

What is HTML?

- HTML stands for Hyper Text Markup Language
- HTML is the standard markup language for creating Web pages
- 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 label pieces of content such as "this is a heading", "this is a paragraph", "this is a link", etc.

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 that this document is an HTML5 document
- The `<html>` element is the root element of an HTML page
- The `<head>` element contains meta information about the HTML page
- The `<title>` element specifies a title for the HTML page (which is shown in the browser's title bar or in the page's tab)
- The `<body>` element defines the document's body, and is a container for all the visible contents, such as headings, paragraphs, images, hyperlinks, tables, lists, etc.
- The `<h1>` element defines a large heading

- The <p> element defines a paragraph

HTML Attributes

- All HTML elements can have **attributes**
- Attributes provide **additional information** about elements
- Attributes are always specified in **the start tag**
- Attributes usually come in name/value pairs like: **name="value"**

The href Attribute

- The <a> tag defines a hyperlink. The href attribute specifies the URL of the page the link goes to:

Example

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

HTML Styles

The HTML style attribute is used to add styles to an element, such as color, font, size, and more.

Example

```
<!DOCTYPE html>

<html>

<body>

<p>I am normal</p>

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

<p style="color:blue;">I am blue</p>

<p style="font-size:50px;">I am big</p>

</body>

</html>
```

HTML Comments

HTML comments are not displayed in the browser, but they can help document your HTML source code. You can add comments to your HTML source by using the following syntax:

Example

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

HTML Styles – CSS

CSS stands for Cascading Style Sheets. CSS saves a lot of work. It can control the layout of multiple web pages all at once.

What is CSS?

Cascading Style Sheets (CSS) is used to format the layout of a webpage.

With CSS, you can control the color, font, the size of text, the spacing between elements, how elements are positioned and laid out, what background images or background colors are to be used, different displays for different devices and screen sizes, and much more!

Tip: The word **cascading** means that a style applied to a parent element will also apply to all children elements within the parent. So, if you set the color of the body text to "blue", all headings, paragraphs, and other text elements within the body will also get the same color (unless you specify something else)!

Using CSS

CSS can be added to HTML documents in 3 ways:

- **Inline** - by using the style attribute inside HTML elements
- **Internal** - by using a <style> element in the <head> section
- **External** - by using a <link> element to link to an external CSS file

The most common way to add CSS, is to keep the styles in external CSS files. However, in this tutorial we will use inline and internal styles, 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.

The following example sets the text color of the <h1> element to blue, and the text color of the <p> element to red:

```
<!DOCTYPE html>

<html>

<body>

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

<p style="color:red;">A red paragraph.</p>

</body>

</html>
```

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.

The following example sets the text color of ALL the <h1> elements (on that page) to blue, and the text color of ALL the <p> elements to red. In addition, the page will be displayed with a "powderblue" background color:

```
<!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.

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

```
<!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>
```

Style.css

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

The class Attribute

The class attribute is often used to point to a class name in a style sheet. It can also be used by a JavaScript to access and manipulate elements with the specific class name.

In the following example we have three <div> elements with a class attribute with the value of "city". All of the three <div> elements will be styled equally according to the .city style definition in the head section:

Example

```
<!DOCTYPE html>
<html>
<head>
<style>
.city {
  background-color: tomato;
  color: white;
  border: 2px solid black;
  margin: 20px;
  padding: 20px;
}
</style>
</head>
<body>
<div class="city">
  <h2>London</h2>
  <p>London is the capital of England.</p>
</div>
<div class="city">
  <h2>Paris</h2>
  <p>Paris is the capital of France.</p>
</div>
<div class="city">
  <h2>Tokyo</h2>
  <p>Tokyo is the capital of Japan.</p>
</div>
</body>
</html>
```

The id Attribute

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

The id attribute is used to point to a specific style declaration in a style sheet. It is also used by JavaScript to access and manipulate the element with the specific id.

The syntax for id is: write a hash character (#), followed by an id name. Then, define the CSS properties within curly braces {}.

In the following example we have an <h1> element that points to the id name "myHeader". This <h1> element will be styled according to the #myHeader style definition in the head section:

```
<!DOCTYPE html>
<html>
<head>
<style>
#myHeader {
  background-color: lightblue;
  color: black;
  padding: 40px;
  text-align: center;
}
</style>
</head>
<body>

<h1 id="myHeader">My Header</h1>

</body>
</html>
```

HTML Forms

An HTML form is used to collect user input. The user input is most often sent to a server for processing.

