HTML

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# HTML INTRODUCTION

|  |  |  |
| --- | --- | --- |
| About HTML | HTML (HyperText Markup Language) is a simple data format used to create electronic documents (pages) that are displayed on the World Wide Web. HTML documents contain HTML tags and plain text. | |
| HTML Tags | HTML tags are keywords surrounded by angle brackets and are used to describe the document content. | |
| HTML Syntax | <tag attribute="(property:)value">Text to be displayed</closing-tag> | |
| Default Page Structure (! + Enter in Visual Studio Code) | <!DOCTYPE html>  <html lang="en">  <head>  <meta charset="UTF-8">  <meta name="viewport"  content="width=device-width, initial-  scale=1.0">  <link rel="stylesheet" type="text/css"  href="site.css">  <script src="main.js"></script>  <title>Document</title>  <link href="/favicon.ico" rel="shortcut  icon" type="image/x-icon"/>  </head>  <body>  ...  </body>  </html> |  |

# THE DOCTYPE DECLARATION

|  |  |
| --- | --- |
| About Document Type | All HTML documents must start with a document type declaration. It is information for the browser about what type of document it should expect. |
| Doctype Declaration for an HTML5 Page | <!DOCTYPE html> <!-- no closing tag --> |

# THE HTML ELEMENT

|  |  |
| --- | --- |
| About <html> | The <html> element contains the whole content of the document. |
| Use <html> in a Web Page | <html lang="en-US">  <head>...</head>  <body>...</body>  </html> |

# THE HEAD ELEMENT

|  |  |
| --- | --- |
| About <head> | The <head> element contains the metadata section of the document (markup not visible to the user). It is intended to give the browser information about the web page (title, author, keywords, description, etc.) and instruct it where to find stylesheets and scripts. |
| Use <head> in a Web Page | <head>  <meta charset="UTF-8">  <title>My Document</title>  </head> |

## METADATA DEFINITIONS

|  |  |
| --- | --- |
| Define the Character Set for the Page | <meta charset="UTF-8"> |
| Set the Viewport for Different Devices | <meta name="viewport" content="width=device-width, initial-scale=1.0"> |
| Define Keywords for Search Engines | <meta name="keywords" content="HTML, CSS"> |
| Define a Description of the Web Page | <meta name="description" content="Free Web tutorials"> |
| Define the Author of the Page | <meta name="author" content="John Doe"> |
| Refresh Web Page Every 30 Seconds | <meta http-equiv="refresh" content="30"> |

## TITLE AND ICON

|  |  |
| --- | --- |
| About Page Title and Icon | The page title and icon are visible in the title bar of the browser tab. |
| Set Page Title | <title>Document</title> |
| Set Page Icon  (favicon-generator.org) | <link href="favicon.ico" rel="shortcut icon" type="image/x-icon"/> |

## LINKS TO CSS DOCUMENTS

|  |  |
| --- | --- |
| About <link> | The <link> tag defines the relationship between a document and an external resource, mostly a style sheet. |
| Use <link> in the <head> Element | <link rel="stylesheet" type="text/css" href="site.css"> |

## EMBED A CLIENT-SIDE SCRIPT

|  |  |
| --- | --- |
| About <script> | The <script> tag either contains scripting statements (JavaScript code) or points to an external script file through the *src* attribute. It can be used in both <head> and <body>. |
| Use <script> in a Web Page | <script src="main.js"></script>  <script src="main.js" defer="true"></script> <!-- execute after page loading --> |
| About <noscript> | The <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. It can be used both in <head> and <body>. When inside the <head> element, it can only contain <link>, <style> and <meta> elements. |
| Use <noscript> in a Web Page | <noscript>Sorry, your browser does not support JavaScript!</noscript> |

## ADD INTERNAL CSS (STYLING)

|  |  |
| --- | --- |
| About <style> | The <style> tag is used to apply a simple stylesheet to an HTML document. |
| Use <style> in the <head> Element | <style>  body { background-color: lightgray; }  </style> |

# THE BODY ELEMENT

|  |  |  |
| --- | --- | --- |
| About <body> | The <body> element contains the markup visible to the user. |  |
| Use <body> in a Web Page | <body>  <p>Hello, world!</p>  </body> | |

