Web Technology

Third Semester

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What is HTML?

- HTML or **H**yper **T**ext **M**arkup **L**anguage is designed to specify the logical organization of a document, with important hypertext extensions.
- HTML instructions divide the text of a document into blocks called *elements*.
- These can be divided into two broad categories:
- Those that define how the **BODY** of the document is to be displayed by the browser, and
- Those that define information about the document, such as the **title** or relationships to other documents.
- The detailed rules for HTML (the names of the tags/elements, how they can be used) are defined using another language known as the SGML (**S**tandard **G**eneralized **M**arkup **L**anguage).
- HTML is a set of special codes that can be embedded in text to add formatting and linking information.
- HTML is the language interpreted by a Browser.
- The HTML file must have an extension "**.htm**" or "**.html**".
- Any text editor can be used to create HTML file.

HTML stands for **H**yper **T**ext **M**arkup **L**anguage. HTML is a presentation language. We use HTML language to display information according to our need. An HTML file is a text file containing small **markup tags**. The markup tags tell the Web browser **how to display** the page. An HTML file must have an .**htm** or .**html** file extension. An HTML file can be created using a **simple text editor**.

HTML is very popular language used on web because of its interoperability. HTML language is platform independent i.e. HTML files can be opened on any platform. HTML files can be written using a simple text editor like notepad which is present in all the operating system.

HTML language is used to create web pages. Web pages can be viewed using application software called a **Web browser**. Popular browsers are **Internet Explorer, Mozilla Firefox and Netscape Navigator**. A web browser parses the HTML file containing markups (html tags) and displays the information with the proper format as specified in the HTML document. HTML tags are also called mark-up. HTML tags are surrounded by the two characters < and >. The surrounding characters are called angle brackets. HTML tags normally come in pairs like and . The first tag in a pair is the start tag, the second tag is the end tag. The text between the start and end tags is the element content. HTML tags are not case sensitive; means the same as <B>.

Structure of an HTML document is shown below:

```
<html>
<head>
    <title> Title of page </title>
</head>
<body>
    This is the place where the information to be displayed in a web page is written.
</body>
</html>
```

Every html document must start with <html> tag. It shows the starting of HTML document. <head> tag contains information like the title of the document and other information which describes about the content of the document.

BODY part of a HTML document contains the information and its format to be displayed by the browser. HEAD part of a HTML document contains the information that is not displayed on the browser window. It defines information `about' the document, such as the title or relationships to other documents.

<body> tag is the place where we write all the information that is to be displayed in the web browser. It also contains other tags which defines how information are to be displayed in the web browser. <body> tag shows the starting of the body tag and </body> tag shows the ending of the body tag. </html> shows the ending of the HTML document. Every ending tag must have a forward slash as shown in </html> tag.

HTML discards whitespaces. HTML only considers a single space as a space. The browser automatically discards rest of the whitespace. Hence, we can use as much whitespace as we want while creating our HTML document. This makes html document easy to read or edit.

Versions of HTML

HTML 2.0

- It set the standard for core HTML features based upon current practice in 1994.

HTML 3.2

- W3C's first Recommendation for HTML which represented the consensus on HTML features for 1996.
- **HTML 3.2** added widely-deployed features such as tables, applets, text-flow around images, superscripts and subscripts, while providing backwards compatibility with the existing HTML 2.0 standard.

HTML 4.0

- First released as a W3C Recommendation on 18 December 1997.

- A second release was issued on 24 April 1998 with changes limited to editorial corrections.
- This specification has now been superseded by HTML 4.01.

HTML 4.01

- HTML 4.01 is the current official standard.
- It includes support for most of the proprietary extensions, plus support for extra features (Internationalized documents, support for **C**ascading **S**tyle **S**heets, extra TABLE, FORM, and JavaSctipt enhancements), that are not universally supported.
- This is the last version of HTML.
- After this XHTML was released which stands for e**X**tensible **H**yper**T**ext **M**arkup **L**anguage.

HTML 5.0

- This is the new version of HTML with many exciting new features.

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/Tags

- The HTML instructions, along with the text to which the instructions apply, are called HTML *elements*.
- The HTML instructions are themselves called ***tags***, and look like <element_name> -- that is, they are simply the element name surrounded by left and right angle brackets.
- The content in the web-page is written after the starting tag, and closed with the end tag.
- E.g: **<element_name>** text to be written HERE **</element_name>**
- The end tag has slash character in front of it.
- HTML tags are not case sensitive; **<b>** means same as **<B>**.

Empty Elements

- Some elements are *empty* -- that is, they do not affect a block of the document in some way.
- These elements do not require an ending *tag*.
  - An example is the <HR> element, which draws a horizontal line across the page.

HTML Tag Attributes

- Many elements can have arguments that pass parameters to the interpreter handling the element.
- These arguments are called *attributes* of the element.
- An attribute is a customizable option for a tag.
- In other words, attributes are used to define the properties of a tag.
  - Example: **<p** align = "left"**>** Trial Example **</p>**.
  - In the above example the align attribute allows you to specify how text in a paragraph is arranged on the page.
- Not all tags support attributes.
- Some tags support multiple attributes, and the attributes are listed one after another in the start tag, seperated by space.
- Attributes are always set to the opening tag.

HTML4.01 Tags Lists

TITLE	TAG	DESCRIPTION
Basic Elements		
Document Type	<HTML> </HTML>	document root element, beginning and end of file
Title	<TITLE> </TITLE>	document title, must be in header
Header	<HEAD> </HEAD>	descriptive info, such as title
Body	<BODY> </BODY>	bulk of the page, notes body of document
Formatting		
Bold	<B> </B> or	bold text style
Italic	<I> </I>	italic text style
Underline	<U> </U>	underlined text (not widely implemented)
Strikeout	<STRIKE> </STRIKE>	strike-through text (not widely implemented)
Strikeout	<S> </S>	strike-through text (not widely implemented)
Subscript		subscript numbers like footnotes
Superscript		superscript numbers like cross - reference numbers
Pre formatted	<PRE> </PRE>	pre formatted text (display text spacing as-is)
Center	<CENTER> </CENTER>	centers text and images
Blinking	<BLINK> </BLINK>	blinking text, Netscape only
Font Size	<FONT SIZE=?> </FONT>	local font size(ranges from 1-7)
Change Font Size	<FONT SIZE="+|-?"> </FONT>	controls font size rendered
Font Color	<FONT COLOR="#$$$$$$"> </FONT>	controls font color rendered
Select Font	<FONT FACE="***"> </FONT>	the style of the text, such as Times New Roman
Marquee	<MARQUEE> </MARQUEE>	scrolling text (IE only)
Links		
Link Something	<A HREF="URL"> </A>	links text or graphic to another URL
Link to Location	<A HREF="URL#***"> </A>	links text or graphic an anchor in an other document
Link to Location in Current Page	<A HREF="#***"> </A>	links text or graphic an anchor in current document
Target Window	<A HREF="URL" TARGET="***">	links text or graphic to a URL in a new browser window

	</A>	
Action on Click	<A HREF="URL" ONCLICK="***"> </A>	takes effect when user clicks on the item (Javascript)
Mouseover Action	<A HREF="URL" ONMOUSEOVER="***"> </A>	takes effect when user moves pointer over item
Link to Email	<A HREF="mailto:@"> </A>	creates blank e-mail to indicated address with visitor's default e-mail client
Graphics and Sound		
Display Image	<IMG SRC="URL">	displays image from the indicated URL
Alignment	<IMG SRC="URL" ALIGN= TOP|BOTTOM|MIDDLE|LEFT|RIGHT>	aligns the image
Dimensions	<IMG SRC="URL" WIDTH=? HEIGHT=?>	the dimensions, in pixels, of the image
Border	<IMG SRC="URL" BORDER=?>	border, in pixels, around the image
Dividers		
Paragraph	<P> </P>	paragraph (closing tag often unnecessary)
Align Text	<P ALIGN=LEFT|CENTER|RIGHT> </P>	aligns paragraph
Justify Text	<P ALIGN=JUSTIFY> </P>	justify's paragraph's text
Line Break	 	a single carriage return
Horizontal Rule	<HR>	horizontal line
Alignment	<HR ALIGN=LEFT|RIGHT|CENTER>	alignment of horizontal line
Thickness	<HR SIZE=?>	thickness, in pixels, of horizontal line
Width	<HR WIDTH=?>	width, in pixels, of horizontal line
Width Percent	<HR WIDTH="%">	width(as a percentage of page width), in pixels, of horizontal line
Solid Line	<HR NOSHADE>	horizontal line without the 3D cutout look
No Break	<NOBR> </NOBR>	prevents line breaks
Structural Elements		
Heading	<H?> </H?>	document header, the ? defines 6 levels (#'s 1-6)
Strong Emphasis	<STRONG> </STRONG>	strongly emphasized text, usually displayed as bold

