HTML

Lesson 1

Objectives

By the end of this lesson, you should know these concepts:

HTML Basics

HTML Elements and Attributes

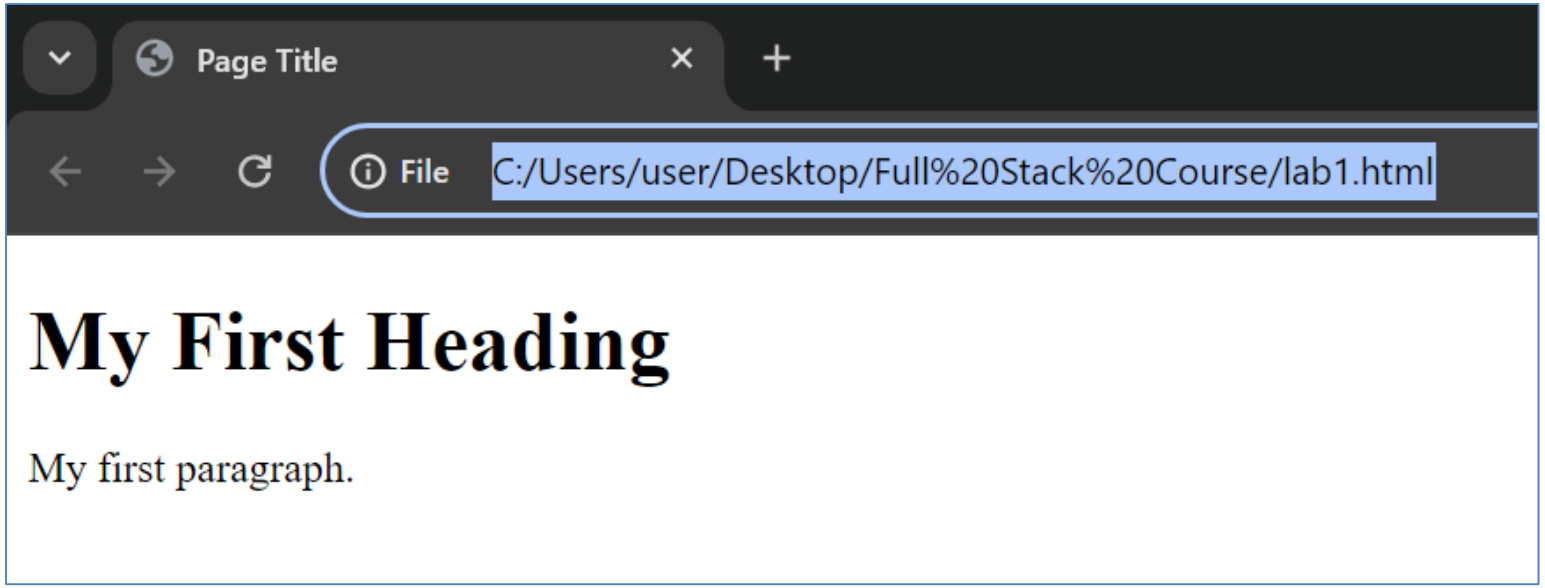
HTML Formatting Elements

HTML Introduction

- 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.

