# UNIT 3
# Concepts of CSS

- Cascading Style Sheet (CSS) is a language designed for describing the appearance of documents written in a markup language such as HTML.
- CSS can control the color of text, the style of fonts, the spacing between paragraphs, columns sizing and laid out, background images or colors usedand variety of other visual effects.
- A CSS file can be used by more than one HTML file for styling web pages.

## Advantages of Using CSS

- The presentation of an entire website can be centralized to a handful of documents, enabling the look of a website to be updated at amoment notice.
- Browsers support multiple alternative style sheets, a feature that allowsmore than one design of a website to be presented at the same time.
- Style sheets download quickly because web documents using CSS consumeless bandwidth.
- Users of a website can compose style sheets of their own, a feature thatmakes website more accessible.

## Creating Style Sheet

### 1. Inline CSS

- An inline style is used to apply a unique style for a single element.
- To use inline styles, add the style attribute to the relevant element. Thestyle attribute can contain any CSS property.

**Example: -**

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

<h1 style="color:blue; text-align:center;">This is a heading</h1>
<p style="color:red;">This is a paragraph.</p>

</body>
</html>
```

## 2. External CSS

- External style sheet changes the look of an entire website by changing onefile.
- Each HTML page should include a reference to the external CSS file insidethe **<link>**. Element inside the head section.

**Example: -**

```
<!DOCTYPE html>
<html>
<head>
<link rel="stylesheet" href="mystyle.css">
</head>
<body>
        <h1>This is a heading</h1>
        <p>This is a paragraph</p>
</body>
</html>
```

**mystyle.css**

```
body {
     background-color: lightblue;
}

h1 {
  color: navy; margin-
  left: 20px;
}
```

## 3. Internal CSS

- An internal style sheet is used if one single HTML page has a unique style.
- An internal style sheet is defined inside the <style> tag, inside the headsection.

**Example: -**

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background-color: linen;
}
h1 {
  color: maroon;
  margin-left: 40px;
}
</style>
</head>
<body>
       <h1>This is a heading</h1>
        <p>This is a paragraph.</p>
</body>
</html>
```

**CSS Properties**

Here are some basic CSS properties to work with.

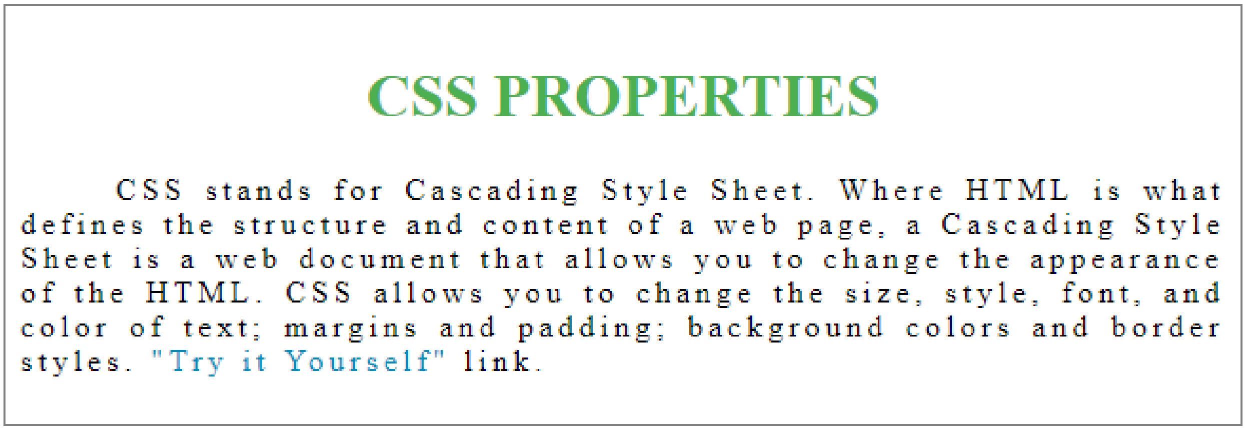
- Text Properties
- List Properties
- Border Properties
- Font Properties

## Text Properties

| **Property** | **Description** | **Values** |
|---|---|---|
| **Color** | Sets the color of a text | RGB, hex, keyword |
| **line-height** | Sets the distance between lines | normal, number, length, % |
| **letter-spacing** | Increase or decrease the spacebetween characters | normal, length |
| **text-align** | Aligns the text in an element | left, right, center, justify |
| **text-decoration** | Adds decoration to text | none, underline, overline,line-through |
| **text-indent** | Indents the first line of text in anelement | length, % |
| **text-transform** | Controls the letters in an element | none, capitalize, uppercase, lowercase |

```
<!DOCTYPE html>
<html>
<head>
<style>
div {
  border: 1px solid gray;
  padding: 8px;
  }
    h1 {
        text-align: center;
        text-transform: uppercase;
        color: #4CAF50;
        }
    p {
        text-indent: 50px;
        text-align: justify;
        letter-spacing: 3px;
      }
    a {
        text-decoration: none;
        color: #008CBA;
    }
    </style>
    </head>
     <body>
    <div>
    <h1>text formatting</h1>
    <p>CSS stands for Cascading Style Sheet. Where HTML is what defines the structure and content of a
    web page, a Cascading Style Sheet is a web documentthat allows you to change the appearance of the
    HTML.
    CSS allows you to change the size, style, font, and color of text; margins andpadding; background
    colors and border styles.
    <a target="_blank" href="https://www.google.com">"Visit Google "</a>link. </p>
    </div>
    </body>
    </html>
```

**Output**



CSS PROPERTIES

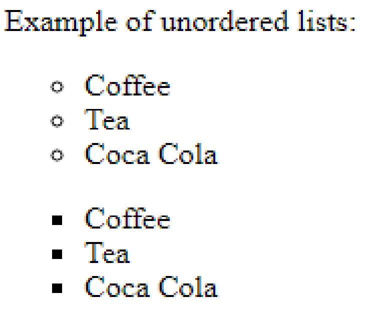
CSS stands for Cascading Style Sheet. Where HTML is what defines the structure and content of a web page, a Cascading Style Sheet is a web document that allows you to change the appearance of the HTML. CSS allows you to change the size, style, font, and color of text; margins and padding; background colors and border styles. "Try it Yourself" link.

## List Properties

| **Property** | **Description** | **Values** |
|---|---|---|
| list-style | Sets all the properties for a list in one declaration | list-style-type, list-style-position, inherit |
| list-style-position | Specifies where to place the list-item marker | inside, outside, inherit |
| list-style-type | Specifies the type of list-itemmarker | none, disc, circle, square |

```
<!DOCTYPE html>
<html>
<head>
<style>
ul.a {
  list-style-type: circle;
}

ul.b {
  list-style-type: square;
}
</style>
</head>
<body>

<p>Example of unordered lists:</p>
<ul class="a">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Coca Cola</li>
</ul>

<ul class="b">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Coca Cola</li>
</ul>
</body>
</html>
```

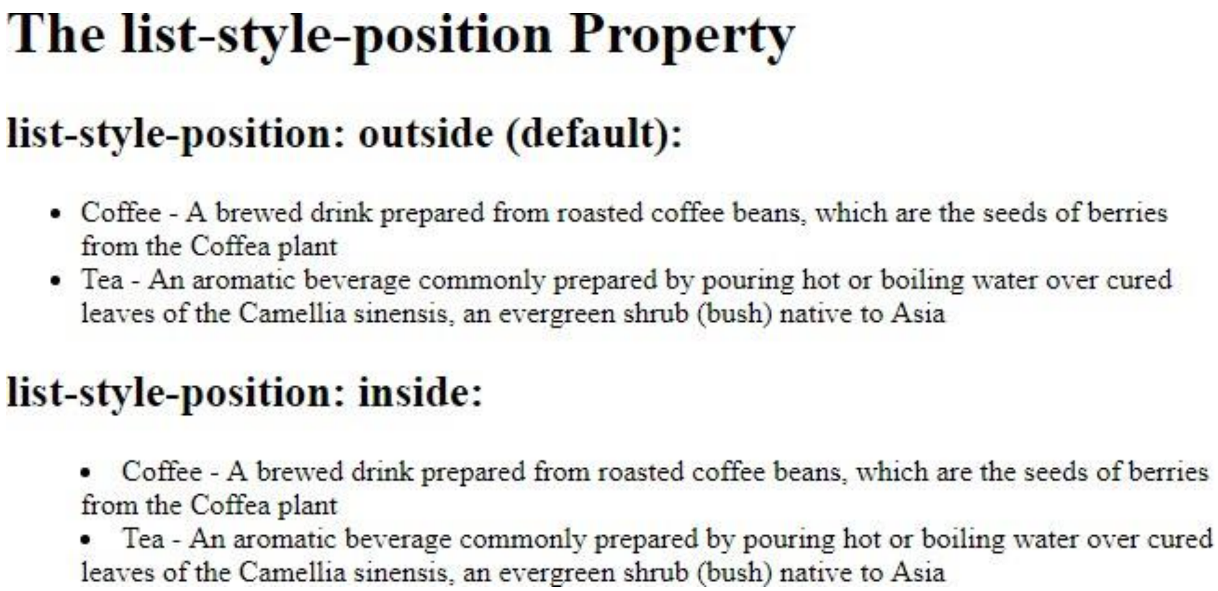
**Output: -**



```
Example of unordered lists:

    ○ Coffee
    ○ Tea
    ○ Coca Cola

    ■ Coffee
    ■ Tea
    ■ Coca Cola
```

```
<!DOCTYPE html>
<html>
<head>
<style>
ul.a {
  list-style-position: outside;
}

ul.b {
  list-style-position: inside;
}
</style>
</head>
<body>

<h1>The list-style-position Property</h1>

<h2>list-style-position: outside (default):</h2>
<ul class="a">
  <li>Coffee - A brewed drink prepared from roasted coffee beans, which are theseeds of berries from the
Coffea plant</li>
  <li>Tea - An aromatic beverage commonly prepared by pouring hot or boiling water over cured leaves
of the Camellia sinensis, an evergreen shrub (bush) nativeto Asia</li>
</ul>

<h2>list-style-position: inside:</h2>
<ul class="b">
  <li>Coffee - A brewed drink prepared from roasted coffee beans, which are theseeds of berries from
the Coffea plant</li>
  <li>Tea - An aromatic beverage commonly prepared by pouring hot or boiling water over cured leaves
of the Camellia sinensis, an evergreen shrub (bush) nativeto Asia</li>
</ul>

</body>
</html>
```

**<u>Output</u>: -**



# The list-style-position Property

## list-style-position: outside (default):

- Coffee - A brewed drink prepared from roasted coffee beans, which are the seeds of berries from the Coffea plant
- Tea - An aromatic beverage commonly prepared by pouring hot or boiling water over cured leaves of the Camellia sinensis, an evergreen shrub (bush) native to Asia

## list-style-position: inside:

- Coffee - A brewed drink prepared from roasted coffee beans, which are the seeds of berries from the Coffea plant
- Tea - An aromatic beverage commonly prepared by pouring hot or boiling water over cured leaves of the Camellia sinensis, an evergreen shrub (bush) native to Asia

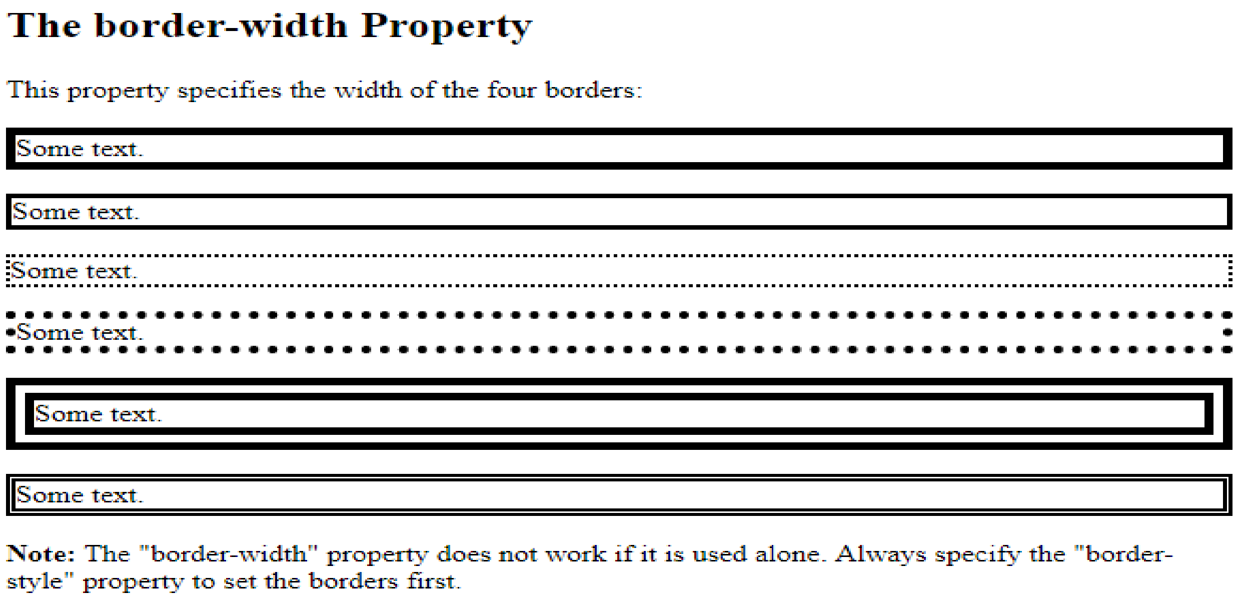
**Border Properties**

| **<u>Property</u>** | **<u>Description</u>** | **<u>Values</u>** |
|---|---|---|
| border | Sets all the border properties in one declaration (Short Hand Method) | border-width, border-style, border-color |
| border-bottom | Sets all the bottom border properties inone declaration | border-bottom-width, border-bottom-style, border-bottom-color |
| border- bottom-color | Sets the color of the bottom border | border-color |
| border- | Sets the style of the | border-style |
| border- bottom-width | Sets the width of the bottom border | border-width |
| border-color | Sets the color of thefour borders | Color name |
| border-left | Sets all the left border properties in one declaration | border-left-width, border-left-style,border-left-color |

| | | |
|---|---|---|
| border-left-color | Sets the color of theleft border | border-color |
| border-left-style | Sets the style of theleft border | border-style |
| border-left-width | Sets the width of theleft border | border-width |
| border-right | Sets all the right border properties inone declaration | border-right-width, border-right-style,border-right-color |
| border-right-color | Sets the color of theright border | border-color |
| border-right-style | Sets the style of theright border | border-style |
| border-right-width | Sets the width of theright border | border-width |
| border-style | Sets the style of thefour borders | none, hidden, dotted, dashed, solid, double, groove, ridge, inset, outset,inherit |
| border-width | Sets the width of thefour borders | thin, medium, thick, length, inherit |

```
<!DOCTYPE html>
<html>
<head>
<style>
p.one {
  border-style: solid;
  border-width: 5px;
}

p.two {
  border-style: solid; border-
  width: medium;
}

p.three {
  border-style: dotted;
  border-width: 2px;
}

p.four {
  border-style: dotted;
  border-width: thick;
}

p.five {
  border-style: double;
  border-width: 15px;
}

p.six {
  border-style: double;
  border-width: thick;
}
</style>
</head>
<body>

<h2>The border-width Property</h2>
<p>This property specifies the width of the four borders:</p>

<p class="one">Some text.</p>
<p class="two">Some text.</p>
<p class="three">Some text.</p>
<p class="four">Some text.</p>
<p class="five">Some text.</p>
<p class="six">Some text.</p>

<p><b>Note:</b> The "border-width" property does not work if it is used alone.Always specify the
"border-style" property to set the borders first.</p>
</body>
</html
```

**Output**: -



The border-width Property

This property specifies the width of the four borders:

Some text.

