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HTML

What is an HTML File?

- HTML stands for **H**yper **T**ext **M**arkup **L**anguage

- An HTML file must have an htm or html file extension
  - With newer software it will be perfectly safe to use .html

- An HTML file can be created using a simple text editor

  ```
  <html>
  <head>
  <title>Title of page</title>
  </head>
  <body>
  This is my first homepage.
  <b>This text is bold</b>
  </body>
  </html>
  ```

- HTML Editors
  - WYSIWYG editor like FrontPage, Macromedia HomeSite, or Adobe PageMill
  - But if you want to be a skillful Web developer, use a plain text editor to learn your primer HTML

HTML Tags

- HTML tags are used to mark-up HTML elements

- HTML tags normally come in pairs like and

- The text between the start and end tags is the element content

- HTML tags are not case sensitive, <b> means the same as <B>
  - W3C recommends lowercase tags in their HTML 4 recommendation, and XHTML (the next generation HTML) demands lowercase tags

- Tag Attributes
  - Tags can have attributes. Attributes can provide additional information about the HTML elements on your page
    - <body bgcolor="red">
  - Attributes always come in name/value pairs like this: name="value"
  - Attribute values should always be enclosed in quotes

The <html> tag

Attribute	Value	Description
dir	ltr | rtl	Sets the text direction
lang	*language_code*	Sets the language code

```
lang="en"
ar (Arabic)
```

The <head> tag

- The head element contains general information (meta-information) about a document

- Head Tags
  - `<title>`: defines the document title
  - `<base>`: defines a base URL for all the links
    - `<base href="http://www.w3schools.com/images/" />`
  - `<link>`: defines a resource reference
    - `<link rel="stylesheet" type="text/css" href="theme.css" />`
  - `<meta>`: defines meta information about your page, such as descriptions and keywords for search engines and refresh rates

… The <head> tag

- metadata is always passed as name/value pairs
- `<meta name="keywords" content="HTML, DHTML, CSS, XML, XHTML, JavaScript, VBScript" />`
- `<meta http-equiv="refresh" content="5" />`
- `<meta http-equiv="Content-Type" content="text/html; charset=windows-1256">`
- `ISO-8859-6 (Arabic)`

Attribute	Value	Description
http-equiv	content-type expires refresh set-cookie	Connects the content attribute to an HTTP header
name	author description keywords generator revised *others*	Connects the content attribute to a name

Basic HTML Tags

- Headings
  - Headings are defined with the <h1> to <h6> tags
- Paragraphs
  - Paragraphs are defined with the <p> tag
  - HTML automatically adds an extra blank line before and after a paragraph
- Line Breaks
  - The <br> tag is used when you want to end a line, but don't want to start a new paragraph
- Horizontal Rule: the <hr> tag
- Comments in HTML
  - `<!-- This is a comment -->`
- HTML will truncate the spaces in your text. Any number of spaces count as one

HTML Text Formatting

Tag	Description
`<b>`	Defines bold text
`<big>`	Defines big text
`<em>`	Defines emphasized text
`<i>`	Defines italic text
`<small>`	Defines small text
`<strong>`	Defines strong text
`<sub>`	Defines subscripted text
`<sup>`	Defines superscripted text
`<ins>`	Defines inserted text
`<del>`	Defines deleted text
`<blockquote>`	Defines a long quotation
`<code>`	Defines computer code text
`<pre>`	Defines preformatted text

HTML Character Entities

Result	Description	Entity Name	Entity Number
	non-breaking space		
<	less than	<	<
>	greater than	>	>
&	ampersand	&	&
"	quotation mark	"	"
'	apostrophe		'
©	copyright	©	©
®	registered trademark	®	®
×	multiplication	×	×
÷	division	÷	÷

HTML Fonts

- The <font> tag in HTML is deprecated. It is supposed to be removed in a future version of HTML.

- Even if a lot of people are using it, you should try to avoid it, and use styles instead

HTML Links

- The Anchor Tag
    - the `href` Attribute
        - `<a href="http://www.w3schools.com/">Visit W3Schools!</a>`
        - always add a trailing slash to subfolder references
    - the `target` attribute: to define where the linked document will be opened
        - `<a href="http://www.w3schools.com/" target="_blank">Visit W3Schools!</a>`
    - the `name` Attribute
        - `<a name="tips">Useful Tips Section</a>`
        - `<a href="http://www.w3schools.com/html_links.asp#tips">` Jump to the Useful Tips Section
        - a hyperlink to the Useful Tips Section from WITHIN the file "html_links.asp" will look like this
            - `<a href="#tips">Jump to the Useful Tips Section</a>`

… HTML Links

- A `mailto` link

```
<html>

<body>

<p>
This is a mail link:
<a href="mailto:someone@microsoft.com?subject=Hello%20again">
Send Mail</a>
</p>

</body>
</html>
```