A Simple HTML Document

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

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

</body>
</html>
```



Example Explained

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

HTML Elements

What is an HTML Element?

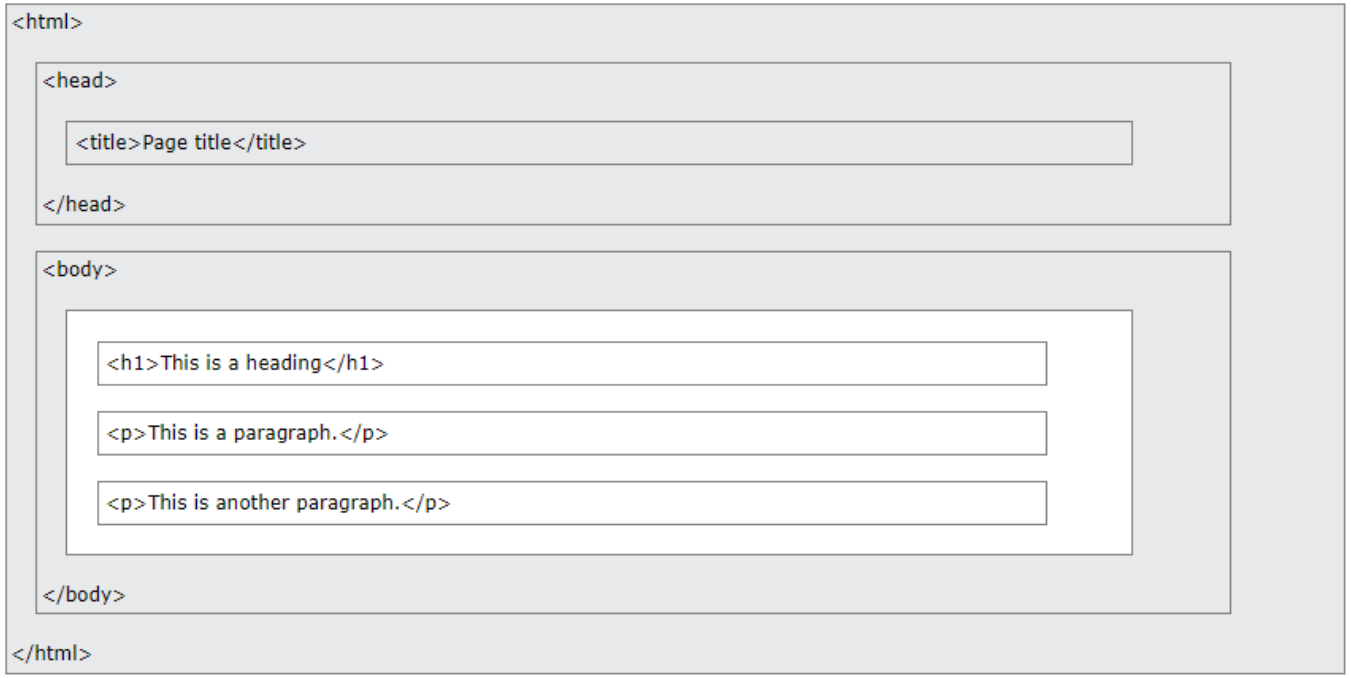
- An HTML element is defined by a start tag, some content, and an end tag:
- <tagname> Content goes here... </tagname>
- The HTML **element** is everything from the start tag to the end tag:

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

Note: Some HTML elements have no content (like the
 element). These elements are called empty elements. Empty elements do not have an end tag!

HTML Page Structure

- Below is a visualization of an HTML page structure:



Note: The content inside the <body> section (the white area above) will be displayed in a browser. The content inside the <title> element will be shown in the browser's title bar or in the page's tab.

HTML Basic Elements

- <!-- this is a comment --> Defines a comment
- <!DOCTYPE> Defines the document type
- <a> Defines a hyperlink
- <h1> <h2> <h3> <h4> <h5> <h6> Define Headings
- <p> Define a paragraph
- <img> Define an image
-
  Define a Break Line
- <hr> Define a Horizontal Rule
- Define a List
- <table> Define a Table

HTML Attributes

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

```
<img src="myimg.jpg">
```

HTML Most Common Attributes

- Href
- Src
- Title
- Alt
- Width
- Height
- Target
- Style
- Bgcolor
- rowspan
- lang
- type
- Border
- cellspacing
- Cellpadding
- Align
- style
- Valign
- Colspan
- rel

HTML Formatting Elements

Formatting elements were designed to display special types of text:

- <b> **Bold text**
- **Important text**
- <i> *Italic text*
- *Emphasized text*
- <mark> Marked text
- <del> ~~Deleted text~~
- <u> Underlined text
- <sub> Subscript$_{text}$
- <sup> Superscript ^{text}

That's all for this lesson. I hope you enjoyed it. Thank you for listening, and see you in the next video!

HTML Lab – Basic Elements

Hands on -4-

HTML LAB – Formatting Elements

Hands on -5-

HTML

Lesson 2

Objectives

By the end of this lesson, you should know these concepts:

HTML Links

Absolute URLs vs. Relative URLs

HTML Images

HTML Favicon

HTML Links

- HTML links are hyperlinks.
- You can click on a link and jump to another document.
- When you move the mouse over a link, the mouse arrow will turn into a little hand.

This is a Link

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

HTML Links - Syntax

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

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

- 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.

HTML Links - Syntax

- Clicking on the link text, will send the reader to the specified URL address.

- This example shows how to create a link to google.com:

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

HTML 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.

- _blank Opens the document in a new window or tab

- Example
- Use target="_blank" to open the linked document in a new browser window or tab:

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

Absolute URLs vs. Relative URLs

- Absolute URL - Links to an external website or image that is hosted on another website.
- Relative URL - Links to an page or image that is hosted within the website. Here, the URL does not include the domain name.

- Example

```
<h2>Absolute URLs</h2>
<a href="https://www.w3.org/img.jpg">W3C</a>
<a href="https://www.google.com/">Google</a>

<h2>Relative URLs</h2>
<a href="html_images.jpg">HTML Images</a>
<a href="/pages/default.html">CSS Tutorial</a>
```

Link 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):

- Example

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

Link Titles

- The title attribute specifies extra information about an element. The information is most often shown as a tooltip text when the mouse moves over the element.

- Example

```
<a href="https://www.w3schools.com/html/" title="Go to W3Schools HTML section">Visit our HTML Tutorial</a>
```

Create Bookmarks

- Bookmarks can be useful if a web page is very long.

- To create a bookmark - first use the id attribute to create the bookmark.
- When the link is clicked, the page will scroll down or up to the location with the bookmark.

- Example