Some text.

Some text.

Some text.

Some text.

Some text.

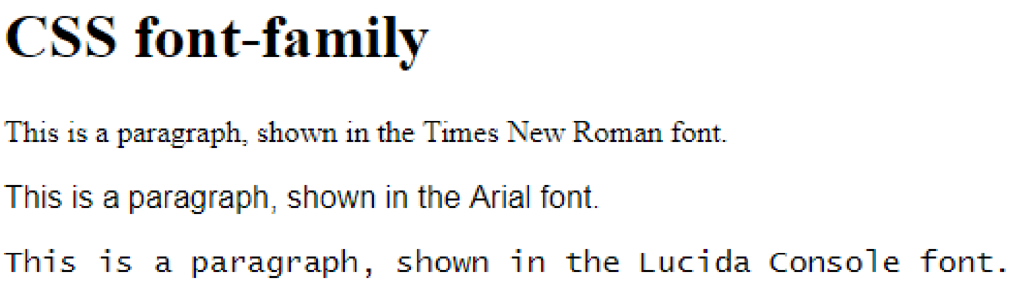
**Note:** The "border-width" property does not work if it is used alone. Always specify the "border-style" property to set the borders first.

### Font Properties

| **Property** | **Description** | **Values** |
|---|---|---|
| font | Sets all the font properties in one declaration | font-style, font-variant, font-weight, font- size/line-height, font-family, caption, icon, menu, message-box, small-caption, status-bar, inherit |
| font-family | Specifies the font family for text | family-name, generic-family, inherit |
| font-size | Specifies the font size oftext | xx-small, x-small, small, medium, large, x-large, xx-large, smaller, larger, length,<br>%, inherit |
| font-style | Specifies the font stylefor text | normal, italic, oblique, inherit |
| font-variant | Specifies whether or nota text should be displayed in a small-capsfont | normal, small-caps, inherit |
| font-weight | Specifies the weight of afont | normal, bold, bolder, lighter,<br>100, 200, 300, 400, 500, 600, 700, 800,<br>900, inherit<br>**Careful, many of these are not supported!** |

```
<!DOCTYPE html>
<html>
<head>
<style>
.serif {
  font-family: "Times New Roman", Times, serif;
}

.sansserif {
  font-family: Arial, Helvetica, sans-serif;
}

.monospace {
  font-family: "Lucida Console", Courier, monospace;
}
</style>
</head>
<body>

<h1>CSS font-family</h1>
<p class="serif">This is a paragraph, shown in the Times New Roman font.</p>
<p class="sansserif">This is a paragraph, shown in the Arial font.</p>
<p class="monospace">This is a paragraph, shown in the Lucida Console font.</p>

</body>
</html>
```

**<u>Output</u>: -**



# CSS font-family

This is a paragraph, shown in the Times New Roman font.

This is a paragraph, shown in the Arial font.

This is a paragraph, shown in the Lucida Console font.

## CSS Styling(Background, Text Format, Controlling Fonts)

### BACKGROUND

- Background of a web page is the area on which the content of the webpage, such as text, tables, border and images is displayed.
- A web page should have a background that expresses the motto of the webpage.
- The CSS provides various properties to set the background of a web page.These properties areas follow:

1. **background-color**
   - The background-color property is used to set the color of theBackground area on which an element is displayed.
   - It can take any of the three values:
     a) Color name
     b) Hexadecimal equivalent
     c) RGB color values

2. **background-image**
   - This property is used to set an image in the background of anelement.
   - This property can virtually set background image for allelements.

3. **background-repeat**
   - This property allows us to tile the background images along x-axis and y-axis of an element.
   - This property is used along with the background-imageproperty only.
   - It can take following values:
     a) repeat-x-Repeat image horizontally
     b) repeat-y-Repeat image vertically
     c) repeat –Repeat image both horizontally and vertically
     d) no-repeat-Does not repeat an image

4. **background-attachment**
   - This property is used to fix or scroll the background imagealong with the text and other content displayed on it.
   - This property takes either of the two values: fixed or scroll
   - Fixed: the background image does not move with the textwhen the page is scrolled.
   - Scroll: the background image scrolls along with the text writtenon it.

5. **background-position**
   - This property sets the position of a background image on aweb page.

6. **background-clip**
   - This property determines whether the background imageextends into the border or not.
   - It takes either the border-box or padding-box value.
   - When we use the border-box value, the background image extends to the border value of the background-clip property.

7. **background-origin**
   - This property is used to determine the starting position of thebackground image in a box like shape.
   - This property allows to specify the starting point of theposition of the background image.

8. **background-size**
   - This property is used to specify the size of the image that isused as a background for an element.

9. **background-quantity**
   - This property is used to specify the number of times to repeatan image.

10. **background-spacing**
    - This property is used to specify the distance between the images that are repeated in the background of an element.

11. **background**
    - This property is the shortcut of specifying several backgroundproperties at the same place in a style sheet.
    - It can be used to specify the values for the background-color, background-image, background-repeat, background- attachment, background-position, background-size properties.

## TEXT FORMATTING

### Applying CSS to TEXT

1. **Color :** Specifies the color of the text in a web page. The value of the color property can be name of the color or the hex code for the color.
2. **letter-spacing:** The letter-spacing property increases or decreases thespace between characters in a text.
3. **line-height:** The line-height property specifies the height of a line.
4. **text-align-last:** Align the last line of text.
5. **text-outline:** Provides a outline on the text.

## FONTS

Fonts represent the style and size of the text that is displayed in a web browser. Apart from imparting a visual appeal to the content fonts are alsoused to help users to discriminate between different types of information. The fonts are categorized under different font families as follows:

1. **Serif**
2. **Sans-serif**
3. **Cursive**
4. **Fantasy**
5. **Monospace**

## FONT PROPERTIES

1. **font-family**
   - This property is used to specify the name of a font family to applythe specified font style on the text.
   - We can specify more than one font family so that, if one font is not installed on the computer then we browser can display the secondspecified font.

2. **font-size**
   - This property is used to change the size of the text.
   - It can have the following values:
     a) Absolute value
     b) Relative value
     c) Percentage value

3. **font-size-adjust**
   - This property is used to change the aspect value of the text on aweb page.
   - The aspect value is the ratio between the font height of alowercase letter and the actual height of the font.
4. **font-stretch**
   - This property is used to change the width of a font.
   - Using this property, we can condense or expand the width of thefont byte specifying the values.
5. **font-style**
   - This property is used to specify the style of the font.
   - The possible values of the font style property are normal, italicand oblique.
6. **font-variant**
   - This property is used to display a font as normal or in small-caps.
   - This property is used to display a font as normal or in small-caps. When we set the font-variant property of a font to small-caps, thefont written in lowercase displays in the smaller version of the uppercase letter.

**7. font-weight**

- This property is used to specify the weight of the font, such as thefont boldness or thickness.
- Font weight is a term used to signify the extent of boldness orthickness assigned to a character.

**8. font**

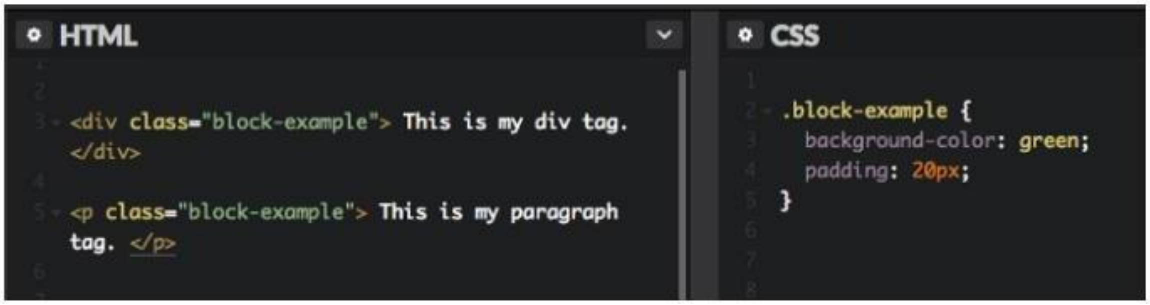
- Instead of defining all the properties, such as font-style and font- weight separately, we can specify the value of all these propertiesin the font property.

## WORKING WITH BLOCK ELEMENTS AND OBJECTS

### BLOCK ELEMENTS

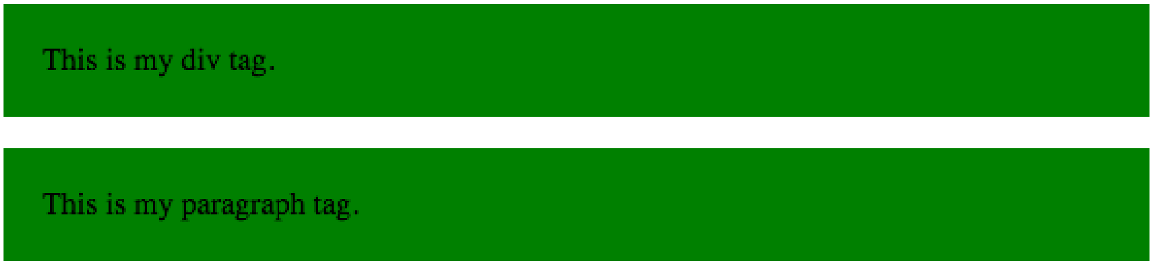
- A block element always starts on a new line, and fills up the horizontal space left and right on the web page. You can add margins and padding on all four sides of any block element — top,right, left, and bottom.

- Some examples of block elements are <div> and <p> tags. As shown below, I've also added green padding on all four sides ofeach block element.



```html
<div class="block-example"> This is my div tag.
</div>

<p class="block-example"> This is my paragraph
tag. </p>
```

```css
.block-example {
  background-color: green;
  padding: 20px;
}
```



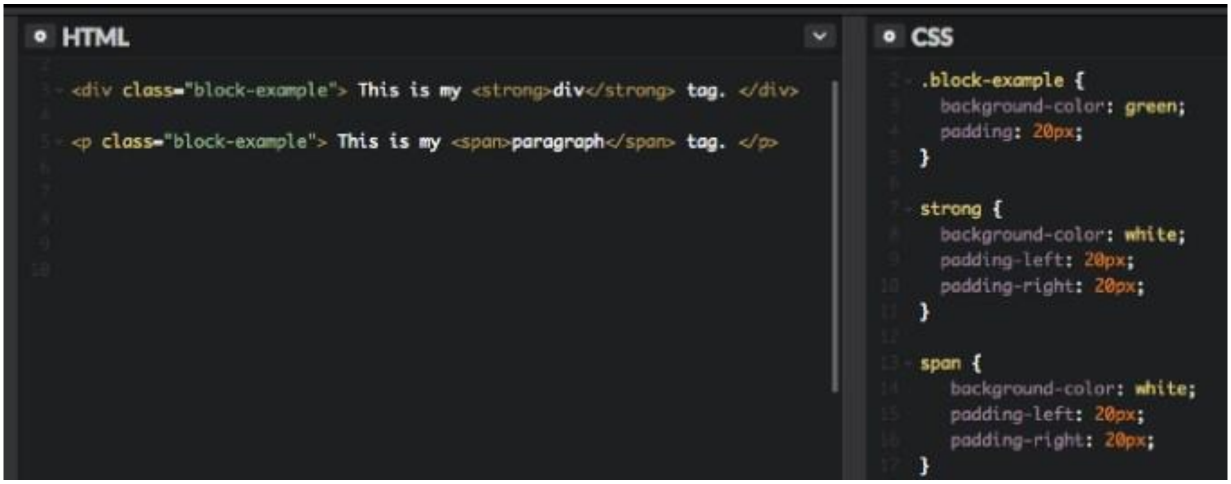
This is my div tag.

This is my paragraph tag.

## Inline Elements

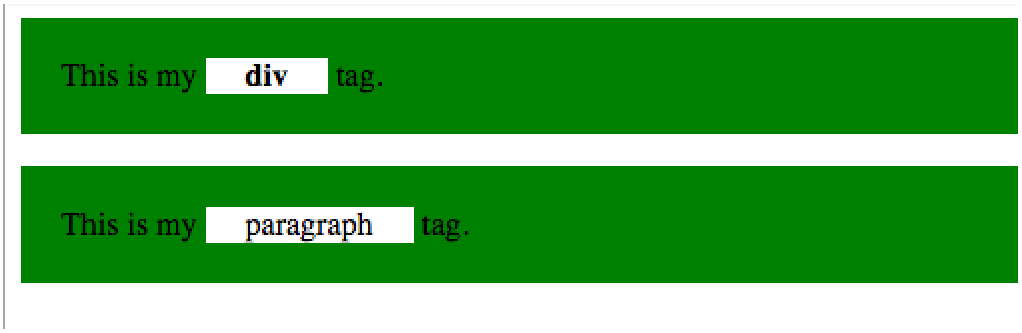
- Inline elements don’t start on a new line, they appear on the same line asthe content and tags beside them. Some examples of inline elements

  are <span> , <strong>, and <img> tags.
- When it comes to margins and padding, browsers treat inline elements differently. You can add space to the left and right on an inline element, butyou cannot add height to the top or bottom padding or margin of an inline element.
- Inline elements can actually appear within block elements, as shown below.Added white padding on the left and right side of each inline element.



```html
<div class="block-example"> This is my <strong>div</strong> tag. </div>

<p class="block-example"> This is my <span>paragraph</span> tag. </p>
```

```css
.block-example {
  background-color: green;
  padding: 20px;
}

strong {
  background-color: white;
  padding-left: 20px;
  padding-right: 20px;
}

span {
  background-color: white;
  padding-left: 20px;
  padding-right: 20px;
}
```



This is my **div** tag.

