

# Internet Web Site Design

## HTML Formatting Elements

- HTML defines special elements for defining text with a special meaning.
- HTML uses elements like `<b>` and `<i>` for formatting output, like bold or italic text.
- Formatting elements were designed to display special types of text:

<code>&lt;b&gt;</code>	→	Bold text
<code>&lt;strong&gt;</code>	→	Important text
<code>&lt;i&gt;</code>	→	Italic text
<code>&lt;em&gt;</code>	→	Emphasized text
<code>&lt;mark&gt;</code>	→	Marked text
<code>&lt;small&gt;</code>	→	Small text
<code>&lt;del&gt;</code>	→	Deleted text
<code>&lt;ins&gt;</code>	→	Inserted text
<code>&lt;sub&gt;</code>	→	Subscript text
<code>&lt;sup&gt;</code>	→	Superscript text

## HTML `<b>` and `<strong>` Elements

- The HTML `<b>` element defines bold text, without any extra importance.
- The HTML `<strong>` element defines strong text, with added semantic "strong" importance.

<b>HTML Script</b>	<pre>&lt;!DOCTYPE html&gt; &lt;html&gt;   &lt;body&gt;     &lt;p&gt;This text is normal.&lt;/p&gt;     &lt;p&gt;&lt;b&gt;This text is bold.&lt;/b&gt;&lt;/p&gt;     &lt;p&gt;&lt;strong&gt;This text is strong.&lt;/strong&gt;&lt;/p&gt;   &lt;/body&gt; &lt;/html&gt;</pre>
<b>Result</b>	<p>This text is normal.</p> <p><b>This text is bold.</b></p> <p><b>This text is strong.</b></p>

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## HTML <i> and <em> Elements

- The HTML <i> element defines italic text, without any extra importance.
- The HTML <em> element defines emphasized text, with added semantic importance.

<b>HTML Script</b>	<pre>&lt;!DOCTYPE html&gt; &lt;html&gt;   &lt;body&gt;     &lt;p&gt;This text is normal.&lt;/p&gt;     &lt;p&gt;&lt;i&gt;This text is italic&lt;/i&gt;&lt;/p&gt;     &lt;p&gt;&lt;em&gt;This text is emphasized&lt;/em&gt;&lt;/p&gt;   &lt;/body&gt; &lt;/html&gt;</pre>
<b>Result</b>	<p>This text is normal.</p> <p><i>This text is italic</i></p> <p><i>This text is emphasized</i></p>

**Note:** Browsers display <strong> as <b>, and <em> as <i>. However, there is a difference in the meaning of these tags: <b> and <i> defines bold and italic text, but <strong> and <em> means that the text is "important".

## HTML <small> Element

- The HTML <small> element defines smaller text:

<b>HTML Script</b>	<pre>&lt;!DOCTYPE html&gt; &lt;html&gt;   &lt;body&gt;     &lt;h2&gt;HTML &lt;small&gt;Small&lt;/small&gt; Formatting&lt;/h2&gt;   &lt;/body&gt; &lt;/html&gt;</pre>
<b>Result</b>	<b>HTML Small Formatting</b>

## HTML <mark> Element

- The HTML <mark> element defines **marked** or **highlighted** text:

<b>HTML Script</b>	<pre>&lt;!DOCTYPE html&gt; &lt;html&gt;   &lt;body&gt;     &lt;h2&gt;HTML &lt;mark&gt;Marked&lt;/mark&gt; Formatting&lt;/h2&gt;   &lt;/body&gt; &lt;/html&gt;</pre>
<b>Result</b>	<b>HTML Marked Formatting</b>

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## HTML <del> Element

- The HTML <del> element defines deleted (removed) text.

<b>HTML Script</b>	<pre>&lt;!DOCTYPE html&gt; &lt;html&gt;   &lt;body&gt;     &lt;p&gt;My favorite color is &lt;del&gt;blue&lt;/del&gt; red.&lt;/p&gt;   &lt;/body&gt; &lt;/html&gt;</pre>
<b>Result</b>	My favorite color is <del>blue</del> red.

## HTML <ins> Element

- The HTML <ins> element defines inserted (added) text.

<b>HTML Script</b>	<pre>&lt;!DOCTYPE html&gt; &lt;html&gt;   &lt;body&gt;     &lt;p&gt;My favorite &lt;ins&gt;color&lt;/ins&gt; is red.&lt;/p&gt;   &lt;/body&gt; &lt;/html&gt;</pre>
<b>Result</b>	My favorite <u>color</u> is red.

## HTML <sub> Element

- The HTML <sub> element defines subscripted text.

