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Module 2: CSS3 for Front End Development

Module 2 Objectives

- Upon completing this module, the learner will be able to:
 - Understand the fundamentals of CSS
 - Understand styling by selectors
 - Use CSS3 New Element styles
 - Understand positioning, display and float properties
 - Understand responsive styling using media queries



Module 2 Agenda

Topic Name	Duration
CSS Fundamentals	20 min
Selectors	20 mins
Pseudo Classes and Elements	30 mins
CSS3 Text Effects	20 min
CSS3 Background Image	20 mins
CSS3 Border and Box Shadow	20 mins
CSS3 Color	20 mins
Media Queries	20 mins
Working with Display, Float and Position properties	20 mins



Introduction to CSS

- CSS stands for Cascading Style Sheets
- It is a W3(World wide web) standard for describing the presentation semantics of Web pages, including colors, layout, and fonts.
- Styles help us in displaying HTML elements.
- CSS separates design elements from structural logic.
- CSS can be used to style pages in:
 - HTML
 - XHTML
 - XML

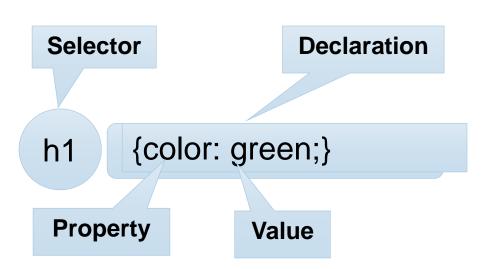
```
body
background-color:#d0e4fe;
h1
color:orange;
text-align:center;
font-family:"Times New Roman";
font-size:20px;
```



CSS Rule

CSS rule has two parts

- Selector
 - It is the HTML element you want to style
 - CSS also allows you to specify your own selectors called id and class
- Declaration : It consists of
 - Property: it is a style attribute you want to change
 - Value : Each property has a value





CSS Syntax

• There are three ways to work with a style sheet:

Туре	Description	Example
	Defines the style attribute in the	This is a
Inline	relevant HTMI element	paragraph.
		<head></head>
		<style type="text/css"></td></tr><tr><td></td><td></td><td>hr {color:cyan;}</td></tr><tr><td></td><td>Styles are defined the head section of</td><td>p {margin-left:28px;}</td></tr><tr><td></td><td>the HTML page using the <style> tag</td><td>body{backgroundimage:url("images/Lilies.gif");}</td></tr><tr><td></td><td>This can be used in case of a unique</td><td></style>
Internal	style for a particular page	
	• External Sytle sheet is a separate file	
	with an extension .css	<head></head>
	• The styles defined in the css can be	
	applied to more than one page by	href="mystyle.css" />
	linking the css file to the HTML page	
External	 This is done using the <link/> Tag 	



Demonstration

Embedding Style in a document

Inline

Internal

External



CSS Vendor Specific Prefixes

- CSS3 specification is a series of modules that are being rolled out by browser vendors.
- In some cases this rolling out involves experimental support.
- This experimental support for CSS properties is handled by the use of a vendor prefix.

WebKit	-webkit-
Mozilla	-moz-
Opera	-0-
Konqueror	-khtml-
Microsoft	-ms-
Chrome	-chrome-

Ex: -webkit-border-radius



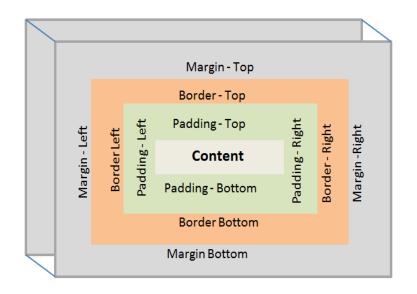
Units

Units	Description
em	It is a relative measurement. Represents the multiplier of the parent element's computed font size
рх	It is an absolute measurement. Represents pixel unit, 96 pixels per inch
pt	It is an absolute measurement. Represents point unit, 72 points per inch
рс	It is an absolute measurement. Represents pica unit, 12 points per pica
in	It is a absolute measurement (inch)
mm	It is a absolute measurement (millimeter)
cm	It is a absolute measurement (centimeter)



Box Model

- Each element displayed in a document posses one or more rectangular boxes.
- These boxes describes how the elements is laid out in a web page.
- The diagram describes how an elements margin, padding and border properties determine the layout of element on web page.





