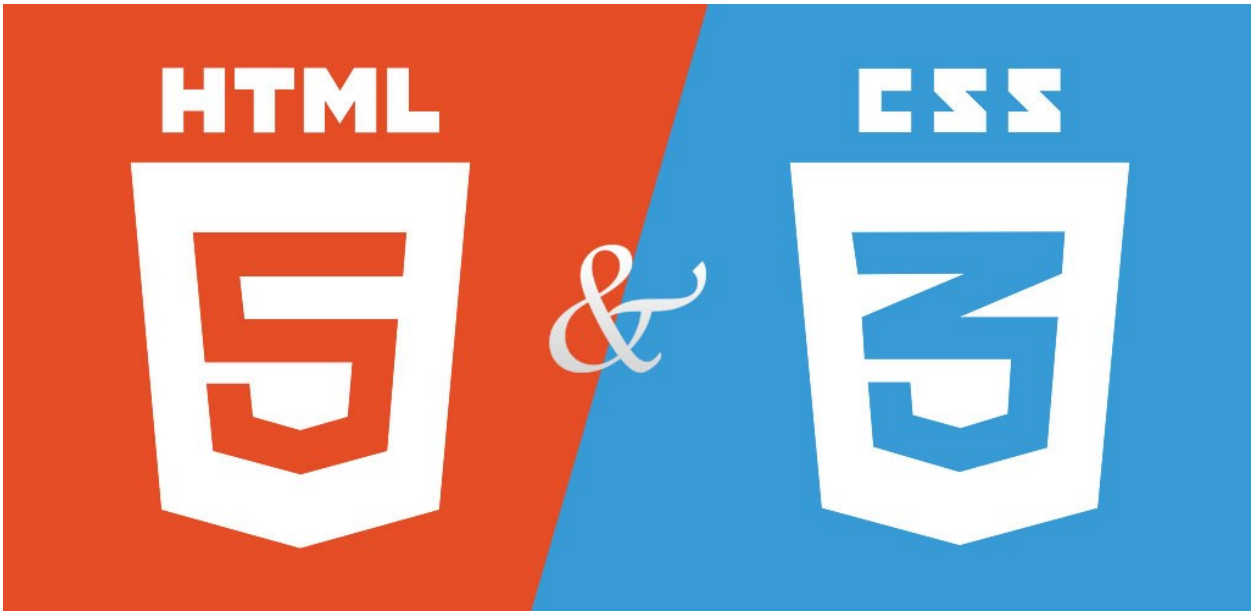

HTML & CSS TAGS INTRODUCTION

TABLE OF CONTENTS

1.ATTRIBUTES

1.1 TITLE

1.2 THE SRC ATTRIBUTE

1.3 THE HREF ATTRIBUTE

 Link Name

1.4 THE ALT ATTRIBUTE

1.5 THE WIDTH AND HEIGHT ATTRIBUTES

2.HEADINGS

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

3.PARAGRAPHS

 This paragraph contains a lot of lines in the source code, but the browser ignores it.

4.STYLES

1. Use the style attribute for styling HTML elements
2. Use background-color for background color
3. Use color for text colors

4. Use font-family for text fonts
5. Use font-size for text sizes
6. Use text-align for text alignment

4.1 BACKGROUND COLOR

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

4.2 TEXT COLOR

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

4.3 FONTS

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

4.4 TEXT SIZE

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

4.5 TEXT ALIGNMENT

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

5.TEXT FORMATTING

Formatting elements were designed to display special types of text:

<b> - Bold text

 - Important text

<i> - Italic text

 - Emphasized text

<mark> - Marked text

<small> - Smaller text

<del> - Deleted text

<ins> - Inserted text

<sub> - Subscript text

<sup> - Superscript text

5.1 HTML <B> AND <STRONG> ELEMENTS

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

This text is bold

The HTML element defines text with strong importance. The content inside is typically displayed in bold.

This text is important!

5.2 HTML <I> AND <EM> ELEMENTS

The HTML element defines a part of text in an alternate voice or mood. The content inside is typically displayed in italic. The tag is often used to indicate a technical term, a phrase from another language, a thought, a ship name, etc

This text is italic

The HTML element defines emphasized text. The content inside is typically displayed in italic. A screen reader will pronounce the words in with an emphasis, using verbal stress.

This text is emphasized

5.3 HTML <SMALL> ELEMENT

The HTML <small> element defines smaller text:

<small>This is some smaller text.</small>

5.4 HTML <MARK> ELEMENT

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

```
<p>Do not forget to buy <mark>milk</mark> today.</p>
```

5.5 HTML <DEL> ELEMENT

The HTML <del> element defines text that has been deleted from a document. Browsers will usually strike a line through deleted text:

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

5.6 HTML <INS> ELEMENT

The HTML <ins> element defines a text that has been inserted into a document. Browsers will usually underline inserted text:

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

5.7 HTML <SUB> ELEMENT

The HTML <sub> element defines subscript text. Subscript text appears half a character below the normal line, and is sometimes rendered in a smaller font. Subscript text can be used for chemical formulas, like H2O:

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

5.8 HTML <SUP> ELEMENT

The HTML <sup> element defines superscript text. Superscript text appears half a character above the normal line, and is sometimes rendered in a smaller font. Superscript text can be used for footnotes, like WWW[1]:

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

6.QUOTATIONS

6.1 HTML <BLOCKQUOTE> FOR QUOTATIONS

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

```
<p>Here is a quote from WWF's website:</p>
<blockquote cite="http://www.worldwildlife.org/who/index.html">
For 60 years, WWF has worked to help people and nature thrive. As the world's leading
```

conservation organization, WWF works in nearly 100 countries. At every level, we collaborate with people around the world to develop and deliver innovative solutions that protect communities, wildlife, and the places in which they live.
</blockquote>

6.2 HTML <Q> FOR SHORT QUOTATIONS

The HTML <q> tag defines a short quotation. Browsers normally insert quotation marks around the quotation.