```
<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>
```

HTML Images

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

- The <img> tag has two required attributes:

- src - Specifies the path to the image
- alt - Specifies an alternate text for the image, if its not working for some reason
- Syntax

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

Use an Image as a Link

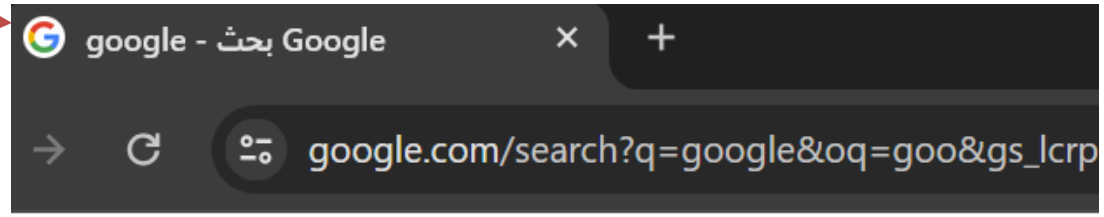
- To use an image as a link, just put the <img> tag inside the <a> tag:

- Example

```
<a href="#">
<img src="smiley.gif" height="100" width="100">
</a>
```

HTML Favicon

- A favicon or favorite icon, is a small image displayed next to the page title in the browser tab.




```
<html>
<head>
  <title>My Page Title</title>
  <link rel="icon"  href="favicon.ico">
</head>
<body>

<h1>This is a Heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

That's all for this lesson. I hope you enjoyed it. Thank you for listening, and see you in the next video!

HTML LAB

Hands on -6-

HTML

Lesson 3

Objectives

By the end of this lesson, you should know these concepts:

HTML Tables

HTML Lists

HTML Block and Inline Elements

HTML class & id

HTML Responsive Web Design

HTML Tables

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

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

HTML Tables

- **Table Headers <th>**
- **Table Data <td>**
- **Table Rows <tr>**

```
<table border="1">
 <tr>
    <th>Person 1</th>
    <th>Person 2</th>
    <th>Person 3</th>
  </tr>
  <tr>
    <td>Emil</td>
    <td>Tobias</td>
    <td>Linus</td>
  </tr>
</table>
```

Person 1	Person 2	Person 3
Emil	Tobias	Linus

HTML Table Colspan & Rowspan

HTML tables can have cells that span over multiple rows and/or columns.

NAME		

APRIL		

2022		
FIESTA		

HTML Table Colspan & Rowspan

- **HTML Table - Colspan**
- To make a cell span over multiple columns, use the colspan attribute:
- Example

```
<table>
  <tr>
    <th colspan="2">Name</th>
    <th>Age</th>
  </tr>
  <tr>
    <td>Jill</td>
    <td>Smith</td>
    <td>43</td>
  </tr>
  <tr>
    <td>Eve</td>
    <td>Jackson</td>
    <td>57</td>
  </tr>
</table>
```

Name		Age
Jill	Smith	43
Eve	Jackson	57

HTML Table Colspan & Rowspan

- **HTML Table - Rowspan**
- To make a cell span over multiple rows, use the rowspan attribute:
- Example

```
<table>
  <tr>
    <th>Name</th>
    <td>Jill</td>
  </tr>
  <tr>
    <th rowspan="2">Phone</th>
    <td>555-1234</td>
  </tr>
  <tr>
    <td>555-8745</td>
</tr>
</table>
```

Name	Jill
Phone	555-1234
	555-8745

HTML Lists

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

An unordered HTML list:

- Item
- Item
- Item
- Item

An ordered HTML list:

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

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:
- Example

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

- Coffee
- Tea
- Milk

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:
- Example

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

1. Coffee
2. Tea
3. Milk

HTML Block and Inline Elements

- There are two display values: block and inline.
- **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 .

Here are the block-level elements in HTML:

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

HTML Block and Inline Elements

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 element inside a paragraph.

Here are the inline elements in HTML:

<a>	<abbr>	<acronym>	<b>	<bdo>
<big>	 	<button>	<cite>	<code>
<dfn>		<i>	<img>	<input>
<kbd>	<label>	<map>	<object>	<output>
<q>	<samp>	<script>	<select>	<small>
		<sub>	<sup>	<textarea>
<time>	<tt>	<var>		

HTML class & id

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

```
<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>
```

HTML class & 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.

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

- 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.

HTML Responsive Web Design

❖What is Responsive Web Design?

