

## Web programming

### Unit - I

#### HTML Introduction

HTML is the standard markup language for creating Web pages.

- HTML stands for Hyper Text Markup Language
- HTML describes the structure of Web pages using markup
- HTML elements are the building blocks of HTML pages
- HTML elements are represented by tags
- HTML tags label pieces of content such as "heading", "paragraph", "table", and so on
- Browsers do not display the HTML tags, but use them to render the content of the page

#### Browser:

- The **web browser** is an application program that displays a www (**World Wide Web**) document.
- It usually uses other internet services to access the document.
- Web browsers like Internet Explorer, Firefox, Chrome, and Safari rank among the most popular network applications in the world.

#### Server:

- The **Web server** is a program or a computer.
- That can provide services to other programs called clients.
- Web servers are supply the content for web browsers.
- The browser requests, the server delivers through Internet network connections.

#### The role of HTTP:

- HTTP full form *HyperText Transfer Protocol*.
- It used mainly to access data on the World Wide Web.
- HTTP is a Server and Client communication Protocol.
- which is primarily set of rules for formating and transferring webpage data (text, images, video and Multimedia files) over the world wide web.
- This is the Protocol used to create communication between Web Servers and Web Users.
- HTTP is an application layer Protocol that works on the top of the TCP/IP suite of Protocols.
- HTTP protocol basically uses server and client model.
- It acts as a request-response protocol.

### Structure of HTML program:

- 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>`.

### Example:

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>
<h1>My First Heading</h1>
<p>My first paragraph.</p>
</body>
</html>
```

### Output:

#### My First Heading

My first paragraph.

### Example Explained:

- The `<!DOCTYPE html>` declaration defines this document to be HTML5
- The `<html>` element is the root element of an HTML page
- The `<head>` element contains meta information about the document
- The `<title>` element specifies a title for the document
- The `<body>` element contains the visible page content
- The `<h1>` element defines a large heading
- The `<p>` element defines a paragraph

### HEAD tag:

- The `<head>` element is a container for all the head elements.
- The `<head>` element can include a title for the document, scripts, styles, meta information, and more.

The following elements can go inside the `<head>` element:

- `<title>` (this element is required in an HTML document)

- <style>
- <base>
- <link>
- <meta>
- <script>
- <noscript>

### **BODY tag:**

- The HTML <body> tag is used for indicating the main content section of the HTML document.
- The body tag is placed between the </head> and the </html> tags.
- The <body> element contains all the contents of an HTML document, such as text, hyperlinks, images, tables, lists, etc.

#### **Example:**

```
<!DOCTYPE html>
<html>
<head><title>Title of the document</title></head>
<body>The content of the document.....</body>
</html>
```

#### **Output:**

The content of the document.....

### **Paragraph tag:**

- The HTML <p> tag is used for defining a paragraph.
- The <br> tag for creating a line break within a paragraph.

#### **Example:**

```
<!DOCTYPE html>
<html><body>
<p>This is a paragraph.</p>
<p>This is a paragraph.</p>
<p>This is a paragraph.</p>
</body></html>
```

#### **Output:**

This is a paragraph.  
This is a paragraph.  
This is a paragraph.

## HTML page formatting basics:

- It is used to HTML **style attribute**.
- HTML also defines special **elements** for defining text with a special **meaning**.
- HTML uses elements like `<b>` and `<i>` for formatting output, like **bold** or *italic* text.

Formatting elements were designed to display special types of text:

- `<b>` - Bold text
- `<strong>` - Important text
- `<i>` - Italic text
- `<em>` - Emphasized text
- `<mark>` - Marked text
- `<small>` - Small text
- `<del>` - Deleted text
- `<ins>` - Inserted text
- `<sub>` - Subscript text
- `<sup>` - Superscript text

### Example:

```
<!DOCTYPE html>
<html>
<body>
<p><b>This text is bold</b></p>
<p><i>This text is italic</i></p>
<p>This is<sub> subscript</sub> and <sup>superscript</sup></p>
<p><em>This text is emphasized.</em></p>
<h2>HTML <small>Small</small> Formatting</h2>
</body>
</html>
```

### Output:

**This text is bold**

*This text is italic*

This is subscript and superscript

*This text is emphasized.*

### HTML Small Formatting

## Unit – II

### LISTS

- HTML Lists are used to specify lists of information.
- All lists may contain one or more list elements.

There are two different types of HTML lists:

1. Ordered List or Numbered List (ol)
2. Unordered List or Bulleted List (ul)

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#### HTML Ordered List or Numbered List

- In the ordered HTML lists, all the list items are marked with numbers.
- It is known as numbered list also.
- The ordered list starts with <ol> tag and the list items start with <li> tag.

#### Example:

1. <ol>
2. <li>Aries</li>
3. <li>Bingo</li>
4. <li>Leo</li>
5. <li>Oracle</li>
6. </ol> **Test it Now**

#### Output:

1. Aries
2. Bingo
3. Leo
4. Oracle

#### HTML Unordered List or Bulleted List

- In HTML Unordered list, all the list items are marked with bullets.
- It is also known as bulleted list also.
- The Unordered list starts with <ul> tag and list items start with the <li> tag.

#### Example:

- ```
<ul>
<li>Aries</li>
```

```
<li>Bingo</li>
<li>Leo</li>
<li>Oracle</li>
</ul> Test it Now
```

**Output:**

- Aries
- Bingo
- Leo
- Oracle

**Marquee tag**

- The **Marquee HTML** tag is a non-standard HTML element.
- It is used to scroll a image or text horizontally or vertically.
- In simple words, scrolls the image or text up, down, left or right automatically.
- Marquee tag was first introduced in early versions of Microsoft's Internet Explorer.

**Example:**

```
<!DOCTYPE html>
<html>
<body>
<marquee>This is an example of html marquee </marquee>
</body>
</html>
```

**Output:**

.  
This is an example of html marquee

**Break tag:**

- HTML <br> tag or element is used to break line in a paragraph.
- It is generally used in poem or address where the division of line is necessary.
- It is an empty tag, means it does not need a company of end tag.

**Example:**

```
<!DOCTYPE html>
<html><body>
<p>To break lines<br>in a text,<br>use the br element.</p>
</body></html>
```

## Output:

To break lines  
in a text,  
use the br element.

## Ruler (or) hr tag

- HTML <hr> tag is used to specify a paragraph-level thematic break in HTML document.
- It is used to change your topic in your HTML document.
- It draws a horizontal line between them. It is also called a Horizontal Rule in HTML.

## Example:

```
<!DOCTYPE html>
<html><body>
<h1>HTML</h1>
<p>HTML is a language for describing web pages.</p>

<hr>

<h1>CSS</h1>
<p>CSS defines how to display HTML elements.</p>
</body></html>
```

## Output:

### HTML

HTML is a language for describing web pages.

---

### CSS

CSS defines how to display HTML elements.

## Font tag:

- The HTML <font> tag defines the font size, color and face of text in the HTML document.
- this tag was removed in HTML5.
- it is recommended that you use CSS properties such as font, font-family, font-size and color to format the text in the document.
- This tag is also commonly referred to as the <font> element.

**Example:**

```
<!DOCTYPE html>
<html><body>
<p><font size="3" color="red">This is some text!</font></p>

<p><font size="2" color="blue">This is some text!</font></p>

<p><font face="verdana" color="green">This is some text!</font></p>
</body></html>
```

**Output:**

This is some text!

This is some text!

This is some text!

**Data definition tag:**

- The <dd> element is used to pair a definition description with a sibling definition term enclosed in <dt> tags within a parent definition list.

**Example**

```
<dl>
<dt>HTML</dt>
<dd>Hypertext Markup Language, the language for authoring web documents.</dd>
<dt>CSS</dt>
<dd>Cascading Style Sheets, the language for defining the styles and presentation of an HTML
document.</dd>
</dl>
```

**Output:**

**HTML**

Hypertext Markup Language, the language for authoring web documents.

**CSS**

Cascading Style Sheets, the language for defining the styles and presentation of an HTML document.



## Unit – III

### Tables

- A **table** is an arrangement of information in **rows** and **columns** containing **cells**.
- that make comparing and contrasting information easier.
- **HTML Table** is defined with the <table> tag and then table row <tr> and cells <td>.
- Till 2005, whole webpage was build using table element, but later or Div Based Layouts becomes popular.

#### Example:

```
<table>  
  
<tr> <th>Name</th> <th>Favorite Color</th> </tr>  
  
<tr> <td>Gopi</td> <td>Yellow</td> </tr>  
  
<tr> <td>kutty</td> <td>Purple</td> </tr>  
  
</table>
```

#### Output:

Name	Favorite Color
Gopi	Yellow
Kutty	Purple

#### Attributes of table:

- It is a list of attributes of table tag.
- All presentational attributes are not used in Html5.

<b>Attribute</b>	<b>Use</b>
Width	width of table or table cell <b>Removed in html5</b>
Height	height of table or table cell <b>Removed in html5</b>
Align	align text in table <b>Removed in html5</b>
Valign	vertically align text in table cell <b>Removed in html5</b>
Border	border width of table in px <b>Removed in html5</b>
Bgcolor	background color of table <b>Removed in html5</b>
Cellspacing	gap between table cells <b>Removed in html5</b>
Cellpadding	gap inside table cells <b>Removed in html5</b>
Colspan	used to group columns in same row.
Rowspan	used to group columns in next row.

**Table Tags :**

- It is a list of Tags used in table.
- Table is started with <table> tag.
- Inside table tag, we can have rows <tr> and columns <td>.

Tag Name	Description
<table>	Defines a table Element
<tr>	Defines a table row
<td>	Defines a table cell or table data
<th>	Defines a table header cell
<caption>	Defines a table caption
<colgroup>	Defines a group of columns in a table, for formatting
<col>	Defines attribute values for one or more columns in a table
<thead>	Groups the header content in a table
<tbody>	Groups the body content in a table
<tfoot>	Groups the footer content in a table

**Table Header tag:**

- **th** or **table head** is used inside table row with <th> tag.
- All major browsers display the text inside <th> element as **strong and centre aligned**.

**Example:**

```
<table border="1">
  <tr>
```

```
<th>Name</th>
<th>Age</th>
</tr>
<tr>
<td>Ram</td>
<td>21</td>
</tr>
<tr>
<td>Selva</td>
<td>20</td>
</tr>
</table>
```

**Output:**

Name	Age
Ram	21
Selva	20

**Table row tag:**

- The <tr> element is used to group together <th> or <td> values into a single row of table heading or data values.
- The <tr> element may be a direct child of a <table> element or nested within a parent <thead>, <tfoot>, or <tbody> element.

**Example**

```
<table>
<tr>
<th>A</th>
<th>Heading</th>
<th>Row</th>
</tr>
<tr>
<td>The first</td>
<td>row of</td>
<td>table data</td>
</tr>
<tr>
<td>The second</td>
<td>row of</td>
```

```
<td>table data</td>  
</tr></table>
```

**Output:**

<b>A</b>	<b>Heading</b>	<b>Row</b>
The first	row of	table data
The second	row of	table data

**Table data tag:**

- The `<td>` element creates a single data cell in an HTML `<table>`.
- Data cells must be used as child elements of a parent `<tr>`, and the resulting group of `<td>` elements will be rendered as a single table row in a `<table>`.

**Example:**

```
<table>  
<tr>  
  <th>Awesome</th>  
  <th>Acceptable</th>  
  <th>Ugh</th>  
</tr>  
<tr>  
  <td>Saturday</td>  
  <td>Thursday</td>  
  <td>Monday</td>  
</tr>  
<tr>  
  <td>Sunny</td>  
  <td>Partly Cloudy</td>  
  <td>Wintery Mix</td>  
</tr>  
<tr> <td>Comfortable</td>  
  <td>Cool</td>  
  <td>Frigid</td>  
</tr></table>
```

**Output:**

Awesome	Acceptable	Ugh
Saturday	Thursday	Monday
Sunny	Partly Cloudy	Wintery Mix

Comfortable	Cool	Frigid
-------------	------	--------

**Row span**

- **Rowspan** attribute can merge two more rows in a table.
- Default value of **rowspan** is 1, and minimum assigned value of **rowspan** is 2.

**Example:**

```
<table border="1">
  <tr>
    <th>S No</th>
    <th>Name</th>
    <th>Class</th>
  </tr>
  <tr>
    <td>1</td>
    <td>abc</td>
    <td rowspan="2">9th</td>
  </tr>
  <tr>
    <td>2</td>
    <td>pqr</td>
  </tr>
  <tr>
    <td>3</td>
    <td>xyz</td>
    <td rowspan="2">7th</td>
  </tr>
  <tr>
    <td>4</td>
    <td>xyz</td>
  </tr>
  <tr>
    <td colspan="2">Total</td>
    <td>4</td>
  </tr> </table>
```

**Output:**

S No	Name	Class
1	Abc	9 <sup>th</sup>
2	Jkl	
3	Pqr	7 <sup>th</sup>
4	Xyz	
Total		4

Total	4
-------	---

**Column span:**

**Colspan** attribute is used to merge two or more columns in one. The Minimum value for **colspan** is 2 and default value is 1.

**Example:**

