





# **Web Designing Overview of CSS**



#### **CSS Background**

- A Web developer always tries to create an impressive website. This is because, unless the website looks appealing, a user is not attracted towards the content of the website.
- o To create attractive websites, Web developers use background images and color gradients.
- o Prior to Hypertext Markup Language (HTML) 4, the background of a Web page was set by using the bgcolor attribute of the BODY element.
- o However, from HTML4 onwards, the background is controlled by using Cascading Style Sheet (CSS).
- CSS not only helps in setting the background of an entire Web page, but also helps in adding different colors to the various elements of the Web page.

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#### **CSS Background**

- For example, you can set the green color for the entire Web page and display the content of a paragraph in the orange base color.
- Therefore, by using different elements with different background colors, you can easily highlight various areas of a Web page, such as paragraphs and headings.
- The new version of CSS, CSS3, allows you to set the color of a background on the basis of various color specifications, such as Red Green Blue (RGB) and Hue Saturation Lightness (HSL).
- It also enables you to set the transparency level of a color that has to be displayed in the background of an element.
- Using CSS3, you can also use an image as the background of a website and specify how many times the image should be repeated.

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#### **Background of a Web Page**

- Background of a Web page is the area on which the content of the Web page, such as text, tables, border, and images, is displayed.
- A Web page should have a background that expresses the motto of the Web page.
- It is important that background should have lighter color than the text written on it, to provide the better readability.
- Similarly, while creating a Web page for entertainment, the background should preferably have vibrant color.

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#### **Background of a Web Page**

- CSS provides you various properties to set the background of a Web page. These properties are as follows.
  - background-color
  - background-image
  - background-repeat
  - background-attachment
  - background-position
  - background-clip
  - background-origin
  - background-size
  - background-quantity
  - background-spacing
  - background

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### The background-color Property

- The background-color property is used to set the color of the background area on which an element is displayed. It can be applied to almost any element.
- The background-color property takes any of the following three values:
  - Color Name
  - Hexadecimal Equivalence of the Color
  - RGB Color Value
- Eample
- h1 { background-color: #FFFFFF; }
- Apart from the preceding three values, the background-color property can also take two more values. They are transparent and inherit.

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### The background-color Property

- When the value is set to transparent, the background color of the element becomes transparent to its parent element so that the background color of the parent element is visible through it.
- It is important to note that the element does not take or inherit
  the color of the parent element; it just becomes transparent so
  that the background color of parent element is visible through it.
- Transparent is a default value, that is, if no value is set for the background-color property; it takes transparent as its default value.
- When you set the value of the background-color property to inherit, it takes or inherits the color of its immediate parent elements.

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#### **Background color**

```
<!DOCTYPE HTML>
<HTML>
<HEAD>

<TITLE>bgndcolor</TITLE>

</HEAD>

<BODY style="background-color:#ff0000;">

<H1 style="background-color:yellow;"> Heading</H1>

<P style="background-color:rgb(175,0,0);">hello world

</P>

</BODY>

</HTML>
```

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### The background-image Property

- The background-image property is used to set an image in the background of an element.
- It is similar to the background attribute of the body element of HTML 4.0.
- In case of the background attribute, the image could only be set for the body element; whereas, using the background-image property, you can virtually set background image for all elements.
- The background-image property is specified using two values either url, to specify the image, or more, when no image is used.
- Some examples of using the background-image property are given in the following code fragment.

```
body { background-image: url("picture.jpg"); }
p { background-image: none; } //no image for p tag
```

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### The background-image Property

- The picture.jpg image is located in the local server. If the image is located in a different server, you have to provide the complete path of the image in the Uniform Resource Locator (URL), as shown in the following code fragment.
- o body { background-image: url("http://ddu.ac.in/pictures/pic1.jpg"); }
- o To provide local url (image located in your pc):
- o body { background-image: url("file:///D:/Images/wallpaper/Waterfall.jpg"); }
- When you set a background image for an element, you should also specify a background color that will be used when the image is unavailable.
- If the image is available, it is placed on top of the background color, and in fact the color is visible in the transparent parts of the image.

