Internet address of a web page and contains the protocol, host name and domain of the web server, and may also include the directory path and filename of the web page, like http://www.bpg.butlercc.edu/index.html
- **XHTML** (e**X**tensible **H**yper**t**ext **M**arkup **L**anguage) is HTML reformatted using XML (e**X**tensible **M**arkup **L**anguage) syntax

List Elements and Attributes

<ol>…</ol>	Defines ordered (number) list
<ol type="value">	Changes numbering style 1 (default) renders as 1, 2, 3 A renders as A, B, C a renders as a, b, c I renders as I, II, III i renders as i, ii, iii
<ol start="value">	Sets start number (1 is default)
<ul>…</ul>	Defines unordered (bullet) list
<ul type="value">	Changes bullet style disc (default) renders as ● circle renders as ○ square renders as ■
<li>…</li>	Defines a list item in ordered and unordered lists
<dl>…</dl>	Defines definition list
<dt>…</dt>	Defines term, aligned left in browser window
<dd>…</dd>	Defines definition, indented from the left on next line in browser window

Horizontal Rule Element and Attributes

<hr />	Inserts a horizontal rule (commonly used to visually separate sections of a page)
<hr width="value" />	Changes width to fixed number of pixels or a percentage (75%) of browser window width
<hr align="value" />	Changes alignment (left | center | right)
<hr size="value" />	Changes height (thickness) to fixed number of pixels

Other Block Elements and Attributes

<blockquote>… </blockquote>	Indents text from both the left and right edges of the browser window
<address>…</address>	Defines address block, rendered as *italic*
<div>…</div>	Logically groups multiple block-level elements together
<div align="value">	Aligns contents of division (left | center | right)
<pre>…</pre>	Creates pre-formatted text which preserves white space and renders in a `fixed-width font`

Font Element and Attributes

<font>…</font>	Changes font attributes for content
<font size="value">	Sets font size from 1 to 7, with 1 the smallest and 7 the largest; use -n to set size smaller and +n to set larger
<font face="name1,name2,name3">	Sets typeface for content in priority order
<font color="#rrggbb">	Sets color of content

Inline Text Elements

<br />	Inserts single line-break
&nbsp;	Inserts non-breaking space to prevent a line break
<cite>…</cite>	Defines citation, rendered as *italic*
<code>…</code>	Defines program code, rendered in `fixed-width font`
<em>…</em>	Renders content as *italic*
<strong>…</strong>	Renders content as **bold**
<span>…</span>	Defines section inside a block-level element, commonly used to apply styles
<!-- comment text -->	Inserts comments, rendered invisible in browser

Image Elements and Attributes

<img src="image.xxx" />	Inserts named image file (required)
<img alt="text" />	Adds alternate text description (screen tip on Windows OS) for visually impaired (recommended)
<img height="pixels" />	Sets height of image
<img width="pixels" />	Sets width of image
<img align="value" />	Aligns image vertically with baseline of text (top | middle | bottom) or horizontally, allowing text to wrap around it (left | right)
<img border="pixels" />	Sets size of border around image (use 0 to turn off border)
<img hspace="pixels" />	Sets horizontal margin around image
<img vspace="pixels" />	Sets vertical margin around image
<img usemap="#mapname" />	Designates image as client-side image map with multiple clickable regions
<map name="mapname"> …</map>	Defines client-side image map and contains an <area /> tag for each clickable region
<area shape="value" />	Defines clickable area's shape (rect | poly | circle)
<area coords="values" />	Specifies the points that locate the clickable area on the image For rectangles, use x1,y1,x2,y2 where x1,y1 represent the upper-left corner and x2,y2 represent the lower-right corner of the area. For polygons, use x1,y1,x2,y2,x3,y3 (and so on), specifying the x and y coordinates of each point. For circles, use x,y,r where x and y represent the center of the circle and r is the radius. Note: x is the distance in pixels from the left edge of the image, while y is the distance from the top edge.
<area href="url" />	Specifies page that should appear when area is clicked
<area target="value" />	Sets target for area's link (_blank | _self | _top | _parent)

Absolute and Relative URLs

An **absolute** URL contains the entire path to a file; the scheme (protocol), host (server name) and domain, complete directory path and filename.