```
<table border="1">
  <tr>
    <th>S No</th>
    <th>Name</th>
    <th>Email Id</th>
    <th>Score</th>
  </tr>
  <tr>
    <td>1</td>
    <td>abc</td>
    <td>abc@domain.com</td>
    <td>88</td>
  </tr>
  <tr>
    <td>2</td>
    <td>xyz</td>
    <td>xyz@domain.com</td>
    <td>78</td>
  </tr>
  <tr>
    <td colspan="3">Total</td>
    <td>166</td>
  </tr>
</table>
```

**Output:**

S No	Name	Email Id	Score
1	abc	abc@domain.com	88
2	xyz	xyz@domain.com	78
Total			166

## Unit – IV

### LINKS

- A link is an HTML object.
- that allows jump to a new location when you click or tap.
- Links are found on almost every webpage and provide a simple means of navigating between pages on the web.
- Links can be attached to text, images, or other HTML elements.

#### Linking page using anchor tag:

- The **HTML anchor tag** defines a *hyperlink that links one page to another page*.
- The "href" attribute is the most important attribute of the HTML a tag.

#### Example:

```
<!DOCTYPE>
<html>
<body>
<a href="second.html">Click for Second Page</a>
</body>
</html>
```

#### Output:

[Click for Second Page](#)

#### Attributes of the **anchor** tag

Attribute	Value	Description
<a href="#">charset</a>	<i>char_encoding</i>	Specifies the character-set of a linked document
<a href="#">coords</a>	<i>Coordinates</i>	Specifies the coordinates of a link



<a href="#">download</a>	<i>Filename</i>	Specifies that the target will be downloaded when a user clicks on the hyperlink
<a href="#">href</a>	<i>URL</i>	Specifies the URL of the page the link goes to
<a href="#">hreflang</a>	<i>language_code</i>	Specifies the language of the linked document
<a href="#">media</a>	<i>media_query</i>	Specifies what media/device the linked document is optimized for
<a href="#">name</a>	<i>section_name</i>	<b>Use the global <a href="#">id attribute</a> instead.</b> Specifies the name of an anchor
<a href="#">ping</a>	<i>list_of_URLs</i>	Specifies a space-separated list of URLs to which, when the link is followed, post requests with the body ping will be sent by the browser (in the background). Typically used for tracking.
<a href="#">rel</a>	Alternate author bookmark external help license next no follow no referrer no opener prev search tag	Specifies the relationship between the current document and the linked document
<a href="#">rev</a>	<i>Text</i>	<b>Not supported in HTML5.</b> Specifies the relationship between the linked document and the current document

<a href="#">shape</a>	default rect circle poly	<b>Not supported in HTML5.</b> Specifies the shape of a link
<a href="#">target</a>	_blank _parent _self _top <i>framename</i>	Specifies where to open the linked document
<a href="#">type</a>	<i>media_type</i>	Specifies the media type of the linked document

### HTML Image tag

- **HTML img tag** is used to display image on the web page.
- HTML img tag is an empty tag that contains attributes only, closing tags are not used in HTML image element.

#### Example:

```
<!DOCTYPE>  
<html>  
<body>  
<h2>HTML Image Example</h2>  
  
</body>  
</html>
```

#### Output:

#### HTML Image Example



### **Attributes of HTML img tag**

- The src and alt are important attributes of HTML img tag.

All attributes of HTML image tag are given below.

#### **1) src**

- It is a necessary attribute that describes the source or path of the image.
- It instructs the browser where to look for the image on the server.
- The location of image may be on the same directory or another server.

#### **2) alt**

- The alt attribute defines an alternate text for the image, if it can't be displayed.
- The value of the alt attribute describe the image in words.
- The alt attribute is considered good for SEO prospective.

#### **3) width**

- It is an optional attribute which is used to specify the width to display the image.
- It is not recommended now. You should apply CSS in place of width attribute.

#### **4) height**

- It specifies the height of the image.
- The HTML height attribute also supports iframe, image and object elements.
- It is not recommended now. You should apply CSS in place of height attribute.

### **Frame tag:**

- HTML frames are used to divide your browser window into multiple sections Each section can load a separate HTML document.
- A collection of frames in the browser window is known as a frameset.
- The window is divided into frames in a similar way the tables are organized: into rows and columns.

### **Example:**

```
<!DOCTYPE html>
<html>

<frameset cols="25%,*,25%">
  <frame src="frame_a.htm">
  <frame src="frame_b.htm">
  <frame src="frame_c.htm">
</frameset></html>
```

## Unit – IV

### Forms

- HTML Forms are collecting some data from the site visitor.
- A form will take input from the site visitor and then will post it to a back-end application such as ASP Script or PHP script etc.
- The back-end application will perform required processing on the passed data based on defined business logic inside the application.

#### Example:

The user registration likes to collect information such as name, email address, mobile number, etc.

#### Form tag:

- The <form> element is used to create an HTML form.
- The <form> element does not actually create form fields, but is used as a parent container to hold form fields such as <input> and <textarea> elements.
- The <form> element is included in an HTTP.
- The request is made to a URL defined in the form's **action** attribute.
- The type of request (**GET** or **POST**) is defined in the form's **method** attribute.

#### Example