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

6.3 HTML <ABBR> FOR ABBREVIATIONS

The HTML <abbr> tag defines an abbreviation or an acronym, like "HTML", "CSS", "Mr.", "Dr.", "ASAP", "ATM". Marking abbreviations can give useful information to browsers, translation systems and search-engines. Use the global title attribute to show the description for the abbreviation/acronym when you mouse over the element.

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

6.4 HTML <ADDRESS> FOR CONTACT INFORMATION

The HTML <address> tag defines the contact information for the author/owner of a document or an article. The contact information can be an email address, URL, physical address, phone number, social media handle, etc. The text in the <address> element usually renders in italic, and browsers will always add a line break before and after the <address> element.

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

USA

</address>

6.5 HTML <CITE> FOR WORK TITLE

The HTML <cite> tag defines the title of a creative work (e.g. a book, a poem, a song, a movie, a painting, a sculpture, etc.). A person's name is not the title of a work. The text in the <cite> element usually renders in italic.

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

6.6 HTML <bdo> for Bi-Directional Override

BDO stands for Bi-Directional Override. The HTML <bdo> tag is used to override the current text direction:

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

6.7 HTML Quotation and Citation Elements

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

7. COMMENTS

7.1 HTML COMMENT TAG

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

<!-- Write your comments here -->

7.2 ADD COMMENTS

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

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

7.3 HIDE CONTENT

Comments can be used to hide content. This can be helpful if you hide content temporarily:

```
<p>This is a paragraph. </p>
<!-- <p>This is another paragraph </p> -->
<p>This is a paragraph too.</p>

<p>This is a paragraph. </p>
<!--
<p>Look at this cool image:</p>
<img border="0" src="pic_trulli.jpg" alt="Trulli">
-->
<p>This is a paragraph too.</p>
```

7.4 HIDE INLINE CONTENT

Comments can be used to hide parts in the middle of the HTML code.

```
<p>This <!-- great text --> is a paragraph.</p>
```

8.CSS

1. Use the HTML style attribute for inline styling
2. Use the HTML <style> element to define internal CSS
3. Use the HTML <link> element to refer to an external CSS file
4. Use the HTML <head> element to store <style> and <link> elements
5. Use the CSS color property for text colors
6. Use the CSS font-family property for text fonts
7. Use the CSS font-size property for text sizes
8. Use the CSS border property for borders

9. Use the CSS padding property for space inside the border
10. Use the CSS margin property for space outside the border

8.1 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

8.2 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:

```
<h1 style="color:blue;">A Blue Heading</h1>
<p style="color:red;">A red paragraph.</p>
```

8.3 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>
```

8.4 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>
```

The 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 what the "styles.css" file looks like:

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

```
  color: red;
}
```

8.5 CSS COLORS, FONTS AND SIZES

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.

```
<!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>
```

8.6 CSS BORDER

The CSS border property defines a border around an HTML element. Tip: You can define a border for nearly all HTML elements.

```
p {
  border: 2px solid powderblue;
}
```

8.7 CSS PADDING

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

```
p {
  border: 2px solid powderblue;
  padding: 30px;
}
```

8.8 CSS MARGIN

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

```
p {
  border: 2px solid powderblue;
  margin: 50px;
}
```

8.9 LINK TO EXTERNAL CSS

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

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

This example links to a style sheet located in the same folder as the current page: <link rel="stylesheet" href="styles.css">

9.LINKS

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.

1. Use the <a> element to define a link

2. Use the href attribute to define the link address
3. Use the target attribute to define where to open the linked document
4. Use the <img> element (inside <a>) to use an image as a link
5. Use the mailto: scheme inside the href attribute to create a link that opens the user's email program

9.1 HTML LINKS - SYNTAX

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

link text

The most important attribute of the <a> element is the href attribute, which indicates the link's destination. The link text is the part that will be visible to the reader. Clicking on the link text, will send the reader to the specified URL address.

Visit W3Schools.com!

By default, links will appear as follows in all browsers:

1. An unvisited link is underlined and blue
2. A visited link is underlined and purple
3. An active link is underlined and red

9.2HTML LINKS - THE TARGET ATTRIBUTE

By default, the linked page will be displayed in the current browser window. To change this, you must specify another target for the link.

The target attribute specifies where to open the linked document.

The target attribute can have one of the following values:

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

Visit W3Schools!

9.3ABSOLUTE URLS VS. RELATIVE URLS

Both examples above are using an absolute URL (a full web address) in the href attribute. A local link (a link to a page within the same website) is specified with a relative URL (without the "https://www" part):

```
<h2>Absolute URLs</h2>
<p><a href="https://www.w3.org/">W3C</a></p>
<p><a href="https://www.google.com/">Google</a></p>
<h2>Relative URLs</h2>
<p><a href="html_images.asp">HTML Images</a></p>
<p><a href="/css/default.asp">CSS Tutorial</a></p>
```

9.4HTML LINKS - USE AN IMAGE AS A LINK

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

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

9.5LINK TO AN EMAIL ADDRESS

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

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

9.6 BUTTON AS A LINK

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

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

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

9.7 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.

Visit our HTML Tutorial

9.8 MORE ON ABSOLUTE URLS AND RELATIVE URLS

Use a full URL to link to a web page:

HTML tutorial

Link to a page located in the html folder on the current web site:

HTML tutorial

Link to a page located in the same folder as the current page:

HTML tutorial

10.IMAGES

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

10.1 HTML IMAGES SYNTAX

The HTML <img> tag is used to embed an image in a web page. Images are not technically inserted into a web page; images are linked to web pages. The <img> tag creates a holding space for the referenced image. The <img> tag is empty, it contains attributes only, and does not have a closing tag.

<img src="url" alt="alternatetext">

1. Use the HTML <img> element to define an image
2. Use the HTML src attribute to define the URL of the image
3. Use the HTML alt attribute to define an alternate text for an image, if it cannot be displayed
4. Use the HTML width and height attributes or the CSS width and height properties to define the size of the image
5. Use the CSS float property to let the image float to the left or to the right

10.2 THE SRC ATTRIBUTE

The required src attribute specifies the path (URL) to the image. When a web page loads, it is the browser, at that moment, that gets the image from a web server and inserts it into the page. Therefore, make sure that the image actually stays in the same spot in relation to the web page, otherwise your visitors will get a broken link icon. The broken link icon and the alt text are shown if the browser cannot find the image.