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#### **Background Image**

```
<!DOCTYPE HTML>
<HTML>
<HEAD>

<TITLE>bgimage</TITLE>

<STYLE>

.foo1 {background-image: url(background_image.jpg);
font-size: large; color: black}

.foo2 {background-image: url(1.jpg); font-size: large;
color: white}

</STYLE>

</HEAD>

<BODY class="foo1">

<P class="foo2">
```

#### **Background Image**

demo text 12

## **Background Image**

demo text demo text

</P>

</BODY>

</HTML>

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## The background-image Property

- Here are some other properties used to decorate background image:
  - o background image repeat
  - o background image attachment
  - o background image position
  - background image origin
  - background image size
  - o background image quantity
  - background image spacing
  - o background image clip

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### The background-position Property

- The background-position property sets the position of a background image on a Web page. This property is used along with the background-image property.
- You can set the position of an image by performing any of the following tasks:
  - Representing position in pixels, as shown in the following code fragment:

```
body{background-image: url('pic.jpg');
background-position: 200px 200px;}
```

 Representing position in percentage, as shown in the following code fragment:

```
body{ background-image: url('pic.jpg');
```

o background-position: 50% 50%;}

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#### The background-position Property

 Representing position by words, such as left, right, and center, for x-axis, and top, down, and center for y-axis, as shown in the following code fragment:

```
body{ background-image: url('pic.jpg');
background-position: left bottom;}
```

 In the preceding code fragment, the position of the background image is set using the left bottom value.

#### The background-repeat Property

- The background-repeat property allows you to tile the background images along x-axis and y-axis of an element.
- Note The background-repeat property is used along with the background-image property only.
- The background-repeat property can take either of the following values:
  - o **repeat-x** Tiles an image horizontally
  - o **repeat-y** Tiles an image vertically
  - o **repeat** Tiles an image both horizontally and vertically
  - o **no-repeat** Does not tile an image

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#### The background-repeat Property

- Repeat Background Image Horizontally or Vertically
  - By default, the background-image property repeats an image both horizontally and vertically.
  - To make background image to repeat horizontally, the syntax is:

```
body {
```

```
background-image: url("bg_image.jpg");
background-repeat: repeat-x; }
```

To make background image to repeat vertically, the syntax is:

body {

```
background-image: url("bg_image.jpg");
background-repeat: repeat-y; }
```

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#### The background-repeat Property

- Background Image no-repeat
- Showing the image only once is specified by the backgroundrepeat property:

```
    body
    {
    background-image: url("bg_cloud_once.png");
    background-repeat: no-repeat;
    }
```

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#### Bg repeat position

```
<!DOCTYPE HTML>

<HEAD>

<TITLE>BgRepeatPosition</TITLE>

</HEAD>

<BODY style="background-image:
    url(photo_1.gif);background-repeat: repeat-y;">

<P style="background-image: url(people.jpg);background-position:top;background-repeat: no-repeat;">

demo text demo
```

#### Bg repeat position

text demo text d

```
</P>
</BODY>
</HTML>
```

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#### The background-attachment Property

- The background-attachment property is used to fix or scroll the background image along with the text and other content displayed on it.
- The background-attachment property takes either of the two values describes in the table given below:
  - Fixed -- If the value is set to fixed, the background image does not move with the text when the Web page is scrolled.
  - Scroll -- If the value is set to scroll, the background image scrolls along with the text written over it. The default value of the background-attachment property is scroll.
- The following code fragment shows how to use the backgroundattachment property:

```
body { background-image: url('myimage.gif');
  background-attachment: scroll; }
```

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#### **Background Attach (Fixed)**

<P style="background: red url('top\_bg.jpg');backgroundattachment:fixed;"> // attachment:scroll;

demo text demo t

#### **Background Attach**

demo text demo text

#### **Background Attach**

demo text demo text

#### **Background Attach**

demo text demo text

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#### **Background Attach**

</P>
</BODY>
</HTML>

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### The background-origin Property

- The background-origin property is used to determine the starting position of the background image in a box like shape.
- The background-origin property allows you to specify the starting point of the position of your background image.
- There are three values that can be specified with the background-origin property. These values are:
  - padding-box -- Specifies the position of the background image in relation to the outer edge of the padding or inner edge of the border. This is the default value of the background-origin property.
  - border-box -- Specifies the position of the background image in relation to the outer edge of the border.
  - content-box -- Specifies the position of the background image in relation to the outer edge of the content or inner edge of the padding.