Knowledge Check

- Choose the components of CSS Style rule:
 - 1. Property
 - 2. Selector
 - 3. Value
 - 4. All of above



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- Selectors are pattern to match an element of web page and apply respective styling.
- There are various ways to define selectors:
 - Element
 - Id
 - Class
 - Universal
 - Grouping
 - Attribute



Selector	Description
p { color: blue; }	Element Type Selector: It represents an instance of the element type in the document tree.
<pre>#error { color: red; }</pre>	Id Selector: It defines style rules based on the id attribute of an element. '#' notation is used to access element id propery.
.container { color: blue; }	Class Selector: It defines style rules based on the class attribute of the elements. '.' notation is used to access the class property

accenture

Selector	Description
* { margin: 0; padding: 0;	Universal Selector: It represents any single element in the document tree
}	It is written with an asterisk(*)
h1, h2, h3 { font-weight: normal; }	Grouping Selector: It represents more than one element that share same style.
[href]{ font-style: italic; }	Attribute Selector: It represents elements with the href attribute, whatever the value of the attribute.



Selector	Description
h1 article { color: green; }	Descendent Selector:It selects element that is descendent of another element. Its applies style to child, or child of child.
ul > li { list-style: square; }	Child Selector: It selects elements that are direct child of the matching element.
h1 ~ p { color: blue; font-size: 18px; }	Sibling Selector: It selects elements that is one of the next sibling of the matching element.



Demonstration

Selectors



Knowledge Check

Choose the selector to give color to elements with class container

```
input[type=container]
color: olive;
#container
color :olive;
.container
color :olive;
container
color:olive;
```

 CSS Specificity assist the browser to decide which
 CSS property values are most relevant to an element to be applied.

 Specificity only applies when the same element is targeted by multiple declarations.

 When multiple declarations have equal specificity, the last declaration found in the CSS is applied to the element.



```
div
 width: 100px;
 height: 100px;
.bluebox
background-color: blue;
.olivebox
background-color: olive;
                                                       Last Shall Be First!!
<div class="bluebox olivebox"></div>
```



- Inline Styles have highest specificity by overriding styles defined in external stylesheet.
- Below is priority of style applied (Highest to Lowest) :





```
h2 {
  color: blue;
}

.header {
  color: red;
}

<h2 class="header">Heading 2</h2>
```

Heading 2

Class has higher specificity compare to Element Type!!



Knowledge Check

Choose the output for below style:

- 1. Container
- 2. Container
- 3. Container
- 4. Container



Demonstration

Specificity

- Multiple Declaration
- Element Style v/s Class Style



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Pseudo Classes

- The pseudo-class makes selection :
 - Elements that are part of document tree that cannot be expressed using simple selectors e.g. no ID or class rather be expressed as first child, last child.
 - Elements dynamic state e.g. hover , focus
- A pseudo-class always consists of a "colon" (:) followed by the name of the pseudo-class and optionally by a value between parentheses.

selector:pseudo-class { property: value; }

- Types of pseudo classes:
 - Dynamic Pseudo Classes
 - Structural Pseudo Classes



Dynamic Pseudo Classes

Pseudo Classes	Description
a:link { color: blue; }	: link : applies to all unvisited links.
a:visited { text-decoration: none; }	:visited : applies to all visited links.
<pre>div:hover { color: red; }</pre>	:hover: applies when a user places cursor over the element, but does not select it.
a:active { color: gray; }	:active : applies when the element is activated or clicked.
<pre>input[type="text"]:focus { color: yellow; }</pre>	:focus : applies when the element has keyboard focus



Structural Pseudo Classes

Pseudo class	Description
:root	represents an element that is the root of the document
:nth-child()	The :nth-child(n) pseudo-class notation represents an element that has n-1 siblings before it in the document tree
:nth-last-child()	he :nth-last-child(an+b) pseudo-class notation represents an element that has an+b-1 siblings after it in the document tree, for any positive integer or zero value of n, and has a parent element
:first-child	represents an element that is the first child of some other element
:empty	represents an element that has no children at all