This is my paragraph tag.

# LIST AND TABLES

## Properties of List

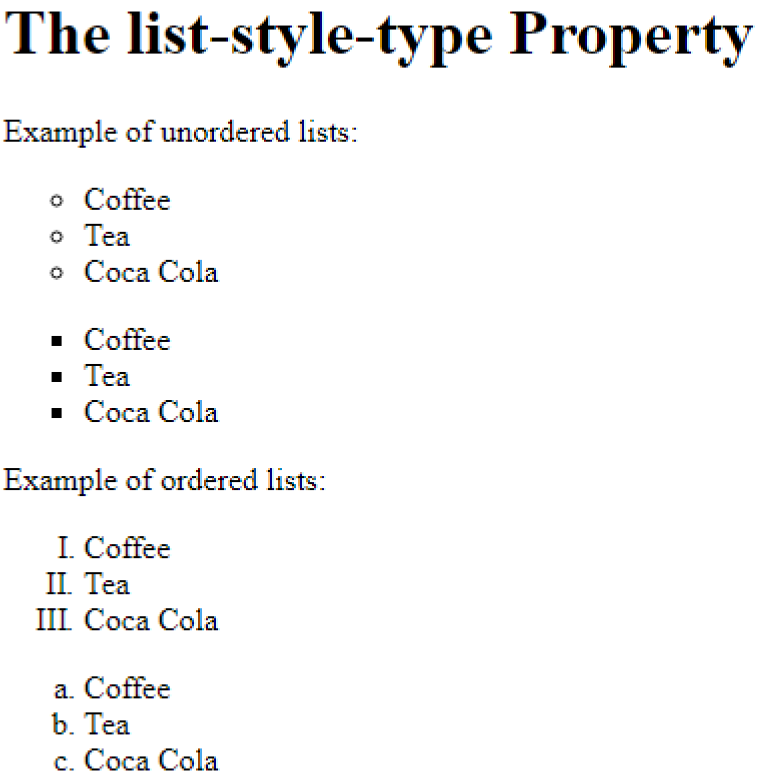
### 1. list-style-type properties

The list-style-type property is used to modify the default appearance of listmarkers in HTML list structure.

```
<!DOCTYPE html>
<html>
<head>
<style>
ul.a {list-style-type: circle;}
ul.b {list-style-type: square;}
ol.c {list-style-type: upper-roman;}
ol.d {list-style-type: lower-alpha;}
</style>
</head>
<body>
<h1>The list-style-type Property</h1>
<p>Example of unordered lists:</p>
<ul class="a">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Coca Cola</li>
</ul>
<ul class="b">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Coca Cola</li>
</ul>
```

```
<p>Example of ordered lists:</p>

<ol class="c">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Coca Cola</li>
</ol>

<ol class="d">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Coca Cola</li>
</ol>

</body>
</html>
```

**<u>Output</u>: -**



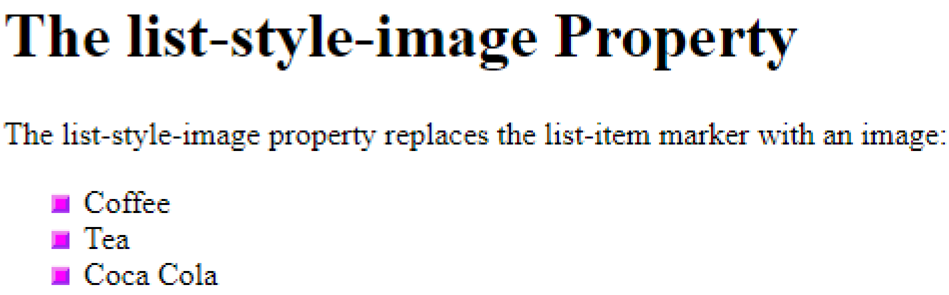
```
The list-style-type Property

Example of unordered lists:

   ○ Coffee
   ○ Tea
   ○ Coca Cola

   ■ Coffee
   ■ Tea
   ■ Coca Cola

Example of ordered lists:

    I. Coffee
   II. Tea
  III. Coca Cola

    a. Coffee
    b. Tea
    c. Coca Cola
```

### 2. list-style-image property

- In CSS, we can use an image as a list item marker. The image used as alist item marker should be smaller in size than the size of the list item.
- An image can be used as a list item marker for both ordered andunordered list.

```
<!DOCTYPE html>
<html>
<head>
<style>ul
{
  list-style-image: url('sqpurple.gif');
}
</style>
</head>
<body>

<h1>The list-style-image Property</h1>

<p>The list-style-image property replaces the list-item marker with an image:</p>
<ul>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Coca Cola</li>
</ul>
</body>
</html>
```

**<u>Output</u>: -**



# The list-style-image Property

The list-style-image property replaces the list-item marker with an image:

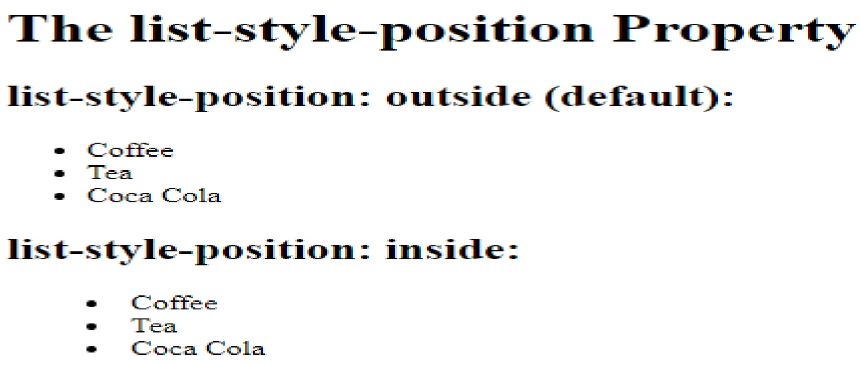
- Coffee
- Tea
- Coca Cola

### 3. list-style-position property

- The list-style-position property is used to specify the position of a listitem marker in a list. The property takes inside or outside values.
- The inside value means indents the marker in the inside direction witcontext to the other elements of the HTML document.
- The outside value displays the marker to the outside or left of the listitem. The default value of the list-style-position property is outside.

```
<!DOCTYPE html>
<html>
<head>
<style>
ul.a {
  list-style-position: outside;
}

ul.b {
  list-style-position: inside;
}
</style>
</head>
<body>

<h1>The list-style-position Property</h1>

<h2>list-style-position: outside (default):</h2>
<ul class="a">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Coca Cola</li>
</ul>

<h2>list-style-position: inside:</h2>
<ul class="b">
  <li>Coffee</li>
  <li>Tea</li>
  <li>Coca Cola</li>
</ul>

</body>
</html>
```

**Output**: -



# The list-style-position Property

## list-style-position: outside (default):

- Coffee
- Tea
- Coca Cola

## list-style-position: inside:

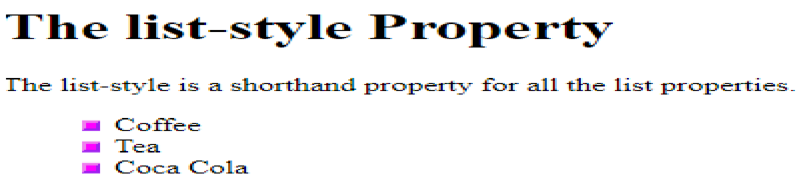
- Coffee
- Tea
- Coca Cola

**4. list-style-shorthand**

- Specify all the list properties in one declaration.

```
<!DOCTYPE html>
<html>
<head>
<style>ul
{
  list-style: square inside url("sqpurple.gif");
}
</style>
</head>
<body>

<h1>The list-style Property</h1>

<p>The list-style is a shorthand property for all the list properties.</p>

<ul>
  <li>Coffee</li>
  <li>Tea</li>
  <li>Coca Cola</li>
</ul>
</body>
</html>
```

**Output**: -



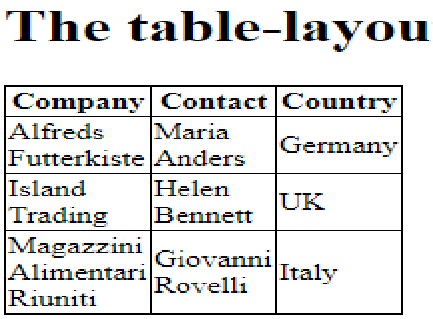
# The list-style Property

The list-style is a shorthand property for all the list properties.

- Coffee
- Tea
- Coca Cola

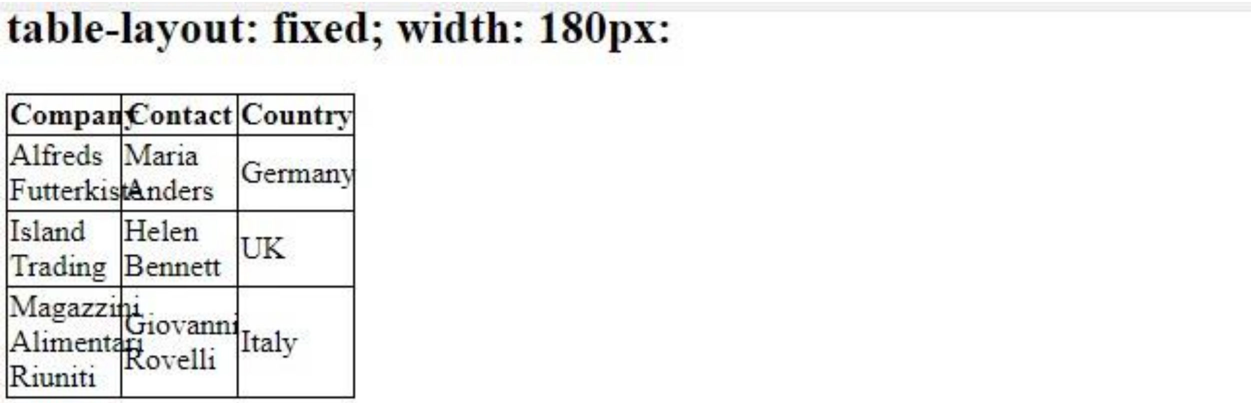
**Table Properties**

1. **table-layout property**
   - The table layout property specifies the way in which a table should bedisplayed in a web browser.



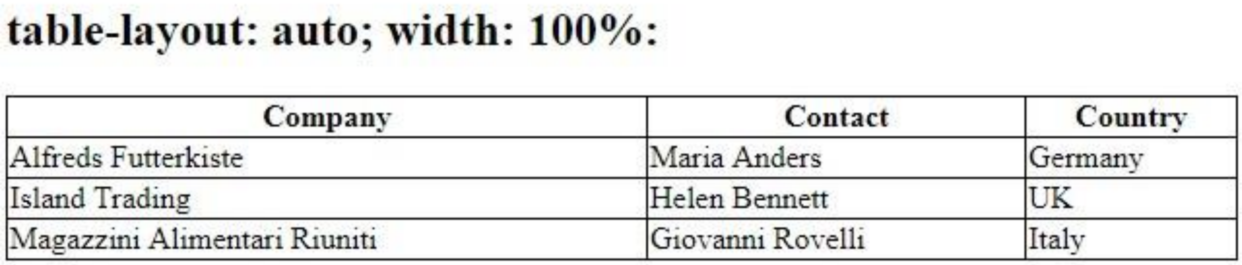
## The table-layout Property

| Company | Contact | Country |
|---|---|---|
| Alfreds Futterkiste | Maria Anders | Germany |
| Island Trading | Helen Bennett | UK |
| Magazzini Alimentari Riuniti | Giovanni Rovelli | Italy |



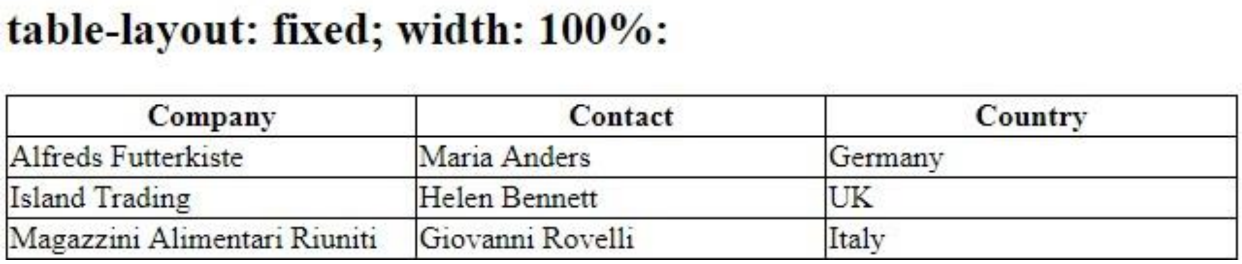
## table-layout: fixed; width: 180px:

| Company | Contact | Country |
|---|---|---|
| Alfreds Futterkiste | Maria Anders | Germany |
| Island Trading | Helen Bennett | UK |
| Magazzini Alimentari Riuniti | Giovanni Rovelli | Italy |



## table-layout: auto; width: 100%:

| Company | Contact | Country |
|---|---|---|
| Alfreds Futterkiste | Maria Anders | Germany |
| Island Trading | Helen Bennett | UK |
| Magazzini Alimentari Riuniti | Giovanni Rovelli | Italy |



## table-layout: fixed; width: 100%:

| Company | Contact | Country |
|---|---|---|
| Alfreds Futterkiste | Maria Anders | Germany |
| Island Trading | Helen Bennett | UK |
| Magazzini Alimentari Riuniti | Giovanni Rovelli | Italy |

