# INTRODUCTION TO WEB TECHNOLOGY

# HTML

**OBJECTIVES**
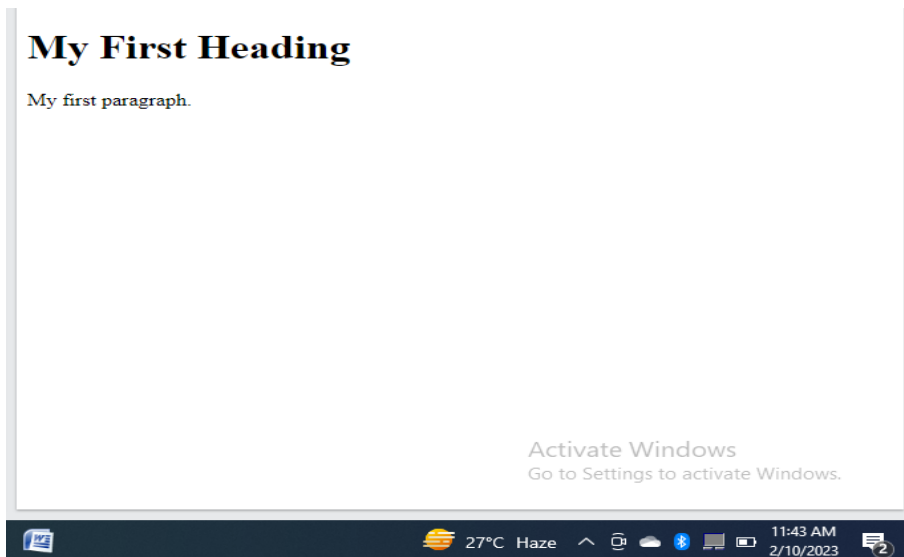
- ➢ Html Basic tags
- ➢ Html Lists
- ➢ Html Links
- ➢ Creation of tables
- ➢ Forms
- ➢ Frames
- ➢ Use of colors
- ➢ Heading and animation