Address	<ADDRESS> </ADDRESS>	author information
Large Font Size	<BIG> </BIG>	uses a large text size
Small Font Size	<SMALL> </SMALL>	use a small text size
Backgrounds		
Tiled Background	<BODY BACKGROUND= "URL">	causes the image to tile as the background of the page
Watermark	<BODY BGPROPERTIES= "FIXED">	Static image which remains in the same location as visitors scroll.
Background Color	<BODY BGCOLOR= "#$$$$$$">	solid background color of the page
Text Color	<BODY TEXT="#$$$$$$">	color of the text throughout the page
Link Color	<BODY LINK="#$$$$$$">	color of all links throughout the page
Visited Link	<BODY VLINK="#$$$$$$">	color of all links that have already been clicked on by visitor
Active Link	<BODY ALINK="#$$$$$$">	color of link while being selected
Lists		
Unordered List	<UL> </UL>	list with bulleted items
List Item	<LI> </LI>	indicates an item on the list
Bullet Type	<UL TYPE=DISC|CIRCLE|SQUARE>	shape of bullet for the whole list
Bullet Type	<LI TYPE=DISC|CIRCLE|SQUARE>	shape of bullet for specific list item
Ordered List	<OL> <LI> </OL>	numbered list
Numbering Type	<OL TYPE=A|a|I|i|1>	type of numbering for the whole list
Numbering Type	<LI TYPE=A|a|I|i|1>	type of numbering for specific list item
Starting Number	<OL START=?>	starting number for list
Starting Number	<LI VALUE=?>	starting number for this & subsequent items
Definition List	<DL> </DL>	a list of definitions
Definition Term	<DT> </DT>	definition term
Definition	<DD> </DD>	definition of a term
Menu List	<MENU> </MENU>	display menu type list
Directory List	<DIR> </DIR>	directory link
Tables		
Define Table	<TABLE> </TABLE>	signals the beginning of a table

Table Alignment	<TABLE ALIGN= LEFT|RIGHT|CENTER>	aligns the table within the browser window
Table Border	<TABLE BORDER=?> </TABLE>	border of table, you can set the value (aka width)
Cell Spacing	<TABLE CELLSPACING=?>	places specific amount of space between the individual cells within a table
Cell Padding	<TABLE CELLPADDING=?>	places specific amount of space between the cells border and its contents
Desired Width	<TABLE WIDTH=?>	width of table in pixels
Width Percent	<TABLE WIDTH=%>	width of table in percentage of page
Table Color	<TABLE BGCOLOR="#$$$$$$"> </TABLE>	overall background color of table
Border Color	<TABLE BORDERCOLOR="#$$$$$$"> </TABLE>	the color of the table border
Table Row	<TR> </TR>	table row
Alignment	<TR ALIGN= LEFT| RIGHT| CENTER| MIDDLE| BOTTOM>	alignment of the table row
Table Cell	<TD> </TD>	specific table cell, must appear within table rows
Alignment	<TD ALIGN= LEFT|RIGHT|CENTER VALIGN= TOP|MIDDLE|BOTTOM>	alignment of the table cell
Columns to Span	<TD COLSPAN=?>	identifies the the number of columns the cell should span
Rows to Span	<TD ROWSPAN=?>	identifies the the number of rows the cell should span
Desired Width	<TD WIDTH=?>	width of cell in pixels
Width Percent	<TD WIDTH="%">	width of cell as percentage of table
Cell Color	<TD BGCOLOR="#$$$$$$">	background color of table cell
Header Cell	<TH> </TH>	table cell for header information (bold & centered)
Alignment	<TH ALIGN= LEFT| RIGHT| CENTER| MIDDLE|BOTTOM>	alignment of the header cell
Table Body	<TBODY>	identifies the specific body section of the table
Table Footer	<TFOOT> </TFOOT>	separates group of cells to serve as footer material for the table (must come before <THEAD>)
Table Header	<THEAD> </THEAD>	separates group of cells to serve as header material for the table

Table Caption	<CAPTION> </CAPTION>	caption for a table
Alignment	<CAPTION ALIGN=TOP|BOTTOM|LEFT|RIGHT>	alignment for the caption of a table
Frames		
Frame Document	<FRAMESET> </FRAMESET>	creates layouts of frames (instead of <BODY>)
Row Heights	<FRAMESET ROWS=,,,> </FRAMESET>	comma separated list of size of each row within the frameset (pixels or %)
Column Widths	<FRAMESET COLS=,,,> </FRAMESET>	comma separated list of size of each column within the frameset (pixels or %)
Borders	<FRAMESET FRAMEBORDER= "yes|no"> </FRAMESET>	identifies if a frame has a visible border or not
Border Width	<FRAMESET BORDER=?> </FRAMESET>	width of frame border if visible
Border Color	<FRAMESET BORDERCOLOR="#$$$$$$"> </FRAMESET>	color of frame border if visible
Frame Spacing	<FRAMESET FRAMESPACING=?> </FRAMESET>	number of pixels of reserved space between frames
Define Frame	<FRAME>	specific contents of an individual frame
Display Document	<FRAME SRC="URL">	identifies the initial contents of the frame
Frame Name	<FRAME NAME="***"| _blank| _self| _parent |_top>	assigns a name to the current frame
Margin Width	<FRAME MARGINWIDTH=?>	distance between content and frame's left and right margins
Margin Height	<FRAME MARGINHEIGHT=?>	distance between content and frame's top and bottom margins
Scroll bar	<FRAME SCROLLING="YES|NO|AUTO">	controls how the window is or isn't scrolled
Not Re-sizable	<FRAME NORESIZE>	prohibits the document viewer from changing dimensions of the frame
Borders	<FRAME FRAMEBORDER="yes|no">	controls wither frame has a border
Border Color	<FRAME BORDERCOLOR="#$$$$$$">	color of border of frame

HTML Lists

- HTML provides three type of lists.
- They are listed below:

1. **Ordered List:**

- A list of multi-line paragraphs, listed separately and ordered numerically in some way.
- The list items are marked with numbers.
- <OL ...> creates an ordered list.
- "Ordered" means that the order of the items in the list is important.
- By default, the number starts with 1,2,3…….
- An ordered list starts with the <ol> tag.
- Each list item starts with the <li> tag.
    - Example:

```
<ol>
<li>Coffee</li>
<li>Milk</li>
</ol>
```

Here is how it looks in a browser:

1. Coffee
2. Milk

2. **Unordered List:**

    - A list of multi-line paragraphs, listed separately and usually marked by a bullet or similar symbol (Unordered List)
    - <UL ...> creates an unordered list.
    - The *unordered* part means that the items in the list are not in any particular order.
    - The list items are marked with bullets (typically small black circles).
    - An unordered list starts with the <ul> tag.
    - Each list item starts with the <li> tag.
        - Example:

```
<ul>
<li>Coffee</li>
<li>Milk</li>
```

```
</ul>
```

Here is how it looks in a browser:

- Coffee
- Milk

3. **Definition List:**

- A definition list is **not** a list of items.
- This is a list of terms and explanation of the terms.
- A definition list starts with the <dl> tag.
- Each definition-list term starts with the <dt> tag.
- Each definition-list definition starts with the <dd> tag.
    - Example:

```
<dl>
<dt>Coffee</dt>
<dd>Black hot drink</dd>
<dt>Milk</dt>
<dd>White cold drink</dd>
</dl>
```

Here is how it looks in a browser:

Coffee
  Black hot drink
Milk
  White cold drink

Frames

- Frames allow displaying more than one web-page in a single browser at a same instance of time.
- HTML tags <frameset>……</frameset> is used to divide a browser screen into two or more HTML recognizable unique regions.
- Each unique region is called frame.
- Each frame can be loaded with a different document and hence, allow multiple HTML documents to be seen concurrently.

The disadvantages of using frames are:

- The web developer must keep track of more HTML documents
- It is difficult to print the entire page.

The major advantages of using frames are:

- It can be given an individual URL, so it can load information independent of the other frames on the page;
- It can be given a NAME, allowing it to be targeted by other URLs, and;
- It can resize dynamically if the user changes the window's size. (Resizing can also be disabled, ensuring a constant frame size.)

The Frameset Tag

- The <frameset> tag defines how to divide the window into frames.
- Each <frameset> defines a set of rows **or** columns.
- The <frameset> tags require one of the following two attributes depending on whether the screen has to be divided into rows or columns.

The two attributes are:

1. Rows:

- This attribute is used to divide the screen into multiple rows.
- The each row can be set with different values depending on the required size of the row.

2. Cols:

- This attribute is used to divide the screen into multiple columns.
- The values for both Rows and Cols can be:
    - A number in pixels ***(Not commonly used.)***
    - Expressed as a percentage of the screen resolution.
    - The symbol *, which indicates the remaining space.

Example of <frameset> tag:

<frameset rows="33%,33%,*"**>**

divides the browser screen into 3 equal horizontal sections.

<frameset cols="33%,*"**>**

divides the browser screen into 2 different vertical sections.

The <frame> Tag

- Once the screen is divided into rows and columns, each unique section can be loaded with different HTML documents.
- This is achieved by using the <frame> tag.