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#### The background-size Property

- The background-size property is used to specify the size of the image that is used as a background for an element.
- You can specify the size by using any of the following values:
  - o the auto keyword
  - o the length parameter
  - the percentage parameter
- There are four different syntaxes you can use with this property: the keyword syntax ("auto", "cover" and "contain"), the one-value syntax (sets the width of the image (height becomes "auto"), the two-value syntax (first value: width of the image, second value: height), and the multiple background syntax (separated with comma).
- CSS auto Keyword : Sets the image to its original size. For example: background-size: auto;

background-size: auto auto:

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#### The background-size Property

 CSS Length Parameter: Sets an image of specified size in terms of height and width. Examples: background-size: 15px;

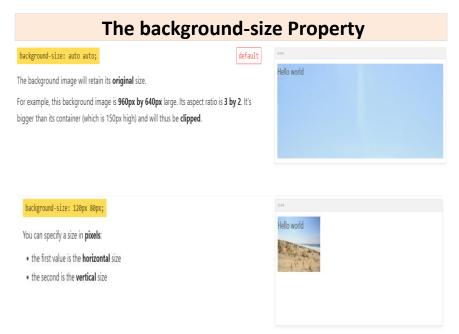
#### background-size: 50px 100px;

 CSS Percentage Parameter: Sets the size of an image with respect to the specified height and width of the area in which the image has to be displayed. Examples:

background-size: 50%;

background-size: 50% auto;

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## The background-size Property

#### background-size: 100% 50%;

You can use **percentage** values as well. Beware that this can alter the **aspect ratio** of the background image, and lead to unexpected results.



#### background-size: contain;

The keyword contain will resize the background image to make sure it remains fully visible.



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## The background-size Property

#### background-size: cover;

The keyword cover will resize the background image to make sure the element is **fully** 



#### The background-quantity Property

- The background-quantity property is used to specify the number of times to repeat an image. It takes following values:
  - o the infinite keyword
  - the integer parameter
- CSS infinite Keyword : Repeats an image infinitely. The following code fragment shows the use of the infinite keyword :

#### background-quantity: infinite;

 CSS Integer Parameter: Repeats an image the specified number of times. Negative values are not allowed. The value zero means that the image is not rendered. The value one means the image will be repeated once. The following code fragment shows the use of the integer parameter:

#### background-quantity: 5;

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#### The background-spacing Property

- The background-spacing property is used to specify the distance between the images that are repeated in the background of an element.
- It takes the value to specify the horizontal and vertical space, related to the coordinates specified by the background-position property.
- The following code fragment shows the use of the backgroundspacing property:

<body style=''background-image: url('picture.gif');</pre>

background-repeat: repeat-x;

background-spacing: 20px 50px;" >

It should be noted that if you specify a single value, this value gives the horizontal and vertical spacing both. However, if you give two values, the first value gives the horizontal spacing and the second gives the vertical spacing.

#### The background Property

- The background property is the shortcut of specifying several background properties at the same place in a style sheet.
- It can be used to specify the values for the backgroundcolor, background-image, background-repeat, backgroundattachment, background-position, and backgroundsize properties.
- Some examples of using the background property are given as follows:

```
/* Example 1 */
body { background: green }
```

Specifies that a color is defined for background

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#### The background Property

o /\* Example 2\*/

p { background: url("people.png") blue 50% repeat fixed }

- Specifies that all properties are specified individually, which includes an image, color, image size, image repetition, and its attachment
- o /\* Example 3\*/

E { background: orange url("metal.jpg")/100% auto

 Specifies that both a background color and a background image are set. In addition, the image is stretched to the full width of the element

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#### **Font Property**

- A font can be defined as a set of characters, including letters, numbers, punctuation marks, and symbols, of a certain size and style.
- The height of characters in a font is measured in points, where each point is approximately 1/72 inch.
- The width is measured in pitch, which refers to how many characters can fit in an inch.
- The pitch of a character also defines its boldness and thickness.
- Apart from fonts, you can also apply various text styles, such as italic, bold, and underline, on a document using a Cascading Style Sheet (CSS).
- These styles can be applied by setting various text properties of a document, such as text-decoration, text-shadow, text-indent, text-stroke, and text-wrap.