- Always use an absolute URL to reference files on another web site.

Omitting the directory path and filename, when referencing the home page of another web site, creates a **partial** URL.

- Always add a trailing slash at the end of partial URLs so the server doesn't generate a second request for the page. Good example: **http://www.butlercc.edu/**

A **relative** URL describes the location of a file or resource from the page that contains the reference.

- To link to a file in the **same folder** as the page that contains the link: **<a href="widgets.html">**
- To link to a file in a subfolder (one level lower) in folder hierarchy: **<a href="products/widgets.html">**
- To link to a file in a subfolder two levels lower in folder hierarchy: **<a href="products/parts/widgets.html">**
- To link to a file in a folder one level above in folder hierarchy: **<a href="../widgets.html">** or **<a href="../products/widgets.html">**
- To link to a file in a folder two levels above in folder hierarchy: **<a href="../../widgets.html">** or **<a href="../../products/widgets.html">**

Anchor Elements and Attributes

<a>…</a>	Defines origin and destination of hyperlink (content between tags is visible hotspot)
<a href="url">	Creates hyperlink to remote (external) or local page specified in URL Remote: http://www.butlercc.edu/ Local: whatsnew.html
<a href="mailto:email">	Creates link to email address mailto:rlingafe@butlercc.edu
<a target="value">	Specifies where linked page should appear (_blank | _self | _top | _parent)
<a name="name">	Names a landing spot on a page (by default, linked pages display the top of the page)
<a href="#name">	Creates a link to a named landing spot
<a href="url#name">	Creates a link to named landing spot on a different page

Multimedia Elements and Attributes

<applet>…</applet>	Inserts java applet
<embed>…</embed>	Inserts audio and video
<object>…</object>	Inserts multimedia objects like Flash movies
<param />	Sets object parameters

Table Elements and Attributes

<table>…</table>	Defines table container that holds all other table elements
<table bgcolor="#rrggbb">	Sets background color for all cells in the table
<table border="pixels">	Sets size of border around table (use 0 to turn off visible border)
<table cellpadding="pixels">	Sets margin between cell walls and cell contents (1 pixel is default)
<table cellspacing="pixels">	Sets margin between cells (2 pixels is default)
<table width="pixels or %">	Sets width of table in pixels (fixed-width) or as percentage of browser window (relative)
<table height="pixels or %">	Sets height of table in pixels (fixed-width) or as percentage of browser window (relative)
<tr>…</tr>	Defines a table row
<tr align="value">	Aligns contents of all cells in the row (left | center | right)
<tr valign="value">	Sets vertical alignment for contents of all cells in the row (top | middle | bottom)
<tr bgcolor="#rrggbb">	Sets background color for all cells in the row (overrides table color)
<td>…</td>	Defines a table data cell
<td align="value">	Aligns contents of cell (left | center | right)
<td valign="value">	Sets vertical alignment for contents of cell (top | middle | bottom)
<td bgcolor="#rrggbb">	Sets background color for a cell (overrides row color)
<td colspan="columns">	Sets cell to span n columns
<td rowspan="rows">	Sets cell to span n rows
<th>…</th>	Defines a table header cell (content rendered as bold and center aligned)
<caption>…</caption>	Defines caption for the table
<caption align="value">	Aligns caption (above | below) table

File Naming Conventions

To avoid problems between operating systems and web servers and to make it easier for visitors to your web site, you should follow these file naming guidelines.

