Chapter 1 - HTML5 and CSS3

 $\label{eq:html} \mbox{HTML5} - \mbox{Document Structure, Basic HTML Tags, Section elements, text, links, tables, images, forms$

CSS3(Cascading Style Sheet)- Evolution of CSS3, Syntax of CSS3, Types, Selectors, Background, Font, Text, Borders.

INTRODUCTION TO HTML:

- HTML stands for **H**yper **T**ext **M**arkup **L**anguage.
- HTML is a method of describing the format of web documents
- It is used to display the document in the web browsers.
- HTML was developed by Tim Berners-Lee. HTML standards are created by a group of interested organizations called W3C (World Wide Web consortium).

HTML Tags:

- o In HTML, formatting is specified by using tags.
- A tag is a format name surrounded by angle brackets.
- End tags which switch a format off also contain a forward slash.

Points to be remembered for HTML tags:

- They are not case sensitive i.e., <head>, <HEAD> and <Head> is equivalent.
- If a browser does not understand a tag it will usually ignore it.
- White spaces, tabs and newlines are ignored by the browser.

STRUCTURE OF A HTML DOCUMENT:

- HTML document consists of 2 sections.
 - 1. Head Section

2. Body Section

The basic document is shown below.

```
<html>
<head>
<! -- Head Section -->
</head>
<body>
<! -- Body Section -->
</body>
</html>
```

HTML ELEMENTS:

An HTML element is everything from the start tag to the end tag

HTML ATTRIBUTES:

HTML Elements can have Attributes. Attribute provide additional information about an element and are always specified in the start tag.

Syntax: <tag attributename="value" > Content </tag>

Sample.html

</body>

</html>

Output:



BASIC HTML TAGS:

1. <html>:

- The <html> tag tells the browser that this is an HTML document.
- The <html> tag represents the root of an HTML document.
- The <html> tag is the container for all other HTML elements.

2. <title>:

- defines 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

3. <body>:

- 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.

Attribute	Value	Meaning
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

4. <!-- --> Comment Tag:

 The comment tag is used to insert comments in the source code. Comments are not displayed in the browsers.

5. Heading Tags:

- There are 6 heading tags.
- The <h1> to <h6> tags are used to define HTML headings.
- <h1> defines the most important heading. <h6> defines the least important heading.

Attribute	Value	Meaning
Align	Left Right Center	Specifies the alignment of a heading

```
Example: Headings.html

<html>

<head>

<title>Heading Tage</title>

</head>

<body bgcolor=yellow text=blue>

<! -- This is a Comment -->

<h1 align="left">This is Heading 1</h1>

<h2 align="center">This is Heading 2</h2>
<h3 align="right">This is Heading 3</h3>
<h4>This is Heading 4</h4>
<h5>This is Heading 5</h5>
```

<h6 align="right">This is Heading 6</h6></body>

</html>

Output:



6. : paragraph Tag

 Browser automatically add some space before and after each element

Attribute	Value	Meaning
Align	Left,	Specifies the alignment
	Right,	of text within a
	Center	paragraph
	Justify	

7. :

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

Attribute	Value	Meaning
Color	rgb(x,x,x)	Specifies the color of text
	#xxxxxx	
	colorname	
Face	font_family	Specifies the font of text
Size	Number	Specifies size of text

8. <link>:

- The k> tag defines a link between a document and an external resource.
- The tag is used to link to external style sheets.

Attribute	Value	Meaning
Href	URL	Specifies the location of the linked document
Target	_blank _self _parent _top framename	Specifies where the linked document is to be loaded
Rel	Stylesheet	Specifies the relationship between current document and the linked document

9. <div>:

- The <div> tag defines a division or a section in an HTML document.
- The <div> tag is used to group block-elements to format them with CSS.

Attribute	Value	M€	eaning	Z
Align	Left,	Specifies		the
	Right,	alignment	of	a
	Center	heading		
	Justify			

10.
:

• The
br> tag inserts a single line break.

 The
br> tag is an empty tag which means that it has no end tag.

