

OVER
40
YEARS
OF ACADEMIC
WISDOM



PRESIDENCY UNIVERSITY

CSE2067 - Web Technology



Department of Computer Science Engineering
School of Engineering

Module I - Syllabus

Introduction to XHTML

[L-10hrs.,P-10hrs.]

Basics: Web, WWW, Web browsers, Web servers, Internet.

XHTML: Origins and Evolution of HTML and XHTML: Basic Syntax, Standard XHTML Document Structure, Basic Text Markup, Images, Hypertext Links, Lists, Tables, Forms, Frames, Syntactic Differences between HTML and XHTML



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Introduction to HTML

HTML stands for **Hyper Text Markup Language**, which is the most widely used language on Web to develop web pages.

In late 1994, Tim Berners-Lee (who developed the initial version of HTML) started the World Wide Web Consortium (W3C), which had as one of its primary purposes to develop and distribute standards for Web technologies.

HTML 2.0 was the first standard HTML specification which was published in 1995.

HTML 4.01 was a major version of HTML and it was published in late 1999.

Currently we are having **HTML-5** version which was published in 2012.

HTML stands for **Hypertext Markup Language**, and it is the most widely used language to write Web Pages.

Hypertext refers to the way in which Web pages (HTML documents) are linked together. Thus, the link available on a webpage is called Hypertext.

As its name suggests, HTML is a **Markup Language** which means we use HTML to simply "mark-up" a text document with tags that tell a Web browser how to structure it to display.

Basic HTML Document

```
<html>
  <head>
    <title>This is document title</title>
  </head>
  <body>
    <h1>This is a heading</h1>
    <p>Document content goes here.....</p>
  </body>
</html>
```

output

This is a heading

Document content goes here.....

HTML Tags

HTML is a markup language and makes use of various tags to format the content.

These tags are enclosed within angle braces **<Tag Name>**.

Tags have their corresponding closing tags.

For example,

<html> has its closing tag **</html>**

<body> tag has its closing tag **</body>** tag etc.

Heading Tags

Any document starts with a heading.

We can use different sizes for your headings.

HTML also has six levels of headings, which use the elements **<h1>**, **<h2>**, **<h3>**, **<h4>**, **<h5>**, and **<h6>**.

While displaying any heading, browser adds one line before and one line after that heading.

```
<html>
```

```
<head>
```

```
<title>Heading Example</title>
```

```
</head>
```

```
<body>
```

```
<h1>This is heading 1</h1>
```

```
<h2>This is heading 2</h2>
```

```
<h3>This is heading 3</h3>
```

```
<h4>This is heading 4</h4>
```

```
<h5>This is heading 5</h5>
```

```
<h6>This is heading 6</h6>
```

```
</body>
```

```
</html>
```

output

This is heading 1

This is heading 2

This is heading 3

This is heading 4

This is heading 5

This is heading 6

Paragraph Tag

The **<p>** tag offers a way to structure your text into different paragraphs.

Each paragraph of text should go in between an opening `<p>` and a closing `</p>` tag

```
<html>
```

```
<head>
```

```
<title>Paragraph Example</title>
```

```
</head>
```

```
<body>
```

```
<p>Here is a first paragraph of text.</p>
```

```
<p>Here is a second paragraph of text.</p>
```

```
<p>Here is a third paragraph of text.</p>
```

```
</body>
```

```
</html>
```

Output

Here is a first paragraph of text.

Here is a second paragraph of text.

Here is a third paragraph of text.

Line Break Tag

Whenever you use the **
** element, anything following it starts from the next line.

The **
** tag has a space between the characters **br** and the forward slash.

If you omit this space, older browsers will have trouble rendering the line break, while if you miss the forward slash character and just use **
** it is not valid in XHTML.

```
<html>
```

Output

```
<head>
```

```
  <title>Line Break Example</title>  
</head>
```

Hello

You delivered your assignment on
time.

Thanks

Ramesh

```
<body>
```

```
  <p>Hello<br />
```

```
  You delivered your assignment on time.<br />
```

```
  Thanks<br />
```

```
  Ramesh</p>
```

```
</body>
```

```
</html>
```

Centering Content

You can use **<center>** tag to put any content in the center of the page or any table cell.

```
<html>
```

```
<head>
```

```
<title>Centring Content Example</title>
```

```
</head>
```

```
<body>
```

```
<p>This text is not in the center.</p>
```

```
<center>
```

```
<p>This text is in the center.</p>
```

```
</center>
```

```
</body>
```

```
</html>
```

Output

This text is not in the center.

This text is in the center.

Horizontal Lines

Horizontal lines are used to visually break-up sections of a document.

The **<hr>** tag creates a line from the current position in the document to the right margin and breaks the line accordingly.

```
<html>
```

```
<head>
```

```
<title>Horizontal Line Example</title>
```

```
</head>
```

This is paragraph one and should be on top

This is paragraph two and should be at bottom

```
<body>
```

```
<p>This is paragraph one and should be on top</p>
```

```
<hr />
```

```
<p>This is paragraph two and should be at bottom</p>
```

```
</body>
```

```
</html>
```

HTML comments are placed in between `<!-- ... -->` tags. So, any content placed with-in `<!-- ... -->` tags will be treated as comment and will be completely ignored by the browser.

```
<html>
```

```
<head> <!-- Document Header Starts -->
```

```
<title>This is document title</title>
```

```
</head> <!-- Document Header Ends -->
```

```
<body>
```

```
<p>Document content goes here.....</p>
```

```
</body>
```

```
</html>
```

Preserve Formatting

Sometimes, we want your text to follow the exact format of how it is written in the HTML document. In these cases, you can use the preformatted tag **<pre>**.

Any text between the opening **<pre>** tag and the closing **</pre>** tag will preserve the formatting of the source document.

```
<html>
  <head>
    <title>Preserve Formatting Example</title>
  </head>
```

```
<body>
  <pre>
    function testFunction( strText ){
      alert (strText)
    }
  </pre>
</body>
```

Output

```
function testFunction( strText ){
  alert (strText)
}
```

```
</html>
```


align attribute: **left**, **center** and **right**.

```
<html>
```

```
<head>
```

```
<title>Align Attribute Example</title>
```

```
</head>
```

```
<body>
```

```
<p align = "left">This is left aligned</p>
```

```
<p align = "center">This is center aligned</p>
```

```
<p align = "right">This is right aligned</p>
```

```
</body>
```

```
</html>
```

Output

This is left aligned

This is center aligned

This is right aligned

Valign-top, middle, bottom: Vertically aligns tags within an HTML element.

The title Attribute

The **title** attribute gives a suggested title for the element.

The behavior of this attribute will depend upon the element that carries it, although it is often displayed as a tooltip when cursor comes over the element or while the element is loading.

```
<html>
```

```
<head>
```

```
<title>The title Attribute Example</title>
```

```
</head>
```

```
<body>
```

```
<h3 title = "Hello HTML!">Titled Heading Tag Example</h3>
```

```
</body>
```

```
</html>
```

The dir Attribute

The **dir** attribute allows you to indicate to the browser about the direction in which the text should flow.

The dir attribute can take one of two values:ltr and rtl

```
<html dir = "rtl">
```

```
<head>
```

```
<title>Display Directions</title>
```

```
</head>
```

```
<body>
```

This is an example for right-to-left directed text.

```
</body>
```

```
</html>
```

Background color

bgcolor-> numeric or hexadecimal or RGB values: Places a background color behind an element

Bold Text

Anything that appears within `...` element, is displayed in bold

Italic Text

Anything that appears within `<i>...</i>` element is displayed in italicized

Underlined Text

Anything that appears within `<u>...</u>` element, is displayed with underline

Strike Text

Anything that appears within `<strike>...</strike>` element is displayed with strikethrough

Monospaced Font

The content of a `<tt>...</tt>` element is written in monospaced font. Most of the fonts are known as variable-width fonts because different letters are of different widths (for example, the letter 'm' is wider than the letter 'i'). In a monospaced font, however, each letter has the same width.

Superscript Text

The content of a `^{...}` element is written in superscript; the font size used is the same size as the characters surrounding it but is displayed half a character's height above the other characters.

Subscript Text

The content of a `_{...}` element is written in subscript; the font size used is the same as the characters surrounding it, but is displayed half a character's height beneath the other characters.

Inserted Text

Anything that appears within `<ins>...</ins>` element is displayed as inserted text.

Deleted Text

Anything that appears within `...` element, is displayed as deleted text.

Larger Text

The content of the `<big>...</big>` element is displayed one font size larger than the rest of the text surrounding it

Hyperlink - Anchor tag

` link name`

Smaller Text

The content of the `<small>...</small>` element is displayed one font size smaller than the rest of the text surrounding it

Hyperlink - Anchor tag

`<a>: link name`

Emphasized Text

Anything that appears within `...` element is displayed as emphasized text.

Marked Text

Anything that appears with-in `<mark>...</mark>` element, is displayed as marked with yellow ink.

Strong Text

Anything that appears within `...` element is displayed as important text.

Text Direction

The `<bdo>...</bdo>` element stands for Bi-Directional Override and it is used to override the current text direction.

```
<bdo dir="rtl">
```

This text will go right-to-left.

```
</bdo>
```

Short Quotations

The `<q>...</q>` element is used when you want to add a double quote within a sentence.

Address Text

The `<address>...</address>` element is used to contain any address.

Grouping Content

The **<div>** and **** elements allow you to group together several elements to create sections or subsections of a page.

For example, you might want to put all of the footnotes on a page within a **<div>** element to indicate that all of the elements within that **<div>** element relate to the footnotes. You might then attach a style to this **<div>** element so that they appear using a special set of style rules.

The **** element, on the other hand, can be used to group inline elements only. So, if you have a part of a sentence or paragraph which you want to group together, you could use the ****

```
<html>
```

```
<head>
```

```
<title>Div Tag Example</title>
```

```
</head>
```

```
<body>
```

```
<div id = "menu" align = "middle" >
```

```
<a href = "/index.htm">HOME</a> |
```

```
<a href = "/about/contact_us.htm">CONTACT</a> |
```

```
<a href = "/about/index.htm">ABOUT</a>
```

```
</div>
```

```
<div id = "content" align = "left" bgcolor = "white">
```

```
<h5>Content Articles</h5>
```

```
<p>Actual content goes here.....</p>
```

```
</div>
```

```
</body>
```

```
</html>
```

```
<html>
```

```
<head>
```

```
<title>Span Tag Example</title>
```

```
</head>
```

```
<body>
```

```
<p>This is the example of <span style =  
"color:green">span tag</span>  
and the <span style = "color:red">div  
tag</span> alongwith CSS</p>
```

```
</body>
```

```
</html>
```



List

HTML has several list elements. Most list elements are composed of one or more (List Item) elements.

There are three types of List

1. Unordered List
2. Ordered List
3. Definition List

1) UL : Unordered List. Items in this list start with a list mark such as a bullet. Browsers will usually change the list mark in nested lists.

 List item ...

 List item ...

Choice of three bullet types: **disc(default), circle, square.**
These are controlled by the “TYPE” attribute for the element.

```
<UL TYPE="square">  
<LI> List item ...</LI>  
<LI> List item ...</LI>  
<LI> List item ...</LI>  
</UL>
```

2) OL: Ordered List. Items in this list are numbered automatically by the browser.

**** List item ...****

**** List item ...****

**** List item ...****

Choice of setting the TYPE Attribute to one of five numbering styles.



Numbering Styles in Ordered List [By default – Arabic numbers]

| TYPE | Numbering Styles | |
|------|------------------|-------------------|
| 1 | Arabic numbers | 1,2,3, |
| a | Lower alpha | a, b, c, |
| A | Upper alpha | A, B, C, |
| i | Lower roman | i, ii, iii, |
| I | Upper roman | I, II, III, |

specify a starting number for an ordered list.

<OL TYPE =“i”>

** List item1 ...**

** List item2 ...**

<P> text</P>

<OL TYPE=“i” START=“3”>

** List item3...**

Output:

i. List item1 ...

ii. List item2 ...

text

iii. List item3...

DL: Definition List. This kind of list is different from the others. Each item in a DL consists of one or more **Definition Terms (DT elements)**, followed by one or more **Definition Description (DD elements)**.

```
<DL>
<DT> HTML </DT>
<DD> Hyper Text Markup Language </DD>
<DT> DOG </DT>
<DD> A human's best friend!</DD>
</DL>
```

Output:
HTML

Hyper Text Markup Language

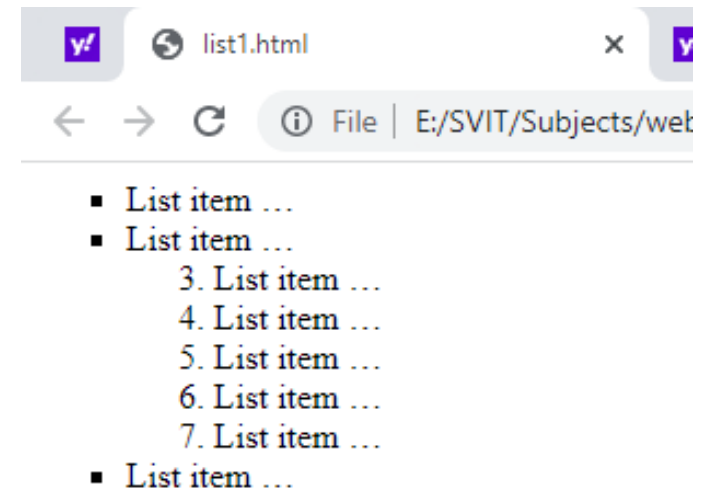
DOG

A human's best friend!

can nest lists by inserting a UL, OL, etc., inside a list item (LI).

Example

```
<UL TYPE = "square">  
<LI> List item ...</LI>  
<LI> List item ...  
  <OL TYPE="i" START="3">  
    <LI> List item ...</LI>  
    <LI> List item ...</LI>  
    <LI> List item ...</LI>  
    <LI> List item ...</LI>  
    <LI> List item ...</LI>  
  </OL>  
</LI>  
<LI> List item ...</LI>  
</UL>
```



<H1 ALIGN="CENTER">SAFETY TIPS FOR </H1>

<OL TYPE="a" START="2">

Be able to swim

Wear a life jacket at all times

Don't stand up or move around. If canoe tips,

Hang on to the canoe

Use the canoe for support and

Swim to shore

Don't overexert yourself

Use a bow light at night

TABLE Tag

The <TABLE></TABLE> element has four sub-elements:

Table Row <TR></TR>.

Table Header <TH></TH>.

Table Data <TD></TD>.

Caption <CAPTION></CAPTION>.

The table row elements usually contain table header elements or table data elements.

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

```
<tr>
```

```
<th> Column 1 header </th>
```

```
<th> Column 2 header </th>
```

```
</tr>
```

```
<tr>
```

```
<td> Row1, Col1 </td>
```

```
<td> Row1, Col2 </td>
```

```
</tr>
```

```
<tr>
```

```
<td> Row2, Col1 </td>
```

```
<td> Row2, Col2 </td>
```

```
</tr>
```

```
</table>
```

| Column 1 Header | Column 2 Header |
|-----------------|-----------------|
| Row1, Col1 | Row1, Col2 |
| Row2, Col1 | Row2, Col2 |

TABLE ATTRIBUTES

BGColor: Some browsers support background colors in a table.

Width: you can specify the table width as an absolute number of pixels or a percentage of the document width. You can set the width for the table cells as well.

Border: You can choose a numerical value for the border width, which specifies the border in pixels.

CellSpacing: Cell Spacing represents the space between cells and is specified in pixels.



TABLE ATTRIBUTES

CellPadding: Cell Padding is the space between the cell border and the cell contents and is specified in pixels.

Align: tables can have left, right, or center alignment.

Background: Background Image, will be titled in IE3.0 and above.

BorderColor, BorderColorDark.



A table caption allows you to specify a line of text that will appear centered above or below the table.

<TABLE BORDER=1 CELLPADDING=2>

<CAPTION ALIGN="BOTTOM"> Label For My Table </CAPTION>

The Caption element has one attribute ALIGN that can be either TOP (Above the table) or BOTTOM (below the table).

```
<html>
```

```
<head>
```

```
<title>HTML Table Cellpadding</title>
```

```
</head>
```

```
<body>
```

```
<table border = "1" cellpadding = "5" cellspacing = "5">
```

```
<tr>
```

```
<th>Name</th>
```

```
<th>Salary</th>
```

```
</tr>
```

```
<tr>
```

```
<td>Ramesh Raman</td>
```

```
<td>5000</td>
```

```
</tr>
```

```
<tr>
```

```
<td>Shabbir Hussein</td>
```

```
<td>7000</td>
```

```
</tr>
```

```
</table>
```

```
</body>
```

```
</html>
```



Colspan and Rowspan Attributes

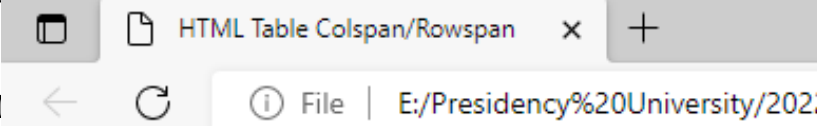
We will use **colspan** attribute if you want to merge two or more columns into a single column. Similar way use **rowspan** if we want to merge two or more rows.

```
<html>
<head>
  <title>HTML Table Colspan/Rowspan</title>
</head>

<body>
  <table border = "1">
    <tr>
      <th>Column 1</th>
      <th>Column 2</th>
      <th>Column 3</th>
    </tr>
    <tr>
      <td rowspan = "2">Row 1 Cell 1</td>
      <td>Row 1 Cell 2</td>
      <td>Row 1 Cell 3</td>
    </tr>
```

```
<tr>
  <td>Row 2 Cell 2</td>
  <td>Row 2 Cell 3</td>
</tr>
<tr>
  <td colspan = "3">Row 3 Cell 1</td>
</tr>
</table>
</body>
```

</html>



| Column 1 | Column 2 | Column 3 |
|--------------|--------------|--------------|
| Row 1 Cell 1 | Row 1 Cell 2 | Row 1 Cell 3 |
| | Row 2 Cell 2 | Row 2 Cell 3 |
| Row 3 Cell 1 | | |

Table Height and Width

You can set a table width and height using width and height attributes.

```
<html>

  <head>
    <title>HTML Table Width/Height</title>
  </head>

  <body>
    <table border = "1" width = "400" height
= "150">
      <tr>
        <td>Row 1, Column 1</td>
        <td>Row 1, Column 2</td>
      </tr>
      <tr>
        <td>Row 2, Column 1</td>
        <td>Row 2, Column 2</td>
      </tr>
    </table>
  </body>
</html>
```



Table Header, Body, and Footer

Tables can be divided into three portions – a header, a body, and a foot.

<thead> – to create a separate table header.

<tbody> – to indicate the main body of the table.

<tfoot> – to create a separate table footer.

CSS can be applied on these sections separately.



Reference tag/anchor tag

The tags used to produce links are the `<A>` and ``.

The `<A>` tells where the link should start and the `` indicates where the link ends.

Everything between these two will work as a link.

The example below shows how to make the word **Here** work as a link to yahoo.

Click `here`

Internal Links : Links can also be created inside large documents to simplify navigation.

Select some text at a place in the document that you would like to create a link to, then add an anchor to link to like this:

``

The Name attribute of an anchor element specifies a location in the document that we link to shortly. All NAME attributes in a document must be unique.

Next select the text that you would like to create as a link to the location created above.

`Go To Book Mark`

Insert Image – img Tag

You can insert any image in your web page by using **** tag.

```
<html>
```

```
<head>
```

```
<title>Using Image in Webpage</title>
```

```
</head>
```

```
<body>
```

```
<p>Simple Image Insert</p>
```

```
<img src = "/html/images/test.png" />
```

```
</body>
```

```
</html>
```

Set Image Width/Height

You can set image width and height based on your requirement using **width and height attributes**.

Set Image Border

By default, image will have a border around it, you can specify border thickness in terms of pixels using border attribute.

Set Image Alignment

By default, image will align at the left side of the page, but you can use **align** attribute to set it in the center or right.

```
<html>

<head>
  <title>Set Image Alignment</title>
</head>

<body>
  <p>Setting image Alignment</p>
  <img src =
"/html/images/test.png" alt = "Test
Image" border = "3" align = "right"/>
</body>

</html>
```

Image as a Link

```
<a href="basic.html"> 
```

```
</a>
```

HTML Email Tag

HTML `<a>` tag provides you option to specify an email address to send an email. While using `<a>` tag as an email tag, you will use **mailto: email address** along with *href* attribute.

`Send Email`



HTML forms

HTML Forms are required, when you want to collect some data from the site visitor / customer.

For example, we would like to collect information such as name, email address, credit card, etc.

There are various form elements available like text fields, textarea fields, drop-down menus, radio buttons, checkboxes, etc.



The HTML <form> tag is used to create an HTML form and it has following syntax

<form>

form elements like input, textarea etc.

</form>



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HTML Form Controls

There are different types of form controls that you can use to collect data using HTML form

- Text Input Controls
- Textarea Controls
- Radio Box Controls
- Checkboxes Controls
- Select Box Controls
- Submit and Reset Button etc.

All the above listed controls except Reset and Submit also require **name** attribute, which becomes the name of the control within the form data.



Input Element

One commonly used **attribute of <input>** is **type**

The type of control is mentioned in this attribute. . The **text, password, checkboxes, radio, range, button, submit and reset** controls come under <input> tag.

Another **attribute of <input>** is **name** – it is used to give a name for the specific control.

Single-line text input controls – This control is used for items that require only one line of user input, such as search boxes or names. They are created using HTML `<input>` tag.

```
<body>
```

```
  <form >
```

```
    First name: <input type = "text" name = "first_name" />
```

```
    <br>
```

```
    Last name: <input type = "text" name = "last_name" />
```

```
  </form>
```

```
</body>
```



Multiple-Line Text Input: used when the user is required to give details that may be longer than a single sentence. Multi-line input controls are created using HTML **<textarea>** tag.

<body>

<form>

**Description :
**

<textarea rows = "5" cols = "50" >

Enter description here...

</textarea>

</form>

</body>



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Checkbox Control:- Checkboxes are used when more than one option is required to be selected.

<form>

**<input type="checkbox" value="bike" > I have a bike
**

<input type="checkbox" value="car" > I have a car

</form>



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Radio Button Control:-Radio buttons are used when out of many options, just one option is required. The name is common for the radio buttons of a group, so that only one can be selected at a time.

<form>

**<input type="radio" name="gender" value="male" checked="checked"> Male
**

**<input type="radio" name="gender" value="female"> Female
**

**<input type="radio" name="gender" value="other"> Other
**
</form>



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```

<body>
  <p>
    Age Category
  </p>
  <form action = "">
    <p>
      <label><input type = "radio"  name = "age"
        value = "under20" checked = "checked" />
        0-19 </label>
      <label><input type = "radio"  name = "age"
        value = "20-35" /> 20-35 </label>
      <label><input type = "radio"  name = "age"
        value = "36-50" /> 36-50 </label>
      <label><input type = "radio"  name = "age"
        value = "over50" /> Over 50 </label>
    </p>
  </form>
</body>

```

Age Category

☒ 0-19
 ☐ 20-35
 ☐ 36-50
 ☐ Over 50



Select Box Control:- A select box, also called **drop down box** which provides option to list down various options in the form of drop down list, from where a user can select one or more options.

```
<select name="cars">  
  <option value="volvo">Volvo</option>  
  <option value="benz">Benz</option>  
  <option value="fiat">Fiat</option>  
  <option value="audi">Audi</option>  
</select>
```



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

```
<option value="fiat"  
selected="selected">Fiat</option>
```

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

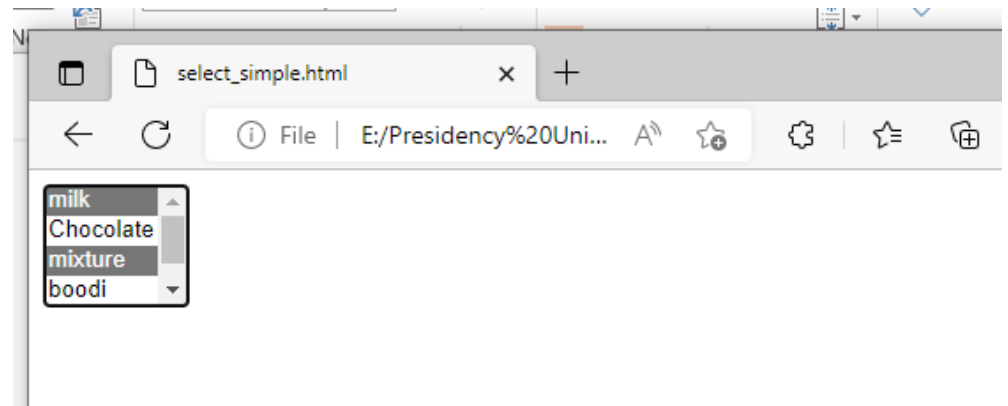
```
<select name="cars" size="3">
```

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

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



```
<form >
<p>
<select name="list" multiple="multiple">
<option selected="selected">milk</option>
<option >Chocolate</option>
<option>mixture</option>
<option> boodi</option>
<option>jelebi</option>
</select>
</p>
```



Button Controls

There are various ways in HTML to create clickable buttons. We can create a clickable button using <input>tag by setting its type attribute to button.

```
<input type = "button" name = "ok" value = "OK" />
```

Other options

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

```
<input type = "image" name = "imagebutton" src = "logo.png" />
```



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<input type="password" name="psw"> // defines password field

<input type="submit" value="Submit"> // submit data form to an action handler

<input type="reset"> // reset all form values to default values

<input type="color"> // used for input a color.



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`<input type="date">` // used for input a date.

`<input type="email">` // used for input an e-mail address.

`<input type="file">` defines a file-select field and a "Browse" button for file uploads.



`<input type="number">` defines a numeric input field.

`<input type="time">` allows the user to select a time (no time zone).

`<input type="url">` is used for input fields that should contain a URL address.



<input type="range"> defines a control for entering a number whose exact value is not important (like a slider control).

Default range is 0 to 100.

However, we can set restrictions on what numbers are accepted with the min, max, and step attributes:

<input type="range" min="0" max="10">

HTML Input Attributes

The **value** attribute specifies the initial value for an input field:

```
<input type="text" name="firstname" value="John">
```

The **readonly** attribute specifies that the input field is read only (cannot be changed):

```
<input type="text" name="firstname" value="John" readonly="readonly">
```

The **disabled** attribute specifies that the input field is disabled.

```
<input type="text" name="firstname" value="John" disabled="disabled">
```



The **size** attribute specifies the size (in characters) for the input field:

```
<input type="text" name="firstname" size="40">
```

The **maxlength** attribute specifies the maximum allowed length for the input field:

```
<input type="text" name="firstname" maxlength="10">
```

The **autofocus** attribute specifies that the input field should automatically get focus when the page loads.

```
<input type="text" name="fname" autofocus>
```



The **form method** attribute defines the HTTP method for sending form-data to the action URL.

<form action="/action_page.php" method="get">

The **pattern** attribute specifies a regular expression that the <input> element's value is checked against.

<input type="text" name="country_code" pattern="[A-Za-z]{3}" >

The **placeholder** attribute specifies a hint that describes the expected value of an input field (a sample value or a short description of the format).

```
<input type="text" name="fname" placeholder="First name">
```

The **required** attribute specifies that an input field must compulsorily be filled out before submitting the form.

```
<input type="text" name="username" required="required">
```



The Action Attribute

The action attribute defines the action to be performed when the form is submitted. Normally, the form data is sent to a web page on the server when the user clicks on the submit button.

```
<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">  
</form>
```



The Target Attribute

The target attribute specifies if the submitted result will open in a new browser tab, a frame, or in the current window.

```
<form action="/action_page.php" target="_blank">
```



The Method Attribute

The method attribute specifies the HTTP method (GET or POST) to be used when submitting the form data:

```
<form action="/action_page.php" method="get">  
<form action="/action_page.php" method="post">
```



Notes on GET:

- Appends form-data into the URL in name/value pairs
- The length of a URL is limited (about 3000 characters)
- Never use GET to send sensitive data! (will be visible in the URL)
- Useful for form submissions where a user wants to bookmark the result
- GET is better for non-secure data, like query strings in Google

Notes on POST:

- POST has no size limitations, and can be used to send large amounts of data.
- Form submissions with POST cannot be bookmarked

Note: more details will be discussed during PHP session

Grouping Form Data with <fieldset>

The <fieldset> element is used to group related data in a form.
The <legend> element defines a caption for the <fieldset> element.

```
<form action="/action_page.php">
```

```
<fieldset>
```

```
<legend>Personal information:</legend>
```

```
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">
```

```
</fieldset>
```

```
</form>
```



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Frames

- Frames are rectangular sections of the display window, each of which can display a different document
- The <frameset> tag specifies the number of frames and their layout in the window
- <frameset> takes the place of <body>
- Cannot have both!
- <frameset> must have either a rows attribute or a cols attribute, or both (usually the case)
- Default is 1
- The possible values for rows and cols are numbers, percentages, and asterisks

The <frame> tag specifies the content of a frame

The first <frame> tag in a <frameset> specifies the content of the first frame, etc.
Row-major order is used

Frame content is specified with the src attribute

Without a src attribute, the frame will be empty (such a frame CANNOT be filled later)

If <frameset> has fewer <frame> tags than frames, the extra frames are empty

Frames (continued)

- An asterisk after some other specification gives the remainder of the height of the window
- Examples:

`<frameset rows = "150, 200, 300">`

`<frameset rows = "25%, 50%, 25%">`

`<frameset rows = "50%, 20%, *" >`

`<frameset rows = "50%, 25%, 25%" cols = "40%, *">`

- A number value specifies the row height in pixels - Not terribly useful!
- A percentage specifies the percentage of total window height for the row - Very useful!

Creating Frames

To use frames on a page we use `<frameset>` tag instead of `<body>` tag.

The `<frameset>` tag defines, how to divide the window into frames.

The **rows** attribute of `<frameset>` tag defines horizontal frames and **cols** attribute defines vertical frames.

Note: HTML 5 is not supporting frame tag

```
<html>
```

```
<head>
```

```
<title>HTML Frames</title>
```

```
</head>
```

```
<frameset rows = "10%,80%,10%">
```

```
<frame name = "top" src = "/html/top_frame.htm" />
```

```
<frame name = "main" src = "/html/main_frame.htm" />
```

```
<frame name = "bottom" src = "/html/bottom_frame.htm" />
```

```
<noframes>
```

```
<body>Your browser does not support frames.</body>
```

```
</noframes>
```

```
</frameset>
```

```
</html>
```

We can define an inline frame with HTML tag **<iframe>**.

The <iframe> tag is not somehow related to <frameset> tag, instead, it can appear anywhere in your document.

The <iframe> tag defines a rectangular region within the document in which the browser can display a separate document, including scrollbars and borders.

An inline frame is used to embed another document within the current HTML document.

HTML Iframes

An iframe is used to display a web page within a web page.

```
<iframe src="URL"></iframe>
```

```
<iframe src="demo_iframe.htm" height="200"  
width="300"></iframe>
```

```
<iframe src="demo_iframe.htm"  
style="height:200px;width:300px;"></iframe>
```

Iframe - Target for a Link

An iframe can be used as the target frame for a link.

The target attribute of the link must refer to the name attribute of the iframe:

```
<iframe src="demo_iframe.htm"  
name="iframe_a"></iframe>
```

```
<p><a href="https://www.google.com"  
target="iframe_a">Load new web page</a></p>
```

```
<iframe src="demo_iframe.htm"  
style="border:none;"></iframe>
```

```
<iframe src="demo_iframe.htm" style="border:2px solid  
red;"></iframe>
```



```
<html>
```

```
<head>
```

```
<title>HTML Iframes</title>
```

```
</head>
```

```
<body>
```

```
<p>Document content goes here...</p>
```

```
<iframe src = "/html/menu.htm" width = "555" height = "200">
```

```
  Sorry your browser does not support inline frames.
```

```
</iframe>
```

```
<p>Document content also go here...</p>
```

```
</body>
```

```
</html>
```

The <marquee> Tag

An HTML marquee is a scrolling piece of text displayed either horizontally across or vertically down your webpage depending on the settings.

```
<html>

<head>
  <title>HTML marquee Tag</title>
</head>

<body>
  <marquee>This is basic example of marquee</marquee>
</body>

</html>
```



```
<body>
```

```
  <marquee direction = "right">This text will scroll from left to right</marquee>  
</body>
```

```
<body>
```

```
  <marquee direction = "up">This text will scroll from bottom to up</marquee>  
</body>
```

Set Font Size

You can set content font size using **size** attribute. The range of accepted values is from 1(smallest) to 7(largest). The default size of a font is 3.

```
<html>

<head>
  <title>Setting Font Size</title>
</head>

<body>
  <font size = "1">Font size = "1"</font><br />
  <font size = "2">Font size = "2"</font><br />
  <font size = "3">Font size = "3"</font><br />
  <font size = "4">Font size = "4"</font><br />
  <font size = "5">Font size = "5"</font><br />
  <font size = "6">Font size = "6"</font><br />
  <font size = "7">Font size = "7"</font>
</body>

</html>
```

The HTML Style Attribute

<tagname style="property:value;">

```
<body style="background-color:powderblue;">
<h1 style="color:blue;">This is a heading</h1>
<p style="color:red;">This is a paragraph.</p>
<h1 style="font-family:verdana;">This is a heading</h1>
<p style="font-family:courier;">This is a paragraph.</p>
<h1 style="font-size:300%;">This is a heading</h1>
<p style="font-size:160%;">This is a paragraph.</p>
<h1 style="text-align:center;">Centered Heading</h1>
<p style="text-align:center;">Centered paragraph.</p>
```



HTML Colors

```
<h1 style="background-color:DodgerBlue;">Hello World</h1>
```

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

```
<h1 style="color:Tomato;">Hello World</h1>
```

```
<p style="color:DodgerBlue;">Lorem ipsum...</p>
```

```
<p style="color:MediumSeaGreen;">Ut wisi enim...</p>
```

```
<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>
```



Image Floating

`<p> `
The image will float to the right of the text.</p>

`<p>`
The image will float to the left of the text.</p>

Image Maps

The <map> tag defines an image-map. An image-map is an image with clickable areas.

In the image below, click on the computer, the phone, or the cup of coffee:



```

```

```
<map name="workmap">
```

```
  <area shape="rect" coords="34,44,270,350" alt="Computer"  
  href="computer.htm">
```

```
  <area shape="rect" coords="290,172,333,250" alt="Phone"  
  href="phone.htm">
```

```
  <area shape="circle" coords="337,300,44" alt="Coffee"  
  href="coffee.htm">  
</map>
```

Background Image

```
<body style="background-image:url('clouds.jpg');">
```

```
<h2>Background Image</h2>
```

```
</body>
```

```
<p style="background-image:url('clouds.jpg');">
```

```
...
```

```
</p>
```

The <div> Element

The <div> element is often used as a container for other HTML elements.

```
<div style="background-color:black;color:white;padding:20px;">  
  <h2>London</h2>  
  <p>London is the capital city of England. It is the most populous  
city in the United Kingdom, with a metropolitan area of over 13  
million inhabitants.</p>  
</div>
```

The Element

The element is often used as a container for some text.

```
<h1>My <span style="color:red">Important</span>  
Heading</h1>
```



HTML Entities

| Result | Description | Entity Name |
|--------|------------------------------------|-------------|
| | non-breaking space | |
| < | less than | < |
| > | greater than | > |
| & | ampersand | & |
| " | double quotation mark | " |
| ' | single quotation mark (apostrophe) | ' |
| ¢ | cent | ¢ |
| £ | pound | £ |
| ¥ | yen | ¥ |
| € | euro | € |
| © | copyright | © |
| ® | registered trademark | ® |

HTML - Embed Multimedia

Sometimes you need to add music or video into your web page. The easiest way to add video or sound to your web site is to include the special HTML tag called `<embed>`. This tag causes the browser itself to include controls for the multimedia automatically provided browser supports `<embed>` tag and given media type.

You can also include a `<noembed>` tag for the browsers which don't recognize the `<embed>` tag. You could, for example, use `<embed>` to display a movie of your choice, and `<noembed>` to display a single JPG image if browser does not support `<embed>` tag.

```
<html>
```

```
<head>
```

```
<title>HTML embed Tag</title>
```

```
</head>
```

```
<body>
```

```
<embed src = "/html/yourfile.mid" width = "100%" height = "60" >
```

```
<noembed><img src = "yourimage.gif" alt = "Alternative Media"
```

```
></noembed>
```

```
</embed>
```

```
</body>
```

```
</html>
```

| Sr.No | Attribute & Description |
|-------|--|
| 1 | align Determines how to align the object. It can be set to either center, <i>left</i> or <i>right</i> . |
| 2 | autostart This boolean attribute indicates if the media should start automatically. You can set it either true or false. |
| 3 | loop Specifies if the sound should be played continuously (set loop to true), a certain number of times (a positive value) or not at all (false) |
| 4 | playcount Specifies the number of times to play the sound. This is alternate option for <i>loop</i> if you are using IE. |
| 5 | hidden Specifies if the multimedia object should be shown on the page. A false value means no and true values means yes. |
| 6 | width Width of the object in pixels |
| 7 | height Height of the object in pixels |
| 8 | name A name used to reference the object. |
| 9 | src URL of the object to be embedded. |
| 10 | volume Controls volume of the sound. Can be from 0 (off) to 100 (full volume). |

Background Audio

You can use HTML `<bgsound src=" ">` tag to play a soundtrack in the background of your webpage. This tag is supported by Internet Explorer only and most of the other browsers ignore this tag. It downloads and plays an audio file when the host document is first downloaded by the user and displayed. The background sound file also will replay whenever the user refreshes the browser.

Difference between HTML & XHTML

| Sl. No. | HTML | XHTML |
|---------|---|---|
| 1 | HTML stands for Hypertext Markup Language. | XHTML stands for Extensible Hypertext Markup Language. |
| 2 | It was developed by Tim Berners-Lee | It was developed by W3C ie. World Wide Web Consortium. |
| 3 | It was developed in 1991 | It was released in 2000. |
| 4 | All tags and attributes are not necessarily to be in specific case. | Every tag and attribute should be in lower case. |
| 5. | It is not necessary to close the tags in the order they are opened. | It is necessary to close the tags in the same order they are opened. |
| 6. | While using the attributes it is not necessary to mention quotes. | While using the attributes it is mandatory to mention quotes. Eg - <p bgcolor = "yellow"> |
| 7. | Filename extension used are .html, .htm | Filename extension used are .xhtml, .xht, .xml |



THANK YOU



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