HTML Introduction

What is HTML?

HTML is the standard markup language for creating Web pages.

HTML stands for Hyper Text Markup Language

HTML describes the structure of Web pages using markup

HTML elements are the building blocks of HTML pages

HTML elements are represented by tags

HTML tags label pieces of content such as "heading", "paragraph", "table", and so on

Browsers do not display the HTML tags, but use them to render the content of the page

A Simple HTML Document

Example

<!DOCTYPE html>  
<html>  
<head>  
<title>Page Title</title>  
</head>  
<body>  
  
<h1>My First Heading</h1>  
<p>My first paragraph.</p>  
  
</body>  
</html>

Example Explained

The <!DOCTYPE html> declaration defines this document to be HTML5

The <html> element is the root element of an HTML page

The <head> element contains meta information about the document

The <title> element specifies a title for the document

The <body> element contains the visible page content

The <h1> element defines a large heading

The <p> element defines a paragraph

HTML Tags

HTML tags are element names surrounded by angle brackets:

<tagname>content goes here...</tagname>

HTML tags normally come in pairs like <p> and </p>

The first tag in a pair is the start tag, the second tag is the end tag

The end tag is written like the start tag, but with a forward slash inserted before the tag name

Tip: The start tag is also called the opening tag, and the end tag the closing tag.

Web Browsers

The purpose of a web browser (Chrome, IE, Firefox, Safari) is to read HTML documents and display them.

The browser does not display the HTML tags, but uses them to determine how to display the document:



HTML Page Structure

Below is a visualization of an HTML page structure:

<html>

<head>

<title>Page title</title>

</head>

<body>

<h1>This is a heading</h1>

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

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

</body>

</html>

Note: Only the content inside the <body> section (the white area above) is displayed in a browser.

The <!DOCTYPE> Declaration

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 Versions

Since the early days of the web, there have been many versions of HTML:

|  |  |
| --- | --- |
| Version | Year |
| HTML | 1991 |
| HTML 2.0 | 1995 |
| HTML 3.2 | 1997 |
| HTML 4.01 | 1999 |
| XHTML | 2000 |
| HTML5 | 2014 |

HTML Editors

Write HTML Using Notepad or TextEdit

Web pages can be created and modified by using professional HTML editors.

However, for learning HTML we recommend a simple text editor like Notepad (PC) or TextEdit (Mac).

We believe using a simple text editor is a good way to learn HTML.

Follow the four steps below to create your first web page with Notepad or TextEdit.

Step 1: Open Notepad (PC)

Windows 8 or later:

Open the Start Screen (the window symbol at the bottom left on your screen). Type Notepad.

Windows 7 or earlier:

Open Start > Programs > Accessories > Notepad

Step 1: Open TextEdit (Mac)

Open Finder > Applications > TextEdit

Also change some preferences to get the application to save files correctly. In Preferences > Format > choose "Plain Text"

Then under "Open and Save", check the box that says "Display HTML files as HTML code instead of formatted text".

Then open a new document to place the code.

Step 2: Write Some HTML

Write or copy some HTML into Notepad.

<!DOCTYPE html>  
<html>  
<body>  
  
<h1>My First Heading</h1>  
  
<p>My first paragraph.</p>  
  
</body>  
</html>



Step 3: Save the HTML Page

Save the file on your computer. Select File > Save as in the Notepad menu.

Name the file "index.htm" and set the encoding to UTF-8 (which is the preferred encoding for HTML files).



You can use either .htm or .html as file extension. There is no difference, it is up to you.

Step 4: View the HTML Page in Your Browser

Open the saved HTML file in your favorite browser (double click on the file, or right-click - and choose "Open with").

The result will look much like this:



W3Schools Online Editor

With our free online editor, you can edit HTML code and view the result in your browser.

It is the perfect tool when you want to test code fast. It also has color coding and the ability to save and share code with others:

Example

<!DOCTYPE html>  
<html>  
<head>  
<title>Page Title</title>  
</head>  
<body>  
  
<h1>This is a Heading</h1>  
<p>This is a paragraph.</p>  
  
</body>  
</html>

HTML Basic Examples

Don't worry if these examples use tags you have not learned.

You will learn about them in the next chapters.

HTML Documents

All HTML documents must start with a document type declaration: <!DOCTYPE html>.

The HTML document itself begins with <html> and ends with </html>.

The visible part of the HTML document is between <body> and </body>.

Example

<!DOCTYPE html>  
<html>  
<body>  
  
<h1>My First Heading</h1>  
<p>My first paragraph.</p>  
  
</body>  
</html>

HTML Headings

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

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

Example

<!DOCTYPE html>

<html>

<body>

<h1>This is heading 1</h1>

<h2>This is heading 2</h2>

<h3>This is heading 3</h3>

<h4>This is heading 4</h4>

<h5>This is heading 5</h5>

<h6>This is heading 6</h6>

</body>

</html>

HTML Paragraphs

HTML paragraphs are defined with the <p> tag:

Example

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

HTML Links

HTML links are defined with the <a> tag:

Example

<a href="https://www.w3schools.com">This is a link</a>

The link's destination is specified in the href attribute.

Attributes are used to provide additional information about HTML elements.

You will learn more about attributes in a later chapter.

HTML Images

HTML images are defined with the <img> tag.

The source file (src), alternative text (alt), width, and height are provided as attributes:

Example

<img src="w3schools.jpg" alt="W3Schools.com" width="104" height="142">

HTML Buttons

HTML buttons are defined with the <button> tag:

Example

<!DOCTYPE html>

<html>

<body>

<h2>HTML Buttons</h2>

<p>HTML buttons are defined with the button tag:</p>

<button>Click me</button>

</body>

</html>

HTML Lists

HTML lists are defined with the <ul> (unordered/bullet list) or the <ol> (ordered/numbered list) tag, followed by <li> tags (list items):

Example

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

HTML Elements

HTML Elements

An HTML element usually consists of a start tag and end tag, with the content inserted in between:

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

The HTML element is everything from the start tag to the end tag:

<p>My first paragraph.</p>

|  |  |  |
| --- | --- | --- |
| Start tag | Element content | End tag |
| <h1> | My First Heading | </h1> |
| <p> | My first paragraph. | </p> |
| <br> |  |  |

HTML elements with no content are called empty elements. Empty elements do not have an end tag, such as the <br> element (which indicates a line break).

Nested HTML Elements

HTML elements can be nested (elements can contain elements).

All HTML documents consist of nested HTML elements.

This example contains four HTML elements:

Example

<!DOCTYPE html>  
<html>  
<body>  
  
<h1>My First Heading</h1>  
<p>My first paragraph.</p>  
  
</body>  
</html>

Example Explained

The <html> element defines the whole document.

It has a start tag <html> and an end tag </html>.

The element content is another HTML element (the <body> element).

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

The <body> element defines the document body.

It has a start tag <body> and an end tag </body>.

The element content is two other HTML elements (<h1> and <p>).

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

The <h1> element defines a heading.

It has a start tag <h1> and an end tag </h1>.

The element content is: My First Heading.

<h1>My First Heading</h1>

The <p> element defines a paragraph.

It has a start tag <p> and an end tag </p>.

The element content is: My first paragraph.

<p>My first paragraph.</p>

Do Not Forget the End Tag

Some HTML elements will display correctly, even if you forget the end tag:

Example

<html>  
<body>  
  
<p>This is a paragraph  
<p>This is a paragraph  
  
</body>  
</html>

The example above works in all browsers, because the closing tag is considered optional.

Never rely on this. It might produce unexpected results and/or errors if you forget the end tag.

Empty HTML Elements

HTML elements with no content are called empty elements.

<br> is an empty element without a closing tag (the <br> tag defines a line break):

Example

<p>This is a <br> paragraph with a line break.</p>

Empty elements can be "closed" in the opening tag like this: <br />.

HTML5 does not require empty elements to be closed. But if you want stricter validation, or if you need to make your document readable by XML parsers, you must close all HTML elements properly.

Use Lowercase Tags

HTML tags are not case sensitive: <P> means the same as <p>.

The HTML5 standard does not require lowercase tags, but W3C recommends lowercase in HTML, and demands lowercase for stricter document types like XHTML.

At W3Schools we always use lowercase tags.

HTML Attributes

Attributes provide additional information about HTML elements.

HTML Attributes

All HTML elements can have attributes

Attributes provide additional information about an element

Attributes are always specified in the start tag

Attributes usually come in name/value pairs like: name="value"

The href Attribute

HTML links are defined with the <a> tag. The link address is specified in the href attribute:

Example

<a href="https://www.w3schools.com">This is a link</a>

You will learn more about links and the <a> tag later in this tutorial.

The src Attribute

HTML images are defined with the <img> tag.

The filename of the image source is specified in the src attribute:

Example

<img src="img\_girl.jpg">

The width and height Attributes

Images in HTML have a set of size attributes, which specifies the width and height of the image:

Example

<img src="img\_girl.jpg" width="500" height="600">

The image size is specified in pixels: width="500" means 500 pixels wide.

You will learn more about images in our [HTML Images chapter](https://www.w3schools.com/html/html_images.asp).

The alt Attribute

The alt attribute specifies an alternative text to be used, when an image cannot be displayed.

The value of the attribute can be read by screen readers. This way, someone "listening" to the webpage, e.g. a vision impaired person, can "hear" the element.

Example

<img src="img\_girl.jpg" alt="Girl with a jacket">

The alt attribute is also useful if the image does not exist:

Example

See what happens if we try to display an image that does not exist:

<img src="img\_typo.jpg" alt="Girl with a jacket">

The style Attribute

The style attribute is used to specify the styling of an element, like color, font, size etc.

Example

<p style="color:red">I am a paragraph</p>

You will learn more about styling later in this tutorial, and in our [CSS Tutorial](https://www.w3schools.com/css/default.asp).

The lang Attribute

The language of the document can be declared in the <html> tag.

The language is declared with the lang attribute.

Declaring a language is important for accessibility applications (screen readers) and search engines:

<!DOCTYPE html>  
<html lang="en-US">  
<body>  
  
...  
  
</body>  
</html>

The first two letters specify the language (en). If there is a dialect, use two more letters (US).

The title Attribute

Here, a title attribute is added to the <p> element. The value of the title attribute will be displayed as a tooltip when you mouse over the paragraph:

Example

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

We Suggest: Use Lowercase Attributes

The HTML5 standard does not require lowercase attribute names.

The title attribute can be written with uppercase or lowercase like title or TITLE.

W3C recommends lowercase in HTML, and demands lowercase for stricter document types like XHTML.

At W3Schools we always use lowercase attribute names.

We Suggest: Quote Attribute Values

The HTML5 standard does not require quotes around attribute values.

The href attribute, demonstrated above, can be written without quotes:

Bad

<a href=https://www.w3schools.com>

Good

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

W3C recommends quotes in HTML, and demands quotes for stricter document types like XHTML.

Sometimes it is necessary to use quotes. This example will not display the title attribute correctly, because it contains a space:

Example

<p title=About W3Schools>

Using quotes are the most common. Omitting quotes can produce errors.   
At W3Schools we always use quotes around attribute values.

Single or Double Quotes?

Double quotes around attribute values are the most common in HTML, but single quotes can also be used.

In some situations, when the attribute value itself contains double quotes, it is necessary to use single quotes:

<p title='John "ShotGun" Nelson'>

Or vice versa:

<p title="John 'ShotGun' Nelson">

Chapter Summary

All HTML elements can have attributes

The title attribute provides additional "tool-tip" information

The href attribute provides address information for links

The width and height attributes provide size information for images

The alt attribute provides text for screen readers

At W3Schools we always use lowercase attribute names

At W3Schools we always quote attribute values with double quotes

HTML Attributes

Below is an alphabetical list of some attributes often used in HTML, which you will learn more about in this tutorial:

|  |  |  |
| --- | --- | --- |
| Attribute |  | Description |
| alt |  | Specifies an alternative text for an image, when the image cannot be displayed |
| disabled |  | Specifies that an input element should be disabled |
| href |  | Specifies the URL (web address) for a link |
| id |  | Specifies a unique id for an element |
| src |  | Specifies the URL (web address) for an image |
| style |  | Specifies an inline CSS style for an element |
| title |  | Specifies extra information about an element (displayed as a tool tip) |

HTML Headings

Headings

Heading 1

Heading 2

Heading 3

Heading 4

Heading 5

Heading 6

HTML Headings

Headings are defined with the <h1> to <h6> tags.

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

Example

<h1>Heading 1</h1>  
<h2>Heading 2</h2>  
<h3>Heading 3</h3>  
<h4>Heading 4</h4>  
<h5>Heading 5</h5>  
<h6>Heading 6</h6>

**Note:** Browsers automatically add some white space (a margin) before and after a heading.

Headings Are Important

Search engines use the headings to index the structure and content of your web pages.

Users skim your pages by its headings. It is important to use headings to show the document structure.

<h1> headings should be used for main headings, followed by <h2> headings, then the less important <h3>, and so on.

**Note:** Use HTML headings for headings only. Don't use headings to make text **BIG** or **bold**.

Bigger Headings

Each HTML heading has a default size. However, you can specify the size for any heading with the style attribute, using the CSS font-size property:

Example

<h1 style="font-size:60px;">Heading 1</h1>

HTML Horizontal Rules

The <hr> tag defines a thematic break in an HTML page, and is most often displayed as a horizontal rule.

The <hr> element is used to separate content (or define a change) in an HTML page:

Example

<h1>This is heading 1</h1>  
<p>This is some text.</p>  
<hr>  
<h2>This is heading 2</h2>  
<p>This is some other text.</p>  
<hr>

The HTML <head> Element

The HTML <head> element has nothing to do with HTML headings.

The <head> element is a container for metadata. HTML metadata is data about the HTML document. Metadata is not displayed.

The <head> element is placed between the <html> tag and the <body> tag:

Example

<!DOCTYPE html>  
<html>  
  
<head>  
  <title>My First HTML</title>  
  <meta charset="UTF-8">  
</head>  
  
<body>  
.  
.  
.

**Note:** Metadata typically define the document title, character set, styles, links, scripts, and other meta information.

How to View HTML Source?

Have you ever seen a Web page and wondered "Hey! How did they do that?"

View HTML Source Code:

Right-click in an HTML page and select "View Page Source" (in Chrome) or "View Source" (in IE), or similar in other browsers. This will open a window containing the HTML source code of the page.

Inspect an HTML Element:

Right-click on an element (or a blank area), and choose "Inspect" or "Inspect Element" to see what elements are made up of (you will see both the HTML and the CSS). You can also edit the HTML or CSS on-the-fly in the Elements or Styles panel that opens.

Top of Form

[Start the Exercise](https://www.w3schools.com/html/exercise.asp?filename=exercise_html_headings1)

HTML Tag Reference

Tag reference contains additional information about these tags and their attributes.

You will learn more about HTML tags and attributes in the next chapters of this tutorial.

|  |  |  |
| --- | --- | --- |
| Tag |  | Description |
|  |  |  |
| [<html>](https://www.w3schools.com/tags/tag_html.asp) |  | Defines the root of an HTML document |
| [<body>](https://www.w3schools.com/tags/tag_body.asp) |  | Defines the document's body |
| [<head>](https://www.w3schools.com/tags/tag_head.asp) |  | A container for all the head elements (title, scripts, styles, meta information, and more) |
| [<h1> to <h6>](https://www.w3schools.com/tags/tag_hn.asp) |  | Defines HTML headings |
| [<hr>](https://www.w3schools.com/tags/tag_hr.asp) |  | Defines a thematic change in the content |

HTML Paragraphs

HTML Paragraphs

The HTML <p> element defines a **paragraph**:

Example

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

**Note:** Browsers automatically add some white space (a margin) before and after a paragraph.

HTML Display

You cannot be sure how HTML will be displayed.

Large or small screens, and resized windows will create different results.

With HTML, you cannot change the output by adding extra spaces or extra lines in your HTML code.

The browser will remove any extra spaces and extra lines when the page is displayed:

Example

<p>  
This paragraph  
contains a lot of lines  
in the source code,  
but the browser   
ignores it.  
</p>  
  
<p>  
This paragraph  
contains         a lot of spaces  
in the source         code,  
but the        browser   
ignores it.  
</p>

Don't Forget the End Tag

Most browsers will display HTML correctly even if you forget the end tag:

Example

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

The example above will work in most browsers, but do not rely on it.

**Note:** Dropping the end tag can produce unexpected results or errors.

HTML Line Breaks

The HTML <br> element defines a **line break**.

Use <br> if you want a line break (a new line) without starting a new paragraph:

Example

<p>This is<br>a paragraph<br>with line breaks.</p>

The <br> tag is an empty tag, which means that it has no end tag.

The Poem Problem

This poem will display on a single line:

Example

<p>  
  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.  
</p>

The HTML <pre> Element

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:

Example

<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>

Top of Form

Bottom of Form

HTML Tag Reference

W3Schools' tag reference contains additional information about HTML elements and their attributes.

|  |  |
| --- | --- |
| Tag | Description |
| [<p>](https://www.w3schools.com/tags/tag_p.asp) | Defines a paragraph |
| [<br>](https://www.w3schools.com/tags/tag_br.asp) | Inserts a single line break |
| [<pre>](https://www.w3schools.com/tags/tag_pre.asp) | Defines pre-formatted text |

HTML Styles

Example

I am Red

I am Blue

I am Big

The HTML Style Attribute

Setting the style of an HTML element, can be done with the style attribute.

The HTML style attribute has the following syntax:

<tagname style="property:value;">

The property is a CSS property. The value is a CSS value.

You will learn more about CSS later in this tutorial.

HTML Background Color

The background-color property defines the background color for an HTML element.