<b>HTML Script</b>	<pre>&lt;!DOCTYPE html&gt; &lt;html&gt;   &lt;body&gt;     &lt;p&gt;This is &lt;sub&gt;subscripted&lt;/sub&gt; text.&lt;/p&gt;   &lt;/body&gt; &lt;/html&gt;</pre>
<b>Result</b>	This is subscripted text.

## HTML <sup> Element

- The HTML <sup> element defines superscripted text.

<b>HTML Script</b>	<pre>&lt;!DOCTYPE html&gt; &lt;html&gt;   &lt;body&gt;     &lt;p&gt;This is &lt;sup&gt;superscripted&lt;/sup&gt; text.&lt;/p&gt;   &lt;/body&gt; &lt;/html&gt;</pre>
<b>Result</b>	This is <sup>superscripted</sup> text.

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## HTML Comments

Comment tags are used to insert comments in the HTML source code.

### HTML Comment Tags

- You can add comments to your HTML source by using the following syntax:

```
<!-- Write your comments here -->
```

- Notice that there is an exclamation point (!) in the opening tag, but not in the closing tag.
- Note: Comments are not displayed by the browser, but they can help document your HTML source code.
- With comments you can place notifications and reminders in your HTML:

<b>HTML Script</b>	<pre>&lt;!DOCTYPE html&gt; &lt;html&gt;   &lt;body&gt;     &lt;!-- This is a comment --&gt;     &lt;p&gt;This is a paragraph.&lt;/p&gt;     &lt;!-- Remember to add more information here --&gt;   &lt;/body&gt; &lt;/html&gt;</pre>
<b>Result</b>	This is a paragraph.

- Comments are also great for debugging HTML, because you can comment out HTML lines of code, one at a time, to search for errors:

<b>HTML Script</b>	<pre>&lt;!DOCTYPE html&gt; &lt;html&gt;   &lt;body&gt;     &lt;!-- This is a comment     &lt;p&gt;This is a paragraph.&lt;/p&gt;     Remember to add more information here --&gt;   &lt;/body&gt; &lt;/html&gt;</pre>
<b>Result</b>	

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## HTML Colors

HTML colors are specified using predefined color names, or RGB, HEX, HSL, RGBA, HSLA values.

### 1- Color Names

- In HTML, a color can be specified by using a color name.
- HTML supports 140 standard color names.



### Background Color

- You can set the background color for HTML elements:

HTML Script	<pre>&lt;!DOCTYPE html&gt; &lt;html&gt;   &lt;body&gt;     &lt;h1 style="background-color:DodgerBlue;"&gt;Hello World&lt;/h1&gt;     &lt;p style="background-color:Tomato;"&gt;       Lorem ipsum dolor sit amet, consectetur adipiscing elit,       sed diam nonummy nibh euismod tincidunt ut laoreet dolore       magna aliquam erat volutpat. Ut wisi enim ad minim veniam,       quis nostrud exerci tation ullamcorper suscipit lobortis nisl       ut aliquip ex ea commodo consequat.&lt;/p&gt;     &lt;/body&gt;   &lt;/html&gt;</pre>
Result	<p><b>Hello World</b></p> <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.</p>

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## Text Color

- You can set the color of text:

<b>HTML Script</b>	<pre>&lt;!DOCTYPE html&gt; &lt;html&gt;   &lt;body&gt;     &lt;h3 style="color:Tomato;"&gt;Hello World&lt;/h3&gt;     &lt;p style="color:DodgerBlue;"&gt;Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.&lt;/p&gt;   &lt;/body&gt; &lt;/html&gt;</pre>
<b>Result</b>	<p><b>Hello World</b></p> <p>Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.</p>

## Border Color

- You can set the color of borders:

<b>HTML Script</b>	<pre>&lt;!DOCTYPE html&gt; &lt;html&gt;   &lt;body&gt;     &lt;h1 style="border: 2px solid Tomato;"&gt;Hello World&lt;/h1&gt;     &lt;h1 style="border: 2px dotted DodgerBlue;"&gt;Hello World&lt;/h1&gt;     &lt;h1 style="border: 2px dashed red;"&gt;Hello World&lt;/h1&gt;   &lt;/body&gt; &lt;/html&gt;</pre>
<b>Result</b>	<p><b>Hello World</b></p> <p><b>Hello World</b></p> <p><b>Hello World</b></p>

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## 2- Color Values

In HTML, colors can also be specified using RGB values, HEX values, HSL values, RGBA values, and HSLA values.