- Don't use spaces (underscores are allowed)
- Avoid capital letters; use all lowercase
- Avoid illegal characters like periods (.), quotes ("), forward or back slashes (/\), colons (:), or exclamation points (!)
- Use either **.html** or **.htm** extension for all web pages but be consistent
- Name the home page **index.html** (or .htm) unless instructed otherwise by your web host
- Use short but descriptive names for all other web pages

Special Character Entities

Character	Code	Character	Code
<	&lt; or &#60;	>	&gt; or &#62;
"	&quot; or &#34;	&	&amp; or &#38;
…	&#133;	•	&#149;
‘	&#145;	’	&#146;
“	&#147	”	&#148;
–	&#150;	—	&#151;
©	&#169;	®	&#174;
°	&#176;	¼	&#188;
½	&#189;	¾	&#190;

Form Elements and Attributes

<form>...</form>
Creates form container for all form elements

<form action="url"> (required)
Specifies where the form's data will be sent, typically the path and name of the CGI script that will process the form data
Can also be mailto:emailaddress

<form method="get|post"> (required)

* Must be **post** when action is set to mailto:url

Specifies how browser should send form data (usually dictated by processing script)
get adds input data to the URL as series of "query string" parameters, visible in address bar (typically used with databases)
post (most common) sends input data in a hidden "form object"

<form enctype="mimeType"> (required)
* Must be **text/plain** when action is set to mailto:url

Specifies how characters and values entered into the form are represented and transferred
application/x-www-form-urlencoded (default) is used for most form applications
multipart/form-data only used when form uploads files to the server
text/plain used to submit form data via email

<select name="menuname"> ...</select>
Creates drop-down list (menu) container that holds menu options

<option>...</option>
Creates a menu item

<textarea>...</textarea>
Creates multi-line text box (32,700 character maximum)

<textarea name="name">
Names element

<textarea rows="n">
Sets height of text box in rows

<textarea cols="n">
Sets width of text box in characters (default is 40)

<textarea wrap="value">
Specifies how text wraps
soft wraps text on screen but line breaks are not submitted
hard wraps text on screen and submits line breaks

Input Form Element and Attributes

<input type=" value" />
Creates most of the common form elements
checkbox Creates a check box
hidden Creates a hidden element, typically used to pass special information to form processing scripts
password Creates a password box that displays data as asterisks (not secure unless entire form is encrypted)
radio Creates a radio button
text Creates a single-line text box
submit Creates a submit button (sends form data)
reset Creates a reset button (clears form data)

<input name="name" />
Names the input element which identifies input data sent to server (also allows client-side scripts to manipulate the input element)
* Use the same name for all check boxes or radio buttons in a single set (creates a group of check boxes or radio buttons)
* Name all input elements except submit and reset button elements

<input value="value" />
Defines a value for input element (not used for all input element types)
checkbox Specify a different value for each
hidden Specify value to pass to script on server
password Not used
radio Specify a different value for each
text Specify default text displayed (not recommended as users must replace it)
submit Specify text displayed on Submit button
reset Specify text displayed on Reset button

<input size="value" />
Sets width of password and text boxes in characters

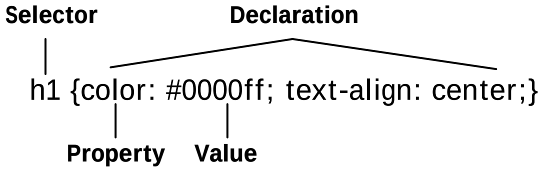
<input maxlength="value" />
Sets maximum number of characters that can be entered in password and text boxes

Cascading Style Sheets (CSS)

Styles can be **embedded** in <style> tags in the Head section or **external**, placed in a separate text file with a **.css** extension.