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

10.3 THE ALT ATTRIBUTE

The required 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:

<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:

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

10.4 IMAGE SIZE - WIDTH AND HEIGHT

You can use the style attribute to specify the width and height of an image.
<img src="img_girl.jpg" alt="Girl in a jacket" style="width:500px;height:600px;">

Alternatively, you can use the width and height attributes:

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

The width and height attributes always define the width and height of the image in pixels. Always specify the width and height of an image. If width and height are not specified, the web page might flicker while the image loads.

10.5 WIDTH AND HEIGHT, OR STYLE?

The width, height, and style attributes are all valid in HTML. However, we suggest using the style attribute. It prevents styles sheets from changing the size of images:

<!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>
```

10.6 IMAGES IN ANOTHER FOLDER

If you have your images in a sub-folder, you must include the folder name in the src attribute:

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

10.7 IMAGES ON ANOTHER SERVER/WEBSITE

Some web sites point to an image on another server. To point to an image on another server, you must specify an absolute (full) URL in the src attribute:

```
<img src="https://www.w3schools.com/images/w3schools_green.jpg" alt="W3Schools.com">
```

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

10.8 ANIMATED IMAGES

HTML allows animated GIFs:

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

10.9 IMAGE AS A LINK

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

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

10.10 IMAGE FLOATING

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

```
<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>
```

10.11 COMMON IMAGE FORMATS

Here are the most common image file types, which are supported in all browsers (Chrome, Edge, Firefox, Safari, Opera):

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

11.TABLES

HTML tables allow web developers to arrange data into rows and columns.

11.1 DEFINE AN HTML TABLE

A table in HTML consists of table cells inside rows and columns.

```
<table>
  <tr>
```

```
    <th>Company</th>
    <th>Contact</th>
    <th>Country</th>
  </tr>
  <tr>
    <td>Alfreds Futterkiste</td>
    <td>Maria Anders</td>
    <td>Germany</td>
  </tr>
  <tr>
    <td>Centro comercial Moctezuma</td>
    <td>Francisco Chang</td>
    <td>Mexico</td>
  </tr>
</table>
```

11.2 TABLE CELLS

Each table cell is defined by a <td> and a </td> tag. td stands for table data. Everything between <td> and </td> are the content of the table cell.

11.3 TABLE ROWS

Each table row starts with a <tr> and ends with a </tr> tag. tr stands for table row. You can have as many rows as you like in a table; just make sure that the number of cells are the same in each row. There are times when a row can have less or more cells than another.

11.4 TABLE HEADERS

Sometimes you want your cells to be table header cells. th stands for table header. In those cases, use the <th> tag instead of the <td> tag. By default, the text in <th> elements are bold and centered, but you can change that with CSS.

11.5 HTML TABLE TAGS

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

12. LISTS

HTML lists allow web developers to group a set of related items in lists.

12.1 UNORDERED HTML LIST

An unordered list starts with the <ul> tag. Each list item starts with the <li> tag. The list items will be marked with bullets (small black circles) by default:

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

12.2 ORDERED HTML LIST

An ordered list starts with the <ol> tag. Each list item starts with the <li> tag. The list items will be marked with numbers by default:

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

12.3 HTML DESCRIPTION LISTS

HTML also supports description lists. A description list is a list of terms, with a description of each term. The <dl> tag defines the description list, the <dt> tag defines the term (name), and the <dd> tag describes each term:

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

12.4 HTML LIST TAGS

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

13. CLASSES

The HTML class attribute is used to specify a class for an HTML element. Multiple HTML elements can share the same class.

13.1 USING 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.

The HTML class attribute specifies one or more class names for an element

Classes are used by CSS and JavaScript to select and access specific elements

The class attribute can be used on any HTML element

The class name is case sensitive

Different HTML elements can point to the same class name

JavaScript can access elements with a specific class name with
the getElementsByClassName() method

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

```
<!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>
```

In the following example we have two elements with a class attribute with the value of "note". Both elements will be styled equally according to the. note style definition in the head section:

```
<!DOCTYPE html>
<html>
<head>
<style>
.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>
```

The class attribute can be used on any HTML element. The class name is case sensitive!

13.2 THE SYNTAX FOR CLASS

To create a class; write a period (.) character, followed by a class name. Then, define the CSS properties within curly braces {}:

```
<!DOCTYPE html>
<html>
<head>
<style>
.city {
  background-color: tomato;
  color: white;
  padding: 10px;
}
</style>
</head>
<body>
<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>
</body>
</html>
```

13.3 MULTIPLE CLASSES

HTML elements can belong to more than one class. To define multiple classes, separate the class names with a space, e.g. . The element will be styled according to all the classes specified.

In the following example, the first <h2> element belongs to both the city class and also to the main class, and will get the CSS styles from both of the classes:

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

13.4 DIFFERENT ELEMENTS CAN SHARE SAME CLASS

Different HTML elements can point to the same class name. In the following example, both <h2> and <p> point to the "city" class and will share the same style

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

13.5 USE OF THE CLASS ATTRIBUTE IN JAVASCRIPT

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

JavaScript can access elements with a specific class name with
the getElementsByClassName() method:

Click on a button to 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>
```

14.ID

The HTML id attribute is used to specify a unique id for an HTML element. You cannot have more than one element with the same id in an HTML document.