Demonstration

Pseudo Classes

- Dynamic Pseudo Classes
- Structural Pseudo Classes



Knowledge Check

- Choose the pseudo styling to change font color of second list item of unordered list to green.
 - 1. ul li:nth-child(second){ color: green;}
 - 2. ul li:2nd-child{color-green;}
 - ul li:nth-child(2){color:green;}
 - 4. ul~li:nth-child(2){color:green;}



Pseudo Elements

- Pseudo-elements create abstractions about the document tree beyond those specified by the document language.
- For instance, document languages do not offer mechanisms to access the first letter or first line of an element's content.
- A pseudo-element is made of two colons (::) followed by the name of the pseudo-element.

selector::pseudo-element { property: value; }



Pseudo Elements

Pseudo element	Description
<pre>p::first-line { color: #ff0000; font-variant: small-caps; }</pre>	::first-line :describes the contents of the first formatted line of an element
<pre>p::first-letter { color: #ff0000; font-size: xx-large; }</pre>	::first-letter: represents the first letter of an element, if it is not preceded by any other content (such as images or inline tables) on its line. The ::first-letter pseudo-element may be used for "initial caps" and "drop caps", which are common typographical effects.
h1::before { content: url("images/marker-left.gif"); }	:before : used to insert some content before the content of an element.
h1::after { content: url("images/marker-right.gif"); }	:after:used to insert some content after the content of an element



Demonstration

Pseudo Elements



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CSS3 Text Effects

 CSS3 introduces a range of new and updated text and typographic features.

 Provides means for creating decorative headlines and flashy effects



CSS3 Text Effects

Text-shadow: this property applies drop shadows to text

```
E { text-shadow: x y; }
E { text-shadow: x y color; }
E { text-shadow: x y blur-radius color; }
```

```
 Video provides a powerful way to
help you prove your point.

#para1
{
    /* offset-x | offset-y | blur-radius | color */
    text-shadow: 3px -3px 8px red;
}
```

Video provides a powerful way



CSS3 Text Effects

Text Colors

```
E {
-webkit-text-fill-color: color;
-webkit-text-stroke-color: color;
-webkit-text-stroke-width: length;
}
```

```
#para2
{
  font-size: xx-large;
  font-weight: bold;
  -webkit-text-fill-color: red;
  -webkit-text-stroke-color: yellow;
  -webkit-text-stroke-width: 3px;
}
```





CSS3 Text Effects

Text Overflow: Text can overflow, when it is prevented from wrapping.

```
E { text-overflow: clip; }
E { text-overflow: ellipsis; }
```

```
p {
    width: 400px;
    padding: 10px;
    overflow: hidden;
    white-space: nowrap;
    background: olive;
p.clipped {
    text-overflow: clip;
  p.ellipses {
    text-overflow: ellipsis;
```

Clipped

Themes and styles also help keep your document coordinated. V

Ellipsis

Themes and styles also help keep your document coordinat...



CSS3 Text Effects

resize: For the elements whose contents are wider than their container, The resize
property gives users control over an element's dimensions, providing a handle with
which a user can drag the element out to a different size.

```
E { resize: keyword; }
 p {
    width: 400px;
     padding: 10px;
    overflow: hidden;
     background: olive;
     resize: both;
p.clipped {
    text-overflow: clip;
  p.ellipses {
    text-overflow: ellipsis;
```

Clipped

Themes and styles also help keep your document coordinated. V

Ellipsis

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CSS3 Text Effects

- Text Shadow
- Text Color
- Text Overflow
- Resize



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CSS3 Multiple Background images

• Unlike the previous versions, CSS3 allows multiple images to be applied to an elements background.

```
h2 {
    background-image: url('bunny.png'), url('landscape.jpg');
    background-position: 95% 85%, 50% 50%;
    packground-repeat: no-repeat;
}
```

```
h2 {
    background:
    url('bunny.png') no-repeat 95% 85%,
    url('landscape.jpg') no-repeat 50% 50%;
}
```





Background Size and Clip

- Background Size :This property allows scaling of background images
 - E { background-size: width height; }
 - To resize a background image to be 100px wide and 200px high,
 - div { background-size: 100px 200px; }
- Background Clip: Sets the section of the box model that becomes the limit of where the background (either color or image) is displayed

```
{ background-clip: border-box; }
  { background-clip: padding-box; }
  { background-clip: content-box; }
```