This example sets the background color for a page to powderblue:

Example

<body style="background-color:powderblue;">  
  
<h1>This is a heading</h1>  
<p>This is a paragraph.</p>  
  
</body>

HTML Text Color

The color property defines the text color for an HTML element:

Example

<h1 style="color:blue;">This is a heading</h1>  
<p style="color:red;">This is a paragraph.</p>

HTML Fonts

The font-family property defines the font to be used for an HTML element:

Example

<h1 style="font-family:verdana;">This is a heading</h1>  
<p style="font-family:courier;">This is a paragraph.</p>

HTML Text Size

The font-size property defines the text size for an HTML element:

Example

<h1 style="font-size:300%;">This is a heading</h1>  
<p style="font-size:160%;">This is a paragraph.</p>

HTML Text Alignment

The text-align property defines the horizontal text alignment for an HTML element:

Example

<h1 style="text-align:center;">Centered Heading</h1>  
<p style="text-align:center;">Centered paragraph.</p>

Chapter Summary

Use the style attribute for styling HTML elements

Use background-color for background color

Use color for text colors

Use font-family for text fonts

Use font-size for text sizes

Use text-align for text alignment

HTML Text Formatting

Text Formatting

This text is bold

This text is italic

This is subscript and superscript

HTML Formatting Elements

In the previous chapter, you learned about the HTML style attribute.

HTML also defines special elements for defining text with a special meaning.

HTML uses elements like <b> and <i> for formatting output, like bold or italic text.

Formatting elements were designed to display special types of text:

<b> - Bold text

<strong> - Important text

<i> - Italic text

<em> - Emphasized text

<mark> - Marked text

<small> - Small text

<del> - Deleted text

<ins> - Inserted text

<sub> - Subscript text

<sup> - Superscript text

HTML <b> and <strong> Elements

The HTML <b> element defines bold text, without any extra importance.

Example

<b>This text is bold</b>

The HTML <strong> element defines strong text, with added semantic "strong" importance.

Example

<strong>This text is strong</strong>

HTML <i> and <em> Elements

The HTML <i> element defines italic text, without any extra importance.

Example

<i>This text is italic</i>

The HTML <em> element defines emphasized text, with added semantic importance.

Example

<em>This text is emphasized</em>

Note: Browsers display <strong> as <b>, and <em> as <i>. However, there is a difference in the meaning of these tags: <b> and <i> defines bold and italic text, but <strong> and <em> means that the text is "important".

HTML <small> Element

The HTML <small> element defines smaller text:

Example

<h2>HTML <small>Small</small> Formatting</h2>

HTML <mark> Element

The HTML <mark> element defines marked or highlighted text:

Example

<h2>HTML <mark>Marked</mark> Formatting</h2>

HTML <del> Element

The HTML <del> element defines (removed) text.

Example

<p>My favorite color is <del>blue</del> red.</p>

HTML <ins> Element

The HTML <ins> element defines inserted (added) text.

Example

<p>My favorite <ins>color</ins> is red.</p>

HTML <sub> Element

The HTML <sub> element defines subscripted text.

Example

<p>This is <sub>subscripted</sub> text.</p>

HTML <sup> Element

The HTML <sup> element defines superscripted text.

Example

<p>This is <sup>superscripted</sup> text.</p>

HTML Text Formatting Elements

|  |  |
| --- | --- |
| Tag | Description |
| [<b>](https://www.w3schools.com/tags/tag_b.asp) | Defines bold text |
| [<em>](https://www.w3schools.com/tags/tag_em.asp) | Defines emphasized text |
| [<i>](https://www.w3schools.com/tags/tag_i.asp) | Defines italic text |
| [<small>](https://www.w3schools.com/tags/tag_small.asp) | Defines smaller text |
| [<strong>](https://www.w3schools.com/tags/tag_strong.asp) | Defines important text |
| [<sub>](https://www.w3schools.com/tags/tag_sub.asp) | Defines subscripted text |
| [<sup>](https://www.w3schools.com/tags/tag_sup.asp) | Defines superscripted text |
| [<ins>](https://www.w3schools.com/tags/tag_ins.asp) | Defines inserted text |
| [<del>](https://www.w3schools.com/tags/tag_del.asp) | Defines deleted text |
| [<mark>](https://www.w3schools.com/tags/tag_mark.asp) | Defines marked/highlighted text |

HTML Quotation and Citation Elements

Quotation

Here is a quote from WWF's website:

For 50 years, WWF has been protecting the future of nature. The world's leading conservation organization, WWF works in 100 countries and is supported by 1.2 million members in the United States and close to 5 million globally.

HTML <q> for Short Quotations

The HTML <q> element defines a short quotation.

Browsers usually insert quotation marks around the <q> element.

Example

<p>WWF's goal is to: <q>Build a future where people live in harmony with nature.</q></p>

HTML <blockquote> for Quotations

The HTML <blockquote> element defines a section that is quoted from another source.

Browsers usually indent <blockquote> elements.

Example

<p>Here is a quote from WWF's website:</p>  
<blockquote cite="http://www.worldwildlife.org/who/index.html">  
For 50 years, WWF has been protecting the future of nature.  
The world's leading conservation organization,  
WWF works in 100 countries and is supported by  
1.2 million members in the United States and  
close to 5 million globally.  
</blockquote>

HTML <abbr> for Abbreviations

The HTML <abbr> element defines an abbreviation or an acronym.

Marking abbreviations can give useful information to browsers, translation systems and search-engines.

Example

<p>The <abbr title="World Health Organization">WHO</abbr> was founded in 1948.</p>

HTML <address> for Contact Information

The HTML <address> element defines contact information (author/owner) of a document or an article.

The <address> element is usually displayed in italic. Most browsers will add a line break before and after the element.

Example

<address>  
Written by John Doe.<br>   
Visit us at:<br>  
Example.com<br>  
Box 564, Disneyland<br>  
USA  
</address>

HTML <cite> for Work Title

The HTML <cite> element defines the title of a work.

Browsers usually display <cite> elements in italic.

Example

<p><cite>The Scream</cite> by Edvard Munch. Painted in 1893.</p>

HTML <bdo> for Bi-Directional Override

The HTML <bdo> element defines bi-directional override.

The <bdo> element is used to override the current text direction:

Example

<bdo dir="rtl">This text will be written from right to left</bdo>

Bottom of Form

HTML Quotation and Citation Elements

|  |  |
| --- | --- |
| Tag | Description |
| [<abbr>](https://www.w3schools.com/tags/tag_abbr.asp) | Defines an abbreviation or acronym |
| [<address>](https://www.w3schools.com/tags/tag_address.asp) | Defines contact information for the author/owner of a document |
| [<bdo>](https://www.w3schools.com/tags/tag_bdo.asp) | Defines the text direction |
| [<blockquote>](https://www.w3schools.com/tags/tag_blockquote.asp) | Defines a section that is quoted from another source |
| [<cite>](https://www.w3schools.com/tags/tag_cite.asp) | Defines the title of a work |
| [<q>](https://www.w3schools.com/tags/tag_q.asp) | Defines a short inline quotation |

HTML Comments

Comment tags are used to insert comments in the HTML source code.

HTML Comment Tags

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

<!-- Write your comments here -->

Notice that there is an exclamation point (!) in the opening tag, but not in the closing tag.

**Note:** Comments are not displayed by the browser, but they can help document your HTML source code.

With comments you can place notifications and reminders in your HTML:

Example

<!-- This is a comment -->  
  
<p>This is a paragraph.</p>  
  
<!-- Remember to add more information here -->

Comments are also great for debugging HTML, because you can comment out HTML lines of code, one at a time, to search for errors:

Example

<!-- Do not display this at the moment  
<img border="0" src="pic\_trulli.jpg" alt="Trulli">  
-->

HTML Colors

HTML colors are specified using predefined color names, or RGB, HEX, HSL, RGBA, HSLA values.

Color Names

In HTML, a color can be specified by using a color name:

Tomato

Orange

DodgerBlue

MediumSeaGreen

Gray

SlateBlue

Violet

LightGray

HTML supports [140 standard color names](https://www.w3schools.com/colors/colors_names.asp).

Background Color

You can set the background color for HTML elements:

Hello World

Example

<h1 style="background-color:DodgerBlue;">Hello World</h1>  
<p style="background-color:Tomato;">Lorem ipsum...</p>

Text Color

You can set the color of text:

Hello World

Example

<h1 style="color:Tomato;">Hello World</h1>  
<p style="color:DodgerBlue;">Lorem ipsum...</p>  
<p style="color:MediumSeaGreen;">Ut wisi enim...</p>

Border Color

You can set the color of borders:

Hello World

Hello World

Hello World

Example

<h1 style="border:2px solid Tomato;">Hello World</h1>  
<h1 style="border:2px solid DodgerBlue;">Hello World</h1>  
<h1 style="border:2px solid Violet;">Hello World</h1>

Color Values

In HTML, colors can also be specified using RGB values, HEX values, HSL values, RGBA values, and HSLA values:

Same as color name "Tomato":

rgb(255, 99, 71)

#ff6347

hsl(9, 100%, 64%)

Same as color name "Tomato", but 50% transparent:

rgba(255, 99, 71, 0.5)

hsla(9, 100%, 64%, 0.5)

Example

<h1 style="background-color:rgb(255, 99, 71);">...</h1>  
<h1 style="background-color:#ff6347;">...</h1>  
<h1 style="background-color:hsl(9, 100%, 64%);">...</h1>  
  
<h1 style="background-color:rgba(255, 99, 71, 0.5);">...</h1>  
<h1 style="background-color:hsla(9, 100%, 64%, 0.5);">...</h1>

RGB Value

In HTML, a color can be specified as an RGB value, using this formula:

rgb(red, green, blue)

Each parameter (red, green, and blue) defines the intensity of the color between 0 and 255.

For example, rgb(255, 0, 0) is displayed as red, because red is set to its highest value (255) and the others are set to 0.

To display the color black, all color parameters must be set to 0, like this: rgb(0, 0, 0).

To display the color white, all color parameters must be set to 255, like this: rgb(255, 255, 255).

Experiment by mixing the RGB values below:

rgb(255, 99, 71)

RED

255

GREEN

99

BLUE

71

Example

rgb(255, 0, 0)

rgb(0, 0, 255)

rgb(60, 179, 113)

rgb(238, 130, 238)

rgb(255, 165, 0)

rgb(106, 90, 205)

Shades of gray are often defined using equal values for all the 3 light sources:

Example

rgb(0, 0, 0)

rgb(60, 60, 60)

rgb(120, 120, 120)

rgb(180, 180, 180)

rgb(240, 240, 240)

rgb(255, 255, 255)

HEX Value

In HTML, a color can be specified using a hexadecimal value in the form:

#rrggbb

Where rr (red), gg (green) and bb (blue) are hexadecimal values between 00 and ff (same as decimal 0-255).

For example, #ff0000 is displayed as red, because red is set to its highest value (ff) and the others are set to the lowest value (00).

Example

#ff0000

#0000ff

#3cb371

#ee82ee

#ffa500

#6a5acd

Shades of gray are often defined using equal values for all the 3 light sources:

Example

#000000

#3c3c3c

#787878

#b4b4b4

#f0f0f0

#ffffff

HSL Value

In HTML, a color can be specified using hue, saturation, and lightness (HSL) in the form:

hsl(hue, saturation, lightness)

Hue is a degree on the color wheel from 0 to 360. 0 is red, 120 is green, and 240 is blue.

Saturation is a percentage value, 0% means a shade of gray, and 100% is the full color.

Lightness is also a percentage, 0% is black, 50% is neither light or dark, 100% is white

Example

hsl(0, 100%, 50%)

hsl(240, 100%, 50%)

hsl(147, 50%, 47%)

hsl(300, 76%, 72%)

hsl(39, 100%, 50%)

hsl(248, 53%, 58%)

Saturation

Saturation can be described as the intensity of a color.

100% is pure color, no shades of gray

50% is 50% gray, but you can still see the color.

0% is completely gray, you can no longer see the color.

Example

hsl(0, 100%, 50%)

hsl(0, 80%, 50%)

hsl(0, 60%, 50%)

hsl(0, 40%, 50%)

hsl(0, 20%, 50%)

hsl(0, 0%, 50%)

Lightness

The lightness of a color can be described as how much light you want to give the color, where 0% means no light (black), 50% means 50% light (neither dark nor light) 100% means full lightness (white).

Example

hsl(0, 100%, 0%)

hsl(0, 100%, 25%)

hsl(0, 100%, 50%)

hsl(0, 100%, 75%)

hsl(0, 100%, 90%)

hsl(0, 100%, 100%)

Shades of gray are often defined by setting the hue and saturation to 0, and adjust the lightness from 0% to 100% to get darker/lighter shades:

Example

hsl(0, 0%, 0%)

hsl(0, 0%, 24%)

hsl(0, 0%, 47%)

hsl(0, 0%, 71%)

hsl(0, 0%, 94%)

hsl(0, 0%, 100%)

RGBA Value

RGBA color values are an extension of RGB color values with an alpha channel - which specifies the opacity for a color.

An RGBA color value is specified with:

rgba(red, green, blue, alpha)

The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (not transparent at all):

Example

rgba(255, 99, 71, 0)

rgba(255, 99, 71, 0.2)

rgba(255, 99, 71, 0.4)

rgba(255, 99, 71, 0.6)

rgba(255, 99, 71, 0.8)

rgba(255, 99, 71, 1)

HSLA Value

HSLA color values are an extension of HSL color values with an alpha channel - which specifies the opacity for a color.

An HSLA color value is specified with:

hsla(hue, saturation, lightness, alpha)

The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (not transparent at all):

Example

hsla(9, 100%, 64%, 0)

hsla(9, 100%, 64%, 0.2)

hsla(9, 100%, 64%, 0.4)

hsla(9, 100%, 64%, 0.6)

hsla(9, 100%, 64%, 0.8)

hsla(9, 100%, 64%, 1)

HTML Styles - CSS

CSS = Styles and Colors

Manipulate Text

Colors,  Boxes

Styling HTML with CSS

CSS stands for Cascading Style Sheets.

CSS describes how HTML elements are to be displayed on screen, paper, or in other media.

CSS saves a lot of work. It can control the layout of multiple web pages all at once.

CSS can be added to HTML elements in 3 ways:

Inline - by using the style attribute in HTML elements

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

External - by using an external CSS file

The most common way to add CSS, is to keep the styles in separate CSS files. However, here we will use inline and internal styling, because this is easier to demonstrate, and easier for you to try it yourself.

Tip: You can learn much more about CSS in our [CSS Tutorial](https://www.w3schools.com/css/default.asp).

Inline CSS

An inline CSS is used to apply a unique style to a single HTML element.

An inline CSS uses the style attribute of an HTML element.

This example sets the text color of the <h1> element to blue:

Example

<h1 style="color:blue;">This is a Blue Heading</h1>

Internal CSS

An internal CSS is used to define a style for a single HTML page.

An internal CSS is defined in the <head> section of an HTML page, within a <style> element:

Example

<!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 CSS

An external style sheet is used to define the style for many HTML pages.

With an external style sheet, you can change the look of an entire web site, by changing one file!

To use an external style sheet, add a link to it in the <head> section of the HTML page:

Example

<!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>

An external style sheet can be written in any text editor. The file must not contain any HTML code, and must be saved with a .css extension.

Here is how the "styles.css" looks:

body {  
  background-color: powderblue;  
}  
h1 {  
  color: blue;  
}  
p {  
  color: red;  
}

CSS Fonts

The CSS color property defines the text color to be used.

The CSS font-family property defines the font to be used.

The CSS font-size property defines the text size to be used.

Example

<!DOCTYPE html>  
<html>  
<head>  
<style>  
h1 {  
  color: blue;  
  font-family: verdana;  
  font-size: 300%;  
}  
p  {  
  color: red;  
  font-family: courier;  
  font-size: 160%;  
}  
</style>  
</head>  
<body>  
  
<h1>This is a heading</h1>  
<p>This is a paragraph.</p>  
  
</body>  
</html>

CSS Border

The CSS border property defines a border around an HTML element:

Example

p {  
  border: 1px solid powderblue;  
}

CSS Padding

The CSS padding property defines a padding (space) between the text and the border:

Example

p {  
  border: 1px solid powderblue;  
  padding: 30px;  
}

CSS Margin

The CSS margin property defines a margin (space) outside the border:

Example

p {  
  border: 1px solid powderblue;  
  margin: 50px;  
}

The id Attribute

To define a specific style for one special element, add an id attribute to the element:

<p id="p01">I am different</p>

then define a style for the element with the specific id:

Example

#p01 {  
  color: blue;  
}

Note: The id of an element should be unique within a page, so the id selector is used to select one unique element!

The class Attribute

To define a style for special types of elements, add a class attribute to the element:

<p class="error">I am different</p>

then define a style for the elements with the specific class:

Example

p.error {  
  color: red;  
}

External References

External style sheets can be referenced with a full URL or with a path relative to the current web page.

This example uses a full URL to link to a style sheet:

Example

<link rel="stylesheet" href="https://www.w3schools.com/html/styles.css">

This example links to a style sheet located in the html folder on the current web site:

Example

<link rel="stylesheet" href="/html/styles.css">

This example links to a style sheet located in the same folder as the current page:

Example

<link rel="stylesheet" href="styles.css">

You can read more about file paths in the chapter [HTML File Paths](https://www.w3schools.com/html/html_filepaths.asp).

Chapter Summary

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 Style Tags

|  |  |
| --- | --- |
| Tag | Description |
| [<style>](https://www.w3schools.com/tags/tag_style.asp) | Defines style information for an HTML document |
| [<link>](https://www.w3schools.com/tags/tag_link.asp) | Defines a link between a document and an external resource |

For a complete list of all available HTML tags, visit our [HTML Tag Reference](https://www.w3schools.com/tags/default.asp).

HTML Links

Links are found in nearly all web pages. Links allow users to click their way from page to page.

HTML Links - Hyperlinks

HTML links are hyperlinks.

You can click on a link and jump to another document.

When you move the mouse over a link, the mouse arrow will turn into a little hand.

