Web Technology

CODE:CACS205

FACILITATOR

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HTML

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

➢ HTML was created by Berners-Lee in late 1991 but "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.

➢ Though HTML 4.01 version is widely used.

➢ Extensible Hypertext Markup Language (XHTML) was used in the year of 2000 But currently we are having HTML-5 version which is an extension to HTML 4.01, and this version was published in 2014.

➢ 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.*

HTML

➢ Originally, HTML was developed with the intent of defining the structure of documents like headings, paragraphs, lists, and so forth to facilitate the sharing of scientific information between researchers.

➢ Now, HTML is being widely used to format web pages with the help of different tags available in HTML language.

```
<html>
    <head>
    <title>My web Page</title>
    </head>
    <body>
    Document body related tags
    </body>
</html>
```

```
1   <!DOCTYPE html>
2   <html>
3
4       <head>
5           <title>This is document title</title>
6       </head>
7
8       <body>
9           <h1>This is a heading</h1>
10          <p>Document content goes here.....</p>
11      </body>
12  </html>
```

World Wide Web Consortium (W3C) recommends to use lowercase tags starting from HTML 4.

HTML

Tag & Description

1 <!DOCTYPE html> This tag defines the document type and HTML version.

2<html> This tag encloses the complete HTML document and mainly comprises of document header which is represented by <head>...</head> and document body which is represented by <body>...</body> tags.

3 <head> This tag represents the document's header which can keep other HTML tags like <title>, <link> etc.

4 <title> The <title> tag is used inside the <head> tag to mention the document title.

5<body> This tag represents the document's body which keeps other HTML tags like <h1>, <div>, <p> etc.

6 <h1> This tag represents the heading.

7 <p>This tag represents a paragraph.

Basic of HTML

➤ 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
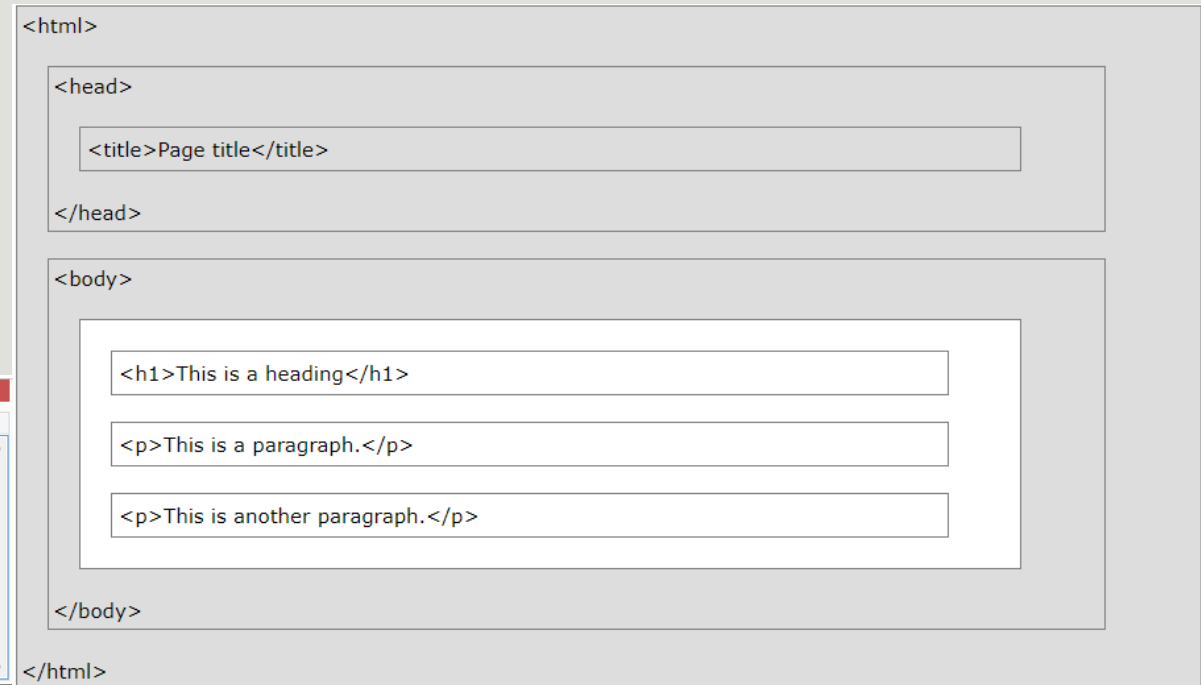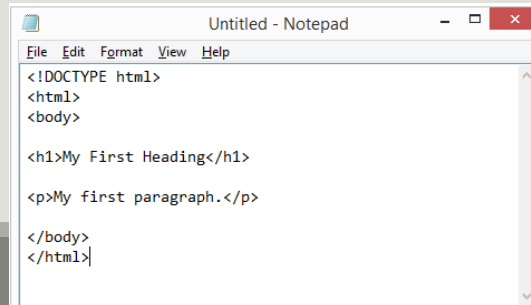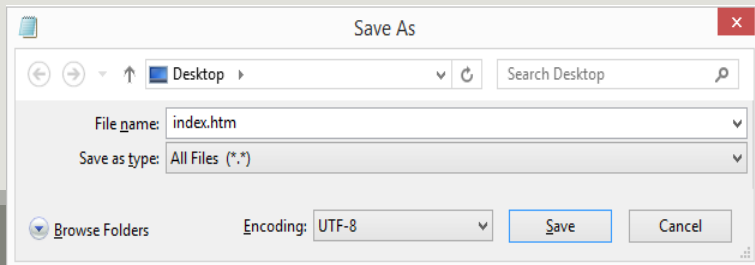
Steps to prepare HTML document
Step 1. Open Notepad in your computer
Step 2. Write HTML code on notepad
Step 3. Save html file in htm or html format.
Step 4. Open this file in any browser.

```
<html>

    <head>

        <title>Page title</title>

    </head>

    <body>

        <h1>This is a heading</h1>

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

        <p>This is another paragraph.</p>

    </body>

</html>
```

Save As

Desktop ▶

Search Desktop

File name: index.htm
Save as type: All Files (*.*)

Browse Folders

Encoding: UTF-8

Save   Cancel

Untitled - Notepad

File Edit Format View Help

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

<h1>My First Heading</h1>

<p>My first paragraph.</p>

</body>
</html>
```

Basic Tag

➤Tag are basic command in html to perform specific task in web browser.

➤An HTML element usually consists of a start tag and end tag, with the content inserted in between:

➤<tagname>Content goes here...</tagname>

➤<p>here we go </p>

➤All tags should be in lowercase.

➤Never use empty tags. Like
 <img> they should be
 <img />

HTML Attributes

➤All HTML elements can have attributes

➤Attributes provide additional information about an element

➤Attributes are always specified in the start tag

➤Attributes usually come in name/value pairs like: name="value"

Example <img src="img_typo.jpg" width= "600" height=" 500" alt="Girl with a jacket">

Basic Tag

Heading Tags

It is used to make heading for the text. 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.

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


This is heading 1

This is heading 2

This is heading 3

This is heading 4

This is heading 5

This is heading 6

Basic Tag

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> .

<!DOCTYPE html>

<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>

Basic Tag

Line Break Tag

Whenever you use the <br /> element, it create new line in html document.

<!DOCTYPE html>

<html>

  <head>

    <title>Paragraph Example</title>

  </head>

  <body>

    <p>First paragraph
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>

First paragraph
Here is a first paragraph of text.

Here is a second paragraph of text.

Here is a third paragraph of text.

Basic Tag

Centering Content

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

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

This text is not in the center.

This text is in the center.

Basic Tag

Preserve Formatting

Sometimes, you 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>.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Preserve Formatting Example</title>
  </head>
  <body>
    <pre>
      function testFunction( strText ){
        alert (strText)
      }
    </pre>
  </body>
</html>
```

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

Basic Tag

Nonbreaking Spaces

It used to create space in the html page since only one space it allows.
<!DOCTYPE html>
<html>
<head>
<title>Nonbreaking Spaces Example</title>
</head>
<body>
 <p>An example of this technique appears in the movie "12   Angry Men."</p>
</body>
 </html>

An example of this technique appears in the movie "12   Angry Men."

HTML Formatting

Comment Tags

Comment tags are used to insert comments in the HTML source code. Comments are not displayed by the browser, but they can help document your HTML source code.

```
<!DOCTYPE html>
<html>
<body>
<!-- This is a comment -->
<p>This is a paragraph.</p>
<!-- Comments are not displayed in the browser -->
</body>
</html>
```

Basic Tag

Comment Tags

HTML provides us with the ability for formatting text just like we do it in MS Word or any text editing software.

<b> - Bold text

<U> -Underline

<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

```
<!DOCTYPE html>
<html>
<head>
<title>Bold Text Example</title>
</head>
<body>
<p>The following word uses a <b>bold</b> typeface.</p>
 <p>The following word uses an <i>italicized</i> typeface.</p>
 <p>The following word uses an <u>underlined</u> typeface.</p>
<p>The following word uses a <strike>strikethrough</strike> typeface.</p>
<p>The following word uses a <sup>superscript</sup> typeface.</p>
<p>The following word uses a <sub>subscript</sub> typeface.</p>
<p>I want to drink <del>cola</del> <ins>wine</ins></p>
<p>The following word uses a <small>small</small> typeface.</p>
<p>The following word uses an <em>emphasized</em> typeface.</p>
<p>The following word has been <mark>marked</mark> with yellow</p>
<p>The following word uses a <strong>strong</strong> typeface.</p>
</body>
</html>
```

HTML Formatting

Meta Tags

<meta> tag to give information about when last time the document was updated. This information can be used by various web browsers while refreshing your webpage. <meta> tag to give a short description about the document. This again can be used by various search engines while indexing your webpage for searching purpose.

```
<!DOCTYPE html>
<html>
   <head>
      <title>Meta Tags Example</title>
      <meta name = "keywords" content = "HTML, Meta Tags, Metadata" />
      <meta name = "description" content = "Learning about Meta Tags." />
      <meta http-equiv = "refresh" content = "5" />
     <meta name = "revised" content = "Tag Tutorial, 3/7/2014" />
     <meta name = "author" content = "Ram Rai" />
   </head>
   <body>
      <p>Hello HTML5!</p>
   </body>
</html>
```

HTML IMG

<img> tag is used to insert image in the html page.

HTML Link

➢ Link can be used to directly connect one page to other pages and even specific parts of a given page. These links are known as **hyperlinks**.

➢ Hyperlinks allow visitors to navigate between web sites by clicking on words, phrases, and images. Thus we can create hyperlinks using text or images available on a webpage.

Text

<!DOCTYPE html>
<html>
  <head>
    <title>Hyperlink Example</title>
    <base href = "https://www.yoursite.com/">
  </head>
  <body>
    <p>Click any of the following links</p>
    Opens in New |
    Opens in Self |
    Opens in Parent |
    Opens in Body
  </body>
</html>

HTML Link

Image Links: it is link through which we can hyperlink one image to another image.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Image Hyperlink Example</title>
  </head>
  <body>
    <p>Click following link</p>
    <a href = "https://facebook.com" target = "_self">
      <img src = "/images/logo.png" alt = "Tutorials" border = "0"/>
    </a>
  </body>
</html>
```

HTML Link

HTML Email Tag

HTML <a> tag provides us option to specify an email address to send an email. While using <a> tag as an email tag, we will use mailto: email address along with href attribute. Following is the syntax of using mailto instead of using http.

Send Email

Send Feedback

<h1 id="top">Top of page!</h1>

Text goes here

Go to top

HTML List

Unorder List

HTML offers web authors three ways for specifying lists of information. All lists must contain one or more list elements. Lists may contain

 − An unordered list. This will list items using plain bullets.

 − An ordered list. This will use different schemes of numbers to list your items.

<dl> − A definition list. This arranges your items in the same way as they are arranged in a dictionary.

```
<!DOCTYPE html>
<html>
  <head>
    <title>HTML Unordered List</title>
  </head>
  <body>
    <ul>
      <li>Beetroot</li>
      <li>Ginger</li>
      <li>Potato</li>
      <li>Radish</li>
    </ul>
  </body>
</html>
```

```
<ul type = "square">
<ul type = "disc">
<ul type = "circle">
```

- Beetroot
- Ginger
- Potato
- Radish

HTML

Order List

If you are required to put your items in a numbered list instead of bulleted, then HTML ordered list will be used. This list is created by using **<ol>** tag. The numbering starts at one and is incremented by one for each successive ordered list element tagged with <li>.

```
<!DOCTYPE html>
<html>
  <head>
    <title>HTML Unordered List</title>
  </head>
  <body>
    <ol>
      <li>Beetroot</li>
      <li>Ginger</li>
      <li>Potato</li>
      <li>Radish</li>
    </ul>
  </body>
</html>
```

1. Beetroot
2. Ginger
3. Potato
4. Radish

```
<ol type = "1"> - Default-Case Numerals.

<ol type = "I"> - Upper-Case Numerals.

<ol type = "i"> - Lower-Case Numerals.

<ol type = "A"> - Upper-Case Letters.

<ol type = "a"> - Lower-Case Letters.

<ol type = "1" start = "4">    - Numerals starts with 4.

<ol type = "I" start = "4">    - Numerals starts with IV.

<ol type = "i" start = "4">    - Numerals starts with iv.

<ol type = "a" start = "4">    - Letters starts with d.

<ol type = "A" start = "4">    - Letters starts with D.
```

HTML

Order List

If you are required to put your items in a numbered list instead of bulleted, then HTML ordered list will be used. This list is created by using **<ol>** tag. The numbering starts at one and is incremented by one for each successive ordered list element tagged with <li>.

```
<!DOCTYPE html>
<html>
  <head>
    <title>HTML Unordered List</title>
  </head>
  <body>
    <ol>
      <li>Beetroot</li>
      <li>Ginger</li>
      <li>Potato</li>
      <li>Radish</li>
    </ul>
  </body>
</html>
```

1. Beetroot
2. Ginger
3. Potato
4. Radish

```
<ol type = "1"> - Default-Case Numerals.

<ol type = "I"> - Upper-Case Numerals.

<ol type = "i"> - Lower-Case Numerals.

<ol type = "A"> - Upper-Case Letters.

<ol type = "a"> - Lower-Case Letters.

<ol type = "1" start = "4">    - Numerals starts with 4.

<ol type = "I" start = "4">    - Numerals starts with IV.

<ol type = "i" start = "4">    - Numerals starts with iv.

<ol type = "a" start = "4">    - Letters starts with d.

<ol type = "A" start = "4">    - Letters starts with D.
```

HTML

HTML Definition Lists

HTML and XHTML supports a list style which is called definition lists where entries are listed like in a dictionary or encyclopedia. The definition list is the ideal way to present a glossary, list of terms, or other name/value list.
Definition List makes use of following three tags.
<dl> − Defines the start of the list
<dt> − A term
<dd> − Term definition

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

    <head>
        <title>HTML Definition List</title>
    </head>

    <body>
        <dl>
            <dt><b>HTML</b></dt>
            <dd>This stands for Hyper Text Markup Language</dd>
            <dt><b>HTTP</b></dt>
            <dd>This stands for Hyper Text Transfer Protocol</dd>
        </dl>
    </body>

</html>
```

HTML
This stands for Hyper Text Markup Language
HTTP
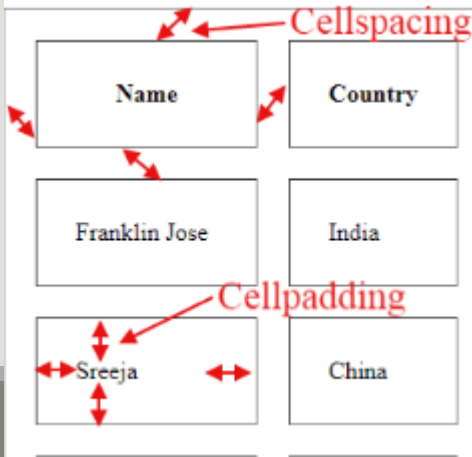This stands for Hyper Text Transfer Protocol

HTML

Table

The HTML tables are created using the <table> tag in which the <tr> tag is used to create table rows and <td> tag is used to create data cells. <th> tag is used to make table heading.The elements under <td> are regular. and left aligned by default

```
<!DOCTYPE html>
<html>
  <head>
    <title>HTML Tables</title>
  </head>
  <body>
    <table border = "1">
      <tr>
        <th>Id</th>
        <th>Name</th>
        <th>Address</th>
      </tr>
      <tr>
        <td>1</td>
        <td>Krishna Acharya</td>
        <td>Jhapa</td>
      </tr>
      <tr>
        <td>2</td>
        <td>Bina Acharya</td>
        <td>Kathmandu</td>
      </tr>
    </table>
  </body>
</html>
```
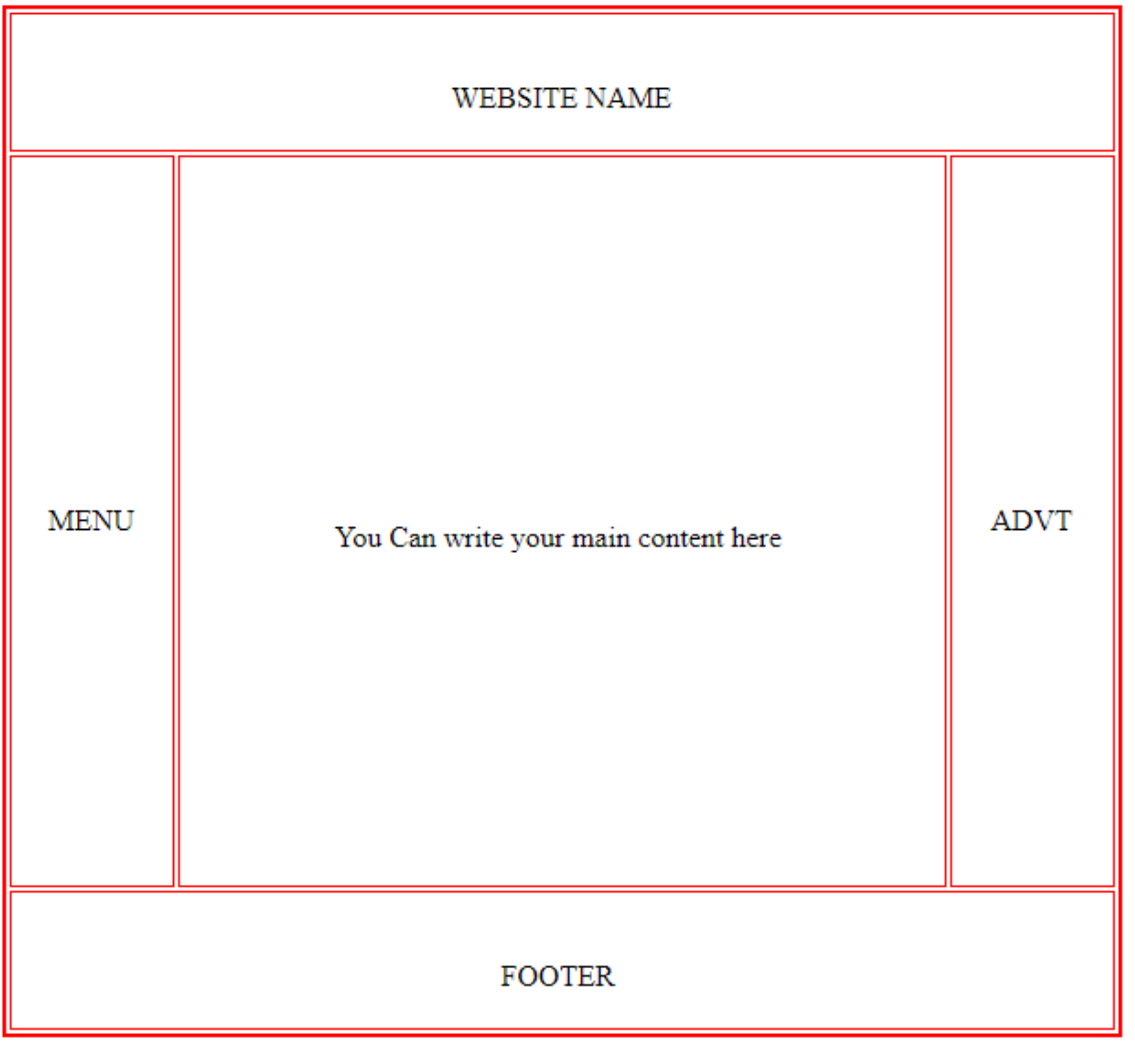
Id	Name	Address
1	Krishna Acharya	Jhapa
2	Bina Acharya	Kathmandu

Colspan

Rowspan
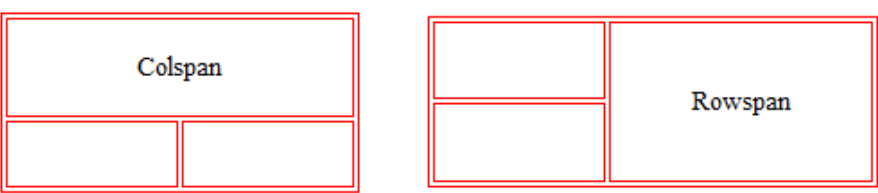
Attribute	Value	Description
<table border= "1">	number (0 to n)	Specifies the thickness of table border (0 = no border)
<table align= "center">	left, center, right	Specifies the horizontal position of a table
<tr align= "center">	left, center, right	Specifies the horizontal position of table row content
<tr valign= "top">	top, middle, bottom	Specifies the vertical position of table row content
<td align= "center">	left, center, right	Specifies the horizontal position of table cell content
<td valign= "top">	top, middle, bottom	Specifies the vertical position of table cell content
<td colspan= "2">	number (0 to n)	Specifies the number of columns a cell should span
<td rowspan= "2">	number (0 to n)	Specifies the number of rows a cell should span
<td width= "20%">	number (pixel) or %	Specifies the width of a cell
<td height= "20%">	number (pixel) or %	Specifies the height of a cell

HTML

Table

The HTML tables are created using the <table> tag in which the <tr> tag is used to create table rows and <td> tag is used to create data cells. <th> tag is used to make table heading. The elements under <td> are regular. and left aligned by default

3. To create an html file as "table.html".

HTML

```
<html>
<body >
<table border="2" bordercolor="red" width="98%" align="center">
<tr>
<td align="center" colspan="3">
   <br><br>WEBSITE NAME<br><br>
</td>
</tr>
<tr>
<td width="15%" align="center">
                              MENU

</td>
<td  width="70%" align="center">
<br><br><br><br><br><br><br><br><br><br><br>
You Can write your main content here
<br><br><br><br><br><br><br><br><br><br><br>
</td>
<td  width="15%" align="center">
              ADVT

</td>
</tr>
<tr><td align="center" colspan="3">
                              <br><br>
                              FOOTER
                              <br><br>
          </td>

</tr>
</table>
```

Grouping Tag

Grouping Content

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

HOME | CONTACT | ABOUT

Content Articles

Actual content goes here.....
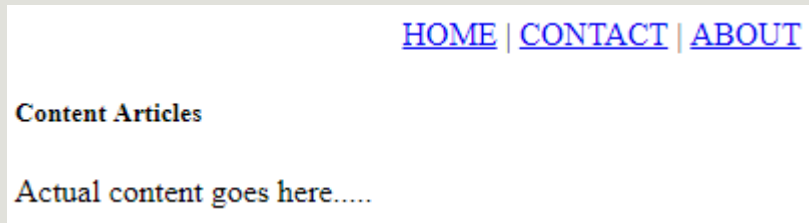
```
<!DOCTYPE html>
<html>
<head>
 <title>Div Tag Example</title>
</head>
 <body>
  <div id = "menu" align = "middle" >
      <a href = "/index.htm">HOME</a> |
      <a href = "/about/contact_us.htm">CONTACT</a> |
      <a href = "/about/index.htm">ABOUT</a>
  </div>
<div id = "content" align = "left" bgcolor = "white">
<h5>Content Articles</h5>
<p>Actual content goes here.....</p>
</div>
</body>

</html>
```

Html frame

Frame

➢ HTML frames are used to divide your browser window into multiple sections where 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.

Disadvantages of Frames
  ➢ There are few drawbacks with using frames, so it's never recommended to use frames in your webpages −
  ➢ Some smaller devices cannot cope with frames often because their screen is not big enough to be divided up.
  ➢ Sometimes your page will be displayed differently on different computers due to different screen resolution.
  ➢ The browser's back button might not work as the user hopes.
  ➢ There are still few browsers that do not support frame technology.
  ➢ Reload Problem

Disadvantages of Using Frames

1. One of the main disadvantage of frames is search engines will not deal with them properly.

 i.e, search engines (including most popular ones) will not index pages containing frames as its hard for them to search for a specific content and move backwards to check to which frameset each page belongs to and retrieve all the pages in the frameset.

2. Its hard to navigate through pages in frames when we have more than two or three frames.

3. Its difficult to print the content of all frames when compared to a normal web page.

4.. Some browsers doesn't support frames, so we need to place the content seperately for the people who doesn't have frames using <noframes> ... </noframes>

5. We cannot bookmark individual pages using browser's Favourites Menu.

Deprecated : FRAME & FRAMESET tags are not supported in HTML5 , better to avoid.

Html frame

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.

➢ Each frame is indicated by <frame> tag and it defines which HTML document shall open into the frame.

Note − The <frame> tag deprecated in HTML5. Do not use this element.

```
<!DOCTYPE html>
<html>
  <head>
    <title>HTML Frames</title>
  </head>
  <frameset rows = "10%,80%,10%">
    <frame name = "top" src = "top.htm" />
    <frame name = "main" src = "main.htm" />
    <frame name = "bottom" src = "bottom.htm" />
</frameset>
</html>
```

```
<frameset cols="*,*,*">
  <frame name="left" src="left.html">
  <frame name="middle" src="middle.html">
  <frame name="right" src="right.html">
</frameset>
```

```
<frameset rows="10%,80%,*">
<frame name="top" src="top.html">
  <frameset cols="25%,*">
    <frame name="left" src="left.html">
    <frame name="main" src="main.html">
  </frameset>
<frame name="footer" src="footer.html">
</frameset>
```

HTML iFrame

➢ An iframe is used to display a web page within another web page

➢ An iframe or inline frame is used to display external objects including other web pages within a web page.
 The basic syntax for adding an iframe can be given with:
```
<iframe src="URL">
   alternative content for browsers which do not support iframe.
</iframe>
```

```
<!DOCTYPE html>
<html >
<head>
   <meta charset="UTF-8">
   <title>Example of HTML Iframe</title>
</head>
<body>
   <iframe src="/html/demo-page.html" width="300" height="200">
     alternative content for browsers which do not support iframe.
   </iframe>
</body>
</html>
```

HTML - Colors

The <body> tag has following attributes which can be used to set different colors −

➢ **bgcolor** − sets a color for the background of the page.

➢ **text** − sets a color for the body text.

➢ **alink** − sets a color for active links or selected links.

➢ **link** − sets a color for linked text.

➢ **vlink** − sets a color for *visited links* − that is, for linked text that you have already clicked on.

<body bgcolor="green" text="red" alink="green" link="blue" vlink="black">

HTML Color Coding Methods

There are following three different methods to set colors in your web page −

Color names − You can specify color names directly like green, blue or red.

Hex codes − A six-digit code representing the amount of red, green, and blue that makes up the color.

Color decimal or percentage values − This value is specified using the rgb( ) property.

HTML - Colors

W3C Standard 16 Colors

Here is the list of W3C Standard 16 Colors names and it is recommended to use them.

	Color		Color		Color		Color
	Black		Gray		Silver		White
	Yellow		Lime		Aqua		Fuchsia
	Red		Green		Blue		Purple
	Maroon		Olive		Navy		Teal

Color	Color HEX
	#000000
	#FF0000
	#00FF00
	#0000FF
	#FFFF00
	#00FFFF
	#FF00FF
	#C0C0C0
	#FFFFFF

Color	Color RGB
	rgb(0,0,0)
	rgb(255,0,0)
	rgb(0,255,0)
	rgb(0,0,255)
	rgb(255,255,0)
	rgb(0,255,255)
	rgb(255,0,255)
	rgb(192,192,192)
	rgb(255,255,255)

HTML Form

➢HTML Forms are required to collect different kinds of user inputs, such as contact details like name, email address, phone numbers, or details like credit card information, etc.

➢Forms contain special elements called controls like input box, checkboxes, radio-buttons, submit buttons, etc.

➢Users generally complete a form by modifying its controls e.g. entering text, selecting items, etc. and submitting this form to a web server for processing.

➢A form will take input from the site visitor and then will post it to a back-end application such as CGI, 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.

```
<form action = "Script URL" method = "GET|POST">
   form elements like input, textarea etc.
</form>
```

HTML form

First name: [   ]

Last name: [   ]

E-mail: [   ]

○ Male
○ Female

[Submit] [Reset]

HTML Form

Form Attributes

Apart from common attributes, following is a list of the most frequently used form attributes –

Attribute & Description

Action: Backend script ready to process your passed data.

Method: Method to be used to upload data. The most frequently used are GET and POST methods.

Target: Specify the target window or frame where the result of the script will be displayed. It takes values like _blank, _self, _parent etc.

Enctype: You can use the enctype attribute to specify how the browser encodes the data before it sends it to the server. Possible values are –

➤ application/x-www-form-urlencoded – This is the standard method most forms use in simple scenarios.

➤ mutlipart/form-data – This is used when you want to upload binary data in the form of files like image, word file etc.

HTML Form

HTML Form Controls

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

➢Text box:

➢Password box :

➢Checkboxes:

➢Radio Box:

➢Select Box:

➢File Select boxes

➢Hidden Controls

➢Buttons:

➢Submit button

➢ Reset Button

┌─Student Information Form─────────────
First Name: Krishna

Last Name: Acharya

Password : ••••••••••••

Gender: ◉ Male ◯ Female ◯ Other

Select Programme: BCA ▾

Select Courses:
☑ HTML
☑ Java
☑ VB.Net

[Choose File] Third.GIF

write comment here..

[Login] [Post] [Reset]

HTML Form

Text/password 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.
Type:
Indicates the type of input control and for text input control it will be set to text/password.
Name/id:
Used to give a name to the control which is sent to the server to be recognized and get the value.
Value:
This can be used to provide an initial value inside the control.
Size:
Allows to specify the width of the text-input control in terms of characters.
Maxlength:
Allows to specify the maximum number of characters a user can enter into the text box.
	``html
	<!DOCTYPE html>
	<html>
	  <head>
	    <title>Text Input Control</title>
	  </head>
	  <body>
	  <form >
	  User Name: <input type = "text"/>
	
	  Password: <input type = "password" />
	</form>
	 </body>
	</html>
	``

HTML Form

Radio Button Control
Radio buttons are used when out of many options, just one option is required to be selected. They are also created using HTML <input> tag but type attribute is set to radio.
Type:
Indicates the type of input control and for checkbox input control it will be set to radio.
Name/id
Used to give a name to the control which is sent to the server to be recognized and get the value.
Value:
The value that will be used if the radio box is selected.
Checked:
Set to *checked* if you want to select it by default.
	`<!DOCTYPE html>`
	`<html>`
	`  <head>`
	`    <title>Text Input Control</title>`
	`  </head>`
	`  <body>`
	`  <form >`
	`  Gender:`
	`<input type="radio" name="r1" id="male">`
	`  <label for="male">Male</label>`
	`<input type="radio" name="r1">Female`
	`<input type="radio" name="r1">Other</form>`
	`  </body>`
	`</html>`

HTML Form

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.
name
Used to give a name to the control which is sent to the server to be recognized and get the value.
size
This can be used to present a scrolling list box.
multiple
If set to "multiple" then allows a user to select multiple items from the menu.
Following is the list of important attributes of <option> tag –
value
The value that will be used if an option in the select box box is selected.
selected
Specifies that this option should be the initially selected value when the page loads.
label
An alternative way of labeling options

```
<!DOCTYPE html>
<html>
   <head>
      <title>Text Input Control</title>
   </head>
   <body>
    <form >
Select Programme:
        <select>
        <option>BCA</option>
        <option selected="selected">BBA</option>
        <option value="1" >BscCsIT</option>
        </select>
</form>
 </body>
</html>
```

HTML Form

File Upload Box
If you want to allow a user to upload a file to your web site, you will need to use a file upload box, also known as a file select box. This is also created using the <input> element but type attribute is set to **file**.
name
Used to give a name to the control which is sent to the server to be recognized and get the value.
accept
Specifies the types of files that the server accepts.

```
<!DOCTYPE html>
<html>
   <head>
      <title>Text Input Control</title>
   </head>
   <body>
   <form enctype="multipart/form-data" >
<input type="file" accept = "image/*" multiple="multiple">
</form>
 </body>
</html>
```

HTML Form

Textarea or multiline Controls
This is 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>,
name
Used to give a name to the control which is sent to the server to be recognized and get the value.
rows
Indicates the number of rows of text area box.
cols
Indicates the number of columns of text area box

```
<!DOCTYPE html>
<html>
  <head>
    <title>Text Input Control</title>
  </head>
  <body>
   <form>
<textarea rows="10" cols="50">
write comment here..
</textarea>

</form>
 </body>
</html>
```

HTML Form

Checkbox Control
Checkboxes are used when more than one option is required to be selected. They are also created using HTML <input> tag but type attribute is set to **checkbox**.
type
Indicates the type of input control and for checkbox input control it will be set to checkbox..
name
Used to give a name to the control which is sent to the server to be recognized and get the value.
value
The value that will be used if the checkbox is selected.
checked

```
<!DOCTYPE html>
<html>
   <head>
      <title>Text Input Control</title>
   </head>
   <body>
   <form>
Select Courses:<br>
<input type="checkbox" name="chk1">HTML<br>
<input type="checkbox" name="chk2" checked="checked">Java<br>
<input type="checkbox" name="chk3" checked="checked">VB.Net<br>
</form>
 </body>
</html>
```

HTML Form

Hidden Form Controls

Hidden form controls are used to hide data inside the page which later on can be pushed to the server.

Group selection
```
<select>
  <optgroup label="FOHSS">
    <option>BCA</option>
    <option>MCA</option>
  </optgroup>
  <optgroup label="FOM">
    <option>BBA</option>
    <option>MBA</option>
  </optgroup>
</select>
```

```
<!DOCTYPE html>
<html>
   <head>
      <title>Text Input Control</title>
   </head>
   <body>
   <form>
Select Courses:<br>
<input type="hidden" name="hname" value="test">
</form>
 </body>
</html>
```

HTML Form

```
<!DOCTYPE html>
<html>
  <head>
    <title>Text Input Control</title>
  </head>
  <body>
   <form>
Select Range : <input type = "range" min = "0" max = "10" step
"1"  value = "5" />
Enter URL : <input type = "url" />
Select Number : <input type = "number" min = "0" max = "10"
step "1"  value = "5"
</form>
 </body>
</html>
```

```
<!DOCTYPE html>
<html>
  <head>
    <title>Text Input Control</title>
  </head>
  <body>
   <form>
Enter email : <input type = "email" />
<input type = "submit" value = "submit" />
Date : <input type = "date"/>
Local Date and Time : <input type = "datetime-local">
</form>
 </body>
</html>
```

HTML5 Form

HTML5 input elements introduced several new values for the type attribute. These are listed below.

datetime

A date and time (year, month, day, hour, minute, second, fractions of a second) encoded according to ISO 8601 with the time zone set to UTC.

datetime-local

A date and time (year, month, day, hour, minute, second, fractions of a second) encoded according to ISO 8601, with no time zone information.

date

A date (year, month, day) encoded according to ISO 8601.

month

A date consisting of a year and a month encoded according to ISO 8601.

week

A date consisting of a year and a week number encoded according to ISO 8601.

time

A time (hour, minute, seconds, fractional seconds) encoded according to ISO 8601.

number

It accepts only numerical value. The step attribute specifies the precision, defaulting to 1.

range

The range type is used for input fields that should contain a value from a range of numbers.

email

It accepts only email value. This type is used for input fields that should contain an e-mail address. If you try to submit a simple text, it forces to enter only email address in email@example.com format.

url

It accepts only URL value. This type is used for input fields that should contain a URL address. If you try to submit a simple text, it forces to enter only URL address either in http://www.example.com format or in http://example.com format.

HTML5 Form

The placeholder attribute

HTML5 introduced a new attribute called placeholder. This attribute on <input> and <textarea> elements provide a hint to the user of what can be entered in the field

<form>

  Enter email : <input type = "email"

         placeholder = "email@example.com" **autofocus**
/>

        <input type = "submit" value = "submit" />

     </form>

Enter email : | email@example.com | submit

The autofocus attribute

HTML5 introduced a new attribute called **autofocus** .

The required attribute

Now you do not need to have JavaScript for client-side validations like empty text box would never be submitted because HTML5 introduced a new attribute called required which would be used as follows and would insist to have a value –

<form>

  Enter email : Enter email : <input type = "text" required/>
<input type = "submit" value = "submit" />

     </form>