14.1 USING 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>
```

The id name is case sensitive! The id name must contain at least one character, cannot start with a number, and must not contain whitespaces (spaces, tabs, etc.).

14.2 DIFFERENCE BETWEEN CLASS AND ID

A class name can be used by multiple HTML elements, while an id name must only be used by one HTML element within the page:

```
<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>
<!-- An element with a unique id -->
<h1 id="myHeader">My Cities</h1>
<!-- Multiple elements with same class -->
<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>
```

14.3 HTML BOOKMARKS WITH ID AND LINKS

HTML bookmarks are used to allow readers to jump to specific parts of a webpage. Bookmarks can be useful if your page is very long. To use a bookmark, you must first

create it, and then add a link to it. Then, when the link is clicked, the page will scroll to the location with the bookmark.

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:

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

14.4 USING THE ID ATTRIBUTE IN JAVASCRIPT

The id attribute can also be used by JavaScript to perform some tasks for that specific element. JavaScript can access an element with a specific id with the getElementById() method. Use the id attribute to manipulate text with JavaScript:

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

14.5 CHAPTER SUMMARY

1. The id attribute is used to specify a unique id for an HTML element
2. The value of the id attribute must be unique within the HTML document
3. The id attribute is used by CSS and JavaScript to style/select a specific element
4. The value of the id attribute is case sensitive
5. The id attribute is also used to create HTML bookmarks
6. JavaScript can access an element with a specific id with the getElementById() method

15. IFRAMES

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

15.1 HTML IFRAME SYNTAX

The HTML <iframe> tag specifies an inline frame. An inline frame is used to embed another document within the current HTML document. It is a good practice to always include a title attribute for the <iframe>. This is used by screen readers to read out what the content of the iframe is.

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

15.2 IFRAME - SET HEIGHT AND WIDTH

Use the height and width attributes to specify the size of the iframe. The height and width are specified in pixels by default:

```
<iframe src="demo_iframe.htm" height="200" width="300" title="Iframe
Example"></iframe>
```

Or you can add the style attribute and use the CSS height and width properties:

```
<iframe src="demo_iframe.htm" style="height:200px;width:300px;" title="Iframe
Example"></iframe>
```

15.3 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:

```
<iframe src="demo_iframe.htm" style="border:none;" title="Iframe Example"></iframe>
```

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

```
<iframe src="demo_iframe.htm" style="border:2px solid red;" title="Iframe
Example"></iframe>
```

15.4 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:

```
<iframe src="demo_iframe.htm" name="iframe_a" title="Iframe Example"></iframe>
<p><a href="https://www.w3schools.com" target="iframe_a">W3Schools.com</a></p>
```

15.5 CHAPTER SUMMARY

The HTML <iframe> tag specifies an inline frame

The src attribute defines the URL of the page to embed

Always include a title attribute (for screen readers)

The height and width attributes specify the size of the iframe

Use border:none; to remove the border around the iframe

16. SCRIPTS

JavaScript makes HTML pages more dynamic and interactive.

16.1 THE HTML <SCRIPT> TAG

The HTML <script> tag is used to define a client-side script (JavaScript).
The <script> element either contains script 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 most often uses
the document.getElementById() method.

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

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

16.2 A TASTE OF JAVASCRIPT

JavaScript can change content:

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

JavaScript can change styles:

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

JavaScript can change attributes:

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

16.3 THE HTML <NOSCRIPT> TAG

The HTML <noscript> tag defines an alternate content to be displayed to users that have disabled scripts in their browser or have a browser that doesn't support scripts:

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

16.4 HTML SCRIPT TAGS

Tag	Description
<script>	Defines a client-side script
<noscript>	Defines an alternate content for users that do not support client-side scripts

17. COMPUTERCODE

HTML contains several elements for defining user input and computer code.

17.1 HTML <KBD> FOR KEYBOARD INPUT

The HTML <kbd> element is used to define keyboard input. The content inside is displayed in the browser's default monospace font.

Define some text as keyboard input in a document:

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

17.2 HTML <SAMP> FOR PROGRAM OUTPUT

The HTML <samp> element is used to define sample output from a computer program. The content inside is displayed in the browser's default monospace font.

Define some text as sample output from a computer program in a document:

```
<p>Message from my computer:</p>
<p><samp>File not found.<br>Press F1 to continue</samp></p>
```

17.3 HTML <CODE> FOR COMPUTER CODE

The HTML <code> element is used to define a piece of computer code. The content inside is displayed in the browser's default monospace font.

Define some text as computer code in a document:

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

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:

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

17.4 HTML <VAR> FOR VARIABLES

The HTML <var> element is used to define a variable in programming or in a mathematical expression. The content inside is typically displayed in italic.

Define some text as variables in a document:

The area of a triangle is: 1/2 x <var>b</var> x <var>h</var>, where <var>b</var> is the base, and <var>h</var> is the vertical height.

17.5 CHAPTER SUMMARY

The <kbd> element defines keyboard input

The <samp> element defines sample output from a computer program

The <code> element defines a piece of computer code

The <var> element defines a variable in programming or in a mathematical expression

The <pre> element defines preformatted text

17.6 HTML COMPUTER CODE ELEMENTS

Tag	Description
<code>	Defines programming code
<kbd>	Defines keyboard input
<samp>	Defines computer output
<var>	Defines a variable
<pre>	Defines preformatted text

18. FORMS

An HTML form is used to collect user input. The user input is most often sent to a server for processing. The <form> element is a container for different types of input elements, such as: text fields, checkboxes, radio buttons, submit buttons, etc. The form itself is not visible. Also note that the default width of an input field is 20 characters.

18.1 THE <FORM> ELEMENT

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

<form>
form elements…
</form>

18.2 THE <INPUT> ELEMENT

The HTML <input> element is the most used form element. An <input> element can be displayed in many ways, depending on the type attribute.

Here are some examples:

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

18.3 TEXT FIELDS

The <input type="text"> defines a single-line input field for text input. A form with input fields for text:

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

18.4 THE <LABEL> ELEMENT

Notice the use of the <label> element in the example above. The <label> tag defines a label for many form elements. The <label> element is useful for screen-reader users, because the screen-reader will read out loud the label when the user focuses on the input element. The <label> element also helps 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.

18.5 RADIO BUTTONS

The <input type="radio"> defines a radio button. Radio buttons let a user select ONE of a limited number of choices.

A form with radio buttons:

```
<p>Choose your favorite Web language:</p>
<form>
  <input type="radio" id="html" name="fav_language" value="HTML">
  <label for="html">HTML</label><br>
  <input type="radio" id="css" name="fav_language" value="CSS">
  <label for="css">CSS</label><br>
  <input type="radio" id="javascript" name="fav_language" value="JavaScript">
  <label for="javascript">JavaScript</label>
</form>
```

18.6 CHECKBOXES

The <input type="checkbox"> defines a checkbox. Checkboxes let a user select ZERO or MORE options of a limited number of choices. A form with checkboxes:

```
<form>
  <input type="checkbox" id="vehicle1" name="vehicle1" value="Bike">
  <label for="vehicle1"> I have a bike</label><br>
  <input type="checkbox" id="vehicle2" name="vehicle2" value="Car">
  <label for="vehicle2"> I have a car</label><br>
  <input type="checkbox" id="vehicle3" name="vehicle3" value="Boat">
  <label for="vehicle3"> I have a boat</label>
</form>
```

18.7 THE SUBMIT BUTTON

The <input type="submit"> defines a button for submitting the form data to a form-handler. The form-handler is typically a file on the server with a script for processing input data. The form-handler is specified in the form's action attribute. A form with a submit button:

```
<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>
```

18.8 THE NAME ATTRIBUTE FOR <INPUT>

Notice that each input field must have a name attribute to be submitted. If the name attribute is omitted, the value of the input field will not be sent at all.

This example will not submit the value of the "First name" input field:

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

19. FORM ATTRIBUTES

Here we will discuss different attributes for the HTML <form> element.

19.1 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:

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>
```

If the action attribute is omitted, the action is set to the current page.

19.2 THE TARGET ATTRIBUTE

The target attribute specifies where to display the response that is received after submitting the form. The default value is _self which means that the response will open in the current window. The target attribute can have one of the following values:

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

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

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

19.3 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. Always use POST if the form data contains sensitive or personal information!. This example uses the GET method when submitting the form data:

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

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

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

19.3.1 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

19.3.2 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

19.4 THE AUTOCOMPLETE ATTRIBUTE

The autocomplete attribute specifies whether a form should have autocomplete on or off. When autocomplete is on, the browser automatically complete values based on values that the user has entered before. A form with autocomplete on:

<form action="/action_page.php" autocomplete="on">

19.5 HE NOVALIDATE ATTRIBUTE

The novalidate attribute is a boolean attribute. When present, it specifies that the form-data (input) should not be validated when submitted.

A form with a novalidate attribute:

<form action="/action_page.php" novalidate>

19.6 LIST OF ALL <FORM> ATTRIBUTES

Attribute	Description
accept-charset	Specifies the character encodings used for form submission
action	Specifies where to send the form-data when a form is submitted
autocomplete	Specifies whether a form should have autocomplete on or off
enctype	Specifies how the form-data should be encoded when submitting it to the server (only for method="post")
method	Specifies the HTTP method to use when sending form-data
name	Specifies the name of the form
novalidate	Specifies that the form should not be validated when submitted
rel	Specifies the relationship between a linked resource and the current document
target	Specifies where to display the response that is received after submitting the form

20. FORM ELEMENTS

Here we describe all the different HTML form elements.

20.1 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>

20.2 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">

20.3 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.

20.4 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> elements define 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>
```

Use the size attribute to specify the number of visible values:

```
<label for="cars">Choose a car:</label>
<select id="cars" name="cars" size="3">
  <option value="volvo">Volvo</option>
  <option value="saab">Saab</option>
  <option value="fiat">Fiat</option>
```

```
  <option value="audi">Audi</option>
</select>
```

20.5 ALLOW MULTIPLE SELECTIONS:

Use the multiple attributes to allow the user to select more than one value:

```
<label for="cars">Choose a car:</label>
<select id="cars" name="cars" size="4" multiple>
  <option value="volvo">Volvo</option>
  <option value="saab">Saab</option>
  <option value="fiat">Fiat</option>
  <option value="audi">Audi</option>
</select>
```

20.6 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. This is how the HTML code above will be displayed in a browser. You can also define the size of the text area by using CSS:

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

20.7 THE <BUTTON> ELEMENT

The <button> element defines a clickable button:

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

Always specify the type attribute for the button element. Different browsers may use different default types for the button element.

20.8 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>
```

20.9 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="Internet Explorer">
    <option value="Firefox">
    <option value="Chrome">
    <option value="Opera">
    <option value="Safari">
  </datalist>
</form>
```

20.10 THE <OUTPUT> ELEMENT

The <output> element represents the result of a calculation (like one performed by a script).

Perform a calculation and show the result in an <output> element:

```
<form action="/action_page.php"
  oninput="x.value=parseInt(a.value)+parseInt(b.value)">
  0
  <input type="range"  id="a" name="a" value="50">
  100 +
  <input type="number" id="b" name="b" value="50">
  =
  <output name="x" for="a b"></output>
  <br><br>
  <input type="submit">
</form>
```

20.11 HTML FORM ELEMENTS

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

<output>	Defines the result of a calculation

21. INPUT TYPES

Here we will describe different types for the HTML <input> element.

21.1 INPUT TYPE TEXT

<input type="text"> defines a single-line text input field:

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

21.2 INPUT TYPE PASSWORD

<input type="password"> defines a password field:

```
<form>
  <label for="username">Username:</label><br>
  <input type="text" id="username" name="username"><br>
  <label for="pwd">Password:</label><br>
  <input type="password" id="pwd" name="pwd">
</form>
```

21.3 INPUT TYPE SUBMIT

<input type="submit"> defines a button for submitting form data to a form-handler. The form-handler is typically a server page with a script for processing input data. The form-handler is specified in the form's action attribute:

```
<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>
```

21.4 INPUT TYPE RESET

If you change the input values and then click the "Reset" button, the form-data will be reset to the default values. <input type="reset"> defines a reset button that will reset all form values to their default values:

```
<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">
  <input type="reset">
</form>
```

21.5 INPUT TYPE RADIO

<input type="radio"> defines a radio button. Radio buttons let a user select ONLY ONE of a limited number of choices:

```
<p>Choose your favorite Web language:</p>
<form>
  <input type="radio" id="html" name="fav_language" value="HTML">
  <label for="html">HTML</label><br>
  <input type="radio" id="css" name="fav_language" value="CSS">
  <label for="css">CSS</label><br>
  <input type="radio" id="javascript" name="fav_language" value="JavaScript">
  <label for="javascript">JavaScript</label>
</form>
```

21.6 INPUT TYPE CHECKBOX

<input type="checkbox"> defines a checkbox. Checkboxes let a user select ZERO or MORE options of a limited number of choices.