## 6.1. 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.

## Sample Example

```
<!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
- <!...> Comment Symbol. Nothing will happen with this tag.
- 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

### 6.2. What is an HTML Element?

- An HTML element is defined by a start tag, some content, and an end tag:

    Syntax:  <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>

| Start tag | Element content | End tag |
|-----------|-----------------|---------|
| <h1>      | My First Heading | </h1>  |

| | | |
|---|---|---|
| <p> | My first paragraph. | </p> |
| <br> | Enter to new Line | No End Tag |

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

### 6.3. HTML Documents

- Some document tags include <!DOCTYPE html>, <html>, <head>, and <body>
- All HTML documents must start with a document type declaration: <!DOCTYPE html>.
- The HTML document itself begins with <html> and ends with </html>.
- The visible part of the HTML document is between <body> and </body>.
  **Example1:**
  <!DOCTYPE html>
  <html>
  <body>
  <h1>My First Heading</h1>
  <p>My first paragraph.</p>
  </body>
  </html>

### 6.4. The <! DOCTYPE> Declaration

- The <!DOCTYPE> declaration represents the document type, and helps browsers to display web pages correctly.
- All HTML documents must start with a <!DOCTYPE> declaration. **It is an "information" to the browser about what document type to expect**.
- It must only appear once, at the top of the page (before any HTML tags).
- The <!DOCTYPE> declaration for HTML5 is: <!DOCTYPE html>

### 6.5. Nested HTML Elements

- HTML elements can be nested (this means that elements can contain other elements).
- All HTML documents consist of nested HTML elements.
- The following example contains four HTML elements (<html>, <body>, <h1> and <p>):

**Example:**
              You can see the above Example1

3

**Example Explained**

- The <html> element is the root element and it defines the whole HTML document.It has a start tag <html> and an end tag </html>.

- Then, inside the <html> element there is a <body> element. The <body> element defines the document's body. It has a start tag <body> and an end tag </body>.

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

- Then, inside the <body> element there are two other elements: <h1> and <p>.

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

- The <h1> element defines a heading. It has a start tag <h1> and an end tag </h1>:
- The <p> element defines a paragraph. It has a start tag <p> and an end tag </p>.

## 6.6. Never Skip the End Tag

- Some HTML elements will display correctly, even if you forget the end tag. Unexpected results and errors may occur if you forget the end tag!

## 6.7. 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:
- <img> also not have the end tag.

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

## 6.8. HTML is not Case Sensitive

- HTML tags are not case sensitive: <P> means the same as <p>.

## 6.8.1 What is an Attribute in HTML

- Attribute provide additional information about elements.
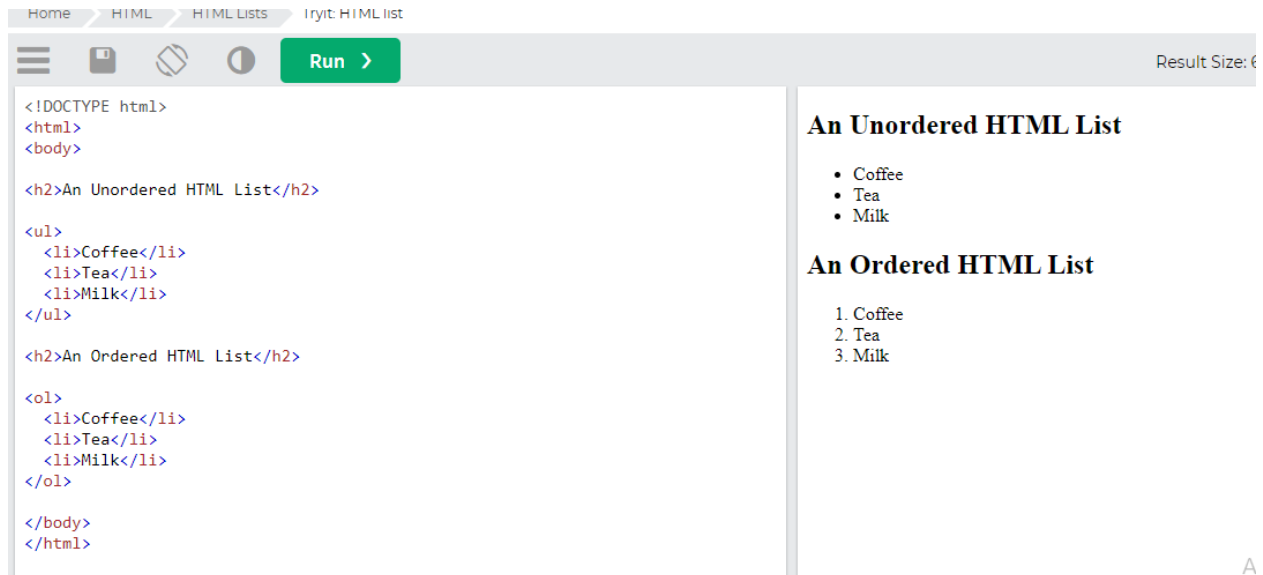
- Attribute are always specified in the start tag.

## 6.9. HTML Tag Reference

| Tag | Description |
| --- | --- |
| <html> | Defines the root of an HTML document |
| <body> | Defines the document's body |
| <h1> to <h6> | Defines HTML headings |
| <!--...--> | Defines a comment |
| <!DOCTYPE> | Defines the document type |
| <a> | Defines a hyperlink |
| <b> | Defines bold text |
| <body> | Defines the document's body |
| <br> | Defines a single line break |
| <dd> | Defines a description/value of a term in a description list |
| <dl> | Defines a description list |
| <dt> | Defines a term/name in a description list |
| <form> | Defines an HTML form for user input |
| <h1> to <h6> | Defines HTML headings |
| <head> | Contains metadata/information for the document |
| <html> | Defines the root of an HTML document |
| <img> | Defines an image |
| <input> | Defines an input control |
| <li> | Defines a list item |
| <ol> | Defines an ordered list |
| <p> | Defines a paragraph |
| <q> | Defines a short quotation |
| <small> | Defines smaller text |
| <strong> | Defines important text |
| <style> | Defines style information for a document |
| <sub> | Defines subscripted text |
| <sup> | Defines superscripted text |
| <table> | Defines a table |
| <td> | Defines a cell in a table |

| | |
|---|---|
| <th> | Defines a header cell in a table |
| <title> | Defines a title for the document |
| <tr> | Defines a row in a table |
| <ul> | Defines an unordered list |

## 6.10. HTML Lists

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