Note: A link does not have to be text. It can be an image or any other HTML element.

HTML Links - Syntax

In HTML, links are defined with the <a> tag:

<a href="url">link text</a>

Example

<a href="https://www.w3schools.com/html/">Visit our HTML tutorial</a>

The href attribute specifies the destination address (https://www.w3schools.com/html/) of the link.

The link text is the visible part (Visit our HTML tutorial).

Clicking on the link text will send you to the specified address.

Note: Without a forward slash at the end of subfolder addresses, you might generate two requests to the server. Many servers will automatically add a forward slash to the end of the address, and then create a new request.

Local Links

The example above used an absolute URL (a full web address).

A local link (link to the same web site) is specified with a relative URL (without https://www....).

Example

<a href="html\_images.asp">HTML Images</a>

HTML Link Colors

By default, a link will appear like this (in all browsers):

An unvisited link is underlined and blue

A visited link is underlined and purple

An active link is underlined and red

You can change the default colors, by using CSS:

Example

<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>

Links are often styled as buttons, by using CSS:

[This is a link](javascript:void(0))

Example

<style>  
a:link, a:visited {  
  background-color: #f44336;  
  color: white;  
  padding: 15px 25px;  
  text-align: center;  
  text-decoration: none;  
  display: inline-block;  
}  
  
a:hover, a:active {  
  background-color: red;  
}  
</style>

To learn more about CSS, go to our [CSS Tutorial](https://www.w3schools.com/css/default.asp).

HTML Links - The target Attribute

The target attribute specifies where to open the linked document.

The target attribute can have one of the following values:

\_blank - Opens the linked document in a new window or tab

\_self - Opens the linked document in the same window/tab as it was clicked (this is default)

\_parent - Opens the linked document in the parent frame

\_top - Opens the linked document in the full body of the window

framename - Opens the linked document in a named frame

This example will open the linked document in a new browser window/tab:

Example

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

Tip: If your webpage is locked in a frame, you can use target="\_top" to break out of the frame:

Example

<a href="https://www.w3schools.com/html/" target="\_top">HTML5 tutorial!</a>

HTML Links - Image as Link

It is common to use images as links:

Example

<a href="default.asp">  
  <img src="smiley.gif" alt="HTML tutorial" style="width:42px;height:42px;border:0;">  
</a>

Note: border:0; is added to prevent IE9 (and earlier) from displaying a border around the image (when the image is a link).

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 Links - Create a Bookmark

HTML bookmarks are used to allow readers to jump to specific parts of a Web page.

Bookmarks can be useful if your webpage is very long.

To make a bookmark, you must first create the bookmark, and then add a link to it.

When the link is clicked, the page will scroll to the location with the bookmark.

Example

First, create a bookmark with the id attribute:

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

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

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

Or, add a link to the bookmark ("Jump to Chapter 4"), from another page:

Example

<a href="html\_demo.html#C4">Jump to Chapter 4</a>

External Paths

External pages can be referenced with a full URL or with a path relative to the current web page.

This example uses a full URL to link to a web page:

Example

<a href="https://www.w3schools.com/html/default.asp">HTML tutorial</a>

This example links to a page located in the html folder on the current web site:

Example

<a href="/html/default.asp">HTML tutorial</a>

This example links to a page located in the same folder as the current page:

Example

<a href="default.asp">HTML tutorial</a>

You can read more about file paths in the chapter [HTML File Paths](https://www.w3schools.com/html/html_filepaths.asp).

Chapter Summary

Use the <a> element to define a link

Use the href attribute to define the link address

Use the target attribute to define where to open the linked document

Use the <img> element (inside <a>) to use an image as a link

Use the id attribute (id="value") to define bookmarks in a page

Use the href attribute (href="#value") to link to the bookmark

Bottom of Form

HTML Images

Images can improve the design and the appearance of a web page.

Example

<img src="pic\_trulli.jpg" alt="Italian Trulli">

Example

<img src="img\_girl.jpg" alt="Girl in a jacket">

Example

<img src="img\_chania.jpg" alt="Flowers in Chania">

HTML Images Syntax

In HTML, images are defined with the <img> tag.

The <img> tag is empty, it contains attributes only, and does not have a closing tag.

The src attribute specifies the URL (web address) of the image:

<img src="url">

The alt Attribute

The alt attribute provides an alternate text for an image, if the user for some reason cannot view it (because of slow connection, an error in the src attribute, or if the user uses a screen reader).

The value of the alt attribute should describe the image:

Example

<img src="img\_chania.jpg" alt="Flowers in Chania">

If a browser cannot find an image, it will display the value of the alt attribute:

Example

<img src="wrongname.gif" alt="Flowers in Chania">

Note: The alt attribute is required. A web page will not validate correctly without it.

Image Size - Width and Height

You can use the style attribute to specify the width and height of an image.

Example

<img src="img\_girl.jpg" alt="Girl in a jacket" style="width:500px;height:600px;">

Alternatively, you can use the width and height attributes:

Example

<img src="img\_girl.jpg" alt="Girl in a jacket" width="500" height="600">

The width and height attributes always defines the width and height of the image in pixels.

Note: Always specify the width and height of an image. If width and height are not specified, the page might flicker while the image loads.

Width and Height, or Style?

The width, height, and style attributes are valid in HTML5.

However, we suggest using the style attribute. It prevents styles sheets from changing the size of images:

Example

<!DOCTYPE html>  
<html>  
<head>  
<style>  
img {   
  width: 100%;   
}  
</style>  
</head>  
<body>  
  
<img src="html5.gif" alt="HTML5 Icon" width="128" height="128">  
<img src="html5.gif" alt="HTML5 Icon" style="width:128px;height:128px;">  
  
</body>  
</html>

Images in Another Folder

If not specified, the browser expects to find the image in the same folder as the web page.

However, it is common to store images in a sub-folder. You must then include the folder name in the src attribute:

Example

<img src="/images/html5.gif" alt="HTML5 Icon" style="width:128px;height:128px;">

Images on Another Server

Some web sites store their images on image servers.

Actually, you can access images from any web address in the world:

Example

<img src="https://www.w3schools.com/images/w3schools\_green.jpg" alt="W3Schools.com">

You can read more about file paths in the chapter [HTML File Paths](https://www.w3schools.com/html/html_filepaths.asp).

Animated Images

HTML allows animated GIFs:

Example

<img src="programming.gif" alt="Computer Man" style="width:48px;height:48px;">

Image as a Link

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

Example

<a href="default.asp">  
  <img src="smiley.gif" alt="HTML tutorial" style="width:42px;height:42px;border:0;">  
</a>

Note: border:0; is added to prevent IE9 (and earlier) from displaying a border around the image (when the image is a link).

Image Floating

Use the CSS float property to let the image float to the right or to the left of a text:

Example

<p><img src="smiley.gif" alt="Smiley face" style="float:right;width:42px;height:42px;">  
The image will float to the right of the text.</p>  
  
<p><img src="smiley.gif" alt="Smiley face" style="float:left;width:42px;height:42px;">  
The image will float to the left of the text.</p>

Tip: To learn more about CSS Float, read our [CSS Float Tutorial](https://www.w3schools.com/css/css_float.asp).

Image Maps

The <map> tag defines an image-map. An image-map is an image with clickable areas.

In the image below, click on the computer, the phone, or the cup of coffee:



Example

<img src="workplace.jpg" alt="Workplace" usemap="#workmap">  
  
<map name="workmap">  
  <area shape="rect" coords="34,44,270,350" alt="Computer" href="computer.htm">  
  <area shape="rect" coords="290,172,333,250" alt="Phone" href="phone.htm">  
  <area shape="circle" coords="337,300,44" alt="Coffee" href="coffee.htm">  
</map>

The name attribute of the <map> tag is associated with the <img>'s usemap attribute and creates a relationship between the image and the map.

The <map> element contains a number of <area> tags, that define the clickable areas in the image-map.

Background Image

To add a background image on an HTML element, use the CSS property background-image:

Example

To add a background image on a web page, specify the background-image property on the BODY element:

<body style="background-image:url('clouds.jpg');">  
  
<h2>Background Image</h2>  
  
</body>

Example

To add a background image on a paragraph, specify the background-image property on the P element:

<body>  
  
<p style="background-image:url('clouds.jpg');">  
...  
</p>  
  
</body>

To learn more about background images, study our [CSS Background Tutorial](https://www.w3schools.com/css/css_background.asp).

The <picture> Element

HTML5 introduced the <picture> element to add more flexibility when specifying image resources.

The <picture> element contains a number of <source> elements, each referring to different image sources. This way the browser can choose the image that best fits the current view and/or device.

Each <source> element have attributes describing when their image is the most suitable.

The browser will use the first <source> element with matching attribute values, and ignore any following <source> elements.

Example

Show one picture if the browser window (viewport) is a minimum of 650 pixels, and another image if not, but larger than 465 pixels.

<picture>  
  <source media="(min-width: 650px)" srcset="img\_pink\_flowers.jpg">  
  <source media="(min-width: 465px)" srcset="img\_white\_flower.jpg">  
  <img src="img\_orange\_flowers.jpg" alt="Flowers" style="width:auto;">  
</picture>

Note: Always specify an <img> element as the last child element of the <picture> element. The <img> element is used by browsers that do not support the <picture> element, or if none of the <source> tags matched.

HTML Screen Readers

A screen reader is a software program that reads the HTML code, converts the text, and allows the user to "listen" to the content. Screen readers are useful for people who are visually impaired or learning disabled.

Chapter Summary

Use the HTML <img> element to define an image

Use the HTML src attribute to define the URL of the image

Use the HTML alt attribute to define an alternate text for an image, if it cannot be displayed

Use the HTML width and height attributes to define the size of the image

Use the CSS width and height properties to define the size of the image (alternatively)

Use the CSS float property to let the image float

Use the HTML <map> element to define an image-map

Use the HTML <area> element to define the clickable areas in the image-map

Use the HTML <img>'s element usemap attribute to point to an image-map

Use the HTML <picture> element to show different images for different devices

Note: Loading images takes time. Large images can slow down your page. Use images carefully.

HTML Image Tags

|  |  |
| --- | --- |
| Tag | Description |
| [<img>](https://www.w3schools.com/tags/tag_img.asp) | Defines an image |
| [<map>](https://www.w3schools.com/tags/tag_map.asp) | Defines an image-map |
| [<area>](https://www.w3schools.com/tags/tag_area.asp) | Defines a clickable area inside an image-map |
| [<picture>](https://www.w3schools.com/tags/tag_picture.asp) | Defines a container for multiple image resources |

HTML Tables

HTML Table Example

|  |  |  |
| --- | --- | --- |
| Company | Contact | Country |
| Alfreds Futterkiste | Maria Anders | Germany |
| Centro comercial Moctezuma | Francisco Chang | Mexico |
| Ernst Handel | Roland Mendel | Austria |
| Island Trading | Helen Bennett | UK |
| Laughing Bacchus Winecellars | Yoshi Tannamuri | Canada |
| Magazzini Alimentari Riuniti | Giovanni Rovelli | Italy |

Defining an HTML Table

An HTML table is defined with the <table> tag.

Each table row is defined with the <tr> tag. A table header is defined with the <th> tag. By default, table headings are bold and centered. A table data/cell is defined with the <td> tag.

Example

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

Note: The <td> elements are the data containers of the table.  
They can contain all sorts of HTML elements; text, images, lists, other tables, etc.

HTML Table - Adding a Border

If you do not specify a border for the table, it will be displayed without borders.

A border is set using the CSS border property:

Example

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

Remember to define borders for both the table and the table cells.

HTML Table - Collapsed Borders

If you want the borders to collapse into one border, add the CSS border-collapse property:

Example

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

HTML Table - Adding Cell Padding

Cell padding specifies the space between the cell content and its borders.

If you do not specify a padding, the table cells will be displayed without padding.

To set the padding, use the CSS padding property:

Example

th, td {  
  padding: 15px;  
}

HTML Table - Left-align Headings

By default, table headings are bold and centered.

To left-align the table headings, use the CSS text-align property:

Example

th {  
  text-align: left;  
}

HTML Table - Adding Border Spacing

Border spacing specifies the space between the cells.

To set the border spacing for a table, use the CSS border-spacing property:

Example

table {  
  border-spacing: 5px;  
}

Note: If the table has collapsed borders, border-spacing has no effect.

HTML Table - Cells that Span Many Columns

To make a cell span more than one column, use the colspan attribute:

Example

<table style="width:100%">  
  <tr>  
    <th>Name</th>  
    <th colspan="2">Telephone</th>  
  </tr>  
  <tr>  
    <td>Bill Gates</td>  
    <td>55577854</td>  
    <td>55577855</td>  
  </tr>  
</table>

HTML Table - Cells that Span Many Rows

To make a cell span more than one row, use the rowspan attribute:

Example

<table style="width:100%">  
  <tr>  
    <th>Name:</th>  
    <td>Bill Gates</td>  
  </tr>  
  <tr>  
    <th rowspan="2">Telephone:</th>  
    <td>55577854</td>  
  </tr>  
  <tr>  
    <td>55577855</td>  
  </tr>  
</table>

HTML Table - Adding a Caption

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

Example

<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>

Note: The <caption> tag must be inserted immediately after the <table> tag.

A Special Style for One Table

To define a special style for a special table, add an id attribute to the table:

Example

<table id="t01">  
  <tr>  
    <th>Firstname</th>  
    <th>Lastname</th>   
    <th>Age</th>  
  </tr>  
  <tr>  
    <td>Eve</td>  
    <td>Jackson</td>   
    <td>94</td>  
  </tr>  
</table>

Now you can define a special style for this table:

table#t01 {  
  width: 100%;   
  background-color: #f1f1c1;  
}

And add more styles:

table#t01 tr:nth-child(even) {  
  background-color: #eee;  
}  
table#t01 tr:nth-child(odd) {  
  background-color: #fff;  
}  
table#t01 th {  
  color: white;  
  background-color: black;  
}

Chapter Summary

Use the HTML <table> element to define a table

Use the HTML <tr> element to define a table row

Use the HTML <td> element to define a table data

Use the HTML <th> element to define a table heading

Use the HTML <caption> element to define a table caption

Use the CSS border property to define a border

Use the CSS border-collapse property to collapse cell borders

Use the CSS padding property to add padding to cells

Use the CSS text-align property to align cell text

Use the CSS border-spacing property to set the spacing between cells

Use the colspan attribute to make a cell span many columns

Use the rowspan attribute to make a cell span many rows

Use the id attribute to uniquely define one table

Bottom of Form

HTML Table Tags

|  |  |
| --- | --- |
| Tag | Description |
| [<table>](https://www.w3schools.com/tags/tag_table.asp) | Defines a table |
| [<th>](https://www.w3schools.com/tags/tag_th.asp) | Defines a header cell in a table |
| [<tr>](https://www.w3schools.com/tags/tag_tr.asp) | Defines a row in a table |
| [<td>](https://www.w3schools.com/tags/tag_td.asp) | Defines a cell in a table |
| [<caption>](https://www.w3schools.com/tags/tag_caption.asp) | Defines a table caption |
| [<colgroup>](https://www.w3schools.com/tags/tag_colgroup.asp) | Specifies a group of one or more columns in a table for formatting |
| [<col>](https://www.w3schools.com/tags/tag_col.asp) | Specifies column properties for each column within a <colgroup> element |
| [<thead>](https://www.w3schools.com/tags/tag_thead.asp) | Groups the header content in a table |
| [<tbody>](https://www.w3schools.com/tags/tag_tbody.asp) | Groups the body content in a table |
| [<tfoot>](https://www.w3schools.com/tags/tag_tfoot.asp) | Groups the footer content in a table |

HTML Lists

 HTML List Example

An Unordered List:

* Item
* Item
* Item
* Item

An Ordered List:

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

Unordered HTML List

An unordered list starts with the [<ul>](https://www.w3schools.com/tags/tag_ul.asp) tag. Each list item starts with the [<li>](https://www.w3schools.com/tags/tag_li.asp) tag.

The list items will be marked with bullets (small black circles) by default:

Example

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

Unordered HTML List - Choose List Item Marker

The CSS list-style-type property is used to define the style of the list item marker:

|  |  |  |
| --- | --- | --- |
| 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 |

Example - Disc

<ul style="list-style-type:disc;">  
  <li>Coffee</li>  
  <li>Tea</li>  
  <li>Milk</li>  
</ul>

Example - Circle

<ul style="list-style-type:circle;">  
  <li>Coffee</li>  
  <li>Tea</li>  
  <li>Milk</li>  
</ul>

Example - Square

<ul style="list-style-type:square;">  
  <li>Coffee</li>  
  <li>Tea</li>  
  <li>Milk</li>  
</ul>

Example - None

<ul style="list-style-type:none;">  
  <li>Coffee</li>  
  <li>Tea</li>  
  <li>Milk</li>  
</ul>

Ordered HTML List

An ordered list starts with the [<ol>](https://www.w3schools.com/tags/tag_ol.asp) tag. Each list item starts with the [<li>](https://www.w3schools.com/tags/tag_li.asp) tag.

The list items will be marked with numbers by default:

Example

<ol>  
  <li>Coffee</li>  
  <li>Tea</li>  
  <li>Milk</li>  
</ol>

Ordered HTML List - The Type Attribute

The type attribute of the [<ol>](https://www.w3schools.com/tags/tag_ol.asp) tag, defines the type of the list item marker:

|  |  |
| --- | --- |
| 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 |

Numbers:

<ol type="1">  
  <li>Coffee</li>  
  <li>Tea</li>  
  <li>Milk</li>  
</ol>

Uppercase Letters:

<ol type="A">  
  <li>Coffee</li>  
  <li>Tea</li>  
  <li>Milk</li>  
</ol>

Lowercase Letters:

<ol type="a">  
  <li>Coffee</li>  
  <li>Tea</li>  
  <li>Milk</li>  
</ol>

Uppercase Roman Numbers:

<ol type="I">  
  <li>Coffee</li>  
  <li>Tea</li>  
  <li>Milk</li>  
</ol>

Lowercase Roman Numbers:

<ol type="i">  
  <li>Coffee</li>  
  <li>Tea</li>  
  <li>Milk</li>  
</ol>

HTML Description Lists

HTML also supports description lists.

