HTML

(Theory)

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 you 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

```
In its simplest form, following is an example of an HTML document:
<!DOCTYPE html>
<html>
<head>
<title>This is document title</title>
</head>
<body>
<h1>This is a heading</h1>
Document content goes here.....
</body>
</html>
```

Type above codes in Notepad and save it as test.html and run the web page through Google Chrome or any other browser.

The <!DOCTYPE> Declaration

The <!DOCTYPE> declaration tag is used by the web browser to understand the version of the HTML used in the document. Current version of HTML is 5 and it makes use of the following

declaration: <!DOCTYPE html>

There are many other declaration types which can be used in HTML document depending on what version of HTML is being used.

<head> Tag

An HTML document, with a <title> tag inside the head section

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

<title> Tag

The <title> tag is required in all HTML documents and it defines the title of the document. The <title> element: defines a title in the browser toolbar

provides a title in the browser toolbar provides a title for the page when it is added to favorites displays a title for the page in search-engine results

<body> Tag

The <body> tag defines the document's body. The <body> element contains all the contents of an HTML document, such as text, hyperlinks, images, tables, lists, etc.

Attributes	Value	Description
background	URL	Specifies a background image for a document
bgcolor	Color	Specifies the background color of a document
text	Color	Specifies the color of the text in a document

Heading Tags

Any document starts with a heading. You 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>.

Attributes	Value	D	Description		
align	left center right justify	Specifies t heading	the alignment	of	а

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.

Attributes	Value	Description
align	left right center justify	Specifies the alignment of the text within a paragraph

Line Break Tag

Whenever you use the

 element, anything following it starts from the next line.

Centering Content

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

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. Again <hr /> tag is an example of the empty element, where you do not need opening and closing tags, as there is nothing to go in between them.

Preserve Formatting

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, which is a thin line through the text.

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

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.

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

Smaller Text

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

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.

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.

Acronym Element

The <acronym> element allows you to indicate that the text between <acronym> and </acronym> tags is an acronym.

At present, the major browsers do not change the appearance of the content of the <acronym> element.

Text Direction

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

Attributes	Value	Description
dir	Itr	Required. Specifies the text
	rtl	direction of the text inside the
		<bd><bdo> element</bdo></bd>

Quoting Text

When you want to quote a passage from another source, you should put it in between
 <blockquote>...</blockquote> tags.

Short Quotations

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

<script> Tag

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.

<style> Tag

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.

 Tag

The tag specifies the font face, font size, and color of text.

Attribute	Value	Description
color	rgb(x,x,x) #xxxxxx colorname	Specifies the color of text
face	font_family	Specifies the font of text
size	number	Specifies the size of text

<a> Tag

The <a> tag defines a hyperlink, which is used to link from one page to another. The most important attribute of the <a> element is the href attribute, which indicates the link's destination.

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

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

Attribute	Value	Description
href	URL	Specifies the URL of the page the link goes to
target	_blank _parent _self _top framename	Specifies where to open the linked document

 Tag

The tag defines an image in an HTML page. The tag has two required attributes: src and alt.

Attribute	Value	Description
align	top bottom middle left right	Specifies the alignment of an image according to surrounding elements
alt	text	Specifies an alternate text for an image
height	pixels	Specifies the height of an image
width	pixels	Specifies the width of an image
src	URL	Specifies the URL of an image

Tag

The tag defines an HTML table.

An HTML table consists of the element and one or more , , and elements.

The <tr> element defines a table row, the <th> element defines a table header, and the <td> element defines a table cell.

Attribute	Value	Description
align	left center right	Specifies the alignment of a table according to surrounding text
bgcolor	rgb(x,x,x) #xxxxxx colorname	Specifies the background color for a table
border	1 0	Specifies whether or not the table is being used for layout purposes
cellpadding	pixels	Specifies the space between the cell wall and the cell content
cellspacing	pixels	Specifies the space between cells
width	pixels %	Specifies the width of a table

Tag

The tag defines a row in an HTML table. A element contains one or more or elements.

Attribute	Value	Description
align	right left center justify	Aligns the content in a table row
bgcolor	rgb(x,x,x) #xxxxxx colorname	Specifies a background color for a table row
valign	top middle bottom baseline	Vertical aligns the content in a table row

, Tag

The tag defines a standard cell in an HTML table.