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

HTML Responsive Web Design

❖Setting The Viewport

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

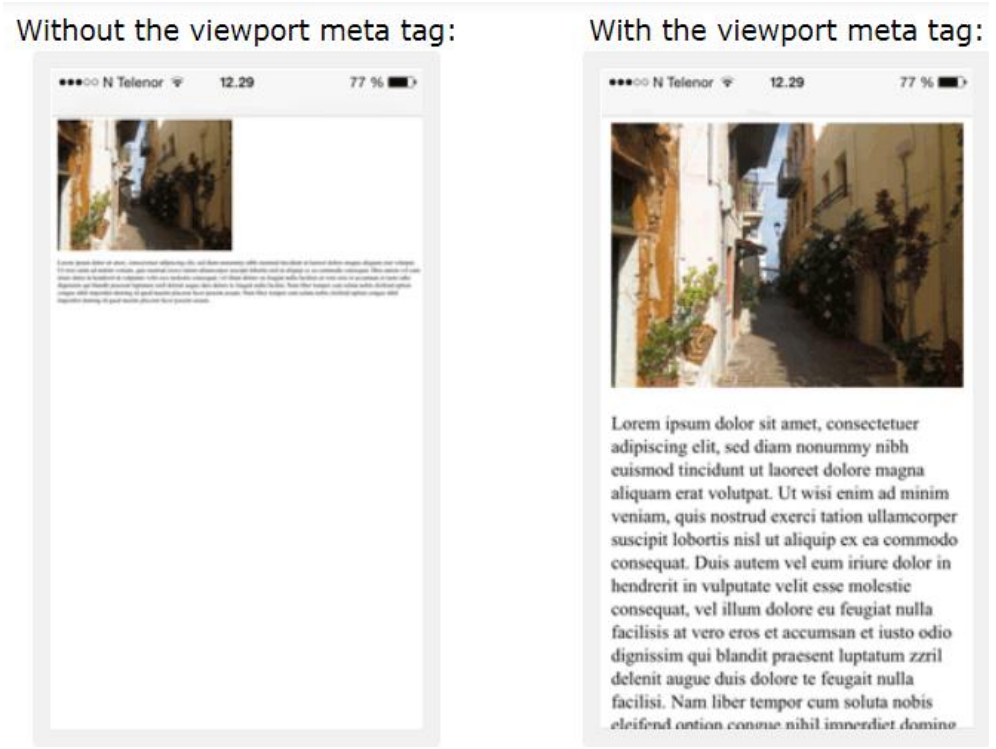
- Example

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

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

HTML Responsive Web Design

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



That's all for this lesson. I hope you enjoyed it. Thank you for listening, and see you in the next video!

HTML LAB

Hands on -7-

HTML

Lesson 4

Objectives

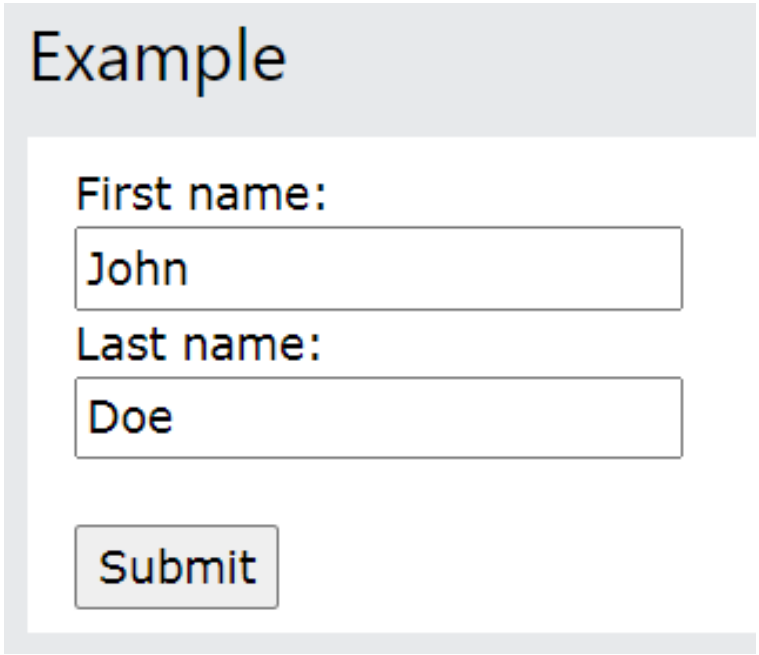
By the end of this lesson, you should know these concepts:

HTML Forms

- Forms – Input Element
- Forms – Input Attributes
- Forms – Other Form Elements

HTML Forms

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




```
<form>
First name:<br>
  <input type="text"><br>
Last name:<br>
  <input type="text"><br><br>
  <input type="submit" value="Submit">
</form>
```

HTML Forms

❖HTML Input Types

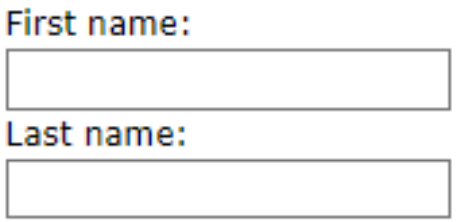
Here are the different input types you can use in HTML:

```
<input type="button">
<input type="checkbox">
<input type="color">
<input type="date">
<input type="datetime-local">
<input type="email">
<input type="file">
<input type="hidden">
<input type="image">
<input type="month">
<input type="number">
<input type="password">
<input type="radio">
<input type="range">
<input type="reset">
<input type="submit">
<input type="text">
<input type="time">
<input type="url">
<input type="week">
```

HTML Forms – Input Element

- **Input Type Text**
- <input type="text"> defines a single-line text input field:

- **Example**




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

HTML Forms – Input Element

- **Input Type Password**
- <input type="password"> defines a password field:

- Example

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

NOTE: The characters in a password field are masked (shown as asterisks or circles).