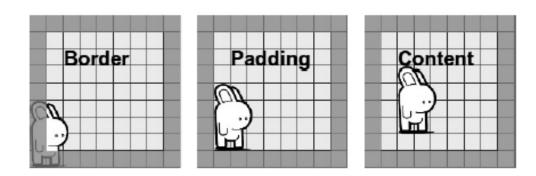




Background Origin

 The background-origin property can be used to specify the positioning area of the background images. It can take the same values as background-clip property: border-box, padding-box, content-box.

```
{ background: url('bunny.png') no-repeat 0 100%;}
{ background-origin: border-box; }
{ background-origin: content-box; }
{ background-origin: padding-box; }
```





CSS3 Background

- Multiple Background
- Background Clip
- Background Origin



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CSS3 Border

border-radius: this property can be used to create rounded corners.

```
E { border-radius: value;}
```

```
.box {
width: 300px;
height: 150px;
background:gray;
border: 2px solid red;
border-radius: 20px;
}
```

Save time in Word with new buttons that show up where you need them. To change the way a picture fits in your document, click it and a button for layout options appears next to it.

When you work on a table, click where you want to add a row or a column, and then click the plus sign.



CSS3 Border

border-image: this property allows to specify image as element border.

E { border-image: source width repeat;}

```
.box2
{
width: 300px;
height: 150px;
border: 15px solid transparent;
border-image: url("solidback.jpg") 30 repeat;
}
```

Save time in Word with new buttons that show up where you need them. To change the way a picture fits in your document, click it and a button for layout options appears next to it. When you work on a table, click where you want to add a row or a column, and then click the plus sign.



CSS3 Box Shadow

box-shadow: this property can be used to add shadow to the element's boxes.

E{box-shadow:.offset-x | offset-y | blur-radius | spread-radius | color;}

```
.box1
{
border:10px;
border-style: solid;
box-shadow:2px 2px 4px 3px red;
width:200px;
}
```

Save time in Word with new buttons that show up where you need them. To change the way a picture fits in your document, click it and a button for layout options appears next to it. When you work on a table, click where you want to add a row or a column, and then click the plus sign.



CSS3 Text Shadow

• text-shadow: this property can be used to apply the shadow effects on text.

E{text-shadow: hshadow vshadow blurradius color;}

```
.box2
{
text-shadow: 5px 5px 10px darkgreen;
width: 300px;}
```

Save time in Word with new buttons that show up where you need them. To change the way a picture fits in your document, click it and a button for layout options appears next to it. When you work on a table, click where you want to add a row or a column, and then click the plus sign.



CSS3 Border and Box Shadow

- Border
- Box Shadow



Knowledge Check

- Choose the property to apply rounded border:
 - 1. border-rounded
 - 2. border-roundstyle
 - 3. border-radius
 - 4. border-roundradius



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CSS3 Color

Opacity is the level of objects resistance to light.

```
E { opacity: number; }
```

 The number value is a decimal fraction—i.e., a number between 0.0 and 1.0, where 0.0 is fully transparent, 1.0 is fully opaque, and any value between those two is a blend of opacity and transparency.

```
.container
{
  background-color: red;
  width: 200px;
  height: 300px;
  margin-bottom: 10px;
}
.container:hover
{
  opacity: 0.5;
}
```

Themes and styles also help keep your document coordinated. When you click Design and choose a new Theme, the pictures, charts, and SmartArt graphics change to match your new theme. When you apply styles, your headings change to match the new theme.



CSS3 Color

- Colors can be defined in the RGBA model (red-green-blue-alpha) using the rgba().
- alpha parameter accepts a value from 0.0 (fully transparent) to 1.0 (fully opaque).

```
.alpha
{
 border: 2px;
 border-style: solid;
 background-color:rgba(120,180,150,0.5);
 width: 200px;
}
```

Themes and styles also help keep your document coordinated. When you click Design and choose a new Theme, the pictures, charts, and SmartArt graphics change to match your new theme. When you apply styles, your headings change to match the new theme.