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Font Family		
Font Family	Description	
Serif	Refers to the font family in which the width of characters is proportional, and the characters are displayed with serifs (serifs are semi-structural details on the ends of some of the strokes). Proportional width means each letter in the text has different width according to its height. Some of the fonts that are included in this family are Times New Roman, Georgia, Palatino Linotype, Sylfaen, Garamond, Book Antiqua, Bookman Old Style, Perpetua, Rockwell, and Cambria.	
Sans- serif	Refers to the font family in which the width of characters is proportional, but does not have serifs. Some of the fonts that are included in this family are Microsoft Sans Serif, Verdana, Tahoma, Arial, Trebuchet MS, Arial Black, Lucida Sans Unicode, Franklin Gothic Medium, Arial Narrow, and Century Gothic.	
Cursive	Refers to the font family in which characters appear as human hand writing. Some of the fonts that are included in this family are Comic Sans MS, Monotype Corsiva, Bradley Hand ITC, French Script MT, Tempus Sans ITC, Mistral, Kristen ITC, Edwardian Script ITC, Maiandra GD, Blackadder ITC, and Vivaldi.	

Font Family		
Font Family	Description	
Fantasy	Refers to the font family in which characters cannot be characterized under a single rule. Some of the fonts included in this family are Impact, Haettenschweiler, Papyrus, Copperplate Gothic Light, Copperplate Gothic Bold, Curlz MT, Felix Titling, Rockwell Extra Bold, Engravers MT, Juice ITC, Jokerman, Imprint MT Shadow, Goudy Stout, Castellar, Agency FB, Perpetua Titling MT, and Cooper Black.	
Monospac e	Refers to the font family in which characters resemble the text written with a type writer. The characters are not proportional, which means, the width of each character is same. Some of the fonts of this family are Courier New, Lucida Console, OCR A Extended, Consolas, Lucida Sans Typewriter, Bitstream Vera Sans Mono, Andale Mono IPA, Andale Mono, OCRB, Monaco, and Terminal.	

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#### **Font Property**

- In Hypertext Markup Language (HTML), you can change the size, style, and family of fonts using various CSS properties.
- CSS provides the following properties to perform different tasks that can be grouped according to their functionalities related to fonts and text.
  - o font-family
  - o font-size-adjust
  - o font-stretch
  - o font-style
  - o font-variant
  - o font-weight
  - o font

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### **Font-family Property**

- The font-family property used to specify the name of a font family to apply the specified font style on the text.
- Please note that if you have specified a font family and that font family is not installed on your computer, then the Web browser displays the text in another font.
- You can specify more than one font family in the font-family property, so that, if one font is not installed on your computer then the Web browser can display the second specified font.
- The following code fragment shows an example of using the font-family property.

```
body { font-family: sans-serif; }
h1 { font-family: sans-serif, monospace; }
```

 In case, the sans-serif font family is not installed, the Web browser will display the heading in the monospace font.

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#### **Font Family**

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#### **Font Family**

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#### **Font-size Property**

- The font-size property is used to change the size of the text.
- The value of the font-size property is often specified in pixels, as shown in the following code fragment.