HTML Forms – Input Element

- **Input Type Reset & submit**

- <input type="submit"> defines a submit button that will send all form values to the server.

- <input type="reset"> defines a reset button that will reset all form values to their default values.

- Example

```
<input type="submit" value="Submit">
<input type="reset">
```

HTML Forms – Input Element

- **Input Type Radio**
- <input type="radio"> defines a radio button.
- Radio element let a user select ONLY ONE of a limited number of choices:

- **Example**

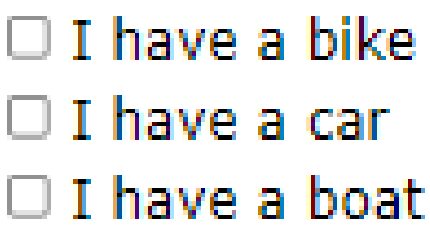
```
<form>
  <input type="radio" id="html" name="fav_language" value="HTML">
  <label for="html">HTML</label><br>

  <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>
```

HTML Forms – Input Element

- **Input Type Checkbox**
- <input type="checkbox" defines a checkbox.
- Checkboxes let a user select ZERO or MORE options of a limited number of choices.

- **Example**

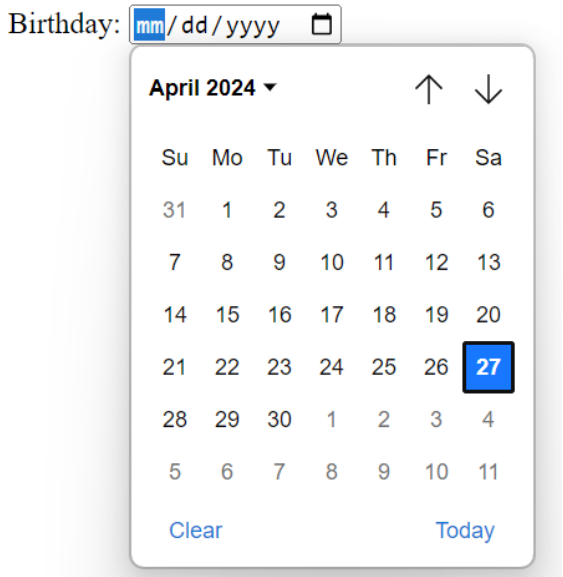
```
<form>
  <input type="checkbox" id="vehicle1" name="vehicle1" value="Bike">
  <label for="vehicle1"> I have a bike</label><br>
  <input type="checkbox" id="vehicle2" name="vehicle2" value="Car">
  <label for="vehicle2"> I have a car</label><br>
  <input type="checkbox" id="vehicle3" name="vehicle3"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



HTML Forms – Input Element

- **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.



- **Example**

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

HTML Forms – Input Attributes

- **The value Attribute**
- The input value attribute specifies an initial value for an input field:
- **Example**
- Input fields with initial (default) values:

```
<form>
 <input type="text"  value="John">
</form>
```

HTML Forms – Input Attributes

- **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!
- **Example**
- A disabled input field:


```
<form>
    <input type="text" value="John" disabled>
</form>
```

HTML Forms – Input Attributes

- **The maxlength Attribute**
- The input maxlength attribute specifies the maximum number of characters allowed in an input field.

- **Example**
- Set a maximum length for an input field:

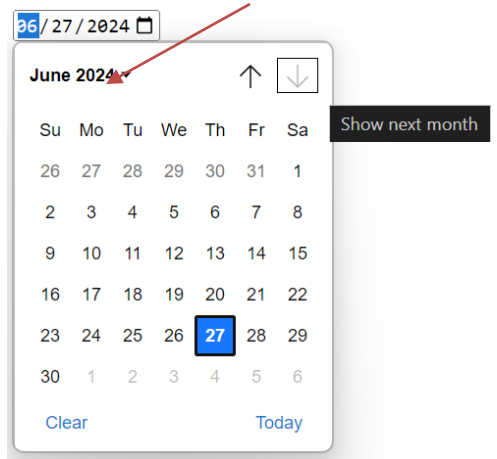
```
<form>
   <input type="text" maxlength="4" >
</form>
```

HTML Forms – Input Attributes

- **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.
- **Example**
- The use can not enter date after the one specified in max:

```
<form>
 <input type="date" max="2024-6-30">
</form>
```



HTML Forms – Input Attributes

- **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 placeholder attribute works with the following input types: text, search, url, number, tel, email, and password.

- **Example**


```
<form>
   <input type="text" placeholder="Enter your name">
</form>
```

HTML Forms – Input Attributes

- **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.

- **Example**