11. < marquee>:

It is used for Scrolling images and text in the web page

Attribute	Value	Meaning
behavior	Scroll, slide alternate	Defines the type of scrolling.
bgcolor	rgb(x,x,x) #xxxxxx colorname	Deprecated-Defines the direction of scrolling the content.
direction	Up, down, left, right	Defines the direction of scrolling the content.
Loop	Number	Specifies how many times to loop. The default value is INFINITE, which means that the marquee loops endlessly.
scrolldelay	Seconds	Defines how long to delay between each jump.
scrollamount	number	Defines how how far to jump.

Text

The following HTML tags are used for format the appearance of the text on your web page.

- (a). Headings <h1> to <h6>
- (b). Bold or

The text in between the tags will be displayed in bold

(c). Italic - <i> </i>

Renders the text in italics i.e displays the text at a slight angle.

- (d). Underline <u> </u>
 Underlines the text written in between the tags
- (e). Strike out <strike> </strike>

 Defines strike through text, puts a line right through the center of the text, crossing it out.
- (f).Preformatted text
 Text in element is displayed in fixed width font,
 and it preserves both spaces and line breaks.
- (g). Typewriter Text <tt> </tt>The text appears to have been typed by a type writer\
- (h). <big> </big> Defines bigger text
- (i). <small> </small> Defines smaller text
- (j). Defines a subscript text. Subscript that appears half a character below the baseline.
- (k). Defines a superscript text. Superscript that appears half a character above the baseline.
- (l). <center></center> It align the text to the center of the page

Example: TextFormattingTags.html

<body>
<h1>This is Heading 1</h1>

<html>

This text is in bold

<i>This text is in Italics</i>

<u>This text is in Underlined</u>

<strike>This text is Striked

This text is Emphasized<sr>
<tt>This text is Type Writer Text</tt>

<big>This text is Bigger</big>

<small>This text is Smaller</small>

H₂O

(a+b)²=a²+2ab+b²

<center>This Text is aligned to Center</center>

</body>
</html>

Output:



Link

<a>: Anchor 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

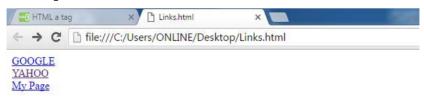
Attribute	Value	Meaning	
href	URL	Specifies the destination of	
IIICI		the link	

target	_blank	
	_self	Specifies where to open the
	_parent	linked document
	_top	miked document
	framename	

Example: Link.html

```
<html>
<body>
<a href="http://www.google.com" target="_self">
GOOGLE</a>
<br/>
<br/>
<a href="http://www.yahoo.com"
target="_blank">YAHOO</a>
<br/>
<br/>
<a href="Headings.html" target="_parent"> My
Page</a>
</body>
</html>
```

Output:



TABLES:

• For Systematic arrangement of information we often require Tabular Structure.

- The biggest advantage of using tables on the web page is that the information gets arranged systematically.
- The tag defines an HTML table.
- An HTML table consists of the element and one or more , , and elements.
- The element defines a table row, the element defines a table header, and the element defines a table cell.
- 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.

Attributes of tag:

Name	Value	Meaning
	Left	Specifies the alignment of
align	Right	a table according to
	center	surrounding text
bgcolor	rgb(x,x,x) #xxxxxx colorname	Specifies the background color for a table
border	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

Attributes of tag:

Name	Value	Meaning
	Left	
olion	Right	Aligns the content in a table
align	Center	row
	justify	
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

Attributes of and tags:

Name	Value	Meaning
	Left, Right	
align	Center	Aligns the content in a cell
	justify	
	rgb(x,x,x)	
bgcolor	#xxxxxx	Aligns the content in a cell
	colorname	

rowspan	number	Specifies the number of rows a cell should span
colspan	number	Specifies the number of rows a cell should span
valign	Top, middle bottom baseline	Vertical aligns the content in a cell
Width	Pixels	Specifies the width of a cell