A description list is a list of terms, with a description of each term.

The [<dl>](https://www.w3schools.com/tags/tag_dl.asp) tag defines the description list, the [<dt>](https://www.w3schools.com/tags/tag_dt.asp) tag defines the term (name), and the [<dd>](https://www.w3schools.com/tags/tag_dd.asp) tag describes each term:

Example

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

Nested HTML Lists

List can be nested (lists inside lists):

Example

<ul>  
  <li>Coffee</li>  
  <li>Tea  
    <ul>  
      <li>Black tea</li>  
      <li>Green tea</li>  
    </ul>  
  </li>  
  <li>Milk</li>  
</ul>

Note: List items can contain new list, and other HTML elements, like images and links, etc.

Control List Counting

By default, an ordered list will start counting from 1. If you want to start counting from a specified number, you can use the start attribute:

Example

<ol start="50">  
  <li>Coffee</li>  
  <li>Tea</li>  
  <li>Milk</li>  
</ol>

Horizontal List with CSS

HTML lists can be styled in many different ways with CSS.

One popular way is to style a list horizontally, to create a navigation menu:

Example

<!DOCTYPE html>  
<html>  
<head>  
<style>  
ul {  
  list-style-type: none;  
  margin: 0;  
  padding: 0;  
  overflow: hidden;  
  background-color: #333333;  
}  
  
li {  
  float: left;  
}  
  
li a {  
  display: block;  
  color: white;  
  text-align: center;  
  padding: 16px;  
  text-decoration: none;  
}  
  
li a:hover {  
  background-color: #111111;  
}  
</style>  
</head>  
<body>  
  
<ul>  
  <li><a href="#home">Home</a></li>  
  <li><a href="#news">News</a></li>  
  <li><a href="#contact">Contact</a></li>  
  <li><a href="#about">About</a></li>  
</ul>  
  
</body>  
</html>

Chapter Summary

Use the HTML <ul> element to define an unordered list

Use the CSS list-style-type property to define the list item marker

Use the HTML <ol> element to define an ordered list

Use the HTML type attribute to define the numbering type

Use the HTML <li> element to define a list item

Use the HTML <dl> element to define a description list

Use the HTML <dt> element to define the description term

Use the HTML <dd> element to describe the term in a description list

Lists can be nested inside lists

List items can contain other HTML elements

Use the CSS property float:left or display:inline to display a list horizontally

|  |  |
| --- | --- |
| Tag | Description |
| [<ul>](https://www.w3schools.com/tags/tag_ul.asp) | Defines an unordered list |
| [<ol>](https://www.w3schools.com/tags/tag_ol.asp) | Defines an ordered list |
| [<li>](https://www.w3schools.com/tags/tag_li.asp) | Defines a list item |
| [<dl>](https://www.w3schools.com/tags/tag_dl.asp) | Defines a description list |
| [<dt>](https://www.w3schools.com/tags/tag_dt.asp) | Defines a term in a description list |
| [<dd>](https://www.w3schools.com/tags/tag_dd.asp) | Describes the term in a description list |

HTML Block and Inline Elements

Every HTML element has a default display value depending on what type of element it is. The default display value for most elements is block or inline.

Block-level Elements

A block-level element always starts on a new line and takes up the full width available (stretches out to the left and right as far as it can).

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

Example

<div>Hello</div>  
<div>World</div>

Block level elements in HTML:

[<address>](https://www.w3schools.com/tags/tag_address.asp)

[<article>](https://www.w3schools.com/tags/tag_article.asp)

[<aside>](https://www.w3schools.com/tags/tag_aside.asp)

[<blockquote>](https://www.w3schools.com/tags/tag_blockquote.asp)

[<canvas>](https://www.w3schools.com/tags/tag_canvas.asp)

[<dd>](https://www.w3schools.com/tags/tag_dd.asp)

[<div>](https://www.w3schools.com/tags/tag_div.asp)

[<dl>](https://www.w3schools.com/tags/tag_dl.asp)

[<dt>](https://www.w3schools.com/tags/tag_dt.asp)

[<fieldset>](https://www.w3schools.com/tags/tag_fieldset.asp)

[<figcaption>](https://www.w3schools.com/tags/tag_figcaption.asp)

[<figure>](https://www.w3schools.com/tags/tag_figure.asp)

[<footer>](https://www.w3schools.com/tags/tag_footer.asp)

[<form>](https://www.w3schools.com/tags/tag_form.asp)

[<h1>-<h6>](https://www.w3schools.com/tags/tag_hn.asp)

[<header>](https://www.w3schools.com/tags/tag_header.asp)

[<hr>](https://www.w3schools.com/tags/tag_hr.asp)

[<li>](https://www.w3schools.com/tags/tag_li.asp)

[<main>](https://www.w3schools.com/tags/tag_main.asp)

[<nav>](https://www.w3schools.com/tags/tag_nav.asp)

[<noscript>](https://www.w3schools.com/tags/tag_noscript.asp)

[<ol>](https://www.w3schools.com/tags/tag_ol.asp)

[<p>](https://www.w3schools.com/tags/tag_p.asp)

[<pre>](https://www.w3schools.com/tags/tag_pre.asp)

[<section>](https://www.w3schools.com/tags/tag_section.asp)

[<table>](https://www.w3schools.com/tags/tag_table.asp)

[<tfoot>](https://www.w3schools.com/tags/tag_tfoot.asp)

[<ul>](https://www.w3schools.com/tags/tag_ul.asp)

[<video>](https://www.w3schools.com/tags/tag_video.asp)

Inline Elements

An inline element does not start on a new line and only takes up as much width as necessary.

This is an inline <span> element inside a paragraph.

Example

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

Inline elements in HTML:

[<a>](https://www.w3schools.com/tags/tag_a.asp)

[<abbr>](https://www.w3schools.com/tags/tag_abbr.asp)

[<acronym>](https://www.w3schools.com/tags/tag_acronym.asp)

[<b>](https://www.w3schools.com/tags/tag_b.asp)

[<bdo>](https://www.w3schools.com/tags/tag_bdo.asp)

[<big>](https://www.w3schools.com/tags/tag_big.asp)

[<br>](https://www.w3schools.com/tags/tag_br.asp)

[<button>](https://www.w3schools.com/tags/tag_button.asp)

[<cite>](https://www.w3schools.com/tags/tag_cite.asp)

[<code>](https://www.w3schools.com/tags/tag_code.asp)

[<dfn>](https://www.w3schools.com/tags/tag_dfn.asp)

[<em>](https://www.w3schools.com/tags/tag_em.asp)

[<i>](https://www.w3schools.com/tags/tag_i.asp)

[<img>](https://www.w3schools.com/tags/tag_img.asp)

[<input>](https://www.w3schools.com/tags/tag_input.asp)

[<kbd>](https://www.w3schools.com/tags/tag_kbd.asp)

[<label>](https://www.w3schools.com/tags/tag_label.asp)

[<map>](https://www.w3schools.com/tags/tag_map.asp)

[<object>](https://www.w3schools.com/tags/tag_object.asp)

[<output>](https://www.w3schools.com/tags/tag_output.asp)

[<q>](https://www.w3schools.com/tags/tag_q.asp)

[<samp>](https://www.w3schools.com/tags/tag_samp.asp)

[<script>](https://www.w3schools.com/tags/tag_script.asp)

[<select>](https://www.w3schools.com/tags/tag_select.asp)

[<small>](https://www.w3schools.com/tags/tag_small.asp)

[<span>](https://www.w3schools.com/tags/tag_span.asp)

[<strong>](https://www.w3schools.com/tags/tag_strong.asp)

[<sub>](https://www.w3schools.com/tags/tag_sub.asp)

[<sup>](https://www.w3schools.com/tags/tag_sup.asp)

[<textarea>](https://www.w3schools.com/tags/tag_textarea.asp)

[<time>](https://www.w3schools.com/tags/tag_time.asp)

[<tt>](https://www.w3schools.com/tags/tag_tt.asp)

[<var>](https://www.w3schools.com/tags/tag_var.asp)

The <div> Element

The <div> element is often used as a container for other HTML elements.

The <div> element has no required attributes, but style, class and id are common.

When used together with CSS, the <div> element can be used to style blocks of content:

Example

<div style="background-color:black;color:white;padding:20px;">  
  <h2>London</h2>  
  <p>London is the capital city of England. It is the most populous city in the United Kingdom, with a metropolitan area of over 13 million inhabitants.</p>  
</div>

The <span> Element

The <span> element is often used as a container for some text.

The <span> element has no required attributes, but style, class and id are common.

When used together with CSS, the <span> element can be used to style parts of the text:

Example

<h1>My <span style="color:red">Important</span> Heading</h1>

HTML Grouping Tags

|  |  |  |
| --- | --- | --- |
| Tag |  | Description |
| [<div>](https://www.w3schools.com/tags/tag_div.asp) |  | Defines a section in a document (block-level) |
| [<span>](https://www.w3schools.com/tags/tag_span.asp) |  | Defines a section in a document (inline) |

.

HTML The class Attribute

Using The class Attribute

The HTML class attribute is used to define equal styles for elements with the same class name.

So, all HTML elements with the same class attribute will have the same format and style.

Here we have three <div> elements that point to the same class name:

Example

<!DOCTYPE html>  
<html>  
<head>  
<style>  
.cities {  
  background-color: black;  
  color: white;  
  margin: 20px;  
  padding: 20px;  
}   
</style>  
</head>  
<body>  
  
<div class="cities">  
  <h2>London</h2>  
  <p>London is the capital of England.</p>  
</div>  
  
<div class="cities">  
  <h2>Paris</h2>  
  <p>Paris is the capital of France.</p>  
</div>  
  
<div class="cities">  
  <h2>Tokyo</h2>  
  <p>Tokyo is the capital of Japan.</p>  
</div>  
  
</body>  
</html>

Result:

London

London is the capital of England.

Paris

Paris is the capital of France.

Tokyo

Tokyo is the capital of Japan.

Using The class Attribute on Inline Elements

The HTML class attribute can also be used on inline elements:

Example

<!DOCTYPE html>  
<html>  
<head>  
<style>  
span.note {  
  font-size: 120%;  
  color: red;  
}  
</style>  
</head>  
<body>  
  
<h1>My <span class="note">Important</span> Heading</h1>  
<p>This is some <span class="note">important</span> text.</p>  
  
</body>  
</html>

**Tip:** The class attribute can be used on **any** HTML element.

**Note:** The class name is case sensitive!

**Tip:** You can learn much more about CSS in our [CSS Tutorial](https://www.w3schools.com/css/default.asp).

Select Elements With a Specific Class

In CSS, to select elements with a specific class, write a period (.) character, followed by the name of the class:

Example

Use CSS to style all elements with the class name "city":

<style>  
**.city** {  
  background-color: tomato;  
  color: white;  
  padding: 10px;  
}   
</style>  
  
<h2 **class**="city">London</h2>  
<p>London is the capital of England.</p>  
  
<h2 **class**="city">Paris</h2>  
<p>Paris is the capital of France.</p>  
  
<h2 **class**="city">Tokyo</h2>  
<p>Tokyo is the capital of Japan.</p>

Result:

London

London is the capital of England.

Paris

Paris is the capital of France.

Tokyo

Tokyo is the capital of Japan.

Multiple Classes

HTML elements can have more than one class name, each class name must be separated by a space.

Example

Style elements with the class name "city", also style elements with the class name "main":

<h2 class="city main">London</h2>  
<h2 class="city">Paris</h2>  
<h2 class="city">Tokyo</h2>

In the example above, the first <h2> element belongs to both the "city" class and the "main" class.

Different Tags Can Share Same Class

Different tags, like <h2> and <p>, can have the same class name and thereby share the same style:

Example

<h2 class="city">Paris</h2>  
<p class="city">Paris is the capital of France</p>

Using The class Attribute in JavaScript

The class name can also be used by JavaScript to perform certain tasks for elements with the specified class name.

JavaScript can access elements with a specified class name by using the getElementsByClassName() method:

Example

When a user clicks on a button, hide all elements with the class name "city":

<script>  
function myFunction() {  
  var x = **document.**getElementsByClassName**(**"city"**)**;  
  for (var i = 0; i < x.length; i++) {  
    x[i].style.display = "none";  
  }  
}  
</script>

HTML The id Attribute

Using The id Attribute

The id attribute specifies a unique id for an HTML element (the value must be unique within the HTML document).

The id value can be used by CSS and JavaScript to perform certain tasks for a unique element with the specified id value.

In CSS, to select an element with a specific id, write a hash (#) character, followed by the id of the element:

Example

Use CSS to style an element with the id "myHeader":

<style>  
**#myHeader** {  
  background-color: lightblue;  
  color: black;  
  padding: 40px;  
  text-align: center;  
}   
</style>  
  
<h1 id="myHeader">My Header</h1>

Result:

My Header

**Tip:** The id attribute can be used on **any** HTML element.

**Note:** The id value is case-sensitive.

**Note:** The id value must contain at least **one** character, and must **not** contain whitespace (spaces, tabs, etc.).

Difference Between Class and ID

An HTML element can only have one unique id that belongs to that single element, while a class name can be used by multiple elements:

Example

<style>  
/\* Style the element with the id "myHeader" \*/  
**#myHeader** {  
  background-color: lightblue;  
  color: black;  
  padding: 40px;  
  text-align: center;  
}  
  
/\* Style all elements with the class name "city" \*/  
**.city** {  
  background-color: tomato;  
  color: white;  
  padding: 10px;  
}   
</style>  
  
<!-- A unique element -->  
<h1 id="myHeader">My Cities</h1>  
  
<!-- Multiple similar elements -->  
<h2 class="city">London</h2>  
<p>London is the capital of England.</p>  
  
<h2 class="city">Paris</h2>  
<p>Paris is the capital of France.</p>  
  
<h2 class="city">Tokyo</h2>  
<p>Tokyo is the capital of Japan.</p>

**Tip:** You can learn much more about CSS in our [CSS Tutorial](https://www.w3schools.com/css/default.asp).

Bookmarks with ID and Links

HTML bookmarks are used to allow readers to jump to specific parts of a Web page.

Bookmarks can be useful if your webpage is very long.

To make a bookmark, you must first create the bookmark, and then add a link to it.

When the link is clicked, the page will scroll to the location with the bookmark.

Example

First, create a bookmark with the id attribute:

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

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

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

Or, add a link to the bookmark ("Jump to Chapter 4"), from another page:

Example

<a href="html\_demo.html#C4">Jump to Chapter 4</a>

Using The id Attribute in JavaScript

JavaScript can access an element with a specified id by using the getElementById() method:

Example

Use the id attribute to manipulate text with JavaScript:

<script>  
function displayResult() {  
  document.getElementById("myHeader").innerHTML = "Have a nice day!";  
}  
</script>

HTML Iframes

An iframe is used to display a web page within a web page.

Iframe Syntax

An HTML iframe is defined with the <iframe> tag:

<iframe src="URL"></iframe>

The src attribute specifies the URL (web address) of the inline frame page.

Iframe - Set Height and Width

Use the height and width attributes to specify the size of the iframe.

The attribute values are specified in pixels by default, but they can also be in percent (like "80%").

Example

<iframe src="demo\_iframe.htm" height="200" width="300"></iframe>

Or you can use CSS to set the height and width of the iframe:

Example

<iframe src="demo\_iframe.htm" style="height:200px;width:300px;"></iframe>

Iframe - Remove the Border

By default, an iframe has a border around it.

To remove the border, add the style attribute and use the CSS border property:

Example

<iframe src="demo\_iframe.htm" style="border:none;"></iframe>

With CSS, you can also change the size, style and color of the iframe's border:

Example

<iframe src="demo\_iframe.htm" style="border:2px solid red;"></iframe>

Iframe - Target for a Link

An iframe can be used as the target frame for a link.

The target attribute of the link must refer to the name attribute of the iframe:

Example

<iframe src="demo\_iframe.htm" name="iframe\_a"></iframe>  
  
<p><a href="https://www.w3schools.com" target="iframe\_a">W3Schools.com</a></p>

HTML JavaScript

JavaScript makes HTML pages more dynamic and interactive.

Example

My First JavaScript

The HTML <script> Tag

The <script> tag is used to define a client-side script (JavaScript).

The <script> element either contains scripting statements, or it points to an external script file through the src attribute.

Common uses for JavaScript are image manipulation, form validation, and dynamic changes of content.

To select an HTML element, JavaScript very often uses the document.getElementById() method.

This JavaScript example writes "Hello JavaScript!" into an HTML element with id="demo":

Example

<script>  
document.getElementById("demo").innerHTML = "Hello JavaScript!";  
</script>

**Tip:** You can learn much more about JavaScript in our [JavaScript Tutorial](https://www.w3schools.com/js/default.asp).