- The **<frame>** tag defines what HTML document to put into each frame.
- The attributes of the **<frame>** tag are:

Attributes	Description
SRC=”url”	Indicates the url of the document to be loaded into the frame.
MARGINHEIGHT=”n”	Specifies the amount of white space to be left at the top and bottom of the frame.
MARGINWIDTH=”n”	Specifies the amount of white space to be left along the sides of the frame.
NAME=”name”	Gives the same unique name so it can be targeted by other documents. The name given must begin with an alphanumeric character.
NORESIZE	Disables the frames resizing capability.
Scrolling	Controls the appearance of horizontal and vertical scrollbars in a frame. This take the values YES/NO/AUTO.

Example of using <frame> tag:

```
<frameset cols="25%,75%">
    <frame src="frame_a.htm">
    <frame src="frame_b.htm">
</frameset>
```

In the example above we have a frameset with two columns.

- The first column is set to 25% of the width of the browser window.
- The second column is set to 75% of the width of the browser window.
- The HTML document "frame_a.htm" is put into the first column, and the HTML document "frame_b.htm" is put into the second column.

HTML Links

- A link is a connection from one Web resource to another.
- A *link* has two ends -- called *anchors* -- and a direction.
- The link starts at the "source" anchor and points to the "destination" anchor, which may be any Web resource (e.g., an image, an HTML document, an element within an HTML document, etc.).
- The text or an image that provides such linkages is called hypertext, hyperlink, or hotspot.

What is Hyperlink?

- A Hyperlink is a connection between an HTML element such as text, an image, or anything else on a page and other resource.
- That link might be to another web page, an external image, or an e-mail address.

Difference between Hyperlink and Normal HTML Text:

- Appears in blue color.
    - The default color setting in a browser for hyperlink text or image.
    - The color can be set dynamically via HTML program if required.
- The Hyperlink text/image is underlined.
- When the mouse cursor is placed over it, the standard arrow shaped mouse cursor changes to the shape of a hand.

Changing the color of Links:

- To change the link color there are three attributes that can be specified with the **<body>** tag.
- These are:
    - LINK (Normal)
    - ALINK (Active)
    - VLINK (Visited)

Types of Hyperlink

There are three types of Hyperlinks:

1. **Inter-page Hyperlink**

- In this type of link the control flows from one-page to another.

Example:

<a HREF="myExample.htm"> Click for Example ****

You can specify the relative as well as the absolute path of the file that you want to call.

2. **Intra-page Hyperlink**

- Intra-page Hyperlink is a link within a same page.
- Sometimes, a jump is required to a different location in the same document.
- Since the jump has to be targeted to a specific location the two steps need to perform.
    a) Identify the location with a name and
    b) Jump to that location using the name.

Example:

<a name =”top”> The HTML text is written here ****

<a HREF=”#top”> Goto Top ****

3. Email Hyperlink

- This type of Hyperlink is used especially to write e-mail.
- The link does not open any web-pages but opens the outlook express for writing mail.
- You can write the mail and send.

Steps:

a) First type any text like:

Email: info@mechi.edu.np

Surround the email address with the anchor tags i.e. <a>, but instead linking to the web page, use the ‘*mailto’* command to link it to an e-mail program.

Email: **<a** HREF=”mailto: info@mechi.edu.np”> info@mechi.edu.np ****

-> Save the page and view it in browser.

4. External Links

You can also have external links like links, when clicking upon them you can jump to next web page.

In such scenario you have to give the path of web page like:

<a HREF=”http://www.google.com”> Goto Google ****

HTML Forms

Forms are the most popular way to make web pages interactive. A form on a web page looks similar to a form on a sheet of paper that allows the user to enter requested information and submit it for further processing. A form can have different types of form elements for different purpose like textbox, list box, checkbox, radio buttons, dropdown menus, text area etc.

1. HTML Text Fields

type - Determines what kind of input field it will be. Possible choices are text, submit, and password.

name - Assigns a name to the given field so that you may reference it later.

size - Sets the horizontal width of the field. The unit of measurement is in blank spaces.

maxlength - Dictates the maximum number of characters that can be entered.

HTML Code:

```
<form method="post">
    Name: <input type="text" size="10" maxlength="40" name="name"> <br />
    Password: <input type="password" size="10" maxlength="10" name="password">
</form>
```

'Do not use the password feature for security purposes. The data in the password field is not encrypted and is not secure in any way.'

2. Submit Buttons

HTML Code:

```
<form method="post">
    Name: <input type="text" size="10" maxlength="40" name="name"> <br />
    Password: <input type="password" size="10" maxlength="10" name="password"><br />
    <input type="submit" value="Send">
</form>
```

3. HTML Radio Buttons

Radio buttons are a popular form of interaction. You may have seen them on quizzes, questionnaires, and other web sites that give the user a multiple-choice question. Below are a couple attributes you should know that relate to the radio button.

value - specifies what will be sent if the user chooses this radio button. Only one value will be sent for a given group of radio buttons.

name - defines which set of radio buttons that it is a part of.

HTML Code:

```
    <form method="post">
    What kind of shirt are you wearing? <br />
    Shade:
    <input type="radio" name="shade" value="dark">Dark
    <input type="radio" name="shade" value="light">Light <br />
    Size:
```

```
<input type="radio" name="size" value="small">Small
<input type="radio" name="size" value="medium">Medium
<input type="radio" name="size" value="large">Large <br />
<input type="submit" value="Email Myself">
</form>
```

4. **HTML Check Boxes**

Check boxes allow for multiple items to be selected for a certain group of choices. The check box's name and value attributes behave the same as a radio button.

HTML Code:

```
<form method="post">
Select your favorite cartoon characters.
    <input type="checkbox" name="toon" value="Goofy">Goofy
    <input type="checkbox" name="toon" value="Donald">Donald
    <input type="checkbox" name="toon" value="Bugs">Bugs Bunny
    <input type="checkbox" name="toon" value="Scoob">Scooby Doo
    <input type="submit" value="Email Myself">
</form>
```

5. **HTML Drop down Lists (Known as Combo Box)**

Drop down menu are created with the <select> and <option> tags. <select> is the list itself and each <option> is an available choice for the user.

HTML Code:

```
<form method="post">
College Degree?
    <select name="degree">
        <option>Choose One</option>
        <option>Some High School</option>
        <option>High School Degree</option>
        <option>Some College</option>
        <option>Bachelor's Degree</option>
        <option>Doctorate</option>
    <input type="submit" value="Email Yourself">
    </select>
</form>
```

TRY IT YOURSELF

HTML Code:

```
    <form method="post" action="mailto:youremail@email.com">
    Musical Taste
```

```
<select multiple name="music" size="4">
        <option value="emo" selected>Emo</option>
        <option value="metal/rock" >Metal/Rock</option>
        <option value="hiphop" >Hip Hop</option>
        <option value="ska" >Ska</option>
        <option value="jazz" >Jazz</option>
        <option value="country" >Country</option>
        <option value="classical" >Classical</option>
        <option value="alternative" >Alternative</option>
        <option value="oldies" >Oldies</option>
        <option value="techno" >Techno</option>
</select>
<input type="submit" value="Email Yourself">
</form>
```

6. HTML Text Areas

Text areas serve as an input field for viewers to place their own comments onto. Forums and the like use text areas to post what you type onto their site using scripts. For this form, the text area is used as a way to write comments to somebody.

Rows and columns need to be specified as attributes to the <textarea> tag. Rows are roughly 12pixels high, the same as in word programs and the value of the columns reflects how many characters wide the text area will be. i.e. The example below shows a text area 5 rows tall and 20 characters wide.

HTML Code:

```
<form method="post”>
        <textarea rows="5" cols="20" wrap="physical" name="comments">
                        Enter Comments Here
        </textarea>
        <input type="submit" value="Email Yourself">
</form>
```

Note that any text placed between the opening and closing ‘textarea’ tags will show up inside the text area when the browser views it.

Entities References used in HTML

In HTML we cannot directly use the special symbols so we use a technique called Entities References. With this we can keep any symbols in a web page. It takes a form: **&Entity_Name;**

Some of the mostly used symbols and their corresponding entities are as follows:

Result	Description	Entity Name
	non-breaking space	

<	less than	&lt;
>	greater than	&gt;
&	ampersand	&amp;
"	quotation mark	&quot;
'	apostrophe	' (does not work in IE)
¢	cent	&cent;
£	pound	&pound;
¥	yen	&yen;
€	euro	&euro;
§	section	&sect;
©	copyright	&copy;
®	registered trademark	&reg;
×	multiplication	&times;
÷	division	&divide;

And more…

What is HTML5?

HTML5 is the latest standard for HTML. The previous version of HTML, HTML 4.01, came in 1999, and the Internet has changed significantly since then. HTML5 was designed to replace both HTML 4 and XHTML.

It was specially designed to deliver rich content without the need for additional plugins. The current version delivers everything from animation to graphics, music to movies, and can also be used to build complicated web applications.

HTML5 is also cross-platform. It is designed to work whether you are using a PC, or a Tablet, a Smartphone, or a Smart TV.

How Did HTML5 Get Started?

HTML5 is cooperation between the World Wide Web Consortium (W3C) and the Web Hypertext Application Technology Working Group (WHATWG).

WHATWG was working with web forms and applications, and W3C was working with XHTML 2.0. In 2006, they decided to cooperate and create a new version of HTML.