```
<!DOCTYPE html>
<html>
<body>

<h2>An Unordered HTML List</h2>

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

<h2>An Ordered HTML List</h2>

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

</body>
</html>
```

**An Unordered HTML List**

- Coffee
- Tea
- Milk

**An Ordered HTML List**

1. Coffee
2. Tea
3. Milk

## Detailed explanation about Unordered and Ordered HTML List

### 6.10.1. Unordered HTML List

- Item
- Item
- Item
- Item

The HTML <ul> tag defines an unordered (bulleted) 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>
```

**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>
```

# Unordered List with Disc Bullets

- Coffee
- Tea
- Milk

Example - Circle

```
        <ul style="list-style-type:circle;">
         <li>Coffee</li>
         <li>Tea</li>
         <li>Milk</li>
        </ul>
```

# Unordered List with Circle Bullets

- Coffee
- Tea
- Milk

```html
<ul style="list-style-type:square;">
 <li>Coffee</li>
 <li>Tea</li>
 <li>Milk</li>
</ul>
```

## Unordered List with Square Bullets

- Coffee
- Tea
- Milk

```html
<ul style="list-style-type:none;">
 <li>Coffee</li>
 <li>Tea</li>
 <li>Milk</li>
</ul>
```

## Unordered List without Bullets

Coffee
Tea
Milk

**6.10.2. Ordered HTML List**

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

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. The HTML <ol> tag defines an ordered list. An ordered list can be numerical or alphabetical.

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

```
<li>Milk</li>
</ol>
```

**Ordered HTML List - The Type Attribute**

The type attribute of the <ol> tag, defines the type of the list item marker:

| Type | Description |
|------|-------------|
| type="1" | The list items will be numbered with numbers (default) |
| type="A" | The list items will be numbered with uppercase letters |
| type="a" | The list items will be numbered with lowercase letters |
| type="I" | The list items will be numbered with uppercase roman numbers |
| type="i" | The list items will be numbered with lowercase roman numbers |

**Numbers:**

```
<ol type="1">
 <li>Coffee</li>
 <li>Tea</li>
 <li>Milk</li>
</ol>
```

## An ordered HTML list

1. Coffee
2. Tea
3. Milk

**Uppercase Letters:**

```
<ol type="A">
 <li>Coffee</li>
 <li>Tea</li>
 <li>Milk</li>
</ol>
```

# Ordered List with Letters

A. Coffee
B. Tea
C. Milk

**Lowercase Letters:**

```
<ol type="a">
 <li>Coffee</li>
 <li>Tea</li>
 <li>Milk</li>
</ol>
```

# Ordered List with Lowercase Letters

a. Coffee
b. Tea
c. Milk

**Uppercase Roman Numbers:**

```
<ol type="I">
 <li>Coffee</li>
 <li>Tea</li>
 <li>Milk</li>
</ol>
```

# Ordered List with Roman Numbers

I. Coffee
II. Tea
III. Milk

**Lowercase Roman Numbers:**

```
<ol type="i">
 <li>Coffee</li>
 <li>Tea</li>
 <li>Milk</li>
</ol>
```

# Ordered List with Lowercase Roman Numbers

    i. Coffee
   ii. Tea
  iii. Milk

### 6.10.3. Menu list:

- A menu list is a type of unordered list that is commonly used for navigation menus on a web page.

**Example:**

```html
<ul>
  <li><a href="home.html">Home</a></li>
  <li><a href="about.html">About</a></li>
  <li><a href="contact.html">Contact</a></li>
</ul>
```

### 6.11. HTML Description Lists or Definition list.

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.

Example

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

```
<!DOCTYPE html>
<html>
<body>

<h2>A Description List</h2>

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

</body>
</html>
```

**A Description List**

Coffee
    - black hot drink
Milk
    - white cold drink

### 6.12. Nested HTML Lists

- Lists can be nested (list inside list):

Example

```
<ol>
 <li>Coffee</li>
 <li>Tea
  <ol>
    <li>Black tea</li>
    <li>Green tea</li>
  </ol>
 </li>
 <li>Milk</li>
</ol>
```

## A Nested List

Lists can be nested (list inside list):

1. Coffee
2. Tea
   1. Black tea
   2. Green tea
3. Milk

**Note:** A list item (`<li>`) can contain a new list, and other HTML elements, like images and links, etc.

### 6.13. HTML Forms

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

Example

First name:

| John |

Last name:

| Doe |

| Submit |

### 6.13.1. The <form> Element

- The <form> Element in the HTML <form> element is used to create an HTML form for user input:

> <form>
>
> *form elements*
>
> </form>

- The <form> element is a container for different types of input elements, such as: text fields, checkboxes, radio buttons, submit buttons, etc.
- 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 |

### 6.13.2. Text Fields

- The <input type="text"> defines a single-line input field for text input.

Example

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>
```

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

First name:

Last name:

**Note:** The form itself is not visible. Also note that the default width of an input field is 20 characters.

### 6.13.3. 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 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.

### 6.13.4. Radio Buttons

- The <input type="radio"> defines a radio button.