A Taste of JavaScript

Here are some examples of what JavaScript can do:

JavaScript can change HTML content

document.getElementById("demo").innerHTML = "Hello JavaScript!";

JavaScript can change HTML styles

document.getElementById("demo").style.fontSize = "25px";  
document.getElementById("demo").style.color = "red";  
document.getElementById("demo").style.backgroundColor = "yellow";

JavaScript can change HTML attributes

document.getElementById("image").src = "picture.gif";

The HTML <noscript> Tag

The <noscript> tag is used to provide an alternate content for users that have disabled scripts in their browser or have a browser that doesn't support client-side scripts:

Example

<script>  
document.getElementById("demo").innerHTML = "Hello JavaScript!";  
</script>  
  
<noscript>Sorry, your browser does not support JavaScript!</noscript>

HTML Script Tags

|  |  |
| --- | --- |
| Tag | Description |
| [<script>](https://www.w3schools.com/tags/tag_script.asp) | Defines a client-side script |
| [<noscript>](https://www.w3schools.com/tags/tag_noscript.asp) | Defines an alternate content for users that do not support client-side scripts |

HTML File Paths

|  |  |
| --- | --- |
| Path | Description |
| <img src="picture.jpg"> | picture.jpg is located in the same folder as the current page |
| <img src="images/picture.jpg"> | picture.jpg is located in the images folder in the current folder |
| <img src="/images/picture.jpg"> | picture.jpg is located in the images folder at the root of the current web |
| <img src="../picture.jpg"> | picture.jpg is located in the folder one level up from the current folder |

HTML File Paths

A file path describes the location of a file in a web site's folder structure.

File paths are used when linking to external files like:

Web pages

Images

Style sheets

JavaScripts

Absolute File Paths

An absolute file path is the full URL to an internet file:

Example

<img src="https://www.w3schools.com/images/picture.jpg" alt="Mountain">

The <img> tag and the src and alt attributes are explained in the chapter about [HTML Images](https://www.w3schools.com/html/html_images.asp).

Relative File Paths

A relative file path points to a file relative to the current page.

In this example, the file path points to a file in the images folder located at the root of the current web:

Example

<img src="/images/picture.jpg" alt="Mountain">

In this example, the file path points to a file in the images folder located in the current folder:

Example

<img src="images/picture.jpg" alt="Mountain">

In this example, the file path points to a file in the images folder located in the folder one level above the current folder:

Example

<img src="../images/picture.jpg" alt="Mountain">

HTML Head

The HTML <head> Element

The <head> element is a container for metadata (data about data) and is placed between the <html> tag and the <body> tag.

HTML metadata is data about the HTML document. Metadata is not displayed.

Metadata typically define the document title, character set, styles, links, scripts, and other meta information.

The following tags describe metadata: <title>, <style>, <meta>, <link>, <script>, and <base>.

The HTML <title> Element

The <title> element defines the title of the document, and is required in all HTML/XHTML documents.

The <title> element:

defines a title in the browser tab

provides a title for the page when it is added to favorites

displays a title for the page in search engine results

A simple HTML document:

Example

<!DOCTYPE html>  
<html>  
  
<head>  
  <title>Page Title</title>  
</head>  
  
<body>  
The content of the document......  
</body>  
  
</html>

The HTML <style> Element

The <style> element is used to define style information for a single HTML page:

Example

<style>  
  body {background-color: powderblue;}  
  h1 {color: red;}  
  p {color: blue;}  
</style>

The HTML <link> Element

The <link> element is used to link to external style sheets:

Example

<link rel="stylesheet" href="mystyle.css">

The HTML <meta> Element

The <meta> element is used to specify which character set is used, page description, keywords, author, and other metadata.

Metadata is used by browsers (how to display content), by search engines (keywords), and other web services.

Define the character set used:

<meta charset="UTF-8">

Define a description of your web page:

<meta name="description" content="Free Web tutorials">

Define keywords for search engines:

<meta name="keywords" content="HTML, CSS, XML, JavaScript">

Define the author of a page:

<meta name="author" content="John Doe">

Refresh document every 30 seconds:

<meta http-equiv="refresh" content="30">

Example of <meta> tags:

Example

<meta charset="UTF-8">  
<meta name="description" content="Free Web tutorials">  
<meta name="keywords" content="HTML,CSS,XML,JavaScript">  
<meta name="author" content="John Doe">

Setting The Viewport

HTML5 introduced a method to let web designers take control over the viewport, through the <meta> tag.

The viewport is the user's visible area of a web page. It varies with the device, and will be smaller on a mobile phone than on a computer screen.

You should include the following <meta> viewport element in all your web pages:

<meta name="viewport" content="width=device-width, initial-scale=1.0">

A <meta> viewport element gives the browser instructions on how to control the page's dimensions and scaling.

The width=device-width part sets the width of the page to follow the screen-width of the device (which will vary depending on the device).

The initial-scale=1.0 part sets the initial zoom level when the page is first loaded by the browser.

Here is an example of a web page without the viewport meta tag, and the same web page with the viewport <meta> tag:

Tip: If you are browsing this page with a phone or a tablet, you can click on the two links below to see the difference.

[[](https://www.w3schools.com/html/example_withoutviewport.htm)  
  
Without the viewport meta tag](https://www.w3schools.com/html/example_withoutviewport.htm)

[[](https://www.w3schools.com/html/example_withviewport.htm)  
  
With the viewport meta tag](https://www.w3schools.com/html/example_withviewport.htm)

The HTML <script> Element

The <script> element is used to define client-side JavaScripts.

This JavaScript writes "Hello JavaScript!" into an HTML element with id="demo":

Example

<script>  
function myFunction {  
  document.getElementById("demo").innerHTML = "Hello JavaScript!";  
}  
</script>

The HTML <base> Element

The <base> element specifies the base URL and base target for all relative URLs in a page:

Example

<base href="https://www.w3schools.com/images/" target="\_blank">

Omitting <html>, <head> and <body>?

According to the HTML5 standard; the <html>, the <body>, and the <head> tag can be omitted.

The following code will validate as HTML5:

Example

<!DOCTYPE html>  
<title>Page Title</title>  
  
<h1>This is a heading</h1>  
<p>This is a paragraph.</p>

Note:

W3Schools does not recommend omitting the <html> and <body> tags. Omitting these tags can crash DOM or XML software and produce errors in older browsers (IE9).

However, omitting the <head> tag has been a common practice for quite some time now.

HTML head Elements

|  |  |  |
| --- | --- | --- |
| Tag |  | Description |
| [<head>](https://www.w3schools.com/tags/tag_head.asp) |  | Defines information about the document |
| [<title>](https://www.w3schools.com/tags/tag_title.asp) |  | Defines the title of a document |
| [<base>](https://www.w3schools.com/tags/tag_base.asp) |  | Defines a default address or a default target for all links on a page |
| [<link>](https://www.w3schools.com/tags/tag_link.asp) |  | Defines the relationship between a document and an external resource |
| [<meta>](https://www.w3schools.com/tags/tag_meta.asp) |  | Defines metadata about an HTML document |
| [<script>](https://www.w3schools.com/tags/tag_script.asp) |  | Defines a client-side script |
| [<style>](https://www.w3schools.com/tags/tag_style.asp) |  | Defines style information for a document |

HTML Layouts

HTML Layout Example

Cities

[London](javascript:void(0))

[Paris](javascript:void(0))

[Tokyo](javascript:void(0))

London

London is the capital city of England. It is the most populous city in the United Kingdom, with a metropolitan area of over 13 million inhabitants.

Standing on the River Thames, London has been a major settlement for two millennia, its history going back to its founding by the Romans, who named it Londinium.

Footer

HTML Layout Elements

Websites often display content in multiple columns (like a magazine or newspaper).

HTML5 offers new semantic elements that define the different parts of a web page:

|  |  |
| --- | --- |
| HTML5 Semantic Elements | <header> - Defines a header for a document or a section  <nav> - Defines a container for navigation links  <section> - Defines a section in a document  <article> - Defines an independent self-contained article  <aside> - Defines content aside from the content (like a sidebar)  <footer> - Defines a footer for a document or a section  <details> - Defines additional details  <summary> - Defines a heading for the <details> element |

HTML Layout Techniques

There are five different ways to create multicolumn layouts. Each way has its pros and cons:

HTML tables (not recommended)

CSS float property

CSS flexbox

CSS framework

CSS grid

Which One to Choose?

HTML Tables

The <table> element was not designed to be a layout tool! The purpose of the <table> element is to display tabular data. So, do not use tables for your page layout! They will bring a mess into your code. And imagine how hard it will be to redesign your site after a couple of months.

Tip: Do NOT use tables for your page layout!

CSS Frameworks

If you want to create your layout fast, you can use a framework, like [W3.CSS](https://www.w3schools.com/w3css/default.asp) or [Bootstrap](https://www.w3schools.com/bootstrap/default.asp).

CSS Floats

It is common to do entire web layouts using the CSS float property. Float is easy to learn - you just need to remember how the float and clear properties work. Disadvantages: Floating elements are tied to the document flow, which may harm the flexibility. Learn more about float in our [CSS Float and Clear](https://www.w3schools.com/css/css_float.asp) chapter.

Float Example

Cities

[London](javascript:void(0))

[Paris](javascript:void(0))

[Tokyo](javascript:void(0))

London

London is the capital city of England. It is the most populous city in the United Kingdom, with a metropolitan area of over 13 million inhabitants.

Standing on the River Thames, London has been a major settlement for two millennia, its history going back to its founding by the Romans, who named it Londinium.

Footer

CSS Flexbox

Flexbox is a new layout mode in CSS3.

Use of flexbox ensures that elements behave predictably when the page layout must accommodate different screen sizes and different display devices. Disadvantages: Does not work in IE10 and earlier.

Learn more about flexbox in our [CSS Flexbox](https://www.w3schools.com/css/css3_flexbox.asp) chapter.

Flexbox Example

Cities

[London](https://www.w3schools.com/html/html_layout.asp)

[Paris](https://www.w3schools.com/html/html_layout.asp)

[Tokyo](https://www.w3schools.com/html/html_layout.asp)

London

London is the capital city of England. It is the most populous city in the United Kingdom, with a metropolitan area of over 13 million inhabitants.

Standing on the River Thames, London has been a major settlement for two millennia, its history going back to its founding by the Romans, who named it Londinium.

Footer

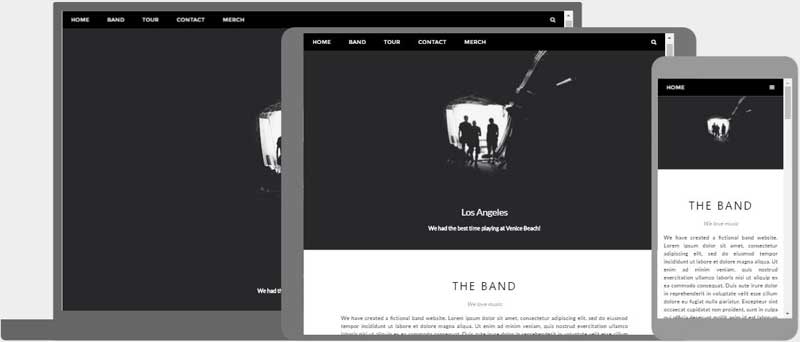
CSS Grid View

The CSS Grid Layout Module offers a grid-based layout system, with rows and columns, making it easier to design web pages without having to use floats and positioning.

Disadvantages: Does not work in IE nor in Edge 15 and earlier.

Learn more about CSS grids in our [CSS Grid View](https://www.w3schools.com/css/css_rwd_grid.asp) chapter.

HTML Responsive Web Design



What is Responsive Web Design?

Responsive Web Design is about using HTML and CSS to automatically resize, hide, shrink, or enlarge, a website, to make it look good on all devices (desktops, tablets, and phones):

**Note:** A web page should look good on **any device**!

Setting The Viewport

When making responsive web pages, add the following <meta> element in all your web pages:

Example

<meta name="viewport" content="width=device-width, initial-scale=1.0">

This will set the viewport of your page, which will give the browser instructions on how to control the page's dimensions and scaling.

Here is an example of a web page without the viewport meta tag, and the same web page with the viewport meta tag:

Without the viewport meta tag:  
[](https://www.w3schools.com/html/example_withoutviewport.htm)

With the viewport meta tag:  
[](https://www.w3schools.com/html/example_withviewport.htm)

**Tip:** If you are browsing this page on a phone or a tablet, you can click on the two links above to see the difference.

Responsive Images

Responsive images are images that scale nicely to fit any browser size.

Using the width Property

If the CSS width property is set to 100%, the image will be responsive and scale up and down:



Example

<img src="img\_girl.jpg" **style**="width:100%;">

Notice that in the example above, the image can be scaled up to be larger than its original size. A better solution, in many cases, will be to use the max-width property instead.

Using the max-width Property

If the max-width property is set to 100%, the image will scale down if it has to, but never scale up to be larger than its original size:



Example

<img src="img\_girl.jpg" style="**max-width:100%;**height:auto;">

Show Different Images Depending on Browser Width

The HTML <picture> element allows you to define different images for different browser window sizes.

Resize the browser window to see how the image below change depending on the width:



Example

<picture>  
  <source srcset="img\_smallflower.jpg" media="(max-width: 600px)">  
  <source srcset="img\_flowers.jpg" media="(max-width: 1500px)">  
  <source srcset="flowers.jpg">  
  <img src="img\_smallflower.jpg" alt="Flowers">  
</picture>

Responsive Text Size

The text size can be set with a "vw" unit, which means the "viewport width".

That way the text size will follow the size of the browser window:

Hello World

Resize the browser window to see how the text size scales.

Example

<h1 style="**font-size:10vw**">Hello World</h1>

Viewport is the browser window size. 1vw = 1% of viewport width. If the viewport is 50cm wide, 1vw is 0.5cm.

Media Queries

In addition to resize text and images, it is also common to use media queries in responsive web pages.

With media queries you can define completely different styles for different browser sizes.

Example: resize the browser window to see that the three div elements below will display horizontally on large screens and stacked vertically on small screens:

Left Menu

Main Content

Right Content

Example

<style>  
.left, .right {  
  float: left;  
  width: 20%; /\* The width is 20%, by default \*/  
}  
  
.main {  
  float: left;  
  width: 60%; /\* The width is 60%, by default \*/  
}  
  
/\* Use a media query to add a breakpoint at 800px: \*/  
@media screen and (max-width: 800px) {  
  .left, .main, .right {  
    width: 100%; /\* The width is 100%, when the viewport is 800px or smaller \*/  
  }  
}  
</style>

Responsive Web Page - Full Example

A responsive web page should look good on large desktop screens and small mobile phones.

Responsive Web Design - Frameworks

There are many existing CSS Frameworks that offer Responsive Design.

They are free, and easy to use.

Using W3.CSS

A great way to create a responsive design, is to use a responsive style sheet, like [W3.CSS](https://www.w3schools.com/w3css/default.asp)

W3.CSS makes it easy to develop sites that look nice at any size; desktop, laptop, tablet, or phone:

W3.CSS Demo

Resize the page to see the responsiveness!

London

London is the capital city of England.

It is the most populous city in the United Kingdom, with a metropolitan area of over 13 million inhabitants.

Paris

Paris is the capital of France.

The Paris area is one of the largest population centers in Europe, with more than 12 million inhabitants.

Tokyo

Tokyo is the capital of Japan.

It is the center of the Greater Tokyo Area, and the most populous metropolitan area in the world.

Example

<!DOCTYPE html>  
<html>  
<meta name="viewport" content="width=device-width, initial-scale=1">  
<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">  
<body>  
  
<div class="w3-container w3-green">  
  <h1>W3Schools Demo</h1>   
  <p>Resize this responsive page!</p>   
</div>  
  
<div class="w3-row-padding">  
  <div class="w3-third">  
    <h2>London</h2>  
    <p>London is the capital city of England.</p>  
    <p>It is the most populous city in the United Kingdom,  
    with a metropolitan area of over 13 million inhabitants.</p>  
  </div>  
  
  <div class="w3-third">  
    <h2>Paris</h2>  
    <p>Paris is the capital of France.</p>   
    <p>The Paris area is one of the largest population centers in Europe,  
    with more than 12 million inhabitants.</p>  
  </div>  
  
  <div class="w3-third">  
    <h2>Tokyo</h2>  
    <p>Tokyo is the capital of Japan.</p>  
    <p>It is the center of the Greater Tokyo Area,  
    and the most populous metropolitan area in the world.</p>  
  </div>  
</div>  
  
</body>  
</html>

Bootstrap

Another popular framework is Bootstrap, it uses HTML, CSS and jQuery to make responsive web pages.

Example

<!DOCTYPE html>  
<html lang="en">  
<head>  
<title>Bootstrap Example</title>  
<meta charset="utf-8">  
<meta name="viewport" content="width=device-width, initial-scale=1">  
<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">  
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.2.0/jquery.min.js"></script>  
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"></script>  
</head>  
<body>  
  
<div class="container">  
  <div class="jumbotron">  
    <h1>My First Bootstrap Page</h1>  
  </div>  
  <div class="row">  
    <div class="col-sm-4">  
      ...  
    </div>  
    <div class="col-sm-4">  
      ...  
    </div>  
    <div class="col-sm-4">  
    ...  
    </div>  
  </div>  
</div>  
  
</body>  
</html>

HTML Computer Code Elements

Computer Code

<code>  
x = 5;<br>  
y = 6;<br>  
z = x + y;  
</code>

HTML <kbd> For Keyboard Input

The HTML <kbd> element represents user input, like keyboard input or voice commands.

Text surrounded by <kbd> tags is typically displayed in the browser's default monospace font:

Example

<p>Save the document by pressing <kbd>Ctrl + S</kbd></p>

Result:

Save the document by pressing Ctrl + S

HTML <samp> For Program Output

The HTML <samp> element represents output from a program or computing system.

Text surrounded by <samp> tags is typically displayed in the browser's default monospace font:

Example

<p>If you input wrong value, the program will return <samp>Error!</samp></p>

Result:

If you input wrong value, the program will return Error!

HTML <code> For Computer Code

The HTML <code> element defines a fragment of computer code.

Text surrounded by <code> tags is typically displayed in the browser's default monospace font:

Example

<code>  
x = 5;  
y = 6;  
z = x + y;  
</code>

Result:

x = 5; y = 6; z = x + y;

Notice that the <code> element does not preserve extra whitespace and line-breaks.

To fix this, you can put the <code> element inside a <pre> element:

Example

<pre>  
<code>  
x = 5;  
y = 6;  
z = x + y;  
</code>  
</pre>

Result:

x = 5;

y = 6;

z = x + y;

HTML <var> For Variables

The HTML <var> element defines a variable.