An HTML table has two kinds of cells:

- Header cells contains header information (created with the element)
- Standard cells contains data (created with the element)

The text in elements are bold and centered by default.

The text in elements are regular and left-aligned by default.

Attribute	Value	Description
align	right left center	Aligns the content in a table row
bgcolor	justify rgb(x,x,x) #xxxxxx colorname	Specifies a background color for a table row
valign	top middle bottom baseline	Vertical aligns the content in a table row
width	pixels %	Specifies the width of a cell
Colspan	number	Specifies the number of columns a cell should span
rowspan	number	Sets the number of rows a cell should span

tag

The tag defines an ordered list. An ordered list can be numerical or alphabetical. Use the tag to define list items.

Attribute	Value	Description
start	number	Specifies the start value of an ordered list
type	1 A a I	Specifies the kind of marker to use in the list

Tag

The tag defines an unordered (bulleted) list. Use the tag to define list items.

Attribute	Value	Description
type	disc square circle	Specifies the kind of marker to use in the list

Tag

The tag defines a list item. The tag is used in ordered lists(), unordered lists (), and in menu lists (<menu>).

Attribute	Value	Description
type	1 A a I i disc square circle	Specifies which kind of bullet point will be used
value	number	Specifies the value of a list item. The following list items will increment from that number (only for lists)

<form> Tag

The <form> tag is used to create an HTML form for user input.

The <form> element can contain one or more of the following form elements:

- <input>
- <textarea>
- <button>
- <select>
- <option>
- <optgroup>
- <fieldset>
- <label>
- <output>

Attribute	Value	Description
method	get post	Specifies the HTTP method to use when sending form-data
action	URL	Specifies where to send the form- data when a form is submitted
name	text	Specifies the name of a form

<input> tag

The <input> tag specifies an input field where the user can enter data.

<input> elements are used within a <form> element to declare input controls that allow users to input data.

An input field can vary in many ways, depending on the type attribute.

Attribute	Value	Description
type	button checkbox file password radio search submit text	Specifies the type <input/> element to display
placeholder	text	Specifies a short hint that describes the expected value of an <input/> element
maxlength	number	Specifies the maximum number of characters allowed in an <input/> element
max	number date	Specifies the maximum value for an <input/> element

<select>, <option> tag

The <select> element is used to create a drop-down list.

The <option> tags inside the <select> element define the available options in the list.

```
<select id="cars">
  <option value="volvo">Volvo</option>
  <option value="saab">Saab</option>
  <option value="mercedes">Mercedes</option>
  <option value="audi">Audi</option>
  </select>
```

<textarea> tag

The <textarea> tag defines a multi-line text input control.

A text area can hold an unlimited number of characters, and the text renders in a fixed-width font (usually Courier).

The size of a text area can be specified by the cols and rows attributes, or even better; through CSS' height and width properties.

Attribute	Value	Description
rows	number	Specifies the visible number of lines in a text area
cols	number	Specifies the visible width of a text area

<frameset>, <frame>Tag

The <frameset> tag defines a frameset.

The <frameset> element holds one or more <frame> elements. Each <frame> element can hold a separate document.

The <frameset> element specifies HOW MANY columns or rows there will be in the frameset

Attributes of <frameset> tag

Attribute	Value	Description
rows	pixels % *	Specifies the number and size of columns in a frameset
cols	pixels % *	Specifies the number and size of rows in a frameset

Attributes of <frame> tag

Attribute	Value	Description
src	URL	Specifies the URL of the document to show in a frame
scrolling	yes no auto	Specifies whether or not to display scrollbars in a frame

<iframe> Tag

The <iframe> tag specifies an inline frame.

Attribute	Value	Description
align	left right top middle bottom	Specifies the alignment of an <iframe> according to surrounding elements</iframe>
src	URL	Specifies the address of the document to embed in the <iframe></iframe>
scrolling	yes no auto	Specifies whether or not to display scrollbars in an <iframe></iframe>
width	pixels	Specifies the width of an <iframe></iframe>
height	pixels	Specifies the height of an <iframe></iframe>

<video> Tag

The <video> tag specifies video, such as a movie clip or other video streams.