Frames

- With frames, you can display more than one HTML document in the same browser window
  - Each HTML document is called a frame, and each frame is independent of the others
- The disadvantages of using frames are:
  - The web developer must keep track of more HTML documents
  - It is difficult to print the entire page
- The Frameset Tag
  - The <frameset> tag defines how to divide the window into frames
  - Each frameset defines a set of rows or columns
  - The values of the rows/columns indicate the amount of screen area each row/column will occupy
- The Frame Tag
  - The <frame> tag defines what HTML document to put into each frame
- Useful Tips
  - If a frame has visible borders, the user can resize it by dragging the border. To prevent a user from doing this, you can add noresize="noresize" to the <frame> tag.
  - Add the <noframes> tag for browsers that do not support frames

… Frames

Mixed frameset

```
<html>

<frameset rows="50%,50%">

<frame src="tryhtml_frame_a.htm">

<frameset cols="25%,75%">
<frame src="tryhtml_frame_b.htm">
<frame src="tryhtml_frame_c.htm">
</frameset>

</frameset>

</html>
```

Navigation frame

```
<html>

<frameset cols="120,*">

<frame
src="tryhtml_contents.htm">
<frame src="tryhtml_frame_a.htm"
name="showframe">

</frameset>

</html>


<a href ="tryhtml_frame_a.htm"
target ="showframe">Frame a</a><br>
```

Inline frame

```
<iframe src ="/default.htm"> </iframe>
```

Attribute	Value	Description
align	left right top middle bottom	Specifies how to align the iframe according to the surrounding text
frameborder	1 0	Specifies whether or not to display a frame border
height	pixels %	Defines the height of the iframe
longdesc	URL	A URL to a long description of the frame contents
marginheight	pixels	Defines the top and bottom margins of the iframe
marginwidth	pixels	Defines the left and right margins of the iframe
name	frame_name	Specifies a unique name of the iframe (to use in scripts)
scrolling	yes no auto	Define scroll bars
src	URL	The URL of the document to show in the iframe
width	pixels %	Defines the width of the iframe

Tables

- One very common practice with HTML, is to use HTML tables to format the layout of an HTML page

- Tables are defined with the <table> tag

- A table is divided into rows (with the <tr> tag), and each row is divided into data cells (with the <td> tag)

- A data cell can contain text, images, lists, paragraphs, forms, horizontal rules, tables, etc

```
<table border="1">
<tr>
<td>row 1, cell 1</td>
<td>row 1, cell 2</td>
</tr>
<tr>
<td>row 2, cell 1</td>
<td>row 2, cell 2</td>
</tr> </table>
```

Table Tags

Tag	Description
`<table>`	Defines a table
`<th>`	Defines a table header
`<tr>`	Defines a table row
`<td>`	Defines a table cell
`<caption>`	Defines a table caption
`<colgroup>`	Defines groups of table columns
`<col>`	Defines the attribute values for one or more columns in a table
`<thead>`	Defines a table head
`<tbody>`	Defines a table body
`<tfoot>`	Defines a table footer

```
<table border="1" cellpadding="10">
<tr>
  <th>Name</th>
  <th colspan="2">Telephone</th>
</tr>
<tr>
  <td>Bill Gates</td>
  <td>555 77 854</td>
  <td>555 77 855</td>
</tr>
</table>
```

The <table> tag attributes

Attribute	Value	Description
align	left center right	Aligns the table. Deprecated. Use styles instead.
bgcolor	rgb(x,x,x) #xxxxxx colorname	Specifies the background color of the table. Deprecated. Use styles instead.
border	pixels	Specifies the border width. **Tip:** Set border="0" to display tables with no borders!
cellpadding	pixels %	Specifies the space between the cell walls and contents
cellspacing	pixels %	Specifies the space between cells
frame	void above below hsides lhs rhs vsides box border	Specifies how the outer borders should be displayed. **Note:** Must be used in conjunction with the "border" attribute!
rules	none groups rows cols all	Specifies the horizontal/vertical divider lines. **Note:** Must be used in conjunction with the "border" attribute!
width	% pixels	Specifies the width of the table

The <td> tag attributes

Attribute	Value	Description
abbr	abbr_text	Specifies an abbreviated version of the content in a cell
align	left right center justify char	Specifies the horizontal alignment of cell content
bgcolor	rgb(x,x,x) #xxxxxx colorname	Specifies the background color of the table cell. Deprecated. Use styles instead.
colspan	number	Indicates the number of columns this cell should span
height	pixels	Specifies the height of the table cell. Deprecated. Use styles instead.
nowrap	nowrap	Whether to disable or enable automatic text wrapping in this cell. Deprecated. Use styles instead.
rowspan	number	Indicates the number of rows this cell should span
valign	top middle bottom baseline	Specifies the vertical alignment of cell content
width	pixels %	Specifies the width of the table cell. Deprecated. Use styles instead.

