



DHTML and CSS

1. Introduction to DHTML

HTML stands for Hypertext markup language and DHTML stands for Dynamic HTML. HTML is basically a markup language used for creating tags but DHTML is not a language DHTML is the standard technology.

DHTML is essentially, Dynamic HTML. It is a new way of looking at and controlling the standard HTML codes and commands. DHTML is a collection of technologies that are used to create interactive and animated web sites. DHTML gives more control over the HTML elements. It allows one to incorporate a client-side scripting language, such as JavaScript, a presentation definition language, such as CSS, and the Document Object Model in HTML web pages.

DHTML also allows the pages to change at any time, without returning to the Web server. It allows scripting languages to change a web page's look and function after the page has been loaded and during the viewing process. It also allows the user to add effects to their pages that are otherwise difficult to achieve.

Dynamic HTML is a collective term for a combination of Hypertext Markup Language (HTML) tags and options that can make Web pages more animated and interactive than previous versions of HTML. Much of dynamic HTML is specified in HTML 4.0. Simple examples of dynamic HTML capabilities include having the color of a text heading change when a user passes a mouse over it and allowing a user to "drag and drop" an image to another place on a Web page. Dynamic HTML can allow Web documents to look and act like desktop applications or multimedia productions. As say earlier, DHTML stands for Dynamic HTML. The first thing that we need to clear about DHTML is that it is neither a language like HTML, JavaScript, etc. It is just a combination of HTML, JavaScript and CSS. It just uses these languages features to build dynamic web pages. DHTML is a feature of Netscape Communicator 4.0, and Microsoft Internet Explorer 4.0 and 5.0 and is called a "client-side" technology.

1.1 DHTML FEATURES:

- DHTML use low-bandwidth effect which enhance web page functionality.
- It's simplest feature is making the page dynamic.
- Can be used to create animations, games, applications, provide new ways of navigating through web sites.
- Dynamic building of web pages is simple as no plug-in is required.
- Facilitates the usage of events, methods and properties and code reuse.
- Animate text and images in their document, independently moving each element from any starting point to any ending point, following a predetermined path or one chosen by the user.

DHTML AND CSS

- Embed a ticker that automatically refreshes its content with the latest news, stock quotes, or other data.
- Use form to capture user input, and then process, verify and respond to that data without having to send data back to the server which enhance the speed of website.
- Include rollover buttons or drop-down menus.

1.2 DIFFERENCES BETWEEN HTML AND DHTML:

- HTML is a mark-up language, while DHTML is a collection of technology.
- DHTML creates dynamic web pages, whereas HTML creates static web pages.
- DHTML allows including small animations and dynamic menus in Web pages but HTML is not able to do so.
- DHTML used events, methods, properties to insulate dynamism in HTML Pages.
- HTML is used to describe the web page but DHTML is collection of JavaScript and style sheets in an HTML page.
- HTML sites will be slow upon client-side technologies, while DHTML sites will be fast enough upon client-side technologies as most of entries are checked on browser itself and not waste time rendering to server for cell's mistake.
- HTML creates a plain page without any styles and Scripts called as HTML. Whereas, DHTML creates a page with HTML, CSS, DOM and Scripts called as DHTML.
- In HTML, there is no need for database connectivity, but DHTML may require connecting to a database as it interacts with user.
- HTML files are stored with .htm or .html extension, while DHTML files are stored with .dhtml extension.
- HTML does not require any processing from browser, while DHTML requires processing from browser which changes its look and feel.
- Other major differences between HTML and DHTML are given below.

HTML	DHTML
HTML works slowly upon client technologies	DHTML sited works faster upon client-side technologies.
HTML is static in nature.	DHTML is dynamic in nature.
HTML files are saved with .htm or .html extension.	DHTML files are saved with .dhtml extension.
HTML does not makes use of any methods for making it dynamic.	DHTML uses events, methods and methods and much more for providing dynamism for HTML pages
HTML contents are always static.	DHTML requires processing from browser
HTML page does not require any processing from browser.	DHTML changes its look and feel.

1.3 DIFFERENT ATTRIBUTES OF DHTML

The attributes that make up DHTML are HTML, JavaScript, CSS and DOM. These are explained below as:

1. **JavaScript:** Whether call it JavaScript, Jscript, or ECMAScript, it is the most common language used for client-side scripting. The main reason for this JavaScript comes with virtually every browser. In DHTML JavaScript JavaScript comes with virtually every browser. For example, an onload event could execute a JavaScript function to query the browser's cookies collection to determine whether the user is a first-time visitor to the page. Detail about JavaScript will discuss in next unit (Unit IV).
2. **CSS:** It stands for Cascading Style Sheet. This is used for the presentation part of the web page. In simple words it holds the designing of the page. The look & feel of the page completely depends on CSS. In DHTML CSS rules can be modified at both the document and the element level using JavaScript with event handlers, they can add a significant amount of dynamism with very little code.
3. **DOM:** It stands for Dynamic Object Model and it is the weakest link in DHTML as many of the browser does not support the DOM functionality. It defines the object and its properties. It is a standard way of accessing and manipulating the static content. The Document Object Model is a platform and language-neutral interface that allows program and scripts to dynamically access the content and update it.
4. **HTML:** It stands for Hyper Text Markup Language. As the names suggest it is not programming language, it is a markup language which consists of a set of markup tags.

2. INTRODUCTION TO CSS

Cascading Style Sheet (CSS) is a way to control the look and feel of your HTML documents in an organized and efficient manner. Cascading style sheets (CSS) is a standard defined by the World Wide Web Consortium that offers designers more flexibility and accuracy when defining the appearance of text and formats than standard HTML. Styles sheets define how HTML elements are to be displayed, just like the font tag and the color attribute in HTML 3.2. To solve this problem www3c/www.consortium) creates CSS. Style sheet is a collection of formatting styles which can be applied to a web page.

Cascading Style Sheet (CSS) is a way to control the look and feel of your HTML documents in an organized and efficient manner. Essentially, CSS allows designers to manipulate the appearance of the webpage without affecting its HTML structure.

Cascading Style Sheets, referred to as CSS, is a simple design language intended to simplify the process of making web pages presentable. CSS handles the look and feel part of a web page. Using CSS, you can control the color of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colors are used, as well as a variety of other effects.

CSS is easy to learn and understand but it provides powerful control over the presentation of an HTML document. Most commonly, CSS is combined with the markup languages HTML or XHTML.

For example, if you wanted to change all the text in your document to blue, and all the headlines to green, with standard HTML, one would have to manually change the elements on the page one by one. By using CSS, it's possible to redefine the body elements in the entire document to turn blue with just one instruction, and then perform another step to change the headlines to green.