Attribute	Value	Description
autoplay	autoplay	Specifies that the video will start playing as soon as it is ready
src	URL	Specifies the URL of the video file
width	pixels	Sets the width of the video player
height	pixels	Sets the height of the video player

Cascading Style Sheets(CSS) (Theory)

CSS stands for **C**ascading **S**tyle **S**heets.

CSS describes how HTML elements are to be displayed on screen, paper, or in other media.

CSS saves a lot of work. It can control the layout of multiple web pages all at once.

CSS can be added to HTML elements in 3 ways:

- **Inline** by using the style attribute in HTML elements
- **Internal** by using a <style> element in the <head> section
- External by using an external CSS file

Inline CSS

An inline CSS is used to apply a unique style to a single HTML element.

An inline CSS uses the style attribute of an HTML element.

This example sets the text color of the <h1> element to blue:

Example

<h1 style="color:blue;">This is a Blue Heading</h1>

Internal CSS

An internal CSS is used to define a style for a single HTML page.

An internal CSS is defined in the <head> section of an HTML page, within a <style> element:

```
Example
<!DOCTYPE html>
<html>
<head>
<style>
body {background-color: powderblue;}
h1 {color: blue;}
p {color: red;}
</style>
</head>
<body>
<h1>This is a heading</h1>
This is a paragraph.
</body>
</html>
```

External CSS

An external style sheet is used to define the style for many HTML pages.

With an external style sheet, you can change the look of an entire web site, by changing one file!

To use an external style sheet, add a link to it in the <head> section of the HTML page:

An external style sheet can be written in any text editor. The file must not contain any HTML code, and must be saved with a .css extension.

```
Here is how the "styles.css" looks:
body {
  background-color: powderblue;
}
h1 {
  color: blue;
}
p {
  color: red;
```

HTML

(Practical)

Basic HTML Document

In its simplest form, following is an example of an HTML document:
<!DOCTYPE html>
<html>
<head>
<title>This is document title</title>
</head>
<body>
<h1>This is a heading</h1>
Document content goes here.....
</body>
</html

Application of Heading Tags

<!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>

Application of Paragraph Tag

```
<!DOCTYPE html>
<html>
<head>
<title>Paragraph Example</title>
</head>
<body>
Here is a first paragraph of text.
Here is a second paragraph of text.
Here is a third paragraph of text.
</body>
</html>
```

Application of Line Break Tag

<!DOCTYPE html>
<html>
<head>
<title>Line Break Example</title>
</head>
<body>
Hello

You delivered your assignment on time.

Thanks

Mahnaz
</body>
</html>

Application of Center Tag

- <!DOCTYPE html>
- <html>
- <head>
- <title>Centring Content Example</title>
- </head>
- <body>
- This text is not in the center.
- <center>
- This text is in the center.
- </center>
- </body>
- </html>

Application of Horizontal Lines

- <!DOCTYPE html>
- <html>
- <head>
- <title>Horizontal Line Example</title>
- </head>
- <body>
- This is paragraph one and should be on top
- <hr />
- This is paragraph two and should be at bottom
- </body>
- </html>

Application of tag

- <!DOCTYPE html>
- <html>
- <body>
- Text in a pre element
- is displayed in a fixed-width
- font, and it preserves
- both spaces and
- line breaks

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

Application of Tag

```
<!DOCTYPE html>
<html>
<body>
<font size="3" color="red">This is some text!</font>
<font size="2" color="blue">This is some text!</font>
<font face="verdana" color="green">This is some text!</font>
<strong>Note:</strong> The font element is not supported in HTML5. Use CSS instead.
</body>
</html>
```

Application of Bold Tag

```
<!DOCTYPE html>
<html>
<head>
<title>Bold Text Example</title>
</head>
<body>
The following word uses a <b>bold</b> typeface.
</body>
</html>
```

Application of Italic Tag

```
<!DOCTYPE html>
<html>
<head>
<title>Italic Text Example</title>
</head>
<body>
The following word uses a <i>italicized</i> typeface.
</body>
</html>
```

Application of Underlined Tag

```
<!DOCTYPE html>
<html>
<head>
<title>Underlined Text Example</title>
</head>
<body>
The following word uses a <u>underlined</u> typeface.
</body>
</html>
```

