

# HTML NOTES

## ❖ 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.

## ❖ Structure of Html Page

- 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

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<title>Page Title</title>
```

```
</head>
```

```
<body>
```

```
<h1>My First Heading</h1>
```

```
<p>My first paragraph.</p>
```

```
</body>
```

```
</html>
```

## 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:

Ex:- <!DOCTYPE html>

HTML Headings – defined with <h1> to <h6> tags.

Ex:-

<h1>This is heading 1</h1>

<h2>This is heading 2</h2>

<h3>This is heading 3</h3>

## ❖ HTML Paragraphs

defined with <p> tags

Ex:- <p>This is a paragraph.</p>

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

## • Empty HTML Elements

HTML elements with no content are called empty elements.

The <br> tag defines a line break, and is an empty element without a closing tag

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

HTML is not case sensitive.

The HTML standard does not require lowercase tags, generally demands lowercase for stricter document types like XHTML

- **What is an HTML Element?**

An HTML element is defined by a start tag, some content, and an end tag:  
<tagname> Content goes here... </tagname>

The HTML element is everything from the start tag to the end tag:  
<h1>My First Heading</h1>  
<p>My first paragraph.</p>

- **Nested HTML Elements**

HTML elements can be nested (this means that elements can contain other elements). All HTML documents consist of nested HTML elements.

- ❖ **HTML Images**

HTML images are defined with the <img> tag. The source file (src), alternative text (alt), width, and height are provided as attributes:

Ex:-

```

```

- **HTML Links**

HTML links are defined with the <a> tag.

Ex:-

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

Attributes are used to give extra information about element. Anchor tag always used with href attribute.

## ❖ 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:

Ex:-

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

Exercise:-

Make the element below into a link that goes to "https://www.google.com".

```
<a ----- "https://www.w3schools.com">This is a link</a>
```

### The src Attribute

The <img> tag is used to embed an image in an HTML page. The src attribute specifies the path to the image to be displayed:

Ex:-

1. **Absolute URL** - Links to an external image that is hosted on another website.

Example: src="https://www.w3schools.com/images/img\_girl.jpg".

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

**2. Relative URL** - Links to an image that is hosted within the website. Here, the URL does not include the domain name. If the URL begins without a slash, it will be relative to the current page.

Example: `src="img_girl.jpg"`. If the URL begins with a slash, it will be relative to the domain. Example: `src="/images/img_girl.jpg"`.

Tip: It is almost always best to use relative URLs. They will not break if you change domain.

- **The width and height Attributes**

The `<img>` tag should also contain the width and height attributes, which specify the width and height of the image (in pixels):

Ex:-

```

```

- **The alt Attribute**

The required alt attribute for the `<img>` tag specifies an alternate text for an image, if the image for some reason cannot be displayed. This can be due to a slow connection, or an error in the src attribute, or if the user uses a screen reader.

Ex:-

```

```

- **The style Attribute**

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

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

- **The lang Attribute**

You should always include the lang attribute inside the <html> tag, to declare the language of the Web page. This is meant to assist search engines and browsers.

The following example specifies English as the language:

```
<!DOCTYPE html>
<html lang="en"> or <html lang="en-US"> ( en language ans us country)
<body>
...
</body>
</html>
```

- **The title Attribute**

The title attribute defines some extra information about an element.

The value of the title attribute will be displayed as a tooltip when you mouse over the element:

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

- Always Use Lowercase Attributes-recommended
- Always Quote Attribute Values
- The HTML standard does not require quotes around attribute values.
- However, W3C **recommends** quotes in HTML, and **demands** quotes for stricter document types like XHTML.
- **Single or Double Quotes?**
- Double quotes around attribute values are the most common in HTML, but single quotes can also be used.
- In some situations, when the attribute value itself contains double quotes, it is necessary to use single quotes:
- Ex:- <p title='John "ShotGun" Nelson'> Or vice versa:  
<p title="John 'ShotGun' Nelson">

## ❖ Summary

- All HTML elements can have **attributes**
- The href attribute of <a> specifies the URL of the page the link goes to
- The src attribute of <img> specifies the path to the image to be displayed
- The width and height attributes of <img> provide size information for images
- The alt attribute of <img> provides an alternate text for an image
- The style attribute is used to add styles to an element, such as color, font, size, and more
- The lang attribute of the <html> tag declares the language of the Web page
- The title attribute defines some extra information about an element

### ❖ HTML Text Formatting Elements

Tag	Description
<a href="#"><u>&lt;b&gt;</u></a>	Defines bold text
<a href="#"><u>&lt;em&gt;</u></a>	Defines emphasized text
<a href="#"><u>&lt;i&gt;</u></a>	Defines a part of text in an alternate voice or mood
<a href="#"><u>&lt;small&gt;</u></a>	Defines smaller text
<a href="#"><u>&lt;strong&gt;</u></a>	Defines important text
<a href="#"><u>&lt;sub&gt;</u></a>	Defines subscripted text
<a href="#"><u>&lt;sup&gt;</u></a>	Defines superscripted text

<a href="#"><u>&lt;ins&gt;</u></a>	Defines inserted text
<a href="#"><u>&lt;del&gt;</u></a>	Defines deleted text
<a href="#"><u>&lt;mark&gt;</u></a>	Defines marked/highlighted text

### • The style Attribute

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

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

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

- Use the style attribute for styling HTML elements
- Use background-color for background color -
- `<body style="background-color:powderblue;">`
- Use color for text colors
- `<h1 style="color:blue;">This is a heading</h1>`
- Use font-family for text fonts
- `<h1 style="font-family:verdana;">This is a heading</h1>`
- Use font-size for text sizes
- `<h1 style="font-size:300%;">This is a heading</h1>`
- Use text-align for text alignment

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



## ❖ Html Blockquote Quotation

- **Definition:** The `<blockquote>` tag is used to define a section that is quoted from another source
- **Purpose:** It is mainly used to indicate quotations that are longer or more significant than inline quotations, which are typically wrapped in the `<q>` tag.
- **Usage:** The content within a `<blockquote>` tag should be a block of text from another source, and it often includes a `cite` attribute to specify the source of the quotation
- `<h1>Example of a Blockquote</h1>` `<p>Here is an example of using the <code>&lt;blockquote&gt;</code> element:</p> <blockquote cite="https://www.example.com"> "The only limit to our realization of tomorrow is our doubts of today." — Franklin D. Roosevelt</blockquote>`
- `<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>`

## ❖ Structure:

The `<blockquote>` tag is used to enclose the quote.

The `cite` attribute provides a URL to the source of the quote. While the `cite` attribute is not visible to users, it can be used by browsers and other tools to offer additional context.

In this example, additional CSS is used to style the `<blockquote>` element, giving it a distinct visual appearance with padding, a border, and a background color.

- **Visual Appearance:**

The quotation text is displayed with an indentation, a border on the left, and a light background to make it stand out.

- **Context:**

The quote is attributed to Franklin D. Roosevelt, and a link to the source is provided below the `<blockquote>` element.

HTML `<q>` for Short Quotations

The HTML `<q>` tag defines a short quotation.

Browsers normally insert quotation marks around the quotation.

- **Definition:** The `<q>` tag is used to denote a short inline quotation within a paragraph.
- **Purpose:** It is used to highlight quotations that are brief and can fit within the flow of text.
- **Rendering:** The text enclosed by the `<q>` tag is usually rendered with quotation marks by the browser.
- `<h1>Example of the <q> Tag</h1>` `<p>Here is an example of using the <q> element:</p>` `<p>She said, <q cite="https://www.example.com">HTML is the standard markup language for creating web pages.</q></p> <p>Source: <a href="https://www.example.com">Example Source</a></p>`

## ❖ 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.

`<p>` The `<abbr title="World Health Organization">WHO</abbr>` was established in 1948, while the `<abbr title="United Nations">UN</abbr>` was founded in 1945.

The `<abbr title="Central Processing Unit">CPU</abbr>` is the brain of a computer. `</p>`

title Attribute: When a user hovers over the abbreviation, the full form specified in the title attribute is displayed as a tooltip.

### ❖ 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.

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

<address>

Written by John Doe.<br>

Visit us at:<br>

Example.com<br>

Box 564, Disneyland<br>

USA

</address>

### ❖ 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>

## ❖ HTML Quotation and Citation Elements

Tag	Description
<a href="#"><code>&lt;abbr&gt;</code></a>	Defines an abbreviation or acronym
<a href="#"><code>&lt;address&gt;</code></a>	Defines contact information for the author/owner of a document
<a href="#"><code>&lt;bdo&gt;</code></a>	Defines the text direction
<a href="#"><code>&lt;blockquote&gt;</code></a>	Defines a section that is quoted from another source
<a href="#"><code>&lt;q&gt;</code></a>	Defines a short inline quotation

## ❖ HTML Comment Tag

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

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

- 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 -->`

- Comments can be used to hide content.

This can be helpful if you hide content temporarily:

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

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

## ❖ HTML Lists

An unordered HTML list:

- Item
- Item
- Item
- Item

An ordered HTML list:

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

Fourth item

A Description List:

Coffee

- black hot drink

Milk

- white cold drink

In HTML, lists are used to group related items together. HTML supports three types of lists:

1. **Ordered List (<ol>):** Used to create a list of items with a specific order, typically numbered.
2. **Unordered List (<ul>):** Used to create a list of items without a specific order, typically bulleted.
3. **Definition List (<dl>):** Used to create a list of terms and their definitions.

### 1. Ordered List (<ol>)

An ordered list starts with the <ol> tag. Each list item starts with the <li> tag. By default, the list items are numbered.

## <h2>Steps to Make a Sandwich</h2>

<ol>

<li>Take two slices of bread.</li>

<li>Spread butter on one side of each slice.</li>

<li>Place your choice of filling (ham, cheese, etc.) on one slice.</li>

<li>Put the other slice on top, butter side down.</li>

<li>Cut the sandwich into halves or quarters, if desired.</li>

</ol>

## 2. Unordered List (<ul>)

An unordered list starts with the <ul> tag. Each list item starts with the <li> tag. By default, the list items are marked with bullets.

## <h2>Grocery List</h2>

<ul>

<li>Bread</li>

<li>Milk</li>

<li>Cheese</li>

<li>Fruits</li>

<li>Vegetables</li>

</ul>

## 4.Nested Lists

You can also create nested lists by placing a list inside a list item of another list. This works for both ordered and unordered lists.

## <h2>Recipe for Pancakes</h2>

<ol>

<li>Gather Ingredients

<ul>