CSS is created and maintained through a group of people within the W3C (World Wide Web Consortium) called the CSS Working Group. The CSS Working Group creates documents called specifications. When a specification has been discussed and officially ratified by W3C members, it becomes a recommendation.

Some ratified specifications are called recommendations because the W3C has no control over the actual implementation of the language. Independent companies and organizations create that software.

NOTE: The World Wide Web Consortium, or W3C is a group that makes recommendations about how the Internet works and how it should evolve.

2.1 ADVANTAGES OF CSS:

- **CSS saves time--** You can write CSS once and then reuse same sheet in multiple HTML pages. You can define a style for each HTML element and apply it to as many Web pages as you want so you have not need to waste time again and again in formatting.
- **Pages load faster--** If you are using CSS, you do not need to write HTML tag attributes every time. Just write one CSS rule of a tag and apply to all the occurrences of that tag. So less code means faster download times and enhance the website accessing time.
- **Easy maintenance--** To make a global change, simply change the style, and all elements in all the web pages will be updated automatically.
- **Superior styles to HTML--** CSS has a much wider array of attributes than HTML so you can give far better look to your HTML page in comparison of HTML attributes.
- **Multiple Device Compatibility--** Style sheets allow content to be optimized for more than one type of device. By using the same HTML document different versions of a website can be presented for handheld devices such as PDAs and cell phones or for printing.
- **Global web standards--** Now HTML attributes are being deprecated and it is being recommended to use CSS. So it is a good idea to start using CSS in all the HTML pages to make them compatible to future browsers.

There are two type of Styles Sheets. Style sheet are normally saved in external .css files and also they can be embedded in html file. External style sheets enable you to change the appearance and lay out of all the pages in your Website, by changing one CSS document. CSS allows developers to control the style and layout of multiple Web pages all at once. To make a global change, simply change the style, and all elements in the Website are updated automatically.

The styles are said to "cascade" in that later styles override earlier styles. If more than one selector occurs in the style sheets that have the same priority, the last one will be used.

3. THE BASIC SYNTAX OF CSS

3.1 CSS rule

The syntax for CSS is different than that of HTML markup. Though it's not too confusing, once you take a look at it, it consists of only three parts. A CSS rule is simply a statement that consists of a selector and a declaration.

Selector: A selector is a string that identifies what elements the corresponding rule applies to and is the first part of the rule. Selector is the hook used to choose what part(s) of your HTML to

apply the CSS. It indicates the element to which the rule is applied. Each selector can have multiple properties, and each property within that selector can have independent values

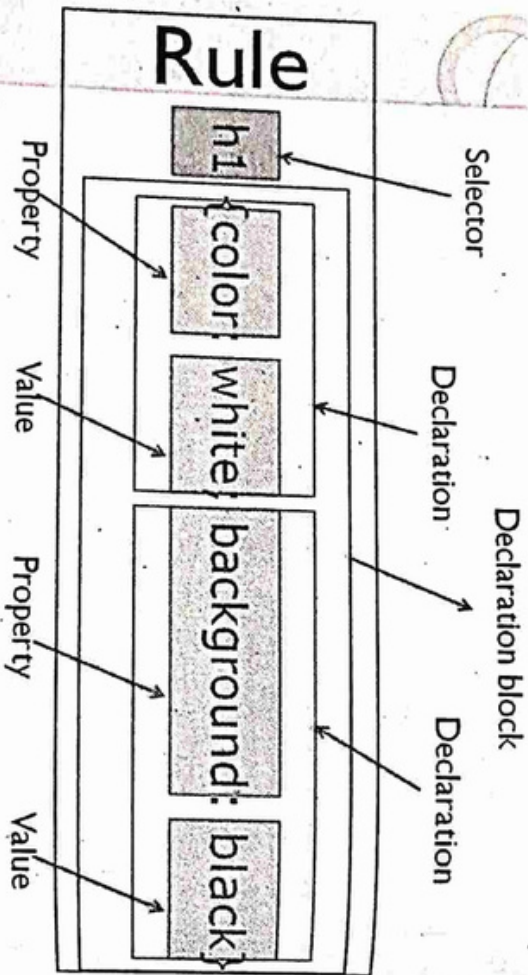
Declaration Block: This part of the rule is enclosed with in curly brackets. A Declaration has two sections separated by a colon. The section before the colon is the **Property** and the one after the colon is the **value** of that property. Everything within the curly brackets, "{" and "}" is called the **declaration block**.

Multiple properties are separated by a semi colon. Multiple values within a property are separated by commas, and if an individual value contains more than one word you surround it with quotation marks.

Inside a declaration block you can have as many declarations as you want and each declaration is a combination of a CSS Property and a value.

Property: Property is one of the CSS Properties used to tell what part of the selector will be changed (or styled). The property is the actual property/title specifies a characteristic, such as color, font-family, position and is followed by a colon (:).

Value: Value is assigns a value to the property. Value is the style you apply to that property. There is no space is allow between property, colon and value. Value are not put double quotation or in single quotation.



The syntax of a style rule is as follow :

Selector {Property : Value;}

Where Selector = Any HTML tag

Property = Attribute like font color, font size etc.

Value = Setting for the attribute.

Example: H1 {color:blue}

H1 is the Selector,

color:blue; is the Declaration,

Color is the Property and blue is the value.

3.2 Types of selectors

CSS has several types of selectors. Explaining all of them in detail would take too long.

3.2.1 Tag Selector

These are simply name of the elements or HTML tag so it is known as tag selector, eg. h1, p, div or article. This is the same selector we have seen above.

Syntax:

Tag_name

Property:Value;

Example:

<html>

<head>

<title>Internal Style sheet</title>

<style type="text/css">

H3

{ background-color:pink;

color:Blue;

}

H1

{ background-color:Yellow;

color:green;

}

</style>

</head>

</body>

<h1>Welcome To CSS </h1>

<h1>CSS is Define for <H1></h1>

<h2>CSS is not Define for <H2></h2>

<h3>CSS is Define for <H3></h3>

<h3>CSS is Define for <H3></h3>

<h3>CSS is Define for <H3></h3>

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

Welcome To CSS

CSS is Define for <H1>.

CSS is not Define for <H2>.

CSS is Define for <H3>.

CSS is Define for <H3>.

Rather than selecting elements of a specific type, the universal selector quite simply matches the name of any element type. You can group selectors. Separate each selector with a comma. You can group selectors, declarations or everything. If you want all your heading levels to have the same color and background. Instead of making a rule for each heading separate, you can group them. Group them together by separating each selector with a comma.