Style Anatomy

- To redefine an HTML tag, create a style rule for the tag (selector) using this syntax



h1 {color: #0000ff; text-align: center;}

- To create a custom style (class), precede the selector with a period (.)
- Use the <link> tag to attach an external style sheet to a page

Frame Elements and Attributes

<frameset> …</ frameset >	Specifies the number and layout of frames in the browser window, and contains all frame elements (replaces the body tag) Framesets can be nested
<frameset rows="a,b">	Specifies the number and height of each row in the frameset **a** represents the first row and the height can be expressed in pixels (absolute) or as a percentage of the window (relative) **b** represents the second row and the height can be expressed in pixels, percentage or with * (variable allocates all remaining space in the window)
<frameset cols="a,b">	Specifies the number and width of each column in the frameset **a** represents the first column and the width can be expressed in pixels (absolute) or as a percentage of the window (relative) **b** represents the second column and the width can be expressed in pixels, percentage or with * (variable allocates all remaining space in the window)
<frameset border=”*n*”>	Controls width of space between frames (default is 5 pixels) Set to 0 in all frameset tags to make all borders disappear
<frameset frameborder=”no”>	Controls sculpted borders in border space (no|yes) Set to no in all frameset tags to make all borders disappear
<frameset framespacing=”0”>	Controls width of space between frames (default is 5 pixels) Set to 0 in all frameset tags to make all borders disappear
<frame src="url" />	Specifies the URL of a page to display in the frame
<frame name="name" />	Labels the frame for targeting within hyperlinks
<frame frameborder=”no”>	Controls sculpted borders in border space (no|yes) Set to no in all frame tags to make all borders disappear
<frame marginwidth="pixels" />	Sets the horizontal margin inside frame
<frame marginheight="pixels" />	Sets the vertical margin inside frame
<frame scrolling="value" />	Shows or hides scrollbar **yes** always shows scrollbar **no** always hides scrollbar **auto** (default) shows scrollbar only when there’s more content than can fit in frame
<frame noresize="noresize" />	Prevents the resizing of a frame
<noframes>…</noframes>	Contains a body tag and content visible only when a browser does not support frames

Inline Frame Elements and Attributes

<iframe>…</iframe>	Defines inline (floating) frame
<iframe src="url">	Specifies the URL of a page to display in the inline frame
<iframe name="name">	Labels the inline frame for targeting within hyperlinks
<iframe width="x">	Sets the width of the inline frame in pixels or as percentage
<iframe height="y">	Sets the height of the inline frame in pixels or as percentage
<iframe align="value">	Wraps following text around inline frame (left | right)

DTDs and DOCTYPEs

A **Document Type Definition (DTD)** provides the syntax and grammar for a markup language and defines allowed elements and attributes.

A **DOCTYPE** tag declares a document’s type but since it’s not HTML or XHTML, it must precede the <html> tag. DOCTYPE declaration tags consist of three parts:

- **DOCTYPE keyword** specifies the top-level tag defined in the DTD and indicates whether the DTD is available for public access **<!DOCTYPE html PUBLIC**
- **Public identifier** names the organization that defined the DTD, the DTD keyword, a unique name for the DTD, and the language used in the DTD **"-//W3C//DTD HTML 4.01//EN"**
- **System identifier** specifies the URL of the DTD referenced **"http://www.w3.org/TR/html4/strict.dtd">**

Begin each page with a DOCTYPE tag to verify the code is valid, error-free and conforms to the DTD. Standards-compliant browsers will display pages in **standard** mode, which is based on a strict DTD. Omitting the DOCTYPE tag (or omitting the system identifier) forces standards-compliant browsers to display pages in “**quirks** mode”, a backwards-compatible view that incorporates the rendering mistakes of earlier browsers (mainly font size rendering, and width and height calculations).

DOCTYPE Variations

Strict: Use for pages that do not include any deprecated tags or attributes and that place all style information in style sheets

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01//EN"
        "http://www.w3.org/TR/html4/strict.dtd">
```

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

Transitional: Use for pages that include deprecated tags and attributes

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
        "http://www.w3.org/TR/html4/loose.dtd">
```