Lists

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

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

- Definition Lists
  - This is a list of terms and explanation of the terms
  - A definition list starts with the <dl> tag. Each definition-list term starts with the <dt> tag. Each definition-list definition starts with the <dd> tag.

Forms

- A form is an area that can contain form elements
  - Form elements are elements that allow the user to enter information (like text fields, textarea fields, drop-down menus, radio buttons, checkboxes, etc.) in a form
  - `<form> <input> <input> </form>`

- Input
  - The most used form tag is the <input> tag. The type of input is specified with the type attribute.
  - Text Fields
  - Radio Buttons
  - Checkboxes
  - Drop Lists

… Forms

```
<form>
First name: <input type="text" name="firstname">
<br>
Last name: <input type="text" name="lastname">
<input type="radio" name="sex" value="male" checked> Male
<br>
<input type="radio" name="sex" value="female"> Female
<input type="checkbox" name="bike"> I have a bike
<br>
<input type="checkbox" name="car"> I have a car
<select name="cars">
  <option value="volvo">Volvo
  <option value="saab">Saab
  <option value="fiat">Fiat
  <option value="audi">Audi
</select>
<textarea rows="10" cols="30">
</textarea>
</form>
```

… Forms

- The Form's Action Attribute and the Submit Button
  - □ When the user clicks on the "Submit" button, the content of the form is sent to another file.
  - □ The form's action attribute defines the name of the file to send the content to
  - □ `<input type="submit" value="Send">`

… Forms

```
<form action="MAILTO:someone@w3schools.com" method="post"
enctype="text/plain">

<h3>This form sends an e-mail to W3Schools.</h3>
Name:<br>
<input type="text" name="name"
value="yourname" size="20">
<br>
Mail:<br>
<input type="text" name="mail"
value="yourmail" size="20">
<br>
Comment:<br>
<input type="text" name="comment"
value="yourcomment" size="40">
<br><br>
<input type="submit" value="Send">
<input type="reset" value="Reset">

</form>
```

Images

- images are defined with the `<img>` tag
  - `<img src="boat.gif" alt="Big Boat">`
  - optional attributes

align	top bottom middle left right	Specifies how to align the image according to surrounding text. Deprecated. Use styles instead
border	pixels	Defines a border around an image. Deprecated. Use styles instead
height	pixels %	Defines the height of an image
hspace	pixels	Defines white space on the left and right side of the image. Deprecated. Use styles instead
ismap	URL	Defines the image as a server-side image map
longdesc	URL	A URL to a document that contains a long description of the image
usemap	URL	Defines the image as a client-side image map. Look at the `<map>` and `<area>` tags to figure out how it works
vspace	pixels	Defines white space on the top and bottom of the image. Deprecated. Use styles instead
width	pixels %	Sets the width of an image

… Images

Let the image float

```
<p>
<img src ="/images/xhtml.gif"
align ="left" width="100" height="50">
A paragraph with an image. The align attribute of the
image is set to "left". The image will float to the
left of this text.
</p>
```

Make a hyperlink of an image

```
<p>
You can also use an image as a link:
<a href="lastpage.htm">
<img border="0" src="buttonnext.gif" width="65" height="38">
</a>
</p>
```

Image Maps

- An imagemap allows you to create links to different URLs according to where you click on the image

- Imagemaps are useful for creating links on maps, diagrams, fancy buttons, etc.

- The map file defines the areas of the image and the URLs that correlate to each different areas.

- There are two types of image maps:
  - *Client-side.* When a user activates a region of a client-side image map with a mouse, the pixel coordinates are interpreted by the user agent. The user agent selects a link that was specified for the activated region and follows it.
  - *Server-side.* When a user activates a region of a server-side image map with a mouse, the pixel coordinates of the click are sent to the server-side agent specified by the href attribute of the A element. The server-side agent interprets the coordinates and performs some action.

Backgrounds

- The background can be a color or an image
  - `<body bgcolor="#000000">`
  - `<body bgcolor="rgb(0,0,0)">`
  - `<body bgcolor="black">`
  - `<body background="clouds.gif">`
  - `<body background="http://www.w3schools.com/clouds.gif">`
  - the background image will increase the loading time
  - The bgcolor, background, and the text attributes in the <body> tag are deprecated in the latest versions of HTML (HTML 4 and XHTML)
  - In future versions of HTML, style sheets (CSS) will be used to define the layout and display properties of HTML elements

Reading List

- Introduction to HTML

- More advanced HTML features

- HTML Short Ref

- HTML 4 Quick List

- W3Schools HTML Tutorial