

HTML NOTES W3SCHOOLS

HTML stands for Hyper Text Markup Language

1989	Tim Berners-Lee invented www
1991	Tim Berners-Lee invented HTML
1993	Dave Raggett drafted HTML+
1995	HTML Working Group defined HTML 2.0
1997	W3C Recommendation: HTML 3.2
1999	W3C Recommendation: HTML 4.01
2000	W3C Recommendation: XHTML 1.0
2008	WHATWG HTML5 First Public Draft
2012	<u>WHATWG HTML5 Living Standard</u>
2014	<u>W3C Recommendation: HTML5</u>
2016	W3C Candidate Recommendation: HTML 5.1
2017	<u>W3C Recommendation: HTML5.1 2nd Edition</u>
2017	<u>W3C Recommendation: HTML5.2</u>

Sample Document Page:

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>My First Heading</h1>
<p>My first paragraph.</p>

</body>
</html>
```

- The `<!DOCTYPE html>` declaration defines that this document is an HTML5 document
- The `<html>` element is the root element of an HTML page
- The `<head>` element contains meta information about the HTML page
- The `<title>` element specifies a title for the HTML page (which is shown in the browser's title bar or in the page's tab)
- The `<body>` element defines the document's body, and is a container for all the visible contents, such as headings, paragraphs, images, hyperlinks, tables, lists, etc.

- The `<h1>` element defines a large heading
- The `<p>` element defines a paragraph

Tag	Description
<code><head></code>	Defines information about the document
<code><title></code>	Defines the title of a document
<code><base></code>	Defines a default address or a default target for all links on a page
<code><link></code>	Defines the relationship between a document and an external resource
<code><meta></code>	Defines metadata about an HTML document
<code><script></code>	Defines a client-side script
<code><style></code>	Defines style information for a document

`<tagname>`Content goes here...`</tagname>`

The `<!DOCTYPE>` declaration represents the document type, and helps browsers to display web pages correctly.

It must only appear once, at the top of the page (before any HTML tags).

The `<!DOCTYPE>` declaration is not case sensitive.

The `<!DOCTYPE>` declaration for HTML5 is:

```
<!DOCTYPE html>
```

HTML headings are defined with the `<h1>` to `<h6>` tags.

`<h1>` defines the most important heading. `<h6>` defines the least important heading:

Example

```
<h1>This is heading 1</h1>
<h2>This is heading 2</h2>
<h3>This is heading 3</h3>
```

HTML paragraphs are defined with the `<p>` tag:

Example

```
<p>This is a paragraph.</p>
<p>This is another paragraph.</p>
```

There are two ways to specify the URL in the `src` attribute:

1. Absolute URL - Links to an external image that is hosted on another website. Example: `src="https://www.w3schools.com/images/img_girl.jpg"`.

Notes: External images might be under copyright. If you do not get permission to use it, you may be in violation of copyright laws. In addition, you cannot control external images; it can suddenly be removed or changed.

2. Relative URL - Links to an image that is hosted within the website. Here, the URL does not include the domain name. If the URL begins without a slash, it will be relative to the current page. Example: `src="img_girl.jpg"`. If the URL begins with a slash, it will be relative to the domain. Example: `src="/images/img_girl.jpg"`.

HTML Attributes

```
<a href="https://www.w3schools.com">Visit W3Schools</a>
```

```

```

```
<p style="color:red;">This is a red paragraph.</p>
```

```
<p title="I'm a tooltip">This is a paragraph.</p>
```

PRE TAG

The HTML `<pre>` element defines preformatted text.

The text inside a `<pre>` element is displayed in a fixed-width font (usually Courier), and it preserves both spaces and line breaks:

```
<pre>
  My Bonnie lies over the ocean.

  My Bonnie lies over the sea.

  My Bonnie lies over the ocean.