Application of Strike Text

<!DOCTYPE html>
<html>
<head>
<title>Strike Text Example</title>
</head>
<body>
The following word uses a <strike>strikethrough</strike> typeface.
</body>
</html>

Application of Superscript Tag

- <!DOCTYPE html>
- <html>
- <head>
- <title>Superscript Text Example</title>
- </head>
- <body>
- The following word uses a ^{superscript} typeface.
- </body>
- </html>

Application of Subscript Text

- <!DOCTYPE html>
- <html>
- <head>
- <title>Subscript Text Example</title>
- </head>
- <body>
- The following word uses a _{subscript} typeface.
- </body>
- </html>

Application of Inserted Tag

- <!DOCTYPE html>
- <html>
- <head>
- <title>Inserted Text Example</title>
- </head>
- <body>
- I want to drink cola <ins>wine</ins>
- </body>
- </html>

Application of Deleted Tag

```
<!DOCTYPE html>
<html>
<head>
<title>Deleted Text Example</title>
</head>
<body>
I want to drink <del>cola</del> <ins>wine</ins>
</body>
</html>
```

Application of <big> Tag

```
<!DOCTYPE html>
<html>
<head>
<title>Larger Text Example</title>
</head>
<body>
The following word uses a <big>big</big> typeface.
</body>
</html>
```

Use of <small> Tag

```
<!DOCTYPE html>
<html>
<head>
<title>Smaller Text Example</title>
</head>
<body>
The following word uses a <small>small</small> typeface.
</body>
</html>
```

Application of <div> tag

```
<!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>
Actual content goes here.....
</div>
</body>
</html>
```

Application of tag

```
<!DOCTYPE html>
<html>
<head>
<title>Span Tag Example</title>
</head>
<body>
This is the example of <span style="color:green">span tag</span> and the <span style="color:red">div tag</span> alongwith CSS
</body>
</html>
```

Application of Emphasized Tag

```
<!DOCTYPE html>
<head>
<title>Emphasized Text Example</title>
</head>
<body>
The following word uses a <em>emphasized</em> typeface.
</body>
</html>
```

Application of Marked Tag

<!DOCTYPE html>

```
<html>
<head>
<title>Marked Text Example</title>
</head>
<body>
The following word has been <mark>marked</mark> with yellow
</body>
</html>
```

Application of Strong Tag

```
<!DOCTYPE html>
<html>
<head>
<title>Strong Text Example</title>
```

```
</head>
<body>
The following word uses a <strong>strong</strong> typeface.
</body>
</html
```

Application of Acronym Tag

<!DOCTYPE html>

<html>

<head>

<title>Acronym Example</title>

</head>

<body>

This chapter covers marking up text in <acronym>XHTML</acronym>.

</body>

</html>

Application of <bdo> Tag

<!DOCTYPE html>

<html>

<head>

<title>Text Direction Example</title>

</head>

<body>

This text will go left to right.

<bdo dir="rtl">This text will go right to left.</bdo>

</body>

</html>

Application of <blockquote> Tag

<!DOCTYPE html>

<html>

<head>

<title>Blockquote Example</title>

</head>

<body>

The following description of XHTML is taken from the W3C Web site:

<blockquote>XHTML 1.0 is the W3C's first Recommendation for XHTML, following on

from earlier work on HTML 4.01, HTML 4.0, HTML 3.2 and HTML 2.0.</blockquote>

</body>

</html>

Application of <q> Tag

```
<!DOCTYPE html>
<html>
<head>
<title>Double Quote Example</title>
</head>
<body>
Amit is in Spain, <q>I think I am wrong</q>.
</body>
</html>
Application of <a> Tag
<!DOCTYPE html>
<html>
<body>
<a href="link.html">Visit Linked page!</a>
</body>
</html>
Application of <img> Tag
<!DOCTYPE html>
<html>
<body>
<img src="smiley.gif" alt="Smiley face" width="42" height="42">
</body>
</html>
Application of , , ,  Tags
<!DOCTYPE html>
<html>
<head>
</head>
<body>
Month
 Savings
January
 $100
February
 $80
</body>
</html>
```