```
<form>
   <input type="text" required>
</form>
```

HTML Forms – Form Elements

❖ HTML Form Elements

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

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

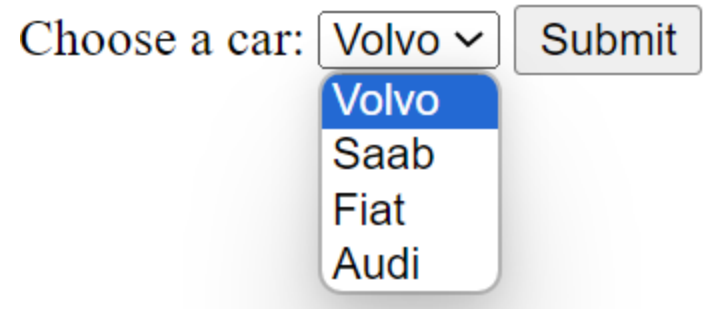
HTML Forms – Form Elements

❖ The <select> Element

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

- Example

```
Choose a car:
<select>
  <option value="volvo">Volvo</option>
  <option value="saab">Saab</option>
  <option value="fiat"selected>Fiat</option>
  <option value="audi">Audi</option>
</select>
```



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

HTML Forms - Form Elements

- Visible Values:

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

```
<select id="cars" name="cars" size="3">
```

- Allow Multiple Selections

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

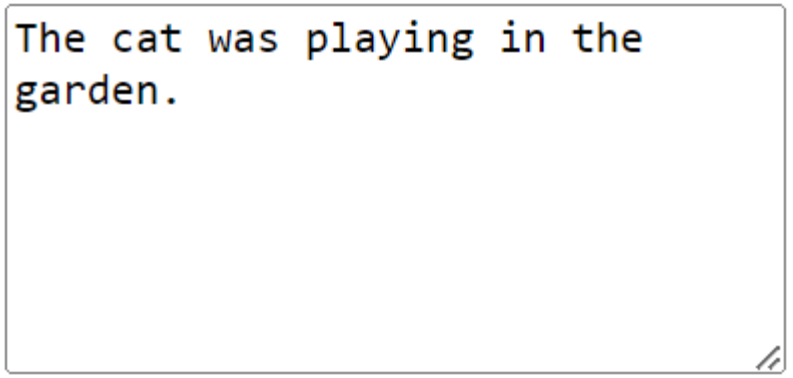
```
<select id="cars" name="cars" size="4" multiple>
```

HTML Forms – Form Elements

❖ The <textarea> Element

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

- **Example**




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

HTML Forms – Form Elements

❖ The <button> Element

- The <button> element defines a clickable button:

- Example

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

HTML Forms – Form Elements

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

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

- **Example**


```
<form>
  <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>
```

That's all for this lesson. I hope you enjoyed it. Thank you for listening, and see you in the next video!

HTML LAB

Hands on -8-

HTML

Lesson 5

Objectives

By the end of this lesson, you should know these concepts:

HTML Media
- HTML Video
- HTML Audio
- HTML YouTube Videos

HTML File Paths

HTML Semantics

HTML Media

- What is Multimedia?
- Multimedia comes in many different formats. It can be almost anything you can hear or see, like images, music, sound, videos, records, films, animations, and more.

- Web pages often contain multimedia elements of different types and formats.

HTML <video>

- **The HTML <video> Element**
- To show a video in HTML, use the <video> element:

- Example

```
<video width="320" height="240" controls>
  <source src="movie.mp4" type="video/mp4">
  <source src="movie.ogg" type="video/ogg">
</video>
```

HTML video

- **How it Works**
- The controls attribute adds video controls, like play, pause, and volume.

- It is a good idea to always include width and height attributes. If height and width are not set, the page might flicker while the video loads.

- The <source> element allows you to specify alternative video files which the browser may choose from. The browser will use the first recognized format.

HTML video

- **HTML <video> Autoplay**
- To start a video automatically, use the autoplay attribute:

- Example

```
<video width="320" height="240" autoplay muted>
  <source src="movie.mp4" type="video/mp4">
  <source src="movie.ogg" type="video/ogg">
</video>
```

NOTE: only one source element will work.
NOTE: autoplay will only work with muted.

HTML video

- **HTML Video - Media Types**

File Format	Media Type
MP4	video/mp4
WebM	video/webm
Ogg	video/ogg

HTML Audio

- **The HTML <audio> Element**
- To play an audio file in HTML, use the <audio> element:

- Example

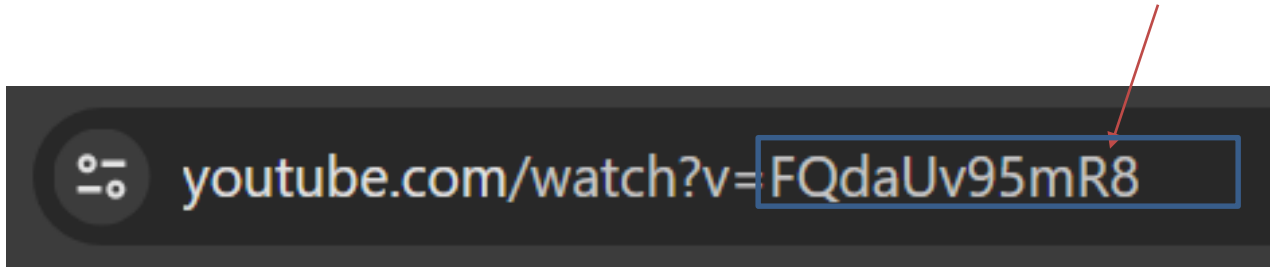
```
<audio controls>
      <source src="horse.mp3" type="audio/mpeg">
     <source src="horse.ogg" type="audio/ogg">
</audio>
```

HTML Audio

- **HTML Audio - Media Types**
- File Format Media Type
- MP3 audio/mpeg
- OGG audio/ogg
- WAV audio/wav

HTML YouTube Videos

- The easiest way to play videos in HTML, is to use YouTube.
- YouTube will display an id (like tgbNymZ7vqY), when you save (or play) a video.
- You can use this id, and refer to your video in the HTML code.



HTML YouTube Videos

- **Playing a YouTube Video in HTML**
- To play your video on a web page, do the following:

- Open a video in YouTube
- Take a note of the video id
- Define an <iframe> element in your web page
- Let the src attribute point to the video URL
- Use the width and height attributes to specify the dimension of the player

HTML YouTube Videos

- EXAMPLE:
- iframe element is an HTML element that loads another HTML page within the document.