## COMMON HTML ELEMENTS IN THE BODY

|  |  |
| --- | --- |
| Paragraph | <p>This is a paragraph.</p> |
| Content Division | <div><p>This is a paragraph in a generic content container.</p></div> |
| Hyperlink | <a href="about.html">About</a>  href: an absolute/relative URL for the hyperlink's destination ("about.html"), an   id for a bookmark ("#C4" refers to the element with *id*="C4"), an email link  ("mailto:ben@abv.bg") or a phone link ("tel:+359898887766")  target: "\_self" (default; opens in the same tab) | "\_blank" (opens in a new tab) |
| Button | <button onclick="clickHandler()">Click me!</button>  onclick: a JavaScript function to be called when the button is clicked |
| Image | <img src="/images/image.png" alt="Photo of the Team">  src: path to the image (a source file or a URL address)  alt: alternative text to be shown when no image is loaded |
| Image Map + Clickable Areas | <img src="workplace.jpg" alt="Workplace" *usemap*="#workmap">  <map *name*="workmap"> <!-- defines clickable areas in the image -->  <area *shape*="rect" *coords*="34,44,270,350" *alt*="PC" *href*="computer.html">  <area *shape*="circle" *coords*="337,300,40" *alt*="Coffee" *href*="coffee.html">  </map>  usemap: hashtag + name of the related image map  shape: shape of the clickable area  coords: rect: x(left, top), y(left, top); circle: center(left, top), radius;  poly: x(left, top), y(left, top), z(left, top), etc. |
| Different Images for Different Screen Sizes | <picture> <!-- first <source> with matching attribute values will be displayed -->  <source *media*="(min-width: 650px)" *srcset*="image1.jpg">  <source *media*="(min-width: 465px)" *srcset*="image2.jpg">  <img *src*="image.jpg"> <!-- always last!; when screen width < 465 px -->  </picture> |
| Unordered List | <ul>  <li>first list item</li>  <li>second list item</li>  </ul> |
| Ordered List | <ol *type*="1">  <li>first list item</li>  <li>second list item</li>  </ol>  type: "1" | "A" | "a" | "I" | "i" |
| Description List | <dl>  <dt>first term</dt>  <dd>description for first term</dd>  <dt>second term</dt>  <dd>description for second term</dd>  </dl> |
| Quotation | <blockquote *cite*="wikipedia.org">A quoted section</blockquote>  *cite*: the source of the quotation |
| Short Quotation | <p>  He said: <q>I'll be back</q> <!-- browsers normally add quotation marks -->  </p> |
| Abbreviation | <p><abbr *title*="JavaScript">JS</abbr> is essential in web pages.</p> |
| Address | <address>Box 564, Disleyland, USA</address> <!-- rendered in italic --> |
| Work Title | <p><cite>The Scream</cite> by Van Gogh</p> <!-- rendered in italic --> |
| New Line | <br/> <!-- not recommended --> |
| Horizontal Line (Rule) | <hr> |
| Comment | <!-- This will be ignored by the browser. --> |
| Audio | <audio controls autoplay>  <source src="horse.mp3" type="audio/mpeg">  </audio> |
| Video | <video controls="controls">  <source src="shuttle.mp4" type="video/mp4">  <source src="shuttle.ogg" type="video/ogg">  Your browser does not support the HTML5 video.  </video> |

## HTML TABLES

|  |  |
| --- | --- |
| Simple Table | <table *cellspacing*="0" *cellpadding*="0">  <tr><td>John</td></tr>  </table>  *cellspacing*: space between cells  *cellpadding*: space in the cells |
| Complete Table | <table>  <caption>Our Participants</caption> <!-- immediately after <table> -->  <colgroup>...</colgroup> <!-- before table elements, after <caption> -->  <thead>...</thead>  <tbody>...</tbody>  <tfoot>...</tfoot>  </table> |
| Group of Columns | <colgroup> <!-- only works with width, visibility, background and border -->  <col *span*="3"> <!-- first three columns without formatting -->  <col *span*="2" *style*="background-color:red"> <!-- first two columns red -->  <col *style*="background-color:yellow"> <!-- next column yellow -->  </colgroup> |
| Table Head | <thead> <!-- a set of rows defining the column titles -->  <tr> <!-- table row -->  <th>Name</th> <!-- table header cell -->  <th>Age</th>  </tr>  </thead> |
| Table Body | <tbody>  <tr>  <td>John</td> <!-- table cell (data) -->  <td>10</td>  </tr>  <tr>  <td>Mark</td>  <td>12</td>  </tr>  </tbody> |
| Table Foot | <tfoot> <!-- a set of rows summarizing the columns of the table -->  <tr>  <td>Average</td>  <td>11</td>  </tr>  </tfoot> |
| Merge Columns and Rows | <td colspan="2">Average</td> <!-- merge 2 columns -->  <td rowspan="2">11</td> <!-- merge 2 rows --> |

