

Introduction to HTML

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Introduction: What is HTML?

- **HTML** stands for **Hypertext Markup language**
 - A markup language is a language that defines the structure of and presentation of raw text.
- HTML is used to describe the structure of a web page.
- Hypertext is the text displayed on a computer or device that provides access to other text through links called **hyperlinks**.

Sample HTML Document

```
<!DOCTYPE html> <!-- This declaration defines that this document is an HTML5 document -->  
<html>  
  <head> <!-- This is the head, here you add the metadata eg. title and links to css etc -->  
    <title>Page Title</title>  
  </head>  
  <body> <!-- The body of the web page begins here. This is what is displayed on the web -->  
    <h1>My First Heading</h1>  
    <p>My first paragraph</p>  
  </body>  
</html>
```

HTML Elements

- An HTML element is defined by a start tag, some content, and an end tag.
- The HTML **element** is everything from the opening tag to the closing tag:

`<openingtag>Content goes here...</closingtag>`

Examples of some HTML elements:

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

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

- **A tag is the element name (eg, p for paragraph) surrounded by an opening (<) and closing (>) bracket.**

Closing tags have a forward slash (/) inside of them directly after the left angle bracket.

Nested HTML Elements

- HTML elements can be nested, this means that one element can contain other elements.
- In the sample above, the body element contains the h1 and p elements.
- In this case, the body is known as the parent element while h1 and p are child elements.
- The body element is one of the key elements in HTML. Every web page must contain a body. Only content inside the body element is displayed on the web page (you will always use it in html).

Empty HTML Elements

- HTML elements with no content are called empty elements.
- The `
` tag defines a line break, and is an empty element without a closing tag:

Example

**`<p>This is a
 paragraph with a line break.</p>`**

Note:

- HTML tags are not case sensitive.
- That means `<P>` means the as `<p>`
- It is however recommended to lowercase in HTML.

HTML attributes

- HTML attributes provide additional information about HTML elements.
- They are always specified in the opening tag.
- They name/value pairs ie. Name="value"

Example:

-href attribute

-This is used inside the <a> (anchor tag) which defines a hyperlink. href specifies the url of the page the link goes to.

Eg. **Google**

HTML attributes Cont.

- There are many other attributes that you can use with html elements to provide extra information. Eg.
 1. src attribute – used together with the tag to define the image source path.
 2. The width and height attributes – used in tag to specify the width and height of the image in pixels.
 3. Alt attribute – This is required for element. It specifies an alternate text for an image if the image cannot be displayed for any reason.

HTML Headings

- HTML headings are similar to headings in other types of media.
- There are six different levels of headings or heading elements in HTML:
 - <h1> –used for main headings. All other smaller headings are used for sub-headings.
 - <h2>
 - <h3>
 - <h4>
 - <h5>
 - <h6>
- Search engines use the headings to index the structure and content of your web pages.
- Users often skim a page by its headings. It is important to use headings to show the document structure.
- <h1> headings should be used for main headings, followed by <h2> headings, then the less important <h3>, and so on.

HTML Styles

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

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

The ***property*** is a CSS property. The ***value*** is a CSS value. (We will learn more about css tomorrow).

Let's add a background color to a html page:

```
<body style="background-color: blue">
```

```
<h1>Heading</h1>
```

```
<p>This is a paragraph</h1>
```

```
</body>
```

When this html page is displayed on the browser, the background color is set to blue.

You can use the style attribute to set other styles such as text color, fonts, text-alignment etc.

HTML Text Formatting

- HTML contains several elements for defining text with a special meaning.
- Eg. Bold text, italic text, subscript and superscript.
- These elements are used to format Text in HTML.
- `` - Bold text
- `` - Important text
- `<i>` - Italic text
- `` - Emphasized text
- `<mark>` - Marked text/highlighted text.
- `<small>` - Smaller text
- `` - Deleted text
- `<ins>` - Inserted text
- `<sub>` - Subscript text
- `<sup>` - Superscript text

HTML Comments

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

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

Example:

```
<!-- This is a comment -->
```

```
<p>This is a paragraph.</p>
```

```
<!-- Remember to add more information here -->
```

HTML Links

- Links are found in nearly all web pages. Links allow users to click their way from page to page.
- HTML links are hyperlinks. You can click on a link and jump to another document.
- 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.