### a- RGB Value

- In HTML, a color can be specified as an RGB value, using this formula:

rgb(red, green, blue)

- Each parameter (red, green, and blue) defines the intensity of the color between 0 and 255.
- For example, rgb(255, 0, 0) is displayed as red, because red is set to its highest value (255) and the others are set to 0.
- To display the color black, all color parameters must be set to 0, like this: rgb(0, 0, 0).
- To display the color white, all color parameters must be set to 255 → rgb(255, 255, 255).

```
<!DOCTYPE html>
<html>
  <body>
    <h1 style="background-color:rgb(255, 0, 0);">rgb(255, 0, 0)</h1>
    <h1 style="background-color:rgb(0, 0, 255);">rgb(0, 0, 255)</h1>
    <h1 style="background-color:rgb(0, 255, 0);">rgb(0, 255, 0)</h1>
    <h1 style="background-color:rgb(238, 130, 238);">rgb(238, 130, 238)</h1>
    <h1 style="background-color:rgb(255, 165, 0);">rgb(255, 165, 0)</h1>
    <h1 style="background-color:rgb(106, 90, 205);">rgb(106, 90, 205)</h1>
  </body>
</html>
```

- Shades of gray are often defined using equal values for all the 3 light sources:

```
<!DOCTYPE html>
<html>
  <body>
    <h1 style="background-color:rgb(0, 0, 0);">rgb(0, 0, 0)</h1>
    <h1 style="background-color:rgb(60, 60, 60);">rgb(60, 60, 60)</h1>
    <h1 style="background-color:rgb(120, 120, 120);">rgb(120, 120, 120)</h1>
    <h1 style="background-color:rgb(180, 180, 180);">rgb(180, 180, 180)</h1>
    <h1 style="background-color:rgb(240, 240, 240);">rgb(240, 240, 240)</h1>
    <h1 style="background-color:rgb(255, 255, 255);">rgb(255, 255, 255)</h1>
  </body>
</html>
```

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## b- HEX Value

- In HTML, a color can be specified using a hexadecimal value in the form:

#rrggbb

- Where rr (red), gg (green) and bb (blue) are hexadecimal values between 00 and ff (same as decimal 0–255).
- For example, #ff0000 is displayed as red, because red is set to its highest value (ff) and the others are set to the lowest value (00).

```
<!DOCTYPE html>
<html>
  <body>
    <h1 style="background-color:#ff0000;">#ff0000</h1>
    <h1 style="background-color:#0000ff;">#0000ff</h1>
    <h1 style="background-color:#00ff00;">#00ff00</h1>
    <h1 style="background-color:#ee82ee;">#ee82ee</h1>
    <h1 style="background-color:#ffa500;">#ffa500</h1>
    <h1 style="background-color:#6a5acd;">#6a5acd</h1>
  </body>
</html>
```

- Shades of gray are often defined using equal values for all the 3 light sources:

```
<!DOCTYPE html>
<html>
  <body>
    <h1 style="background-color:#000000;">#000000</h1>
    <h1 style="background-color:#3c3c3c;">#3c3c3c</h1>
    <h1 style="background-color:#787878;">#787878</h1>
    <h1 style="background-color:#b4b4b4;">#b4b4b4</h1>
    <h1 style="background-color:#f0f0f0;">#f0f0f0</h1>
    <h1 style="background-color:#ffffff;">#ffffff</h1>
  </body>
</html>
```



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## c- HSL Value

- In HTML, a color can be specified using hue, saturation, and lightness (HSL) in the form:

hsl(hue, saturation, lightness)

- Hue is a degree on the color wheel from 0 to 360. 0 is red, 120 is green, and 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, 50% is neither light or dark, 100% is white

```
<!DOCTYPE html>
<html>
  <body>
    <h1 style="background-color:hsl(0, 100%, 50%);">hsl(0, 100%, 50%)</h1>
    <h1 style="background-color:hsl(240, 100%, 50%);">hsl(240, 100%, 50%)</h1>
    <h1 style="background-color:hsl(120, 100%, 50%);">hsl(147, 50%, 47%)</h1>
    <h1 style="background-color:hsl(300, 76%, 72%);">hsl(300, 76%, 72%)</h1>
    <h1 style="background-color:hsl(39, 100%, 50%);">hsl(39, 100%, 50%)</h1>
    <h1 style="background-color:hsl(248, 53%, 58%);">hsl(248, 53%, 58%)</h1>
  </body>
</html>
```

## Saturation

Saturation can be described as the intensity of a color. Where:

- 100% is pure color, no shades of gray
- 50% is 50% gray, but you can still see the color.
- 0% is completely gray, you can no longer see the color.