## HTML FORMS FOR USER INPUT

|  |  |
| --- | --- |
| Simple Form | <form *action*="#" *method*="POST"> <!-- interactive controls for user input -->  <input *type*="text" *name*="name">  <input *type*="submit" *value*="Submit">  </form>  *action*: where to send the form data  *method*: GET (adds form fields to the URL) | POST (sends an HTTP post request) |
| Complete Form | <form *action*="#" *method*="POST"> <!-- interactive controls for user input -->  <fieldset>  <legend>Personal Information</legend>  <label *for*="full-name">Full Name:</label>  <input *type*="text" *id*="full-name" *name*="full-name">  ...  <input *type*="submit" *value*="Submit">  </fieldset>  </form> |
| Fieldset + Legend | <fieldset> <!-- groups related elements in a form; rendered with a thin frame -->  <legend>Personal Information</legend> <!-- a caption for the <fieldset> -->  ...  </fieldset> |
| Input | <input *type*="text" *id*="name" *name*="name"> <!-- takes data from the user -->  *type*: the type of data the user can input  *name*: the property name in the JS code  *id*: related to the <label> with this value for the "for" attribute  *list*: related to the <datalist> with this value for the "id" attribute  *value*: the initial value  *placeholder*: a hint that describes the expected value of the input  *required*: the field must be filled out before submitting the form  *autofocus*: the input filed should automatically get focus when the page loads  *disabled*: the user cannot input data in the input field  *min* and *max*: the minimum and maximum values the user can input  *minlength*: minimum number of characters |
| Label | <label *for*="name">Full Name:</label>  *for*: id of the related form element |
| Label + Input | <label>Full Name: <input *type*="text" *name*="name"></label> |
| Multi-Line Text Input | <textarea *id*="definition" *name*="definition" *rows*="4" *cols*="50">  This is a multi-line text input limited to 4 rows, 50 characters on each.  </textarea> |
| Number Input | <input *type*="number" *id*="qty" *name*="qty" *min*="1" *max*="5"> |
| Password Input | <input *type*="password" *id*="pwd" *name*="pwd" *minlength*="8"> |
| Drop-Down List | <select *name*="cars" *id*="cars">  <optgroup *label*="German Cars"> <!-- groups related options -->  <option *value*="mercedes">Mercedes</option>  <option *value*="audi">Audi</option>  </optgroup>  </select> |
| Input with Autocomplete | <input *list*="browsers" *id*="browser" *name*="browser">  <datalist *id*="browsers"> <!-- a list of pre-defined options -->  <option *value*="Chrome">  <option *value*="Safari">  </datalist> |
| Checkbox | <input *type*="checkbox" *id*="terms" *name*="terms" *value*="agree">  *value*: value of the property "terms" for JS code |
| Radio Button | <input *type*="radio" *id*="male" *name*="gender" *value*="Male">  *name*: groups all radio buttons with the same name (only one can be checked) |
| Slider Control | <input *type*="range" *id*="vol" *name*="vol" *min*="0" *max*="50"> |
| Time Picker | <input *type*="time" *id*="appt" *name*="appt"> |
| Date Picker | <input *type*="date" *id*="birthday" *name*="birthday"> |
| Date and Time Picker | <input *type*="datetime-local" *id*="birthdaytime" *name*="birthdaytime"> |
| Month Picker | <input *type*="month" *id*="month" *name*="month"> |
| Week Picker | <input *type*="week" *id*="week" *name*="week"> |
| File Uploads | <input *type*="file" *id*="myfile" *name*="myfile"> |
| Color Picker | <input *type*="color" *id*="favcolor" *name*="favcolor" *value*="#ff0000"> |
| Submit Button | <input *type*="submit" *value*="Submit"> <!-- sends the data to the server --> |
| Reset Button | <input *type*="reset" *value*="Reset"> <!-- resets all form fields --> |