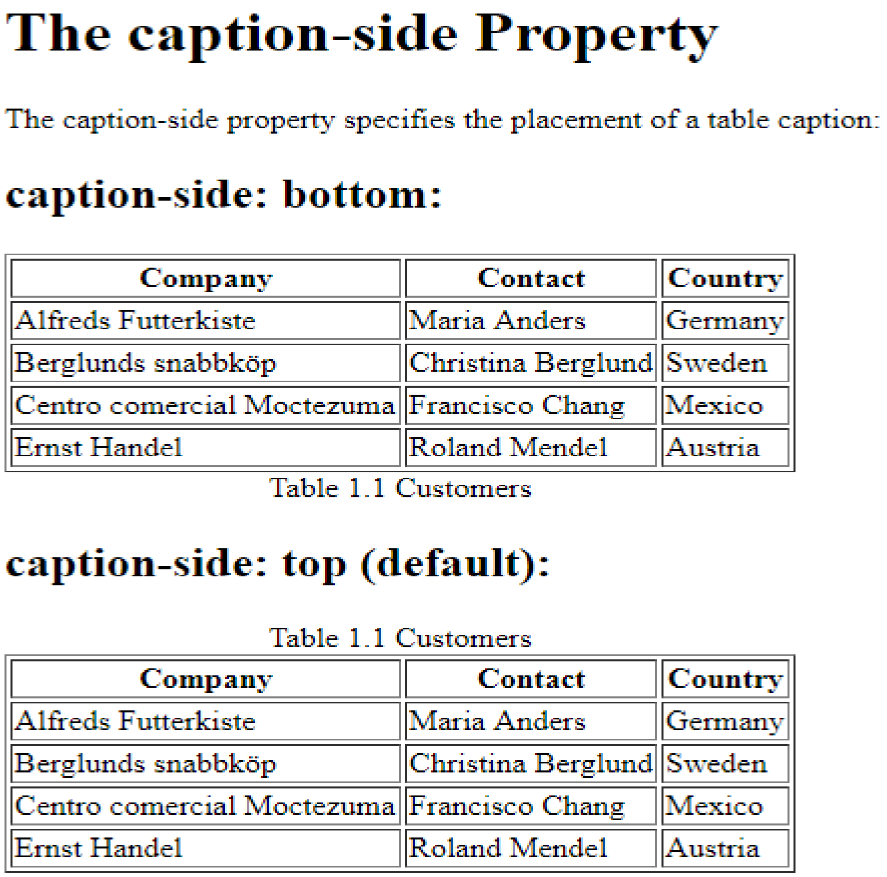
## 2. caption-side property

- Specify the placement of table captions.

```
 <!DOCTYPE html>
 <html>
 <head>
 <style>
 #example1 {
   caption-side: bottom;
 }
#example2 {caption-side: top;
                        }
                        </style>
                        </head>
                        <body>
                        <h1>The caption-side Property</h1>
                        <p>The caption-side property specifies the placement of a table
                        caption:</p>
                        <h2>caption-side: bottom:</h2>
                        <table id="example1" border="1">
                        <caption>Table 1.1 Customers</caption>
                        <tr>
                          <th>Company</th>
                          <th>Contact</th>
                          <th>Country</th>
                        </tr>
                        <tr>
                          <td>Alfreds Futterkiste</td>
                          <td>Maria Anders</td>
                          <td>Germany</td>
                        </tr>
                        <tr>
                          <td>Berglunds snabbköp</td>
                          <td>Christina Berglund</td>
                          <td>Sweden</td>
                        </tr>
                        <tr>
                          <td>Centro comercial Moctezuma</td>
                          <td>Francisco Chang</td>
                          <td>Mexico</td>
                          </tr>
```

```
                    <tr>
                      <td>Ernst Handel</td>
                      <td>Roland Mendel</td>
                      <td>Austria</td>

</tr>
</tr>
</table>

<h2>caption-side:  top  (default):</h2>
<table id="example2" border="1">
<caption>Table 1.1 Customers</caption>
<tr>
  <th>Company</th>
  <th>Contact</th>
  <th>Country</th>
</tr>
<tr>
  <td>Alfreds Futterkiste</td>
  <td>Maria Anders</td>
  <td>Germany</td>
</tr>
<tr>
  <td>Berglunds snabbköp</td>
  <td>Christina Berglund</td>
  <td>Sweden</td>
</tr>
<tr>
  <td>Centro  comercial  Moctezuma</td>
  <td>Francisco Chang</td>
  <td>Mexico</td>
</tr>
<tr>
  <td>Ernst Handel</td>
  <td>Roland Mendel</td>
  <td>Austria</td>
</tr>
</table>
</body>
</html>
```

**Output:**



# The caption-side Property

The caption-side property specifies the placement of a table caption:

## caption-side: bottom:

| Company | Contact | Country |
|---|---|---|
| Alfreds Futterkiste | Maria Anders | Germany |
| Berglunds snabbköp | Christina Berglund | Sweden |
| Centro comercial Moctezuma | Francisco Chang | Mexico |
| Ernst Handel | Roland Mendel | Austria |

Table 1.1 Customers

## caption-side: top (default):

Table 1.1 Customers

| Company | Contact | Country |
|---|---|---|
| Alfreds Futterkiste | Maria Anders | Germany |
| Berglunds snabbköp | Christina Berglund | Sweden |
| Centro comercial Moctezuma | Francisco Chang | Mexico |
| Ernst Handel | Roland Mendel | Austria |

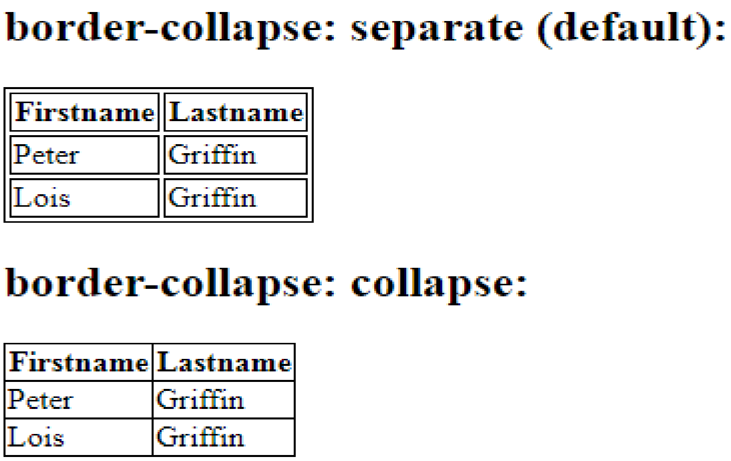
### 3. border-collapse property

- The border-collapse property allows to define a way in which a bordershould be displayed around a table cell.

```
<!DOCTYPE html>
<html>
<head>
<style> table,
td, th {
  border: 1px solid black;
}
                    #table1 {
                      border-collapse: separate;
                    }
                    #table2 {
                      border-collapse: collapse;
                    }
                    </style>
                    </head>
```

```
<body>

<h2>border-collapse: separate (default):</h2>
<table id="table1">
  <tr>
    <th>Firstname</th>
    <th>Lastname</th>
  </tr>
  <tr>
    <td>Peter</td>
    <td>Griffin</td>
  </tr>
  <tr>
    <td>Lois</td>
    <td>Griffin</td>
  </tr>
</table>

<h2>border-collapse: collapse:</h2>
<table id="table2">
  <tr>
    <th>Firstname</th>
    <th>Lastname</th>
  </tr>
  <tr>
    <td>Peter</td>
    <td>Griffin</td>
  </tr>
  <tr>
    <td>Lois</td>
    <td>Griffin</td>
  </tr>
</table>

</body>
</html>
```

**<u>Output</u>: -**



border-collapse: separate (default):

| Firstname | Lastname |
|---|---|
| Peter | Griffin |
| Lois | Griffin |

border-collapse: collapse:

| Firstname | Lastname |
|---|---|
| Peter | Griffin |
| Lois | Griffin |

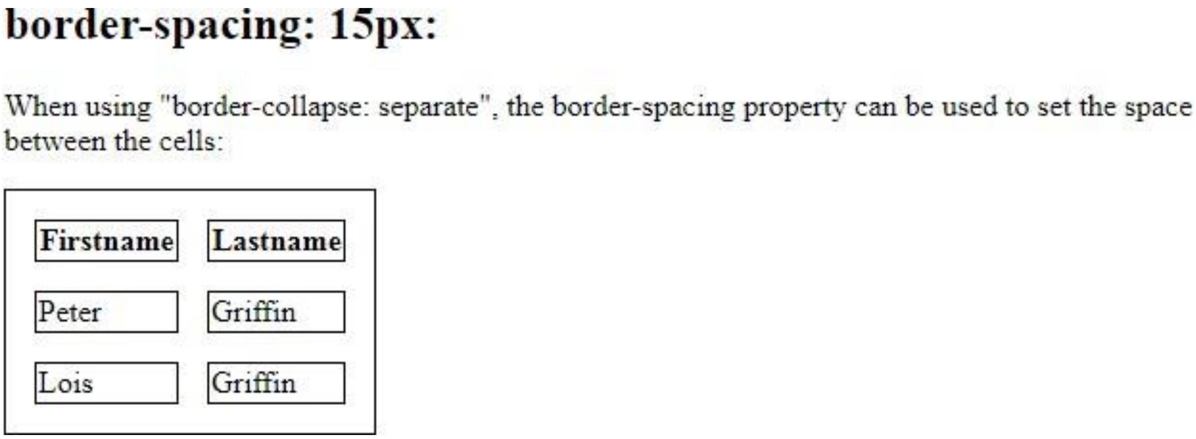
### 4. border-spacing property

- The border-spacing property allows to specify the amount of spacebetween the border of adjacent table cells.
- The amount of space between the borders of adjacent cells is knownas border space.

```
<!DOCTYPE html>
<html>
<head>
<style> table, td, th {
border: 1px solid black;
}
#table1 {
border-collapse: separate;border-spacing: 15px;
}

#table2 {
border-collapse: separate; border-spacing: 15px 50px;
}
</style>
</head>
<body>

<h2>border-spacing: 15px:</h2>
<p>When using "border-collapse: separate", the border-spacingproperty can be used to set the space between the
    cells:</p>
<table id="table1">
<tr>
<th>Firstname</th>
<th>Lastname</th>
</tr>
<tr>
<td>Peter</td>
<td>Griffin</td>
</tr>
<tr>
<td>Lois</td>
<td>Griffin</td>
</tr>
</table>
```

```
<h2>border-spacing: 15px 50px:</h2>
<p>Using two values (the first sets the horizontal spacing and thesecond sets the vertical spacing):</p>
<table id="table2">
<tr>
<th>Firstname</th>
<th>Lastname</th>
</tr>
<tr>
<td>Peter</td>
<td>Griffin</td>
</tr>
<tr>
<td>Lois</td>
<td>Griffin</td>
</tr>
</table>

</body>
</html>
```

**<u>Output</u>: -**

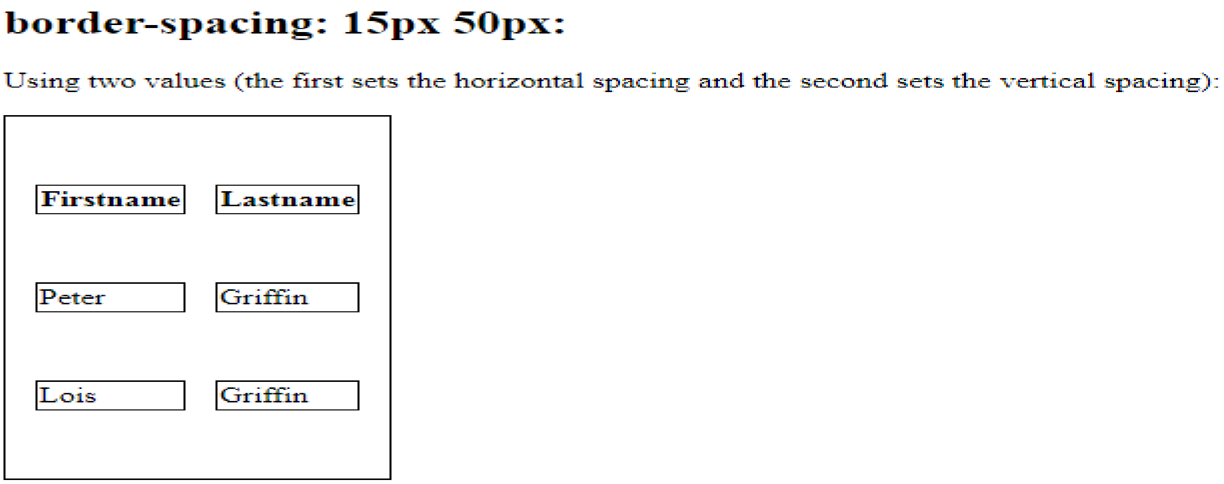


## border-spacing: 15px:

When using "border-collapse: separate", the border-spacing property can be used to set the space between the cells:

| Firstname | Lastname |
|---|---|
| Peter | Griffin |
| Lois | Griffin |

**Output:**



## border-spacing: 15px 50px:

Using two values (the first sets the horizontal spacing and the second sets the vertical spacing):

| Firstname | Lastname |
|---|---|
| Peter | Griffin |
| Lois | Griffin |

### CSS ID

- The CSS id selector matches an element based on the value of its idattribute.
- In order for the element to be selected, its id attribute must match exactlythe value given in the selector.
- The following is the syntax for CSS id:

```
#id_value{
          background-color:blue;
}
```

### CSS CLASS

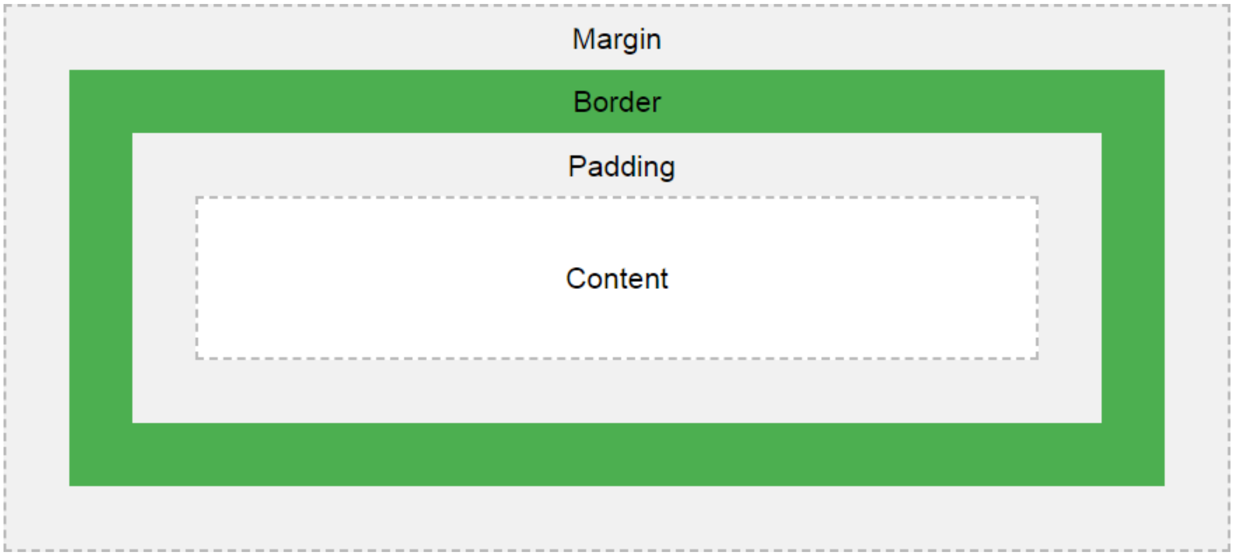
- The CSS class selector matches elements based on the contents of theirclass attribute.
- Following is the syntax:

```
.class_name{
          Color:red;
}
```