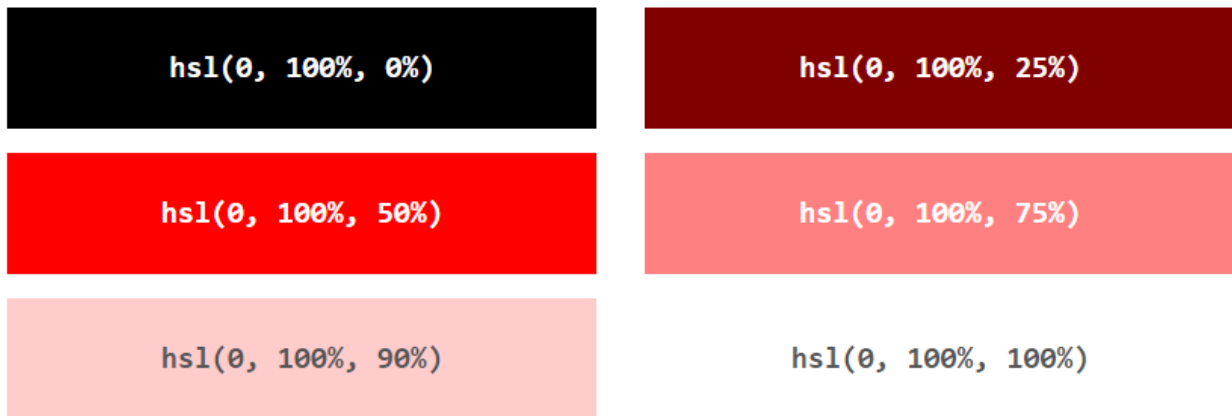


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## Lightness

The lightness of a color can be described as how much light you want to give the color. where:

- 0% means no light (black).
- 50% means 50% light (neither dark nor light)
- 100% means full lightness (white)



- Shades of gray are often defined by setting the hue and saturation to 0, and adjust the lightness from 0% to 100% to get darker/lighter shades

```
<!DOCTYPE html>  
<html>  
  <body>  
    <h1 style="background-color:hsl(0, 0%, 0%);">hsl(0, 0%, 0%)</h1>  
    <h1 style="background-color:hsl(0, 0%, 24%);">hsl(0, 0%, 24%)</h1>  
    <h1 style="background-color:hsl(0, 0%, 47%);">hsl(0, 0%, 47%)</h1>  
    <h1 style="background-color:hsl(0, 0%, 71%);">hsl(0, 0%, 71%)</h1>  
    <h1 style="background-color:hsl(0, 0%, 94%);">hsl(0, 0%, 94%)</h1>  
    <h1 style="background-color:hsl(0, 0%, 100%);">hsl(0, 0%, 100%)</h1>  
  </body>  
</html>
```



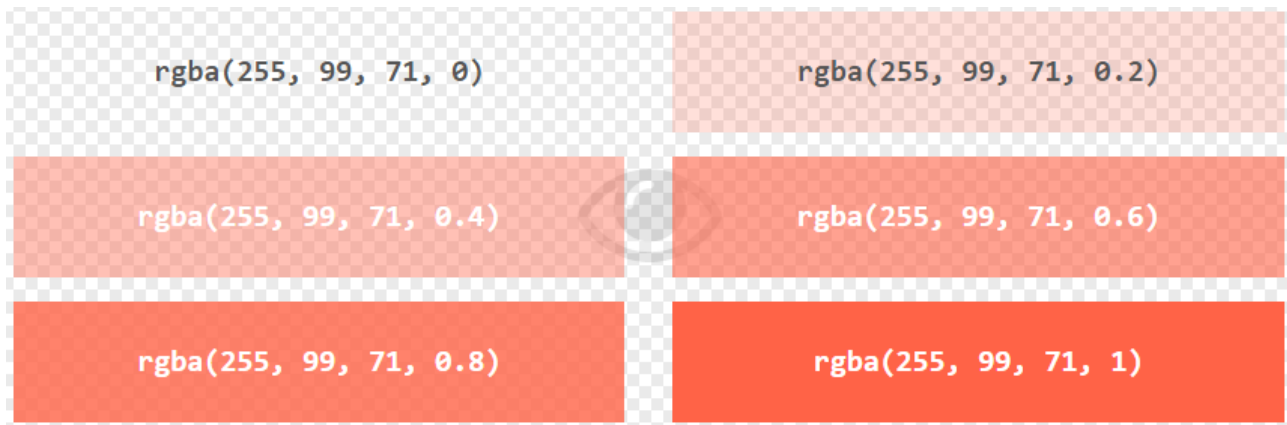
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## d- RGBA Value

- RGBA color values are an extension of RGB color values with an alpha channel – which specifies the opacity for a color.
- 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 (not transparent at all):



## HSLA Value

- HSLA color values are an extension of HSL color values with an alpha channel – which specifies the opacity for a color.
- An HSLA color value is specified with:

```
hsla(hue, saturation, lightness, alpha)
```

- The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (not transparent at all):