#### p { font-size: 12px; }

- The font size can be specified in the following three different ways.
  - Using absolute values
  - Using relative values
  - o Using a percentage value

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## **Font-size Property (Absolute value)**

- Absolute value refers to the absolute size of the font. Absolute sizes are predefined fixed sizes that cannot be changed by a user. The following font sizes are categorized under the absolute values.
  - o xx-small
  - o x-small
  - o small
  - o medium
  - large
  - x-large
  - xx-large
- The xx-small is the smallest text size, xx-large is the largest text size, and rest comes in between.
- Example: p { font-size: x-small; }

## Font-size property using absolute values

```
<!DOCTYPE HTML>
<HTML>

<HEAD>

<TITLE>fontsize</TITLE>

<STYLE>

body{ font-size:medium }

</STYLE>

</HEAD>

<BODY>

<H1>Working with Font-Size Property Using Absolute Values </H1>
<P>Following are the different font sizes based on the absolute values:</P>
```

#### Font-size property using absolute values

```
<LI><P style="font-size: xx-small">xx-small</P></LI>
<LI><P style="font-size: x-small">x-small</P></LI>
<LI><P style="font-size: small">small</P></LI>
<LI><P style="font-size: small">small</P></LI>
<LI><P style="font-size: medium">medium</P></LI>
<LI><P style="font-size: large">large</P></LI>
<LI><P style="font-size: x-large">x-large</P></LI>
<LI><P style="font-size: xx-large">xx-large</P></LI>
</BODY>
</HTMI>
```

### **Font-size Property (Relative value)**

- Relative values refer to the values that are not fixed value and are calculated on the basis of the current font values.
- Consider a case in which an element has a child element and the font size of the child element is set with a relative value, which you can increase or decrease by specifying as smaller or larger.
- The smaller value displays the child element with font size one unit smaller than the font size of the parent element and the larger value displays the child element with font size one unit larger than the font of the parent element.
- o Example: p { font-size: larger; }
- In the preceding code fragment, the font of the child element, p, is displayed one size larger that its parent element.

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#### **Font Size Relative**

```
<!DOCTYPE HTML>
<HTML>
  <HEAD>
    <TITLE>font-size</TITLE>
    <STYLE>
        body {font-size: large}
    </STYLE>
  </HEAD>
  <BODY>
     <H1>Working with Font-Size Property Using Relative
     Values </H1>
     <P>Base font value</P>
     <P style="font-size: larger">This font is larger than the base
     font</P>
     <P style="font-size: smaller">This font is smaller than the
     base font</P>
  </BODY>
                                                                51
</HTML>
```

## Font-size Property (Percentage value)

- You can also increase or decrease the font size of the text by specifying a percentage value in the font-size property.
- The percentage value is relative to the size of the parent element, which is the base value.
- For instance, if you set the percentage value for the font size to 50%, then the font size increases 50% to its current size.
- Example of the font-size property using the percentage values.

```
p { font-size: 20%; }
```

- In the preceding code fragment, the font size of the text will be increased by 20%.
- In case, you want to decrease the font size, specify the percentage in negative, such as -20%.

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## **Font-Size Percentage**

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### Font-size Property (Adjust value)

- The font-size-adjust property is used to change the aspect value of the text on a Web page.
- The aspect value is the ratio between the font height of a lowercase letter and the actual height of the font.
- This ratio is also known as the x-height.
- For example, the aspect value of the Verdana font is 0.58, which means that when the font size of 100px, the height of a character written in lowercase of Verdana font is 58 pixels.
- In case of Times New Roman font, when the font size is 100px, its x-height is 46 pixels. This means that the aspect value of the Times New Roman font is 0.46.
- You can increase or decrease the height of the font by modifying its aspect value.

o Example : p { font-size-adjust: 0.5; }

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#### **Font Size Adjust**

```
<!DOCTYPE HTML>
<HTML>
  <HEAD>
      <TITLE>font-size-adjust</TITLE>
      <STYLE>
            p { font-family: Futura; font-size: 100px;
            span { border: solid 1px;
            span.adjust { font-size-adjust: 0.5; }
      </STYLE>
 </HEAD>
 <BODY>
      <H1>Working with font-size-adjust Property </H1>
      <span>Hi</span> <span class="adjust"> Hi </span>
      </BODY>
</HTML>
                                                        55
```

#### **Font-stretch Property**

- The font-stretch property is used to change the width of a font. Using this property, you can condense or expand the width of the font by specifying the following values.
  - o ultra-condensed
  - extra-condensed
  - condensed
  - semi-condensed
  - normal
  - o semi-expanded
  - expanded
  - extra-expanded
  - o ultra-expanded
- o Example : p { font-stretch: condensed; }

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#### **Font-style Property**

- o The font-style property is used to specify the style of the font.
- The possible values of the font-style property are normal italic, and oblique.
- The following code fragment is an example of using the fontstyle property.

```
p { font-style: italic; }
```

 In the preceding code fragment, the style of the font is set to italic, which means that the text will appear in italics.