```
<iframe width="420" height="315"
src="https://www.youtube.com/embed/tgbNymZ7vqY">
</iframe>
```

HTML YouTube Videos

- Add mute=1 after autoplay=1 to let your video start playing automatically (but muted).

- YouTube - Autoplay + Muted

```
<iframe width="420" height="315"
src="https://www.youtube.com/embed/tgbNymZ7vqY?autoplay=1&mute=1">
</iframe>
```

HTML File Paths

Path	Description
<img src="picture.jpg">	The "picture.jpg" file is located in the same folder as the current page
<img src="images/picture.jpg">	The "picture.jpg" file is located in the images folder in the current folder
<img src="../picture.jpg">	Go to the root folder

HTML Semantics

- Semantic HTML, also known as semantic markup, refers to the use of HTML tags that convey the meaning—or semantics—of the content contained within them.

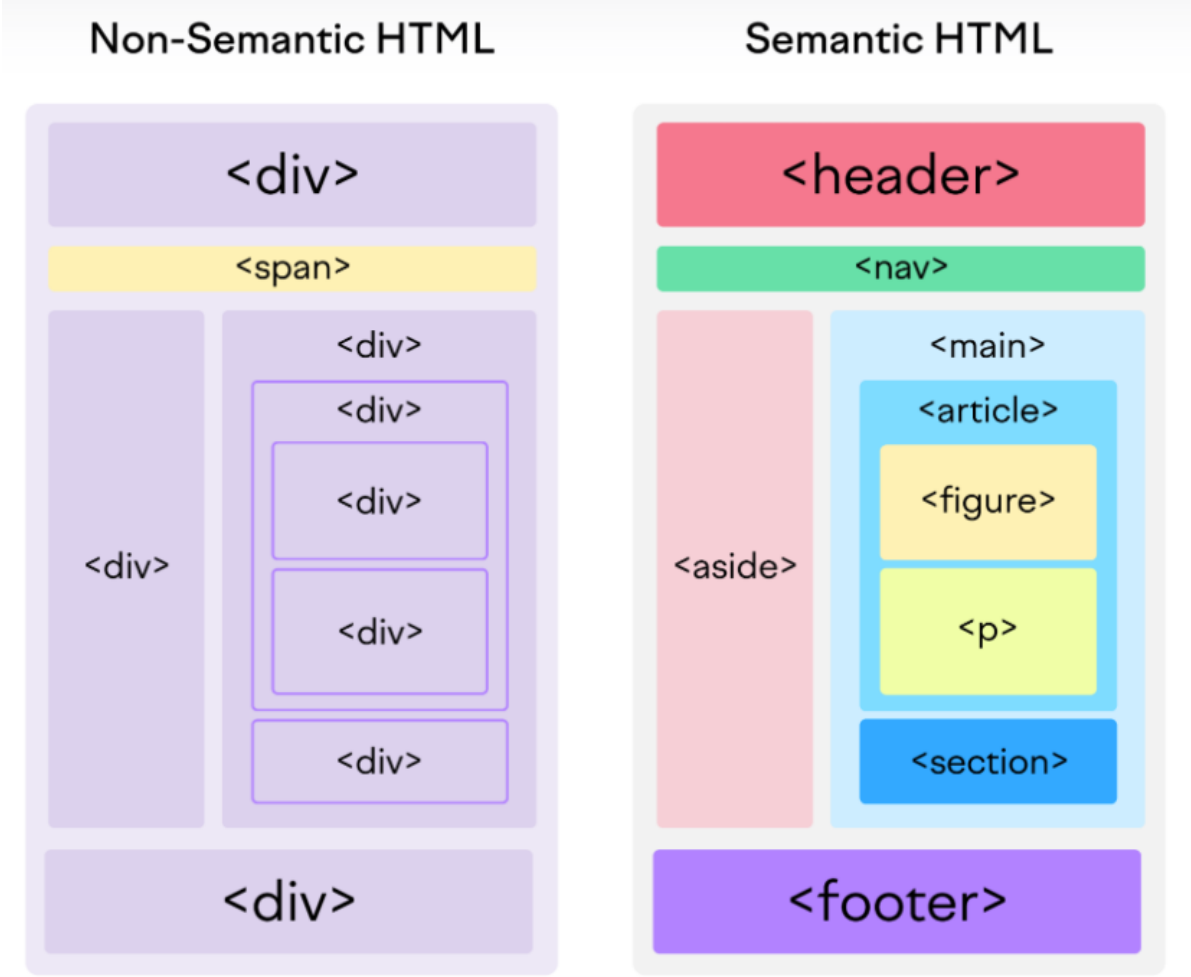
- By adding semantic HTML tags to your pages, you provide additional information that helps define the roles and relative importance of the different parts of your page.

HTML Semantics