Syntax:

```
Tag_1, Tag_2, Tag_3.....Tag_n
```

```
{
Property:Value;
}
```

Example:

```
<html>
<head>
<title>Internal Style sheet</title>
<style type="text/css">
```

```
h3h1
```

```
{
background-color:pink;
color:green;
}
```

```
</style>
</head>
<body>
<h1> Welcome To CSS </h1>
<h1>CSS is Define for &lt;H1&gt;.</h1>
<h2>CSS is not Define for &lt;H2&gt;.</h2>
<h3>CSS is Define for &lt;H3&gt;.</h3>
<h3>CSS is Define for &lt;H3&gt;.</h3>
</body>
</html>
```

Welcome To CSS

CSS is Define for <H1>.

CSS is not Define for <H2>.

CSS is Define for <H3>.

CSS is Define for <H3>.

3.2.2 ID Selector

ID selector is use to apply style to the selected parts of text. In this style each ID selector has a unique identifier. An ID selector is preceded by a hash (#) mark and to apply ID selector the ID attribute of an HTML tag is used.

ID selector can be used independently of HTML elements. They can be used on their own or in combination with an element selector.

Suppose you want only certain Heading to have blue text. H1 {color: blue;} not all heading turns in blue;text. So for this purpose use id selector

Syntax:

```
<STYLE>
#ID-selector-name
{ Property : Value }
</STYLE>
<BODY>
```

```
<P ID="ID-selector-name">
```

```
</BODY>
```

1. ID-selector name can be any valid string of characters.
2. The ID selector is preceded with a hash(#).
3. ID selector can be applied to any of the HTML tag by using the ID attribute.

Example:

```
<html>
<head>
<title>Internal Style sheet</title>
<style type="text/css">
#style1
{
background-color:pink;
color:blue;
}
#style2
{
background-color:yellow;
color:green;
}
</style>
</head>
<body>
<h1 id="style1">ID Selector is apply on &lt;H1&gt;</h1>
<h1 id="style2">ID Selector use style attribute.</h1>
<h2 id="style2">Style attribute.</h2>
<h3 id="style2">ID Selector is apply on &lt;H2&gt;&lt;H3&gt;</h3>
</body>
</html>
```

ID Selector is apply on <H1>.

ID Selector use style attribute.

Style attribute.

ID Selector is apply on <H2>

ID Selector is apply on <H3>.

3.2.3. Class Selector

Class and ID selector types have one thing in common, that Class selector and ID selector can be used independently of HTML elements. They can be used on their own or in combination with an element selector.

Suppose you want only certain Heading to have blue text. P {color: blue;} not all heading turns in blue text.

The Class selector gives authors the ability to apply styles to specific parts of a document and not necessarily to the whole document. To create class selector use dot (.) symbol.

```
<STYLE>
.class-name { Property : Value }
</STYLE>
<BODY>
<P CLASS="class-name">
</BODY>
```

1. class-name can be any valid string of characters.
 2. The CLASS selector is preceded with a dot(.) called the Flag Character.
 3. Class selector can be applied to any of the HTML tag by using the CLASS attribute.
- With the class selector you can define different styles for the same type of HTML element.

Example:

```
<html>
<head>
<title>Internal Style sheet</title>
```

```

<style type="text/css">
.style1
{
background-color:pink;
color:blue;
}
.style2
{
background-color:yellow;
color:green;
}
</style>
</head>
<body>
<h1 class="style1">Class Selector is apply on &lt;H1&gt;</h1>
<h1 class="style2">Class Selector use style attribute.</h1>
<h2 class="style1">Class Selector is apply on &lt;H2&gt;</h2>
<h3 class="style2">Class Selector is apply on &lt;H3&gt;</h3>
</body>
</html>

```

Class Selector is apply on <H1>.

Class Selector use style attribute.

Class attribute in available in all Tags.

Class Selector is apply on <H2>

Class Selector is apply on <H3>.

The big difference between Class and ID:

ID = A person's Identification (ID) is unique to one person.
Class = There are many people in a class.

Use IDs when there is only one occurrence per page or in case you have info that is unique in the document (footer, title, ...); Use classes when there are one or more occurrences per page. In HTML, we must use "id=name" instead of "class=name" to reference it.

3.2.4. Comment tags

Comments can be used to explain why you added certain selectors within your css file. So as to help others who may see your file or to help you remember what you were thinking at a later date. You can add comments that will be ignored by browsers in the following manner. It means browser reads the comments but not interpret. So, Comments are used to explain your code and may help you when you edit the source code at a later date. A comment will be ignored by browsers. There are two type of comments in CSS same which are used in C language.

```

/* It is Single Line comment is
*
* is multiple
Line comment.
*/

```

CSS Comments:-

A CSS comment begins with "/*", and ends with "*/", like this:
 /* This is a comment */

4. Type of CSS

4.1 Inline CSS

The first way is called Inline Cascading Style Sheets. You can add CSS directly into the elements in your markup with the "style" attribute.

INLINE Style declaration is the most basic Style rule, which can be applied to individual tags in the web page. Inline Style are implemented by using Style attribute with the HTML tags.

Syntax:

```
<HTML_tag STYLE="Property:Value">
```

Example is :

```

<html>
<head>
<title>Inline Style sheet</title>
</head>
<body>
<h1 STYLE="color:Olive;">Inline Style Sheet</h1 Example.>
</body>
</html>

```

4.2 INTERNAL STYLE SHEET

You can group more than one style rule using the <STYLE></STYLE> tag pair instead applying it individually in the Inline Style. Each of these tags when used in the BODY of the HTML code will apply the style rule.

The Syntax is :

```
<HTML>
<HEAD>
<STYLE>
  STYLE RULE
</STYLE>
</HEAD>
<BODY>
.....
</BODY>
<HTML>
```

With this method each HTML file contains the CSS code needed to style the page. Meaning that any changes you want to make to one page, will have to be made to all. This method can be good if you need to style only one page. To apply internal CSS use <STYLE> tag in head portion. Within the <STYLE> element is the CSS that will be applied to that page. There is no limit to the amount of CSS you can put inside the <STYLE> element. You would enter this code in the <head> area of your web page (anywhere after <head> and before </head> in your HTML document) and that would apply this CSS to the elements of that web page.

Example:

```
<html>
<head>
<title>Internal Style sheet</title>
<style type="text/css">
  H3
  {
    background-color:pink;
    color:Blue;
  }
  H1
  {
    background-color:Yellow;
    color:green;
  }
</style>
</head>
<body>
<h1>Welcome To CSS </h1>
<h1>Internal CSS Example.</h1>
<h3>CSS is Define for &lt;i>H3&gt;</h3>
```

DHTML AND CSS

```
<h3>CSS is Define for &lt;i>H3&gt;</h3>
```

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

Welcome To CSS

Internal CSS Example.

```
CSS is Define for <H3>.
.....
CSS is Define for <H3>.
```

4.3 EXTERNAL STYLE SHEETS

External CSS files are documents that contain only CSS code. For constructing a CSS, first styles rules must be written in a document and saved in a separate file with an extension of .css. Then this external style sheet must be linked with the sheet that requires the style rules to be applied.