Some rules for HTML5 were established:

- New features should be based on HTML, CSS, DOM, and JavaScript
- The need for external plugins (like Flash) should be reduced
- Error handling should be easier than in previous versions
- Scripting has to be replaced by more markup
- HTML5 should be device-independent
- The development process should be visible to the public

The HTML5 <!DOCTYPE>

In HTML5 there is only one <!doctype> declaration, and it is very simple:

```
<!DOCTYPE html>
```

A Minimum HTML5 Document

Below is a simple HTML5 document, with the minimum of required tags:

```
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Title of the document</title>
</head>

<body>
Content of the document……
</body>

</html>
```

HTML5 - New Features

Some of the most interesting new features in HTML5 are:

- The <canvas> element for 2D drawing
- The <video> and <audio> elements for media playback
- New content-specific elements, like <article>, <footer>, <header>, <nav>, <section>
- New form controls, like calendar, date, time, email, url, search

There are a bunch of new syntaxes added, but below I am listing the most important.

- <article> – this tag defines an article, a user comment or a post, so an independent item of content
- <aside> – the *aside* tag marks content aside from the page content, which for example could be a lateral sidebar
- <header>, <footer> – you won't need to manually name IDs for headers and footers, as now you have a pre-defined tag for them
- <nav> – the navigation can now be placed in the markup in between the *nav* tags, which will automatically make your lists act like navigation
- <section> – this is another important new syntax, as it can define any kind of sections in your document. It works pretty much like a *div* which separates different sections.

- <audio>, <video> – these two obviously mark sound or video content, which will now be easier to run by devices.
- <embed> – this new tag defines a container for interactive content (plugin) or external application
- <canvas> – the *canvas* tag is quite exciting, as it allows drawing graphics via scripting (mostly JavaScript, but some others can be employed as well)

```
<!DOCTYPE html> <!--The new DOCTYPE declaration, much easier than before-->
    <head> <!--Like before, this is where the style declaration goes-->
    </head>

    <body>

        <header> <!--This marks the header of the page and includes the navigation -->
            <nav>
            </nav>
        </header>

        <section> <!--This starts the content section -->

            <header>
            <!--This time the header tag marks the beginning of the content section -->
            </header>

            <article>
            </article>

            <footer>
            <!--As with the header tag, this time the footer marks the end of the content section -->
            </footer>

        </section> <!--This ends the content section -->

        <aside>
        <!--Here comes the sidebar content-->
        </aside>

        <footer>
        <!--The footer, which marks the end of the page, is here-->
        </footer>

    </body>
</html>
```

The following tags from HTML 4.01 are now removed from HTML5; therefore browsers do not offer support for them anymore. This means that it is a good idea to go back to your HTML pages and check for them, as they might disrupt the design in the latest browsers.

- <acronym>
- <applet>
- <basefont>
- <big>
-
- <dir>
- <font>
- <frame>
- <frameset>
- <noframes>
- <strike>
- <tt>

The <audio> tag defines sound, such as music or other audio streams.

```
<audio controls>
  <source src="horse.ogg" type="audio/ogg">
  <source src="horse.mp3" type="audio/mpeg">
  Your browser does not support the audio tag.
</audio>
```

Currently, there are 3 supported file formats for the <audio> element: MP3, Wav, and Ogg:

Browser	MP3	Wav	Ogg
Internet Explorer	YES	NO	NO
Chrome	YES	YES	YES
Firefox	YES	YES	YES
Safari	YES	YES	NO
Opera	NO	YES	YES

MIME Types for Audio Formats

Format	MIME-type
MP3	audio/mpeg
Ogg	audio/ogg
Wav	audio/wav

Attributes

Attribute	Value	Description
autoplay	autoplay	Specifies that the audio will start playing as soon as it is ready
controls	controls	Specifies that audio controls should be displayed (such as a play/pause button etc)
loop	loop	Specifies that the audio will start over again, every time it is finished
muted	muted	Specifies that the audio output should be muted
preload	auto metadata none	Specifies if and how the author thinks the audio should be loaded when the page loads

src	*URL*	Specifies the URL of the audio file

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

```
<video width="320" height="240" controls>
  <source src="movie.mp4" type="video/mp4">
  <source src="movie.ogg" type="video/ogg">
  Your browser does not support the video tag.
</video>
```

Currently, there are 3 supported video formats for the <video> element: MP4, WebM, and Ogg:

Browser	MP4	WebM	Ogg
Internet Explorer	YES	NO	NO
Chrome	YES	YES	YES
Firefox	YES	YES	YES
Safari	YES	NO	NO
Opera	NO	YES	YES

MIME Types for Video Formats

Format	MIME-type
MP4	video/mp4
WebM	video/webm
Ogg	video/ogg

Attributes

Attribute	Value	Description
autoplay	autoplay	Specifies that the video will start playing as soon as it is ready
controls	controls	Specifies that video controls should be displayed (such as a play/pause button etc).

height	*pixels*	Sets the height of the video player
loop	loop	Specifies that the video will start over again, every time it is finished
muted	muted	Specifies that the audio output of the video should be muted
poster	*URL*	Specifies an image to be shown while the video is downloading, or until the user hi play button
preload	auto metadata none	Specifies if and how the author thinks the video should be loaded when the page lo
src	*URL*	Specifies the URL of the video file
width	*pixels*	Sets the width of the video player

<canvas>

The HTML5 <canvas> tag is used to draw graphics, on the fly, via scripting (usually JavaScript). However, the <canvas> element has no drawing abilities of its own (it is only a container for graphics) - you must use a script to actually draw the graphics.

```
<canvas id="myCanvas"></canvas>
```

[More on 'Chapter 3 – JavaScript']

<iframe>

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

`<iframe src="URL"></iframe>` - The URL points to the location of the separate page.

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

<iframe src="demoiframe.htm" frameborder="0"></iframe>

<iframe src="demoiframe.htm" name="myiframe"></iframe>
<p><a href="http://www.w3schools.com" target=" myiframe">W3Schools.com</a></p>


<iframe width="853" height="480"

src="//www.youtube.com/embed/stZchtUEau4?list=UUe2TabHBHSUMz2P_nQH-w_g"

frameborder="0" allowfullscreen></iframe>
```

<embed>

The <embed> tag defines a container for an external application or interactive content (a plug-in like flash)

```
<embed src="helloworld.swf">
```

Attribute	Value	Description
height	*pixels*	Specifies the height of the embedded content
src	*URL*	Specifies the address of the external file to embed
type	*MIME_type*	Specifies the MIME type of the embedded content
width	*pixels*	Specifies the width of the embedded content

<embed type="video/quicktime" src="movie.mov" width="640" height="480">

```
<embed
width="420" height="345"
src="http://www.youtube.com/v/XGSy3_Czz8k"
type="application/x-shockwave-flash">
</embed>
```

Points for review:

- HTML stands for **H**yper **T**ext **M**arkup **L**anguage.
- HTML file consist of tags also called markups to display information in an arranged way.
- Tags in HTML are predefined i.e. we cannot create our own tags.
- Web browser is application software that is used to view web pages created using HTML.
- HTML document is mainly divided into two parts: head and body.
- The current version of HTML that we are using now is HTML4.
- W3C stands for World Wide Web consortium is a body which looks after the standardization of HTML language.
- HTML file ends with .htm or .html extension.
- Every starting tag has its corresponding ending tag in HTML for e.g. …. .
- HTML also has empty tags like <br /> which is used to break row.
- The browser ignores comments. <!-- … … … … -->

- Tag can also have attributes, which are used to define the properties of a tag.

  For e.g. …

- Character entities are used to display some special characters, which cannot be typed from the keyboard. It is also used to display some of the characters, which are forbidden to be written as element content.

HTML Editors

A **HTML editor** is an authoring software program that is used to create content for web sites. HTML software is easy to use since it has a feature that is known as **WYSIWYG**.

Examples:

- Vim Editor, gEdit Editor, Emacs Editor, BlueFish Editor (Linux)
- Notepad, Wordpad, Notepad+ (Windows)
- BlueFish Editor, TextEdit, TextWrangler (Mac)

WYSIWYG - ***W****hat* ***Y****ou* ***S****ee* ***I****s* ***W****hat* ***Y****ou* ***G****et*. The term is used in computing to describe a system in which content (text and graphics) displayed onscreen during editing appears in a form exactly corresponding to its appearance when printed or displayed as a finished product, which might be a printed document, web page, or slide presentation.

WYSIWYG implies a user interface that allows the user to view something very similar to the end result while the document is being created. In general WYSIWYG implies the ability to directly manipulate the layout of a document without having to type or remember names of layout commands. The actual meaning depends on the user's perspective.

Examples:

- Adobe Dreamweaver (With this software user can view the output as he writes the HTML code.)
- Microsoft Front Page

CASCADING STYLE SHEETS (CSS)

- CSS is an acronym for **C**ascading **S**tyle **S**heets.
- A CSS (Cascading Style Sheet) file allows to separate your web sites HTML content from it's style. HTML file is used to arrange the content, but all of the presentation (fonts, colors, background, borders, text formatting, link effects & so on…) is accomplished with a CSS.
- Styles define **how to display** HTML elements
- **External Style Sheets** can save a lot of work
- External Style Sheets are stored in *.**CSS files**

What can be done with CSS?

CSS is a style language that defines layout of HTML documents. For example, CSS covers fonts, colors, margins, lines, height, width, background images, advanced positions and many other things.

CSS offers more options and is more accurate and sophisticated on designing web sites. All browsers support CSS.

What is the difference between CSS and HTML?

HTML is used to structure content. CSS is used for formatting structured content.

Back in the good old days when a guy called Tim Berners Lee invented the World Wide Web, the language HTML was only used to add structure to text. An author could mark his text by stating, "this is a headline" or "this is a paragraph" using HTML tags such as <h1> and <p>.

As the Web gained popularity, designers started looking for possibilities to add layout to online documents. To meet this demand, the browser producers (at that time Netscape and Microsoft) invented new HTML tags such as for example <font> which differed from the original HTML tags by defining layout - and not structure. This also led to a situation where original structure tags such as <table> were increasingly being misused to layout pages instead of adding structure to text. Many new layout tags such as <blink> were only supported by one type of browser. "You need browser X to view this page." became a common disclaimer on web sites.

CSS was invented to remedy this situation by providing web designers with sophisticated layout opportunities supported by all browsers. At the same time, separation of the presentation style of documents from the content of documents makes site maintenance a lot easier.

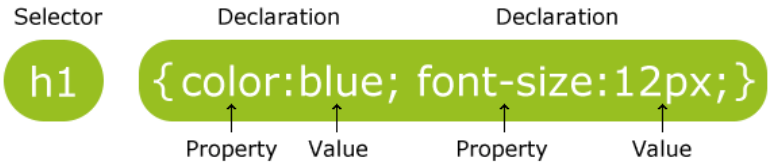
Which benefits will CSS give?

CSS was a revolution in the world of web design. The concrete benefits of CSS include:

- Control layout of many documents from one single style sheet;
- More precise control of layout;

- Apply different layout to different media-types (screen, print, etc.)
- Numerous advanced and sophisticated techniques.

The basic CSS syntax



Let's say we want a nice red color as the background of a webpage:

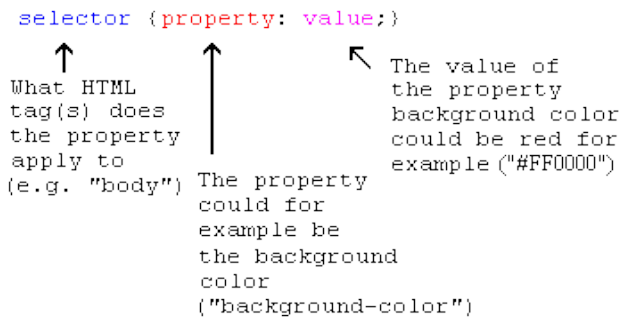
Using **HTML** we could have done it like this:

```
<body bgcolor="#FF0000">
```

With **CSS** the same result can be achieved like this:

```
body {background-color: #FF0000;}
```

As you will note, the codes are more or less identical for HTML and CSS. The above example also shows you the fundamental CSS model:



CSS Comments

Comments are used to explain your code, and may help you when you edit the source code at a later date. Browsers ignore comments. A CSS comment begins with "/*", and ends with "*/", like this:

```
/* This is a comment */
p
{
text-align:center;

/* This is another comment */
}
```

Applying CSS to an HTML document

There are three ways you can apply CSS to an HTML document. These methods are all outlined below. We recommend that you focus on the third method i.e. external.

Method 1: In-line (the attribute style)

One way to apply CSS to HTML is by using the HTML attribute style. Building on the above example with the red background color, it can be applied like this:

```
<html>
<head> <title>Example</title></head>
<body style="background-color: #FF0000;">
        <p>This is a red page</p>
</body>
</html>
```

Method 2: Internal (the tag style)

Another way is to include the CSS codes using the HTML tag <style>. For example like this:

```
<html>
<head>
        <title>Example</title>
        <style type="text/css">
                body {background-color: #FF0000;}
        </style>
</head>
<body>
        <p>This is a red page</p>
</body>
</html>
```

Method 3: External (link to a style sheet)

The recommended method is to link to a so-called external style sheet. An external style sheet is simply a text file with the extension **.css**. Like any other file, you can place the style sheet on your web server or hard disk.

For example, let's say that your style sheet is named **style.css** and is located in a folder named **style**. The situation can be illustrated like this:

The trick is to create a link from the HTML document (default.htm) to the style sheet (style.css). Such link can be created with one line of HTML code:

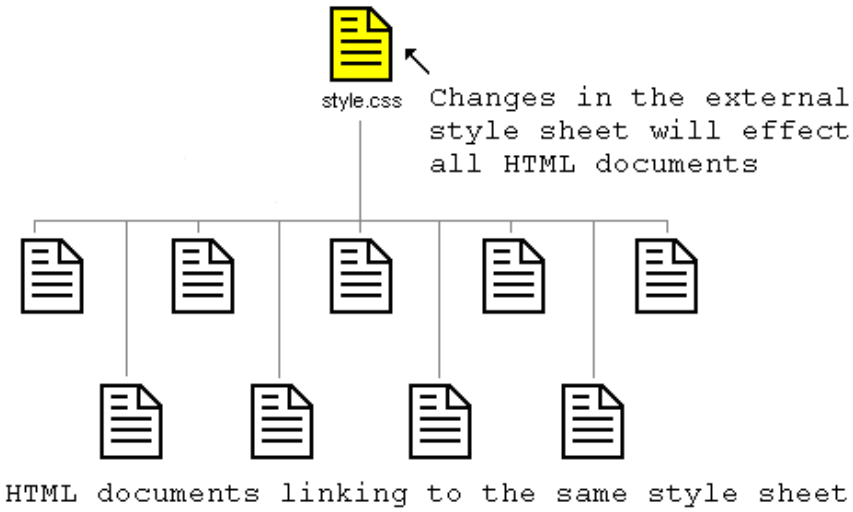
```
<link rel="stylesheet" type="text/css" href="style/style.css" />
```

Notice how the path to our style sheet is indicated using the attribute 'href'. The line of code must be inserted in the header section of the HTML code i.e. between the <head> and </head> tags. Like this:

```
<html>
<head>
<title>My document</title>
```

```
        <link rel="stylesheet" type="text/css" href="style/style.css" />
</head>
<body>
        … … … …
```

This link tells the browser that it should use the layout from the CSS file when displaying the HTML file. The really smart thing is that several HTML documents can be linked to the same style sheet. In other words, one CSS file can be used to control the layout of many HTML documents.



This technique can save you a lot of work. If you, for example, would like to change the background color of a website with 100 pages, a style sheet can save you from having to manually change all 100 HTML documents. Using CSS, the change can be made in a few seconds just by changing one code in the central style sheet.

CSS Classes

The class selector allows to style items within the same HTML element differently. Same class selector can be used again and again within an HTML file.

```
    This style will be applied to all <p> tags.

    p {
     font-size: small;
     color: #333333
    }
```

But lets say that we wanted to change some words to green bold text within the paragraph, while leaving the rest of the sentence untouched. We would do the following:

```
.greenBoldText
{
  font-size: small;
  color: #008080;
  font-weight: bold;
}
```

 This is main paragraph, it contains Green Bold Text and it still continues with main formatting.

CSS IDs

IDs are similar to classes, except once a specific id has been declared it cannot be used again within the same HTML file.

Use IDs to style the layout elements of a page that will only be needed once and use classes to style text and such that may be declared multiple times.

The main container for this page is defined by the following.

```
<div id=”container”>
    Everything within my document is inside this division.
</div>
```

Here, id selector is chosen for the “container” division over a class, because it will be used one time only within the file.

CSS file looks following:

```
#container
{
  width: 80%;
  margin: auto;
  padding: 20px;
  border: 1px solid #666;
  background: #ffffff;
}
```

Note: The id selector begins with a (#) sign instead of a (.)

Multiple Style Sheets

If some properties have been set for the same selector in different style sheets, the values will be inherited from the more specific style sheet.

For example, an external style sheet has these properties for the h3 selector:

```
h3
{
color:red;
text-align:left;
font-size:8pt;
}
```

And an internal style sheet has these properties for the h3 selector:

```
h3
{
text-align:right;
font-size:20pt;
}
```

If the page with the internal style sheet also links to the external style sheet the properties for h3 will be:

```
color:red;
text-align:right;
font-size:20pt;
```

The color is inherited from the external style sheet and the text-alignment and the font-size is replaced by the internal style sheet.

Mostly Used CSS$^{2.0}$ Properties

Background Properties

Property	Description	Possible Values	Examples
background-attachment	Declares the attachment of a background image (to scroll with the page content or be in a fixed position).	*fixed* *scroll*	*div { background-attachment:fixed; }* *div { background-attachment:scroll; }*
background-color	Declares the background color.	Valid color names, RGB values, hexadecimal notation.	*div { background-color:green; }* *div { color:#00FF00; }*
background-image	Declares the background	URL values.	*div { background-*

	image of an element.		*image:url(images/img.jpg); }* *body { background-image:url(img.jpg); }*
background-position	Declares the position of a background image.	*top left* *top center* *top right* *center left* *center center* *center right* *bottom left* *bottom center* *bottom right*	*div { background-position:10px 50px; }* *div { background-position:bottom right; }*
background-repeat	Declares how and/or if a background image repeats.	*repeat* *repeat-x* *repeat-y* *no-repeat*	*div { background-repeat:repeat-x; }* *div { background-repeat:no-repeat; }*
background	Used as a shorthand property to set all the background properties at once.	Separate values by a space in the following order (those that are not defined will use inherited or default initial values): *background-color* *background-image* *background-repeat* *background-attachment* *background-position*	*div { background:green url(image.jpg) no-repeat fixed center center; }* *div { background:url(image.jpg) fixed; }*

Border Properties

Property	Description	Possible Values	Examples
border-top-color	Declares the color of the top border.	Valid color names, RGB values, hexidecimal notation, or the predefined value **transparent**.	*div { border-top-color:green; }* *div { border-top-color:#00FF00; }*
border-top-style	Declares the style of the top border.	*none* *hidden* *dotted* *dashed* *solid* *double* *groove* *ridge* *inset* *outset*	*div { border-top-style:solid; }* *div { border-top-style:inset; }*
border-top-width	Declares the width of the top border.	Lengths or the following predefined values: *thin* *medium* *thick*	*div { border-top-width:2px; }* *div { border-top-width:thin; }*
border-top	Used as a shorthand property to set all the border-top properties at once.	Separate values by a space in the following order (those that are not defined will use inherited or default initial values): *border-top-width* *border-top-style* *border-top-color*	*div { border-top:2px solid green; }* *div { border-top:thick double #00FF00; }*
border-right-color	Declares the color of the right border.	Valid color names, RGB values, hexadecimal notation, or the predefined value **transparent**.	*div { border-right-color:green; }* *div { border-right-color:#00FF00; }*
border-right-style	Declares the style of the right border.	*none* *hidden* *dotted* *dashed* *solid* *double* *groove* *ridge* *inset* *outset*	*div { border-right-style:solid; }* *div { border-right-style:inset; }*
border-right-width	Declares the width of the right border.	**Lengths or the following predefined values:** *thin* *medium* *thick*	*div { border-right-width:2px; }* *div { border-right-width:thin; }*
border-right	Used as a shorthand property to set all the border-right	Separate values by a space in the following order (those that are not defined will use inherited or default initial values):	*div { border-right:2px solid green; }*

	properties at once.	*border-right-width* *border-right-style* *border-right-color*	*div { border-right:thick double #00FF00; }*
border-bottom-color	Declares the color of the bottom border.	Valid color names, RGB values, hexidecimal notation, or the predefined value **transparent**.	*div { border-bottom-color:green; }* *div { border-bottom-color:#00FF00; }*
border-bottom-style	Declares the style of the bottom border.	*none* *hidden* *dotted* *dashed* *solid* *double* *groove* *ridge* *inset* *outset*	*div { border-bottom-style:solid; }* *div { border-bottom-style:inset; }*
border-bottom-width	Declares the width of the bottom border.	Lengths or the following predefined values: *thin* *medium* *thick*	*div { border-bottom-width:2px; }* *div { border-bottom-width:thin; }*
border-bottom	Used as a shorthand property to set all the border-bottom properties at once.	Separate values by a space in the following order (those that are not defined will use inherited or default initial values): *border-bottom-width* *border-bottom-style* *border-bottom-color*	*div { border-bottom:2px solid green; }* *div { border-bottom:thick double #00FF00; }*
border-left-color	Declares the color of the left border.	Valid color names, RGB values, hexidecimal notation, or the predefined value **transparent**.	*div { border-left-color:green; }* *div { border-left-color:#00FF00; }*
border-left-style	Declares the style of the left border.	*none* *hidden* *dotted* *dashed* *solid* *double* *groove* *ridge* *inset* *outset*	*div { border-left-style:solid; }* *div { border-left-style:inset; }*
border-left-width	Declares the width of the left border.	Lengths or the following predefined values: *thin*	*div { border-left-width:2px; }*

		medium *thick*	*div { border-left-width:thin; }*
border-left	Used as a shorthand property to set all the border-left properties at once.	Separate values by a space in the following order (those that are not defined will use inherited or default initial values): *border-left-width* *border-left-style* *border-left-color*	*div { border-left:2px solid green; }* *div { border-left:thick double #00FF00; }*
border-color	Declares the border color of all four borders at once.	Valid color names, RGB values, hexidecimal notation, or the predefined value **transparent**. Separate the color for each border by a space, declaring the colors for the borders in the following order: border-top-color border-right-color border-bottom-color border-left-color Undeclared values work as further shorthand notation. If only one color value is declared, all four borders will use that color. If two colors are declared, the top and bottom borders will use the first color while the right and left borders will use the second color. If three colors are declared, the top border will use the first color, the right and left borders will use the second color, and the bottom border will use the third color.	*div { border-color:green red blue olive; }* *div { border-color:green; }* *div { border-color:green red; }* *div { border-color:green red blue; }*
border-style	Declares the border style of all four borders at once.	*none* *hidden* *dotted* *dashed* *solid* *double* *groove* *ridge* *inset* *outset*	*div { border-style:solid dotted dashed double; }* *div { border-style:solid; }* *div { border-style:solid dotted; }* *div { border-style:solid dotted dashed; }*
border-width	Declares the width of all four borders at once.	Lengths or the following predefined values: *thin* *medium* *thick*	*div { border-width:1px 3px 5px 2px; }* *div { border-width:thin; }*
border	Used as a shorthand to declare the border properties when all four borders will	Separate values by a space in the following order (those that are not defined will use inherited or default initial values):	*div { border:1px double green; }* *div { border:thin*

	have the same appearance.	*border-width* *border-style* *border-color*	*solid #00FF00; }*

Classification and Positioning Properties

Property	Description	Possible Values	Examples
clear	Declares the side(s) of an element where no previous floating elements are allowed to be adjacent.	*left* *right* *both* *none*	*div { clear:right; }* *div { clear:both; }*
cursor	Declares the type of cursor to be displayed.	URL values, and the following prefefined values: *auto* *crosshair* *default* *pointer* *move* *e-resize* *ne-resize* *nw-resize* *n-resize* *se-resize* *sw-resize* *s-resize* *w-resize* *text* *wait* *help*	*div { cursor:crosshair; }* *div { cusrsor:url(image.csr); }* *div { cusrsor:url(image.csr), pointer; }*
display	Declares if/how the element displays.	*none* *inline* *block* *list-item* *run-in* *compact* *marker* *table* *inline-table* *table-row-group* *table-header-group* *table-footer-group* *table-row* *table-column-group* *table-column* *table-cell* *table-caption*	*div { display:none; }* *div { display:inline; }* *div { display:marker; }*
float	Declares whether a box should float to the left or right of other content, or whether it should not be floated at all.	*left* *right* *none*	*div { float:left; }* *div { float:right; }*
visibility	Declares the visibility of boxes generated by an element.	visible hidden	*div { visibility:visible; }*

		collapse	*div { visibility:hidden; }*
top	Declares the distance that the top content edge of the element is offset below the top edge of its containing block. The **position** property of the element must also be set to a value other than **static**.	Lengths, percentages, and the predefined value **auto**.	*div { top:15px; }* *div { top:2%; }*
right	Declares the distance that the right content edge of the element is offset to the left of the right edge of its containing block. The **position** property of the element must also be set to a value other than **static**.	Lengths, percentages, and the predefined value **auto**.	*div { right:15px; }* *div { right:2%; }*
bottom	Declares the distance that the bottom content edge of the element is offset above the bottom edge of its containing block. The **position** property of the element must also be set to a value other than **static**.	Lengths, percentages, and the predefined value **auto**.	*div { bottom:15px; }* *div { bottom:2%; }*
left	Declares the distance that the left content edge of the element is offset to the right of the left edge of its containing block. The **position** property of the element must also be set to a value other than **static**.	Lengths, percentages, and the predefined value **auto**.	*div { left:15px; }* *div { left:2%; }*
position	Declares the type of positioning of an element.	*static* *relative* *absolute* *fixed*	*div { position:absolute; }* *div { position:relative; }*
clip	Declares the shape of a clipped region when the value of the **overflow** property is set to a value other than **visible**.	Shapes, or the predefined value **auto**. *rect(top, right, bottom, left)*	*div { clip:auto; }* *div { clip:rect(2px, 4px, 7px, 5px); }*
overflow	Declares how content that overflows the element's box is handled.	*visible* *hidden* *scroll* *auto*	*div { overflow:hidden; }* *div { overflow:scroll; }*
vertical-align	Declares the vertical alignment of an inline-level element or a table cell.	Lengths, percentages, and the following predefined values: *baseline* *sub* *super* *top* *text-top* *middle* *bottom* *text-bottom*	*span { vertical-align:middle; }* *td { vertical-align:top; }*