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

Frameset: Use if page contains frames

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"
        "http://www.w3.org/TR/html4/frameset.dtd">
```

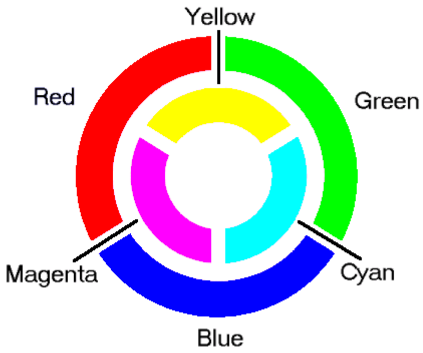
```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Frameset//EN"
        "http://www.w3.org/TR/xhtml1/DTD/xhtml1-frameset.dtd">
```

Basic Color Names

Black	Gray	Navy	Silver
Aqua	Green	Olive	Teal
Blue	Lime	Purple	White
Fuchsia	Maroon	Red	Yellow

These color names correspond to the basic VGA set on PCs. Some browsers support additional named colors but only these 16 are recognized by all browsers. Specifying color by name is not recommended.

RGB Color Model



Monitors use the **RGB** color model to produce color, which combines red, green and blue light in varying intensities to create 16.7 million different colors. As shown on this modified color wheel, combining red and green make yellow, green and blue make cyan, blue and red make magenta.

Decimal Color Values

The amount of red, green, and blue in any color is represented by decimal values in the range 0–255, where 0 represents off (no light) and 255 is maximum intensity.

Syntax: r,g,b

Example: 255,255,0 specifies yellow (maximum red and green but no blue).

Hexadecimal Color Values

Convert the decimal value of each primary color to hexadecimal, which uses the digits 0-9 and letters a-f. This is the recommended method for specifying color in HTML.

Syntax: #rrggbb

Example: #ffff00 specifies yellow.

Web Safe Colors

To compensate for older computers capable of displaying only 256 colors at a time, most browsers support the same palette of 216* web safe colors. The web safe color palette uses 6 evenly spaced gradations of red, green and blue (decimal values in increments of 51).

Although the problem will eventually disappear, it is considered “good coding practice” to limit your color choices to the web safe palette.

* *After subtracting the 40 colors each operating system reserves for its own use.*

Web Safe Decimal RGB Values to Hex

RGB	0	51	102	153	204	255
Hex	00	33	66	99	cc	ff

Common Web Safe Color Values

0,0,0 #000000 Black	102,102,102 #666666 Dark Gray	204,204,204 #cccccc Light Gray	255,255,255 #ffffff White
255,0,0 #ff0000 Red	255,255,0 #ffff00 Yellow	0,255,0 #00ff00 Green	0,255,255 #00ffff Cyan
0,0,255 #0000ff Blue	255,0,255 #ff00ff Magenta		

Comparison of Web Image Formats

	GIF	JPEG	PNG
Compression	LZW (lossless)	Lossy	Variety of lossless
Colors	256 max.	Full RGB (16.7 million)	Up to 48-bit color
Best Use	Logos Line art cartoons	Photos Color blends	Any
Interlacing	Yes	Yes (Progressive)	Yes 2-dimensional
Transparency	Yes (1-color)	No	Yes*
Animation	Yes	No	No
Supported by all major browsers	Yes	Yes	Mostly supported

* PNG also supports semi-transparency (allows alpha channel to indicate transparency mask)

HTML Tips and Tricks

- Tags not recognized by a browser are ignored (in some instances, so is the content).
- Make code more readable by inserting blank lines, tabs or spaces (browsers ignore vertical and horizontal white space).
- Avoid non-standard, proprietary code (causes pages to be rendered inconsistently) and test your pages on as many platforms and with as many browsers as possible.
- When developing on Windows, remember that text on a Mac looks about 2 points smaller and images will appear lighter.
- Adhere to 10 second rule—faster is better.
- Check out these online resources:
  - **Web Style Guide** http://www.webstyleguide.com/
  - **IBM’s Web Design Guidelines** http://www-3.ibm.com/ibm/easy/eou_ext.nsf/Publish/572
  - **Vincent Flanders’ Web Pages That Suck** http://webpagesthatsuck.com/