Syntax:

```
<HTML>
<HEAD>
<LINK REL="STYLESHEET" HREF="Directory path where style sheet is saved" TYPE="text/
css">
</HEAD>
<BODY>
.....
</BODY>
</HTML>
```

This and most advantageous way to embed CSS into a document uses External Cascading Style Sheets (or External Style Sheets). An external CSS file is simply a text file with a ".css" extension. This file can then be included into many different pages. This allows to make one document that has the styling for your entire website. Then include that file into every page of website. This is the recommended way of using CSS in website as it make global visual changes to an entire website by handling only one file.

The REL attribute describes the relationship between the current document and the document identified by the href attribute

HREF attribute states the relative URL to the style sheet

```
<Head>
<Title>Demo_1</Title>
<Style type="text/css">
<link rel="stylesheet" type="text/css" href="style.css">
</Style>
</Head>
```

Example:

First make text file with .css extension containing code given below and name this file as Extern.css

```
h3
{
background-color:pink;
color:blue;
}
h1
{
background-color:red;
color:white;
}
```

Now create a First.html file where link the Extern.css file using <LINK> tag in head portion of document.

```
<html>
<head>
<title>External Style sheet</title>
<link href="Extern.css" type="text/css" rel="StyleSheet" />
</head>
<body>
<h1>Welcome To CSS </h1>
<h1>External CSS Example.</h1>
<h3>CSS is Define for &lt;H3&gt;.</h3>
<h3>CSS is Define for &lt;H3&gt;.</h3>
```

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

Welcome To CSS

External CSS Example.

CSS is Define for <H3>.

CSS is Define for <H3>.

By using an external style sheet, all of HTML files link to one CSS file in order to style the pages. This means, that if we need to alter the design of all pages, we only need to edit one .css file to make global changes to entire website.

Here are reasons for better:

- Easier Maintenance
- Reduced File Size
- Reduced Bandwidth
- Improved Flexibility

Cascading Order:

1. Inline style (inside an HTML element)
2. Internal style sheet (inside the tag)
3. External style sheet
4. Browser default

Any inline style sheet takes highest priority. So it will override any rule defined in <style>...</style> tags or rules defined in any external style sheet file. Any rule defined in <style>...</style> tags will override rules defined in any external style sheet file. Any rule defined in external style sheet file takes lowest priority and rules defined in this file will be applied only when above two rules are not applicable.

So, order of cascade is according to priority is given from highest to lowest is:

Inline Style (inside (X)HTML element)

Internal Style Sheet (inside the <head> tag)

External Style Sheet

Default Browser

5. PROPERTIES OF CSS

5.1 CSS Colors-Property

CSS uses color values to specify a color. Typically, these are used to set a color either for the foreground of an element (i.e., its text) or else for the background of the element. They can also be used to affect the color of borders and other decorative effects.

Following table shows:

Format	Syntax	Example
Hex Code	#RRGGBB	P {color:#FF0000;}
Short Hex Code	#RGB	P {color:#6A7;}
RGB %	rgb(rr%,ggg%,bbb%)	P {color:rgb(50%,50%,50%)}
RGB Absolute	rgb(rr,ggg,bbb)	P {color:rgb(0,0,255);}
keyword	aqua, black, etc.	P {color:teal;}

5.2 Background property of CSS

CSS can use to set backgrounds of various HTML elements. Background properties of an element is used to set background.

- The **background-color** property is used to set the background color of an element.
- The **background-image** property is used to set the background image of an element.

Syntax:

```
<table style="background-image:url(/images/pattern1.gif);">
```

```
<tr><td>
```

```
</td></tr>
```

```
</table>
```

This table has background image set.

- The **background-repeat** property is used to control the repetition of an image in the background. To repeat the background image if image is small then **background-repeat** property is used. **background-repeat: repeat;** // To make repeat the background image.
- **background-repeat: no-repeat;** // To make not to repeat the background image.
- By default **background-repeat** property will have repeat value.

Example:
`table style="background-image:url(/images/pattern1.gif); background-repeat: repeat;">`

```
<tr><td>
```

```
</td></tr>
```

```
</table>
```

- The **background-position** property is used to control the position of an image in the background.
- The **background-attachment** property is used to control the scrolling of an image in the background with the foreground contents. **Background-attachment** property have two values fixed and scroll. The background property is used as shorthand to specify a number of other background properties as given below:

```
<p style="background:url(/images/img1.gif) repeat fixed;">
```

```
This paragraph has fixed repeated background image.
```

```
</p>
```

5.3 FONTS USING CSS

To apply formatting on fonts of a content available in an HTML element there are many font properties in CSS. Set following font properties of an element with various values:

- The **font-family** property is used to change the face of a font.
- The **font-style** property is used to make a font italic or oblique or normal.
- The **font-variant** property is used to create a small-caps effect. Possible values of Font-variant properties are: normal and small-caps.

Example.

```
<p style="font-variant:small-caps;">
```

```
This text will be rendered as small caps
```

```
</p>
```

The **font-weight** property is used to increase or decrease how bold or light a font appears. Font-weight sets the boldness of the element's font. The scale is a numeric rating from 100-900 at 100 unit increments. A font-weight of 100 is the least bold than can be displayed, whereas 900 is the boldest. A setting of normal is equal to font-weight value of 400.

Other possible values of font-weight properties are:bold, bolder, lighter, and normal.

Example:

```
<p style="font-weight:bold;">
```

```
This font is bolder.
```

```
</p>
```

```
<p style="font-weight:900;">
```

```
This font is 900 weight means boldest.
```

```
</p>
```

- The **font-size** property is used to increase or decrease the size of a font. Possible values could be xx-small, x-small, small, medium, large, x-large, xx-large, smaller, larger, size in pixels or in %.

Example

```
<p style="font-size-adjust:0.61;">
This text is using a font-size-adjust value.
</p>
Shortand property:
<p style="font:italic small-caps bold 15px georgia;">
```

5.4 TEXT USING CSS:

There are many CSS properties to let you to manipulate text. Set following text properties of an element:

- The colorproperty is used to set the color of a text.
- The text-indent property is used to indent the text of a paragraph.
- The text-align property is used to align the text of a document possible values of text-align property are left, right, center, justify.
- The text-decoration property is used to underline, overline, and strikethrough text. Possible values are none, underline, overline, line-through and blink..
- The text-transform property is used to capitalize text or convert text to uppercase or lowercase letters.
- The direction property is used to set the text direction. Possible values of direction property are:
 - ltr: Means Left To Right.
 - rtl: Means Right To Left.
- The letter-spacing property is used to add or subtract space between the letters that make up a word. Possible values are normal or a number specifying space.
 - Eg. Letter-spacing:5;
- The word-spacing property is used to add or subtract space between the words of a sentence
 - Eg. Word-spacing:5;
- The text-shadow property is used to set the text shadow around a text.