The variable could be a variable in a mathematical expression or a variable in programming context:

HTML Computer Code Elements

|  |  |  |
| --- | --- | --- |
| Tag |  | Description |
| [<code>](https://www.w3schools.com/tags/tag_code.asp) |  | Defines programming code |
| [<kbd>](https://www.w3schools.com/tags/tag_kbd.asp) |  | Defines keyboard input |
| [<samp>](https://www.w3schools.com/tags/tag_samp.asp) |  | Defines computer output |
| [<var>](https://www.w3schools.com/tags/tag_var.asp) |  | Defines a variable |
| [<pre>](https://www.w3schools.com/tags/tag_pre.asp) |  | Defines preformatted text |

HTML Entities

Reserved characters in HTML must be replaced with character entities.

Characters that are not present on your keyboard can also be replaced by entities.

HTML Entities

Some characters are reserved in HTML.

If you use the less than (<) or greater than (>) signs in your text, the browser might mix them with tags.

Character entities are used to display reserved characters in HTML.

A character entity looks like this:

&entity\_name;

OR

&#entity\_number;

To display a less than sign (<) we must write: &lt; or &#60;

Advantage of using an entity name: An entity name is easy to remember.  
Disadvantage of using an entity name: Browsers may not support all entity names, but the support for numbers is good.

Non-breaking Space

A common character entity used in HTML is the non-breaking space: &nbsp;

A non-breaking space is a space that will not break into a new line.

Two words separated by a non-breaking space will stick together (not break into a new line). This is handy when breaking the words might be disruptive.

Examples:

§ 10

10 km/h

10 PM

Another common use of the non-breaking space is to prevent browsers from truncating spaces in HTML pages.

If you write 10 spaces in your text, the browser will remove 9 of them. To add real spaces to your text, you can use the &nbsp; character entity.

The non-breaking hyphen ([&#8209;](https://www.w3schools.com/charsets/ref_utf_punctuation.asp)) lets you use a hyphen character (‑) that won't break.

Some Other Useful HTML Character Entities

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Result | | Description |  | Entity Name | | Entity Number |
|  | | non-breaking space |  | &nbsp; | | &#160; |
| < | | less than |  | &lt; | | &#60; |
| > | | greater than |  | &gt; | | &#62; |
| & | | ampersand |  | &amp; | | &#38; |
| " | | double quotation mark |  | &quot; | | &#34; |
| ' |  | single quotation mark (apostrophe) | | &apos; |  | &#39; |
| ¢ |  | cent | | &cent; |  | &#162; |
| £ |  | pound | | &pound; |  | &#163; |
| ¥ |  | yen | | &yen; |  | &#165; |
| € |  | euro | | &euro; |  | &#8364; |
| © |  | copyright | | &copy; |  | &#169; |
| ® |  | registered trademark | | &reg; |  | &#174; |

Note: Entity names are case sensitive.

Combining Diacritical Marks

A diacritical mark is a "glyph" added to a letter.

Some diacritical marks, like grave (  ̀) and acute (  ́) are called accents.

Diacritical marks can appear both above and below a letter, inside a letter, and between two letters.

Diacritical marks can be used in combination with alphanumeric characters to produce a character that is not present in the character set (encoding) used in the page.

Here are some examples:

|  |  |  |  |
| --- | --- | --- | --- |
| Mark | Character | Construct | Result |
| ̀ | a | a&#768; | à |
| ́ | a | a&#769; | á |
| ̂ | a | a&#770; | â |
| ̃ | a | a&#771; | ã |
| ̀ | O | O&#768; | Ò |
| ́ | O | O&#769; | Ó |
| ̂ | O | O&#770; | Ô |
| ̃ | O | O&#771; | Õ |

You will see more HTML symbols in the next chapter of this tutorial.

HTML Symbols

HTML Symbol Entities

HTML entities were described in the previous chapter.

Many mathematical, technical, and currency symbols, are not present on a normal keyboard.

To add such symbols to an HTML page, you can use an HTML entity name.

If no entity name exists, you can use an entity number, a decimal, or hexadecimal reference.

Example

<p>I will display &euro;</p>  
<p>I will display &#8364;</p>  
<p>I will display &#x20AC;</p>

Will display as:

I will display €  
I will display €  
I will display €

Some Mathematical Symbols Supported by HTML

|  |  |  |  |
| --- | --- | --- | --- |
| Char | Number | Entity | Description |
| ∀ | &#8704; | &forall; | FOR ALL |
| ∂ | &#8706; | &part; | PARTIAL DIFFERENTIAL |
| ∃ | &#8707; | &exist; | THERE EXISTS |
| ∅ | &#8709; | &empty; | EMPTY SETS |
| ∇ | &#8711; | &nabla; | NABLA |
| ∈ | &#8712; | &isin; | ELEMENT OF |
| ∉ | &#8713; | &notin; | NOT AN ELEMENT OF |
| ∋ | &#8715; | &ni; | CONTAINS AS MEMBER |
| ∏ | &#8719; | &prod; | N-ARY PRODUCT |
| ∑ | &#8721; | &sum; | N-ARY SUMMATION |

[Full Math Reference](https://www.w3schools.com/charsets/ref_utf_math.asp)

Some Greek Letters Supported by HTML

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Char | | Number | | Entity | Description |
| Α | | &#913; | | &Alpha; | GREEK CAPITAL LETTER ALPHA |
| Β |  | &#914; |  | &Beta; | GREEK CAPITAL LETTER BETA |
| Γ |  | &#915; |  | &Gamma; | GREEK CAPITAL LETTER GAMMA |
| Δ |  | &#916; |  | &Delta; | GREEK CAPITAL LETTER DELTA |
| Ε |  | &#917; |  | &Epsilon; | GREEK CAPITAL LETTER EPSILON |
| Ζ |  | &#918; |  | &Zeta; | GREEK CAPITAL LETTER ZETA |

[Full Greek Reference](https://www.w3schools.com/charsets/ref_utf_greek.asp)

Some Other Entities Supported by HTML

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Char | | Number | Entity | Description |
| © | | &#169; | &copy; | COPYRIGHT SIGN |
| ® | | &#174; | &reg; | REGISTERED SIGN |
| € | | &#8364; | &euro; | EURO SIGN |
| ™ | | &#8482; | &trade; | TRADEMARK |
| ← | | &#8592; | &larr; | LEFTWARDS ARROW |
| ↑ | | &#8593; | &uarr; | UPWARDS ARROW |
| → | | &#8594; | &rarr; | RIGHTWARDS ARROW |
| ↓ |  | &#8595; | &darr; | DOWNWARDS ARROW |
| ♠ |  | &#9824; | &spades; | BLACK SPADE SUIT |
| ♣ |  | &#9827; | &clubs; | BLACK CLUB SUIT |
| ♥ |  | &#9829; | &hearts; | BLACK HEART SUIT |
| ♦ |  | &#9830; | &diams; | BLACK DIAMOND SUIT |

HTML Encoding (Character Sets)

To display an HTML page correctly, a web browser must know which character set (character encoding) to use.

What is Character Encoding?

ASCII was the first **character encoding standard** (also called character set). ASCII defined 128 different alphanumeric characters that could be used on the internet: numbers (0-9), English letters (A-Z), and some special characters like ! $ + - ( ) @ < > .

ISO-8859-1 was the default character set for HTML 4. This character set also supported 256 different character codes.

ANSI (Windows-1252) was the original Windows character set. ANSI is identical to ISO-8859-1, except that ANSI has 32 extra characters.

Because ANSI and ISO-8859-1 were so limited, HTML 4 also supported UTF-8.

UTF-8 (Unicode) covers almost all of the characters and symbols in the world.

The default character encoding for HTML5 is UTF-8.

The HTML charset Attribute

To display an HTML page correctly, a web browser must know the character set used in the page.

This is specified in the <meta> tag:

For HTML4:

<meta http-equiv="Content-Type" content="text/html;charset=ISO-8859-1">

For HTML5:

<meta charset="UTF-8">

If a browser detects ISO-8859-1 in a web page, it defaults to ANSI.