- Radio buttons let a user select ONE of a limited number of choices.

Example

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

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

Choose your favorite Web language:

○  HTML

○  CSS

◉  JavaScript

### 6.13.5. Checkboxes

- The `<input type="checkbox">` defines a **checkbox**.

- Checkboxes let a user select ZERO or MORE options of a limited number of choices.

Example

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>
```

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

☐    I have a bike

☐    I have a car

☐    I have a boat

### 6.13.6. 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.

**Example**

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>
```

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

First name:

| John |

Last name:

| Doe |

| Submit |

### 6.13.7. 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.

```
<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>
```

## The name Attribute

First name:
```
John
```

```
Submit
```

If you click the "Submit" button, the form-data will be sent to a page called "/action_page.php".

Notice that the value of the "First name" field will not be submitted, because the input element does not have a name attribute.

## Without attributes also we can create a form

```
<form>
 <label >First name:</label><br>
 <input type="text" ><br>
 <label >Last name:</label><br>
 <input type="text" >
<label > text box </label> <input type = "text">
<label > radio button </label><input type = "radio">
<label > check box </label> <input type = "checkbox">
<label > submit button </label><input type = "submit">
</form>
```

First name:

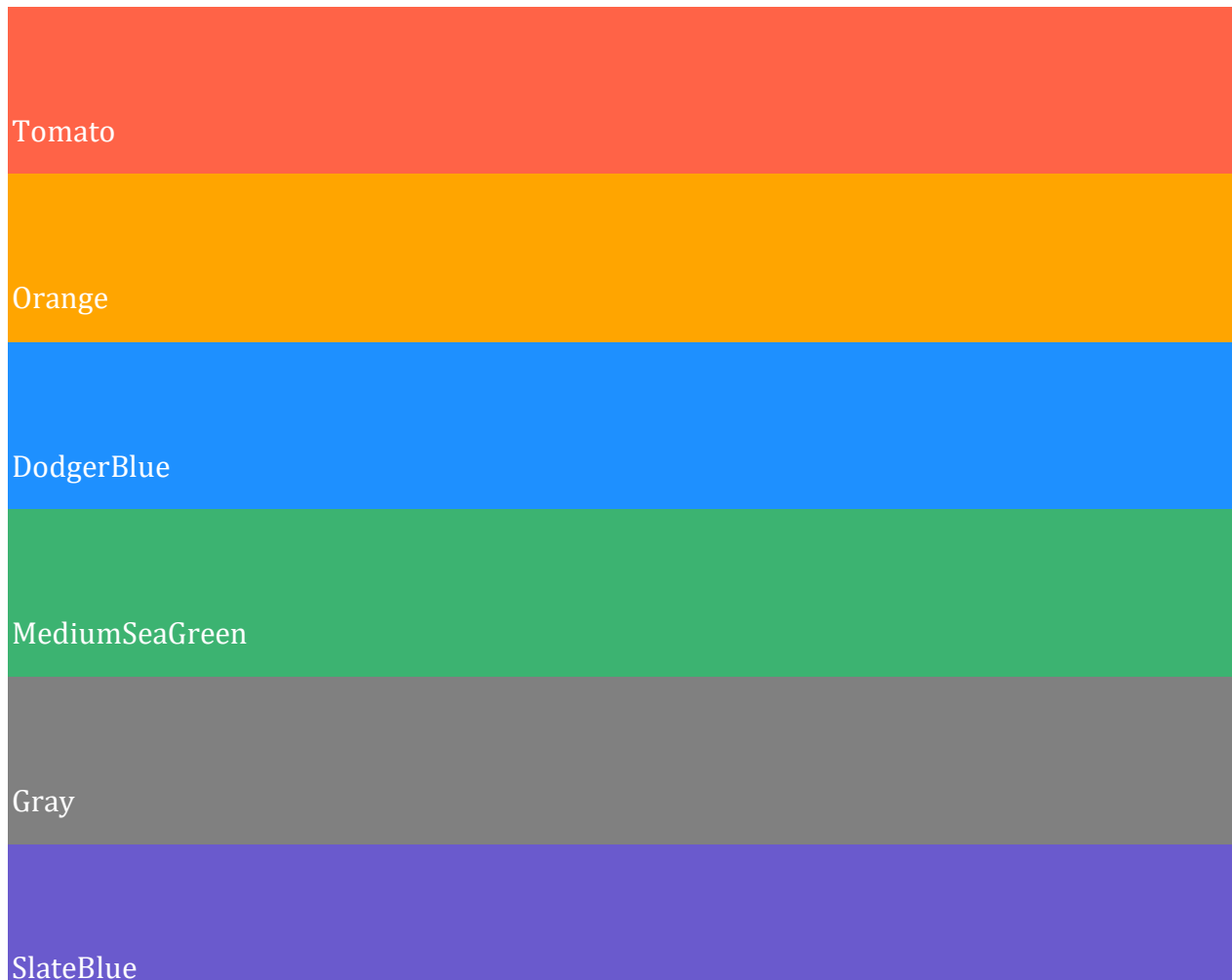Last name:

text box

radio button ○

check box ☐

submit button Submit

## 6.14. HTML Colors

- HTML colors are specified with predefined color names, or with RGB, HEX, HSL, RGBA, or HSLA values.

## 6.14.1 Color Names

- In HTML, a color can be specified by using a color name:

Tomato

Orange

DodgerBlue

MediumSeaGreen

Gray

SlateBlue

<div style="background-color:Violet; color:white;">Violet</div>

### 6.14.2. Background Color

You can set the background color for HTML elements:

<div style="background-color:DodgerBlue; color:white;">Hello World</div>

<div style="background-color:Tomato; color:white;">Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.</div>

Example

```
<h1 style="background-color:DodgerBlue;">Hello World</h1>
<p style="background-color:Tomato;">Lorem ipsum...</p>
```

### 6.14.3. Text Color

- You can set the color of text:

Hello World

Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.

Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.

Example

```
<h1 style="color:Tomato;">Hello World</h1>
<p style="color:DodgerBlue;">Lorem ipsum...</p>
<p style="color:MediumSeaGreen;">Ut wisi enim...</p>
```

### 6.14.4. Border Color

- You can set the color of borders:

Hello World

Hello World

Hello World

Example

```
<h1 style="border:2px solid Tomato;">Hello World</h1>
<h1 style="border:2px solid DodgerBlue;">Hello World</h1>
<h1 style="border:2px solid Violet;">Hello World</h1>
```

### 6.14.5. Color Values

The following three <div> elements have their background color set with RGB values:

**rgb(255, 99, 71)**

**#ff6347**

**hsl(9, 100%, 64%)**

Example

```
<h1 style="background-color:rgb(255, 99, 71);">...</h1>
<h1 style="background-color:#ff6347;">...</h1>
<h1 style="background-color:hsl(9, 100%, 64%);">...</h1>

<h1 style="background-color:rgba(255, 99, 71, 0.5);">...</h1>
<h1 style="background-color:hsla(9, 100%, 64%, 0.5);">...</h1>
```

Same as color name "Tomato":

**rgb(255, 99, 71)**

**#ff6347**

**hsl(9, 100%, 64%)**

Same as color name "Tomato", but 50% transparent:

**rgba(255, 99, 71, 0.5)**

**hsla(9, 100%, 64%, 0.5)**

In addition to the predefined color names, colors can be specified using RGB, HEX, HSL, or even transparent colors using RGBA or HSLA color values.

### 6.15. HTML Heading

- In this article, we will know **HTML Headings**, & their implementation through examples.
- An HTML heading tag is used to define the headings of a page.
- There are six levels of headings defined by HTML.
- These 6 heading elements are h1, h2, h3, h4, h5, and h6.
- With h1 being the highest level and h6 being the least.
- **<h1>** is used for the main heading. (Biggest in size)
- **<h2>** is used for subheadings if there are further sections under the subheadings then the **<h3>** elements are used.
- **<h6>** for the small heading (smallest one).
- Browsers display the contents of headings in different sizes. The exact size at which each browser shows the heading can vary slightly. Users can also adjust the size of the text in their browser.

**Syntax:**

// the 'h' inside the tag should be in small case only.

<h1>Heading1</h1>

<h2>Heading2</h2>

<h3>Heading3</h2>

<h4>Heading4</h2>

<h5>Heading5</h2>

<h6>Heading6</h6>

**6.15.1. Importance of Heading:**
- Search Engines use headings for indexing the structure and organizing the content of the webpage.
- Headings are used for highlighting important topics.
- They provide valuable information and tell us about the structure of the document.

**Example 1:** This example illustrates the HTML heading tags.

```
<!DOCTYPE html>
<html>
<body>
  <h1>Welcome to RGUKT</h1>
  <h2>A portal for RGUKT</h2>
  <h5>Website</h5>
  <h6>www.rgukt.ac.in</h6>
</body>
</html>
```

**Output:**

# Welcome to RGUKT

## A portal for RGUKT

##### Website

www.rgukt.ac.in

**Changing the size of HTML Headings:** The default size of HTML headings can be changed, using the style attribute.

**Example:** This example explains the HTML heading tags by specifying the size of the font.

```
<!DOCTYPE html>
<html>
<body>
  <h1>H1 Heading</h1>

  <h1 style="font-size: 50px">H1 with new size.</h1>
</html>
```
HTML
**Output:**

# H1 Heading

# H1 with new size.

**6.16. 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.
- When you move the mouse over a link, the mouse arrow will turn into a little hand.

**6.16.1. 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.
- Clicking on the link text, will send the reader to the specified URL address.
  Example:

      `<a href="https://www.rgukt.ac.in/">Visit RGUKT!</a>`

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

  - An unvisited link is underlined and blue
  - A visited link is underlined and purple
  - An active link is underlined and red

**Absolute URLs vs. Relative URLs**

- In the above example is 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):

Example

      `<h2>Absolute URLs</h2>`
      `<p><a href="https://www.rgukt.ac.in/">RGUKT</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>
```

## Absolute URLs

RGUKT

Google

## Relative URLs

HTML Images

CSS Tutorial

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

## Image as a Link

The image below is a link. Try to click on it.

**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 to an Email Address

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

Send email

**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:

Example

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

## Button as a Links

Click the button to go to the HTML tutorial.

HTML Tutorial

**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.google.com/html/" title="Go to google">Visit our HTML Tutorial</a>
```

Visit our HTML Tutorial

Go to google

https://www.google.com/html/

**HTML Link Tags**

| Tag | Description |
| --- | --- |
| <a> | Defines a hyperlink |

**6.17. Image and image maps:**

- Images can be added to a web page using the <img> tag.

- Image maps are used to create clickable areas within an image.

- The source file (src), alternative text (alt), width, and height are provided as attributes

- Example of an image tag:

```
<img src="example.jpg" alt="Example image">
```

- **<body** background = "image.gif">   it applied to web page background.

## 6.18. 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 |

## 6.18.1. Define an HTML Table

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

Example

A simple HTML table: to create a border line use CSS format given bellow

```
<html>
<head>
<style>
Table, th, td { border: 1px solid black;}
</style>
</head>
<body>
<table style="width:50%">
 <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>
     </body>
    </html>
```

## A basic HTML table

| Company | Contact | Country |
|---|---|---|
| Alfreds Futterkiste | Maria Anders | Germany |
| Centro comercial Moctezuma | Francisco Chang | Mexico |

To understand the example better, we have added borders to the table.

### 6.18.2. 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.

Example

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

## TD elements define table cells

| Emil | Tobias | Linus |
|------|--------|-------|

To understand the example better, we have added borders to the table.

> **Note:** A table cell can contain all sorts of HTML elements: text, images, lists, links, other tables, etc.

### 6.18.3. Table Rows

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

Example

```
<table>
 <tr>
  <td>Emil</td>
  <td>Tobias</td>
  <td>Linus</td>
 </tr>
 <tr>
  <td>16</td>
  <td>14</td>
  <td>10</td>
 </tr>
</table>
```

## TR elements define table rows

| Emil | Tobias | Linus |
|------|--------|-------|
| 16   | 14     | 10    |

To understand the example better, we have added borders to the table.

- You can have as many rows as you like in a table; just make sure that the number of cells is the same in each row.

> **Note:** There are times when a row can have less or more cells than another. You will learn about that in a later chapter.

### 6.18.4. Table Headers

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

Example

Let the first row be table header cells:

```
<table>
 <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>
 <tr>
  <td>16</td>
  <td>14</td>
  <td>10</td>
 </tr>
</table>
```

- By default, the text in `<th>` elements are bold and centered, but you can change that with CSS.