```
<!DOCTYPE html>
<html>
<body>

<h2>HTML Forms</h2>

<form action="/action_page.php">

  <label for="fname">First name:</label><br>

  <input type="text" id="fname" name="fname" value="John"><br>
```

```
<label for="lname">Last name:</label><br>
<input type="text" id="lname" name="lname" value="Doe"><br><br>
<input type="submit" value="Submit">
</form>

<p>If you click the "Submit" button, the form-data will be sent to a page called
"/action_page.php".</p>

</body>

</html>
```

The HTML `<form>` element is used to create an HTML form for user input.

The `<form>` element is a container for different types of input elements, such as: text fields, checkboxes, radio buttons, submit buttons, etc.

HTML Form Attributes

The Action Attribute

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

Usually, the form data is sent to a file on the server when the user clicks on the submit button.

In the example below, the form data is sent to a file called "action_page.php". This file contains a server-side script that handles the form data:

Example

On submit, send form data to "action_page.php":

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


The Target Attribute

The target attribute specifies where to display the response that is received after submitting the form.

The target attribute can have one of the following values:

Value	Description
<code>_blank</code>	The response is displayed in a new window or tab
<code>_self</code>	The response is displayed in the current window
<code>_parent</code>	The response is displayed in the parent frame
<code>_top</code>	The response is displayed in the full body of the window
<code>iframe</code>	The response is displayed in a named iframe

Example

Here, the submitted result will open in a new browser tab:

```
<form action="/action_page.php" target="_blank">
```

The Method Attribute

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

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

The default HTTP method when submitting form data is GET.

Example

This example uses the GET method when submitting the form data:

```
<form action="/action_page.php" method="get">
```

Example

This example uses the POST method when submitting the form data:

```
<form action="/action_page.php" method="post">
```

Notes on GET:

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

Notes on POST:

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

The HTML <form> Elements

The HTML <form> element can contain one or more of the following form elements:

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

The <input> Element

One of the most used form elements is the <input> element.

The <input> element can be displayed in several ways, depending on the type attribute.

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

The <label> Element

The <label> element defines a label for several form elements.

The <label> element is useful for screen-reader users, because the screen-reader will read out loud the label when the user focus on the input element.

The <label> element also help users who have difficulty clicking on very small regions (such as radio buttons or checkboxes) - because when the user clicks the text within the <label> element, it toggles the radio button/checkbox.

The for attribute of the <label> tag should be equal to the id attribute of the <input> element to bind them together.

The <select> Element

The <select> element defines a drop-down list:

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

The <option> element defines an option that can be selected.

By default, the first item in the drop-down list is selected.

To define a pre-selected option, add the selected attribute to the option:

```
<option value="fiat" selected>Fiat</option>
```

The **<textarea>** Element

The **<textarea>** element defines a multi-line input field (a text area):

```
<textarea name="message" rows="10" cols="30">  
The cat was playing in the garden.  
</textarea>
```

The rows attribute specifies the visible number of lines in a text area.

The cols attribute specifies the visible width of a text area.

The **<button>** Element

The **<button>** element defines a clickable button:

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

The **<fieldset>** and **<legend>** Elements

The **<fieldset>** element is used to group related data in a form.

The **<legend>** element defines a caption for the **<fieldset>** element.

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

The **<datalist>** Element

The **<datalist>** element specifies a list of pre-defined options for an **<input>** element.

Users will see a drop-down list of the pre-defined options as they input data.

The list attribute of the **<input>** element, must refer to the id attribute of the **<datalist>** element.

```
<form action="/action_page.php">
  <input list="browsers">
  <datalist id="browsers">
    <option value="Edge">
    <option value="Firefox">
    <option value="Chrome">
    <option value="Opera">
    <option value="Safari">
  </datalist>
</form>
```

For more document go to <https://www.w3schools.com/html/default.asp>