Example:

```
<html>
<body>
    bgcolor="yellow" border="1" cellspacing="0"
<table
cellpadding="10" bordercolor="green" align="center">
Header1
   Header2
r1,c1
    r1,c2
   r1,c3
r2,c1
    r2,c2
   r2,c3
```

```
r3,c1
   r3,c2
   <table border="1" bgcolor="cyan"
cellspacing="0" bordercolor="red">
      Nested
Table
      One
         Two
      Three
         Four
      </body>
</html>
```

Output:

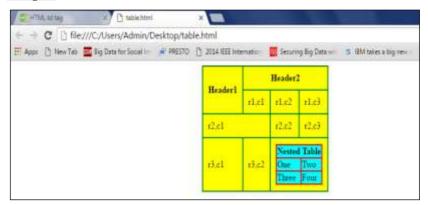


IMAGE:

- Images increase the visual appearance of web pages and make your web pages more attractive.
- The tag defines an image in an HTML page.
- The tag has two required attributes: src and alt.

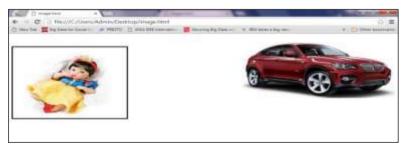
Attributes of tag:

Name	Value	Meaning
src	URL	Specifies the URL of an image
	Top,	
align	bottom	Specifies the alignment of an image
aligii	middle	according to surrounding elements
	left, right	
alt	text	Specifies an alternate text for an image
border	pixels	Specifies the width of the border
border		around an image
width	pixels	Specifies the width of an image
height	pixels	Specifies the height of an image
hspace	pixels	Specifies the whitespace on left and
	pixeio	right side of an image

1a	Specifies the whitespace on top and	
vspace	pixels	bottom of an image
iaman	nap ismap	Specifies an image as a server-side
ismap		image-map
usomon #monnomo	Specifies an image as a client-side	
usemap	#mapname	image-map

Example:

Output:



FORMS:

- Form is a typical layout on the web page by which a user can interact with the web page.
- 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:

o <input> <textarea> <select> <option> <label>

Attributes of <form> tag:

Name	Value	Meaning
action	URL	Specifies where to send the form-data when a form is submitted
method	get post	Specifies the HTTP method to use when sending form-data
name	text	Specifies the name of a form
target	_blank _self _parent _top	Specifies where to display the response that is received after submitting the form

<input>:

- 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.

Attributes of <input > tag:

Name	Value	Meaning
	Button,	
T	checkbox	Specifies the type <input/>
Туре	date, file,	element to display
	hidden	

	image,	
	month,	
	number	
	password,	
	radio,	
	reset	
	submit,	
	text	
Name	text	Specifies the name of an
		<input/> element
		Specifies that an <input/>
		element should be pre-
Checked	checked	selected when the page
		loads (for type="checkbox"
		or type="radio")
Value	Text.	Specifies the value of an
varuc	ICAL	<input/> element

<textarea>:

- 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

Attributes of <textarea > tag:

Name	Value	Meaning
Name	text	Specifies a name for a text area

Rows	number	Specifies the visible number of
		lines in a text area
Cols number		Specifies the visible width of a
	text area	

<select>:

- 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.

Attributes of <select > tag:

Name	Value	Meaning
Name	name	Defines a name for the drop-
Name		down list
Multiple		Specifies that multiple options
Multiple multiple	munipie	can be selected at once
Size	Size number	Defines the number of visible
Size		options in a drop-down list

<label>: The <label> tag defines a label for an <input> element.