## TH elements define table headers

| Person 1 | Person 2 | Person 3 |
|---|---|---|
| Emil | Tobias | Linus |
| 16 | 14 | 10 |

To understand the example better, we have added borders to the table.

### 6.19. Frames and their division:

- Frames are used to divide a web page into separate sections, each of which can display a different web page.

- Frames are created using the <frameset>, <frame>, and <noframes> tags.

- Here we will show one HTML page displayed with four different stylesheets. With using CSS **(Cascading Style Sheets)**



- Click on the "Stylesheet 1" you can see one page with their content.
- Click on the "Stylesheet 2" you can see one page with their content.
- Click on the "Stylesheet 3" you can see one page with their content.
- Click on the "Stylesheet 4" you can see one page with their content.

### 6.20. Use of colors, headings, and animation:

- Colors can be added to text and background using CSS.
- Headings are used to create headings and subheadings on a web page.
- Animation can be added to web pages using CSS and JavaScript.
- Example with using CSS:

```css
body {
  background-color: #f0f0f0;
}

h1 {
  font-size: 36px;
  color: blue;
}

@keyframes example {
  0% { background-color: red; }
  50% { background-color: yellow; }
  100% { background-color: green; }
}

div {
  animation-name: example;
  animation-duration: 3s;
  animation-iteration-count: infinite;
}
```

# Assignment

**One or Two marks questions.**

1) What is HTML?
2) What is an element?
3) Do all HTML tags have an end tag? Give examples?
4) How to create a hyperlink in HTML?
5) How many types of heading does an HTML contain? Explain it?
6) Does a <!DOCTYPE html> tag is a HTML tag?
7) How to make a picture of a background image of a web page?

**Four Mark Questions**

8) Which HTML tags is used to display the data in the tabular form and give the tag names and describe?
9) What are some common lists that are used when designing a page? Explain with examples?
10) Can you create a multi-colored text on a web page? Explain it?

**Web Page Creation**

11) Create a given file

# HTML basics

HTML (HyperText Markup Language) is the code that is used to structure a web page and its content. For example, content could be structured within a set of paragraphs, a list of bulleted points, or using images and data tables. As the title suggests, this article will give you a basic understanding of HTML and its functions.

## So what is HTML?

HTML is a markup language that defines the structure of your content. HTML consists of a series of elements, which you use to enclose, or wrap, different parts of the content to make it appear a certain way, or act a certain way. The enclosing tags can make a word or image hyperlink to somewhere else, can italicize words, can make the font bigger or smaller, and so on. For example, take the following line of content: *My cat is very grumpy* If we wanted the line to stand by itself, we could specify that it is a paragraph by enclosing it in paragraph tags:

### Some Basic creations

1. we can create Paragraph---- p with <>
2. lists
    i. we can create Ordered list---ol
    ii. we can create unordered list--ul
    iii. we can create Menu list-------ul
    iv. we can create Description list----dl
3. headings

# . Heading1

## . Heading2

### ∘ Heading3

#### Heading4

##### ∘ Heading5

###### ∘ Heading6

4. Forms
    1. we can create applications like
    - text box
    - radio button ○
    - check box ☐
    - submit button Submit
5. Colors
    a. Back Ground
    b. text color
    c. Border
    d. Color Values
6. Hyperlinks
    1. we can create a hyper links with
7. Image Insertion

    1.                                                      image

**Note:** In place of image you can use bellow smily.png with given effect. You have to down load from google.com and apply given effect.

<center><img src="smily.png" style="width:42px;height:42px;">

# MCQs

1) HTML stands for –
   a. Hyper Text and links Markup Language
   **b. Hyper Text Markup Language**
   c. None of these

2) The correct sequence of HTML tags for starting a webpage is -
   a. HTML, Body, Title, Head
   b. HTML, Head, Title, Body
   **c. HTML, Head, Title, Body**

3) Which of the following element is responsible for making the text bold in HTML?
   a. <a>
   **b. <b>**
   c. <br>

4) Which of the following tag is used for inserting the big heading in HTML?
   a. <h3>
   **b. <h1>**
   c. <h5>
   d. <h6>

5) Which of the following tag is used to insert a line-break in HTML?
   **a. <br>**
   b. <a>
   c. <pre>
   d. <b>

6) How to create an unordered list (a list with the list items in bullets) in HTML?
   a. <ol>
   b. <li>
   c. <i>
   **d. <ul>**

7) Which character is used to represent the closing of a tag in HTML?
   a. \
   b. !
   **c. /**
   d. .