```

        <li>Flour</li>
        <li>Sugar</li>
        <li>Milk</li>
        <li>Eggs</li>
    </ul>
</li>
<li>Mix Ingredients</li>
<li>Cook on a Griddle</li>
<li>Serve with toppings
    <ul>
        <li>Maple Syrup</li>
        <li>Fresh Berries</li>
        <li>Butter</li>
    </ul>
</li>
</ol>

```

### Unordered HTML List - Choose List Item Marker

The CSS `list-style-type` property is used to define the style of the list item marker. It can have one of the following values:

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>
```



## ❖ HTML Tables

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

Ex:-

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

- **Table Cells**

Each table cell is defined by a `<td>` and a `</td>` tag.

```
<table>
  <tr>
    <td>Emil</td>
    <td>Tobias</td>
    <td>Linus</td>
  </tr>
</table>
```

- **Table Rows**

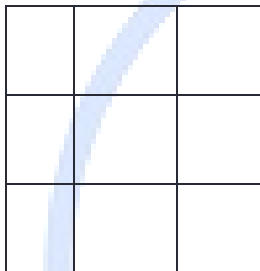
Each table row starts with a `<tr>` and ends with a `</tr>` tag.

Table Headers

Sometimes you want your cells to be table header cells. In those cases use the `<th>` tag instead of the `<td>` tag:

How To Add a Border

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




- **Dotted Table Borders**

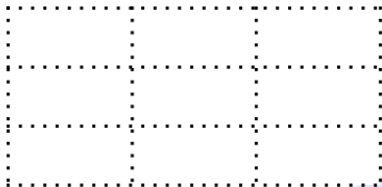
With the `border-style` property, you can set the appearance of the border.

The following values are allowed:

- dotted
- dashed
- solid
- double
- groove
- ridge
- inset
- outset

- none
- hidden

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



### ❖ HTML class Attribute

The HTML class attribute is used to specify a class for an HTML element.

The HTML class attribute is used to specify a class for an HTML element.

Multiple HTML elements can share the same class.

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 {}:

### ❖ HTML id Attribute

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.

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:

```
<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 attribute is used to specify 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 by CSS and JavaScript to style/select a specific element

The value of the id attribute is case sensitive. The id attribute is also used to create HTML bookmarks

### ❖ Block-level Elements

- A block-level element always starts on a new line, and the browsers automatically add some space (a margin) before and after the element.
- A block-level element always takes up the full width available (stretches out to the left and right as far as it can).

Two commonly used block elements are: <p> and <div>.

The <p> element defines a paragraph in an HTML document.

The <div> element defines a division or a section in an HTML document.

```
<p>Hello World</p>
<div>Hello World</div>
```

Here are the block-level elements in HTML:

```
<address>, <article>, <aside>, <blockquote>
<canvas>, <dd>
<div>, <dl>, <dt>, <fieldset>, <figcaption>, <figure>
<footer>, <form>
<h1>-<h6>, <header>, <hr>, <li>
<main>, <nav>
<noscript>, <ol>, <p>
<pre>, <section>, <table>, <tfoot>
<ul>
<video>
```

### ❖ Inline Elements

- An inline element does not start on a new line.
- An inline element only takes up as much width as necessary.
- This is a `<span>` element inside a paragraph.

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

Here are the inline elements in HTML:

```
<a>
<abbr>, <acronym>, <b>, <bdo>
<big>, <br>
<button>, <cite>, <code>
<dfn>, <em>
<i>, <img>, <input>, <label>, <map>
<object>, <output>, <q>, <samp>
<script>, <select>, <small>
```

<span>,<strong>

<sub>,<sup>,<textarea>,<time>

<tt>

<var>

- **The <div> Element**

Used as a container for other HTML elements. often used to group sections of a web page together.

The <div> element is by default a block element, meaning that it takes all available width, and comes with line breaks before and after.

A <div> element takes up all available width:

Lorem Ipsum <div>I am a div</div> dolor sit amet.

<div>

<h2>London</h2>

<p>London is the capital city of England.</p>

<p>London has over 13 million inhabitants.</p>

</div>

Center align a <div> element

<style>

div {

width:300px;

margin:auto;

}

</style>

### ❖ **Inline-block**

If you change the <div> element's display property from block to inline-block, the <div> elements will no longer add a line break before and after, and will be displayed side by side instead of on top of each other.

How to use display: inline-block to align div elements side by side:

```
<style>
div {
  width: 30%;
  display: inline-block;
}
</style>
```

### ❖ Flex

The CSS Flexbox Layout Module was introduced to make it easier to design flexible responsive layout structure without using float or positioning.

To make the CSS flex method work, surround the <div> elements with another <div> element and give it the status as a flex container.

```
<style>
.mycontainer {
  display: flex;
}
.mycontainer > div {
  width: 33%;
}
</style>
```

### ❖ HTML Iframes

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

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

height and width attributes to specify the size of the iframe

<h1>Embedding a YouTube Video</h1>

<p>Below is an example of an iframe embedding a YouTube video:</p>

```
<iframe width="560" height="315"
src="https://www.youtube.com/embed/dQw4w9WgXcQ"
frameborder="0" allow="accelerometer; autoplay; clipboard-write;
encrypted-media; gyroscope; picture-in-picture" allowfullscreen>
</iframe>
```

The src attribute includes the URL of the YouTube video to be embedded, formatted as `https://www.youtube.com/embed/VIDEO_ID`.

width and height specify the dimensions of the iframe.

frameborder="0" removes the border around the iframe.

The allow attribute specifies permissions for the iframe, such as autoplay and fullscreen.

The allowfullscreen attribute enables the video to be viewed in fullscreen mode.

- **Responsive web design**

Responsive web design is about creating web pages that look good on all devices!

A responsive web design will automatically adjust for different screen sizes and viewports.

- **What is Responsive Web Design?**

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

### Setting The Viewport

To create a responsive website, add the following <meta> tag to all your web pages:

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



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

- **&**: Ampersand
- Entity: `&amp;`;
- Example: `&amp;` displays as `&`
- **<**: Less Than
- Entity: `&lt;`;
- Example: `&lt;` displays as `<`
- **>**: Greater Than
- Entity: `&gt;`;
- Example: `&gt;` displays as `>`
- **"**: Double Quote
- Entity: `&quot;`;
- Example: `&quot;` displays as `"`
- **'**: Single Quote or Apostrophe
- Entity: `&apos;`; (Note: `&apos;` is not universally supported in HTML4, use `&#39;` instead)
- Example: `&#39;` displays as `'`
- **&**: Ampersand
- Entity: `&amp;`;
- Example: `&amp;` displays as `&`
- **<**: Less Than
- Entity: `&lt;`;
- Example: `&lt;` displays as `<`
- **>**: Greater Than
- Entity: `&gt;`;

- Example: &gt; displays as >
- ": Double Quote
- Entity: &quot;
- Example: &quot; displays as "
- ': Single Quote or Apostrophe
- Entity: &apos; (Note: &apos; is not universally supported in HTML4, use &#39; instead)
- Example: &#39; displays as '

### ❖ What are Semantic Elements?

A semantic element clearly describes its meaning to both the browser and the developer.

Examples of **non-semantic** elements: <div> and <span> - Tells nothing about its content.

Examples of **semantic** elements: <form>, <table>, and <article> - Clearly defines its content

<a href="#"><u>&lt;footer&gt;</u></a>	Defines a footer for a document or section
<a href="#"><u>&lt;header&gt;</u></a>	Specifies a header for a document or section
<a href="#"><u>&lt;main&gt;</u></a>	Specifies the main content of a document
<a href="#"><u>&lt;mark&gt;</u></a>	Defines marked/highlighted text
<a href="#"><u>&lt;nav&gt;</u></a>	Defines navigation links
<a href="#"><u>&lt;section&gt;</u></a>	Defines a section in a document

## ❖ 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 <form> Element

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.

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

### **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.

### **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.

### 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.

### 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:

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

<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
<i>framename</i>	The response is displayed in a named iframe

### 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.

### 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 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.

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

### 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>
```

```
<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 **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>
```