  Oh, bring back my Bonnie to me.
</pre>
```

STYLE ATTRIBUTE

```
<tagname style="property:value;">
```

HTML Text Formatting Elements

Tag	Description
<code></code>	Defines bold text
<code></code>	Defines emphasized text
<code><i></code>	Defines a part of text in an alternate voice or mood
<code><small></code>	Defines smaller text
<code></code>	Defines important text
<code><sub></code>	Defines subscripted text
<code><sup></code>	Defines superscripted text
<code><ins></code>	Defines inserted text
<code></code>	Defines deleted text
<code><mark></code>	Defines marked/highlighted text

HTML Quotation and Citation Elements

Tag	Description
<code><abbr></code>	Defines an abbreviation or acronym
<code><address></code>	Defines contact information for the author/owner of a document
<code><bdo></code>	Defines the text direction
<code><blockquote></code>	Defines a section that is quoted from another source
<code><cite></code>	Defines the title of a work
<code><q></code>	Defines a short inline quotation

HTML Comment Tag

You can add comments to your HTML source by using the following syntax:

```
<!-- Write your comments here -->
```

Using CSS

CSS can be added to HTML documents in 3 ways:

- **Inline** - by using the `style` attribute inside HTML elements

```
<h1 style="color:blue;">A Blue Heading</h1>
```

- **Internal** - by using a `<style>` element in the `<head>` section

```
<!DOCTYPE html>
<html>
<head>
<style>
body {background-color: powderblue;}
h1   {color: blue;}
p    {color: red;}
</style>
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

- **External** - by using a `<link>` element to link to an external CSS file

```
<!DOCTYPE html>
<html>
<head>
  <link rel="stylesheet" href="styles.css">
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

- Use the HTML `style` attribute for inline styling
- Use the HTML `<style>` element to define internal CSS
- Use the HTML `<link>` element to refer to an external CSS file
- Use the HTML `<head>` element to store `<style>` and `<link>` elements
- Use the CSS `color` property for text colors
- Use the CSS `font-family` property for text fonts
- Use the CSS `font-size` property for text sizes
- Use the CSS `border` property for borders
- Use the CSS `padding` property for space inside the border
- Use the CSS `margin` property for space outside the border

HTML Links - Syntax

The HTML `<a>` tag defines a hyperlink. It has the following syntax:

```
<a href="url">Link text</a>
```

The `target` attribute can have one of the following values:

- `_self` - Default. Opens the document in the same window/tab as it was clicked
- `_blank` - Opens the document in a new window or tab
- `_parent` - Opens the document in the parent frame
- `_top` - Opens the document in the full body of the window

```
<a href="https://www.w3schools.com/" target="_blank">Visit  
W3Schools!</a>
```

HTML Links - Use an Image as a Link

To use an image as a link, just put the `` tag inside the `<a>` tag:

Example

```
<a href="default.asp">  
  
</a>
```

Link to an Email Address

Use `mailto:` inside the `href` attribute to create a link that opens the user's email program (to let them send a new email):

Example

```
<a href="mailto:someone@example.com">Send email</a>
```

Button as a Link

To use an HTML button as a link, you have to add some JavaScript code.

JavaScript allows you to specify what happens at certain events, such as a click of a button:

Example

```
<button onclick="document.location='default.asp'">HTML  
Tutorial</button>
```

Link Titles

The **title** attribute specifies extra information about an element. The information is most often shown as a tooltip text when the mouse moves over the element.

Example

```
<a href="https://www.w3schools.com/html/" title="Go to W3Schools HTML  
section">Visit our HTML Tutorial</a>
```

HTML Link Colors

```
<style>  
a:link {  
    color: green;  
    background-color: transparent;  
    text-decoration: none;  
}  
  
a:visited {  
    color: pink;  
    background-color: transparent;  
    text-decoration: none;  
}  
  
a:hover {  
    color: red;  
    background-color: transparent;  
    text-decoration: underline;  
}  
  
a:active {  
    color: yellow;  
    background-color: transparent;  
    text-decoration: underline;  
}  
</style>
```

Create a Bookmark in HTML

Example

First, use the `id` attribute to create a bookmark:

```
<h2 id="C4">Chapter 4</h2>
```

Then, add a link to the bookmark ("Jump to Chapter 4"), from within the same page:

Example

