|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| WEB Systems and Technology  (ITEC-516) | [ BSIT P-III First Semester ]  HTML | | | |
| [Institute of Information and Communication Technology  University of Sindh, Jamshoro.] | | [By: Dr. Zeeshan Bhatti] | |
|  | | |  | |

HTML Table of Contents

**HTML BASICS**

HTML Introduction

HTML Editors

HTML Basic

HTML Elements

HTML Attributes

HTML Headings

HTML Paragraphs

HTML Styles

HTML Formatting

HTML Quotations

HTML Comments

HTML Colors

HTML CSS

HTML Links

HTML Images

HTML Tables

HTML Lists

HTML Blocks

HTML Classes

HTML Id

HTML Iframes

HTML JavaScript

HTML File Paths

HTML Head

HTML Layout

HTML Responsive

HTML Computercode

HTML Entities

HTML Symbols

HTML Charset

HTML URL Encode

HTML XHTML

**HTML Forms**

HTML Forms

HTML Form Elements

HTML Input Types

HTML Input Attributes

**HTML5**

HTML5 Intro

HTML5 Support

HTML5 New Elements

HTML5 Semantics

HTML5 Migration

HTML5 Style Guide

# Chapter 1: 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 a Web page
* HTML consists of a series of elements
* HTML elements tell the browser how to display the content
* 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>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_intro)

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, Edge, 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 |

# Chapter 2: 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 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 the 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>

# Chapter 3: 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

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

## **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

<button>Click me</button>

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

# Chapter 4: HTML Elements

## **HTML Elements**

An HTML element usually consists of a **start** tag and an **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>.

Inside the <html> element is 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>.

Inside the <body> element 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.

## **HTML Is Not Case Sensitive**

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.

# Chapter 5: 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**

 HTML images also have width and height attributes, which specifies the width and height of the image:

### Example

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

The width and height are specified in pixels by default; so 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, if an image cannot be displayed.

The value of the alt 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 cannot be displayed (e.g. if it 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">This is 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, add 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.

# Chapter 6: 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 often skim a page 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 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, 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 Edge), 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.

## **HTML Exercises**

Top of Form

## Use the correct HTML tag to add a heading with the text "London".

  
  
<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>

Bottom of Form

# Chapter 7: 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>

## **HTML Exercises**

Top of Form

Use the correct HTML tag to add a paragraph with the text "Hello World!".

<html>  
<body>  
  
</body>  
</html>

# Chapter 8: 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.

## **Background Color**

The CSS 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>

## **Text Color**

The CSS 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>

## **Fonts**

The CSS 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>

## **Text Size**

The CSS 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>

## **Text Alignment**

The CSS 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 Exercises**

Top of Form

Use the correct HTML attribute, and CSS, to set the color of the paragraph to "blue".

<p =";">This is a paragraph.</p>

Bottom of Form

Bottom of Form

# Chapter 9: HTML Text Formatting

### Text Formatting

**This text is bold**

*This text is italic*

This issubscript 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/highlighted text:

### Example

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

## **HTML <del> Element**

The HTML <del> element defines deleted/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 Exercises**

Top of Form

Add extra importance to the word "degradation" in the paragraph below.

<p>  
WWF's mission is to stop the degradation of our planet's natural environment.  
</p>

Bottom of Form

# Chapter 10: HTML Quotation and Citation Elements

### Quotation

Here is a quote from WWF's website:

For nearly 60 years, WWF has been protecting the future of nature. The world's leading conservation organization, WWF works in 100 countries and is supported by more than one million members in the United States and close to five 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>

## **HTML Exercises**

Top of Form

Use an HTML element to add quotation marks around the letters "cool".

<p>  
I am so cool.  
</p>

Bottom of Form

# Chapter 11: 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 image at the moment  
<img border="0" src="pic\_trulli.jpg" alt="Trulli">  
-->

## **HTML Exercises**

Top of Form

Use the HTML comment tag to make a comment out of the "This is a comment" text.

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

Bottom of Form

# Chapter 12: 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

Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.

### 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

Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.

Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.

### 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 black, set all color parameters to 0, like this: rgb(0, 0, 0).

To display white, set all color parameters 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)**

# Chapter 13: HTML Styles - CSS

# CSS = Styles and Colors

Manipulate Text

Colors,  Boxes

## **Styling HTML with CSS**

**CSS** stands for **C**ascading **S**tyle **S**heets.

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.

## **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">

## **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 Exercises**

Top of Form

Use CSS to set the background color of the document (body) to yellow.

<!DOCTYPE html>  
<html>  
<head>  
<style>  
   
  :yellow;  
  
</style>  
</head>  
<body>  
  
<h1>My Home Page</h1>  
  
</body>  
</html>

# Chapter 14: 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**

Hyperlinks are defined with the HTML <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 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>

## **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

## **HTML Exercises**

Top of Form

Use the correct HTML to make the text below into a link to "default.html".