z-index	Declares the stack order of the element.	Integer values and the predefined value **auto**.	*div { z-index:2; }* *div { z-index:auto; }*

Dimension Properties

Property	Description	Possible Values	Examples
height	Declares the height of the element.	Lengths, percentages, and the predefined value **auto**.	*div { height:200px; }* *div { height:50%; }*
max-height	Declares the maximum height of the element.	Lengths, percentages, and the predefined value **auto**.	*div { max-height:200px; }* *div { max-height:50%; }*
min-height	Declares the minimum height of the element.	Lengths, percentages, and the predefined value **auto**.	*div { min-height:200px; }* *div { min-height:50%; }*
width	Declares the width of the element.	Lengths, percentages, and the predefined value **auto**.	*div { width:500px; }* *div { width:75%; }*
max-width	Declares the maximum width of the element.	Lengths, percentages, and the predefined value **auto**.	*div { max-width:500px; }* *div { max-width:75%; }*
min-width	Declares the minimum width of the element.	Lengths, percentages, and the predefined value **auto**.	*div { min-width:500px; }* *div { min-width:75%; }*

Font Properties

Property	Description	Possible Values	Examples
font-family	Declares the name of the font to be used. Previously set in HTML via the *face* attribute in a <font> tag.	Valid font family names or generic family names, i.e. *Arial*, *Verdana*, *sans-serif*,*"Times New Roman"*, *Times*, *serif*, etc. Font family names can be separated by a comma in the same declaration to allow additional and/or generic family names to be used if the preferred font is unable to be displayed.	*div { font-family:Arial; }* *div { font-family:Arial, Helvetica, sans-serif; }*
font-size	Declares the size of the font. Previously set in HTML via the *size* attribute in a <font> tag.	Lengths (number and unit type— i.e. *1em*,*12pt*, *10px*, *80%*) or one of the following predefined values: *xx-small* *x-small* *small* *medium* *large* *x-large* *xx-large* *smaller*	*div { font-size:70%; }* *div { font-size:0.85em; }* *div { font-size:medium; }*

		larger	
font-style	Declares the font style.	*normal* *italic* *oblique*	*div { font-style:italic; }* *div { font-style:oblique; }*
font-variant	Declares the font variant.	*normal* *small-caps*	*div { font-variant:normal; }* *div { font-variant:small-caps; }*
font-weight	Declares the font weight (lightness or boldness)	*normal* *bold* *bolder* *lighter* *100* *200* *300* *400* *500* *600* *700* *800* *900*	*div { font-weight:bolder; }* *div { font-weight:200; }*
font	Used as a shorthand property to declare all of the font properties at once (except font-size-adjust and font-stretch).	Separate values by a space in the following order (those that are not defined will use inherited or default initial values): *font-style* *font-variant* *font-weight* *font-size* *line-height* *font-family*	*div { font:italic small-caps bold 1em 1.2em Arial }* *div { font:bold 0.8em Verdana }*

List Properties

Property	Description	Possible Values	Examples
list-style-type	Declares the type of list marker used.	*disc* *circle* *square* *decimal* *decimal-leading-zero* *lower-roman* *upper-roman* *lower-alpha* *upper-alpha* *lower-greek* *lower-latin* *upper-latin*	*ol { list-style-type:upper-roman; }* *ul { list-style-type:square; }*
list-style-position	Declares the position of the list marker.	*inside* *outside*	*ol { list-style-position:inside; }* *ul { list-style-position:outside; }*
list-style-image	Declares an image to be used as the list marker.	URL values.	*ul { list-style-image:url(image.jpg); }*
list-style	Shorthand property to declare three list properties at once.	Separate values by a space in the following order (those that are not defined will use inherited or default initial values): *list-style-type* *list-style-position* *list-style-image*	*ul { list-style:disc inside url(image.gif); }* *ol { list-style:upper-roman outside; }*
marker-offset	Declares the marker offset for elements with a value of**marker** set for the **display**property.	Lengths and the predefined value**auto**.	*li:before { display:marker; marker-offset:5px; }*

Margin Properties

Property	Description	Possible Values	Examples
margin-top	Declares the top margin for the element.	Lengths, percentages, and the predefined value **auto**.	*div { margin-top:5px; }* *div { margin-top:15%; }*
margin-right	Declares the right margin for the element.	Lengths, percentages, and the predefined value **auto**.	*div { margin-right:5px; }* *div { margin-right:15%; }*
margin-bottom	Declares the bottom margin for the element.	Lengths, percentages, and the predefined value **auto**.	*div { margin-bottom:5px; }* *div { margin-bottom:15%; }*
margin-left	Declares the left margin for the element.	Lengths, percentages, and the predefined value **auto**.	*div { margin-left:5px; }* *div { margin-left:15%; }*

margin	Shorthand property used to declare all the margin properties at once.	Separate values by a space in the following order (those that are not defined will use inherited or default initial values): *margin-top* *margin-right* *margin-bottom* *margin-left*	*div { margin:5px 12px 4px 7px; }* *div { margin:5px; }* *div { margin:5px 10px; }* *div { margin:5px 7px 4px; }*

Padding Properties

Property	Description	Possible Values	Examples
padding-top	Declares the top padding for the element.	Lengths, percentages, and the predefined value **auto**.	*div { padding-top:5px; }* *div { padding-top:15%; }*
padding-right	Declares the right padding for the element.	Lengths, percentages, and the predefined value **auto**.	*div { padding-right:5px; }* *div { padding-right:15%; }*
padding-bottom	Declares the bottom padding for the element.	Lengths, percentages, and the predefined value **auto**.	*div { padding-bottom:5px; }* *div { padding-bottom:15%; }*
padding-left	Declares the left padding for the element.	Lengths, percentages, and the predefined value **auto**.	*div { padding-left:5px; }* *div { padding-left:15%; }*
padding	Shorthand property used to declare all the margin properties at once.	Separate values by a space in the following order (those that are not defined will use inherited or default initial values): *padding-top* *padding-right* *padding-bottom* *padding-left*	*div { padding:5px 12px 4px 7px; }* *div { padding:5px; }* *div { padding:5px 10px; }* *div { padding:5px 7px 4px; }*

Table Properties

Property	Description	Possible Values	Examples
border-collapse	Declares the way borders are displayed.	*collapse* *separate*	*table { border-collapse:collapse; }* *table { border-collapse:separate; }*
border-spacing	Declares the distance separating borders (if **border-collapse** is**separate**).	Lengths for the horizontal and vertical spacing, separated by a space. If one length is value is declared, that length is used for both the horizontal and vertical spacing. If two lengths are declared, the first one is used for horizontal spacing and the second one is used for vertical spacing.	*table { border-spacing:5px; }* *table { border-spacing:5px 10px; }*
caption-side	Declares where the table caption is displayed in relation to the table.	*top* *bottom* *left* *right*	*caption { caption-side:top; }* *caption { caption-side:right; }*
empty-cells	Declares the way empty cells are displayed (if**border-collapse**is **separate**).	*show* *hide*	*table { empty-cells:show; }* *table { empty-cells:hide; }*
table-layout	Declares the type of table layout.	*auto* *fixed*	*table { table-layout:auto; }* *table { table-layout:fixed; }*

Text Properties

Property	Description	Possible Values	Examples
color	Declares the color of the text.	Valid color names, RGB values, hexidecimal notation. *aqua* *black* *blue* *fuchsia* *gray* *green* *lime* *maroon* *navy* *olive* *purple* *red* *silver* *teal* *white* *yellow*	*div { color:green; }* *div {color:rgb(0,255,0); }* *div { color:#00FF00; }*

direction	Declares the reading direction of the text.	ltr = left-to-right rtl = right-to-left	*div { direction:ltr; }* *div { direction:rtl; }*
line-height	Declares the distance between lines.	Numbers, percentages, lengths, and the predefined value of *normal*.	*div { line-height:normal; }* *div { line-height:2em; }* *div { line-height:125%; }*
letter-spacing	Declares the amount of space between text characters.	A length (in addition to the default space) or the predefined value of*normal*.	*div { letter-spacing:normal; }* *div { letter-spacing:5px; }* *div { letter-spacing:-1px; }*
text-align	Declares the horizontal alignment of inline content.	*left* *right* *center* *justify*	*div { text-align:center; }* *div { text-align:right; }*
text-decoration	Declares the text decoration.	*none* *underline* *overline* *line-through* *blink*	*div { text-decoration:none; }* *div { text-decoration:underline; }*
text-indent	Declares the indentation of the first line of text.	Lengths and percentages.	*div { text-indent:12px; }* *div { text-indent:2%; }*
text-shadow	Declares shadow effects on the text.	A list containg a color followed by numeric values (separated by spaces) that specify: 1. The color for the shadow effect 2. Horizontal distance to the right of the text 3. Vertical distance below the text 4. Blur radius	*div { text-shadow:green 2px 2px 7px; }* *div { text-shadow:olive -3px -4px 5px; }*
text-transform	Declares the capitalization effects on the letters in the text.	*none* *capitalize* *uppercase* *lowercase*	*div { text-transform:uppercase; }* *div { text-transform:lowercase; }*
word-spacing	Declares the space between words in the text.	A length (in addition to the default space) or the predefined value of*normal*.	*div { word-spacing:normal; }* *div { word-spacing:1.5em; }*

DHTML

Dynamic HTML is not really a new specification of HTML, but rather a new way of looking at and controlling the standard HTML codes and commands. When thinking of dynamic HTML, you need to remember the qualities of standard HTML, especially that once a page is loaded from the server, it will not change until another request comes to the server. Dynamic HTML gives you more control over the HTML elements and allows them to change at any time, without returning to the Web server.

There are four parts to DHTML:

- Document Object Model (DOM)
- Scripts
- Cascading Style Sheets (CSS)
- HTML

DOM

The DOM is what allows you to access any part of your Web page to change it with DHTML. The DOM specifies every part of a Web page and using its consistent naming conventions you can access them and change their properties.

Scripts

Scripts written in either JavaScript or VBScript.

Cascading Style Sheets (CSS)

CSS is used in DHTML to control the look and feel of the Web page. Style sheets define the colors and fonts of text, the background colors and images, and the placement of objects on the page. Using scripting and the DOM, you can change the style of various elements.

Practical Exercises:

Type the following codes in a notepad and save it as a html page to see the output. Here in this example we have used tables to divide the content of web page into different sections.

Question 1:

```
<html>
<head>
<title>WEB PAGE TITLE GOES HERE</title>
</head>

<body style="margin: 0px; padding: 0px; font-family: 'Trebuchet MS',verdana;">
<table width="100%" style="height: 100%;" cellpadding="10" cellspacing="0"
border="0"><tr>
<!-- ============ LEFT COLUMN (MENU) ============== -->
<td width="20%" valign="top" bgcolor="#999f8e">
<a href="#">Menu link</a><br>
<a href="#">Menu link</a><br>
<a href="#">Menu link</a><br>
<a href="#">Menu link</a><br>
<a href="#">Menu link</a>
</td>
<!-- ============ RIGHT COLUMN (CONTENT) ============== -->
<td width="80%" valign="top" bgcolor="#d2d8c7">

<h1>Website Logo</h1>
<h2>Page heading</h2>
This is a basic two-column web page layout. The left column or the <i>menu
column</i> is a narrow band of space (usually between 15-25% of the page width) and
is reserved for a menu of hyperlinks leading to other pages on your website. The
table used to create this layout employs a single table row containing two table
cells.<br>
<br>
The right column or the <i>content column</i> takes up the lion's share of the web
page width and contains the actual content of each particular page. In a basic two
column layout like this, it is common to place the website logo at the top of the
content column on each page.</td></tr></table>
</body>
</html>
```

Question 2:

```
<html>
<head>
<title>WEB PAGE TITLE GOES HERE</title>
</head>
<body style="margin: 0px; padding: 0px; font-family: 'Trebuchet MS',verdana;">
<table width="100%" style="height: 100%;" cellpadding="10" cellspacing="0"
border="0">
<tr>
<!-- ============ HEADER SECTION ============== -->
<td colspan="2" style="height: 100px;" bgcolor="#777d6a"><h1>Website
Logo</h1></td></tr>
```

```
<tr>
<!-- ============ LEFT COLUMN (MENU) ============== -->
<td width="20%" valign="top" bgcolor="#999f8e">
<a href="#">Menu link</a><br>
<a href="#">Menu link</a><br>
<a href="#">Menu link</a><br>
<a href="#">Menu link</a><br>
<a href="#">Menu link</a>
</td>

<!-- ============ RIGHT COLUMN (CONTENT) ============== -->
<td width="80%" valign="top" bgcolor="#d2d8c7">
<h2>Page heading</h2>

Here's a two column layout with a header section that spans the width of both
columns. The first table row creates the header and contains a single table cell
which uses the colspan="2" attribute-value pair. The website logo typically goes in
the header section.<br>
<br>
The second table row contains two table cells which create the menu column (left)
and the content column (right). The colspan attribute is not set in either so they
default to colspan="1".</td></tr></table>
</body>
</html>
```

Question 3:

```
<html>
<head>
<title>WEB PAGE TITLE GOES HERE</title>
</head>
<body style="margin: 0px; padding: 0px; font-family: 'Trebuchet MS',verdana;">
<table width="100%" style="height: 100%;" cellpadding="10" cellspacing="0"
border="0">
<tr>
<!-- ============ HEADER SECTION ============== -->
<td colspan="2" style="height: 100px;" bgcolor="#777d6a"><h1>Website
Logo</h1></td></tr>

<tr>
<!-- ============ LEFT COLUMN (MENU) ============== -->
<td width="20%" valign="top" bgcolor="#999f8e">
<a href="#">Menu link</a><br>
<a href="#">Menu link</a><br>
<a href="#">Menu link</a><br>
<a href="#">Menu link</a><br>
<a href="#">Menu link</a>
</td>

<!-- ============ RIGHT COLUMN (CONTENT) ============== -->
<td width="80%" valign="top" bgcolor="#d2d8c7">
<h2>Page heading</h2>

Here's a two column layout with header and footer sections that span the width of
both columns. The first table row creates the header and contains a single table
cell which uses the colspan="2" attribute-value pair.<br>
```

```
<br>
The second table row contains two table cells which create the menu column (left)
and the content column (right). The colspan attribute is not set in either so they
default to colspan="1".<br>
<br>
The third table row creates the footer. Like the header, it contains a single table
cell which uses the colspan="2" attribute-value pair.</td></tr>

<!-- ============ FOOTER SECTION ============== -->
<tr><td colspan="2" align="center" height="20" bgcolor="#777d6a">Copyright
©</td></tr>
</table>
</body>
</html>
```

Question 4

```
<!-- save the file as frame.html-->
<frameset rows="75%, *" cols="*, 40%">
  <frame src="framea.html">
  <frame src="frameb.html">
  <frame src="framec.html">
  <frame src="framed.html">

  <noframes>
        <h1>Your browser does not supports frames</h1>
        Click the below link to continue your visit.
        <a href="noframes.html">no-frames</a>
  </noframes>

</frameset>
</html>

<!-- save the file as framea.html-->
<html>
<head>
<title> framea</title>
</head>
<body>
<h1>this is framea</h1>
</body>
</html>

<!-- save the file as frameb.html-->
<html>
<head>
<title> frameb</title>
</head>
<body>
<h1>this is frameb</h1>
</body>
</html>

<!-- save the file as framec.html-->
<html>
<head>
```

```
<title> framec</title>
</head>
<body>
<h1>this is framec</h1>
</body>
</html>

<!-- save the file as framed.html-->
<html>
<head>
<title> framed</title>
</head>
<body>
<h1>this is framed</h1>
</body>
</html>
```

Simple Multi level menu with CSS

```
<html>

<head>

<title>MENU</title>

<style>

nav{font-family:Arial, Helvetica, sans-serif; font-size:12px; margin-left:30px;
border-radius:5px; width:90%;}

nav ul{ margin:0px; padding:0px;}

nav ul li{list-style-type:none; display:inline-block; margin:0 0 0 -3px}

nav ul li a{ display:block; color:#333;text-decoration:none; text-
transform:uppercase; padding:20px 25px; background:#e5e4e4; border-right:solid 1px
#fff}

nav ul li:hover a{ background:#f00}

nav ul li:first-child a{border-radius:5px 0 0 5px;}

nav ul li:last-child a{border-radius:0 5px 5px 0;}

/* First-Level */

nav ul li ul li:first-child a{border-top:solid 5px #fff}

nav ul li ul li:last-child a{border-bottom:solid 5px #fff}

nav ul li ul{position:absolute; display:none; width:140px; margin:0;}

nav ul li:hover ul{display:block;}

nav ul li ul li{display:block; position:relative; border:none}

nav ul li ul li a{ border-bottom:solid 1px #f4f4f4; border-right:5px solid #fff;
border-left:5px solid #fff; border-radius:0px; background:#e5e4e4; margin:0px;
padding:10px}
```

```
/* Second-Level */

nav ul li:hover ul ul{display:none}

nav ul li ul li:hover>ul{display:block}

/* Third-Level */

nav ul li ul li ul{display:none; background:#fff; position:absolute; top:-10%;
left:145px; width:140px;}

</style>

</head>

<body>

<nav>

<ul>

<li><a href="#">Home</a></li>

<li><a href="#">About Us</a></li>

<li><a href="#">Blog</a></li>

<li>

<a href="#">Drop Down</a>

<ul>

<li><a href="#">First</a></li>

<li><a href="#">First</a></li>

<li><a href="#">First</a>

<ul>

<li><a href="#">Second</a></li>

<li><a href="#">Second</a></li>

<li><a href="#">Second</a>

<ul>

<li><a href="#">Third</a></li>

<li><a href="#">Third</a></li>

<li><a href="#">Third</a></li>

</ul>

</li>

</ul>

</li>

<li><a href="#">First</a></li>

</ul>

</li>

<li><a href="#">Services</a> </li>
```

```
<li><a href="#">Contact Us</a></li>
</ul>
</nav>
</body>
</html>
```

~