CSS3 Color

- Colors also can be defined the HSL model (hue-saturation-lightness) using the hsl().
 - Hue is represented as an angle (from 0 to 360) of the color wheel or circle
 - Saturation and lightness are represented as percentages.(100% saturation means full color,
 - and 0% is a shade of gray.)
 - 100% lightness is white, 0% lightness is black, and 50%lightness is normal.
- Colors can be defined in the HSLA model (hue-saturation-lightness-alpha) using the hsla().

```
.container1
{
background-color: hsl(0, 100%, 90%);
}
.container2
{
background-color: hsla(0, 100%, 90%,0.5);
}
```

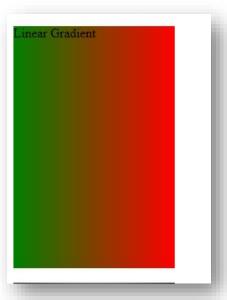




Gradient

- gradient is a gradual transition between a range of (at least two) colors.
- Linear Gradient :
 - A linear gradient is one that gradually transitions between colors along the full length of the line.
 - E { background-image:startpoint or angle , from-color, to-color}

```
.container1
{
  background-image: linear-gradient(-
  90deg,red,green);
  OR
  background-image: linear-gradient(to
  left,red,green);
}
```





Radical Gradient

- A radial gradient is the gradual transition between colors, radiating from a central point in all directions.
- E { background-image: radial-gradient(from-stop,to-stop); }

background-image:radial-gradient(white, black);





CSS3 Color

- Opacity
- -HSL and HSLA
- -Linear and Radical Gradient



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Media Queries

- Provides the ability to apply different styles based on the output device types
- A media query consists of a media type and at least one expression that limits the style sheets' scope by using media features, such as width, height, and color.
- Media queries, added in CSS3, lets the presentation of content be tailored to a specific range of output devices without having to change the content itself.



Media Queries

- Media Queries extend the media types by providing a query syntax that allows serving styles far more specifically to user's device.
- Using media rule

```
@media media and (feature:value) { rules }
```

Width and height: width indicates the current width of the browser

```
@media media and (max-width:480px) { rules }
@media media and (min-width:640px) { rules }
```



Media Queries

- Device width and height:
 - describes the width of the *device* that is rendering the page.
- Orientation:
 - optimize your pages for either horizontal or vertical viewing.

```
media media and (orientation:value) { rules }
```

```
/* Mobile phones (portrait and landscape) ------ */
@media screen and (max-width: 767px){
    .container {
        width: 100%;
        padding: 0 10px;
    }
}
```

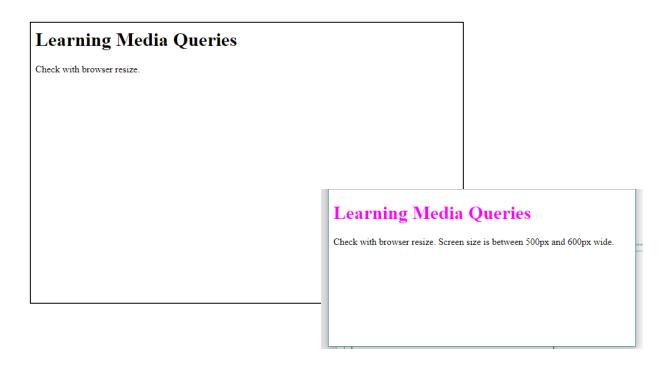


Media Types

Media Type	Description
all	Used for all media type devices
aural	Used for speech and sound synthesizers
braille	Used for braille tactile feedback devices
embossed	Used for paged braille printers
handheld	Used for small or handheld devices
print	Used for printers
projection	Used for projected presentations, like slides
screen	Used for computer screens
tty	Used for media using a fixed-pitch character grid, like teletypes and terminals
tv	Used for television-type devices



Media Queries





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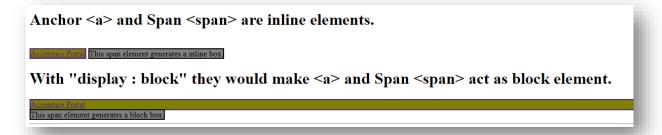
Display Property

• Display property of an element overrides the box's types generated by an element.

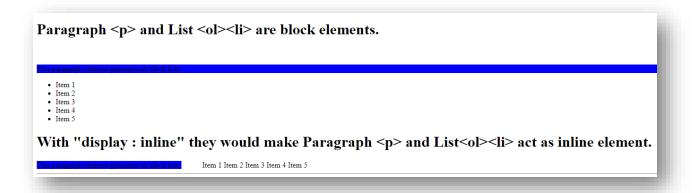
Value	Description
block	It forces an element to behave as a block level element.
inline	It forces an element to behave as an inline element.
inline-block	It forces an element to generate block box followed by surrounding content.