```
<form action="" method="GET">
<label for="name">Name</label>
<input name="name" id="name">
<input type="submit">
</form>
```

Top of Form

#### Output:

Name

### Input tag:

- The `<input>` element is used to create form fields that accept user input.
- Form `<input>` elements can be presented many different ways, including simple text fields, buttons, checkboxes, drop-down menus, etc.

### Example:

```
<!DOCTYPE>
<html>
<body>
<form action="#">
First name: <input type="text" name="FirstName" placeholder="enter firstname..."><br>
Last name: <input type="text" name="LastName" placeholder="enter lastname..."><br>
<input type="submit" value="Submit">
</form>
</body>
</html>
```

### Output:

First name:

Last name:

### Type:

- The type attribute specifies the type of button.
- The type attribute specifies the type of `<input>` element to display.
- For `embed`, `link`, `object`, `script`, `source`, and `style` elements the type attribute specifies the Internet media type.

### Values of the type attribute

Value Name	Notes
<a href="#">button</a>	Defines a button-like input.

<i>checkbox</i>	Defines a checkbox, which the user can toggle on or off.
<i>file</i>	Defines a file upload box with a browse button.
<i>hidden</i>	Defines a field within a form that is not visible to the user.
<i>image</i>	Defines an image that is clicked to submit a form.
<i>password</i>	Displays an obfuscated password entry field.
<i>radio</i>	Defines a circular selection button in a form.
<i>reset</i>	Defines a button on a form that will return all fields to their default values.
<i>submit</i>	Defines a button that is clicked to submit a form.
<i>text</i>	Defines a text entry field in a form.

**Text:**

- Defines a text entry field in a form.
- The **text** value of **input** defines a single-line text entry field.

**Example:**

```
<!DOCTYPE html>
<html>
<body>
<form action="/action_page.php">
First name:<br>
<input type="text" name="firstname" value="Mickey">
<br>
```

```
Last name:<br>
<input type="text" name="lastname" value="Mouse"><br><br>
<input type="submit" value="Submit">
<input type="reset">
</form>
</body></html>
```

### Output:

First name:

Last name:

### Radio:

- Defines a circular selection button in a form.
- The **radio** input type displays a radio button.
- The user can toggle on and off.
- The **radio** differs from **checkbox** in the way it is displayed.

### Example:

```
<!DOCTYPE html>
<html><body>
<h2>Radio Buttons</h2>
<p>The <strong>input type="radio"</strong> defines a radio button:</p>
<form action="/action_page.php">
  <input type="radio" name="gender" value="male" checked> Male<br>
  <input type="radio" name="gender" value="female"> Female<br>
  <input type="radio" name="gender" value="other"> Other<br><br>
  <input type="submit">
</form> </body></html>
```

### Output:

#### Radio Buttons

The **input type="radio"** defines a radio button:

- Male
- Female
- Other

### Button:

- The **button** input type creates an form button.
- the **value** of which is displayed as the text or label on the button.
- The **button** input looks identical to the **submit**, but they are not interchangeable.

### Example:

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

<h2>The Button Element</h2>
<button type="button" onclick="alert('Hello world!')">Click Me!</button>

</body>
</html>
```

### Output:

#### The Button Element

---

Click Me!

### Check Box:

- The checkbox is shown as a square box that is ticked (checked) when activated.
- Checkboxes are used to let a user select one or more options of a limited number of choices.

### Example:

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

<h1>Show checkboxes:</h1>
```



```
<form action="/action_page.php">
  <input type="checkbox" name="vehicle1" value="Bike"> I have a bike<br>
  <input type="checkbox" name="vehicle2" value="Car"> I have a car<br>
  <input type="checkbox" name="vehicle3" value="Boat" checked> I have a boat<br><br>
  <input type="submit" value="Submit">
</form></body></html>
```

**Output:**

**Show checkboxes:**

- I have a bike
- I have a car
- I have a boat

**Password:**

- HTML password fields are designed to capture user input, but disguise each character with an asterisk (\*) instead of displaying the entered digits.
- They offer a user on-screen privacy while he or she is entering a password.

**Example:**

```
<!DOCTYPE html>
<html><body>
<form action="/action_page.php">
  Email: <input type="text" name="email"><br>
  Password: <input type="password" name="pwd" maxlength="8"><br>
  <input type="submit">
</form>
</body></html>
```

**Output:**

Email:

Password: