Web Design Course

HTML Basic

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Instructional Units in the Module

IU #	IU Description	Required / Optional
01	Web Design Concepts	Required
02	**HTML Basics**	**Required**
03	Advanced HTML & Web Browsers	Required
04	Structuring & Styling with CSS	Required
05	Working with CSS : An Example	Required
06	Javascript Basics	Required
07	Advanced Javascript	Required

HTML Basics

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HTML Basics
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What is HTML?

- ❑ HTML is a **markup** language for **designing** web documents (web pages).

- ❑ HTML stands for **H**yper **T**ext **M**arkup **L**anguage

- ❑ Markup language is a set of **markup tags**

- ❑ HTML documents are described by **HTML tags**

- ❑ Every HTML tag **describes** different document content

HTML History and Versions

❑ Berners-Lee created HTML in late 1991 but "HTML 2.0" was the first standard HTML specification which was published in the year 1995.

Version	Year
HTML	1991
HTML+	1993
HTML 2.0	1995
HTML 3.2	1997
HTML 4.01	1999
XHTML 1.0	2000
HTML5	2012
XHTML5	2013

- ❑ HTML is used to create electronic documents (called pages) that are displayed on the World Wide Web.

- ❑ Each page contains a series of connections to other pages called **hyperlinks**.

- ❑ Every web page you see on the Internet is written using one version of HTML code or another.

- ❑ HTML code ensures the proper formatting of text and images.

- ❑ HTML also provides a basic structure of the page, upon which Cascading Style Sheets are overlaid to change its appearance.

Purpose of HTML Pages

❑ The Text Version of Some Content is

My First Heading

My first paragraph

❑ See below HTML Version, which produces the output as shown. Note the Bigger Font Size for Heading

```
<!DOCTYPE html>
<html>
<head>
<title>Page Title</title>
</head>
<body>

<h1>This is a Heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

➡️

My First Heading

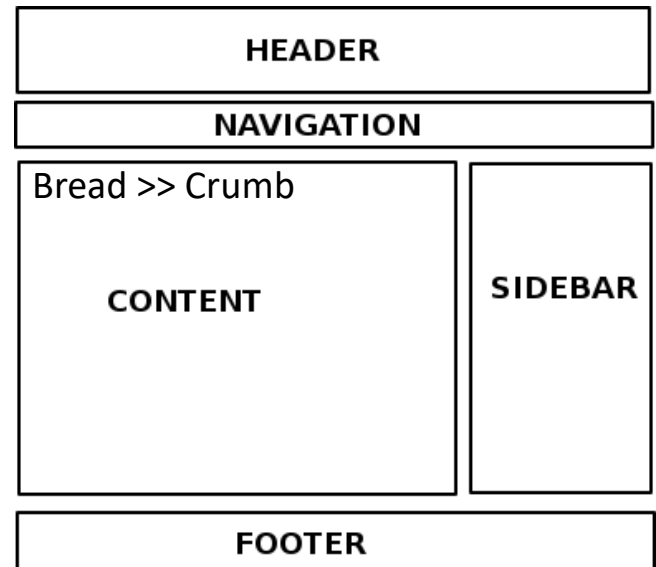My first paragraph.

❑ HTML files have extension .html or .htm

Static & Dynamic HTML

❑ HTML pages can be either static or dynamic.

❑ "Static" means unchanged or constant, while "dynamic" means changing or lively.

❑ Therefore, static Web pages contain the same prebuilt content each time the page is loaded, While the content of dynamic Web pages can be generated on-the-fly.

❑ Dynamic web pages are generated using Server Side programming languages such as Java Server Pages, Active Server Pages.NET, Python, Perl, PHP etc..
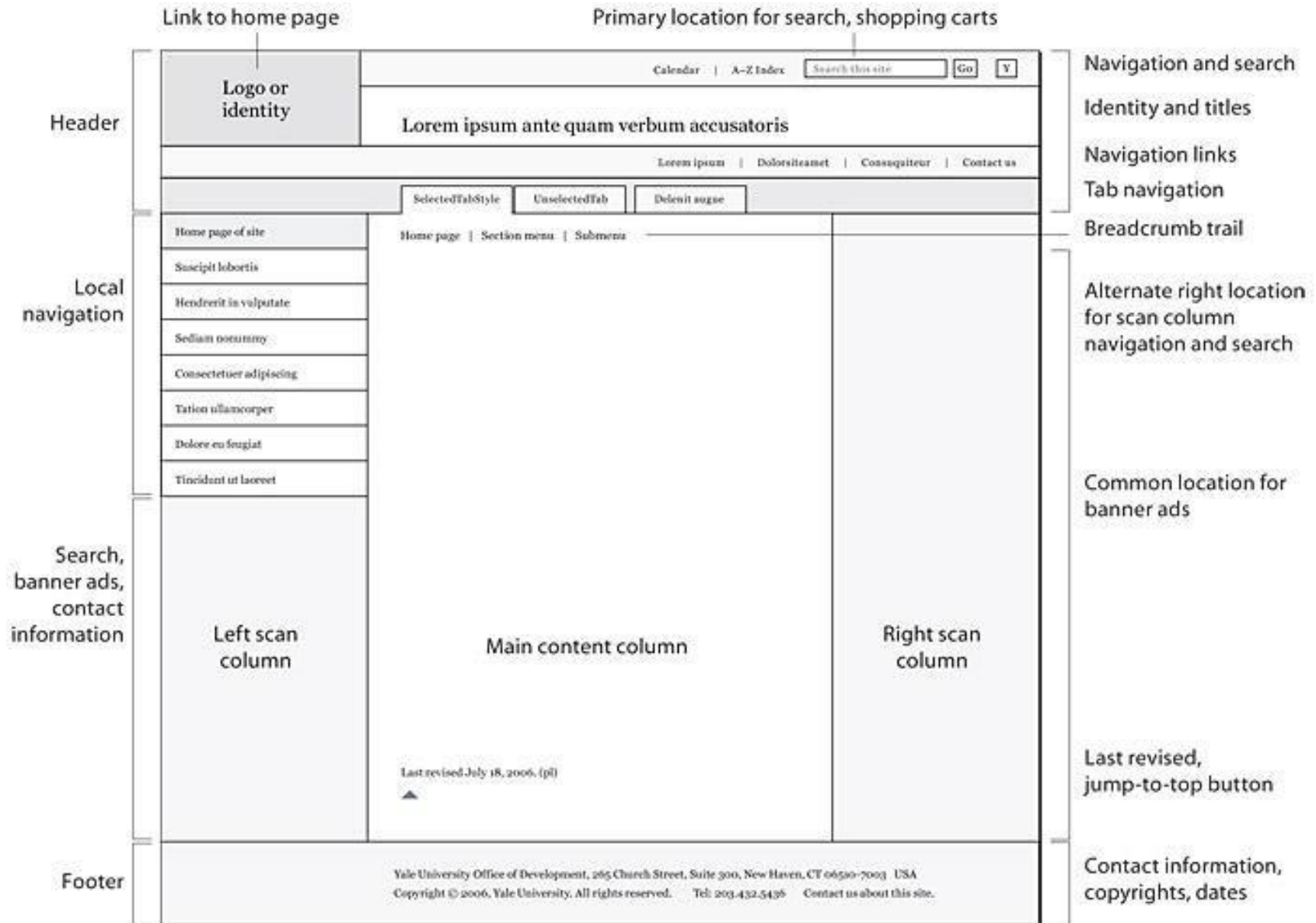
❑ Both Static & Dynamic HTML consist of HTML Code only.
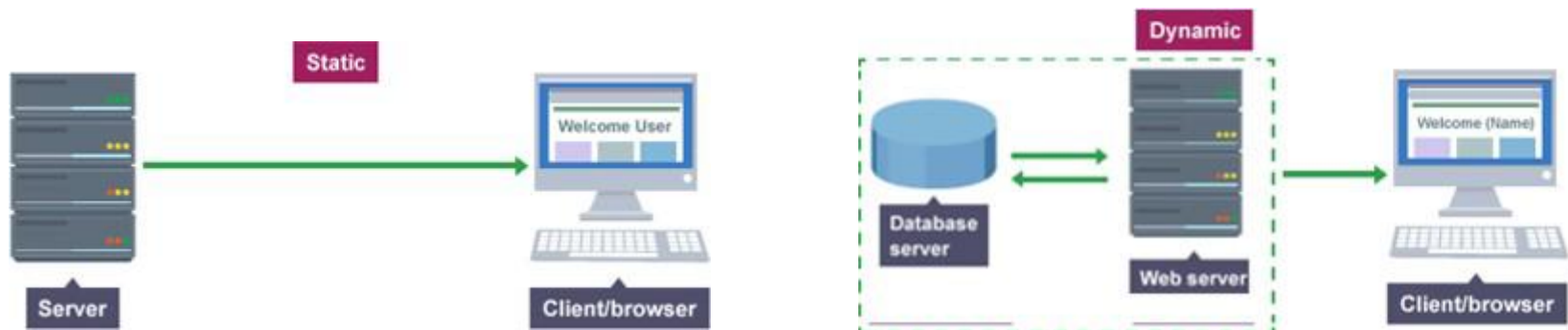
HTML Layout

❑ A HTML Page consist of various key sections, which are available in most sites. This is called layout. Below is a sample layout

❑ Header Section Consist of Logo, Top Navigation etc.

❑ Navigation is usually a list of links taking you to various sections of the website

❑ Content is the main content. Sidebar consist of various elements.

❑ Footer consist of copy right and other links.

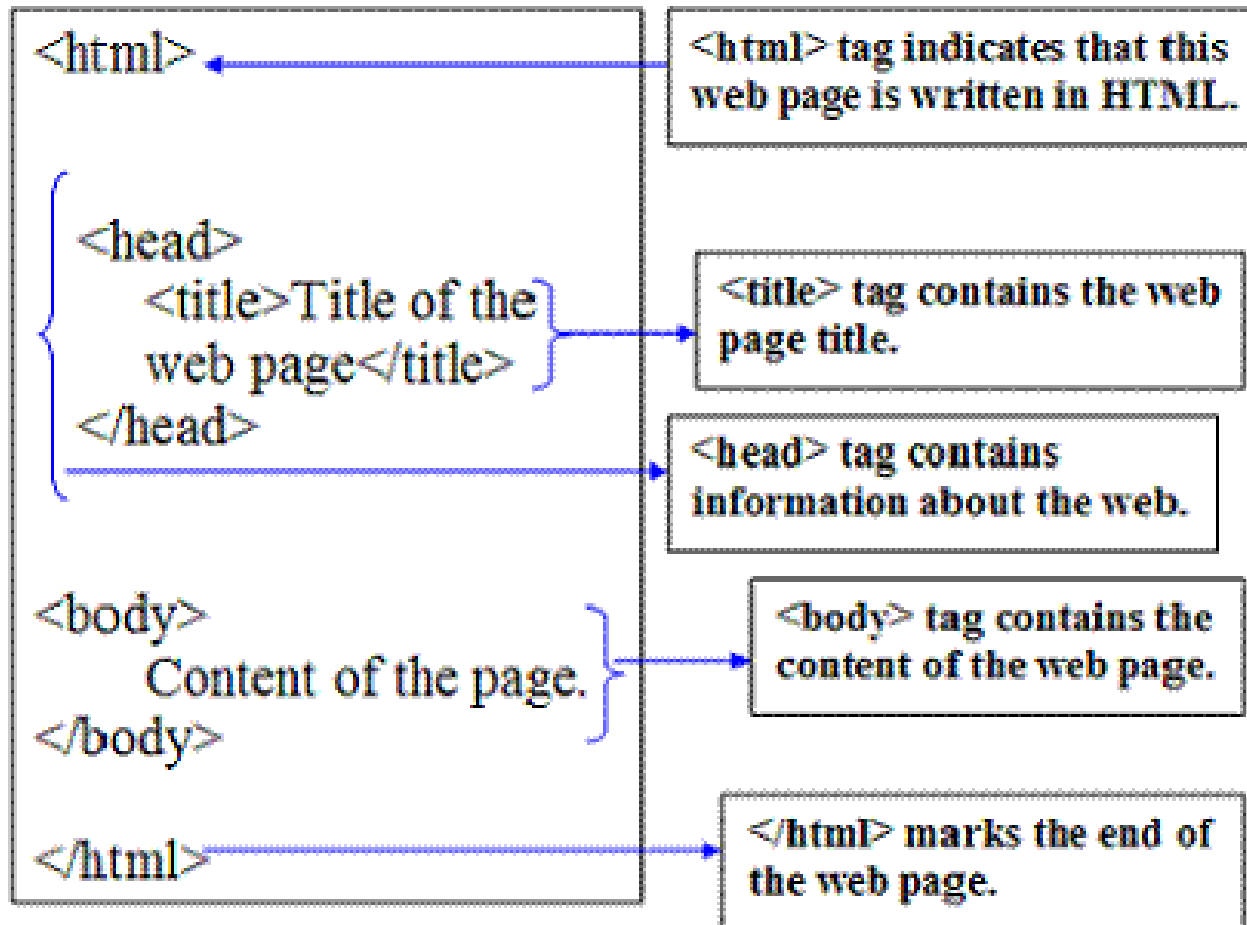❑ Bread Crumb consist of links to navigate through page hierarchy

HEADER	
NAVIGATION	
Bread >> Crumb CONTENT	SIDEBAR
FOOTER	

Sample HTML Layout

Link to home page

Primary location for search, shopping carts

Header

Local navigation

Search, banner ads, contact information

Footer

Logo or identity

Calendar | A–Z Index | Search this site | Go | Y

Lorem ipsum ante quam verbum accusatoris

Lorem ipsum | Dolorsiteamet | Consequiteur | Contact us

SelectedTabStyle | UnselectedTab | Delenit augue

Home page of site

Suscipit lobortis

Hendrerit in vulputate

Sediam nonummy

Consectetuer adipiscing

Tation ullamcorper

Dolore eu feugiat

Tincidunt ut laoreet

Home page | Section menu | Submenu

Left scan column

Main content column

Right scan column

Last revised July 18, 2006. (pl)

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Navigation and search

Identity and titles

Navigation links

Tab navigation

Breadcrumb trail

Alternate right location for scan column navigation and search

Common location for banner ads

Last revised, jump-to-top button

Contact information, copyrights, dates

Structure & Elements of a HTML Document

❑ A HTML page consist of the enclosing <html> tag, Head Section within <head> tag and <body> tag contains the content

<html>	<html> tag indicates that this web page is written in HTML.
<head> <title>Title of the web page</title> </head>	<title> tag contains the web page title.
	<head> tag contains information about the web.
<body> Content of the page. </body>	<body> tag contains the content of the web page.
</html>	</html> marks the end of the web page.

HTML Document/Page Types

❑ The <!DOCTYPE> declaration
  ▪ the 1st Instruction in a HTML document, even before the <html> tag.
  ▪ not an HTML tag
  ▪ it is an instruction to the web browser about what version of HTML the page is written in.

❑ In HTML 4.01, the <!DOCTYPE> declaration refers to a DTD, because HTML 4.01 was based on SGML.

❑ The DTD (Document Type Declaration) specifies the rules for the mark-up language, so that the browsers render the content correctly.

❑ HTML5 is not based on SGML, and therefore does not require a reference to a DTD.

❑ Always add the <!DOCTYPE> declaration to your HTML documents, so that the browser knows what type of document to expect.

Common DOCTYPE Declarations

❑ HTML 5

    `<!DOCTYPE html>`

❑ HTML 4.01 Strict

   ▪ This DTD contains all HTML elements and attributes, but does NOT INCLUDE presentational or deprecated elements (like font). Framesets are not allowed.

   `<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">`

❑ HTML 4.01 Transitional

   ▪ This DTD contains all HTML elements and attributes, INCLUDING presentational and deprecated elements (like font). Framesets are not allowed.

   `<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">`

❑ HTML 4.01 Frameset

   ▪ This DTD is equal to HTML 4.01 Transitional, but allows the use of frameset content.

   `<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN" "http://www.w3.org/TR/html4/frameset.dtd">`

HTML Elements

❑ HTML elements are written with a **start** tag, with an **end** tag, with the **content** in between:

<tagname>content</tagname>

❑ The HTML **element** is everything from the start tag to the end tag:

Example

Start Tags

<p> My first HTML paragraph </p>

<h1> This is a heading </h1>

<div> This is a div </div>
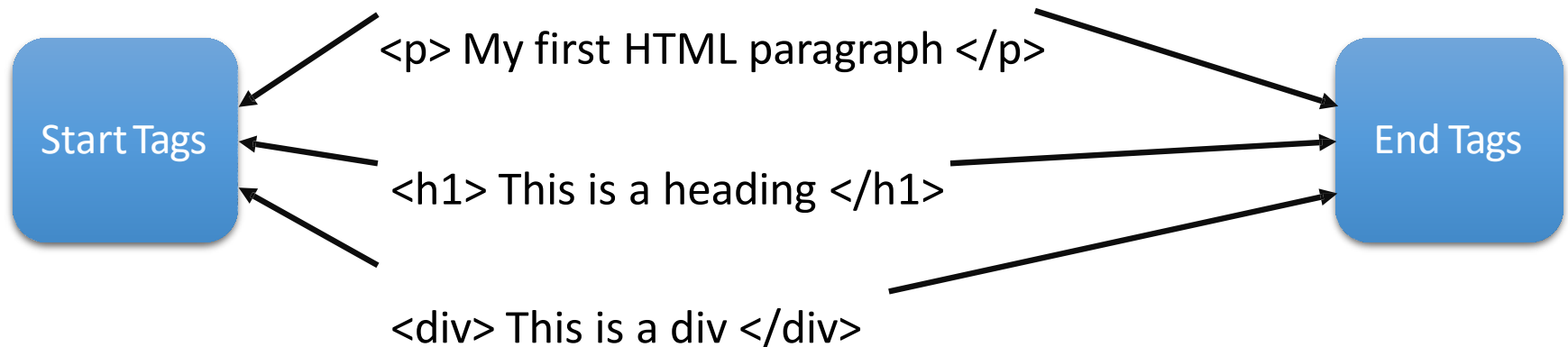
End Tags

Some HTML elements do not have an end tag like above <br/> tag.

HTML Attributes

- ❑ An attribute is used to define the characteristics of an HTML element and is placed inside the element's opening tag.

- ❑ Attributes provide additional information about an element

- ❑ Attributes consists of two parts: a name and a value:

Example

name   value

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

o/p

This is left aligned

This is center aligned

This is right aligned

Nested HTML Elements

❑ HTML elements can be nested i.e. elements can contain elements.

❑ All HTML documents contain nested HTML elements.

Example

```
<html>
<body>

<h1>Heading H1</h1>
<p>My paragraph.</p>

</body>
</html>
```

O/P

Heading H1
My paragraph

Empty HTML Elements

❑ HTML elements that are with no content are called empty elements.

❑ \<br\> is an empty element without a closing tag (the \<br\> tag is used to define a line break).

❑ Empty elements can be "closed" in the opening tag like this: \<br /\>.

Example

```
<html>
<body>

<p>Hello
<br />
You delivered your assignment
on time.<br />
Thanks<br />
 Yoohooo</p>

</body>
</html>
```

o/p

Hello
You delivered your
assignment on time.
Thanks
Yoohooo

HTML Head Elements

- ❑ The HTML <head> Element
  - ▪ The <head> element act as a container for all the head elements.
  - ▪ The <head> element includes a title for the document, scripts, styles, meta information, and more.
- ❑ The following elements can go inside the <head> element:
  - ▪ <title>
  - ▪ <style>
  - ▪ <base>
  - ▪ <link>
  - ▪ <meta>
  - ▪ <script>
  - ▪ <noscript>

HTML Head Elements

❑ HTML Head Elements

Tag	Description
<head>	Defines information about the document
<title>	Defines the title of a document
<base>	Defines a default address or a default target for all links on a page
<link>	Defines the relationship between a document and an external resource
<meta>	Defines metadata about an HTML document
<script>	Defines a client-side script
<style>	Defines style information for a document

❑ The title Attribute

- ■ The **title** attribute gives a suggested title for the element. The syntax for the **title** attribute is similar as explained for **id** attribute:

- ■ 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.

```
<!DOCTYPE html>
 <html>
<head> <title>The title Attribute Example</title></head>
 <body>
<h3 title="Hello HTML!">Titled Heading Tag Example</h3>
 </body>
 </html>
```

o/p

Titled Heading Tag Example

HTML <base> tag

❑ The <base> tag specifies the base URL/target for all relative URLs in a document.

❑ There can be at maximum one <base> element in a document, and it must be inside the <head> element.

❑ Put the <base> tag as the *first* element inside the <head> element, so that other elements in the head section uses the information from the <base> element.

❑ If the <base> tag is present, it must have either an href attribute or a target attribute, or both.

❑ Target can be _blank, _parent, _self, _top or framename

```
<head>
  <base href="https://www.lithan.com/images/" target="_blank">
</head>
<body>
<img src="stickman.gif" width="24" height="39" alt="Stickman">
<a href="https://www.lithan.com">Lithan</a>
</body>
```

- ❑ The <link> tag defines a link between a document and an external resource.

- ❑ The <link> tag is used to link to external style sheets.

- ❑ The <link> element is an empty element, it contains attributes only.

- ❑ This element goes only in the head section, but it can appear any number of times.

- ❑ Following code links an HTML Stylesheet to the HTML page

```html
<head>
  <link rel="stylesheet" type="text/css" href="theme.css">
</head>
```

- ❑ The **<meta>** tag provides metadata about the HTML document.

- ❑ Metadata will not be displayed on the page, but will be machine readable.

- ❑ Meta elements are typically used to specify page description, keywords, author of the document, last modified, and other metadata.

- ❑ The metadata can be used by browsers (how to display content or reload page), search engines (keywords), or other web services.

- ❑ **<meta>** tags always go inside the **<head>** element.

- ❑ Metadata is always passed as name/value pairs.

```
<head>
  <meta charset="UTF-8">
  <meta name="description" content="Free Web tutorials">
  <meta name="keywords" content="HTML,CSS,XML,JavaScript">
  <meta name="author" content="John Doe">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
</head>
```

- ❑ Define keywords for search engines

- ❑ Define a description of your web page

- ❑ Define the author of a page:

- ❑ Setting the viewport to make your website look good on all devices

- ❑ Refresh document every 30 seconds

```
<head> <meta http-equiv="refresh" content="30"></head>
```

- ❑ Redirect to another page

```
<head> <meta http-equiv="refresh" content="0;URL='http://www.Lithan.com'"> </head>
```

- ❑ The <style> tag is used to define style information for an HTML document.

- ❑ Inside the <style> element you specify how HTML elements should render in a browser.

- ❑ Each HTML document can contain multiple <style> tags.

- ❑ To link to an external style sheet, use the <link> tag.

- ❑ If the "scoped" attribute is not used, each <style> tag must be located in the head section.

❑ Following code changes the colour of h1 & p tags

```html
<html>
<head>
<style>
h1 {color:red;}
p {color:blue;}
</style>
</head>
<body>

<h1>A heading</h1>
<p>A paragraph.</p>

</body>
</html>
```


This is a heading

This is a paragraph.

- ❑ The **<script>** tag is used to define a client-side script (JavaScript).

- ❑ The <script> element either contains scripting statements, or it points to an external script file through the **src** attribute.

- ❑ Common uses for JavaScript are image manipulation, form validation, and dynamic changes of content.

- ❑ To select an HTML element, JavaScript very often use the document.getElementById(id) method.

- ❑ This JavaScript example writes "Hello JavaScript!" into an HTML element with id="demo":

```
<script>
    document.getElementById("demo").innerHTML = "Hello JavaScript!";
</script>
```

- ❑ To attach an external JavaScript with .js extension use like below

```
<script src="myscripts.js"></script>
```

- ❑ The <body> tag defines the document'sbody.
- ❑ The <body> element contains all the contents of an HTML document, such as text, hyperlinks, images, tables, lists, etc.
- ❑ A simple HTMLdocument, with the minimum of required tags:

```html
<html>
<head>
<title>Title of the document</title>
</head>

<body>
The content of the document......
</body>

</html>
```

❑ Most browsers will display the <body> element with the following default values:

```css
body {
    display: block;
    margin: 8px;
}
body:focus {
    outline: none;
}
```

- ❑ Headings are Important in a HTML page

- ❑ <h1> is the the most important heading.

- ❑ <h6> is the least important heading.

- ❑ Headings are defined with the <h1> to <h6> tags.

- ❑ Search engines use headings to index the structure and content of your web pages.

- ❑ Users scan through web pages by their headings.

- ❑ Always use headings to show the document structure.

- ❑ h1 headings should be the main headings, followed by h2 headings, then the less important h3, and so on

```
<!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>
```

o/p

This is heading 1

This is heading 2

This is heading 3

This is heading 4

This is heading 5

This is heading 6

❑ Centering Content <center>

■ **<center>** tag is used 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>
```

o/p

This text is not in the center.
This text is in the center.

- ❑ The HTML **<p>** element defines a **paragraph.**

- ❑ Large or small screens, and resized windows will create different results for same paragraph.

- ❑ In HTML, you cannot change the output by adding extra spaces or extra lines in your HTML code.

- ❑ The browser will remove extra spaces and extra lines when the page is displayed.

- ❑ Any number of spaces, and any number of new lines, count as **only one space**.

Example

```
<p>This is a paragraph</p>
<p>This is another paragraph</p>
```
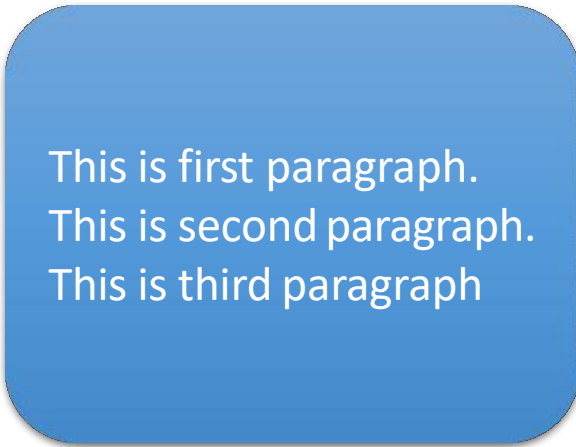
```
<!DOCTYPE html>
 <html>
<body>
<p>This is first paragraph.</p>
 <p>This is second paragraph.</p>
 <p>This is third paragraph.</p>
 </body>
</html>
```

o/p

This is first paragraph.
This is second paragraph.
This is third paragraph

❑ Horizontal Lines \<hr>

- Horizontal lines are used to visually break up sections of a document. It creates a line from the current position in the document to the right margin and breaks the line accordingly.

- For example you may want to give a line between two paragraphs as in the given example below:

```html
<!DOCTYPE html>
<html>
<head> <title>Horizontal Line
Example</title></head>
<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>
```

o/p →

This is paragraph one and should be on top

This is paragraph two and should be at bottom

❑ **Preserve Formatting <pre>**

- Sometimes we want our text to follow the exact format of how it is written in the HTML document. In those cases, preformatted tag <pre> is used.
- Any text between the opening <pre> tag and the closing </pre> tag will preserve the formatting of the source document

Example

```
<!DOCTYPE html>
<html>
<body>
 <pre>
     function testFunction( strText )
      {
                alert (strText)

      }
</pre>
</body>
</html>
```

o/p

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

}
```

- ❑ **Bold Text**
  - Anything that appears within **... or ** element, is displayed in bold as shown below:
  - bold   **bold**
- ❑ **Italic Text**
  - Anything that appears within **<i>...</i>** element is displayed in italicized as shown below:
  - <i>italicized</i   *italicized*
    >
- ❑ **Underlined Text**
  - Anything that appears within **<u>...</u>** element, is displayed with underline as shown underlined
  - <u>underlined</u>
- ❑ **Strike Text**
  - Anything that appears within **<strike>...</strike>** element is displayed with strikethrough, which is a thin line through the text as shown below: ~~strikethrough~~
  - <strike>strikethrough</strike>

- ❑ **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.
  - <tt>monospaced</tt>   `monospaced`
- ❑ **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.
  - ^{superscript}   a ^{superscript} typeface.
- ❑ **Subscript Text**
  - The content of a **_{...}** element is written in subscript;
  - _{subscript}   a $_{subscript}$ typeface.

❑ **The four core attributes that can be used on the majority of HTML elements (although not all) are:**

- ▪ Id
- ▪ Title
- ▪ Class
- ▪ Style

```
 <!DOCTYPE html>
<html lang="en-US">
<body>
<h1>My First Heading</h1>
<p>My first paragraph.</p>
</body>
</html>
```

In the above example 'lang' is name and 'en-US' is value

❑ The id Attribute

- It specifies an unique id for an element.
- If an element carries an id attribute as a unique identifier it is possible to identify just that element and its content.
- When we have two elements of the same name within a Web page, then id attribute is used to distinguish between elements that have the same name.

Example

```
<p id="html">This para explains what is HTML</p>
<p id="css">This para explains what is Cascading Style Sheet</p>
```

❑ The class Attribute

- Used to associate an element with a style sheet, and specifies the class of element.

```
class="className1 className2 className3"
```

❑ **The style Attribute**

- Allows you to specify Cascading Style Sheet (CSS) rules within the element

Example

```
<!DOCTYPE html>
<html>
<head>
  <title>The style Attribute</title>
</head>
 <body>
 <p style="font-family:arial;
color:#FF0000;">Some text...</p>
</body>
 </html>
```

o/p → Some text...

Attributes that are readily usable with many HTML tags

Attribute	Options	Function
align	right, left, center	Horizontally aligns tags
valign	top, middle, bottom	Vertically aligns tags within an HTML element.
bgcolor	numeric, hexadecimal, RGB values	Places a background color behind an element
background	URL	Places a background image behind an element
width	Numeric Value	Specifies the width of tables, images, or table cells.
height	Numeric Value	Specifies the height of tables, images, or table cells.
title	User Defined	"Pop-up" title of the elements.

❑ Some characters are reserved in HTML and they have special meaning when used in HTML document.

❑ HTML entities are used to display reserved characters in HTML.

❑ If you use the less than (<) or greater than (>) signs in your text, the browser might mix them with tags.

❑ To display a less than sign we must write: **<** or **<**

❑ Non-breaking Space

- A common character entity used in HTML is the non-breaking space ( ).

- Remember that browsers will always truncate spaces in HTML pages.

- If you write 10 spaces in your text, the browser will remove 9 of them.

- To add real spaces to your text, you can use the   character entity.

Some Other Useful HTML Character

Result	Description	Entity Name	Entity Number
	non-breaking space		
<	less than	<	<
>	greater than	>	>
&	ampersand	&	&
¢	cent	¢	¢
£	pound	£	£
¥	yen	¥	¥
€	euro	€	€
©	copyright	©	©

➡ **Entity names are case sensitive.**

Combining Diacritical Marks

- A diacritical mark is a "glyph" added to a letter.

- Diacritical marks can appear both above and below a letter, inside a letter, and between two letters.

- Diacritical marks can be used in combination with alphanumeric characters, to produce a character that is not present in the character set (encoding) used in the page.

Result

Diacritical marks : à, á, Õ,etc.

Here are some examples of Diacritical marks

Mark	Character	Construct	Result
`	a	à	à
´	a	á	á
~	a	ã	ã
~	o	Õ	Õ

❑ Every HTML element has a default display value depending on what type of element it is.

❑ Default display value for most of the elements is block or inline.

❑ **Block-level Elements**

▪ A block-level element always starts on a new line and takes up the full width   available (stretches out to the left and right as far as it can).

The <div> element is a block-level element.

Examples of block-level elements:
•<div>
•<h1> - <h6>
•<p>
•<form>

❑ **Inline Elements**

▪ An inline element does not start on a new line and only takes up as much width as necessary.

This is |an inline <span> element inside| a paragraph.

Examples of inline elements:
    <span>
    <a>
    <img>

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

- ❑ The <div> element has no required attributes, but both **style** and **class** are common.

- ❑ When used together with CSS, the <div> element can be used to style blocks of content:

```
<html>
<head>
</head>
<body>
<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> </body>
</html>
```


London

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.

❑ The <span> element is often used as a container for some text.

❑ The <span> element has no required attributes,
    but both **style** and **class** are common.

❑ When used together with CSS, the <span> element can be used to
    style parts of the text

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

<p>My mother has <span
style="color:blue;font-
weight:bold">blue</span> eyes and my
father  has <span
style="color:darkolivegreen;font-
weight:bold">dark green</span> eyes.</p>

</body>
</html>
```
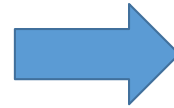
My mother has **blue** eyes and my father has **dark green** eyes.

- ❑ Comment tags are used to insert comments in the HTML source code.

- ❑ You can add comments to your HTML source by using the following syntax:

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

- ❑ Notice that there is an exclamation point (!) in the opening tag, but not in the closing tag.

- ❑ Comments are not displayed by the browser, but they can help document your HTML source code.

- ❑ With comments you can place notifications and reminders in your HTML

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

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

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

- ❑ In HTML, a color can be specified by using a color name, an RGB value, or a HEX value.
- ❑ **Color Name**
  - ▪ In HTML, a color can be specified by using a color name
  - ▪ HTML supports 140 standard color names.

Color	Name
	Red
	Orange
	Yellow
	Cyan
	Blue

❑ Example

```
<!DOCTYPE html>
<html>
<body>
<h2 style="background-color:#FF0000">
Background-color set by using #FF0000
</h2>
<h2 style="background-color:#00FF00">
Background-color set by using #00FF00
</h2>
<h2 style="background-color:#0000FF">
Background-color set by using #0000FF
</h2>
<h2 style="background-color:#FFFF00">
Background-color set by using #FFFF00
</h2>
<h2 style="background-color:#FF00FF">
Background-color set by using #FF00FF
</h2>
<h2 style="background-color:#00FFFF">
Background-color set by using #00FFFF
</h2>
</body>
</html>
```
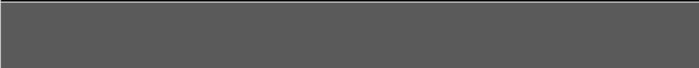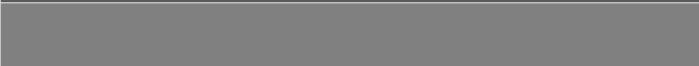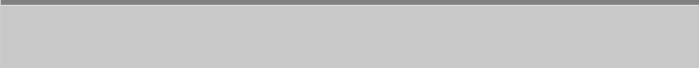
Background-color set by using red

Background-color set by using orange

Background-color set by using yellow

Background-color set by using blue

Background-color set by using cyan

- In HTML, a color can also be specified as an RGB value, using this formula: rgb(red, green, blue)

- Each parameter (red, green, and blue) defines the intensity of the color between 0 and 255.

- For example, rgb(255,0,0) is displayed as red, because red is set to its highest value (255) and the others are set to 0.

- To display the color black, all color parameters must be set to 0, like this: rgb(0,0,0).

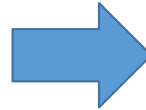- To display the color white, all color parameters must be set to 255, like this: rgb(255,255,255).

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

❑ Shades of gray are often defined using equal values for all the 3 light sources:

Color	RGB
	rgb(0,0,0)
	rgb(90,90,90)
	rgb(128,128,128)
	rgb(200,200,200)
	rgb(255,255,255)

❑ Example

```
<!DOCTYPE html>
<html>
<body>
<h2 style="background-color:rgb(255,0,0)">
Background-color set by using rgb(255,0,0)
</h2>
<h2 style="background-color:rgb(0,255,0)">
Background-color set by using rgb(0,255,0)
</h2>
<h2 style="background-color:rgb(0,0,255)">
Background-color set by using rgb(0,0,255)
</h2>
<h2 style="background-color:rgb(255,255,0)">
Background-color set by using rgb(255,255,0)
</h2>
<h2 style="background-color:rgb(255,0,255)">
Background-color set by using rgb(255,0,255)
</h2>
<h2 style="background-color:rgb(0,255,255)">
Background-color set by using rgb(0,255,255)
</h2>
</body>
</html>
```

❑ In HTML, a color can also be specified using a hexadecimal value in the form: #RRGGBB, where RR (red), GG (green) and BB (blue) are hexadecimal values between 00 and FF (same as decimal 0-255).

❑ For example, #FF0000 is displayed as red, because red is set to its highest value (FF) and the others are set to the lowest value (00).

Color	HEX
	#FF0000
	#FFFF00
	#00FF00
	#00FFFF
	#0000FF

❑ Shades of gray are often defined using equal values for all the 3 light sources

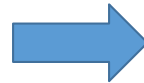| Color	HEX
	#000000
	#404040
	#808080
	#CCCCCC
	#FFFFFF

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

<h2 style="background-
color:#000000;color:white">
Background-color set by using #000000
</h2>

<h2 style="background-
color:#808080;color:white">
Background-color set by using #808080
</h2>

<h2 style="background-color:#FFFFFF;">
Background-color set by using #FFFFFF
</h2>

</body>
</html>
```

Background-color set by using #000000

Background-color set by using #808080

Background-color set by using #FFFFFF

- ❑ ASCII was the first **character encoding standard** (also called character set).

- ❑ ASCII defined 127 different alphanumeric characters that could be used on the internet: numbers (0-9), English letters (A-Z), and some special characters like ! $ + - ( ) @ < > .

- ❑ ANSI (Windows-1252) was the original Windows character set, with support for 256 different character codes.

- ❑ ISO-8859-1 was the default character set for HTML 4. This character set also supported 256 different character codes.

- ❑ Because ANSI and ISO-8859-1 were so limited, the default character encoding was changed to UTF-8 in HTML5.

- ❑ UTF-8 (Unicode) covers almost all of the characters and symbols in the world.

HTML charset Attribute

❑ To display an HTML page correctly, a web browser must know the character set used in the page.

❑ This is specified in the <meta> tag:

❑ For HTML 4

    <meta http-equiv="Content-Type" content="text/html;charset=ISO-8859-1">

❑ For HTML 5

```
<meta charset="UTF-8">
```

❑ Some common charset

- UTF-8
- GB2312 (Mainland Chinese)
- EUC-JP (Japanese)
- EUC-KR (Korean)

THANK YOU