```
<a href="#C4">Jump to Chapter 4</a>
```

HTML Images Syntax

- `src` - Specifies the path to the image
- `alt` - Specifies an alternate text for the image

```

```

```

```

Image as a Link

```
<a href="default.asp">  
    
</a>
```

Abbreviation	File Format	File Extension
APNG	Animated Portable Network Graphics	.apng
GIF	Graphics Interchange Format	.gif
ICO	Microsoft Icon	.ico, .cur
JPEG	Joint Photographic Expert Group image	.jpg, .jpeg, .jfif, .pjpeg, .jpp
PNG	Portable Network Graphics	.png
SVG	Scalable Vector Graphics	.svg

Background Image on a HTML element

```
<p style="background-image: url('img_girl.jpg');">
```

Or

```
<style>
body {
  background-image: url('img_girl.jpg');
  background-repeat: no-repeat;
  background-attachment: fixed;
  background-size: cover;
}
</style>
```

The HTML <picture> Element

The HTML <picture> element gives web developers more flexibility in specifying image resources.

The <picture> element contains one or more <source> elements, each referring to different images through the srcset attribute. This way the browser can choose the image that best fits the current view and/or device.

Each <source> element has a media attribute that defines when the image is the most suitable.

Example

Show different images for different screen sizes:

```
<picture>
  <source media="(min-width: 650px)" srcset="img_food.jpg">
  <source media="(min-width: 465px)" srcset="img_car.jpg">
  
</picture>
```

How To Add a Favicon in HTML

```
<link rel="icon" type="image/x-icon" href="/images/favicon.ico">
```

HTML Page Title

```
<head>
  <title>HTML Tutorial</title>
</head>
```

HTML Tables

td stands for table data.

tr stands for table row.

th stands for table header.

HTML Table Tags

Tag	Description
<code><table></code>	Defines a table
<code><th></code>	Defines a header cell in a table
<code><tr></code>	Defines a row in a table
<code><td></code>	Defines a cell in a table
<code><caption></code>	Defines a table caption
<code><colgroup></code>	Specifies a group of one or more columns in a table for formatting
<code><col></code>	Specifies column properties for each column within a <code><colgroup></code> element
<code><thead></code>	Groups the header content in a table
<code><tbody></code>	Groups the body content in a table
<code><tfoot></code>	Groups the footer content in a table

Company	Contact	Country
Alfreds Futterkiste	Maria Anders	Germany
Centro comercial Moctezuma	Francisco Chang	Mexico

Code:

```
<table>
  <tr>
    <th>Company</th>
    <th>Contact</th>
    <th>Country</th>
  </tr>
  <tr>
    <td>Alfreds Futterkiste</td>
    <td>Maria Anders</td>
    <td>Germany</td>
  </tr>
```

```
<tr>
  <td>Centro comercial Moctezuma</td>
  <td>Francisco Chang</td>
  <td>Mexico</td>
</tr>
</table>
```

How To Add a Border

```
table, th, td {
  border: 1px solid black;
}
```


Collapsed Table Borders

```
table, th, td {
  border: 1px solid black;
  border-collapse: collapse;
}
```


Style Table Borders

```
table, th, td {
  border: 1px solid white;
  border-collapse: collapse;
}
th, td {
  background-color: #96D4D4;
}
```


The following values are allowed

- dotted
- dashed
- solid
- double
- groove
- ridge
- inset
- outset
- none
- hidden



```
th, td {  
  border-style: dotted;  
  border-color: #96D4D4;  
}
```


```
<table style="width:100%">
```

100% wide HTML Table

Firstname	Lastname	Age
Jill	Smith	50
Eve	Jackson	94
John	Doe	80

```
<table style="width:100%">  
  <tr>  
    <th style="width:70%">Firstname</th>  
    <th>Lastname</th>  
    <th>Age</th>  
  </tr>
```


```

<table style="width:100%">
  <tr>
    <th>Firstname</th>
    <th>Lastname</th>
    <th>Age</th>
  </tr>
  <tr style="height:200px">
    <td>Jill</td>
    <td>Smith</td>
    <td>50</td>
  </tr>
  <tr>
    <td>Eve</td>
    <td>Jackson</td>
    <td>94</td>
  </tr>
</table>

```


Vertical Table Headers

```

<table>
  <tr>
    <th>Firstname</th>
    <td>Jill</td>
    <td>Eve</td>
  </tr>
  <tr>
    <th>Lastname</th>
    <td>Smith</td>
    <td>Jackson</td>
  </tr>
  <tr>
    <th>Age</th>
    <td>94</td>
    <td>50</td>
  </tr>
</table>

```

Firstname	Jill	Eve
Lastname	Smith	Jackson
Age	50	94

Align Table Headers

By default, table headers are bold and centered:

Firstname	Lastname	Age
Jill	Smith	50
Eve	Jackson	94

```
th {
  text-align: left;
}
```

Header for Multiple Columns

You can have a header that spans over two or more columns.

Name		Age
Jill	Smith	50
Eve	Jackson	94

To do this, use the `colspan` attribute on the `<th>` element:

```
<table>
  <tr>
    <th colspan="2">Name</th>
    <th>Age</th>
  </tr>
  <tr>
    <td>Jill</td>
    <td>Smith</td>
    <td>50</td>
  </tr>
  <tr>
    <td>Eve</td>
    <td>Jackson</td>
    <td>94</td>
  </tr>
</table>
```

Table Caption

You can add a caption that serves as a heading for the entire table.

Monthly savings

Month	Savings
January	\$100
February	\$50

To add a caption to a table, use the `<caption>` tag:

```
<table style="width:100%">
  <caption>Monthly savings</caption>
  <tr>
    <th>Month</th>
    <th>Savings</th>
  </tr>
  <tr>
    <td>January</td>
    <td>$100</td>
  </tr>
  <tr>
    <td>February</td>
    <td>$50</td>
  </tr>
</table>
```

HTML tables can have cells that span over multiple rows and/or columns.

NAME		

APRIL		

2022		
FIESTA		

```
<tr>
  <th colspan="2">Name</th>
  <th>Age</th>
</tr>

<tr>
  <th rowspan="2">Phone</th>
  <td>555-1234</td>
</tr>
```

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20

```
tr:nth-child(even) {
  background-color: #D6EEEE;
}
```

HTML Lists

An unordered HTML list:

- Item
- Item
- Item
- Item

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

Type	Description
type="1"	The list items will be numbered with numbers (default)
type="A"	The list items will be numbered with uppercase letters
type="a"	The list items will be numbered with lowercase letters
type="I"	The list items will be numbered with uppercase roman numbers
type="i"	The list items will be numbered with lowercase roman numbers

An ordered HTML list:

1. First item
2. Second item
3. Third item
4. Fourth item

```
<ol style="list-style-type:none;">
  <li>Coffee</li>
  <li>Tea</li>
```



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

Value	Description
disc	Sets the list item marker to a bullet (default)
circle	Sets the list item marker to a circle
square	Sets the list item marker to a square
none	The list items will not be marked

A Description List

Coffee

- black hot drink

Milk

- white cold drink

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

Tag	Description
<u></u>	Defines an unordered list
<u></u>	Defines an ordered list
<u></u>	Defines a list item
<u><dl></u>	Defines a description list
<u><dt></u>	Defines a term in a description list
<u><dd></u>	Describes the term in a description list

The <p> element is a block-level element.

```
<span>Hello World</span>
```

Iframe TAGS

```
<iframe src="url" title="description"></iframe>
```

```
<iframe src="demo_iframe.htm" name="iframe_a" title="Iframe
Example"></iframe>
```

File Path Examples

Path	Description
<code></code>	The "picture.jpg" file is located in the same folder as the current page
<code></code>	The "picture.jpg" file is located in the images folder in the current folder
<code></code>	The "picture.jpg" file is located in the images folder at the root of the current web
<code></code>	The "picture.jpg" file is located in the folder one level up from the current folder

Relative File Paths

```

```

Absolute File Paths

```

```

HTML Layout Elements

HTML has several semantic elements that define the different parts of a web page:



- `<header>` - Defines a header for a document or a section
- `<nav>` - Defines a set of navigation links
- `<section>` - Defines a section in a document
- `<article>` - Defines an independent, self-contained content
- `<aside>` - Defines content aside from the content (like a sidebar)
- `<footer>` - Defines a footer for a document or a section
- `<details>` - Defines additional details that the user can open and close on demand
- `<summary>` - Defines a heading for the `<details>` element

You can read more about semantic elements in our [HTML Semantics](#) chapter.

HTML Entities

`&entity_name;`

OR

`&#entity_number;`

<	less than	<	<
>	greater than	>	>
&	ampersand	&	&
"	double quotation mark	"	"
'	single quotation mark (apostrophe)	'	'
¢	cent	¢	¢
£	pound	£	£
¥	yen	¥	¥
€	euro	€	€
©	copyright	©	©
®	registered trademark	®	®

HTML Forms

Type	Description
<code><input type="text"></code>	Displays a single-line text input field
<code><input type="radio"></code>	Displays a radio button (for selecting one of many choices)
<code><input type="checkbox"></code>	Displays a checkbox (for selecting zero or more of many choices)
<code><input type="submit"></code>	Displays a submit button (for submitting the form)
<code><input type="button"></code>	Displays a clickable button

```
<form>
  <label for="fname">First name:</label><br>
  <input type="text" id="fname" name="fname"><br>
  <label for="lname">Last name:</label><br>
  <input type="text" id="lname" name="lname">
</form>
```

Radio Buttons

`<p>Choose your favorite Web language:</p>`

```
<form>
  <input type="radio" id="html" name="fav_language" value="HTML">
  <label for="html">HTML</label><br>
  <input type="radio" id="css" name="fav_language" value="CSS">
  <label for="css">CSS</label><br>
  <input type="radio" id="javascript" name="fav_language" value="JavaScript">
  <label for="javascript">JavaScript</label>
</form>
```

- ☐ HTML
- ☐ CSS
- ☐ JavaScript

Checkboxes

```
<form>
  <input type="checkbox" id="vehicle1" name="vehicle1" value="Bike">
  <label for="vehicle1"> I have a bike</label><br>
  <input type="checkbox" id="vehicle2" name="vehicle2" value="Car">
  <label for="vehicle2"> I have a car</label><br>
```

```
<input type="checkbox" id="vehicle3" name="vehicle3" value="Boat">
<label for="vehicle3"> I have a boat</label>
</form>
```

- ☐ I have a bike
- ☐ I have a car
- ☐ I have a boat

Submit Button

```
<input type="submit" value="Submit">
```

Action Attribute

The **action** attribute defines the action to be performed when the form is submitted.

```
<form action="/action_page.php">
  <label for="fname">First name:</label><br>
  <input type="text" id="fname" name="fname" value="John"><br>
  <label for="lname">Last name:</label><br>
  <input type="text" id="lname" name="lname" value="Doe"><br><br>
  <input type="submit" value="Submit">
</form>
```

The Method Attribute

The **method** attribute specifies the HTTP method to be used when submitting the form data.

The form-data can be sent as URL variables (with **method="get"**) or as HTTP post transaction (with **method="post"**).

Notes on GET:

- Appends the form data to the URL, in name/value pairs
- NEVER use GET to send sensitive data! (the submitted form data is visible in the URL!)
- The length of a URL is limited (2048 characters)
- Useful for form submissions where a user wants to bookmark the result
- GET is good for non-secure data, like query strings in Google

Notes on POST:

- Appends the form data inside the body of the HTTP request (the submitted form data is not shown in the URL)
- POST has no size limitations, and can be used to send large amounts of data.

- Form submissions with POST cannot be bookmarked

The HTML `<form>` Elements

```
<input>
<label>
<select>
<textarea>
<button>
<fieldset>
<legend>
<datalist>
<output>
<option>
<optgroup>
```

The `<select>` Element

```
<label for="cars">Choose a car:</label>
<select id="cars" name="cars">
  <option value="volvo">Volvo</option>
  <option value="fiat" selected>Fiat</option>
  <option value="fiat">Fiat</option>
  <option value="audi">Audi</option>
</select>
```

Allow Multiple Selections:

```
<select id="cars" name="cars" size="4" multiple>
```

```
<textarea name="message" style="width:200px; height:600px;">
The cat was playing in the garden.
</textarea>
```

```
<button type="button" onclick="alert('Hello World!')">Click
Me!</button>
```

```
*****
```

```
<form action="/action_page.php">
  <fieldset>
    <legend>Personalia:</legend>
    <label for="fname">First name:</label><br>
    <input type="text" id="fname" name="fname" value="John"><br>
    <label for="lname">Last name:</label><br>
    <input type="text" id="lname" name="lname" value="Doe"><br><br>
```

```
        <input type="submit" value="Submit">
    </fieldset>
</form>
```

Personalia:

First name:

Last name:

Tag	Description
<u><form></u>	Defines an HTML form for user input
<u><input></u>	Defines an input control
<u><textarea></u>	Defines a multiline input control (text area)
<u><label></u>	Defines a label for an <input> element
<u><fieldset></u>	Groups related elements in a form
<u><legend></u>	Defines a caption for a <fieldset> element
<u><select></u>	Defines a drop-down list
<u><optgroup></u>	Defines a group of related options in a drop-down list
<u><option></u>	Defines an option in a drop-down list
<u><button></u>	Defines a clickable button
<u><datalist></u>	Specifies a list of pre-defined options for input controls
<u><output></u>	Defines the result of a calculation

- `<input type="button">`
- `<input type="checkbox">`
- `<input type="color">`
- `<input type="date">`
- `<input type="datetime-local">`
- `<input type="email">`
- `<input type="file">`
- `<input type="hidden">`
- `<input type="image">`
- `<input type="month">`
- `<input type="number">`
- `<input type="password">`
- `<input type="radio">`
- `<input type="range">`
- `<input type="reset">`
- `<input type="search">`
- `<input type="submit">`
- `<input type="tel">`
- `<input type="text">`
- `<input type="time">`
- `<input type="url">`
- `<input type="week">`

The readonly Attribute

```
<form>
  <label for="fname">First name:</label><br>
  <input type="text" id="fname" name="fname" value="John" readonly><br>
  <label for="lname">Last name:</label><br>
  <input type="text" id="lname" name="lname" value="Doe">
</form>
```

disabled Attribute

```
<form>
  <label for="fname">First name:</label><br>
  <input type="text" id="fname" name="fname" value="John" disabled><br>
  <label for="lname">Last name:</label><br>
  <input type="text" id="lname" name="lname" value="Doe">
</form>
```

required Attribute

```
<form>
  <label for="username">Username:</label>
  <input type="text" id="username" name="username" required>
</form>
```


The min and max Attributes

```
<form>
  <label for="datemax">Enter a date before 1980-01-01:</label>
  <input type="date" id="datemax" name="datemax" max="1979-12-31"><br><br>

  <label for="datemin">Enter a date after 2000-01-01:</label>
  <input type="date" id="datemin" name="datemin" min="2000-01-02"><br><br>

  <label for="quantity">Quantity (between 1 and 5):</label>
  <input type="number" id="quantity" name="quantity" min="1" max="5">
</form>
```

The maxlength Attribute

```
<form>
  <label for="fname">First name:</label><br>
  <input type="text" id="fname" name="fname" size="50"><br>
  <label for="pin">PIN:</label><br>
  <input type="text" id="pin" name="pin" maxlength="4" size="4">
</form>
```

HTML Video

```
<video width="320" height="240" controls>
  <source src="movie.mp4" type="video/mp4">
  <source src="movie.ogg" type="video/ogg">
Your browser does not support the video tag.
</video>
```

```
<video width="320" height="240" autoplay>
<video width="320" height="240" autoplay muted>
```