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#### **Font Style**

```
<!DOCTYPE HTML>
<HTML>
 <HEAD>
   <TITLE>font-style</TITLE>
   <STYLE>
       p{ font-size:40px;
       span.normal {
                        font-style:normal;
       span.italic { font-style:italic;
       span.oblique {
                        font-style:oblique;
   </STYLE>
  </HEAD>
  <BODY>
       <H1>Working with font-style Property </H1>
        <span class="normal">This font style is Normal</span><BR/>
        <span class="italic">This font style is Italic</span><BR/>
        <span class="oblique">This font style is Oblique</span><BR/>
  </BODY>
</HTML>
```

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#### **Font-variant Property**

- The font-variant property is used to display a font as normal or in small-caps.
- When you set the font-variant property of a font to small-caps, the font written in lower case displays in the smaller version of the uppercase letter.
- The following code fragment is an example of the font-variant property.

#### p { font-variant: small-caps; }

- In the preceding code fragment, we have specified the fontvariant property of the p element to small-caps.
- The text written in the p element displays in the smaller version of the uppercase letters.

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#### **Font-weight Property**

- The font-weight property is used to specify the weight of the font, such as the font boldness or thickness.
- Font weight is a term used to signify the extent of boldness or thickness assigned to a character, when a particular font is applied to it.
- For example, the font weight of a character written in the Cooper Black font, A, is more than the same letter, A written in the Arial font.
- Here are the list of possible values for the font-weight property.
  - lighter
  - normal
  - o bold
  - bolder
  - o numbers from 100 to 900

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## **Font-weight Property**

• The following table describes details of the numbers that are used with the font-weight property.

Values	Description
100	Represents the thin font
200	Represents the extra light (ultra light) font
300	Represents the light font
400	Represents the normal font
500	Represents the medium font
600	Represents the semi bold font
700	Represents the bold font
800	Represents the extra bold (ultra bold) font
900	Represents the black (heavy) font

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#### **Font Property**

- Instead of defining all the properties, such as font-style, font-weight, and font-size, font-family separately, you can specify the values of all these properties in the font property.
- The following is an example of using the font property.

#### p { font: bold italic 30px verdana; }

 In the preceding code fragment, we have specified the values of the font-weight, font-style, font-size, and font-family properties as bold, italics, 30px, and Verdana respectively, as the value of the font property.

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#### **Web Font Property**

- Web font is a feature that allows you to write text in fonts other than those existing in your system.
- The Web font feature is introduced in the latest version of CSS, that is CSS3.
- This feature eliminates the restriction of using the limited number of fonts that are installed on your computer.
- You can also use the fonts that are available online by specifying their Uniform Resource Locator (URL) in the style sheet.
- In CSS3, you can define the name of the desired font by using the @font-face keyword in the style sheet.

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#### **Web Font Property**

The following is the syntax for defining the Web font in your style sheet.

#### @font-face { font-family: <name> src: <source> }

 In the preceding syntax, you need to define the name of the font that you want to use in your Web page in the font-family attribute, and the address of the URL of the font in the src attribute.

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#### Web font

```
<!DOCTYPE HTML>
<HTML>
<HEAD>
<TITLE>fontsize</TITLE>
<STYLE>

@font-face{font-family: "MyFont";
src: url(sample.ttf) format("opentype"); }
body{font-family:myfont;
font-size:medium }
</STYLE>
</HEAD>
<BODY>
<H1>Working with Web font in CSS3 </H1>
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```

### Web font

```
<P>In this example we have used local font file, named sample.ttf, to use the font style.</P>
</BODY>
</HTML>
```



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