5.5 IMAGES USING CSS

Images are very important part of any Web Page. Though it is not recommended to include lot of images but it is still important to use good images and applying a better effect is required. CSS plays a good role to control image display. You can set following image properties using CSS.

- The border property is used to set the width of an image border.
- The height property is used to set the height of an image.
- The width property is used to set the width of an image.
- The -moz-opacity property is used to set the opacity of an image.

The -moz-opacity property is used to set the opacity of an image. The -moz-opacity property of an image is used to set the opacity of an image. This property is used to create a transparent image in Mozilla. IE uses filter:alpha(opacity=x) to create transparent images.

In Mozilla:

Syntax: moz-opacity:x;

5.6 LINKS USING CSS

Here x can be a value from 0.0 - 1.0. A lower value makes the element more transparent.

In IE
filter:alpha(opacity=x)

Here x can be a value from 0 - 100. A lower value makes the element more transparent.

5.6 Links using CSS

CSS provides many properties for hyperlinks to make hyperlink good in appear.

- The a :link signifies unvisited hyperlinks.
 - The a :visited signifies visited hyperlinks.
 - The a : hover signifies an element that currently has the user's mouse pointer hovering over it.
 - The a : active signifies an element on which the user is currently clicking.
- Usually these all properties are kept in the header part of HTML document.
- The order of applying all above properties must have fixed order to have result. The order is a: hover must come after a: link and a: visited in the CSS definition in order to be effective. Also, a: active must come after a: hover in the CSS definition.

a:link

↓

a:visited

↓

a: hover

↓

a: active

As follows.

```
<style type="text/css">
```

```
a:link
```

```
{
color: #000000;
}
```

```
a:visited
```

```
{
color: #006600;
}
```

```
a: hover
```

```
{
color: #FFCC00;
}
```

```
a: active
```

```
{
color: #FF00CC;
}
```

```
</style>
```

Set the color of links:

```
<style type="text/css">
a:link
color=000000;
```

```
</style>
<hr style="border: 1px solid black;">
```

5.7 Tables using CSS

Using CSS table properties it is possible to make HTML table attractive. Properties of a table given below:

- The border-collapse specifies whether the browser should control the appearance of adjacent borders that touch each other or whether each cell should maintain its style. This property can have two values collapse and separate.
- The border-spacing specifies the width that should appear between table cells.
- The caption-side captions are presented in the <caption> element (tag). By default, these are rendered above the table in the document. You use the caption-side property to control the placement of a <caption> element should be placed in relationship to the table. The table that follows lists the possible values. This property can have one of the four values top, bottom, left or right. See following example to show each value:

```

Caption-side:top;
Caption-side:right;
Caption-side:left;
Caption-side:bottom;

```

NOTE: These properties may not work with your IE Browser.

- The empty-cells specifies whether the border should be shown if a cell is empty. The empty-cells property indicates whether a cell without any content should have a border displayed. This property can have one of the three values.

1. show
2. hidden
3. inherit

5.8 CSS - Borders

The border properties allow you to specify how the border of the box representing an element should look. There are three properties of a border you can change

The border-color property allows to change the color of the border surrounding an element. You can individually change the color of the bottom, left, top and right sides of an element's border using the properties:

- border-bottom-color changes the color of bottom border.
- border-top-color changes the color of top border.
- border-left-color changes the color of left border.

HTML AND CSS

- border-right-color changes the color of right border.
- The border-style specifies whether a border should be solid, dashed line, double line, or one of the other possible values.

The border-style property allows you to select one of the following styles of border:

- none: No border. (Equivalent of border-width:0;)
 - solid: Border is a single solid line.
 - dotted: Border is a series of dots.
 - dashed: Border is a series of short lines.
 - double: Border is two solid lines.
 - groove: Border looks as though it is carved into the page.
 - ridge: Border looks the opposite of groove.
 - inset: Border makes the box look like it is embedded in the page.
 - outset: Border makes the box look like it is coming out of the canvas.
 - hidden: Same as none, except in terms of border-conflict resolution for table elements.
- The border-width specifies the width of a border. The border-width property allows you to set the width of an element borders. The value of this property could be either a length in px, pt or cm or it should be set to thin, medium or thick.
- We can individually change the width of the bottom, top, left, and right borders of an element using the following properties:
- border-bottom-width changes the width of bottom border.
 - border-top-width changes the width of top border.
 - border-left-width changes the width of left border.
 - border-right-width changes the width of right border.

5.9 CSS - Margins

The margin property defines the space around an HTML element. It is possible to use negative values to overlap content. The values of the margin property are not inherited by child elements. Remember that the adjacent vertical margins (top and bottom margins) will collapse into each other so that the distance between the blocks is not the sum of the margins, but only the greater of the two margins or the same size as one margin if both are equal.

- There are following four properties to set an element margin.
- The margin-bottom: Specifies the bottom margin of an element.
 - The margin-top: Specifies the top margin of an element.
 - The margin-left: Specifies the left margin of an element.
 - The margin-right: Specifies the right margin of an element.

5.10 CSS - Lists

Lists are very helpful in to create a set of either numbered or bulleted points. This tutorial teaches you how to control list type, position, style etc. using CSS

- There are following five CSS properties which can be used to control lists:
- The list-style-type: Allows you to control the shape or appearance of the marker. The list-style-type property allows you to control the shape or style of bullet point in the case of unordered lists, and the style of numbering characters in ordered lists. Possible values of list-style-type for

unordered list are: Circle, disc and square and for ordered list are: decimal, decimal-leading-zero, lower-roman, upper-roman, lower-alpha, upper-alpha.

- **The list-style-position:** Specifies whether a long point that wraps to a second line should align with the first line or start underneath the start of the marker. The list-style-position property indicates whether the marker should appear inside or outside of the box containing the bullet points. It can have one the two values:
None: NA

Inside: If the text goes onto a second line, the text will wrap underneath the marker. It will also appear indented to where the text would have started if the list had a value of outside.

Outside: If the text goes onto a second line, the text will be aligned with the start of the first line (to the right of the bullet).

- **The list-style-image:** Specifies an image for the marker rather than a bullet point or number. For example: `List-style-image: url(image.jpg)`
- **The list-style-type:** Specifies as shorthand for the preceding properties.

5.11 CSS - Paddings

The padding property allows you to specify space between the content of an element and its border.

The value of this attribute should be either a length, a percentage, or the word inherit. If the value is inherit it will have the same padding as its parent element. If a percentage is used, the percentage is of the containing box.

Different values for the padding are following:

- **The padding-bottom:** Specifies the bottom padding of an element.
 - **The padding-top:** Specifies the top padding of an element.
 - **The padding-left:** Specifies the left padding of an element.
 - **The padding-right:** Specifies the right padding of an element.
- The padding serves as shorthand for the preceding properties.

5.12 CSS - Cursors:

The cursor property of CSS allows to specify the type of cursor that should be displayed to the user.

By default, when a cursor hovers over a link, the cursor changed from a pointer to a hand. For a submit button or a form this does not happen. Therefore, using the cursor property, to change the cursor to a hand whenever someone hovers over an image that is a submit button. This provides a visual cue that they can click it.

DHTML AND CSS

Values of cursor property

Values of cursor property	Description
auto	Shape of the cursor depends on the context area it is over. For example an I over text, a hand over a link, and so on.
crosshair	A crosshair or plus sign
default	An arrow
pointer	A pointing hand (in IE 4 this value is hand)
move	The I bar
e-resize	The cursor indicates that an edge of a box is to be moved right.
ne-resize	The cursor indicates that an edge of a box is to be moved up and right.
nw-resize	The cursor indicates that an edge of a box is to be moved up and left.
n-resize	The cursor indicates that an edge of a box is to be moved up.
se-resize	The cursor indicates that an edge of a box is to be moved down and right.
sw-resize	The cursor indicates that an edge of a box is to be moved down and left.
s-resize	The cursor indicates that an edge of a box is to be moved down.
w-resize	The cursor indicates that an edge of a box is to be moved left.
wait	An hour glass
help	A question mark or balloon, ideal for use over help buttons
<url>	The source of a cursor image file

6. Filter Effect in CSS:

Filters are a powerful tool that web authors can use to achieve interesting visual effects. A filter collection is available on every object to provide access to the individual filters of each object. The collection can be accessed like any other object model collection.

Filters are considered sub-objects of the object to which they are attached. Like other objects, they expose properties and methods for changing their internal state. Like other object model collections, the filters collection supports several kinds of access. Visual filters are extensions to CSS properties that change the display of an object's contents. In some cases, filters create simple behaviors that could be implemented as script. Using filters simplifies the task of incorporating sophisticated effects in Web documents. Style visual filters affect the display of content, while transitions affect the way content changes in an object are displayed.

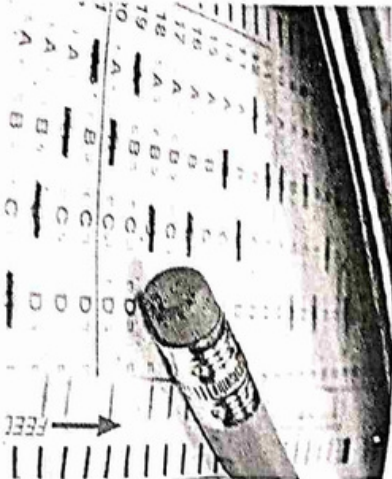
Filters are applied to HTML controls through the filter property. The filter property is a string of filter descriptors that uses a function-like notation, but you do not need to know script to implement this property.

The style object also has a filter property. This is a read-write string that you can use to manipulate the CSS filters of an object directly. Using filters from CSS is done by using the 'filter' property applied to any visible element on your web page. For a very simple example you could write something like:

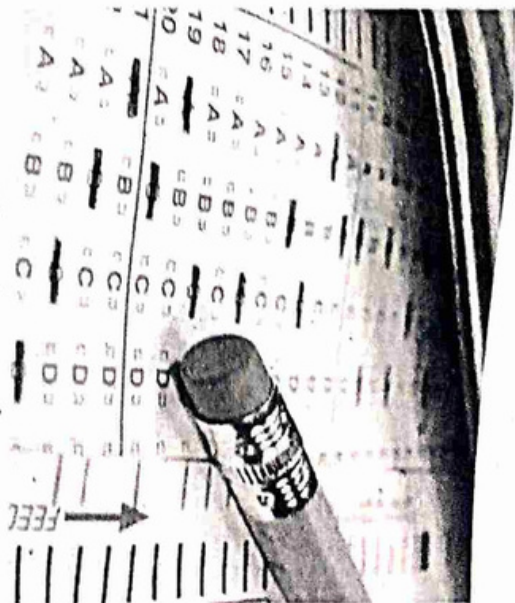
```
div { filter:grayScale(100%); }
```



Original image



Grayscale filtered image.



Most filters take some form of parameter to control how much filtering is done. So for example if you wanted to style your content to be half way between the original color and a gray scale version like this:

```
div { filter:grayScale(50%); }
```

(Original image above with 50% gray filtered.)

6.1 Basics Functions for Filter

To use the CSS filter property you specify a value for one of the following functions. If the value is invalid, the function returns "none." Except where noted, the functions that take a value expressed with a percent sign also accept the value expressed as decimal.

Function blur()

Applies a blur to the input image. The value of 'radius' defines the value of the standard deviation or how many pixels on the screen blend into each other, so a larger value will create more blur. If no parameter is provided, then a value 0 is used. The parameter is specified as a CSS length, but does not accept percentage values.

Example: filter:blur(5px);

Function brightness()

Applies a linear multiplier to input image, making it appear more or less bright. A value of 0% will create an image that is completely black. A value of 100% leaves the input unchanged. Other values are linear multipliers on the effect. Values of an amount over 100% are allowed, providing brighter results. If the 'amount' parameter is missing, a value of 1 is used.

Example: filter:brightness(0.5);

Function contrast()

Adjusts the contrast of the input. A value of 0% will create an image that is completely black. A value of 100% leaves the input unchanged. Values of amount over 100% are allowed, providing

results with less contrast. If the 'amount' parameter is missing, a value of 1 is used.

Example: filter:contrast(200%);

Function grayscale()

Converts the input image to grey scale. The value of 'amount' defines the proportion of the conversion. A value of 100% is completely grey scale. A value of 0% leaves the input unchanged. Values between 0% and 100% are linear multipliers on the effect. If the 'amount' parameter is missing, a value of 0 is used.

Example: filter:grayscale(100%)

Function invert()

Inverts the samples in the input image. The value of 'amount' defines the proportion of the conversion. A value of 100% is completely inverted. A value of 0% leaves the input unchanged. Values between 0% and 100% are linear multipliers on the effect. If the 'amount' parameter is missing, a value of 0 is used.

Example: filter:invert(100%)

Function opacity()

Applies transparency to the samples in the input image. The value of 'amount' defines the proportion of the conversion. A value of 0% is completely transparent. A value of 100% leaves the input unchanged. Values between 0% and 100% are linear multipliers on the effect. This is equivalent to multiplying the input image samples by amount. If the 'amount' parameter is missing a value of 1 is used. This function is similar to the more established opacity property; the difference is that with filters, some browsers provide hardware acceleration for better performance.

Example: filter:opacity(50%)

Function saturate()

Saturates the input image. The value of 'amount' defines the proportion of the conversion. A value of 0% is completely un-saturated. A value of 100% leaves the input unchanged. Other values are linear multipliers on the effect. Values of amount over 100% are allowed, providing super-saturated results. If the 'amount' parameter is missing, a value of 1 is used.

Example: filter:saturate(200%)

7. IFRAME

The IFRAME element defines an inline frame for the inclusion of external objects including other HTML documents. IFRAME provides similar functionality to OBJECT. One advantage of IFRAME is that it can act as a target for other links.

There are few drawbacks with using frames, so it's never recommended to use frames in your webpages:

- Some smaller devices cannot cope with frames often because their screen is not big enough to be divided up.
 - Sometimes your page will be displayed differently on different computers due to different screen resolution.
 - The browser's back button might not work as the user hopes.
 - There are still few browsers that do not support frame technology.
- An inline frame ("floating frame") is a construct which embeds a document into an HTML document so that embedded data is displayed inside a subwindow of the browser's window. This

does not mean full inclusion; the two documents are independent, and both them are treated as complete documents, instead of treating one as part of the other.

7.1 Attributes of <IFRAME> Tag

IFRAME's SRC attribute provides the location of the frame content--typically an HTML document. The optional NAME attribute specifies the name of the inline frame, allowing links to target the frame.

An example follows:

```
<IFRAME SRC="product.html" TITLE="The Famous Product">
<!-- Alternate content for non-supporting browsers -->
<H2>The Famous Product</H2>
<H3>Ingredients</H3>
...
</IFRAME>
```

WIDTH and HEIGHT attributes: The WIDTH and HEIGHT attributes specify the dimensions of the inline frame in pixels or as a percentage of the available space.

FRAMEBORDER attribute: The FRAMEBORDER attribute specifies to draw border in given frame. The default value of 1 results in a border while a value of 0 suppresses the border. Style sheets allow greater flexibility in suggesting the border presentation.

ALIGN attribute: The ALIGN attribute specifies the alignment of the inline frame. The values top, middle, and bottom specify the frame's position with respect to surrounding content on its left and right.

ALIGN=middle: aligns the vertical center of the frame with the current baseline. To center the frame horizontally on the page, place the frame in a centered block, example:

```
<P ALIGN=center><IFRAME SRC="foo.html" WIDTH=300 HEIGHT=100></IFRAME></P>
```

The other ALIGN values, left and right, specify a floating frame; the frame is placed at the left or right margin and content flows around it.

MARGINWIDTH and MARGINHEIGHT attributes: The MARGINWIDTH and MARGINHEIGHT attributes define the number of pixels to use as the left/right margins and top/bottom margins, respectively, within the inline frame. The value must be a non-negative integer.

SCROLLING attribute: The SCROLLING attribute specifies whether scrollbars are provided for the inline frame. The default value, auto, generates scrollbars only when necessary.

Attribute:

name	value	meaning
src	"URL"	the address of the initial content for the inline frame
longdesc	"URL"	refers to a document containing a description (not supported yet)
width	number of pixels or percentage (e.g. "20%")	width of the inline frame; see notes below
height	"top", "bottom", "middle", "left", "right"	height of the inline frame; see notes below
align	"top"	aligns the inline frame vertically on the top of the surrounding content on its left and right
	"bottom"	aligns the inline frame vertically on the bottom of the surrounding content on its left and right
	"middle"	aligns the center of the inline frame vertically with the current baseline
	"left"	places the inline frame at the left margin so that subsequent page content flows on the right of it
	"right"	places the inline frame at the right margin so that subsequent page content flows on the left of it
frameborder	"1", "0"	specifies that a border is to appear around the frame; this is the default
marginwidth	number of pixels	suppresses the border
	size of the top and bottom margin inside the inline frame; see notes below	
marginheight	size of the left and right margin inside the inline frame; see notes below	
	"auto"	scrollbars appear if and only if they are needed to see all the content; this is the default
scrolling	"yes"	scrollbars appear in any case
	"no"	scrollbars do not appear, which may cause part of the content to be inaccessible; see example on simulating scrollable tables

Inline frames vs. normal frames

Normal frames are used to divide the entire browser window to subwindows. Inline frames are used inside the presentation of a document much the same way as images are. The browser gives some space for an inline frame and takes this into account when rendering the document. This means, in particular, that an inline frame as a whole scrolls along with the rest of the document. It might be scrolled away. An inline frame usually has its own internal scroll bar too, for scrolling its own content.

These features make inline frames an interesting possibility especially for embedding relatively small documents onto pages. On the other hand, as explained above, browser support to iframe is still more limited than for normal frames.

On the other hand, normal frames are usually resizable by the user, though the author might arrange to prevent this (using the noresize attribute). Inline frames are not resizable.

6. DIV AND SPAN TAG

6.1 DIV TAG

The div tag is used to specify a section within an HTML document. Anything from text to images to videos can be placed within a div. Divs are similar to tables but they are easier to use, customizable with CSS, and load faster than tables. Divs also make it easier for search engine.

Div (short for division) divides the content into individual sections. Each section can then have its own formatting, as specified by the CSS. Div is a block-level container, meaning that there is a line feed after the <div> tag.