8) How to create a hyperlink in HTML?
   a. <a url = ""www.google.com" google.com /a>
   b. <a link = "www.google.com"> google.com </a>
   c. <a> www.google.com google.com /a>
   **d. <a href = "www.google.com"> google.com</a>**

9) How to create an ordered list (a list with the list items in numbers) in HTML?
   **a. <ol>**

b. &lt;li&gt;

c. &lt;i&gt;

10) Which of the following element is responsible for making the text italic in HTML?

   **a. &lt;i&gt;**

   b. &lt;italic&gt;

   c. &lt;it&gt;

   d. &lt;pre&gt;

11) How to insert an image in HTML?

   **a. &lt;img href = "jtp.png" /&gt;**

   b. &lt;img url = "jtp.png" /&gt;

   c. &lt;img link = "jtp.png" /&gt;

   d. &lt;img src = "jtp.png" /&gt;

12) &lt;input&gt; is -

   **a. a format tag.**

   b. an empty tag.

   c. All of the above

   d. None of the above

13) Which of the following tag is used to make the underlined text?

   a. &lt;i&gt;

   b. &lt;ul&gt;

   **c. &lt;u&gt;**

   d. &lt;pre&gt;

14) How to create a checkbox in HTML?

   **a. &lt;input type = "checkbox"&gt;**

   b. &lt;input type = "button"&gt;

   c. &lt;checkbox&gt;

   d. &lt;input type = "check"&gt;

15) HTML tags are enclosed in-

   a. { and }

   b. ! and ?

   **c. &lt; and &gt;**

16) Which of the following tag is used to add rows in the table?

a.    &lt;td&gt; and &lt;/td&gt;

   b. &lt;th&gt; and &lt;/th&gt;

   **c. &lt;tr&gt; and &lt;/tr&gt;**

   d. None of the above

17) Which of the following attribute is used to provide a unique name to an element?

   a. class

   **b. id**

   c. type

   d. None of the above

18) Which of the following is the container for <tr>, <th>, and <td> ?

    a. <data>

    **b. <table>**

    c. <group>

    d. All of the above

19) How to insert a background image in HTML?

    **a. <body background = "img.png">**

    b. <img background = "img.png">

    c. <bg-image = "img.png">

    d. None of the above

20) What are the types of unordered or bulleted list in HTML?

    a. disc, square, triangle

    b. polygon, triangle, circle

    **c. disc, circle, square**

    d. All of the above

21) Which of the following is the correct way to create a list using the lowercase letters?

    a. <ol alpha = "a" >

    **b. <ol type = "a">**

    c. <ol letter = "a">

    d. None of the above

22) Which of the following is the paragraph tag in HTML?

    **a. <p>**

    b. <b>

    c. <pre>

    d. None of the above

23) An HTML program is saved by using the ___ extension.

    a. .ht

    **b. .html**

    c. .hml

    d. None of the above

24) A program in HTML can be rendered and read by -

    **a. Web browser**

    b. Server

    c. Interpreter

    d. None of the above

25) The tags in HTML are -

    a. case-sensitive

    b. in upper case

    **c. not case sensitive**

    d. in lowercase

26) Which of the following is the root tag of the HTML document?

    a. &lt;body&gt;

    b. &lt;head&gt;

    c. &lt;title&gt;

    **d. &lt;html&gt;**

27) In HTML5, which of the following tag is used to initialize the document type?

    a. &lt;Doctype HTML&gt;

    b. &lt;\Doctype html&gt;

    c. &lt;Doctype&gt;

    **d. &lt;!DOCTYPE html&gt;**

28) Which is the correct way to comment out something in HTML?

    a. Using ## and #

    **b. Using &lt;!-- and --&gt;**

    c. Using &lt;/-- and -/-&gt;

    d. Using &lt;-- and -!&gt;

29) Which HTML tag is used to display the power in expression, i.e., $(x^2 - y^2)$?

    **a. &lt;sup&gt;**

    b. &lt;sub&gt;

    c. &lt;p&gt;

    d. None of the above

30) Which HTML tag is used to display the power in expression, i.e., $(x_2 - y_2)$?

    a. &lt;sup&gt;

    **b. &lt;sub&gt;**

    c. &lt;p&gt;

    d. None of the above