Example: Login.html

```
<html>
```

<body>

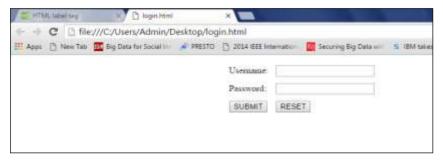
<form name="f1" method="post" action="">

<label> Username: </label>

<input type="text" name="t1">

```
<label> Password: </label>
<input type="password" name="t2">
<input type="submit" value="SUBMIT" >
<input type="reset" value="RESET" >
</form>
</body>
</html>
```

Output:



WORKING WITH LISTS:

- Lists are used to collect a group of items.
- There are 3 types of Lists in HTML
 - 1. Ordered List
 - 2. Unordered List
 - 3. Definition List

1. ORDERED LIST:

- These are those in which the items are arranged in some specific order.
- This list can be numerical or alphabetic.
- The tag defines an ordered list. tag:

Attributes:

Name	Value	Meaning
type	1 A a I i	Specifies the kind of marker to use in the list
start	number	Specifies the start value of an ordered list
reversed	reversed	Specifies that the list order should be descending

tag: defines a list item.

Example:

```
<html>
<body>
<01>
   Red
   Green
   Blue

    type="A">

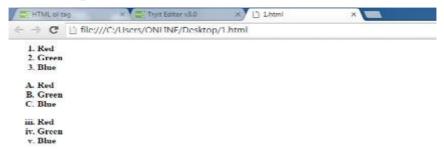
   Red
   Green
   Blue

    start=3 type="i">

   Red
   Green
   Blue
```

- </body>
- </html>

Output:



2. UNORDERED LIST:

- The Unordered lists are those in which the items are not arranged in any order.
- This defines a Bulleted List.
- defines an unordered (bulleted) list.

Attributes:

Name	Value	Meaning
	Disc	Specifies the kind of marker to
Туре	Square Circle	use in the list

tag: defines a list item.

Example:

```
<html>
<body>

Red
Black
White
```

```
Red
Black
White

Red
Red
Hack

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

Output:



3. DEFINITION LIST

- These are lists of items that have 2 parts, a term to be defined and the definition.
- This create lists similar to a dictionary.
 - o **<dl> tag:** defines a definition list. It is used in conjunction with <dt> and <dd>
 - o <dt> tag: defines a term/name in a definition list.
 - o <dd> tag: used to describe a term/name in a definition list.

• Example:

Output:



FRAMES:

- HTML Frames divide a browser window into several pieces or panes, each pane containing a separate HTML page.
- Each portion is called as a *Frame*.
- A Collection of Frames in the browser window is known as a *Frameset*.
- HTML Frames allow authors to present documents in multiple views, which may be independent windows or sub windows.

 One of the Key advantages that frames offer is that you can load and reload single frames without having to reload the entire contents of the browser window.

<frameset>:

- The <frameset> tag defines a frameset.
- <frameset> element holds one 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, and how much percentage/pixels of space will occupy each of them.

Attributes of <frameset> tag:

Name	Value	Meaning
cols	Pixels, %	Specifies the number and size of columns
	*	in a frameset
rows	Pixels, %	Specifies the number and size of rows in a
	*	frameset

<frame>:

- The <frame> tag defines one particular window (frame) within a <frameset>.
- Each <frame> in a <frameset> can have different attributes, such as border, scrolling, the ability to resize, etc.

Attributes of <frame> tag:

Name	Value	Meaning
src	URL	Specifies the URL of the document to show in a frame

frameborder	0	Specifies whether or not to display a
	1	border around a frame
name	text	Specifies the name of a frame
noresize	noresize	Specifies that a frame is not resizable
scrolling	yes no auto	Specifies whether or not to display scrollbars in a frame

Example:

Frames.html:

```
<html>
    <frameset cols="25%,*,25%">
       <frame src="http://www.bing.com" name="f1" noresize>
       <frame src="http://www.w3schools.com" name="f2" noresize>
       <frame src="Mypage.html" name="f3" noresize>
    </frameset>
</html>
```

CSS3(CASCADING STYLE SHEET)

INTRODUCTION TO CSS:

- A Style sheet is a set of Stylistic rules that expresses the Presentation and Layout of Structured documents (Web Pages).
- Using CSS we can determine the style and layout of the web page.
- CSS is a style sheet language used to describe the presentation semantics of a document written in Markup Language.
- They allow us to specify rules for how the content of elements within your document appears.
- With CSS, all formatting could be removed from the HTML document and stored in a separate CSS file.

• Advantages of CSS:

- 1. Improves the formatting capability of a HTML page
- 2. Reduced Document size
- Reduced Complexity and repetition can reuse the same style sheet with many different HTML documents.
- 4. Saves time
- 5. A style sheet can import and use styles from other style sheets.

CSS RULES:

 CSS consists of set of rules that determines how the content of elements within your document should be formatted.

Syntax:

Selector { property1:value ; property2:value; }

- CSS rule is made up of 2 parts:
 - 1. Selector
 - 2. Declaration
- **Selector:** Element/ set of elements to which declaration must be applied to
- **Declaration:** (i). Property: CSS Property that is to be applied
 - (ii). Value: Value of CSS property
- Example:

```
h1
{
    font-family : arial;
    color : blue;
    text-align : center;
}
```

• **Grouping of Selectors:** Separate selector with a

```
Comma
```

```
h1, h2, h3
{
    color: blue;
    font-family: calibri;
    text-align: center;
```

'CLASS' SELECTOR / STYLESHEET CLASS:-

- 'Class' selector allows us to define multiple styles for the same type of HTML element.
- Syntax:

```
selector.classname
{
```

```
Property1 : valuel; property2 : value;
}
```

• To define a style that can be used by multiple HTML elements remove tag name/selector.

• Syntax:

```
.classname
{
     Property1 : valuel; property2 : value;
}
```

THE 'id' SELECTOR:

• The #id selector styles the element with the specified id

• Syntax:

```
#id
{
     Property1 : valuel; property2 : value;
}
```

EXAMPLE:

```
{ color:green; }
                    #id1
                    { color:blue; background-color:orange; }
             </style>
</head>
<body>
             This paragraph is styled by class
             'center'
             This paragraph is styled by class
             'right'
             This paragraph is styled by class
             'cl1'
             This paragraph is selected by ID
             selector
                    <h1 class="cl1">This Heading is styled by class
'cl1'</h1>
</body>
</html>
```

Output:



TYPES OF CSS:

- When a browser reads a style sheet, it will format the HTML document according to the information in the style sheet.
- There are three ways of inserting a style sheet:
 - 1. Inline style sheet

- 2. Internal/Embedded style sheet
- 3. External style sheet

1. INLINE STYLE SHEET:

- Inline styles are placed directly inside a specific HTML element in the code.
- The style is applied at the occurrence of the HTML element by using "style" attribute in the relevant tag.
- The style attribute can contain any CSS Properties
- Inline styles cannot be reused at all

• Example:

```
<html>
```

<body>

<h1>This is Normal Text</h1>

align:center">This Text is Styled

</body>

</html>

Output:



2. INTERNAL STYLE SHEET:

- An internal style sheet may be used if one single page has a unique style.
- Internal styles are defined within the <style> element,
 inside the <head> section of an HTML page.
- All the desired selectors along with the properties and values are included in the header section between <style> and </style> tags.

Example:

```
<html>
<head>
<style>
          body {
                 background-color:pink;
          h1 {
                 color: maroon;
                 font-family: verdana;
            }
</style>
</head>
<body>
          <h1>This is a heading</h1>
          This is a paragraph.
</body>
</html>
```

Output:



3. EXTERNAL STYLE SHEET:

- External Style Sheets are useful when we need to apply particular style to more than one web page.
- The central idea in this type of style sheet is that the desired style is stored in an external .css file.

- The name of the external .css file has to be mentioned on our web pages. Then the styles defined in the .css file will be applied to all those web pages.
- tag is used to link the external style sheet to a web page.

Example:

```
Mystyle.css:
         p.left
                 text-align:left;
                 color:red:
                 text-decoration:overline;
                 font-family:tahoma;
                 font-size:20pt;
          p.center
                 color:green;
                 text-align:center;
                 text-decoration:underline;
                 font-family:calibri;
                 font-size:30pt;
Ext.html:
          <html>
          <head>
          k rel="stylesheet" href="Mystyle.css">
          </head>
          <body>
```

Output:



CSS PROPERTIES:

CSS BACKGROUND PROPERTIES:

PROPERTY NAME	VALUE
background-	fixed, scroll
attachment	
background-color	Rgb(X,X,X), #XXXXXX, colorname
background-image	url(' url of image')
background-position	left top,left center, left bottom
	center top,center bottom, center
	center
	right top,right center, right bottom

Example:

```
<html>
<head>
<style type="text/css">
h1
{
   background-image:url('2.gif');
   background-attachment:fixed;
   background-repeat:no-repeat;
```

```
body
{
    background-position:center top;
    background-image:url('bunny giving flower.gif');
    background-repeat:no-repeat;
    background-attachment:fixed;
    background-color:green;
}
</style>
</head>
</body>
    </html>
```

Output:



CSS TEXT PROPERTIES:

PROPERTY	VALUE
NAME	
color	Color name
direction	ltr,rtl
text-align	left, right, center, justify
text-	Underline, overline, Line-through,
decoration	blink
text-	none, uppercase, lowercase,

transform	capitalize
text-indent	length, %
vertical-align	length, %, top, middle, bottom, sup, super
letter-spacing	normal, length(-ve)
word-spacing	normal, length

CSS FONT PROPERTIES:

PROPERTY NAME	VALUE
font-family	Arial, Times New Roman, Etc
font-size	Small, smaller, medium, large,
	larger, length, %
font-style	normal, italic
font-variant	normal, small-caps
font-weight	normal, bold, bolder, 100-900
font-stretch	Normal, wider, narrower

Example:

TextFont.css:

```
p.right
{
    color:red;
    font-size:large;
    text-transform:capitalize;
    text-align:right;
    font-weight:200;
    letter-spacing:-3;
    word-spacing:5;
```

```
p.center
    color:blue;
    text-align:center;
    text-decoration:underline;
    text-tranform:uppercase;
    font-style:italic;
    font-size:30;
.left
    color:green;
    text-indent:20;
    text-decoration:overline;
    text-transform:lowercase;
    font-family:tahoma;
    font-size:small;
    font-style:italic;
}
#id1
    color:purple;
    font-weight:900;
    font-family:verdana;
    text-decoration:line-through;
    text-align:right;
    font-variant:small-caps;
    font-size:20;
```

```
}
```

TextFont.html:

```
<html>
```

<head>

k rel="stylesheet" type="text/css" href="TextFont.css">

</head>

<body>

This Paragraph is not styled

This paragraph is styled by class left

This paragraph is styled by class right

This pragraph is styled by class center

This paragraph is styled by id

</body>

</html>

Output:



CSS POSITIONING ELEMENTS:

PROPERTY NAME	VALUE
Position	static (normal flow), fixed (will
	not move)
	relative (can overlap), absolute (x
	& y co-ordinates)
Left, right, top,	any Numeric value
bottom	

Example:

```
<html>
<body>
<h1 style="position:relative;left:10;top:10;z-
index:3;background-color:yellow">This is layer 1</h1>
<h1 style="position:relative;left:50;top:-20;z-
index:2;background-color:red"> This is layer 2</h1>
<h1 style="position:relative;left:100;top:-50;z-
index:1;background-color:green"> This is layer 3</h1>
<br><br><br><br>>
<h1 style="position:relative;left:10;top:10;z-
index:2;background-color:yellow"> This is layer 1</h1>
<h1 style="position:relative;left:50;top:-20;z-
index:3;background-color:red"> This is layer 2</h1>
<h1 style="position:relative;left:100;top:-50;z-
index:1;background-color:green"> This is layer 3</h1>
<br><br><br><br><
<h1 style="position:relative;left:10;top:10;z-
index:1;background-color:yellow"> This is layer 1</h1>
<h1 style="position:relative;left:50;top:-20;z-
index:2;background-color:red"> This is layer 2</h1>
<h1 style="position:relative;left:100;top:-50;z-
index:3;background-color:green"> This is layer 3</h1>
</body>
</html>
```

Output:

