

Cascading Style Sheet (CSS)

Lesson 00: (version 3.0)

People matter, results count.



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Document History

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Course Goals and Non Goals

- Course Goals

- Understand Cascading Style Sheet 3.0
- Understand new features of CSS 3.0
- Understanding RGBA and HSLA color schemes

- Course Non Goals

- Animation
- Be able to use Custom Fonts
- Exploring Layouts supported by CSS 3.0

Pre-requisites

- HTML 5
- Understanding of Different Browsers like IE , FireFox, Opera and Chrome



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Intended Audience

- Web page designers



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Day Wise Schedule

■ Day 1

- Lesson 1: Introduction to CSS 3
- Lesson 2: Working with Text and Fonts
- Lesson 3: CSS Selectors
- Lesson 4: Colors and Borders



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References

- W3 Schools
- Sitepoint



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Software required

- Editor like notepad, notepad++
- Browsers (IE, Google Chrome, FireFox and Opera)

Cascading Style Sheet 3.0

Lesson 01: Introduction to CSS 3.0

Lesson Objectives

- In this lesson, we will learn:
 - Introduction to CSS
 - What is CSS
 - CSS History
 - CSS 3.0 features
 - What CSS can do
 - CSS Syntax
 - Types of CSS



1.1 Introduction to CSS What is CSS ?

- Cascading Style Sheets (CSS) is a style sheet language used to describe the presentation (that is, the look and formatting) of a document written in a markup language.
- CSS was created by Hakon Wium Lie and Bert Bos and was adopted as a W3C Recommendation in late 1996



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Cascading Style Sheet:

- CSS allows complete and total control over the style of a hypertext document
- A standards-based method for controlling the look and feel of HTML content.
- Comprised of Rules to control elements in the document.
- Designed to separate formatting from the content while being flexible and scalable

What is a Style Sheet?

- Style sheets define how to display HTML elements.
- Style sheets (SS) provide a means for web authors to separate the appearance of web pages from the content.
- Style sheets are an accepted standard on the W3C. The standards are referred to as Cascading Style Sheets 1 (CSS1) and Cascading Style Sheets 2 (CSS2).

1.1 Introduction to CSS

CSS History

Version	Description	Features
CSS 1	The first CSS specification , an official W3C Recommendation, published in December 1996	typeface, emphasis, backgrounds, spacing between words, letters, and lines of text. Alignment of text, images, tables and other elements Margin, border, padding etc
CSS 2	CSS level 2 specification was developed by the W3C and published as a recommendation in May 1998.	includes a number of new capabilities like absolute, relative, and fixed positioning of elements and z-index, the concept of media types, support for aural style sheets and bidirectional text, and new font properties such as shadows
CSS 2.1	CSS 2.1 was published as a W3C Recommendation on 7 June 2011	CSS level 2 revision 1, often referred to as "CSS 2.1", fixes errors in CSS 2, removes poorly supported or not fully interoperable features and adds already-implemented browser extensions to the specification
CSS 3	Current version	CSS 3 is divided into several separate documents called "modules". Each module adds new capabilities or extends features defined in CSS 2. As of June 2012, there are over fifty CSS modules published from the CSS Working Group

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CSS 1 Features:

- [Font](#):properties such as typeface and emphasis
- Color of text, backgrounds, and other elements
- Text attributes such as spacing between words, letters, and lines of text
- [Alignment](#) of text, images, [tables](#) and other elements
- Margin, border, padding, and positioning for most elements
- Unique identification and generic classification of groups of attribute

CSS 2 Features:

CSS level 2 specification was developed by the W3C and published as a recommendation in May 1998. A superset of CSS 1, CSS 2 includes a number of new capabilities like absolute, relative, and fixed positioning of elements and z-index, the concept of media types, support for aural style sheets and bidirectional text, and new font properties such as shadows.

CSS 2.1 Features:

CSS level 2 revision 1, often referred to as "CSS 2.1", fixes errors in CSS 2, removes poorly supported or not fully interoperable features and adds already-implemented browser extensions to the specification

1.1 Introduction to CSS

Why CSS?

- Solves common problem:
 - Separate document presentation from the web page content.
- Save lots of work:
 - Allows developers to control the style and layout of multiple Web pages all at once.

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Why use CSS?

Styles solve a common problem : HTML tags were originally designed to define the document content. They were supposed to say "This is a header", "This is a paragraph", "This is a table", by using tags like `<h1>`, `<p>`, `<table>`, and so on. Browser was to take care of the layout of the document without using any formatting tags.

Two major browsers - Netscape and Internet Explorer - continued to add new HTML tags and attributes (like the `` tag and the `color` attribute) to the original HTML specification. Subsequently, it became more difficult to create HTML documents with content clearly separate from the presentation layout. To solve this problem, W3C, the non-profit, standard setting consortium responsible for standardizing HTML, created STYLES in addition to HTML.

Style Sheets Save a Lot of Work

Styles in HTML define how HTML elements are displayed, just like the *bold tag*. Styles are saved in files external to your HTML documents. External style sheets allow you to change the appearance and layout of all pages in your website. Simply, edit a single CSS document. If you have ever had to change the font or color of all the headings in all your Web pages, you will understand how CSS can save you a lot of work.

CSS is a breakthrough in Web design because it allows developers to control the style and layout of multiple Web pages all at once. As a Web developer you can define a style for each HTML element and apply it to as many Web pages as you want. To make a global change, simply change the style, and all elements in the Web are updated automatically.

1.1 Introduction to CSS

CSS 3.0 Features

- Many exciting new functions and features have been introduced in CSS3.
- Following table list some of the new features

Property	New Attributes			
Borders	border-color	border-image	border-radius	box-shadow
Backgrounds	background-origin	background-size	multiple-backgrounds	
Color	HSL Colors	HSLA Colors	RGBA Colors	opacity
Text Effects	text-shadow	text-overflow	word-wrap	
Selectors	Attribute-selector	:nth-child()	:nth-of-type()	

- Many more features like...
 - CSS3 Transitions
 - Animations
 - media queries
 - multi-column layout
 - Web fonts

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CSS 3 has introduced many features using which we can much more powerful and flexible websites. Some of the new features of CSS 3 are as follows:

Border Radius: Creating rounded corners in web design isn't always the easiest of things to accomplish. Thanks to the power of CSS3, it has since become one of the more popular and easier techniques to implement. By taking advantage of the **border-radius** property, you can easily round off those corners in seconds

Box Shadow: Creating box shadows is another pretty cool example for adding some stylish elements to your web designs. The best part being the fact that it is completely executed without the use of images. There are even ways to add multiple box shadows to your rounded corners, allowing for the possibility of creating some very slick designs

Multiple Background Images: Another cool example of CSS3 is the ability to apply multiple backgrounds to a single DIV without having to create extra child DIV's whose only purpose is to support an image

Text Shadow: You know how easy it is to double click a layer in Photoshop and say hey, I want to add a quick drop shadow to that text? This may be even easier than that. You aren't just restricted to just one shadow either. By combining multiple text shadows of varying colors, the possibilities are endless.

@Font-Face: With this feature we can include custom fonts into our web pages. We can now begin to take advantage of various other fonts, whether installed on the readers computer or not, assuming that they can be pulled via an online directory. Just upload the desired font to your server and pull it via the @font-face feature.

Multi-column layout: W3C offers a new way to arrange text “news-paper wise”, in columns. [Multi-column layout](#) is actually a module on its own. It allows a web developer to let text be fitted into columns

CSS3 Animations: Traditionally, the Web was a very static place. Achieving animations was not really possible unless we use JavaScript, animated GIFs and Flash . But With CSS3, we can create animations, which can replace animated images, Flash animations, and Java Scripts in many web pages.

1.1 Introduction to CSS

What Can CSS Do?

- Text formatting
- Element sizing
- Element positioning
- Change link attributes
- Cursor manipulation
- Animation

Many More....



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1.2 CSS Syntax

CSS Syntax

The diagram illustrates the structure of a CSS rule. It starts with an **h1** **Selector**, followed by a pair of curly braces **{** **}**. Inside the braces is a series of **Declaration**s, each consisting of a **Property** and a **Value**. The first declaration is **color:blue;** and the second is **font-size:12px;**. Arrows point from the labels to their corresponding parts in the code.

- A CSS rule has two main parts:
 - A selector
 - One or more declarations
- The selector is normally the HTML element you want to style.
- Each declaration consists of a property and a value.
- The property is the style attribute you want to change. Each property has a value.

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A CSS declaration always ends with a semicolon, and declaration groups are surrounded by curly brackets:

```
p {color:red;text-align:center;}
```

To make the CSS more readable, you can put one declaration on each line, like this:

```
p
{
color:red;
text-align:center;
}
```

1.3 Types of CSS

Types of CSS

▪ Three CSS implementations

- **Inline**
 - Affects only the element applied to
- **Embedded**
 - Affects only the elements in a single file
- **External**
 - Linked to an unlimited number of files



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Types of CSS:

- **Inline:** Style sheet definition only applies to the tag contents that contain it. It is used to control a single tag element. Each tag does not need to have its style defined as it inherits from its parent.
- **Embedded:** Embedded style sheets are placed within HTML code of the page they are to be applied to. Style sheet syntax comes between opening and closing <STYLE> tags. These tags are placed either in the <HEAD> section or between the </HEAD> and <BODY> tags.
- **Linked:** Linked style sheets exist as separate files that are linked to a page with the <LINK> tag. They have the css extension and are referenced with a URL. Inside the css file, style attributes are contained within opening and closing <STYLE> tags. Placing a single <LINK> tag within the <HEAD> tags links the page that needs these styles.

1.3 Types of CSS

HTML Page Structure

```
<!DOCTYPE HTML>
<HTML>

<HEAD>
  <TITLE>Title Text</TITLE>
</HEAD>

<BODY>
  <H1>H1 Heading</H1>
  <P>Paragraph 1</P>
  <P>Paragraph 2</P>
</BODY>

</HTML>
```

Document (HTML)

Head
Title Text
Body
H1 Heading
Paragraph 1
Paragraph 2

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The above given HTML document content is not formatted using CSS.

1.3 Types of CSS

HTML Page Structure with CSS

```
<!DOCTYPE HTML>
<HTML>

<HEAD>
  <TITLE>Title Text</TITLE>
</HEAD>

<BODY>
  <H1>H1 Heading</H1>
  <P>Paragraph 1</P>
  <P>Paragraph 2</P>
</BODY>

</HTML>
```

Document (HTML)

Head

Title Text

Body

H1 Heading

Paragraph 1

Paragraph 2

The above given HTML document content is formatted using CSS.

1.3 Types of CSS Inline CSS

- **Inline Style Sheets:**
 - All style attribute are specified in the tag it self.
 - It gives desired effect on that tag only. It does not affect any other HTML tag.
- **Syntax:**

```
<element style="propertname : value; propertname : value">
```

- An example of STYLE attribute usage:

```
<p style="font-weight: bold">This is bold text</p>
```

is equivalent to

```
<p><b>This is bold text</b></p>
```



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Inline Style Sheet:

Definitions appear next to other tag attributes. You need to remember to place the style sheet description within quotes, like the following:

```
<!DOCTYPE HTML>
<html>
<head><title>Inline Style Sheet</title></head>
<body style="background: white; color:green">
<h2 style="background: gold; font-family: Arial, Impact, Sans Serif;
color:red">
This is Level 2 Heading, with style</h2>
<h1 style="background: orange; font-family: Arial, Impact, Sans serif;
color: blue;font-size:30pt; text-align: center">
This is Level 1 Heading, with style</h1>
<h3 style="background: gold; font-family: Arial, Impact, Sans Serif;
color:red">
This is Level 3 Heading, with style</h3>
<h4>This is Level 4 Heading, without style</h4>
<h1>This is again Level 1 heading with default styles</h1>
</body>
</html>
```

1.3 Types of CSS

Embedded CSS

- Embedded Style Sheet:
 - Set of style definitions placed within <STYLE> tags.
 - Added to the <HEAD> area of file
- Syntax:


```
<HEAD>
<STYLE TYPE="text/css">..</STYLE>
</HEAD>
```
- An example of <STYLE> tag usage:


```
<HEAD>
<TITLE>New Topic1</TITLE>
<STYLE>P {font-weight : bold}</STYLE>
</HEAD>
```

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Embedded Style Sheet:

An embedded style sheet is a set of style definitions placed within <STYLE> tags and located in the HEAD section of the HTML document. It sets the style attributes for the entire page where it is located.

Following style sheet description applies to the <H1> tag. It sets the font face to be either Arial, Impact, or Sans Serif, depending on which one it finds first on the user's system. Text color is also defined as blue.

H1 {font-family: Arial, Impact, Sans Serif; color: blue}

You can also group tags together by separating them with commas:

H1, H2, H3 {font-family: Arial, Impact, Sans Serif; color: blue}<html>

```
<!DOCTYPE HTML>
<html>
<head>
<style>  body {background: black; color:green}
h1 {background: orange; font-family: Arial; color:blue}
h2, h3 {background: gold; font-family: Arial, Impact, Sans Serif; color:red}
</style> </head>
<body>
<h2>This is Level 2 Heading, with style</h2>
<h1>This is Level 1 Heading, with style</h1>
<h3>This is Level 3 Heading, with style</h3>
<h4>This is Level 4 Heading, without style</h4>
</body>
</html>
```

1.3 Types of CSS

External CSS

- The <LINK> element is used to attach an external CSS document to an HTML document
 - All style definition are stored in one file (.css file)
 - This file gets called by the HTML file during page loading
 - **Syntax:** <link rel="stylesheet" href="filename.css" type="text/css">
- Example
 - Content in first.css:

```
P {font-weight : bold}
```
 - Content in first.html file:

```
<HEAD>
<TITLE>Demo CSS</TITLE>
<LINK HREF="FIRST.CSS" REL="STYLESHEET" TYPE="TEXT/CSS">
</HEAD>
```

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External CSS

External CSS is same as embedded style sheet. The only difference is that the separate css file contains all styles, and gets called by the HTML file.

Example:

```
<!DOCTYPE HTML>
<html>
<head>
<title>Linked Style Sheet</title>
<link rel=stylesheet href="linked_ex2.css" type="text/css">
</head>
<body>
<h2>This is Level 2 Heading, with style</h2>
<h1>This is Level 1 Heading, with style</h1>
<h3>This is Level 3 Heading, with style</h3>
<h4>This is Level 4 Heading, without style</h4>
</body></html>
```

1.3 Types of CSS CSS Precedence

- Browser determines default format.
- Order of precedence when three CSS types combine at run time in the HTML page are:
 - Inline styles
 - Embedded style sheets
 - Linked (external) style sheets



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Style Sheet Precedence

There are several rules that apply to the order of precedence of style sheets. All tags have a default format determined by the browser. This is what you see if no style sheet attributes are set. This also represents the lowest priority.

Another level of priority is established by how close the style definition is to the tag. For this order, linked style sheets are lower than embedded style sheets, which are lower than inline style sheets. If you accidentally include the same property in a linked style sheet as in inline style sheet, then the priority goes to the definition closest to the tag, which would be inline style.

Style sheets for more specific tags have priority over general tags. For example, if a Web page marks the <BODY> tag with a certain style sheet definition and an <H3> tag with same property and a different value, then the <H3> tag has the priority, even though it is also part of the body.

Demo : CSS Syntax and CSS Types

■ Lesson01

- demo1.html
- Embeddedstylesheet.htm
- Linkedstylesheet.htm
- Inlinestylesheet.htm



Lesson Summary

- In this lesson, you have learnt about:
 - What is CSS
 - CSS history
 - What CSS can do
 - CSS Syntax
 - Types of CSS



Review Questions

■ Question 1: Which of the following are CSS Types.

- Inline
- Embedded
- External
- All the above

■ Question 2: CSS rule has _____ and _____

- Selector
- Declaration
- Element
- All the Above



Cascading Style Sheet 3.0

Lesson 2: Working with Text and Fonts

Lesson Objectives

- In this lesson, we will learn:
 - Text Formatting
 - Text Effects
 - Fonts



2.1 Text Formatting

Text Formatting

- Following properties can be specified with the text formatting
 - Text Color
 - Text Alignment
 - Text Decoration
 - Text Transformation
 - Text Indentation
 - Text Shadow
 - Word-wrap

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Text Color :The color property is used to set the color of the text.

Text Alignment:The text-align property is used to set the horizontal alignment of a text.

Text can be centered, or aligned to the left or right, or justified.

Text Decoration:The text-decoration property is used to set or remove decorations from text.

The text-decoration property is mostly used to remove underlines from links for design purposes:

Text Transformation:The text-transform property is used to specify uppercase and lowercase letters in a text.

It can be used to turn everything into uppercase or lowercase letters, or capitalize the first letter of each word.

Text Indentation:The text-indentation property is used to specify the indentation of the first line of a text.

Text Shadow: In CSS3, the text-shadow property applies shadow to text

Word Wrapping:In CSS3, the word-wrap property allows you to force the text to wrap - even if it means splitting it in the middle of a word

2.1 Text Formatting

Text Color

- Color property can be specified as follows:
 - a HEX value - like "#ff0000"
 - an RGB value - like "rgb(255,0,0)"
 - a color name - like "red"
- Example
 - `body {color:blue;}`
 - `h1 {color:#00ff00;}`
 - `h2 {color:rgb(255,0,0);}`



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2.1 Text Formatting

Text Alignment and Text Decoration

- The text-align property is used to set the horizontal alignment of a text.

Example:

- h1 {text-align:center;}
- p.date {text-align:right;}
- p.main {text-align:justify;}

- The text-decoration property is used to set or remove decorations from text.

Example:

- h1 {text-decoration:overline;}
- h2 {text-decoration:line-through;}
- h3 {text-decoration:underline;}
- h4 {text-decoration:blink;}



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2.1 Text Formatting

Text Transformation and Text Indentation and Cast

- The text-transform property is used to specify uppercase and lowercase letters in a text.
- Example
 - p.uppercase {text-transform:uppercase;}
 - p.lowercase {text-transform:lowercase;}
 - p.capitalize {text-transform:capitalize;}
- The text-indent property is used to specify the indentation of the first line of a text.
- Example
 - p {text-indent:50px;}



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2.2 Text Effects Text Shadow

- In CSS3, the text-shadow property applies shadow to text.
- You specify the horizontal shadow, the vertical shadow, the blur distance, and the color of the shadow:

~~Text shadow effect!~~

- Ex: Add a shadow to a header:

```
h1
{
    text-shadow: 5px 5px 5px
    #FF0000;
}
```



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2.2 Text Effects

Word wrap

- word-wrap property allows you to force the text to wrap - even if it means splitting it in the middle of a word

Ex:

- Allow long words to be able to break and wrap onto the next line:

```
P  
{  
    word-wrap : break-word;  
}
```

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New Text Properties:

[hanging-punctuation](#): Specifies whether a punctuation character may be placed outside the line box

[punctuation-trim](#): Specifies whether a punctuation character should be trimmed

[text-align-last](#): Describes how the last line of a block or a line right before a forced line break is aligned when text-align is "justify"

[text-emphasis](#): Applies emphasis marks, and the foreground color of the emphasis marks, to the element's text

[text-justify](#): Specifies the justification method used when text-align is "justify"

[text-outline](#): Specifies a text outline

[text-overflow](#): Specifies what should happen when text overflows the containing element

[text-shadow](#): Adds shadow to text

[text-wrap](#): Specifies line breaking rules for text

[word-break](#): Specifies line breaking rules for non-CJK scripts

[word-wrap](#): Allows long, unbreakable words to be broken and wrap to the next line

2.3 Fonts

Fonts

- CSS font properties define the font family, boldness, size, and the style of a text.
- Font-Family : Ex**

```
p{font-family:"Times New Roman", Times, serif;}
```

- Font Style : Ex**

```
p.normal {font-style:normal;}  
p.italic {font-style:italic;}  
p.oblique {font-style:oblique;}
```

- Font Size : Ex**

```
h1 {font-size:40px;}  
p {font-size:14px;}
```

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Font Family: The font family of a text is set with the font-family property.

If the name of a font family is more than one word, it must be in quotation marks, like font-family: "Times New Roman".

More than one font family is specified in a comma-separated list

Font Style: The font-style property is mostly used to specify italic text.

This property has three values:

normal - The text is shown normally

italic - The text is shown in italics

oblique - The text is "leaning" (oblique is very similar to italic, but less supported)

Font Size : Setting the text size with pixels gives you full control over the text size: It can be set either using **px** attribute or **em** attribute as follows:

```
h1 {font-size:40px;}  
h1 {font-size:2.5em;}
```

Note: The em size unit is recommended by the W3C.

1em is equal to the current font size. The default text size in browsers is 16px. So, the default size of 1em is 16px.

The size can be calculated from pixels to em using this formula: $\text{pixels}/16=\text{em}$

Demo : Text and Font

- Lesson02
 - demoFontText.html
 - word_wrap.html



Lesson Summary

- In this lesson, you have learnt about
 - Text Formatting
 - Text Effects
 - Fonts



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Review Questions

- Question 1: Given :

```
h1  
{  
text-shadow: A ,B ,C,D;  
}
```

What property does C represents?

- Option 1: Color
- Option 2: Vertical Shadow
- Option 3: Blur
- Option 4: Horizontal Shadow

- Question 2: Color can be applied to Fonts with CSS 3

- Option 1: TRUE
- Option 2: FALSE



Cascading Style Sheet 3.0

Lesson 3: CSS Selectors

Lesson Objectives

- In this lesson, you will be learning about:
 - Introduction to Selectors
 - Universal Selector
 - Type Selector
 - Class Selector
 - ID Selector
 - Attribute Selector
 - Pseudo Classes



3.1 Introduction to Selectors

Selectors

- **Introduction:**
 - Selectors are one of the most important aspects of CSS as they are used to "select" elements on an HTML page so that they can be styled.
 - The selector "selects" the elements on an HTML page that are affected by the rule set.
 - A rule or "rule set" is a statement that tells browsers how to render particular elements on an HTML page
 - A rule set consists of a selector followed by a declaration block.
 - Rule structure

The diagram illustrates the structure of a CSS rule set. It shows 'body' as the selector, followed by a brace, then 'color: black;' and 'padding: 1em;' as declarations. Each declaration is further broken down into 'property' and 'value'. The structure is as follows:

selector	declaration block
body	{ declaration property value declaration property value }

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Text Color :The color property is used to set the color of the text.

Text Alignment:The text-align property is used to set the horizontal alignment of a text.

Text can be centered, or aligned to the left or right, or justified.

Text Decoration:The text-decoration property is used to set or remove decorations from text.

The text-decoration property is mostly used to remove underlines from links for design purposes:

Text Transformation:The text-transform property is used to specify uppercase and lowercase letters in a text.

It can be used to turn everything into uppercase or lowercase letters, or capitalize the first letter of each word.

Text Indentation:The text-indentation property is used to specify the indentation of the first line of a text.

Text Shadow: In CSS3, the text-shadow property applies shadow to text

Word Wrapping:In CSS3, the word-wrap property allows you to force the text to wrap - even if it means splitting it in the middle of a word

3.1 Introduction to Selectors

Selectors



- Example
 - h1 { color: blue; margin-top: 1em; }
 - p { padding: 5px; }
 - td { background-color: #ddd; }

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The slide has a blue header bar with the title 'Universal Selector'. Below the header, there is a bulleted list: 'The universal selector matches any element type.' and 'Example:'. A text box contains the CSS rule: '* { margin : 0; padding: 0; }'. At the bottom right of the slide, there is a small footer with the text 'Copyright © Capgemini 2015. All Rights Reserved 5'.

It's important not to confuse the universal selector with a wildcard character—the universal selector doesn't match “zero or more elements.” Consider the following HTML fragment:

```
<body>
  <div>
    <h1>The <em>Universal</em> Selector</h1>
    <p>We must <em>emphasize</em> the following:</p>
    <ul>
      <li>It's <em>not</em> a wildcard.</li>
      <li>It matches elements regardless of <em>type</em>.</li>
    </ul>
    This is an <em>immediate</em> child of the division.
  </div>
</body>
```

The selector `div * em` will match the following `em` elements:

“Universal” in the `h1` element (* matches the `<h1>`)
“emphasize” in the `p` element (* matches the `<p>`)
“not” in the first `li` element (* matches the `` or the ``)
“type” in the second `li` element (* matches the `` or the ``)
However, it won’t match the `immediate` element, since that’s an immediate child of the `div` element—there’s nothing between `<div>` and `` for the * to match.

3.3 Type Selector

Type selectors

- While the universal selector matches any element, an element type selector matches elements with the corresponding element type name.
- Type selectors are case insensitive in HTML (including XHTML served as text/html), but are case sensitive in XML (including XHTML served as XML).
- Example

```
ul {  
    : declarations  
}
```

- A type selector like the above ul matches all the elements within an HTML or XML document that are marked up as follows:
** ... **

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The most common and easy to understand selectors are type selectors. Type selectors will select any HTML element on a page that matches the selector, regardless of their position in the document tree. For example:

```
em {color: blue; }
```

This rule will select any `` element on the page and color it blue. As you can see from the document tree diagram below, all `` elements will be colored blue, regardless of their position in the document tree

There are a huge range of elements that you can select using type selectors, which means you can change the appearance of any or every element on your page using only type selectors.

3.4 Class Selector

Class Selectors

- Selecting elements on the basis of their class names is a very common technique in CSS
- While type selectors target every instance of an element, class selectors can be used to select any HTML element that has a class attribute, regardless of their position in the document tree.
- Example:

```
<body>
<p class="big">This is some <em>text</em></p>
<p>This is some text</p>
<ul>
<li class="big">List item</li>
<li>List item</li>
<li>List <em>item</em></li></ul>
</body>
```

```
.big { font-size: 110%; font-weight: bold; }
```

- Above code targets the first paragraph and first list items on a page to make them stand out

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Combining class and type selectors:

If you want to be more specific, you can use class and type selectors together. Any type selectors can be used.

```
div.big { color: blue; }
td.big { color: yellow; }
label.big { color: green; }
form.big { color: red; }
```

3.5 ID Selector

ID Selector

- An ID selector matches an element that has a specific id attribute value. Since id attributes must have unique values, an ID selector can never match more than one element in a document.
- In its simplest form, an ID selector looks like this:

```
#navigation
{
    : declarations
}
```

- This selector matches any element whose id attribute value is equal to "navigation"

```
#firstname
{
    background-color:yellow;
}
```

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Code:

```
<!DOCTYPE html>
<html>
<head>
<style>
#firstname
{
    background-color:yellow;
}
</style>
</head>
<body>

<h1>Welcome to My Homepage</h1>

<div class="intro">
<p id="firstname">My name is iGATE.</p>
<p id="hometown">I live in Bangalore.</p>
</div>

<p>My best friend was Patni.</p>

</body>
</html>
```

3.6 Attribute Selector

Attribute Selector

- All HTML elements can have associated properties, called attributes. These attributes generally have values. Any number of attribute/value pairs can be used in an element's tag - as long as they are separated by spaces. They may appear in any order.
- In the example below, the code segments highlighted in blue are attributes and the segments highlighted in red are attribute values

```
<h1 id="section1">  
  
<img title="mainimage" alt="main image"/>  
<a href="foo.htm"/>  
<p class="maintext"/>  
<form style="padding: 10px"/>
```

3.6 Attribute Selector

Attribute Selector

Attribute selectors are used to select elements based on their attributes or attribute value. For example, you may want to select any image on an HTML page that is called "small.gif". This could be done with the rule below, that will only target images with the chosen name:

- There are four types of attribute selectors.
 - **Example for Select based on attribute**

```
img[title] { border: 1px solid #000; }  
img[width] { border: 1px solid #000; }
```

- The example above will select an element (in this case "img") with the relevant attribute

- **Example for Select based on value**

```
img[src="small.gif"] { border: 1px solid #000; }
```

- The above example selects any image whose attribute (in this case "src") has a value of "small.gif"

3.7 Pseudo Classes

Pseudo Classes

- A pseudo-class is similar to a class in HTML, but it's not specified explicitly in the markup. Some pseudo-classes are dynamic—they're applied as a result of user interaction with the document.
- A pseudo-class starts with a colon (:). No whitespace may appear between a type selector or universal selector and the colon, nor can whitespace appear after the colon.



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CSS1 introduced the [:link](#), [:visited](#), and [:active](#) pseudo-classes, but only for the HTML a element. These pseudo-classes represented the state of links—unvisited, visited, or currently being selected—in a web page document. In CSS1, all three pseudo-classes were mutually exclusive.

CSS2 expanded the range of pseudo-classes and ensured that they could be applied to any element. :link and :visited now apply to any element defined as a link in the document language. While they remain mutually exclusive, the :active pseudo-class now joins [:hover](#) and [:focus](#) in the group of dynamic pseudo-classes. The :hover pseudo-class matches elements that are being designated by a pointing device (for example, elements that the user's hovering the cursor over); :active matches any element that's being activated by the user; and :focus matches any element that is currently in focus (that is, accepting input).

CSS2 also introduced the [:lang](#) pseudo-class to allow an element to be matched on the basis of its language, and the [:first-child](#) pseudo-class to match an element that's the first child element of its parent.

CSS3 promises an even [greater range of powerful pseudo-classes](#).

Remember that pseudo-classes, like [ID selectors](#) and [attribute selectors](#), act like modifiers on [type selectors](#) and the [universal selector](#): they specify additional constraints for the selector pattern, but they don't specify other elements. For instance, the selector li:first-child matches a list item that's the first child of its parent; it doesn't match the first child of a list item.

Pseudo Classes	
Pseudo class	Description
:link	matches link elements that are unvisited
<u>:visited</u>	matches link elements that have been visited
<u>:active</u>	matches any element that's being activated by the user
<u>:hover</u>	matches elements that are being designated by a pointing device
:focus	matches any element that's currently in focus
<u>:first-child</u>	matches any element that's the first child element of its parent
<u>:lang(C)</u>	allows elements to be matched on the basis of their languages

CSS 3 - Pseudo Classes

Pseudo class	Description
:nth-child(N)	matches elements on the basis of their positions within a parent element's list of child elements
:nth-last-child(N)	matches elements on the basis of their positions within a parent element's list of child elements
:nth-of-type(N)	matches elements on the basis of their positions within a parent element's list of child elements of the same type
:nth-last-of-type(N)	matches elements on the basis of their positions within a parent element's list of child elements of the same type
:last-child	matches an element that's the last child element of its parent element
:first-of-type	matches the first child element of the specified element type
:last-of-type	matches the last child element of the specified element type

CSS 3 - Pseudo Classes

Pseudo class	Description
:only-child	matches an element if it's the only child element of its parent
:only-of-type	matches an element that's the only child element of its type
:root	matches the element that's the root element of the document
:empty	matches elements that have no children
:target	matches an element that's the target of a fragment identifier in the document's URI
:enabled/:disabled	matches user interface elements that are enabled/disabled respectively
:checked Pseudo-class	matches elements like checkboxes or radio buttons that are checked
:not(S)	matches elements that aren't matched by the specified selector

Demo : Selector

- demoType.html
- demold.html
- demoClass.html
- demoAttributeSelector.html
- demoPseudoClasses.html



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Lesson Summary

- In this lesson, you have learnt about:
 - Universal Selector
 - Type Selector
 - Class Selector
 - ID Selector
 - Attribute Selector
 - PseudoClasses



Cascading Style Sheet 3.0

Lesson 04: Colors and Borders

Lesson Objectives

- In this lesson, we will learn:
 - Background
 - Multiple Image Background
 - Colors
 - RGB and RGBA
 - HSL and HSLA
 - Borders
 - Rounded Corners
 - Applying Shadows in border



4.1 Background

Background

- CSS background properties are used to define the background effects of an element.
- Following are some of the properties used for background effects
 - `background-color`
 - `background-image`
 - `background-repeat`
 - `background-attachment`
 - `background-position`
- With CSS 3.0 two more properties are available to define background effects
 - `background-size`
 - `background-origin`
- CSS 3 also supports inclusion of multiple background images

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All CSS Background Properties

Property	Description
<u>background</u>	Sets all the background properties in one declaration
<u>background-attachment</u>	Sets whether a background image is fixed or scrolls with the rest of the page
<u>background-color</u>	Sets the background color of an element
<u>background-image</u>	Sets the background image for an element
<u>background-position</u>	Sets the starting position of a background image
<u>background-repeat</u>	Sets how a background image will be repeated

4.1 Background

Background Properties

- Background Color: Specifies the background color of an element.
- Ex:

```
body { background-color:grey; }
```
- Background Image: Specifies an image to use as the background of an element.
- Ex:

```
body {background-image:url(flower.pbg);}
```

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Background Color: Color can be specified by name like “RED”, RGB Value like `rgb(255,200,0)` or Hex value like `#FF00FF`

Ex:

```
h1 {background-color:#6495ed;}  
p {background-color:rgb(255,200,0) ;}  
div {background-color:RED;}
```

In the example above, the h1, p, and div elements have different background colors:

Background Image: The `background-image` property specifies an image to use as the background of an element.

By default, the image is repeated so it covers the entire element.

4.1 Background

Background Properties

- Properties background-repeat, background-attachment and background-position are related to background-image property. They define image attributes as follows
 - The background-attachment sets whether a background image is fixed or scrolls with the rest of the page
 - The background-position property sets the starting position of a background image
 - The background-repeat property sets if/how a background image will be repeated.
 - By default, a background-image is repeated both vertically and horizontally.

```
body
{
background-image:url('img_tree.png');
background-repeat:no-repeat;
background-position:right top;
background-attachment:fixed
}
```

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Background Repeat Properties:

No-repeat: Image will not be repeated

Repeat-x : Image repeats horizontally

Repeat-y : Image repeats vertically

By default, a background-image is repeated both vertically and horizontally.

Background Attachment Properties:

Fixed :The value fixed stops the background-image from scrolling with its containing block

Scroll :The value scroll allows the background-image to scroll along with the document. When it's used on an element that has a scrollbar

Background - Shorthand property: It is also possible to specify all the properties in one single property. This is called a shorthand property. The shorthand property for background is simply "background":

Ex: body {background:#ffffff url('img_tree.png') no-repeat right top;}

4.1 Background

Background Properties – CSS 3

- **Background-size** : The background-size property specifies the size of the background image.
- **Ex : 1**

```
div
{
background:url(flower.png);
background-size:80px 60px;
background-repeat:no-repeat;
```

- **Background-origin** :The background-origin property specifies the positioning area of the background images. The background image can be placed within the content-box, padding-box, or border-box area.
- **Ex:** Position the background image within the content-box:

```
div
{
background:url(img_flwr.gif);
background-repeat:no-repeat;
background-size:100% 100%;
-webkit-background-origin:content-box; /* Safari */
background-origin:content-box;
```

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Background Size: Before CSS3, the background image size was determined by the actual size of the image.

In CSS3 it is possible to specify the size of the background image, which allows us to re-use background images in different contexts.

You can specify the size in pixels or in percentages. If you specify the size as a percentage, the size is relative to the width and height of the parent element

Ex : 2 - Stretch the background image to completely fill the content area:

```
div
{
background:url(flower.png);
background-size:100% 100%;
background-repeat:no-repeat;
```

Background Origin:



4.2 Multiple Background Images

Multiple Background Images

- CSS 3 supports multiple background images
- Ex:

```
body  
{  
background-image:url(img_flwr.gif),url(img_tree.gif);  
}
```



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Demo : Background Properties

- [Background.html](#)
- [Background2.html](#)
- [Background_image.html](#)
- [Multiple_image_background.html](#)



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4.3 Colors

CSS Color

- The color property defines the foreground color of an element; in essence, this means it defines the color of the text content
- Colors in CSS can be specified by using any of the mechanism
 - Hexadecimal colors
 - RGB colors
 - RGBA colors
 - HSL colors
 - HSLA colors
 - Predefined/Cross-browser color names

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Note :If a border-color value hasn't been defined explicitly for the element, the color value will be used instead.

4.3 Colors

CSS Color

- Hexadecimal Colors : A hexadecimal color is specified with: #RRGGBB, where the RR (red), GG (green) and BB (blue)
- Ex:

```
p
{
background-color:#ff0000;
}
```
- RGB Colors: An RGB color value is specified with: rgb(red, green, blue).
- Ex

```
p
{
background-color:rgb(255,0,0);
}
```

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Hexadecimal Colors:

Hexadecimal color values are supported in all major browsers.

Hexadecimal integers specify the components of the color. All values must be between 0 and FF.

For example, the #0000ff value is rendered as blue, because the blue component is set to its highest value (ff) and the others are set to 0.

RGB Colors:

RGB color values are supported in all major browsers.

An RGB color notation `rgb(red, green, blue)`, Each parameter (red, green, and blue) defines the intensity of the color and can be an integer between 0 and 255 or a percentage value (from 0% to 100%).

For example, the `rgb(0,0,255)` value is rendered as blue, because the blue parameter is set to its highest value (255) and the others are set to 0.

Also, the following values define the same color: `rgb(0,0,255)` and `rgb(0%,0%,100%)`.

CSS Color

- **RGBA Colors :** RGBA color values are an extension of RGB color values with an alpha channel - which specifies the opacity of the object.
- **Ex:**

```
p
{
    background-color:rgba(255,0,0,0.5);}
```
- **HSL Colors:** HSL stands for hue, saturation, and lightness - and represents a cylindrical-coordinate representation of colors. An HSL color value is specified with: hsl(hue, saturation, lightness)
- **Ex:**

```
p
{
    background-color :hsl(120,65%,75%);}
```

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RGBA Colors:

RGBA color values are supported in IE9+, Firefox 3+, Chrome, Safari, and in Opera 10+.

RGBA color values are an extension of RGB color values with an alpha channel - which specifies the opacity of the object.

An RGBA color value is specified with: `rgba(red, green, blue, alpha)`. The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (fully opaque).

HSL Colors:

HSL color values are supported in IE9+, Firefox, Chrome, Safari, and in Opera 10+.

HSL stands for hue, saturation, and lightness - and represents a cylindrical-coordinate representation of colors.

Hue is a degree on the color wheel (from 0 to 360) - 0 (or 360) is red, 120 is green, 240 is blue.

Saturation is a percentage value; 0% means a shade of gray and 100% is the full color.

Lightness is also a percentage; 0% is black, 100% is white.

4.3 Colors

CSS Color

- HSLA Color : HSLA color values are an extension of HSL color values with an alpha channel - which specifies the opacity of the object.
- Ex:

```
p  
{  
    background-color :hsla(120,65%,75%,0.3);  
}
```

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HSLA Colors

HSLA color values are supported in IE9+, Firefox 3+, Chrome, Safari, and in Opera 10+.

An HSLA color value is specified with: hsla(hue, saturation, lightness, alpha), where the alpha parameter defines the opacity. The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (fully opaque).

Demo : CSS Colors

▪ demoColor.html



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4.4 Borders

Border

- The CSS border properties allow you to specify the style and color of an element's border.
- Following are some of the properties we can specify for a border
 - border-style
 - border-width
 - border-color
- CSS 3 adds 3 more border properties
 - border-radius
 - box-shadow
 - border-image
 - border-collapse
 - border-spacing

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Note: None of the border properties will have ANY effect unless the border-style property is set!

4.4 Borders

Border Style

- The border-style property specifies what kind of border to display.
- Ex :

```
div.wrapper
{
    border-style:solid;
}
```
- Border style can be dotted, dashed ,solid etc
- Above example code will draw a border as shown below

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Border-style values:

Style	Description
dotted	Defines a dotted border
dashed	Defines a dashed border
solid	Defines a solid border
double	Defines two borders. The width of the two borders are the same as the border-width value
groove	Defines a 3D grooved border. The effect depends on the border-color value
ridge	Defines a 3D ridged border. The effect depends on the border-color value
inset	Defines a 3D inset border. The effect depends on the border-color value
outset	Defines a 3D outset border. The effect depends on the border-color value

4.4 Borders

Border Width

- Border Width : The border-width property is used to set the width of the border.
- The width is set in pixels, or by using one of the three pre-defined values: thin, medium, or thick.
- Ex:

```
div.one
{
border-style:solid;
border-width:5px;
```

```
div.two
{
border-style:solid;
border-width:medium;
```

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Note: The "border-width" property does not work if it is used alone. Use the "border-style" property to set the borders first.

4.4 Borders

Border Color

- Border Color : The border-color property is used to set the color of the border. The color can be set by:
 - name - specify a color name, like "red"
 - RGB - specify a RGB value, like "rgb(255,0,0)"
 - Hex - specify a hex value, like "#ff0000"
 - You can also set the border color to "transparent".
- Ex:

```
div.one
{
border-style:solid;
border-color:red;
}
```

```
div.two
{
border-style:dotted;
border-color:#98bf21;
}
```



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4.4 Borders

Border - Individual sides

- In CSS it is possible to specify different borders for different sides:
- Ex:

```
div
{
border-top-style:dotted;
border-right-style:solid;
border-bottom-style:dotted;
border-left-style:solid;
}
```

2 different border style:

- Border - Shorthand property:it is also possible to specify all the individual border properties in one property.
- Ex : border:5px solid red;
Above example sets 5px width, solid as border style and red as color

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Note :All the four border sides can be of different style

The border-style property can have from one to four values:

border-style:dotted solid double dashed;

top border is dotted
right border is solid
bottom border is double
left border is dashed

border-style:dotted solid double;

top border is dotted
right and left borders are solid
bottom border is double

border-style:dotted solid;

top and bottom borders are dotted
right and left borders are solid

border-style:dotted;

all four borders are dotted

Demo : Border

- demoBorder.html



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The screenshot shows a presentation slide with a blue header bar. The title '4.4 Borders' is at the top left, and 'Rounded Corners Border' is the main heading. A blue curly brace on the left side groups the CSS code. Below the code is a preview of a rounded border. The bottom right corner of the border is circled in red. At the bottom of the slide, there is a small logo and the text 'CONSULTING TECHNOLOGY OUTSOURCING' followed by 'Copyright © Capgemini 2015. All Rights Reserved 20'.

```
border-radius: 25px;
border: 2px solid #0070C0;
```

With CSS3, we can create rounded borders as shown below:

```
border-radius: 25px;
border: 2px solid #0070C0;
```

Rounded Corners: In CSS3, creating rounded corners is easy. The border-radius property is used to create rounded corners:

Use following extension for different browser:

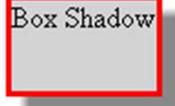
-webkit-	for Safari and Chrome
-moz-	for old firefox
-o-	for opera

4.4 Borders

Applying Shadows in border

- With CSS3, we can add shadow to border as shown below:

```
box-shadow div { box-shadow: 10px 10px 5px #888888; }
```



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Box Shadow: In CSS3, the box-shadow property is used to add shadow to boxes:

Use following extension for different browser:

-webkit-	for Safari and Chrome
-moz-	for old firefox
-o-	for opera

Demo : CSS 3 Border

▪ demoBorder_CSS 3.0.html



Lesson Summary

- In this lesson, you have learned about
 - Background
 - Multiple Image Background
 - Colors
 - RGB and RGBA
 - HSL and HSLA
 - Borders
 - Rounded Corners
 - Applying Shadows in border



Review Questions

■ Question 1: In HSLA color scheme H,S,L,A stands for _____, _____, _____ and _____ respectively



■ Question 2: With Background Attachment _____ property stops the background-image from scrolling with its containing bloc

- Option 1: Stop
- Option 2: No-scroll
- Option 3: Static
- Option 4: Fixed

Review Questions

- Question 3: Which of the following are CSS 3 properties

Option 1 : border-image
Option 2 : border-width
Option 3 : border-color
Option 4 : border-radius
Option 5 : box-shadow



- Question 4: In CSS it is possible to specify different borders for different sides:

Option 1 : True
Option 2 : False

Web Basics – CSS 3.0

Lab Book

Document Revision History

Date	Revision	Author	Summary of Changes
1-Apr-2015	1.0	System Admin	Initial Draft
2-Apr-2015	1.1	InnovationSoft	Minor Updates
May-2015	1.2	Admin	Final Version

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Getting Started

Overview

This lab book is a guided tour for learning CSS 3.0. It comprises solved examples and 'To Do' assignments. Follow the steps provided in the solved examples and work out the 'ToDo' assignments given.

Setup Checklist for CSS 3.0

Here is what is expected on your machine in order to work with the lab assignments.

Minimum System Requirements

Hardware: Networked PCs with minimum 64 MB RAM and 60 MB HDD.

Software:

Window based Operating System having the latest version of Browser (Google Chrome 20.0, Mozilla Firefox 13.0, Opera 12.0 and Internet Explorer 9.0 or higher) is installed.

Eclipse Luna or Visual Studio 2008 or an editor like Notepad, Edit Plus etc is installed.

Instructions

- For all coding standards refer Appendix A. All lab assignments should refer coding standards.
- Create a directory by your name in drive <drive>. In this directory, create a subdirectory css_assgn. For each lab exercise create a directory as lab<lab number>.
- You may also look up the on-line help provided in the MSDN library.
- The faculty will introduce you to the editor to be used.

Learning More (Bibliography)

www.w3Schools.com

www.csssitepoint.com

1. Introduction to CSS

Goals	<ul style="list-style-type: none">• Learn and understand the process of:<ul style="list-style-type: none">◦ Using inline, embedded and external CSS
Time	10 minutes

1.1 Create an HTML file as shown below

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

        <h1> Introduction to CSS</h1>

        <p> A CSS (cascading style sheet) file allows you to separate your web sites
(X)HTML content from it's style. As always you use your (X)HTML file to arrange the
content, but all of the presentation (fonts, colors, background, borders, text
formatting, link effects & so on...) are accomplished within a CSS. </p>

    </body>
</html>
```

Example 1: Introduction.html

1.2 Add the following styles to above html file using inline style sheet

Header Font Color : Red

Paragraph Font Color : Blue

Background Color : Light Grey

1.3 Add the above styles using embedded style sheet

1.4 Add the above styles using external style sheet

2. Working with Text and Fonts

Goals	<ul style="list-style-type: none"> • At the end of this lab session, you will be able to work with: <ul style="list-style-type: none"> ◦ Text formatting ◦ Text effects ◦ Fonts
Time	30 min

2.1 Use introduction.html from above exercise and apply following styles using external style sheet

```

h1
{
    font-family: calibri;
    font-size: 30px;
    font-style: normal;
    font-weight: bold;
    color: grey;
    text-decoration: underline;
    text-align: center;
}

p
{
    font-family: verdana;
    font-size: 20px;
    font-style: italic;
}

```

Example 2: Introduction.css

2.2 Use introduction.css and apply the following properties

- Text Transformation
- Text Indentation
- Specify text color using Hex value

2.3 Use introduction.css and apply text-shadow property

3. CSS Selectors

Goals	<ul style="list-style-type: none"> • At the end of this lab session, you will be able to understand: <ul style="list-style-type: none"> ○ Universal Selector ○ Type Selector ○ Class Selector ○ ID Selector ○ Attribute Selector ○ Pseudo-classes
Time	30 min

3.1 Given

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

<h1>Learn CSS 3.0 for better web design</h1>

<div>Do not go where the path may lead, go instead where there is no path and leave a trail. </div>

<div>It is always the simple that produces the marvelous. </div>

<div>As knowledge increases, wonder deepens.</div>

<p>For beautiful eyes, look for the good in others; for beautiful lips, speak only words of kindness; and for poise, walk with the knowledge that you are never alone.</p>

<p>The best and most beautiful things in the world cannot be seen or even touched - they must be felt with the heart.</p>

<p>It is during our darkest moments that we must focus to see the light. </p>

<p>Happiness is not something you postpone for the future; it is something you design for the present.</p>

<p>Be faithful to that which exists within yourself. </p>
```



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

Example 3: Selector1.html

- 3.2 Use selector.html and apply color attribute using universal selector**
- 3.3 Use selector.html apply different colors to text based on type selectors - H1, Div and P.**
- 3.4 Use selector.html apply id attribute by specifying different values to every paragraph and division (use p1, p2, p3 ... for paragraph and d1, d2, d3 ...for div).**
- 3.5 Apply text and font properties using external style sheet**
- 3.6 Use selector.html apply class attribute for paragraphs and divisions. All the paragraphs under para_class class and all divisions under div_class class. Apply different CSS font and text styles.**
- 3.7 Create an html file as shown**

```
<!DOCTYPE html>  
<html>  
<body>  
  
<h1>Learn CSS 3.0 for better web design</h1>  
  
  
  
  
  
  
  
  
  
  
  
  
  
</body>  
</html>
```

Example 4: Selector2.html

Note: Use your own images and pictures of proper size

Create an external CSS file and apply following styles using attribute selector.

- `img[title] { border: 1px solid #000; }`
- `img[width] { border: 1px solid #000; }`
- `img[title|="title"] { border: 1px solid #000; }`

3.8 Create an html file as show below.

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

<h2>CSS Pseudo Classes or Links</h2>
<p>This is a <a href="">link with Pseudo Classes</a> ! </p>

</body>
</html>
```

Example 5: Selector3.html

Apply below css to given html file using pseudo classes and understand how pseudo classes works

```
a:link{
    text-decoration: none;
    color: gray;
}

a:visited{
    text-decoration: none;
    color: gray;
}

a:hover{
    text-decoration: none;
    color: green;
    font-weight: bolder;
```

```
letter-spacing: 2px;  
}
```

Example 6: Selector4.css

4. Colors and Borders

Goals	<ul style="list-style-type: none">• At the end of this lab session, you will be able to understand:<ul style="list-style-type: none">○ Background○ Multiple Image Background○ Applying Colors○ Borders○ Rounded Corners○ Applying Shadows in border
Time	30 minutes

4.1 Refer problem 4.3's solution and set appropriate background and foreground colors using following mechanism.

- Hexadecimal colors
- RGB colors
- RGBA colors
- HSL colors
- HSLA colors

4.2 Refer to the assignment 3.5 and apply border to the images.

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