Differences Between Character Sets

The following table displays the differences between the character sets described above:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Numb | | | | | | | | | ASCII | | | | | | | | | ANSI | | | | | | | | | 8859 | | | | | | | | | UTF-8 | | | | | | | | | | Description |
| 32 | | | | | | | | |  | | | | | | | | |  | | | | | | | | |  | | | | | | | | |  | | | | | | | | | | space |
| 33 | | | | | | | | | ! | | | | | | | | | ! | | | | | | | | | ! | | | | | | | | | ! | | | | | | | | | | exclamation mark |
| 34 | | | | | | | | | " | | | | | | | | | " | | | | | | | | | " | | | | | | | | | " | | | | | | | | | | quotation mark |
| 35 | | | | | | | | | # | | | | | | | | | # | | | | | | | | | # | | | | | | | | | # | | | | | | | | | | number sign |
| 36 | | | | | | | | | $ | | | | | | | | | $ | | | | | | | | | $ | | | | | | | | | $ | | | | | | | | | | dollar sign |
| 37 | | | | | | | | | % | | | | | | | | | % | | | | | | | | | % | | | | | | | | | % | | | | | | | | | | percent sign |
| 38 | |  | | | | | | | & | | | | | | | |  | & |  | | | | | | | | & |  | | | | | | | | & |  | | | | | | | | | ampersand |
| 39 | |  | | | | | | | ' | | | | | | | |  | ' |  | | | | | | | | ' |  | | | | | | | | ' |  | | | | | | | | | apostrophe |
| 40 | |  | | | | | | | ( | | | | | | | |  | ( |  | | | | | | | | ( |  | | | | | | | | ( |  | | | | | | | | | left parenthesis |
| 41 | |  | | | | | | | ) | | | | | | | |  | ) |  | | | | | | | | ) |  | | | | | | | | ) |  | | | | | | | | | right parenthesis |
| 42 | |  | | | | | | | \* | | | | | | | |  | \* |  | | | | | | | | \* |  | | | | | | | | \* |  | | | | | | | | | asterisk |
| 43 | |  | | | | | | | + | | | | | | | |  | + |  | | | | | | | | + |  | | | | | | | | + |  | | | | | | | | | plus sign |
| 44 | |  | | | | | | | , | | | | | | | |  | , |  | | | | | | | | , |  | | | | | | | | , |  | | | | | | | | | comma |
| 45 | |  | | | | | | | - | | | | | | | |  | - |  | | | | | | | | - |  | | | | | | | | - |  | | | | | | | | | hyphen-minus |
| 46 | |  | | | | | | | . | | | | | | | |  | . |  | | | | | | | | . |  | | | | | | | | . |  | | | | | | | | | full stop |
| 47 | |  | | | | | | | / | | | | | | | |  | / |  | | | | | | | | / |  | | | | | | | | / |  | | | | | | | | | solidus |
| 48 | |  | | | | | | | 0 | | | | | | | |  | 0 |  | | | | | | | | 0 |  | | | | | | | | 0 |  | | | | | | | | | digit zero |
| 49 | |  | | | | | | | 1 | | | | | | | |  | 1 |  | | | | | | | | 1 |  | | | | | | | | 1 |  | | | | | | | | | digit one |
| 50 | |  | | | | | | | 2 | | | | | | | |  | 2 |  | | | | | | | | 2 |  | | | | | | | | 2 |  | | | | | | | | | digit two |
| 51 | |  | | | | | | | 3 | | | | | | | |  | 3 |  | | | | | | | | 3 |  | | | | | | | | 3 |  | | | | | | | | | digit three |
| 52 | |  | | | | | | | 4 | | | | | | | |  | 4 |  | | | | | | | | 4 |  | | | | | | | | 4 |  | | | | | | | | | digit four |
| 53 | |  | | | | | | | 5 | | | | | | | |  | 5 |  | | | | | | | | 5 |  | | | | | | | | 5 |  | | | | | | | | | digit five |
| 54 | |  | | | | | | | 6 | | | | | | | |  | 6 |  | | | | | | | | 6 |  | | | | | | | | 6 |  | | | | | | | | | digit six |
| 55 |  | | | | | | | | 7 |  | | | | | | | | 7 | | |  | | | | | | 7 | |  | | | | | | | 7 | | |  | | | | | | | digit seven |
| 56 |  | | | | | | | | 8 |  | | | | | | | | 8 | | |  | | | | | | 8 | |  | | | | | | | 8 | | |  | | | | | | | digit eight |
| 57 |  | | | | | | | | 9 |  | | | | | | | | 9 | | |  | | | | | | 9 | |  | | | | | | | 9 | | |  | | | | | | | digit nine |
| 58 |  | | | | | | | | : |  | | | | | | | | : | | |  | | | | | | : | |  | | | | | | | : | | |  | | | | | | | colon |
| 59 |  | | | | | | | | ; |  | | | | | | | | ; | | |  | | | | | | ; | |  | | | | | | | ; | | |  | | | | | | | semicolon |
| 60 |  | | | | | | | | < |  | | | | | | | | < | | |  | | | | | | < | |  | | | | | | | < | | |  | | | | | | | less-than sign |
| 61 |  | | | | | | | | = |  | | | | | | | | = | | |  | | | | | | = | |  | | | | | | | = | | |  | | | | | | | equals sign |
| 62 |  | | | | | | | | > |  | | | | | | | | > | | |  | | | | | | > | |  | | | | | | | > | | |  | | | | | | | greater-than sign |
| 63 |  | | | | | | | | ? |  | | | | | | | | ? | | |  | | | | | | ? | |  | | | | | | | ? | | |  | | | | | | | question mark |
| 64 |  | | | | | | | | @ |  | | | | | | | | @ | | |  | | | | | | @ | |  | | | | | | | @ | | |  | | | | | | | commercial at |
| 65 |  | | | | | | | | A |  | | | | | | | | A | | |  | | | | | | A | |  | | | | | | | A | | |  | | | | | | | Latin capital letter A |
| 66 |  | | | | | | | | B |  | | | | | | | | B | | |  | | | | | | B | |  | | | | | | | B | | |  | | | | | | | Latin capital letter B |
| 67 |  | | | | | | | | C |  | | | | | | | | C | | |  | | | | | | C | |  | | | | | | | C | | |  | | | | | | | Latin capital letter C |
| 68 |  | | | | | | | | D |  | | | | | | | | D | | |  | | | | | | D | |  | | | | | | | D | | |  | | | | | | | Latin capital letter D |
| 69 |  | | | | | | | | E |  | | | | | | | | E | | |  | | | | | | E | |  | | | | | | | E | | |  | | | | | | | Latin capital letter E |
| 70 |  | | | | | | | | F |  | | | | | | | | F | | |  | | | | | | F | |  | | | | | | | F | | |  | | | | | | | Latin capital letter F |
| 71 |  | | | | | | | | G |  | | | | | | | | G | | |  | | | | | | G | |  | | | | | | | G | | |  | | | | | | | Latin capital letter G |
| 72 | | |  | | | | | | H | |  | | | | | | | H | | | |  | | | | | H | | | | | | | |  | H | | | | | | | | | | Latin capital letter H |
| 73 | | |  | | | | | | I | |  | | | | | | | I | | | |  | | | | | I | | | | | | | |  | I | | | | | | | | |  | Latin capital letter I |
| 74 | | |  | | | | | | J | |  | | | | | | | J | | | |  | | | | | J | | | | | | | |  | J | | | | | | | | |  | Latin capital letter J |
| 75 | | |  | | | | | | K | |  | | | | | | | K | | | |  | | | | | K | | | | | | | |  | K | | | | | | | | |  | Latin capital letter K |
| 76 | | |  | | | | | | L | |  | | | | | | | L | | | |  | | | | | L | | | | | | | |  | L | | | | | | | | |  | Latin capital letter L |
| 77 | | |  | | | | | | M | |  | | | | | | | M | | | |  | | | | | M | | | | | | | |  | M | | | | | | | | |  | Latin capital letter M |
| 78 | | |  | | | | | | N | |  | | | | | | | N | | | |  | | | | | N | | | | | | | |  | N | | | | | | | | |  | Latin capital letter N |
| 79 | | |  | | | | | | O | |  | | | | | | | O | | | |  | | | | | O | | | | | | | |  | O | | | | | | | | |  | Latin capital letter O |
| 80 | | |  | | | | | | P | |  | | | | | | | P | | | |  | | | | | P | | | | | | | |  | P | | | | | | | | |  | Latin capital letter P |
| 81 | | |  | | | | | | Q | |  | | | | | | | Q | | | |  | | | | | Q | | | | | | | |  | Q | | | | | | | | |  | Latin capital letter Q |
| 82 | | |  | | | | | | R | |  | | | | | | | R | | | |  | | | | | R | | | | | | | |  | R | | | | | | | | |  | Latin capital letter R |
| 83 | | |  | | | | | | S | |  | | | | | | | S | | | |  | | | | | S | | | | | | | |  | S | | | | | | | | |  | Latin capital letter S |
| 84 | | |  | | | | | | T | |  | | | | | | | T | | | |  | | | | | T | | | | | | | |  | T | | | | | | | | |  | Latin capital letter T |
| 85 | | |  | | | | | | U | |  | | | | | | | U | | | |  | | | | | U | | | | | | | |  | U | | | | | | | | |  | Latin capital letter U |
| 86 | | |  | | | | | | V | |  | | | | | | | V | | | |  | | | | | V | | | | | | | |  | V | | | | | | | | |  | Latin capital letter V |
| 87 | | |  | | | | | | W | |  | | | | | | | W | | | |  | | | | | W | | | | | | | |  | W | | | | | | | | |  | Latin capital letter W |
| 88 | | |  | | | | | | X | |  | | | | | | | X | | | |  | | | | | X | | | | | | | |  | X | | | | | | | | |  | Latin capital letter X |
| 89 | | | | | | | | | Y | | | | | | | | | Y | | | | | | | | | Y | | | | | | | | | Y | | | | | | | | | | Latin capital letter Y |
| 90 | | | | | | | |  | Z | | | | | | | | | Z | | | | | | | | | Z | | | | | | | | | Z | | | | | | | | | | Latin capital letter Z |
| 91 | | | | | | | |  | [ | | | | | | | | | [ | | | | | | | | | [ | | | | | | | | | [ | | | |  | | | | | | left square bracket |
| 92 | | | | | | | |  | \ | | | | | | | | | \ | | | | | | | | | \ | | | | | | |  | | \ | | | |  | | | | | | reverse solidus |
| 93 | | | | | | | |  | ] | | | | |  | | | | ] | | | | | | |  | | ] | | | | | | |  | | ] | | | |  | | | | | | right square bracket |
| 94 | | | | | | | |  | ^ | | | | |  | | | | ^ | | | | | | |  | | ^ | | | | | | |  | | ^ | | | |  | | | | | | circumflex accent |
| 95 | | | | | | | |  | \_ | | | | |  | | | | \_ | | | | | | |  | | \_ | | | | | | |  | | \_ | | | |  | | | | | | low line |
| 96 | | | | | | | |  | ` | | | | |  | | | | ` | | | | | | |  | | ` | | | | | | |  | | ` | | | |  | | | | | | grave accent |
| 97 | | | | | | | |  | a | | | | |  | | | | a | | | | | | |  | | a | | | | | | |  | | a | | | |  | | | | | | Latin small letter a |
| 98 | | | | | | | |  | b | | | | |  | | | | b | | | | | | |  | | b | | | | | | |  | | b | | | |  | | | | | | Latin small letter b |
| 99 | | | | | | | |  | c | | | | |  | | | | c | | | | | | |  | | c | | | | | | |  | | c | | | |  | | | | | | Latin small letter c |
| 100 | | | | | | | |  | d | | | | |  | | | | d | | | | | | |  | | d | | | | | | |  | | d | | | |  | | | | | | Latin small letter d |
| 101 | | | | | | | |  | e | | | | |  | | | | e | | | | | | |  | | e | | | | | | |  | | e | | | |  | | | | | | Latin small letter e |
| 102 | | | | | | | |  | f | | | | |  | | | | f | | | | | | |  | | f | | | | | | |  | | f | | | |  | | | | | | Latin small letter f |
| 103 | | | | | | | |  | g | | | | |  | | | | g | | | | | | |  | | g | | | | | | |  | | g | | | | | | |  | | | Latin small letter g |
| 104 | | | | | | | |  | h | | | | |  | | | | h | | | | | | |  | | h | | | | | | |  | | h | | | | | | | |  | | Latin small letter h |
| 105 | | | | | | | |  | i | | | | |  | | | | i | | | | | | |  | | i | | | |  | | | | | i | | | | | | | |  | | Latin small letter i |
| 106 | | | | | | |  | | j | | | | | | |  | | j | | | | | | |  | | j | | | |  | | | | | j | | | | | | | |  | | Latin small letter j |
| 107 | | | | | | |  | | k | | | | | | |  | | k | | | | | | | |  | k | | | |  | | | | | k | | | | | | | |  | | Latin small letter k |
| 108 | | | | | | |  | | l | | | | | | |  | | l | | | | | | | |  | l | | | |  | | | | | l | | | | | | | |  | | Latin small letter l |
| 109 | | | | | | |  | | m | | | | | | |  | | m | | | | | | | |  | m | | | |  | | | | | m | | | | | | | |  | | Latin small letter m |
| 110 | | | | | | |  | | n | | | | | | |  | | n | | | | | | | |  | n | | | |  | | | | | n | | | | | | | |  | | Latin small letter n |
| 111 | | | | | | |  | | o | | | | | | |  | | o | | | | | | | |  | o | | | |  | | | | | o | | | | | | | |  | | Latin small letter o |
| 112 | | | | |  | | | | p | | |  | | | | | | p | |  | | | | | | | p | | | |  | | | | | p | | | | |  | | | | | Latin small letter p |
| 113 | | | | |  | | | | q | | |  | | | | | | q | |  | | | | | | | q | | | |  | | | | | q | | | | |  | | | | | Latin small letter q |
| 114 | | | | |  | | | | r | | |  | | | | | | r | |  | | | | | | | r | | | | |  | | | | r | | | | |  | | | | | Latin small letter r |
| 115 | | | | |  | | | | s | | |  | | | | | | s | |  | | | | | | | s | | | | |  | | | | s | | | | |  | | | | | Latin small letter s |
| 116 | | | | |  | | | | t | | |  | | | | | | t | |  | | | | | | | t | | | | |  | | | | t | | | | |  | | | | | Latin small letter t |
| 117 | | | | |  | | | | u | | |  | | | | | | u | |  | | | | | | | u | | | | |  | | | | u | | | | |  | | | | | Latin small letter u |
| 118 | | | | |  | | | | v | | |  | | | | | | v | |  | | | | | | | v | | | | |  | | | | v | | | | |  | | | | | Latin small letter v |
| 119 | | | | |  | | | | w | | |  | | | | | | w | |  | | | | | | | w | | | | |  | | | | w | | | | |  | | | | | Latin small letter w |
| 120 | | | | |  | | | | x | | |  | | | | | | x | |  | | | | | | | x | | | | |  | | | | x | | | | |  | | | | | Latin small letter x |
| 121 | | | | |  | | | | y | | |  | | | | | | y | |  | | | | | | | y | | | | |  | | | | y | | | | |  | | | | | Latin small letter y |
| 122 | | | | |  | | | | z | | |  | | | | | | z | |  | | | | | | | z | | | | |  | | | | z | | | | |  | | | | | Latin small letter z |
| 123 | | | | | |  | | | { | | | | | |  | | | { | | | | | |  | | | { | | |  | | | | | | { | |  | | | | | | | | left curly bracket |
| 124 | | | | | |  | | | | | | | | | |  | | | | | | | | | |  | | | | | | |  | | | | | | | | |  | | | | | | | | vertical line |
| 125 | | | | | |  | | | } | | | | | |  | | | } | | | | | |  | | | } | | |  | | | | | | } | |  | | | | | | | | right curly bracket |
| 126 | | | | | |  | | | ~ | | | | | |  | | | ~ | | | | | |  | | | ~ | | |  | | | | | | ~ | |  | | | | | | | | tilde |
| 127 | | | | | |  | | | DEL | | | | | |  | | |  | | | | | |  | | |  | | |  | | | | | |  | |  | | | | | | | |  |
| 128 | | | | | |  | | |  | | | | | |  | | | € | | | | | |  | | |  | | |  | | | | | |  | |  | | | | | | | | euro sign |
| 129 | | | | | |  | | |  | | | | | |  | | |  | | | | | |  | | |  | | |  | | | | | |  | |  | | | | | | | | NOT USED |
| 130 | | | | | |  | | |  | | | | | |  | | | ‚ | | | | | |  | | |  | | |  | | | | | |  | |  | | | | | | | | single low-9 quotation mark |
| 131 | | | | | |  | | |  | | | | | |  | | | ƒ | | | | | |  | | |  | | |  | | | | | |  | |  | | | | | | | | Latin small letter f with hook |
| 132 | | | | | |  | | |  | | | | | |  | | | „ | | | | | |  | | |  | | |  | | | | | |  | |  | | | | | | | | double low-9 quotation mark |
| 133 | | | | | |  | | |  | | | | | |  | | | … | | | | | |  | | |  | | |  | | | | | |  | |  | | | | | | | | horizontal ellipsis |
| 134 | | | | | |  | | |  | | | | | |  | | | † | | | | | |  | | |  | | |  | | | | | |  | |  | | | | | | | | dagger |
| 135 | | | |  | | | | |  | | | |  | | | | | ‡ | | | | |  | | | |  | | | | | |  | | |  | | | | | |  | | | | double dagger |
| 136 | | | |  | | | | |  | | | |  | | | | | ˆ | | | | |  | | | |  | | | | | |  | | |  | | | | | |  | | | | modifier letter circumflex accent |
| 137 | | | |  | | | | |  | | | |  | | | | | ‰ | | | | |  | | | |  | | | | | |  | | |  | | | | | |  | | | | per mille sign |
| 138 | | | |  | | | | |  | | | |  | | | | | Š | | | | |  | | | |  | | | | | |  | | |  | | | | | |  | | | | Latin capital letter S with caron |
| 139 | | | |  | | | | |  | | | |  | | | | | ‹ | | | | |  | | | |  | | | | | |  | | |  | | | | | |  | | | | single left-pointing angle quotation mark |
| 140 | | | |  | | | | |  | | | |  | | | | | Œ | | | | |  | | | |  | | | | | |  | | |  | | | | | |  | | | | Latin capital ligature OE |
| 141 | | | |  | | | | |  | | | |  | | | | |  | | | | |  | | | |  | | | | | |  | | |  | | | | | |  | | | | NOT USED |
| 142 | | | |  | | | | |  | | | |  | | | | | Ž | | | | |  | | | |  | | | | | |  | | |  | | | | | |  | | | | Latin capital letter Z with caron |
| 143 | | | |  | | | | |  | | | |  | | | | |  | | | | |  | | | |  | | | | | |  | | |  | | | | | |  | | | | NOT USED |
| 144 | | | |  | | | | |  | | | |  | | | | |  | | | | |  | | | |  | | | | | |  | | |  | | | | | |  | | | | NOT USED |
| 145 | | | |  | | | | |  | | | |  | | | | | ‘ | | | | |  | | | |  | | | | | |  | | |  | | | | | |  | | | | left single quotation mark |
| 146 | | | | | | | | |  | | | | | | | | | ’ | | | | | | | | |  | | | | | | | | |  | | | | | |  | | | | right single quotation mark |
| 147 | | | | | | | | |  | | | | | | | | | “ | | | | | | | | |  | | | | | | | | |  | | | | | |  | | | | left double quotation mark |
| 148 | | | | | | | | |  | | | | | | | | | ” | | | | | | | | |  | | | | | | | | |  | | | | | |  | | | | right double quotation mark |
| 149 | | | | | | | | |  | | | | | | | | | • | | | | | | | | |  | | | | | | | | |  | | | | | |  | | | | bullet |
| 150 | | | | | | | | |  | | | | | | | | | – | | | | | | | | |  | | | | | | | | |  | | | | | |  | | | | en dash |
| 151 | | | | | | | | |  | | | | | | | | | — | | | | | | | | |  | | | | | | | | |  | | | | | |  | | | | em dash |
| 152 | | | | | | | | |  | | | | | | | | | ˜ | | | | | | | | |  | | | | | | | | |  | | | | | |  | | | | small tilde |
| 153 | | | | | | | | |  | | | | | | | | | ™ | | | | | | | | |  | | | | | | | | |  | | | | | |  | | | | trade mark sign |
| 154 | | | | | | | | |  | | | | | | | | | š | | | | | | | | |  | | | | | | | | |  | | | | | |  | | | | Latin small letter s with caron |
| 155 | | | | | | | | |  | | | | | | | | | › | | | | | | | | |  | | | | | | | | |  | | | | | |  | | | | single right-pointing angle quotation mark |
| 156 | | | | | | | | |  | | | | | | | | | œ | | | | | | | | |  | | | | | | | | |  | | | | | | | | | | Latin small ligature oe |
| 157 | | | | | | | | |  | | | | | | | | |  | | | | | | | | |  | | | | | | | | |  | | | | | | | | | | NOT USED |
| 158 | | | | | | | | |  | | | | | | | | | ž | | | | | | | | |  | | | | | | | | |  | | | | | | | | | | Latin small letter z with caron |
| 159 | | | | | | | | |  | | | | | | | | | Ÿ | | | | | | | | |  | | | | | | | | |  | | | | | | | | | | Latin capital letter Y with diaeresis |
| 160 | | | | | | | | |  | | | | | | | | |  | | | | | | | | |  | | | | | | | | |  | | | | | | | | | | no-break space |
| 161 | | | | | | | | |  | | | | | | | | | ¡ | | | | | | | | | ¡ | | | | | | | | | ¡ | | | | | | | | | | inverted exclamation mark |
| 162 | | | | | | | | |  | | | | | | | | | ¢ | | | | | | | | | ¢ | | | | | | | | | ¢ | | | | | | | | | | cent sign |
| 163 | | | | | | | | |  | | | | | | | | | £ | | | | | | | | | £ | | | | | | | | | £ | | | | | | | | | | pound sign |
| 164 | | | | | | | | |  | | | | | | | | | ¤ | | | | | | | | | ¤ | | | | | | | | | ¤ | | | | | | | | | | currency sign |
| 165 | | | | | | | | |  | | | | | | | | | ¥ | | | | | | | | | ¥ | | | | | | | | | ¥ | | | | | | | | | | yen sign |
| 166 | | | | | | | | |  | | | | | | | | | ¦ | | | | | | | | | ¦ | | | | | | | | | ¦ | | | | | | | | | | broken bar |
| 167 | | | | | | | | |  | | | | | | | | | § | | | | | | | | | § | | | | | | | | | § | | | | | | | | | | section sign |
| 168 | | | | | | | | |  | | | | | | | | | ¨ | | | | | | | | | ¨ | | | | | | | | | ¨ | | | | | | | | | | diaeresis |
| 169 | | | | | | | | |  | | | | | | | | | © | | | | | | | | | © | | | | | | | | | © | | | | | | | | | | copyright sign |
| 170 | | | | | | | | |  | | | | | | | | | ª | | | | | | | | | ª | | | | | | | | | ª | | | | | | | | | | feminine ordinal indicator |
| 171 | | | | | | | | |  | | | | | | | | | « | | | | | | | | | « | | | | | | | | | « | | | | | | | | | | left-pointing double angle quotation mark |
| 172 | | | | | | | | |  | | | | | | | | | ¬ | | | | | | | | | ¬ | | | | | | | | | ¬ | | | | | | | | | | not sign |
| 173 | | | | | | | | |  | | | | | | | | | ­ | | | | | | | | | ­ | | | | | | | | | ­ | | | | | | | | | | soft hyphen |
| 174 | | | | | | | | |  | | | | | | | | | ® | | | | | | | | | ® | | | | | | | | | ® | | | | | | | | | | registered sign |
| 175 | | | | | | | | |  | | | | | | | | | ¯ | | | | | | | | | ¯ | | | | | | | | | ¯ | | | | | | | | | | macron |
| 176 | | | | | | | | |  | | | | | | | | | ° | | | | | | | | | ° | | | | | | | | | ° | | | | | | | | | | degree sign |
| 177 | | | | | | | | |  | | | | | | | | | ± | | | | | | | | | ± | | | | | | | | | ± | | | | | | | | | | plus-minus sign |
| 178 | | | | | | | | |  | | | | | | | | | ² | | | | | | | | | ² | | | | | | | | | ² | | | | | | | | | | superscript two |
| 179 | | | | | | | | |  | | | | | | | | | ³ | | | | | | | | | ³ | | | | | | | | | ³ | | | | | | | | | | superscript three |
| 180 | | | | | | | | |  | | | | | | | | | ´ | | | | | | | | | ´ | | | | | | | | | ´ | | | | | | | | | | acute accent |
| 181 | | | | | | | | |  | | | | | | | | | µ | | | | | | | | | µ | | | | | | | | | µ | | | | | | | | | | micro sign |
| 182 | | | | | | | | |  | | | | | | | | | ¶ | | | | | | | | | ¶ | | | | | | | | | ¶ | | | | | | | | | | pilcrow sign |
| 183 | | | | | | | | |  | | | | | | | | | · | | | | | | | | | · | | | | | | | | | · | | | | | | | | | | middle dot |
| 184 | | | | | | | | |  | | | | | | | | | ¸ | | | | | | | | | ¸ | | | | | | | | | ¸ | | | | | | | | | | cedilla |
| 185 | | | | | | | | |  | | | | | | | | | ¹ | | | | | | | | | ¹ | | | | | | | | | ¹ | | | | | | | | | | superscript one |
| 186 | | | | | | | | |  | | | | | | | | | º | | | | | | | | | º | | | | | | | | | º | | | | | | | | | | masculine ordinal indicator |
| 187 | | | | | | | | |  | | | | | | | | | » | | | | | | | | | » | | | | | | | | | » | | | | | | | | | | right-pointing double angle quotation mark |
| 188 | | | | | | | | |  | | | | | | | | | ¼ | | | | | | | | | ¼ | | | | | | | | | ¼ | | | | | | | | | | vulgar fraction one quarter |
| 189 | | | | | | | | |  | | | | | | | | | ½ | | | | | | | | | ½ | | | | | | | | | ½ | | | | | | | | | | vulgar fraction one half |
| 190 | | | | | | | | |  | | | | | | | | | ¾ | | | | | | | | | ¾ | | | | | | | | | ¾ | | | | | | | | | | vulgar fraction three quarters |
| 191 | | | | | | | | |  | | | | | | | | | ¿ | | | | | | | | | ¿ | | | | | | | | | ¿ | | | | | | | | | | inverted question mark |
| 192 | | | | | | | | |  | | | | | | | | | À | | | | | | | | | À | | | | | | | | | À | | | | | | | | | | Latin capital letter A with grave |
| 193 | | | | | | | | |  | | | | | | | | | Á | | | | | | | | | Á | | | | | | | | | Á | | | | | | | | | | Latin capital letter A with acute |
| 194 | | | | | | | | |  | | | | | | | | | Â | | | | | | | | | Â | | | | | | | | | Â | | | | | | | | | | Latin capital letter A with circumflex |
| 195 | | | | | | | | |  | | | | | | | | | Ã | | | | | | | | | Ã | | | | | | | | | Ã | | | | | | | | | | Latin capital letter A with tilde |
| 196 | | | | | | | | |  | | | | | | | | | Ä | | | | | | | | | Ä | | | | | | | | | Ä | | | | | | | | | | Latin capital letter A with diaeresis |
| 197 | | | | | | | | |  | | | | | | | | | Å | | | | | | | | | Å | | | | | | | | | Å | | | | | | | | | | Latin capital letter A with ring above |
| 198 | | | | | | | | |  | | | | | | | | | Æ | | | | | | | | | Æ | | | | | | | | | Æ | | | | | | | | | | Latin capital letter AE |
| 199 | | | | | | | | |  | | | | | | | | | Ç | | | | | | | | | Ç | | | | | | | | | Ç | | | | | | | | | | Latin capital letter C with cedilla |
| 200 | | | | | | | | |  | | | | | | | | | È | | | | | | | | | È | | | | | | | | | È | | | | | | | | | | Latin capital letter E with grave |
| 201 | | | | | | | | |  | | | | | | | | | É | | | | | | | | | É | | | | | | | | | É | | | | | | | | | | Latin capital letter E with acute |
| 202 | | | | | | | | |  | | | | | | | | | Ê | | | | | | | | | Ê | | | | | | | | | Ê | | | | | | | | | | Latin capital letter E with circumflex |
| 203 | | | | | | | | |  | | | | | | | | | Ë | | | | | | | | | Ë | | | | | | | | | Ë | | | | | | | | | | Latin capital letter E with diaeresis |
| 204 | | | | | | | | |  | | | | | | | | | Ì | | | | | | | | | Ì | | | | | | | | | Ì | | | | | | | | | | Latin capital letter I with grave |
| 205 | | | | | | | | |  | | | | | | | | | Í | | | | | | | | | Í | | | | | | | | | Í | | | | | | | | | | Latin capital letter I with acute |
| 206 | | | | | | | | |  | | | | | | | | | Î | | | | | | | | | Î | | | | | | | | | Î | | | | | | | | | | Latin capital letter I with circumflex |
| 207 | | | | | | | | |  | | | | | | | | | Ï | | | | | | | | | Ï | | | | | | | | | Ï | | | | | | | | | | Latin capital letter I with diaeresis |
| 208 | | | | | | | | |  | | | | | | | | | Ð | | | | | | | | | Ð | | | | | | | | | Ð | | | | | | | | | | Latin capital letter Eth |
| 209 | | | | | | | | |  | | | | | | | | | Ñ | | | | | | | | | Ñ | | | | | | | | | Ñ | | | | | | | | | | Latin capital letter N with tilde |
| 210 | | | | | | | | |  | | | | | | | | | Ò | | | | | | | | | Ò | | | | | | | | | Ò | | | | | | | | | | Latin capital letter O with grave |
| 211 | | | | | | | | |  | | | | | | | | | Ó | | | | | | | | | Ó | | | | | | | | | Ó | | | | | | | | | | Latin capital letter O with acute |
| 212 | | | | | | | | |  | | | | | | | | | Ô | | | | | | | | | Ô | | | | | | | | | Ô | | | | | | | | | | Latin capital letter O with circumflex |
| 213 | | | | | | | | |  | | | | | | | | | Õ | | | | | | | | | Õ | | | | | | | | | Õ | | | | | | | | | | Latin capital letter O with tilde |
| 214 | | | | | | | | |  | | | | | | | | | Ö | | | | | | | | | Ö | | | | | | | | | Ö | | | | | | | | | | Latin capital letter O with diaeresis |
| 215 | | | | | | | | |  | | | | | | | | | × | | | | | | | | | × | | | | | | | | | × | | | | | | | | | | multiplication sign |
| 216 | | | | | | | | |  | | | | | | | | | Ø | | | | | | | | | Ø | | | | | | | | | Ø | | | | | | | | | | Latin capital letter O with stroke |
| 217 | | | | | | | | |  | | | | | | | | | Ù | | | | | | | | | Ù | | | | | | | | | Ù | | | | | | | | | | Latin capital letter U with grave |
| 218 | | | | | | | | |  | | | | | | | | | Ú | | | | | | | | | Ú | | | | | | | | | Ú | | | | | | | | | | Latin capital letter U with acute |
| 219 | | | | | | | | |  | | | | | | | | | Û | | | | | | | | | Û | | | | | | | | | Û | | | | | | | | | | Latin capital letter U with circumflex |
| 220 | | | | | | | | |  | | | | | | | | | Ü | | | | | | | | | Ü | | | | | | | | | Ü | | | | | | | | | | Latin capital letter U with diaeresis |
| 221 | | | | | | | | |  | | | | | | | | | Ý | | | | | | | | | Ý | | | | | | | | | Ý | | | | | | | | | | Latin capital letter Y with acute |
| 222 | | | | | | | | |  | | | | | | | | | Þ | | | | | | | | | Þ | | | | | | | | | Þ | | | | | | | | | | Latin capital letter Thorn |
| 223 | | | | | | | | |  | | | | | | | | | ß | | | | | | | | | ß | | | | | | | | | ß | | | | | | | | | | Latin small letter sharp s |
| 224 | | | | | | | | |  | | | | | | | | | à | | | | | | | | | à | | | | | | | | | à | | | | | | | | | | Latin small letter a with grave |
| 225 | | | | | | | | |  | | | | | | | | | á | | | | | | | | | á | | | | | | | | | á | | | | | | | | | | Latin small letter a with acute |
| 226 | | | | | | | | |  | | | | | | | | | â | | | | | | | | | â | | | | | | | | | â | | | | | | | | | | Latin small letter a with circumflex |
| 227 | | | | | | | | |  | | | | | | | | | ã | | | | | | | | | ã | | | | | | | | | ã | | | | | | | | | | Latin small letter a with tilde |
| 228 | | | | | | | | |  | | | | | | | | | ä | | | | | | | | | ä | | | | | | | | | ä | | | | | | | | | | Latin small letter a with diaeresis |
| 229 | | | | | | | | |  | | | | | | | | | å | | | | | | | | | å | | | | | | | | | å | | | | | | | | | | Latin small letter a with ring above |
| 230 | | | | | | | | |  | | | | | | | | | æ | | | | | | | | | æ | | | | | | | | | æ | | | | | | | | | | Latin small letter ae |
| 231 | | | | | | | | |  | | | | | | | | | ç | | | | | | | | | ç | | | | | | | | | ç | | | | | | | | | | Latin small letter c with cedilla |
| 232 | | | | | | | | |  | | | | | | | | | è | | | | | | | | | è | | | | | | | | | è | | | | | | | | | | Latin small letter e with grave |
| 233 | | | | | | | | |  | | | | | | | | | é | | | | | | | | | é | | | | | | | | | é | | | | | | | | | | Latin small letter e with acute |
| 234 | | | | | | | | |  | | | | | | | | | ê | | | | | | | | | ê | | | | | | | | | ê | | | | | | | | | | Latin small letter e with circumflex |
| 235 | | | | | | | | |  | | | | | | | | | ë | | | | | | | | | ë | | | | | | | | | ë | | | | | | | | | | Latin small letter e with diaeresis |
| 236 | | | | | | | | |  | | | | | | | | | ì | | | | | | | | | ì | | | | | | | | | ì | | | | | | | | | | Latin small letter i with grave |
| 237 | | | | | | | | |  | | | | | | | | | í | | | | | | | | | í | | | | | | | | | í | | | | | | | | | | Latin small letter i with acute |
| 238 | | | | | | | | |  | | | | | | | | | î | | | | | | | | | î | | | | | | | | | î | | | | | | | | | | Latin small letter i with circumflex |
| 239 | | | | | | | | |  | | | | | | | | | ï | | | | | | | | | ï | | | | | | | | | ï | | | | | | | | | | Latin small letter i with diaeresis |
| 240 | | | | | | | | |  | | | | | | | | | ð | | | | | | | | | ð | | | | | | | | | ð | | | | | | | | | | Latin small letter eth |
| 241 | | | | | | | | |  | | | | | | | | | ñ | | | | | | | | | ñ | | | | | | | | | ñ | | | | | | | | | | Latin small letter n with tilde |
| 242 | | | | | | | | |  | | | | | | | | | ò | | | | | | | | | ò | | | | | | | | | ò | | | | | | | | | | Latin small letter o with grave |
| 243 | | | | | | | | |  | | | | | | | | | ó | | | | | | | | | ó | | | | | | | | | ó | | | | | | | | | | Latin small letter o with acute |
| 244 | | | | | | | | |  | | | | | | | | | ô | | | | | | | | | ô | | | | | | | | | ô | | | | | | | | | | Latin small letter o with circumflex |
| 245 | | | | | | | | |  | | | | | | | | | õ | | | | | | | | | õ | | | | | | | | | õ | | | | | | | | | | Latin small letter o with tilde |
| 246 | | | | | | | | |  | | | | | | | | | ö | | | | | | | | | ö | | | | | | | | | ö | | | | | | | | | | Latin small letter o with diaeresis |
| 247 | | | | | | | | |  | | | | | | | | | ÷ | | | | | | | | | ÷ | | | | | | | | | ÷ | | | | | | | | | | division sign |
| 248 | | | | | | | | |  | | | | | | | | | ø | | | | | | | | | ø | | | | | | | | | ø | | | | | | | | | | Latin small letter o with stroke |
| 249 | | | | | | | | |  | | | | | | | | | ù | | | | | | | | | ù | | | | | | | | | ù | | | | | | | | | | Latin small letter u with grave |
| 250 | | | | | | | | |  | | | | | | | | | ú | | | | | | | | | ú | | | | | | | | | ú | | | | | | | | | | Latin small letter u with acute |
| 251 | | | | | | | | |  | | | | | | | | | û | | | | | | | | | û | | | | | | | | | û | | | | | | | | | | Latin small letter with circumflex |
| 252 | | | | | | | | |  | | | | | | | | | ü | | | | | | | | | ü | | | | | | | | | ü | | | | | | | | | | Latin small letter u with diaeresis |
| 253 | | | | | | | | |  | | | | | | | | | ý | | | | | | | | | ý | | | | | | | | | ý | | | | | | | | | | Latin small letter y with acute |
| 254 | | | | | | | | |  | | | | | | | | | þ | | | | | | | | | þ | | | | | | | | | þ | | | | | | | | | | Latin small letter thorn |
| 255 | | | | | | | | |  | | | | | | | | | ÿ | | | | | | | | | ÿ | | | | | | | | | ÿ | | | | | | | | | | Latin small letter y with diaeresis |

The ASCII Character Set

ASCII uses the values from 0 to 31 (and 127) for control characters.

ASCII uses the values from 32 to 126 for letters, digits, and symbols.

ASCII does not use the values from 128 to 255.

The ANSI Character Set (Windows-1252)

ANSI is identical to ASCII for the values from 0 to 127.

ANSI has a proprietary set of characters for the values from 128 to 159.

ANSI is identical to UTF-8 for the values from 160 to 255.

The ISO-8859-1 Character Set

8859-1 is identical to ASCII for the values from 0 to 127.

8859-1 does not use the values from 128 to 159.

8859-1 is identical to UTF-8 for the values from 160 to 255.

The UTF-8 Character Set

UTF-8 is identical to ASCII for the values from 0 to 127.

UTF-8 does not use the values from 128 to 159.

UTF-8 is identical to both ANSI and 8859-1 for the values from 160 to 255.

UTF-8 continues from the value 256 with more than 10 000 different characters.

For a closer look, study our [Complete HTML Character Set Reference](https://www.w3schools.com/charsets/default.asp).

The @charset CSS Rule

You can use the CSS @charset rule to specify the character encoding used in a style sheet:

Example

Set the encoding of the style sheet to Unicode UTF-8:

@charset "UTF-8";

Read more about the [CSS @charset Rule in our CSS Reference](https://www.w3schools.com/cssref/pr_charset_rule.asp).

HTML Uniform Resource Locators

A URL is another word for a web address.

A URL can be composed of words (w3schools.com), or an Internet Protocol (IP) address (192.68.20.50).

Most people enter the name when surfing, because names are easier to remember than numbers.

URL - Uniform Resource Locator

Web browsers request pages from web servers by using a URL.

A Uniform Resource Locator (URL) is used to address a document (or other data) on the web.

A web address like <https://www.w3schools.com/html/default.asp> follows these syntax rules:

scheme://prefix.domain:port/path/filename

Explanation:

scheme - defines the type of Internet service (most common is http or https)

prefix - defines a domain prefix (default for http is www)

domain - defines the Internet domain name (like w3schools.com)

port - defines the port number at the host (default for http is 80)

path - defines a path at the server (If omitted: the root directory of the site)

filename - defines the name of a document or resource

Common URL Schemes

The table below lists some common schemes:

|  |  |  |  |
| --- | --- | --- | --- |
| Scheme | Short for |  | Used for |
| http | HyperText Transfer Protocol |  | Common web pages. Not encrypted |
| https | Secure HyperText Transfer Protocol |  | Secure web pages. Encrypted |
| ftp | File Transfer Protocol |  | Downloading or uploading files |
| file |  |  | A file on your computer |

URL Encoding

URLs can only be sent over the Internet using the [ASCII character-set](https://www.w3schools.com/charsets/ref_html_ascii.asp). If a URL contains characters outside the ASCII set, the URL has to be converted.

URL encoding converts non-ASCII characters into a format that can be transmitted over the Internet.

URL encoding replaces non-ASCII characters with a "%" followed by hexadecimal digits.

URLs cannot contain spaces. URL encoding normally replaces a space with a plus (+) sign, or %20.

Bottom of Form

ASCII Encoding Examples

Your browser will encode input, according to the character-set used in your page.

The default character-set in HTML5 is UTF-8.

|  |  |  |
| --- | --- | --- |
| Character | From Windows-1252 | From UTF-8 |
| € | %80 | %E2%82%AC |
| £ | %A3 | %C2%A3 |
| © | %A9 | %C2%A9 |
| ® | %AE | %C2%AE |
| À | %C0 | %C3%80 |
| Á | %C1 | %C3%81 |
| Â | %C2 | %C3%82 |
| Ã | %C3 | %C3%83 |
| Ä | %C4 | %C3%84 |
| Å | %C5 | %C3%85 |

For a complete reference of all URL encodings, visit our [URL Encoding Reference](https://www.w3schools.com/tags/ref_urlencode.asp).

HTML and XHTML

XHTML is HTML written as XML.

What Is XHTML?

XHTML stands for EXtensible HyperText Markup Language

XHTML is almost identical to HTML

XHTML is stricter than HTML

XHTML is HTML defined as an XML application

XHTML is supported by all major browsers

Why XHTML?

Many pages on the internet contain "bad" HTML.

This HTML code works fine in most browsers (even if it does not follow the HTML rules):

<html>  
<head>  
  <title>This is bad HTML</title>  
  
<body>  
  <h1>Bad HTML  
  <p>This is a paragraph  
</body>

Today's market consists of different browser technologies. Some browsers run on computers, and some browsers run on mobile phones or other small devices. Smaller devices often lack the resources or power to interpret "bad" markup.

XML is a markup language where documents must be marked up correctly (be "well-formed").

XHTML was developed by combining the strengths of HTML and XML.

XHTML is HTML redesigned as XML.

The Most Important Differences from HTML:

Document Structure

XHTML DOCTYPE is mandatory

The xmlns attribute in <html> is mandatory

<html>, <head>, <title>, and <body> are mandatory

XHTML Elements

XHTML elements must be properly nested

XHTML elements must always be closed

XHTML elements must be in lowercase

XHTML documents must have one root element

XHTML Attributes

Attribute names must be in lower case

Attribute values must be quoted

Attribute minimization is forbidden

<!DOCTYPE ....> Is Mandatory

An XHTML document must have an XHTML DOCTYPE declaration.

A complete list of all the [XHTML Doctypes](https://www.w3schools.com/tags/tag_doctype.asp) is found in our HTML Tags Reference.

The <html>, <head>, <title>, and <body> elements must also be present, and the xmlns attribute in <html> must specify the xml namespace for the document.

This example shows an XHTML document with a minimum of required tags:

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"  
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">  
  
<html xmlns="http://www.w3.org/1999/xhtml">  
  
<head>  
  <title>Title of document</title>  
</head>  
  
<body>  
  some content   
</body>  
  
</html>

XHTML Elements Must Be Properly Nested

In HTML, some elements can be improperly nested within each other, like this:

<b><i>This text is bold and italic</b></i>

In XHTML, all elements must be properly nested within each other, like this:

<b><i>This text is bold and italic</i></b>

XHTML Elements Must Always Be Closed

This is wrong:

<p>This is a paragraph  
<p>This is another paragraph

This is correct:

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

Empty Elements Must Also Be Closed

This is wrong:

A break: <br>  
A horizontal rule: <hr>  
An image: <img src="happy.gif" alt="Happy face">

This is correct:

A break: <br />  
A horizontal rule: <hr />  
An image: <img src="happy.gif" alt="Happy face" />

XHTML Elements Must Be In Lower Case

This is wrong:

<BODY>  
<P>This is a paragraph</P>  
</BODY>

This is correct:

<body>  
<p>This is a paragraph</p>  
</body>

XHTML Attribute Names Must Be In Lower Case

This is wrong:

<table WIDTH="100%">

This is correct:

<table width="100%">

Attribute Values Must Be Quoted

This is wrong:

<table width=100%>

This is correct:

<table width="100%">

Attribute Minimization Is Forbidden

Wrong:

<input type="checkbox" name="vehicle" value="car" checked />

Correct:

<input type="checkbox" name="vehicle" value="car" checked="checked" />

Wrong:

<input type="text" name="lastname" disabled />

Correct:

<input type="text" name="lastname" disabled="disabled" />

How to Convert from HTML to XHTML

Add an XHTML <!DOCTYPE> to the first line of every page

Add an xmlns attribute to the html element of every page

Change all element names to lowercase

Close all empty elements

Change all attribute names to lowercase

Quote all attribute values

Validate HTML With The W3C Validator

Top of Form

Put your web address in the box below:



Bottom of Form