## Box Model(Introduction, Border properties, Padding Properties, Marginproperties)

### Box Model

The CSS box model is essentially a box that wraps around every HTMLelement. It consists of: margins, borders, padding, and the actual content. The image below illustrates the box model:



Explanation of the different parts:

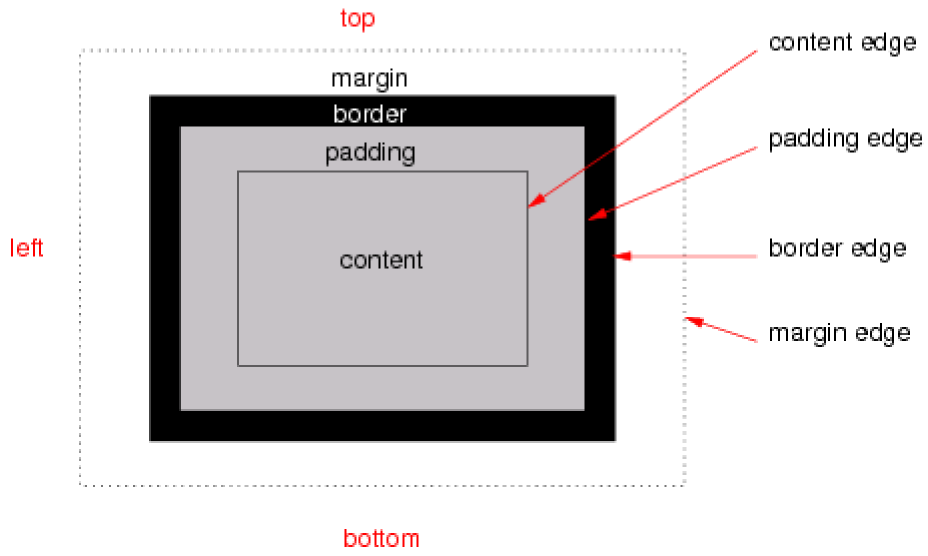
- **Content -** The content of the box, where text and images appear
- **Padding -** Clears an area around the content. The padding istransparent
- **Border -** A border that goes around the padding and content
- **Margin -** Clears an area outside the border. The margin istransparent

The box model allows us to add a border around elements, and to definespace between elements
A box model includes the following types of boxes:

1. Block-Level Box: Represents a box to show a paragraph.
2. Line Box: Represents a box to show a line of text.
3. Inline-Level Box: Represents a box to show the words of a line.

### Box Dimension

Each box has a *content area* (which contains its content—text, descendant boxes,an image or other replaced element content, etc.) and optional
surrounding *padding*, *border*, and *margin areas*; the size of each area is specified by corresponding properties, and can be zero (or in the case of margins, negative).The following diagram shows how these areas relate and the terminology used torefer to the various parts of the box:



*The various areas and edges of a typical box.*

The margin, border, and padding can be broken down into top, right, bottom, and left segments, each of which can be controlled independently by its correspondingproperty.
The perimeter of each of the four areas (content, padding, border, and margin) iscalled an edge, and each edge can be broken down into a top, right, bottom, andleft side. Thus each box has four edges each composed of four sides:
content edge or inner edge

The content edge surrounds the rectangle given by the width and height of the box, which often depend on the element’s content and/or its containing block size.The four sides of the content edge together define the box’s content box.

**padding edge**

The padding edge surrounds the box’s padding. If the padding has zero width on a given side, the padding edge coincides with the content edge onthat side. The four sides of the padding edge together define the
box’s padding box, which contains both the content and padding areas.

**border edge**

The border edge surrounds the box’s border. If the border has zero width ona given side, the border edge coincides with the padding edge on that side. The four sides of the border edge together define the box’s border box,
which contains the box’s content, padding, and border areas.

**margin edge or outer edge**

The margin edge surrounds the box’s margin. If the margin has zero widthon a given side, the margin edge coincides with the border edge on that side. The four sides of the margin edge together define the box’s margin box, which contains the all of the box’s content, padding, border and margin areas.

### Padding Properties

The CSS padding properties are used to generate space around an element'scontent, inside of any defined borders.

With CSS, you have full control over the padding.

CSS has properties for specifying the padding for each side of an element:

- padding-top
- padding-right
- padding-bottom
- padding-left

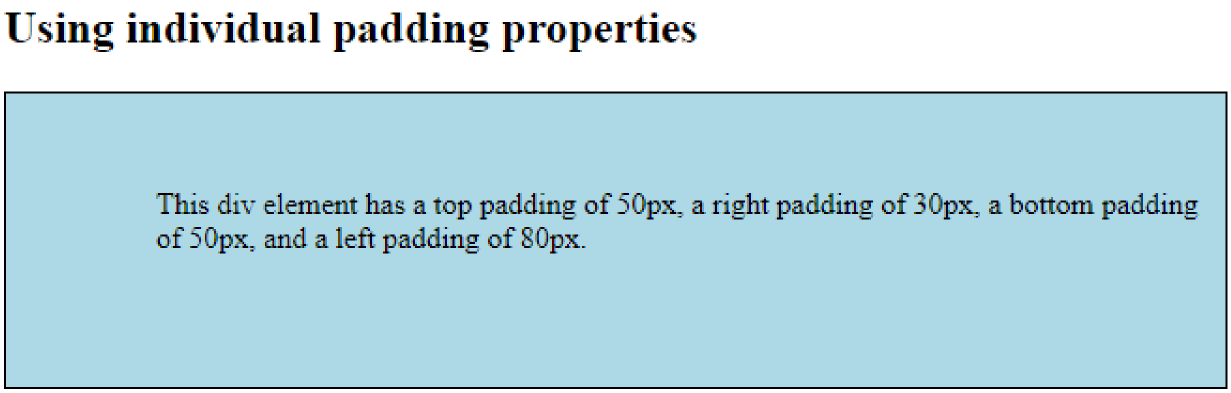
All the padding properties can have the following values:

- length - specifies a padding in px, pt, cm, etc.
- % - specifies a padding in % of the width of the containing element
- inherit - specifies that the padding should be inherited from the parentelement

Note: Negative values are not allowed.e.g.

```
<!DOCTYPE html>
<html>
<head>
<style>
div {
  border: 1px solid black;
  background-color: lightblue;
  padding-top: 50px;
  padding-right: 10px;
  padding-bottom: 70px;
  padding-left: 80px;
}
</style>
</head>
<body>
<h2>Using individual padding properties</h2>
<div>This div element has a top padding of 50px, a right padding of 30px, a bottompadding of 50px, and a
left padding of 80px.</div>
</body>
</html>
```

**Output: -**



# Using individual padding properties

This div element has a top padding of 50px, a right padding of 30px, a bottom padding of 50px, and a left padding of 80px.

**Margin Properties**

The CSS margin properties are used to create space around elements, outside ofany defined borders. With CSS, you have full control over the margins.

CSS has properties for specifying the margin for each side of an element:

- margin-top
- margin-right
- margin-bottom
- margin-left

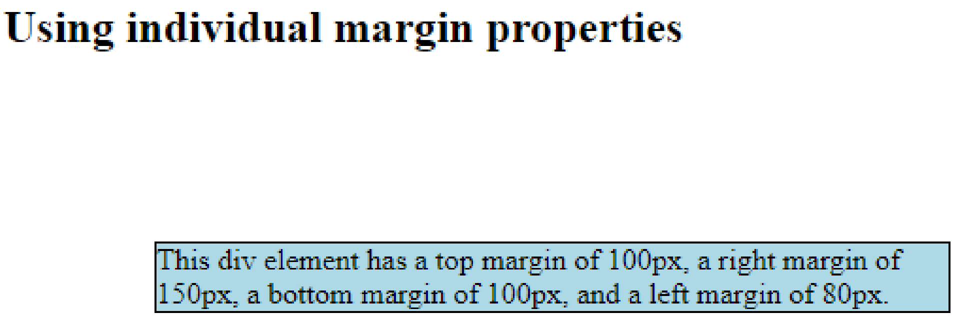
All the margin properties can have the following values:

- auto - the browser calculates the margin
- length - specifies a margin in px, pt, cm, etc.
- % - specifies a margin in % of the width of the containing element
- inherit - specifies that the margin should be inherited from the parentelement

Tip: Negative values are allowed.

```
<!DOCTYPE html>
<html>
<head>
<style>
div {
  border: 1px solid black;
  margin-top: 100px; margin-
  bottom: 0px; margin-right:
  150px; margin-left: 80px;
  background-color: lightblue;
}
</style>
</head>
<body>
<h2>Using individual margin properties</h2>
<div>This div element has a top margin of 100px, a right margin of 150px, a
bottom margin of 100px, and a left margin of 80px.</div>
</body>
</html>
```

**Output: -**



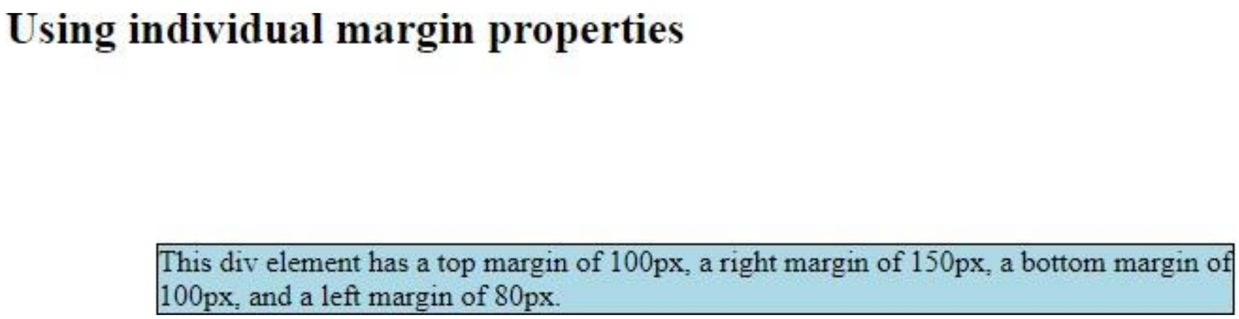
## Using individual margin properties

This div element has a top margin of 100px, a right margin of 150px, a bottom margin of 100px, and a left margin of 80px.

Similarly, if the CSS part was:div {

```
  border: 1px solid black;
  margin-top: 100px; margin-
  bottom: 0px; margin-right:
  0px; margin-left: 80px;
  background-color: lightblue;
}
```

**Output: -**



Using individual margin properties

This div element has a top margin of 100px, a right margin of 150px, a bottom margin of 100px, and a left margin of 80px.

**CSS Advanced(Grouping, Dimension, Display, Positioning, Floating, Align, Pseudoclass, Navigation Bar, Image Sprites, Attribute sector)**

CSS Grouping

The grouping selects all the HTML elements with the same style definitions.Rather than writing the following:

```
h1 {
  text-align: center;
  color: red;
}

h2 {
  text-align: center;
  color: red;
}

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

It will be better to group the selectors, to minimize the code.To group selectors, separate each selector with a comma.

Here we have grouped the selectors from the code above:

```
h1, h2, p {
  text-align: center;
  color: red;
}
```

### CSS Dimension Properties

The height and width properties are used to set the height and width of anelement.

The height and width properties do not include padding, borders, or margins. Itsets the height/width of the area inside the padding, border, and margin of theelement.

The height and width properties may have the following values:

- **auto -** This is default. The browser calculates the height and width
- **length -** Defines the height/width in px, cm etc.
- **% -** Defines the height/width in percent of the containing block
- initial - Sets the height/width to its default value
- inherit - The height/width will be inherited from its parent value

| **Property** | **Description** |
|---|---|
| height | Sets the height of an element |
| max-height | Sets the maximum height of an element |
| max-width | Sets the maximum width of an element |
| min-height | Sets the minimum height of an element |
| min-width | Sets the minimum width of an element |
| width | Sets the width of an element |

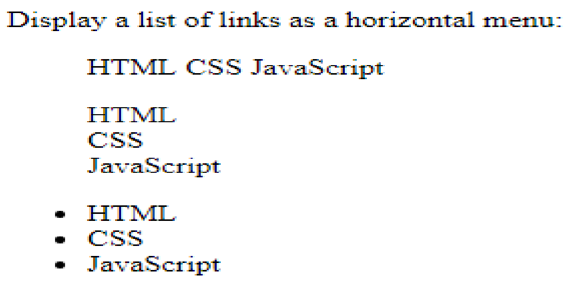
### CSS Display Properties

The display property specifies if/how an element is displayed.

Every HTML element has a default display value depending on what type of element it is. The default display value for most elements is block , inline or none.

```
<!DOCTYPE html>
<html>
<head>
<style>
ul.one li {
  display: inline;
}
ul.two li { display:
  block;
}
</style>
</head>
<body>

<p>Display a list of links as a horizontal menu:</p>
<ul class="one">
  <li>HTML</li>
  <li>CSS</li>
  <li>JavaScript</li>
</ul>
<ul class="two">
  <li>HTML</li>
  <li>CSS</li>
  <li>JavaScript</li>
</ul>
<ul class="three">
  <li>HTML</li>
  <li>CSS</li>
  <li>JavaScript</li>
</ul>
</body>
</html>
```

**Output: -**



```
Display a list of links as a horizontal menu:

      HTML CSS JavaScript

      HTML
      CSS
      JavaScript

   •  HTML
   •  CSS
   •  JavaScript
```

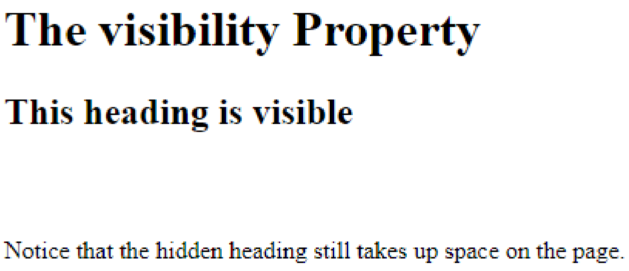
### CSS Visibility Property

The visibility property specifies whether or not an element is visible.

Tip: Hidden elements take up space on the page. Use the display property to bothhide and remove an element from the document layout!