- Display property.
 - Inline to Block



Block to Inline



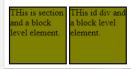


Inline-block

Section <section> and div <div> are block elements.



With "display: inline-block" causes an element to generate a block box that will be flowed with surrounding content i.e. in the same line as adjacent content.





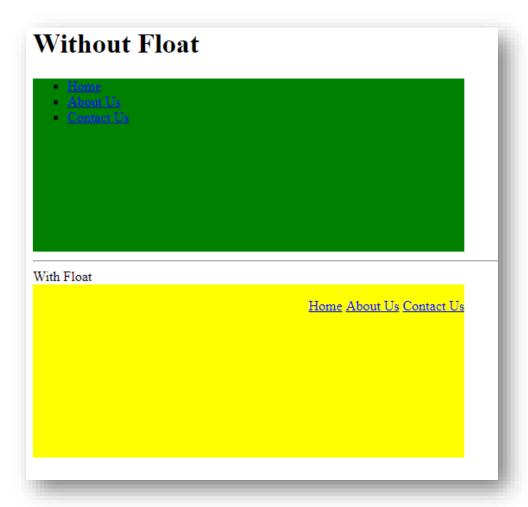
Float Property

• Float property of an element specifies if the box of an element should float or not.

Value	Description
left	The element floats on the left side of its containing block.
right	The element floats on the right side of its containing block.
none	Removes the float property from an element.



• Float property





Position Property

 Position property defines how the element has to be position in a document.

Value	Description
static	The element is positioned according to document flow. By default all html elements are static positioned.
relative	The element positioned relatively according to top or bottom or left or right property values specified.
absolute	It is positioned relatively with offset values specified for top, right, bottom and left.



Position property

Video provides a powerful way to help you prove your point. When you click Online Video, you can paste in the embed code for the video you want to add. You can also type a keyword to search online for the video that best fits your document. To make your document look professionally produced, Word provides header, footer, cover page, and text box designs that complement each other. For example, you can add a matching cover page, header, and sidebar. Click Insent and then choose the elements you want from the different galleries. Themes and styles also help keep your document coordinated. When you click Design and choose a new Theme, the pictures, charts, and SmartArt graphics change to match your new theme. When you apply styles, your headings change to match the new theme. Save time in Word with new buttons that show up where you need them.

21486987682070657266617266616e53652e2044656c8976657265642e2[48696768207065726661726d616e63652e2044656c8976657265642e2[48696768207065726661726d616e3652e2044656c8976657265642e2[48696768207065726564]

To change the way a picture fits in your document, click it and a button for layout options appears next to it. When you work on a table, click where you want to add a row or a column, and then click the plus sign. Reading is easier, too, in the new Reading view. You can collapse parts of the document and focus on the text you want. If you need to stop reading before you reach the end, Word remembers where you left off - even on another device. Video provides a powerful way to help you prove your point. When you click Online Video, you can paste in the embed code for the video you want to add. You can also type a keyword to search online for the video that best fits your document. To make your document look professionally produced, Word provides header, footer, cover page, and text box designs that complement each other. For example, you can add a matching cover page, header, and sidebar.

Click Insert and then choose the elements you want from the different galleries. Themes and styles also help keep your document coordinated. When you click Design and choose a new Theme, the pictures, charts, and SmartArt graphics change to match your new theme. When you apply styles, your headings change to match the new theme. Save time in Word with new buttons that show up where you need them. To change the way a picture fits in your document, click it and a button for layout options appears next to it. When you work on a table, click where you want to add a row or a column, and then click the plus sign. Reading is easier, too, in the new Reading view. You can collapse parts of the document and focus on the text you want. If you need to stop reading before you reach the end, Word remembers where you left off - even on another device.



Module 2 Summary

- Upon completing this module, you should now be able to:
 - Embed CSS Styles in a document
 - Work with selectors
 - Work with Pseudo Classes and Elements
 - Write CSS3 Styles
 - Text
 - Background Image
 - Border and Shadow
 - Colors
 - Make responsive content using Media Queries.
 - Work with display , float and position property.