 >Visit our HTML tutorial.

Bottom of Form

# HTML Link Colors

## **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>

A links can also be styled as a button, 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>

# HTML Link Bookmarks

## **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 a webpage is very long.

To create a bookmark - first create the bookmark, then add a link to it.

When the link is clicked, the page will scroll down or up 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:

### Example

<a href="#C4">Jump to Chapter 4</a>

You can also add a link to a bookmark on another page:

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

## **Chapter Summary**

* Use the id attribute (id="value") to define bookmarks in a page
* Use the href attribute (href="#value") to link to the bookmark

# Chapter 15: 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 HTML.

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">

.

## **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>

## **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

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

## **HTML Exercises**

Top of Form

Use the HTML image attributes to set the size of the image to 250 pixels wide and 400 pixels tall.

<img src="scream.png" ="250" ="400">

Bottom of Form

# Chapter 16: HTML Background Images

## **Background Images**

A background image can be specified on almost any HTML element.

To add a background image in HTML, use the CSS property background-image.

## **Background Image on a HTML element**

To add a background image on an HTML element, you can use the style attribute:

### Example

Add a background image on a HTML element:

<div style="background-image: url('img\_girl.jpg');">

You can also specify the background image in the <style> element:

### Example

Specify the background image in the style element:

<style>  
div {  
  background-image: url('img\_girl.jpg');  
}  
</style>

## **Background Image on a Page**

If you want the entire page to have a background image, then you must specify the background image on the <body> element:

### Example

Add a background image on a HTML page:

<style>  
body {  
  background-image: url('img\_girl.jpg');  
}  
</style>

## **Background Repeat**

If the background image is smaller than the element, the image will repeat itself, horizontally and vertically, until it has reach the end of the element.

To explain, see what happens when we use a small image as a background inside a large div element:

The background-image property will try to fill the div element with images until it has reach the end.

### Example

<style>  
body {  
  background-image: url('example\_img\_girl.jpg');  
}  
</style>

To avoid the background image from repeating itself, use the background-repeat property.

### Example

<style>  
body {  
  background-image: url('example\_img\_girl.jpg');  
  background-repeat: no-repeat;  
}  
</style>

## **Background Cover**

If  you want  the background image cover the entire element, you can set the background-size property to cover.

Also, to make sure the entire element is always covered, set the background-attachment property to fixed:

As you can see, the image will cover the entire element, with no stretching, the image will keep its original proportions.

### Example

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

## **Background Stretch**

If  you want  the background image stretch to fit the entire image in the element, you can set the background-size property to 100% 100%:

Try resizing the browser window, and you will see that the image will stretch, but always cover the entire element.

### Example

<style>  
body {  
  background-image: url('img\_girl.jpg');  
  background-repeat: no-repeat;  
  background-attachment: fixed;  
  background-size: 100% 100%;  
}  
</style>

# HTML Picture Element

The picture element allows us to display different pictures for different devices or screen sizes.



## **The HTML <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.

### Example

Show different images on different screen sizes:

<picture>  
  <source media="(min-width: 650px)" srcset="img\_food.jpg">  
  <source media="(min-width: 465px)" srcset="img\_car.jpg">  
  <img src="img\_girl.jpg">  
</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.

## **When to use the Picture Element**

There are two main purposes for the <picture> element:

### 1. Bandwidth

If you have a small screen or device, it is not necessary to load a large image file. The browser will use the first <source> element with matching attribute values, and ignore any of the following elements.

### 2. Format Support

Some browsers or devices may not support all image formats. By using the <picture> element, you can add images of all formats, and the browser will use the first format it recognizes and ignore any of the following.

### Example

The browser will use the first image format it recognizes:

<picture>  
  <source srcset="img\_avatar.png">  
  <source srcset="img\_girl.jpg">  
  <img src="img\_beatles.gif" alt="Beatles" style="width:auto;">  
</picture>

# Chapter 17: 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

## **HTML Exercises**

Top of Form

Add a table row with two table headers.

The two table headers should have the value "Name" and "Age".

<table>  
    
      
      
    
  <tr>  
    <td>Jill Smith</td>  
    <td>50</td>  
  </tr>  
</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 |

# Chapter 18: 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

## **HTML Exercises**

Top of Form

Add a list item with the text "Coffee" inside the <ul> element.

<ul>Coffee</ul>

Bottom of Form

# Chapter 19: HTML Block and Inline Elements

Every HTML element has a default display value depending on what type of element it is.

The two display values are: block and 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

<!DOCTYPE html>

<html>

<body>

<div style="border: 1px solid black">Hello World</div>

<p>The DIV element is a block element, and will always start on a new line and take up the full width available (stretches out to the left and right as far as it can).</p>

</body>

</html>

**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 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>

[Try it Yourself »](https://www.w3schools.com/html/tryit.asp?filename=tryhtml_span_red)

## **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) |