```
<!DOCTYPE html>
<html>
<head>
<style>
h2.a {
  visibility: visible;
}

h2.b {
  visibility: hidden;
}
</style>
</head>
<body>

<h1>The visibility Property</h1>

<h2 class="a">This heading is visible</h2>

<h2 class="b">This heading is hidden</h2>

<p>Notice that the hidden heading still takes up space on the page.</p>

</body>
</html>
```

**Output**



# The visibility Property

## This heading is visible

Notice that the hidden heading still takes up space on the page.

**Positioning in CSS**

The position property specifies the type of positioning method used for anelement (static, relative, absolute, fixed, or sticky)

| **Value** | **Description** |
|---|---|
| Static | Default value. Elements render in order, as they appear in thedocument flow |
| Absolute | The element is positioned relative to its first positioned (not static)ancestor element |
| fixed | The element is positioned relative to the browser window |
| relative | The element is positioned relative to its normal position, so "left:20px"adds 20 pixels to the element's LEFT position |
| initial | Sets this property to its default value. |
| inherit | Inherits this property from its parent element. |

**CSS Float Property**

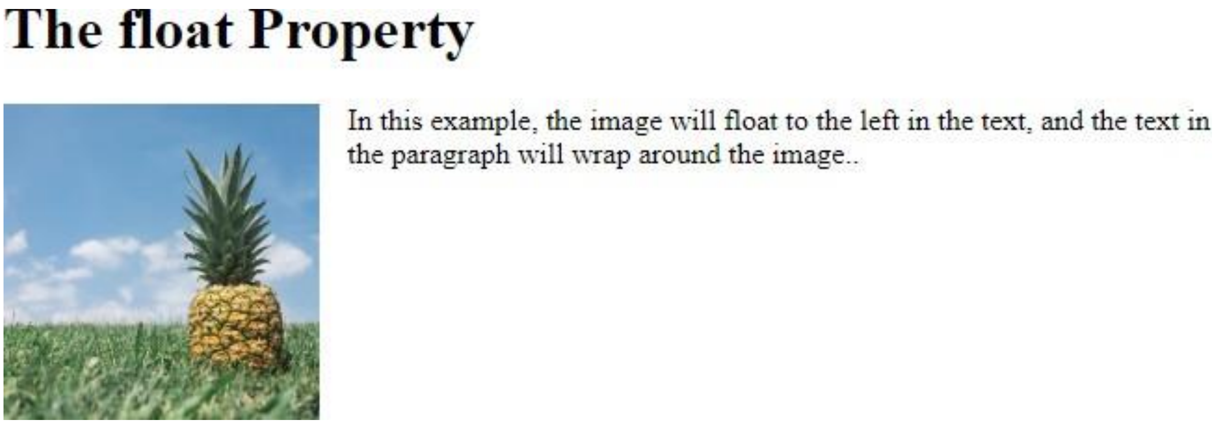
The float property specifies how an element should float.

Note: Absolutely positioned elements ignore the float property!

| **Value** | **Description** |
|---|---|
| none | The element does not float, (will be displayed just where it occurs inthe text). This is default |
| Left | The element floats to the left of its container |
| right | The element floats the right of its container |
| initial | Sets this property to its default value. |
| inherit | Inherits this property from its parent element. |

```
<!DOCTYPE html>
<html>
<head>
<style>
img {
  float: left;
}
</style>
</head>
<body>
<h1>The float Property</h1>


<p><img src="pineapple.jpg" alt="Pineapple"
style="width:170px;height:170px;margin-right:15px;">
In this example, the image will float to the left in the text, and the text in theparagraph will wrap around the image..</p>

</body>
</html>
```

**Output:**



# The float Property

In this example, the image will float to the left in the text, and the text in the paragraph will wrap around the image..

**CSS Test-align Property**

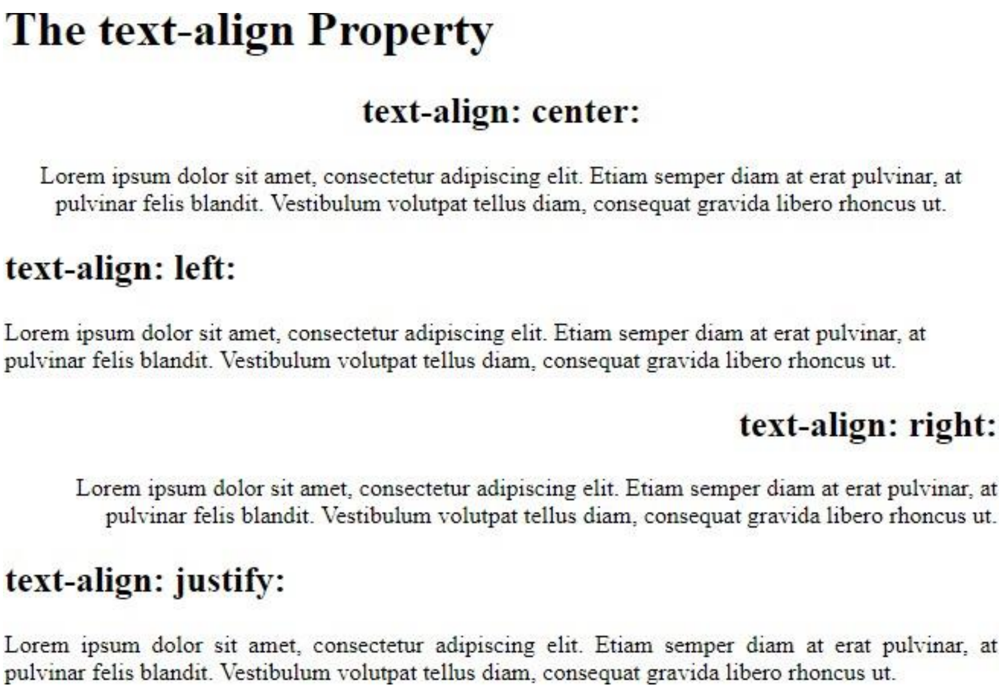
The text-align property specifies the horizontal alignment of text in an element.

| **Value** | **Description** |
|---|---|
| Left | Aligns the text to the left |
| Right | Aligns the text to the right |
| center | Centers the text |
| Justify | Stretches the lines so that each line has equal width (like innewspapers and magazines) |

```
<!DOCTYPE html>
<html>
<head>
<style>
div.a {
  text-align: center;
}

div.b {
  text-align: left;
}

div.c {
  text-align: right;
}


div.d {
  text-align: justify;
}
</style>
</head>
<body>

<h1>The text-align Property</h1>

<div class="a">
<h2>text-align: center:</h2>
<p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam semper diam at erat pulvinar, at
pulvinar felis blandit. Vestibulum volutpat tellus diam, consequatgravida libero rhoncus ut.</p>
</div>

<div class="b">
<h2>text-align: left:</h2>
<p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam semper diam at erat pulvinar, at
pulvinar felis blandit. Vestibulum volutpat tellus diam, consequatgravida libero rhoncus ut.</p>
</div>


<div class="c">
<h2>text-align:  right:</h2>
<p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam semper diam aterat pulvinar, at pulvinar
felis blandit. Vestibulum volutpat tellus diam, consequatgravida libero rhoncus ut.</p>
</div>
```

```
<div class="d">
<h2>text-align: justify:</h2>
<p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam semper diam at erat pulvinar, at pulvinar felis blandit. Vestibulum volutpat tellus diam, consequatgravida libero rhoncus ut.</p>
</div>

</body>
</html>
```

**Output:**



# The text-align Property

## text-align: center:

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam semper diam at erat pulvinar, at pulvinar felis blandit. Vestibulum volutpat tellus diam, consequat gravida libero rhoncus ut.

## text-align: left:

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam semper diam at erat pulvinar, at pulvinar felis blandit. Vestibulum volutpat tellus diam, consequat gravida libero rhoncus ut.

## text-align: right:

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam semper diam at erat pulvinar, at pulvinar felis blandit. Vestibulum volutpat tellus diam, consequat gravida libero rhoncus ut.

## text-align: justify:

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam semper diam at erat pulvinar, at pulvinar felis blandit. Vestibulum volutpat tellus diam, consequat gravida libero rhoncus ut.

### CSS Pseudo Class

A pseudo-class is used to define a special state of an element.For example, it

can be used to:

- Style an element when a user mouses over it
- Style visited and unvisited links differently
- Style an element when it gets focusThe

syntax of pseudo-classes:

```
selector:pseudo-class {
  property: value;
}
```

All CSS Pseudo Classes

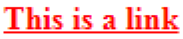
| Selector | Example | Example description |
|---|---|---|
| :active | a:active | Selects the active link |
| :checked | input:checked | Selects every checked <input> element |
| :disabled | input:disabled | Selects every disabled <input> element |
| :empty | p:empty | Selects every <p> element that has nochildren |
| :enabled | input:enabled | Selects every enabled <input> element |
| :first-child | p:first-child | Selects every <p> elements that is thefirst child of its parent |
| :first-of-type | p:first-of-type | Selects every <p> element that is the first <p> element of its parent |
| :focus | input:focus | Selects the <input> element that hasfocus |
| :hover | a:hover | Selects links on mouse over |
| :in-range | input:in-range | Selects <input> elements with a valuewithin a specified range |
| :invalid | input:invalid | Selects all <input> elements with an invalid value |

| | | |
|---|---|---|
| :lang(language) | p:lang(it) | Selects every <p> element with a langattribute value starting with "it" |
| :last-child | p:last-child | Selects every <p> elements that is the lastchild of its parent |
| :last-of-type | p:last-of-type | Selects every <p> element that is the last <p> element of its parent |
| :link | a:link | Selects all unvisited links |
| :not(selector) | :not(p) | Selects every element that is not a <p>element |
| :nth-child(n) | p:nth-child(2) | Selects every <p> element that is thesecond child of its parent |
| :nth-last-child(n) | p:nth-last-child(2) | Selects every <p> element that is the second child of its parent, counting from the last child |

| | | |
|---|---|---|
| :nth-last-of-type(n) | p:nth-last-of-type(2) | Selects every <p> element that is thesecond <p> element of its parent, counting from the last child |
| :nth-of-type(n) | p:nth-of-type(2) | Selects every <p> element that is thesecond <p> element of its parent |
| :only-of-type | p:only-of-type | Selects every <p> element that is the only <p> element of its parent |
| :only-child | p:only-child | Selects every <p> element that is the onlychild of its parent |
| :optional | input:optional | Selects <input> elements with no "required" attribute |
| :out-of-range | input:out-of-range | Selects <input> elements with a valueoutside a specified range |
| :read-only | input:read-only | Selects <input> elements with a "readonly" attribute specified |
| :read-write | input:read-write | Selects <input> elements with no "readonly" attribute |
| :required | input:required | Selects <input> elements with a "required" attribute specified |
| :root | root | Selects the document's root element |
| :target | #news:target | Selects the current active #news element(clicked on a URL containing that anchor name) |
| :valid | input:valid | Selects all <input> elements with a validvalue |
| :visited | a:visited | Selects all visited links |

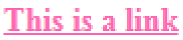
```
<!DOCTYPE html>
<html>
<head>
<style>
/* unvisited link */
a:link {
  color: red;
}

/* visited link */
a:visited {
  color: green;
}

/* mouse over link */
a:hover {
  color: hotpink;
}

/* selected link */
a:active {
  color: blue;
}
</style>
</head>
<body>
<p><b><a href="default.asp" target="_blank">This is a link</a></b></p>
</body>
</html>
```

**Output:-**



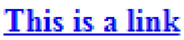
**This is a link**

Upon Cursor over it:



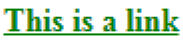
**This is a link**

Upon Click



**This is a link**

After Click



**This is a link**

## CSS Navigation Bar

A navigation bar needs standard HTML as a base. We will build the navigation bar from a standard HTML list. A navigation bar is basically a list of links, so using the <ul> and <li> elements makes perfect sense.

```
<ul>
  <li><a href="default.asp">Home</a></li>
  <li><a href="news.asp">News</a></li>
  <li><a href="contact.asp">Contact</a></li>
  <li><a href="about.asp">About</a></li>
</ul>
```

Now let's remove the bullets and the margins and padding from the list:ul {

```
  list-style-type: none;
  margin: 0;
  padding: 0;
}
```

- list-style-type: none; - Removes the bullets. A navigation bar does not needlist markers
- Set margin: 0; and padding: 0; to remove browser default settings.

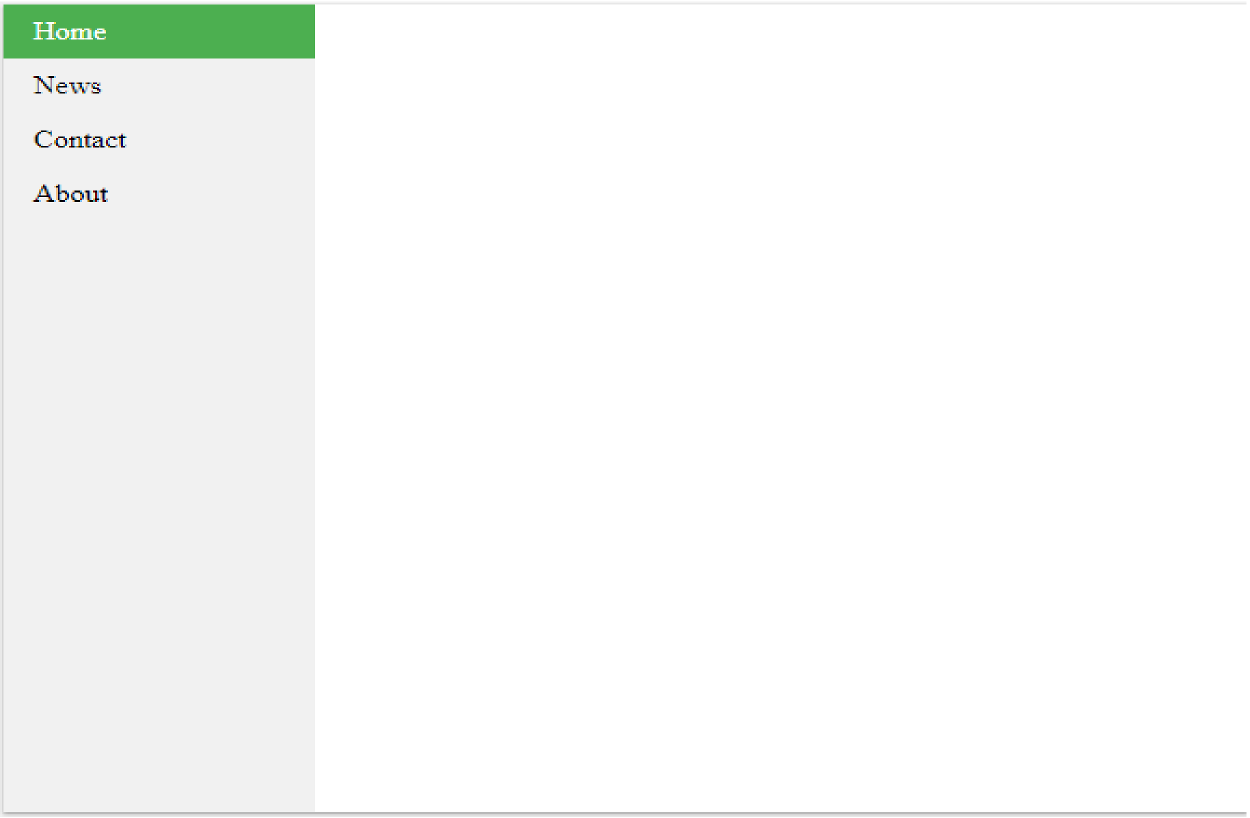
### 1. Vertical Navigation Bar

To build a vertical navigation bar, you can style the <a> elements inside thelist, in addition to the code from the previous page