## SEMANTIC ELEMENTS

|  |  |
| --- | --- |
| The Importance of Semantic HTML | Semantic tags make it clear to the browser what the meaning of a page and its content is, which is also communicated with search engines. |
| Header: Introductory Content | <header> <!-- may contain headings, logo, search form -->  <h1>The Biggest Title</h1> <!-- h6: the smallest title/heading -->  <p>A paragraph beneath the title</p>  </header> |
| Navigation | <nav id="topmenu"> <!-- contains a set of navigation links -->  <ul>  <li><a href="/Home">Home</a></li>  <li><a href="/About">About</a></li>  <li><a href="/Contact">Contact</a></li>  </ul>  </nav> |
| Main: the Main Content | <main> <!-- only one main element per page; helps crawlers -->  <aside>...</aside>  <section>  <article><h1>Peter</h1><p>...</p></article>  <article><h1>Maria</h1><p>...</p></article>  </section>  </main> |
| Aside | <aside> <!-- defines a sidebar (left/right navigation) -->  <h2>Blogroll</h2>  <ul>  <li><a href="#">My first post</a></li>  <li><a href="#">My second post</a></li>  </ul>  </aside> |
| Section | <section> <!-- a standalone section, usually with a title -->  <h2>Peter</h2><img *src*="bird.jpg" />  </section> |
| Article | <article> <!-- self-contained composition, ex.: forum post, article, blog entry -->  <h1>Peter</h1><p>...</p>  </article> |
| Footer | <footer> <!-- typically contains info about navigation links and copyright data -->  <p>Posted by: Hege Refsnes</p>  <p><a href="mailto:webmaster@example.com">Contact Information</a></p>  <p>&copy;copyright</p>  </footer> |
| Figure + Caption | <figure> <!-- self-contained content -->  <img src="img\_pulpit.jpg" alt="The Pulpit Rock Photo">  <figcaption>Fig. 1 – A view of the Pulpit Rock in Norway</figcaption>  </figure> |
| Details + Summary | <details> <!-- additional details that the user can view or hide -->  <summary>Some details</summary> <!-- a visible heading for the details -->  <p>More info about the details.</p>  </details> |
| Time | <time datetime="2014-01-13T11:34">January 13th, 2014</time> |
| Address | <address> <!-- contact information, rendered in italic -->  Street Address: Karlstraße 120<br/>  Country Name: Germany  </address> |

## TEXT FORMATTING

|  |  |
| --- | --- |
| Italic | <i>This text is italic.</i>  <em>This text is italic and semantically emphasized.</em> |
| Bold | <b>This text is bold.</b>  <strong>This text is bold and semantically important.</strong> |
| Smaller Text | <h2>HTML <small>Small</small> Formatting</h2> |
| Highlighted Text | <h2>HTML <mark>Marked</mark> Formatting</h2> |
| Subscripted Text | <p>The water formula is H<sub>2</sub>O.</p> |
| Superscripted Text | <p>Today is January 1<sup>st</sup>.</p> |
| Deleted Text (Line Through) | <p>My favorite color is <del>blue</del> red.</p> |
| Inserted Text (Underlined) | <p>My favorite <ins>color</ins> is red.</p> |
| Text on Hover (Tooltip) | <p *title*="I'm a tooltip">This is a paragraph.</p> |
| Preformatted Text | <pre>  If you can fill the unforgiving minute  With sixty seconds’ worth of distance run,  Yours is the Earth and everything that’s in it,  And — which is more — you’ll be a Man, my son!  </pre> |
| Change Text Direction | <bdo *dir*="rtl">This will be written from right to left.</bdo> |
| Text Formatting with Inline CSS (not Recommended) | <p *style*="font-family:Georgia,serif;">This is a Georgia paragraph.</p>  <p *style*="font-size:35px;">This is a very large paragraph.</p>  <p *style*="color:blue;">This is a paragraph with some blue text.</p>  <p *style*="background-color:gray;">This is a gray paragraph.</p> |

## HTML ENTITIES (SPECIAL SYMBOLS)

|  |  |
| --- | --- |
| Empty Space ( ) | <p>Here I have a double space&nbsp;&nbsp;between the words.</p> |
| Smaller than (<) | <p>2 &lt; 5</p> |
| Greater than (>) | <p>2 &gt; 0</p> |
| Ampersand (&) | <p>Guns &amp; Roses</p> |
| Quotation Marks (") | <p>She said: &quot;I know you&quot;.</p> |
| Apostrophe (') | <p>That&apos;s just the way it is.</p> |
| Number (№) | <p>&numero;</p> |
| Copyright (©) | <p>&copy; All copyrights reserved.</p> |
| Rights Reserved (®) | <p>&reg; All rights reserved.</p> |
| Euro (€) | <p>500 &euro;</p> |
| Pound (£) | <p>500 &pound;</p> |