```
<form>
  <input type="checkbox" id="vehicle1" name="vehicle1" value="Bike">
  <label for="vehicle1"> I have a bike</label><br>
  <input type="checkbox" id="vehicle2" name="vehicle2" value="Car">
  <label for="vehicle2"> I have a car</label><br>
  <input type="checkbox" id="vehicle3" name="vehicle3" value="Boat">
  <label for="vehicle3"> I have a boat</label>
</form>
```

21.7 INPUT TYPE BUTTON

<input type="button"> defines a button:

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

21.8 INPUT TYPE COLOR

The <input type="color"> is used for input fields that should contain a color. Depending on browser support, a color picker can show up in the input field.

```
<form>
  <label for="favcolor">Select your favorite color:</label>
  <input type="color" id="favcolor" name="favcolor">
</form>
```

21.9 INPUT TYPE DATE

The <input type="date"> is used for input fields that should contain a date. Depending on browser support, a date picker can show up in the input field.

```
<form>
  <label for="birthday">Birthday:</label>
  <input type="date" id="birthday" name="birthday">
</form>
```

You can also use the min and max attributes to add restrictions to dates:

```
<form>
  <label for="datemax">Enter a date before 1980-01-01:</label>
  <input type="date" id="datemax" name="datemax" max="1979-12-31"><br><br>
  <label for="datemin">Enter a date after 2000-01-01:</label>
  <input type="date" id="datemin" name="datemin" min="2000-01-02">
</form>
```

21.10 INPUT TYPE DATETIME-LOCAL

The <input type="datetime-local"> specifies a date and time input field, with no time zone. Depending on browser support, a date picker can show up in the input field.

```
<form>
  <label for="birthdaytime">Birthday (date and time):</label>
  <input type="datetime-local" id="birthdaytime" name="birthdaytime">
</form>
```

21.11 INPUT TYPE EMAIL

The <input type="email"> is used for input fields that should contain an e-mail address. Depending on browser support, the e-mail address can be automatically validated when submitted. Some smartphones recognize the email type, and add ".com" to the keyboard to match email input.

```
<form>
  <label for="email">Enter your email:</label>
  <input type="email" id="email" name="email">
</form>
```

21.12 INPUT TYPE IMAGE

The <input type="image"> defines an image as a submit button. The path to the image is specified in the src attribute.

```
<form>
<input type="image" src="img_submit.gif" alt="Submit" width="48" height="48">
</form>
```

21.13 INPUT TYPE FILE

The <input type="file"> defines a file-select field and a "Browse" button for file uploads.

```
<form>
  <label for="myfile">Select a file:</label>
  <input type="file" id="myfile" name="myfile">
</form>
```

21.14 INPUT TYPE HIDDEN

The <input type="hidden"> defines a hidden input field (not visible to a user). A hidden field lets web developers include data that cannot be seen or modified by users when a form is submitted. A hidden field often stores what database record that needs to be updated when the form is submitted.

Note: While the value is not displayed to the user in the page's content, it is visible (and can be edited) using any browser's developer tools or "View Source" functionality. Do not use hidden inputs as a form of security!

```
<form>
  <label for="fname">First name:</label>
  <input type="text" id="fname" name="fname"><br><br>
  <input type="hidden" id="custId" name="custId" value="3487">
  <input type="submit" value="Submit">
</form>
```

21.15 INPUT TYPE MONTH

The <input type="month"> allows the user to select a month and year. Depending on browser support, a date picker can show up in the input field.

```
<form>
  <label for="bdaymonth">Birthday (month and year):</label>
  <input type="month" id="bdaymonth" name="bdaymonth">
</form>
```

21.16 INPUT TYPE NUMBER

The <input type="number"> defines a numeric input field. You can also set restrictions on what numbers are accepted. The following example displays a numeric input field, where you can enter a value from 1 to 5:

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

21.17 INPUT RESTRICTIONS

Attribute	Description
checked	Specifies that an input field should be pre-selected when the page loads (for type="checkbox" or type="radio")
disabled	Specifies that an input field should be disabled
max	Specifies the maximum value for an input field
maxlength	Specifies the maximum number of character for an input field
min	Specifies the minimum value for an input field
pattern	Specifies a regular expression to check the input value against
readonly	Specifies that an input field is read only (cannot be changed)
required	Specifies that an input field is required (must be filled out)
size	Specifies the width (in characters) of an input field
step	Specifies the legal number intervals for an input field
value	Specifies the default value for an input field

```
<form>
  <label for="quantity">Quantity:</label>
  <input type="number" id="quantity" name="quantity" min="0" max="100" step="10" val
ue="30">
</form>
```

21.18 INPUT TYPE RANGE

The <input type="range"> defines a control for entering a number whose exact value is not important (like a slider control). Default range is 0 to 100. However, you can set restrictions on what numbers are accepted with the min, max, and step attributes:

```
<form>
  <label for="vol">Volume (between 0 and 50):</label>
  <input type="range" id="vol" name="vol" min="0" max="50">
</form>
```

21.19 INPUT TYPE SEARCH

The <input type="search"> is used for search fields (a search field behaves like a regular text field).

```
<form>
  <label for="gsearch">Search Google:</label>
  <input type="search" id="gsearch" name="gsearch">
</form>
```

21.20 Input Type Tel

The <input type="tel"> is used for input fields that should contain a telephone number.

```
<form>
  <label for="phone">Enter your phone number:</label>
  <input type="tel" id="phone" name="phone" pattern="[0-9]{3}-[0-9]{2}-[0-9]{3}">
</form>
```

21.21 INPUT TYPE TIME

The <input type="time"> allows the user to select a time (no time zone). Depending on browser support, a time picker can show up in the input field.