HTML Links: 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:
 - _self - Default. Opens the document in the same window/tab as it was clicked
 - _blank - Opens the document in a new window or tab
 - _parent - Opens the document in the parent frame
 - _top - Opens the document in the full body of the window
- Experiment with these values and see what happens!

HTML Images

- We add images to html using the element.
- Syntax:

As we already discussed, the src attribute defines the source url or path, while the alt attribute defines the alternate text which is displayed in case the image does not display.

HTML Tables

- They allow us to arrange data into rows and columns.
- A table consists of table cells inside rows and columns.
- **Sample HTML Table**

```
<table>
  <tr>
    <th>Company</th>
    <th>City</th>
    <th>Country</th>
  </tr>
  <tr>
    <td>The Jitu</td>
    <td>Nyeri</td>
    <td>Kenya</td>
  </tr>
  <tr>
    <td>Microsoft</td>
    <td>Seattle</td>
    <td>USA</td>
  </tr>
</table>
```

HTML Tables: Table cells

- Each table cell is defined by a `<td>` tag. This is short for table data.
- Everything between the `<td>` and `</td>` tags is the content of the table cell.
- This can contain all kinds of data; text, images, lists, other tables etc.

HTML Tables: Table Rows

- Each table row starts with `<tr>` and end with a `</tr>` tag. `tr` stands for table row.

HTML Tables: Table headers

- Sometimes you want cells to be headers. In that case, use the <th> (table header) tag instead of the <td> tag. Eg.

```
<table>
  <tr>
    <th>Person 1</th>
    <th>Person 2</th>
    <th>Person 3</th>
  </tr>
  <tr>
    <td>16</td>
    <td>14</td>
    <td>10</td>
  </tr>
</table>
```

The first row of the table will contain headers for each column.

Assignment: Read about colspan and rowspan and create a table that spans over multiple rows and/or columns

HTML Lists

- Lists allow us to group a set of related items in lists.
- Example:

An unordered HTML list:

- Item
- Item
- Item
- Item

An ordered HTML list:

- First item
- Second item
- Third item
- Fourth item

HTML Lists: Unordered List

- An unordered list starts with the `` tag. Each list item starts with the `` 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>
```

HTML Lists: Ordered List

- An ordered list starts with the `` tag. Each list item starts with the `` tag.
- The list items will be marked with numbers by default:
- **Example:**

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

Assignment: Learn about description lists and use them in an html page.

https://www.w3schools.com/html/html_lists.asp

HTML 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

- The <form> element is used to create an html form for user input. It is a container for different types of input elements such as; text fields, checkboxes, radio buttons, submit buttons, etc.

<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.
- I.e.

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

Text Fields

- The `<input type="text">` defines a single-line input for text input.
- **Example:**

```
<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>
```

Note:

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

Radio Buttons

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

`<p>Choose your favorite Web language:</p>`

`<form>`

`<input type="radio" id="html" name="fav_language" value="HTML">`

`<label for="html">HTML</label>
`

`<input type="radio" id="css" name="fav_language" value="CSS">`

`<label for="css">CSS</label>
`

`<input type="radio" id="javascript" name="fav_language" value="JavaScript">`

`<label for="javascript">JavaScript</label>`

`</form>`

Output

- The above form displays the following:

This is how the HTML code above will be displayed in a browser:

Choose your favorite Web language:

- ☐ HTML
- ☐ CSS
- ☐ JavaScript

Checkboxes

- The `<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>
```

Read More About the following:

- HTML Form attributes like action, target, method, autocomplete etc.
- Other HTML form elements like <select>, <textarea>, <button>, etc.
- HTML Input types eg. Button, checkbox, date, text, password,number, file, etc.
- HTML input attributes
- Semantic HTML

Project Assignment

- Create a simple HTML Portfolio landing page.

What it will contain?

-About yourself

- Short bio / description

- Photo

- Social media links

-Skills- A list of all the skills you know.

-Education

- University

- Course name

- University name

- Dates (from-to)

- Highschool

- KCSE

- Name of high school

- Dates(from-to)

-Projects (if any)

- Add any projects you might have undertaken.

-Work Experience

- Add any work experience you might have had if any.

Resources

- <https://www.w3schools.com/html/default.asp>
- <https://www.freecodecamp.org/learn/responsive-web-design/>
- <https://www.codecademy.com/learn/learn-html>