```
<!DOCTYPE html>
<html>
<head>
<style> body {
margin: 0;
}
ul {
  list-style-type: none;
  margin: 0;
  padding: 0;
  width: 25%;
  background-color: #f1f1f1;
  position: fixed;
  height: 100%;
  overflow: auto;
}
li a {
  display: block; color:
  #000; padding: 8px
  16px;
  text-decoration: none;
}
li a.active {
```

```
          background-color: #4CAF50;color:
          white;
        }

        li a:hover:not(.active) {
          background-color: #555;color:
          white;
        }
        </style>
        </head>
        <body>

        <ul>
          <li><a class="active" href="#home">Home</a></li>
          <li><a href="#news">News</a></li>
          <li><a href="#contact">Contact</a></li>
          <li><a href="#about">About</a></li>
</ul>
</body>
</html>
```

**Output:**



## 2. Horizontal Navigation Bar

One way to build a horizontal navigation bar is to specify the <li> elementsas inline, in addition to the "standard" code from the previous page

```
li {
  display: inline;
```

```
<!DOCTYPE html>
<html>
<head>
<style>
ul {
  list-style-type: none;
  margin: 0;
  padding: 0; overflow:
  hidden;
  background-color: #333;
}

li {
  float: left;
}

li a {
  display: block;
  color: white;
  text-align: center; padding:
  14px 16px; text-decoration:
  none;
}
li a:hover {
  background-color: #111;
}
</style>
</head>
<body>

<ul>
  <li><a class="active" href="#home">Home</a></li>
  <li><a href="#news">News</a></li>
  <li><a href="#contact">Contact</a></li>
  <li><a href="#about">About</a></li>
</ul>
</body>
</html>
```

Output:

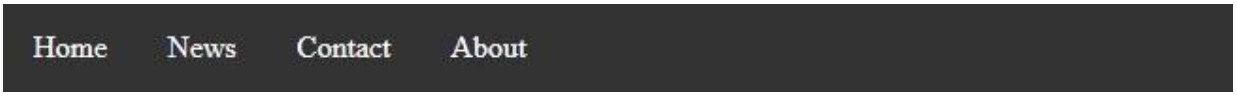
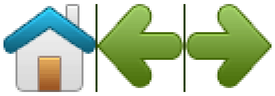


**Image Sprites**

An image sprite is a collection of images put into a single image.

A web page with many images can take a long time to load and generates multiple server requests.Using image sprites will reduce the number of serverrequests and save bandwidth.

Instead of using three separate images, we use this single image ("img_navsprites.gif"):



With CSS, we can show just the part of the image we need.

In the following example the CSS specifies which part of the "img_navsprites.gif"image to show:

```
<!DOCTYPE html>
<html>
<head>
<style> #home {
width: 46px;
height: 44px;
  background: url(img_navsprites.gif) 0 0;
}

#next  { width:
  43px;
  height: 44px;
  background: url(img_navsprites.gif) 43px 0;
}
</style>
</head>
<body>

<img id="home" src=" white.gif" width="1" height="1"><br><br>
<img id="next" src="white.gif" width="1" height="1">
</body>
</html>
```

Output

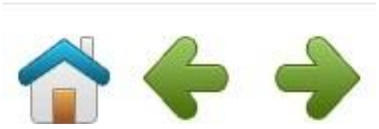
**Image Sprites - Create a Navigation List**

We want to use the sprite image ("img_navsprites.gif") to create a navigation list.

We will use an HTML list, because it can be a link and also supports a backgroundimage:

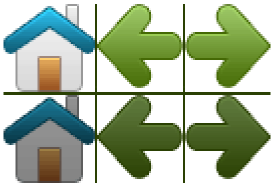
```
   <!DOCTYPE html>
   <html>
   <head>
   <style> #navlist {
     position: relative;
   }
 #navlist li {
 margin: 0;
 padding: 0;
 list-style: none;
 position: absolute;top:
 0;
}
#navlist li, #navlist a {
 height: 44px; display:
 block;
}
#home {
 left: 0px;
 width: 46px;
 background: url('img_navsprites.gif') 0 0;
}
#prev { left:
 63px;
 width: 43px;
 background: url('img_navsprites.gif') -47px 0;
}




#next {
 left: 129px;
 width: 43px;
 background: url('img_navsprites.gif') 43px 0;
}
</style>
</head>
<body>
<ul id="navlist">
 <li id="home"><a href="default.asp"></a></li>
 <li id="prev"><a href="css_intro.asp"></a></li>
 <li id="next"><a href="css_syntax.asp"></a></li>
 </ul>

 </body>
 </html>
```

**Output**



### Image Sprites - Hover Effect

Now we want to add a hover effect to our navigation list.



Because this is one single image, and not six separate files, there will be noloading delay when a user hovers over the image.

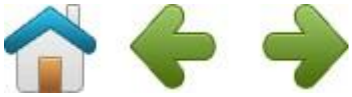
We only add three lines of code to add the hover effect:

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

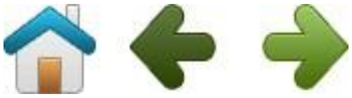
```
<head>
<style> #navlist {
  position: relative;
}

#navlist li {margin: 0;
  padding: 0;
      list-style: none;
      position: absolute;top:
      0;
    }

    #navlist li, #navlist a {
      height: 44px; display:
      block;
    }

    #home {
      left: 0px;
      width: 46px;
      background: url('img_navsprites_hover.gif') 0 0;
    }

    #prev { left:
      63px;
      width: 43px;
      background: url('img_navsprites_hover.gif') -47px 0;
    }

    #next {
      left: 129px;
      width: 43px;
      background: url('img_navsprites_hover.gif') 43px 0;
    }

    #home a:hover {
      background: url('img_navsprites_hover.gif') 0 -45px;
    }

    #prev a:hover {
      background: url('img_navsprites_hover.gif') -47px -45px;
    }

  #next a:hover {
  background: url('img_navsprites_hover.gif') 43px -45px;
}
</style>
</head>
<body>
```

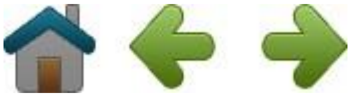
```
<ul id="navlist">
  <li id="home"><a href="default.asp"></a></li>
  <li id="prev"><a href="css_intro.asp"></a></li>
  <li id="next"><a href="css_syntax.asp"></a></li>
</ul>

</body>
</html>
```

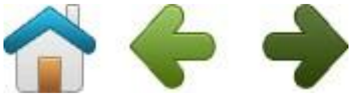
**Output**



**After Hover**





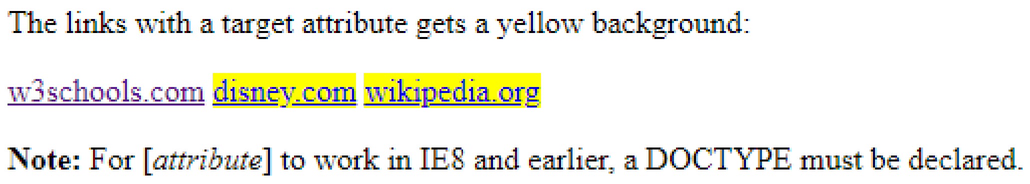


### Attribute Selector

The attribute selector is used to select elements with a specified attribute.The following example selects all <a> elements with a target attribute:

```
<!DOCTYPE html>
<html>
<head>
<style>
a[target] {
  background-color: yellow;
}
</style>
</head>
<body>

<p>The links with a target attribute gets a yellow background:</p>

<a href="https://www.w3schools.com">w3schools.com</a>
<a href="http://www.disney.com" target="_blank">disney.com</a>
<a href="http://www.wikipedia.org" target="_top">wikipedia.org</a>

<p><b>Note:</b> For [<i>attribute</i>] to work in IE8 and earlier, a DOCTYPEmust be
declared.</p>

</body>
</html>
```

**Output**



The links with a target attribute gets a yellow background:

w3schools.com disney.com wikipedia.org

**Note:** For [*attribute*] to work in IE8 and earlier, a DOCTYPE must be declared.

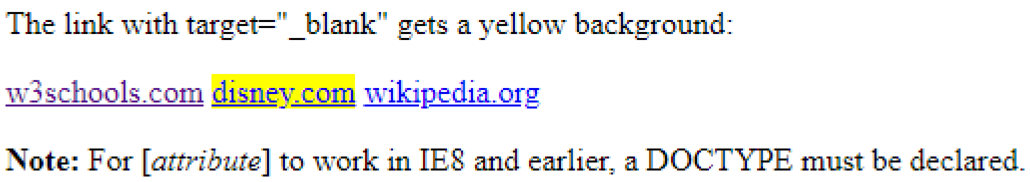
### 1. CSS [attribute="value"] Selector

The [attribute="value"] selector is used to select elements with a specifiedattribute and value.

The following example selects all <a> elements with a target="_blank" attribute:

```
a[target="_blank"] {
  background-color: yellow;
}
```

**Output:**



The link with target="_blank" gets a yellow background:

w3schools.com disney.com wikipedia.org

**Note:** For [*attribute*] to work in IE8 and earlier, a DOCTYPE must be declared.

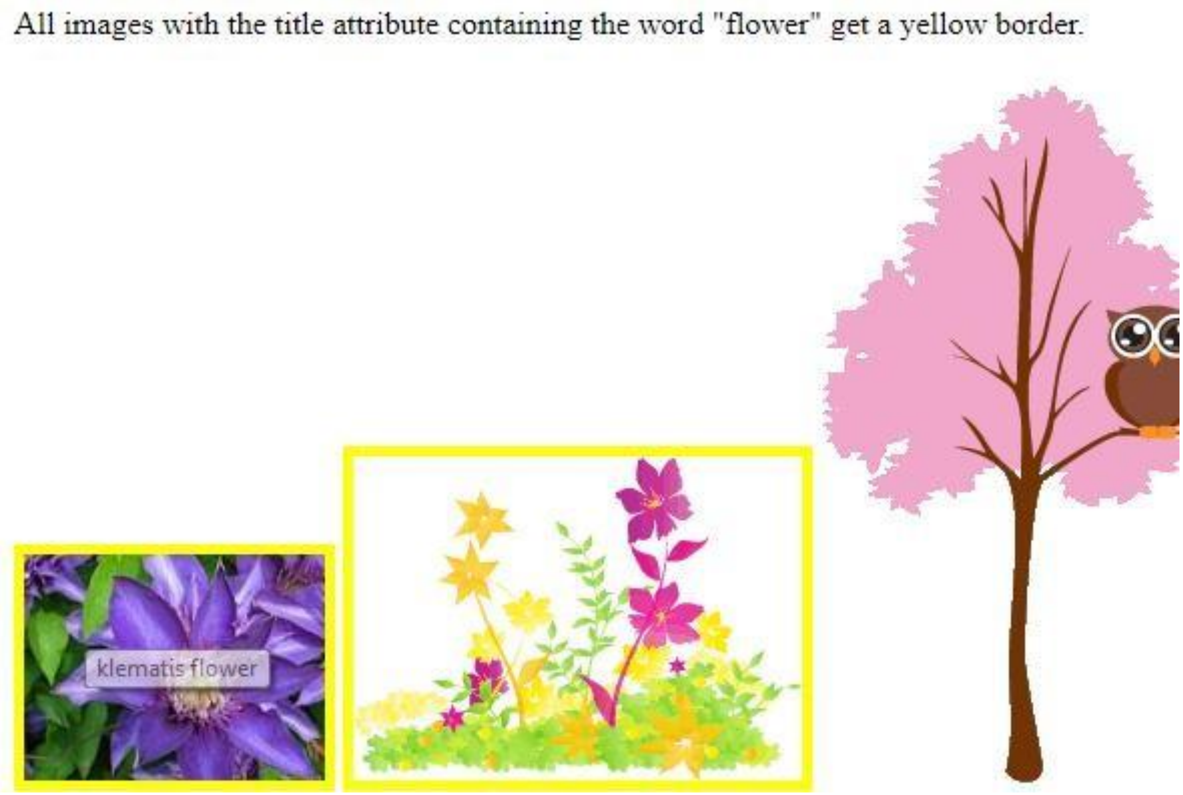
### 2. CSS [attribute~="value"] Selector

The [attribute~="value"] selector is used to select elements with an attributevalue containing a specified word.

The following example selects all elements with a title attribute that contains aspace-separated list of words, one of which is "flower":

```
<!DOCTYPE html>
<html>
<head>
<style>
[title~=flower] {
  border: 5px solid yellow;
}
</style>
</head>
<body>
<p>All images with the title attribute containing the word "flower" get a yellowborder.</p>

<img src="klematis.jpg" title="klematis flower" width="150" height="113">
<img src="img_flwr.gif" title="flower" width="224" height="162">
<img src="img_tree.gif" title="tree" width="200" height="358">
</body>
</html>
```

**Output**



All images with the title attribute containing the word "flower" get a yellow border.

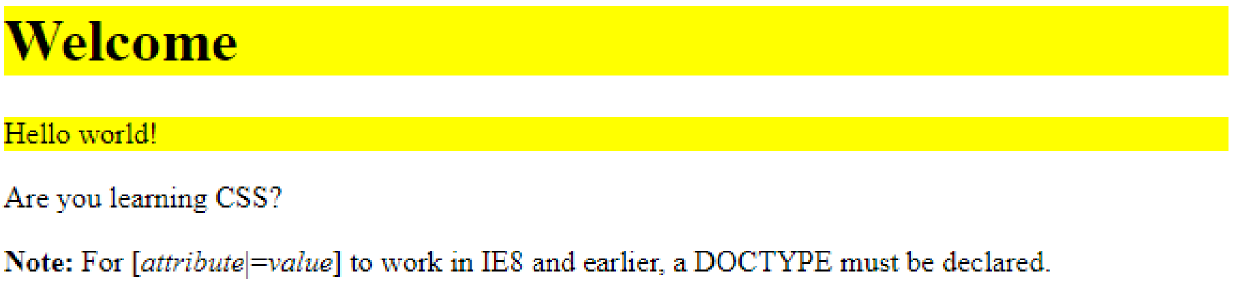
### 3. CSS [attribute|="value"] Selector

The [attribute|="value"] selector is used to select elements with the specifiedattribute starting with the specified value. The following example selects all elements with a class attribute value that beginswith "top":

Note: The value has to be a whole word, either alone, like class="top", or followedby a hyphen( - ), like class="top-text"!