For example, if we have the following CSS declaration:

```
large {
color: #00FF00;
font-family:arial;
font-size: 4pt;
}
```

The HTML code:
<div class="large">
This is a DIV sample.
</div>

Example

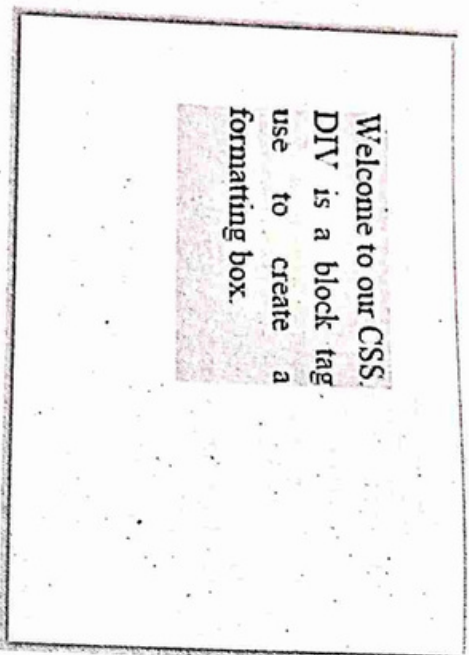
```
<html>
<head>
<title>HTML div Tag</title>
<link rel="stylesheet" href="style2.css">
</head>
<body>
<div id="contentInfo">
<p>Welcome to our CSS. DIV is a block tag use to create a formatting box...</p>
</div>
</body>
```

```

</html>
Here is the css file style2.css
#contentinfo p {
line-height: 20px;
margin: 30px;
padding-bottom: 20px;
text-align: justify;
width: 140px;
color: red;
background-color: pink;
}

```

This will produce following result:



Div ID Verses DIV Class

The difference is between div id and div class is small. Div id should be used to identify a single element that appears only once within a document. Div class should be used to identify elements that appear more than once within a document. For example, let's say that you have an HTML document that uses a div for the header and a div to contain each image. Since the header will only appear once you might code

8.2 SPAN TAG

Span is similar to div in that they both divide the content into individual sections. The difference is that span goes into a finer level, so we can span to format a single character if needed. There is no line feed after the `` tag.

The following CSS declaration:
`targetfont {`
`color: #0066FF;`

```

font-family:arial;
font-size: 6px;
}

```

The HTML code:

Span is not at the `` block level ``.

The HTML `<div>` tag is used for defining a section of your document. With the div tag you can group large sections of HTML elements together and format them with CSS.

The difference between the div tag and the span tag is that the div tag is used with block-level elements while the span tag is used with inline elements.

The HTML `<div>` tag is used for defining a section of your document. With the div tag, you can group large sections of HTML elements together and format them with CSS.

The difference between the div tag and the span tag is that the div tag is used with block-level elements whilst the span tag is used with inline elements.

DIV and SPAN tag Example:

```

<html>
<head>
<title>My First Page</title>
</head>
<body>
<div style="color:red">
DIV is block tag.
</div>
<div style="color:blue">
DIV tag is used to create division.
</div>
<span style="color:red">
SPAN is inline tag.
</span>
<span style="color:blue">
SPAN tag is used to format single line, word or
character.
</span>
</body>
</html>

```


DIV is block tag.
 DIV tag is used to create division.
 SPAN is inline tag. SPAN tag is used to format single line word or character.

9. LAYER IN CSS

With CSS, it is possible to work with layers: pieces of HTML that are placed on top of the regular page with pixel precision.

CSS gives opportunity to create layers of various divisions. The CSS layers refer to applying the z-index property to elements that overlap with each other.

The z-index property is used along with position property to create an effect of layers. You can specify which element should come on top and which element should come at bottom.

A z-index property can help you to create more complex webpage layouts.

The advantages of this are obvious - but once again Netscape has very limited support of CSS layers - and to top it off: the limited support it offers is quite often executed with failures.

Relative versus absolute positioning

If position layer of calculated from the upper left corner(absolute) or calculated from the position where the layer itself is inserted (relative).

position:absolute

If the position to be absolute it will be calculated from the upper left corner of the page - unless the layer is defined inside another layer, in which case it will be calculated from the upper left corner of the parent layer.

position:relative

If the position to be relative it will be relative to the position of the tag that carries the style.

VISIBLE VERSUS HIDDEN LAYERS :

A final property is the visibility property that will allow you to create invisible layers.

An invisible layer used to gives for adding pop-up menus and other cool effects on pages.

With dynamic HTML, it is possible to change the visibility of a layer according to certain events. The most common use of this is to create menus that pop out (like the sub menus in the START

HTML AND CSS

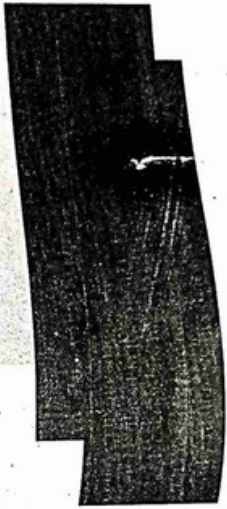
menu on Windows). The trick behind these menus is to create all submenus as invisible layers. Then, when a mouse-over is detected on a link the according layer becomes visible. (Sounds pretty easy - actually is pretty easy - except when tried on Netscape browsers that seem to have only a vague idea of the logic behind CSS layers).

Valid values for the visibility property are: visible and hidden.

Example:

```
<html>
<head>
<title>Practice CSS z-index Property</title>
</head>
<body>
<div style="background-color:red;
width:300px;
height:100px;
position:relative;
top:10px;
left:80px;
z-index:2">
</div>
<div style="background-color:yellow;
width:300px;
height:100px;
position:relative;
top:60px;
left:35px;
z-index:1;">
</div>
<div style="background-color:green;
width:300px;
height:100px;
position:relative;
top:-220px;
left:120px;
z-index:3;">
</div>
</body>
</html>
```

Output:

**Exercise****Very Short Questions:**

- Q1. What is DHTML?
- Q2. What does the CSS stands for?
- Q3. Write about CSS comments.
- Q4. What is order of Cascading?
- Q5. Which tags are used for internal and external style sheet?
- Q6. Write down the name of the attribute which is used for inline-style sheet.
- Q7. Write down all CSS-border properties.
- Q8. Is DIV is inline or block attribute?

Short Questions:

- Q1. What is difference between HTML and DHTML?
- Q2. Write note on DHTML. Explain features of DHTML.
- Q3. Explain different attributes of DHTML.
- Q4. What do you mean CSS? Also describe the advantage of using CSS.
- Q5. Explain the basic rule of CSS.
- Q6. What is difference between tag Id and class selectors?
- Q7. Explain different type of CSS. Why external CSS is better?
- Q8. Explain how image become more attractive using CSS property?
- Q9. Write down a note on CSS links.
- Q10. What is CSS-padding and CSS-margin? Explain in details.

DHTML AND CSS

- Q11. What are drawbacks of frame? And how IFRAME are better?
- Q12. Write a short note on LAYES in CSS.

Long Questions:

- Q1. What is CSS? Explain syntax of CSS and different type CSS selectors with example.
- Q2. Write Note on following:
 - a. Color-property using CSS.
 - b. Background-property using CSS.
 - c. Text-property and font-property using CSS.
- Q3. Explain the following:
 - a. Table properties of CSS with example.
 - b. List properties of CSS with example.
- Q4. What is filter? Explain basic filter effects of CSS.
- Q5. Why IFRAME becomes more popular? Explain all attributes of IFRAME.
- Q6. What are div and span tags? Explain DIV and SPAN tag with executable code.