Application of Tag

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

Coffee
Tea
Milk

Coffee
Tea
Milk

Coffee
Tea
Milk

Holary and the model of the model o
```

Application of Tag

```
<!DOCTYPE html>
<html>
<body>
<h4>An Unordered List:</h4>

Coffee
Tea
Milk

</body>
</html>
```

Application of <form> , <input> Tag

```
<!DOCTYPE html>
<html>
<body>
<form action="/action_page.php">
<label for="fname">First name:</label>
<input type="text" id="fname" name="fname"><br>
<label for="lname">Last name:</label>
<input type="text" id="lname" name="lname"><br>
<input type="text" id="lname" name="lname"><br>
<input type="submit" value="Submit"></form>
Click the "Submit" button and the form-data will be sent to a page on the server called "/action_page.php".
</body>
</html>
```

Application of <select> Tag

```
<!DOCTYPE html>
<html>
<body>
<h2>Create a drop-down List</h2>
<label for="cars">Choose a car:</label>
<select id="cars">
<option value="volvo">Volvo</option>
<option value="saab">Saab</option>
<option value="opel">Opel</option>
<option value="audi">Audi</option>
</select>
</body>
</html>
```

Application of <textarea> Tag

```
<!DOCTYPE html>
<html>
<head>
        <title>HTML textarea Tag</title>
</head>
<body>
        <form action = "/cgi-bin/hello_get.cgi" method = "get">
        Fill the Detail:
        <br/>
        <textarea rows = "5" cols = "50" name = "description">
        Enter your name
        </textarea>
        <input type = "submit" value = "submit" />
        </form>
</body>
```

Application of <frameset>, <frame> Tag

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

Application of <iframe> Tag

```
<!DOCTYPE html>
<html>
<head>
    <title>HTML Iframes</title>
</head>
<body>
    Document content goes here...
    <iframe src = "/html/menu.htm" width = "555" height = "200">
        Sorry your browser does not support inline frames.
    </iframe>
        Document content also go here...
    </body>
</html>
```

Application of <video> Tag

Cascading Style Sheets(CSS) (Practical)

CSS Fonts

```
<!DOCTYPE html>
<html>
<head>
<style>
h1 {
 color: blue;
 font-family: verdana;
 font-size: 300%;
}
p {
color: red;
font-family: courier;
font-size: 160%;
}
</style>
</head>
<body>
<h1>This is a heading</h1>
This is a paragraph.
</body>
</html
CSS Border
<!DOCTYPE html>
<html>
<head>
<style>
border: 1px solid powderblue;
</style>
</head>
<body>
<h1>This is a heading</h1>
This is a paragraph.
This is a paragraph.
This is a paragraph.
</body>
</html>
```

CSS Padding

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
 border: 1px solid powderblue;
 padding: 30px;
}
</style>
</head>
<body>
<h1>This is a heading</h1>
This is a paragraph.
This is a paragraph.
This is a paragraph.
</body>
</html>
CSS Margin
<!DOCTYPE html>
<html>
<head>
<style>
p {
 border: 1px solid powderblue;
 margin: 50px;
}
</style>
</head>
<body>
<h1>This is a heading</h1>
```

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

</body>

The id Attribute

</html>

```
<!DOCTYPE html>
<html>
<head>
<style>
#p01 {
color: blue;
</style>
</head>
<body>
This is a paragraph.
This is a paragraph.
I am different.
</body>
</html>
CSS Links
<!DOCTYPE html>
<html>
<head>
<style>
/* unvisited link */
a:link {
color: red;
/* visited link */
a:visited {
color: green;
/* mouse over link */
a:hover {
color: hotpink;
/* selected link */
a:active {
color: blue;
</style>
</head>
<body>
<b><a href="default.asp" target="_blank">This is a link</a></b>
<b>Note:</b> a:hover MUST come after a:link and a:visited in the CSS definition in order to be effective.
<b>Note:</b> a:active MUST come after a:hover in the CSS definition in order to be effective.
</body>
```

CSS Tables

```
<!DOCTYPE html>
<html>
<head>
<style>
table, th, td {
border: 1px solid black;
</style>
</head>
<body>
<h2>Add a border to a table:</h2>
Firstname
 Lastname
Peter
 Griffin
Lois
 Griffin
</body>
</html>
```