```
<html>
<head>
<style>
[class|=top] {
  background: yellow;
}
</style>
</head>
<body>

<h1 class="top-header">Welcome</h1>
<p class="top-text">Hello world!</p>
<p class="topcontent">Are you learning CSS?</p>

<p><b>Note:</b> For [<i>attribute</i>|=<i>value</i>] to work in IE8 and earlier,a DOCTYPE must be declared.</p>

</body>
</html>
```

**Output**



# Welcome

Hello world!

Are you learning CSS?

**Note:** For [*attribute*|=*value*] to work in IE8 and earlier, a DOCTYPE must be declared.

### 4. CSS [attribute^="value"] Selector

The a]ttribute^="value"] selector is used to select elements whose attribute valuebegins with a specified value.

The following example selects all elements with a class attribute value that beginswith "top":

```
[class^="top"] {
  background: yellow;
}
```

### 5. CSS [attribute$="value"] Selector

The **[attribute$="value"]** selector is used to select elements whose attributevalue ends with a specified value.

The following example selects all elements with a class attribute value that endswith "test":

```
[class$="test"] {
  background: yellow;
}
```

### 6. CSS [attribute*="value"] Selector

The [attribute*="value"] selector is used to select elements whose attribute valuecontains a specified value.

The following example selects all elements with a class attribute value thatcontains "te":

Note: The value does not have to be a whole word!

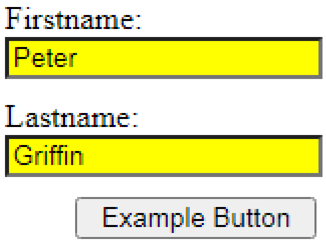
```
[class*="te"] {
  background: yellow;
}
```

### Styling Forms

The attribute selectors can be useful for styling forms without class or ID:

```
<!DOCTYPE html>
<html>
<head>
<style>
input[type="text"] {
width: 150px; display:
block;
  margin-bottom: 10px;
  background-color: yellow;
}

input[type="button"] {
  width: 120px;
  margin-left: 35px;
  display: block;
}
</style>
</head>
<body>

<form name="input" action="" method="get">
  Firstname:<input type="text" name="Name" value="Peter" size="20"> Lastname:<input type="text"
  name="Name" value="Griffin" size="20">
  <input type="button" value="Example Button">
</form>

</body>
</html>
```

### Output



Firstname:

Peter

Lastname:

Griffin

### CSS Color

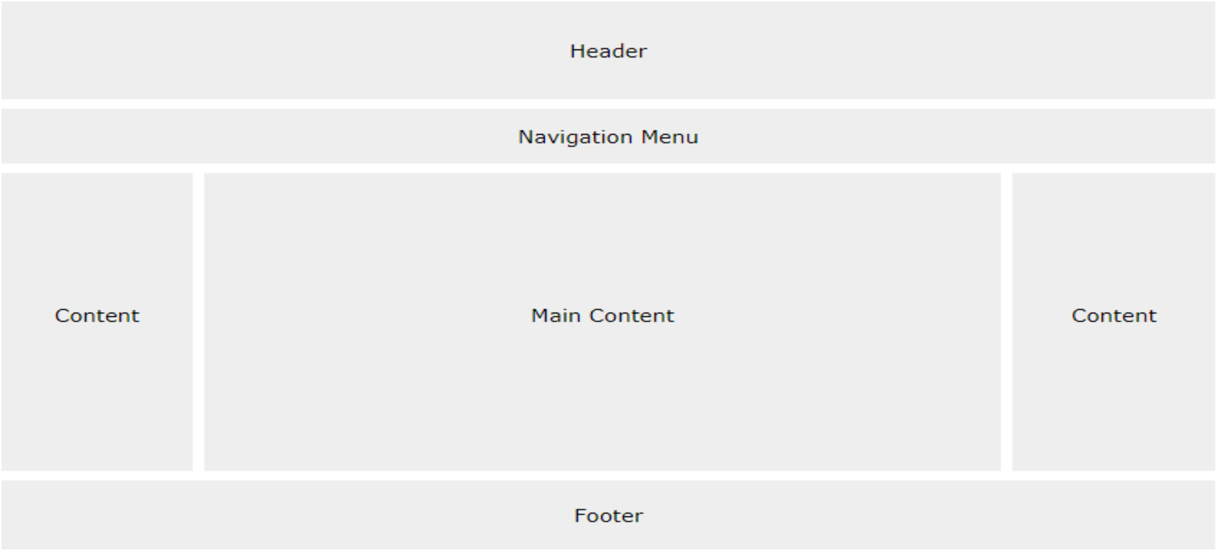
CSS uses color values to specify a color. Typically, these are used to set a color either for the foreground of an element (i.e., its text) or else for the background of the element. They can also be used to affect the color of borders and other decorative effects.

You can specify your color values in various formats. Following table lists all the possible formats −

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

## Creating page Layout and Site DesignsWebsiteLayout

A website is often divided into headers, menus, content and a footer:



### 1. Header

A header is usually located at the top of the website (or right below a topnavigation menu). It often contains a logo or the website name:

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>CSS Website Layout</title>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<style>
</style>
</head>
<body>
<div class="header">
  <h1>Header</h1>
</div>
<div class="topnav">
  <a href="#">Link</a>
  <a href="#">Link</a>
  <a href="#">Link</a>
</div>
</body>
</html>
```

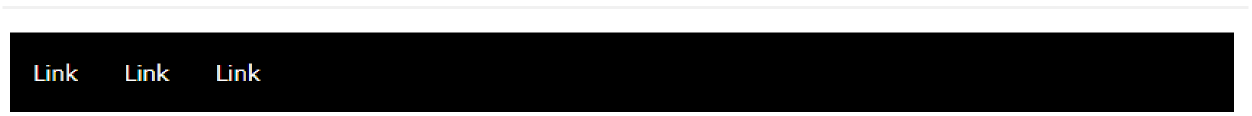
```
.header {
  background-color: #F1F1F1;text-
  align: center;
  padding: 20px;
}
```

**2. Navigation Bar**

A navigation bar contains a list of links to help visitors navigating through yourwebsite:

```
/* The navbar container */
.topnav  { overflow:
  hidden;
  background-color: #333;
}

/* Navbar links */
.topnav a { float:
  left; display:
  block;color:
  #f2f2f2;
  text-align: center; padding:
  14px 16px; text-decoration:
  none;
}

/* Links - change color on hover */
.topnav a:hover { background-
  color: #ddd;color: black;
}
```

**Output**



**3. Content**

The layout in this section, often depends on the target users. The most commonlayout is one (or combining them) of the following:

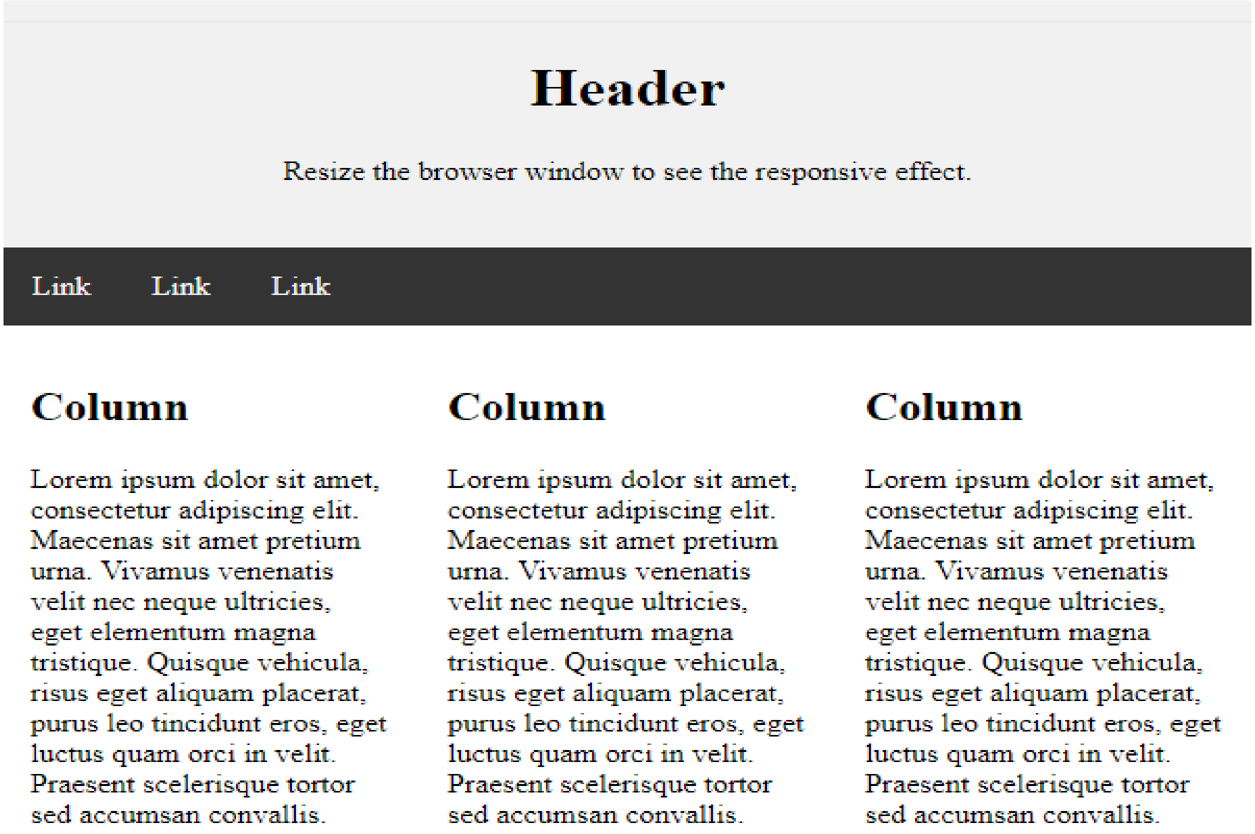
- 1-column (often used for mobile browsers)
- 2-column (often used for tablets and laptops)
- 3-column layout (only used for desktops)

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>CSS Website Layout</title>
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<style>
* {
  box-sizing: border-box;
}

body {
  margin: 0;
}

/* Style the header */
.header {
  background-color: #f1f1f1;
  padding: 20px;
  text-align: center;
}

/* Style the top navigation bar */
.topnav  { overflow:
  hidden;
  background-color: #333;
}

/* Style the topnav links */
.topnav a { float:
  left; display:
  block;color:
  #f2f2f2;
  text-align: center; padding:
  14px 16px; text-decoration:
  none;
}

/* Change color on hover */
.topnav a:hover { background-
  color: #ddd;color: black;
}
```

```
/* Create three equal columns that floats next to each other */
.column {
  float: left;
  width: 33.33%;
  padding: 15px;
}

/* Clear floats after the columns */
.row:after {
  content: "";
  display: table;
  clear: both;
}

/* Responsive layout - makes the three columns stack on top of each otherinstead of next to each
other */
@media screen and (max-width:600px) {
  .column { width:
    100%;
  }
}
</style>
</head>
<body>

<div class="header">
  <h1>Header</h1>
  <p>Resize the browser window to see the responsive effect.</p>
</div>

<div class="topnav">
  <a href="#">Link</a>
  <a href="#">Link</a>
  <a href="#">Link</a>
</div>

<div class="row">
  <div class="column">
    <h2>Column</h2>
    <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas sit amet pretium urna. Vivamus
venenatis velit nec neque ultricies, eget elementum magna tristique. Quisque vehicula, risus eget aliquam
placerat, purus leo tincidunteros, eget luctus quam orci in velit. Praesent scelerisque tortor sed accumsan
convallis.</p>
  </div>
```

```
<div class="column">
    <h2>Column</h2>
    <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas sit amet pretium urna. Vivamus venenatis velit nec neque ultricies, eget elementum magna tristique. Quisque vehicula, risus eget aliquam placerat, purus leo tincidunteros, eget luctus quam orci in velit. Praesent scelerisque tortor sed accumsan convallis.</p>
  </div>

  <div class="column">
    <h2>Column</h2>
    <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas sit amet pretium urna. Vivamus venenatis velit nec neque ultricies, eget elementum magna tristique. Quisque vehicula, risus eget aliquam placerat, purus leo tincidunteros, eget luctus quam orci in velit. Praesent scelerisque tortor sed accumsan convallis.</p>
  </div>
</div>

</body>
</html>
```

**Output**



# Header

Resize the browser window to see the responsive effect.

Link Link Link

## Column

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas sit amet pretium urna. Vivamus venenatis velit nec neque ultricies, eget elementum magna tristique. Quisque vehicula, risus eget aliquam placerat, purus leo tincidunt eros, eget luctus quam orci in velit. Praesent scelerisque tortor sed accumsan convallis.

## Column

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## Column

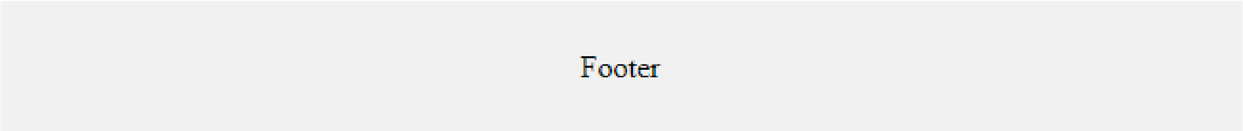
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas sit amet pretium urna. Vivamus venenatis velit nec neque ultricies, eget elementum magna tristique. Quisque vehicula, risus eget aliquam placerat, purus leo tincidunt eros, eget luctus quam orci in velit. Praesent scelerisque tortor sed accumsan convallis.

### Footer

```
<div class="footer">
  <p>Footer</p>
</div>
```

```
.footer {
  background-color: #f1f1f1;
  padding: 10px;
  text-align: center;
  }
```

### Output



Footer