```
<form>
  <label for="appt">Select a time:</label>
  <input type="time" id="appt" name="appt">
</form>
```

21.22 INPUT TYPE URL

The <input type="url"> is used for input fields that should contain a URL address. Depending on browser support, the url field can be automatically validated when submitted. Some smartphones recognize the url type, and adds ".com" to the keyboard to match url input.

```
<form>
  <label for="homepage">Add your homepage:</label>
  <input type="url" id="homepage" name="homepage">
</form>
```

21.23 INPUT TYPE WEEK

The <input type="week"> allows the user to select a week and year. Depending on browser support, a date picker can show up in the input field.

```
<form>
  <label for="week">Select a week:</label>
  <input type="week" id="week" name="week">
</form>
```

22. INPUT ATTRIBUTES

22.1 THE VALUE ATTRIBUTE

The input value attribute specifies an initial value for an input field. Input fields with initial (default) values:

```
<form>
  <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">
</form>
```

22.2 THE READONLY ATTRIBUTE

The input readonly attribute specifies that an input field is read-only. A read-only input field cannot be modified (however, a user can tab to it, highlight it, and copy the text from it). The value of a read-only input field will be sent when submitting the form!

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

22.3 THE DISABLED ATTRIBUTE

The input disabled attribute specifies that an input field should be disabled. A disabled input field is unusable and un-clickable. The value of a disabled input field will not be sent when submitting the form!

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

22.4 THE SIZE ATTRIBUTE

The input size attribute specifies the visible width, in characters, of an input field. The default value for size is 20. The size attribute works with the following input types: text, search, tel, url, email, and password.

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

22.5 THE MAXLENGTH ATTRIBUTE

The input maxlength attribute specifies the maximum number of characters allowed in an input field. Note: When a maxlength is set, the input field will not accept more than the specified number of characters. However, this attribute does not provide any feedback. So, if you want to alert the user, you must write JavaScript code.

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

22.6 THE MIN AND MAX ATTRIBUTES

The input min and max attributes specify the minimum and maximum values for an input field. The min and max attributes work with the following input types: number, range, date, datetime-local, month, time and week.

Tip: Use the max and min attributes together to create a range of legal values.

Set a max date, a min date, and a range of legal values:

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

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

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

22.7 THE MULTIPLE ATTRIBUTE

The input multiple attributes specifies that the user is allowed to enter more than one value in an input field. The multiple attributes work with the following input types: email, and file.

A file upload field that accepts multiple values:

```
<form>
  <label for="files">Select files:</label>
  <input type="file" id="files" name="files" multiple>
</form>
```

22.8 THE PATTERN ATTRIBUTE

The input pattern attribute specifies a regular expression that the input field's value is checked against, when the form is submitted. The pattern attribute works with the following input types: text, date, search, url, tel, email, and password.

An input field that can contain only three letters (no numbers or special characters):

```
<form>
  <label for="country_code">Country code:</label>
  <input type="text" id="country_code" name="country_code"
  pattern="[A-Za-z]{3}" title="Three letter country code">
</form>
```

22.9 THE PLACEHOLDER ATTRIBUTE

The input placeholder attribute specifies a short hint that describes the expected value of an input field (a sample value or a short description of the expected format).

The short hint is displayed in the input field before the user enters a value.
The placeholder attribute works with the following input types: text, search, url, tel, email, and password.

An input field with a placeholder text:

```
<form>
  <label for="phone">Enter a phone number:</label>
  <input type="tel" id="phone" name="phone"
```

```
  placeholder="123-45-678"
  pattern="[0-9]{3}-[0-9]{2}-[0-9]{3}">
</form>
```

22.10 THE REQUIRED ATTRIBUTE

The input required attribute specifies that an input field must be filled out before submitting the form.

The required attribute works with the following input types: text, search, url, tel, email, password, date pickers, number, checkbox, radio, and file.

A required input field:

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

22.11 THE STEP ATTRIBUTE

The input step attribute specifies the legal number intervals for an input field. Example: if step="3", legal numbers could be -3, 0, 3, 6, etc.

Tip: This attribute can be used together with the max and min attributes to create a range of legal values.

The step attribute works with the following input types: number, range, date, datetime-local, month, time and week.

An input field with a specified legal number interval.

```
<form>
  <label for="points">Points:</label>
  <input type="number" id="points" name="points" step="3">
</form>
```

Note: Input restrictions are not foolproof, and JavaScript provides many ways to add illegal input. To safely restrict input, it must also be checked by the receiver (the server)!

22.12 THE AUTOFOCUS ATTRIBUTE

The input autofocus attribute specifies that an input field should automatically get focus when the page loads. Let the "First name" input field automatically get focus when the page loads:

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

22.13 THE HEIGHT AND WIDTH ATTRIBUTES

The input height and width attributes specify the height and width of an <input type="image"> element

Tip: Always specify both the height and width attributes for images. If height and width are set, the space required for the image is reserved when the page is loaded. Without these attributes, the browser does not know the size of the image, and cannot reserve the appropriate space to it. The effect will be that the page layout will change during loading (while the images load).

Define an image as the submit button, with height and width attributes:

```
<form>
  <label for="fname">First name:</label>
  <input type="text" id="fname" name="fname"><br><br>
  <label for="lname">Last name:</label>
  <input type="text" id="lname" name="lname"><br><br>
  <input type="image" src="img_submit.gif" alt="Submit" width="48" height="48">
</form>
```

22.14 THE LIST ATTRIBUTE

The input list attribute refers to a <datalist> element that contains pre-defined options for an <input> element. An <input> element with pre-defined values in a <datalist>:

```
<form>
  <input list="browsers">
  <datalist id="browsers">
    <option value="Internet Explorer">
    <option value="Firefox">
    <option value="Chrome">
    <option value="Opera">
    <option value="Safari">
  </datalist>
</form>
```

22.15 THE AUTOCOMPLETE ATTRIBUTE

The input autocomplete attribute specifies whether a form or an input field should have autocomplete on or off. Autocomplete allows the browser to predict the value. When a user starts to type in a field, the browser should display options to fill in the field, based on earlier typed values. The autocomplete attribute works with <form> and the following <input> types: text, search, url, tel, email, password, datepickers, range, and color.

An HTML form with autocomplete on, and off for one input field:

```
<form action="/action_page.php" autocomplete="on">
  <label for="fname">First name:</label>
  <input type="text" id="fname" name="fname"><br><br>
  <label for="lname">Last name:</label>
  <input type="text" id="lname" name="lname"><br><br>
  <label for="email">Email:</label>
  <input type="email" id="email" name="email" autocomplete="off"><br><br>
  <input type="submit" value="Submit">
</form>
```

23. HTML TAGS ORDERED ALPHABETICALLY

Tag	Description
<!--...-->	Defines a comment
<!DOCTYPE>	Defines the document type
<a>	Defines a hyperlink
<abbr>	Defines an abbreviation or an acronym
<acronym>	Not supported in HTML5. Use <abbr> instead. Defines an acronym
<address>	Defines contact information for the author/owner of a document
<applet>	Not supported in HTML5. Use <embed> or <object> instead. Defines an embedded applet
<area>	Defines an area inside an image map
<article>	Defines an article
<aside>	Defines content aside from the page content
<audio>	Defines embedded sound content
<b>	Defines bold text
<base>	Specifies the base URL/target for all relative URLs in a document
<basefont>	Not supported in HTML5. Use CSS instead. Specifies a default color, size, and font for all text in a document
<bdi>	Isolates a part of text that might be formatted in a different direction from other text outside it
<bdo>	Overrides the current text direction
<big>	Not supported in HTML5. Use CSS instead. Defines big text
<blockquote>	Defines a section that is quoted from another source

<body>	Defines the document's body
 	Defines a single line break
<button>	Defines a clickable button
<canvas>	Used to draw graphics, on the fly, via scripting (usually JavaScript)
<caption>	Defines a table caption
	Not supported in HTML5. Use CSS instead. Defines centered text
<cite>	Defines the title of a work
<code>	Defines a piece of computer code
<col>	Specifies column properties for each column within a <colgroup> element
<colgroup>	Specifies a group of one or more columns in a table for formatting
<data>	Adds a machine-readable translation of a given content
<datalist>	Specifies a list of pre-defined options for input controls
<dd>	Defines a description/value of a term in a description list
<del>	Defines text that has been deleted from a document
<details>	Defines additional details that the user can view or hide
<dfn>	Specifies a term that is going to be defined within the content
<dialog>	Defines a dialog box or window
<dir>	Not supported in HTML5. Use instead. Defines a directory list
	Defines a section in a document
<dl>	Defines a description list
<dt>	Defines a term/name in a description list
	Defines emphasized text

<embed>	Defines a container for an external application
<fieldset>	Groups related elements in a form
<figcaption>	Defines a caption for a <figure> element
<figure>	Specifies self-contained content
<font>	Not supported in HTML5. Use CSS instead. Defines font, color, and size for text
<footer>	Defines a footer for a document or section
<form>	Defines an HTML form for user input
<frame>	Not supported in HTML5. Defines a window (a frame) in a frameset
<frameset>	Not supported in HTML5. Defines a set of frames
<h1> to <h6>	Defines HTML headings
<head>	Contains metadata/information for the document
<header>	Defines a header for a document or section
<hr>	Defines a thematic change in the content
<html>	Defines the root of an HTML document
<i>	Defines a part of text in an alternate voice or mood
<iframe>	Defines an inline frame
<img>	Defines an image
<input>	Defines an input control
<ins>	Defines a text that has been inserted into a document
<kbd>	Defines keyboard input
<label>	Defines a label for an <input> element
<legend>	Defines a caption for a <fieldset> element

	Defines a list item
<link>	Defines the relationship between a document and an external resource (most used to link to style sheets)
<main>	Specifies the main content of a document
<map>	Defines an image map
<mark>	Defines marked/highlighted text
<meta>	Defines metadata about an HTML document
<meter>	Defines a scalar measurement within a known range (a gauge)
<nav>	Defines navigation links
<noframes>	Not supported in HTML5. Defines an alternate content for users that do not support frames
<noscript>	Defines an alternate content for users that do not support client-side scripts
<object>	Defines a container for an external application
	Defines an ordered list
<optgroup>	Defines a group of related options in a drop-down list
<option>	Defines an option in a drop-down list
<output>	Defines the result of a calculation
<p>	Defines a paragraph
<param>	Defines a parameter for an object
<picture>	Defines a container for multiple image resources
<pre>	Defines preformatted text
<progress>	Represents the progress of a task
<q>	Defines a short quotation

<rp>	Defines what to show in browsers that do not support ruby annotations
<rt>	Defines an explanation/pronunciation of characters (for East Asian typography)
<ruby>	Defines a ruby annotation (for East Asian typography)
<s>	Defines text that is no longer correct
<samp>	Defines sample output from a computer program
<script>	Defines a client-side script
<section>	Defines a section in a document
<select>	Defines a drop-down list
<small>	Defines smaller text
<source>	Defines multiple media resources for media elements (<video> and <audio>)
	Defines a section in a document
<strike>	Not supported in HTML5. Use <del> or <s> instead. Defines strikethrough text
	Defines important text
<style>	Defines style information for a document
<sub>	Defines subscripted text
<summary>	Defines a visible heading for a <details> element
<sup>	Defines superscripted text
<svg>	Defines a container for SVG graphics
<table>	Defines a table
<tbody>	Groups the body content in a table
<td>	Defines a cell in a table

<template>	Defines a container for content that should be hidden when the page loads
<textarea>	Defines a multiline input control (text area)
<tfoot>	Groups the footer content in a table
<th>	Defines a header cell in a table
<thead>	Groups the header content in a table
<time>	Defines a specific time (or datetime)
<title>	Defines a title for the document
<tr>	Defines a row in a table
<track>	Defines text tracks for media elements (<video> and <audio>)
<tt>	Not supported in HTML5. Use CSS instead. Defines teletype text
<u>	Defines some text that is unarticulated and styled differently from normal text
	Defines an unordered list
<var>	Defines a variable
<video>	Defines embedded video content
<wbr>	Defines a possible line-break

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