Semantic HTML tags are tags that define the meaning of the content they contain.

For example, tags like <header>, <article>, and <footer> are semantic HTML tags. They clearly indicate the role of the content they contain.

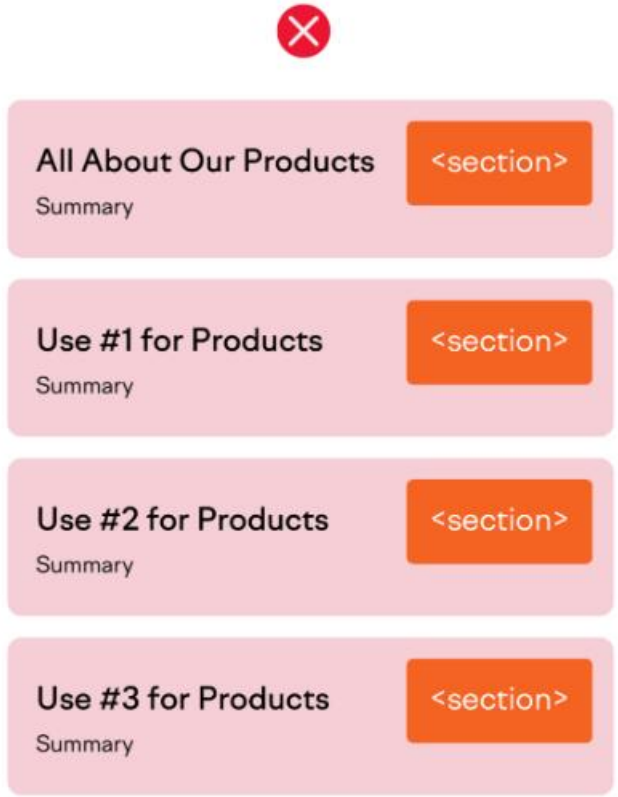
On the other hand, tags like and are typical examples of non-semantic HTML elements. They serve only as content holders but give no indication as to what type of content they contain or what role that content plays on the page.

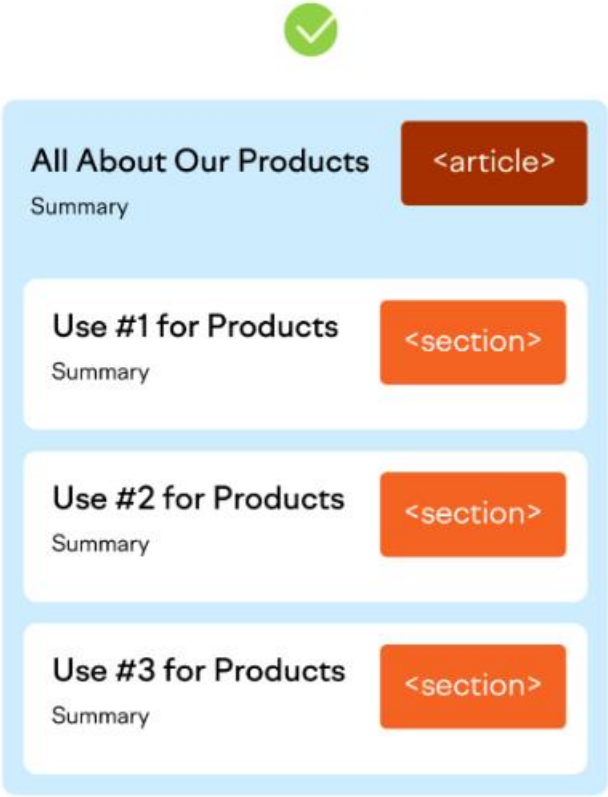


HTML Semantics

The usage of HTML tags on the left side is incorrect because it indicates that the page contains four different topics, rather than one topic and three subtopics, as shown on the right.

On the right-hand side, we have a properly constructed page using semantic HTML. Although there are four separate sections in the visual layout of the page, the HTML tags are nested according to the semantics of the content.





That's all for this lesson. I hope you enjoyed it. Thank you for listening, and see you in the next video!