Unit-4 Introduction to CSS

Significance of CSS

- CSS stands for Cascading Style Sheets.
- CSS is the language we use to style a Web page.
- CSS describes how HTML elements are to be displayed on screen, paper, or in other media.
- CSS saves a lot of work. It can control the layout of multiple web pages all at once.
- External stylesheets are stored in CSS files.

Structure, syntax and types of CSS

- To apply style(formatting) to specific tags, we can use CSS.
- The syntax of CSS is slightly different from that of an HTML. CSS uses (curly braces { }), (colons :) and (semicolon ;).

Syntax:

```
Selector{
            Property1:value;
            Property2:value;
             --------------------
           }
```

In above syntax "selector" is the element(tag) that the rule defines and "property1", "property2" are the the different properties like font-size, background, border, color etc. Which we want to assigned to different elements along with values assigned to these properties.

Example:

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

- p is a selector in CSS (it points to the HTML element you want to style: <p>).
- color is a property, and blue is the property value
- text-align is a property, and center is the property value

Types of CSS

There are three types of CSS which are given below:

1. **Inline CSS:** By using the style attribute inside HTML elements.
2. **Internal or Embedded CSS:** By using a <style> element in the <head> section.
3. **External CSS:** By using a <link> element in the <head> section to link to an external CSS file

Inline CSS

- An inline CSS is used to apply a unique style to a single HTML element.
- An inline CSS uses the style attribute of an HTML element.
- The following example sets the text color of the <h1> element to blue, and the text color of the <p> element to red:

Syntax

<element style= “property-name:value; property-name:value……..”></element>

Example:

```
<html>
<body>
    <h1 style="color:green;">A Green Heading</h1>
    <p style="color:red;">A red paragraph.</p>
</body>
</html>
```

Output:

A Green Heading

A red paragraph.

Internal Style

- An internal CSS is used to define a style for a single HTML page.
- An internal CSS is defined in the <head> section of an HTML page, within a <style> element.
- The following example sets the text color of ALL the <h1> elements (on that page) to blue, and the text color of ALL the <p> elements to purple. In addition, the page will be displayed with a "pink" background color:

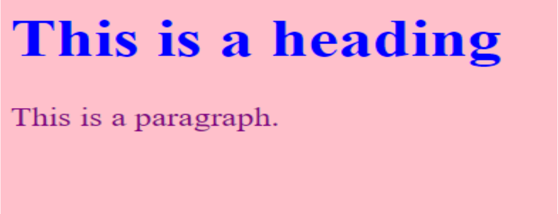
Syntax

```
<head>
        <style>
                Selector{
                  property-name 1 : value;
                  property-name 2 : value;
                  |
                  |
                  property-name n : value;
                }
        </style>
 </head>
```

Example:

```
<html>
<head>
<style>
   body {background-color: pink;}
   h1{color: blue;}
   p{color: purple;}
</style>
</head>
   <body>
   <h1>This is a heading</h1>
   <p>This is a paragraph.</p>
   </body>
</html>
```

Output:



This is a heading

This is a paragraph.

External CSS

- External CSS contains separate CSS file which contains only style property with the help of tag attributes (For example class, id, heading, … etc). CSS property written in a separate file with .css extension and should be linked to the HTML document using **link** tag.
- This means that for each element, style can be set only once and that will be applied across web pages.

Below is the HTML file that is making use of the created external style sheet

<link> tag:

The <link> tag defines the relationship between the current document and an external resource.

```
Syntax: <link rel="stylesheet" href="style.css" type="text/css">
```

Attributes of <link> tag:

- **The "rel" Attribute :** rel is the relationship between the external file and the current file. For CSS, you use stylesheet. For example, rel="stylesheet".
- **The type Attribute :** type is the type of the document you are linking to the HTML. For CSS, it is text/css. For example, type="text/css".
- **The href Attribute :** href stands for "hypertext reference". You use it to specify the location of the CSS file and the file name. For example, href="styles.css" if the CSS file is located in the same folder as the HTML file. Or href="folder/styles.css" if the CSS file is located on another folder.

  Note- <link> tag has rel & href is compulsory attributes

Example

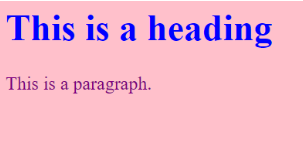
style.css

```
body
{
background-color: pink;
}
h1
{
color: blue;
}
p
{
color: purple;
}
```

demo.html

```
<html>
<head>
        <link rel="stylesheet" href="style.css" type=”text/css”>
</head>
<body>
        <h1>This is a heading</h1>
        <p>This is a paragraph.</p>
</body>
</html>
```

Output:



This is a heading

This is a paragraph.

Cascading Order

All the styles in a page will "cascade" into a new "virtual" style sheet by the following rules, where number one has the highest priority:

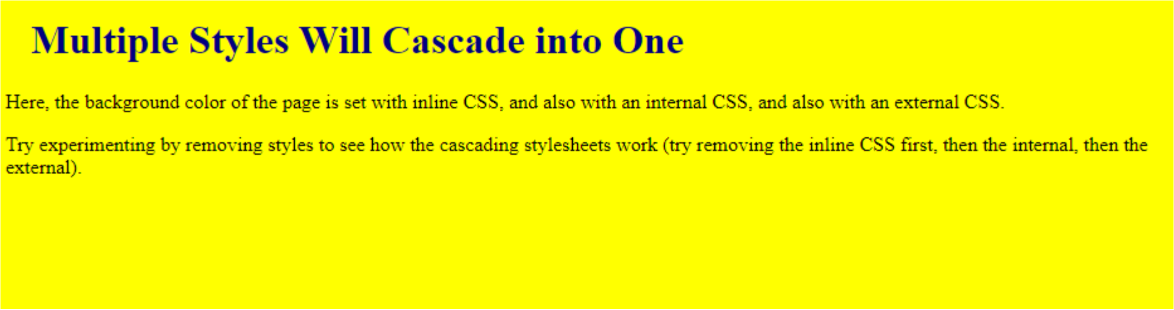
1. Inline style (inside an HTML element)
2. External and internal style sheets (in the head section)
3. Browser default

So, an inline style has the highest priority, and will override external and internal styles and browser defaults.

Example 1

```
<html>
<head>
<link rel="stylesheet" type="text/css" href="mystyle.css">
<style>
body {background-color: red;}
</style>
</head>
<body style="background-color: yellow">
<h1>Multiple Styles Will Cascade into One</h1>
<p>Here, the background color of the page is set with inline CSS, and also with an internal
CSS, and also with
an external CSS.</p>
<p>Try experimenting by removing styles to see how the cascading stylesheets work (try
removing the inline
CSS first, then the internal, then the external).</p>
</body>
</html>
```

Output:



Multiple Styles Will Cascade into One

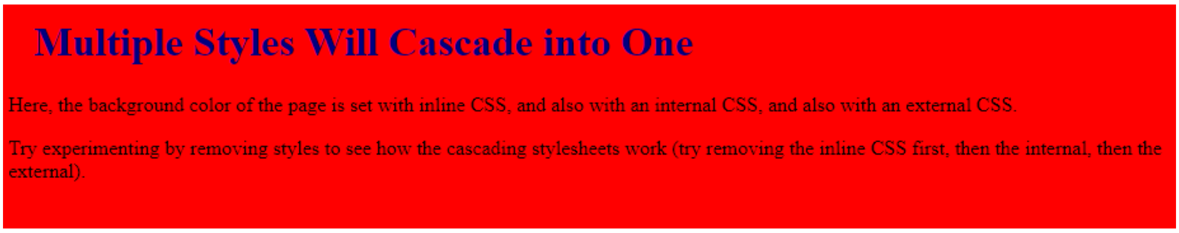
Here, the background color of the page is set with inline CSS, and also with an internal CSS, and also with an external CSS.

Try experimenting by removing styles to see how the cascading stylesheets work (try removing the inline CSS first, then the internal, then the external).

Example 2 (Removing inline style)

```
<html>
<head>
<link rel="stylesheet" type="text/css" href="mystyle.css">
<style>
body {background-color: red;}
</style>
</head>
<body>
<h1>Multiple Styles Will Cascade into One</h1>
<p>Here, the background color of the page is set with inline CSS, and also with an internal
CSS, and also with
an external CSS.</p>
<p>Try experimenting by removing styles to see how the cascading stylesheets work (try
removing the inline
CSS first, then the internal, then the external).</p>
</body>
</html>
```

Output:



Multiple Styles Will Cascade into One

Here, the background color of the page is set with inline CSS, and also with an internal CSS, and also with an external CSS.

Try experimenting by removing styles to see how the cascading stylesheets work (try removing the inline CSS first, then the internal, then the external).

Note: 1) If Internal and External CSS applied in same file then last one will take more priority. 2) The **!important** rule in CSS is used to add more importance to a property/value than normal. In fact, if you use the !important rule, it will override ALL previous styling rules for that specific property on that element!

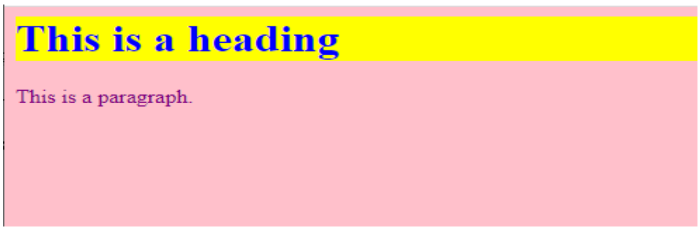
Example: (combination of Internal and External CSS – For Positional effect swap positions of Internal <style> and External CSS <link> tags.)

```
<html>
<head>

<style>
            h1{color: white;
            background-color: aqua ;}
</style>

<link rel="stylesheet" href="style.css">
</head>

<body>
<h1>This is a heading</h1>
<p>This is a paragraph.</p>
</body>
</html>
```

In style.css

```
body {
    background-color: pink;
    }
   h1 {
   color: blue;
   background-color: yellow;
    }
   p {
    color: purple;
    }
```

Output:



This is a heading

This is a paragraph.

Various CSS Selectors

- A CSS selector selects the HTML element(s) you want to style.
- CSS selectors are used to "find" (or select) the HTML elements you want to style.

1) CSS Element Selector

- The element selector selects HTML elements based on the element name.

Syntax: element-name{CSS property: value; CSS property: value………}

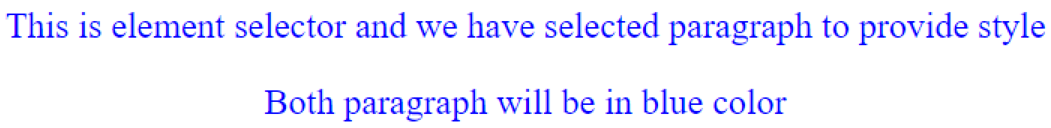
Note: Element name can be any HTML tag name

Example:

- Here, all <p> elements on the page will be center-aligned, with a red text color:

```
<html>
<head>
<style>
p {
text-align: center;
color: blue;
}
</style>
</head>
<body>
<p>This is element selector and we have selected paragraph to provide style<p>
<p>Both paragraph will be in blue color</p>
</body>
</html>
```

Output:



This is element selector and we have selected paragraph to provide style

Both paragraph will be in blue color

2) Id Selector

- The id selector uses the id attribute of an HTML element to select a specific element.
- The id of an element is unique within a page, so the id selector is used to select one unique element!(*create problem from javascript “getElementById()”)
- To select an element with a specific id, write a **hash (#)** character, followed by the id of the element.

Syntax:

```
#element-id{
                CSS property1: value-1;CSS property2: value-2;
                }
```

Note: An id name cannot start with a number! Must start with letter.

Example:

```
<html>
<head>
<style>
#para1 {
text-align: center;
color: green;
}
</style>
</head>
<body>


<p id="para1">Paragraph with ID</p>
<p>Paragraph without ID</p>


</body>
</html>
```

Output:

Paragraph with ID

Paragraph without ID

3) Class Selector

- The class selector selects HTML elements with a specific class attribute.
- To select elements with a specific class, **write a period (.) character**, followed by the class name.

Syntax:

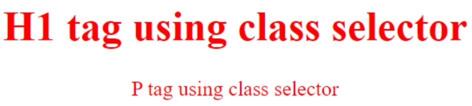
```
.element-classname{
                css property: value;
                }
```

Note: *A class name shouldn't start with a number!*

Example 1:

```
<html>
<head>
<style>
.center{
text-align: center;
color: red;
}
</style>
</head>
<body>

<h1 class="center">H1 tag using class selector</h1>
<p class="center">P tag using class selector</p>


</body>
</html>
```

Output:



H1 tag using class selector

P tag using class selector

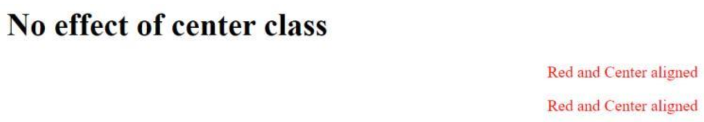
Example 2 (Combination of Element along with class)

- You can also specify that only specific HTML elements should be affected by a class.
- In this example only <p> elements with class="center" will be red and center-aligned:

```
<head>
<style>
p.center {
text-align: center;
color: red;
}
</style>
</head>
```

```
<body>
        <h1 class="center">No effect of center class</h1>
        <p class="center">Red and Center aligned</p>
        <p class="center"> Red and Center aligned</p>
</body>
```

Output:



No effect of center class

Red and Center aligned

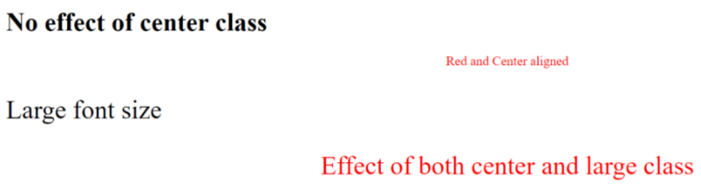
Red and Center aligned

Example 3 (Multiple class can combine with one element)

- HTML elements can also refer to more than one class.
- In this example the <p> element will be styled according to class="center" and to class="large":

```
<html>
<head>
<style>
p.center {
text-align: center;
color: red;
}
p.large {
font-size: 200%;
}
</style>
</head>
<body>
  <h1 class="center">No effect of center class</h1>
  <p class="center">Red and Center aligned</p>
  <p class="large">Large font size</p>
  <p class="center large">Effect of both center and large class</p>
</body>
</html>
```

Output:



No effect of center class

Red and Center aligned

Large font size

Effect of both center and large class

4) Universal Selector

The universal selector (*) selects all HTML elements on the page.

Syntax:

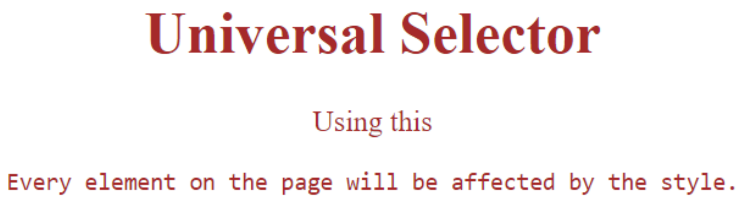
*{ css property: value;…..}

Example:

- The CSS rule below will affect every HTML element on the page:

```
<html>
<head>
<style>
* {
text-align: center;
color: brown;
}
</style>

</head>
<body>
<h1>Universal Selector</h1>
<p>Using this</p>
<pre>Every element on the page will be affected by the style.</pre>
</body>
</html>
```

Output:



Universal Selector

Using this

```
Every element on the page will be affected by the style.
```

5) Descendant selector

If some tag is nested in the other tag then nested tag is called as descendant of parent tag.

The Descendant Selectors can be any selector having the white-space in between the elements without using any combinators. Descendant is a manner to nested anywhere within the DOM tree. This selector is used to select all the child elements of the specified tag.

Syntax:

```
element1 element2
{
css property: value;
}
```

Example:

```
<html>
 <head>
 <style>
 ul b
            {
                  font-size:20px;
                  color:blue;
            }
 </style>
 </head>

 <body>
 <h3>Unordered list</h3>
 <ul>
            <li><b>abc</b></li>
             <li>xyz</li>
            <b><li>pqr</li></b>
            <li><b><i>def</i></b></li>
 </ul>
 </body>
</html>
```

Output:

Unordered list

- **abc**
- xyz
- **pqr**
- ***def***

6) Child Selector

- The child selector selects all elements that are the children of a specified element.
- To apply CSS, nested tag must be a direct child of previous tag.
- The operand on the left side of > is the parent and the operand on the right is the children element.

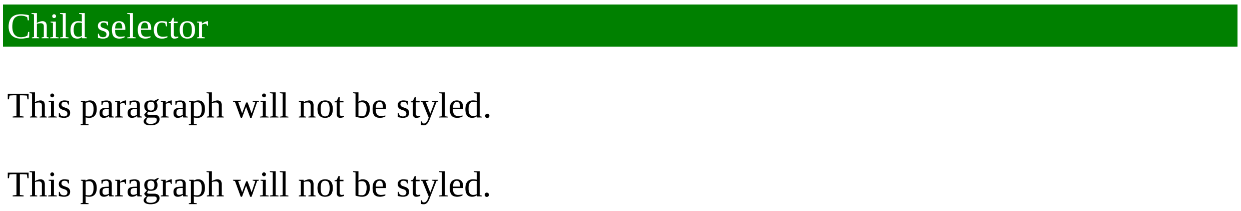
Syntax:

```
element1>element2
{
css property:value;
}
```

Example 1:

```
<html>
<head>
        <style>
                div > p {
                        color:white;
                        background: green;}
        </style>
</head>
<body>
        <div>
                <p>Child selector</p>
        </div>
     <p>This paragraph will not be styled.   </p>
     <p>
        <div>
        This paragraph will not be styled.
        </div>
     </p>
</body>
</html>
```

Output:



Child selector

This paragraph will not be styled.

This paragraph will not be styled.

7) Attribute selector

- It is possible to style HTML elements that have specific attributes or attribute values.
- The [attribute] selector is used to select elements with a specified attribute.
- The attribute selectors can be useful for styling forms without class or ID:

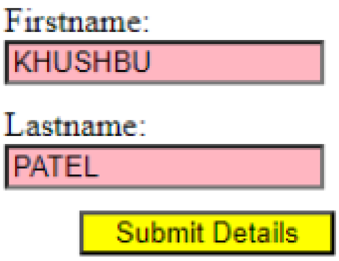
Syntax:
element-name[attribute-name= “value”]{css property: value;}

Note: Any supported attribute name along with it’s value for specific tag should be used. For Example: input[type= “text”] , a[target= “_blank”] , etc..

Example:

```
<html><head><style>
input[type=text] { width: 150px; display: block; margin-bottom: 10px;
background-color: lightpink;}
input[type=button] { width: 120px; margin-left: 35px; display: block;
background-color: yellow;}
</style></head><body>

<form name="input" action="" method="get">
Firstname:<input type="text" name="Name" value="KHUSHBU" size="20">
Lastname:<input type="text" name="Name" value="PATEL" size="20">
<input type="button" value="Submit Details">
</form>
</body></html>
```

Output:



Firstname:
KHUSHBU

Lastname:
PATEL

<u>Every CSS selector has its place in the specificity hierarchy.</u>

There are four categories which define the specificity level of a selector:

1. **Inline styles -** Example: <h1 style= “color: pink”>;

2. **IDs -** Example: #navbar

3. **Classes, pseudo-classes, attribute selectors -** Example: .test, :hover, [href]
4. **Elements and pseudo-elements -** Example: h1, ::before

CSS colors

- Colors are specified using predefined color names, or RGB, HSL, RGBA, HSLA values.
- Colors are specified using HEX code #rr gg bb, Simple #rgb.
- Colors are specified using RGB function: rgb(RRR, GGG, BBB)
- In CSS, a color can be specified by using a predefined color name: Orange, Red, White, Gray etc.

RGB Format: The RGB (Red, Green, Blue) format is used to define the color of an HTML element by specifying the R, G, B values range between 0 to 255. For example: RGB value of Red color is (255, 0, 0)

RGBA Format: The RGBA format is similar to the RGB, but the difference is RGBA contains A (Alpha) which specifies the transparency of elements. The value of alpha lies between 0.0 to 1.0 where 0.0. represents fully transparent and 1.0 represents not transparent.

HSL: HSL stands for Hue, Saturation, and Lightness respectively. This format uses the cylindrical coordinate system.

- Hue: Hue is the degree of the color wheel. Its value lies between 0 to 360 where 0 represents red, 120 represents green and 240 represents blue color.
- Saturation: It takes a percentage value, where 100% represents completely saturated, while 0% represents completely unsaturated (gray).
- Lightness: It takes percentage value, where 100% represents white, while 0% represents black.

Example:

```
<html>
<body>
<h2 style="color:orange;">Hello World!</h2>
<h3 style="color: hsla(120, 100%, 30%, 0.5);">Be kind</h3>
<h4 style="color:rgb(25,140,230);">Keep Smiling</h4>
<h5 style="color: #df0fdd;">Be Happy</h5>
</body>
</html>
```

Output:

Hello World!

Be kind

Keep Smiling

Be Happy

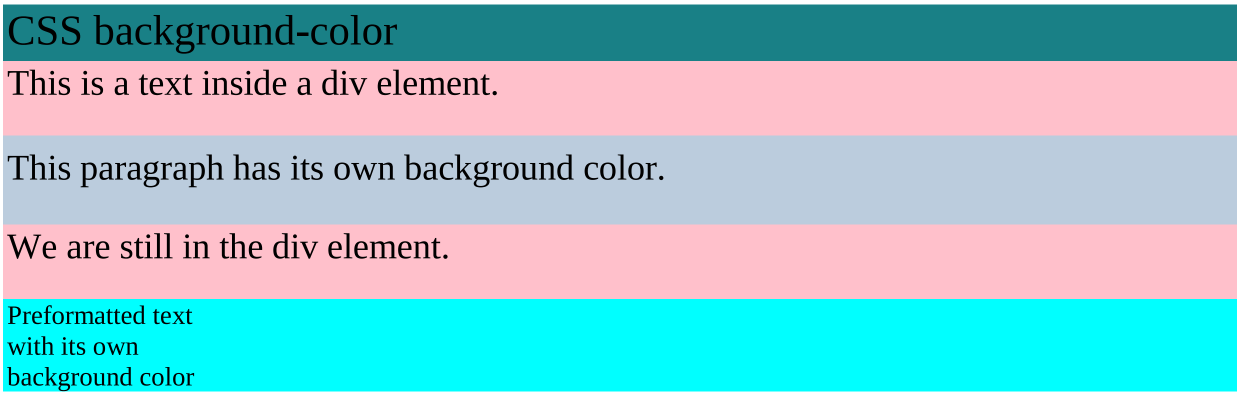
Background Rules: background-color

The background-color property specifies the background color of an element.

Example

```
<html>
<head>
<style>
h1 {background-color: rgb(25, 128, 134);}
div {background-color: #FFC0CB;}
p {background-color: #bcd;}
pre {background-color: aqua;}
</style>
</head>
<body>
<h1>CSS background-color</h1>
<div>
        This is a text inside a div element.
        <p>This paragraph has its own background color.</p>
        We are still in the div element.
        <pre>Preformatted text
        with its own
        background color
        </pre>
</div>
</body>
</html>
```

Output:



```
CSS background-color
This is a text inside a div element.

This paragraph has its own background color.

We are still in the div element.

Preformatted text
with its own
background color
```

Background Rules: background-image

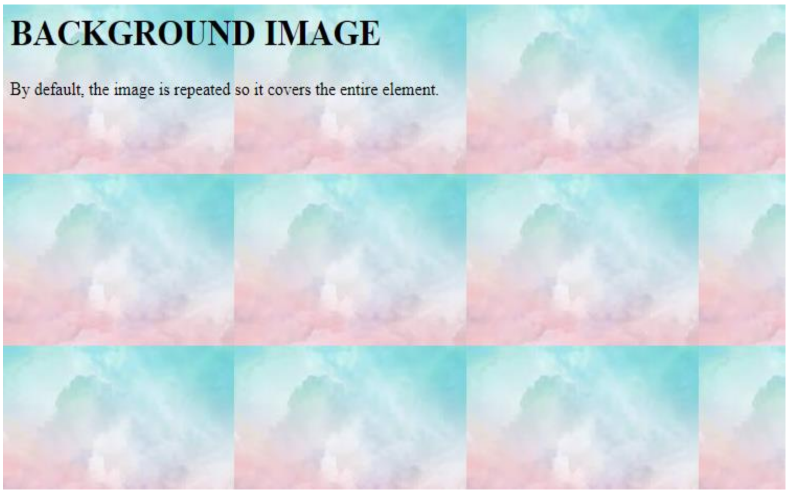
- Sets the background image for an element
- The background-image property specifies an image to use as the background of an element.
- By default, the image is repeated so it covers the entire element.
- The background image can also be set for specific elements, like the <p> element.

Note: When using a background image, use an image that does not disturb the text.

Example:

```
<html>
<head>
<style>
body {
           background-image: url("scenary.jfif");
          }
</style>
</head>
<body>
          <h1>BACKGROUND IMAGE</h1>
          <p>By default, the image is repeated so it covers the entire element.</p>
</body>
</html>
```

Output:



BACKGROUND IMAGE

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

Note: **background-size:100%** will fill viewport by stretching single image

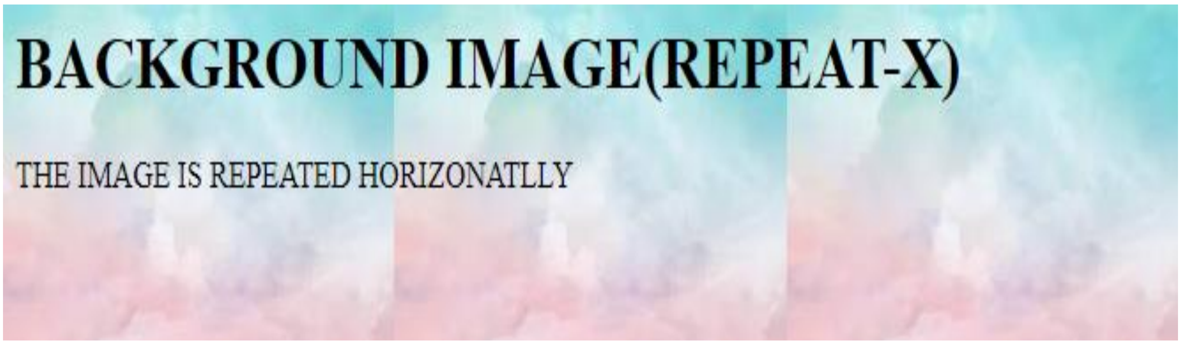
Background Rules: background-repeat

- By default, the background-image property repeats an image both horizontally and vertically.
- Some images should be repeated only horizontally or vertically, or they will look strange.
- To repeat an image vertically, set background-repeat: repeat-y;
- To repeat an image horizontally, set background-repeat: repeat-x;
- To repeat an image only once, set background-repeat: no-repeat;

Example (repeat-x):

```
<head>
   <style>
   body {
         background-image: url("nature.jfif");
         background-repeat: repeat-X;
         }
   </style>
   </head>
   <body>
         <h1>BACKGROUND IMAGE(REPEAT-X)</h1>
          <p>THE IMAGE IS REPEATED HORIZONATLLY</p>
   </body>
   </html>
```

Output:



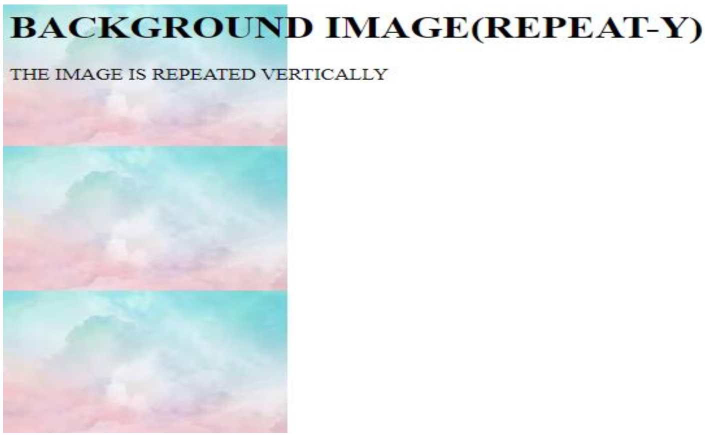
BACKGROUND IMAGE(REPEAT-X)

THE IMAGE IS REPEATED HORIZONATLLY

Example (repeat-y):

```
<html>
<head>
<style>
body {
            background-image: url("scenary.jfif");
            background-repeat: repeat-y;
           }
</style>
</head>
<body>
           <h1>BACKGROUND IMAGE(REPEAT-Y)</h1>
           <p>THE IMAGE IS REPEATED VERTICALLY</p>
</body>
</html>
```

Output:



BACKGROUND IMAGE(REPEAT-Y)

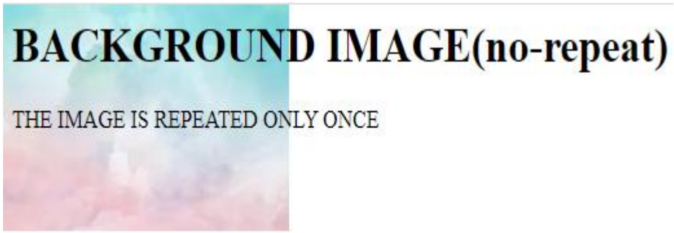
THE IMAGE IS REPEATED VERTICALLY

Example (no-repeat)

```
<html>
<head>
<style>
body {
           background-image: url("scenary.jfif");
            background-repeat: no-repeat;
}
</style>
</head>
<body>
```

```
        <h1>BACKGROUND IMAGE(no-repeat)</h1>
        <p>THE IMAGE IS REPEATED ONLY ONCE</p>
</body>
</html>
```

Output:



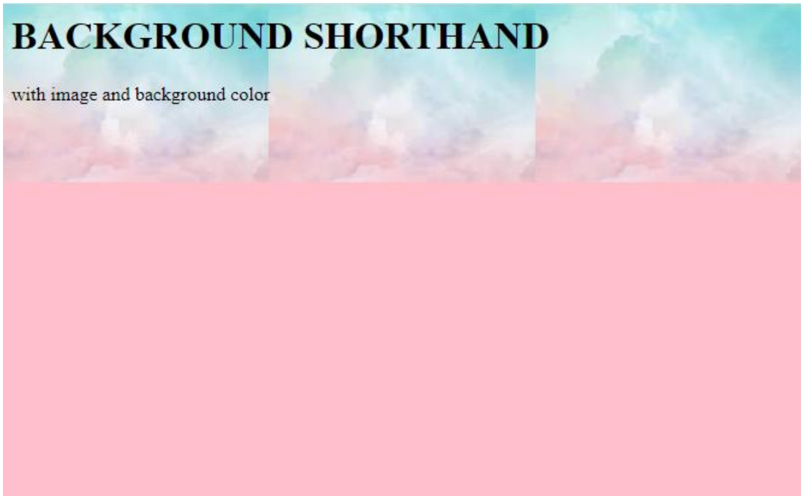
BACKGROUND IMAGE(no-repeat)

THE IMAGE IS REPEATED ONLY ONCE

Example (Shorthand):

```
<html>
<head>
<style>
body {
        background: url("scenary.jfif") pink repeat-x;
        }
</style>
</head>
<body>
        <h1>BACKGROUND SHORTHAND</h1>
        <p>with image and background color</p>
</body>
</html>
```

Output:



BACKGROUND SHORTHAND

with image and background color

Text Manipulation: text-indent

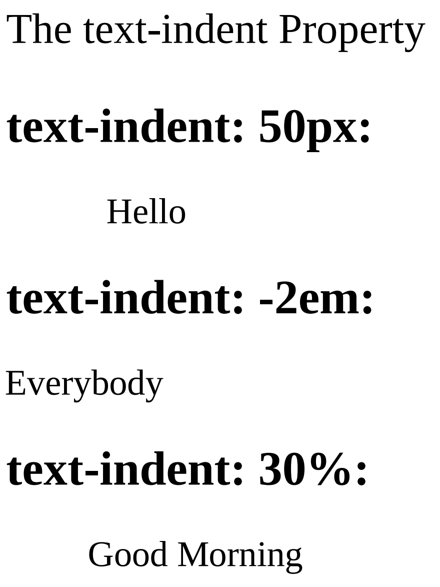
The text-indent property specifies the indentation of the first line in a text-block. Defines a fixed indentation in px, pt, cm, em, etc. Default value is 0.

Note: Negative values are allowed. The first line will be indented to the left if the value is negative.

Example:

```
<html>
<head>
<style>
        .a {
            text-indent: 50px;
        }
        .b {
            text-indent: -2em;
        }
        .c {
            text-indent: 5%;
        }
</style>
</head>
<body>
<h1>The text-indent Property</h1>
<h2>text-indent: 50px:</h2>
<div class="a">
        <p>Hello</p>
</div>
<h2>text-indent: -2em:</h2>
<div class="b">
        <p>Everybody</p>
</div>
<h2>text-indent: 30%:</h2>
<div class="c">
        <p>Good Morning</p>
</div>
</body>
</html>
```

Output:



The text-indent Property

text-indent: 50px:

          Hello

text-indent: -2em:

Everybody

text-indent: 30%:

        Good Morning

Text Manipulation: text-decoration

- This property is used to decorate a text.
- Possible values are: none, underline, overline, line-through.

Example

```
<html>
<head>
<style>
h1 {
            text-decoration: overline;
           }
h2 {
            text-decoration: line-through;
           }
h3 {
            text-decoration: underline;
           }
h4 {
           text-decoration: underline overline;
           }
h5 {
            text-decoration: none;
           }
</style>
```

```
</head>
<body>
        <h1>Heading with overline</h1>
        <h2>Heading with line-through</h2>
        <h3>Heading with underline</h3>
        <h4>Heading with underline overline</h4>
        <h5>Heading with none</h5>
</body>
</html>
```

Output:

Heading with overline

~~Heading with line-through~~

Heading with underline

Heading with underline overline

Heading with none

For Reference

The text-decoration property is a shorthand property for:

- text-decoration-line (required)
- text-decoration-color (optional)
- text-decoration-style (optional)
- text-decoration-thickness (optional)

or

text-decoration: text-decoration-line text-decoration-style text-decoration-color text decoration-thickness

Example: text-decoration: underline double red 2px;

Text Manipulation: text-transform

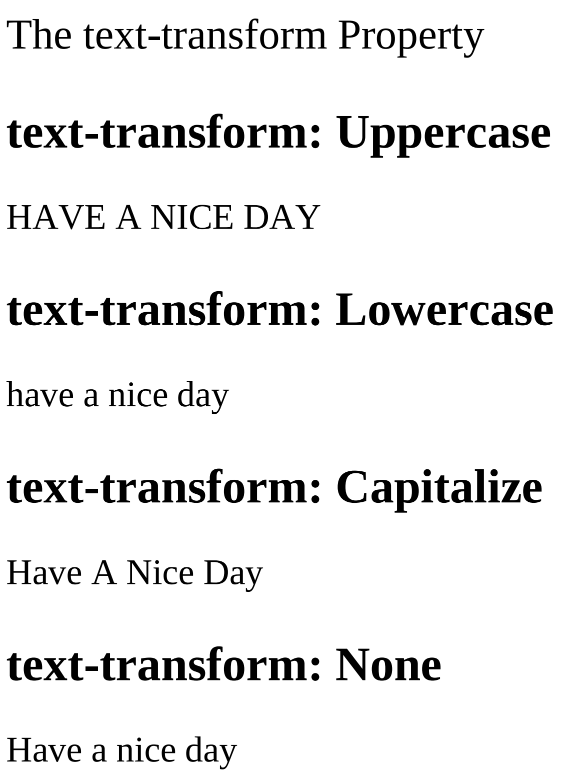
The text-transform property controls the capitalization of text. Possible values are: uppercase, lowercase, capitalize.

- **none:** No capitalization. The text renders as it is. This is default
- **capitalize:** Transforms the first character of each word to uppercase
- **lowercase:** Transforms all characters to lowercase
- **uppercase:** Transforms all characters to uppercase

Example:

```
<html>
<head>
<style>
.a {
        text-transform: uppercase;
        }
.b {
         text-transform: lowercase;
        }
.c {
         text-transform: capitalize;
        }
.d {
         text-transform: none;
        }
</style>
</head>
<body>
<h1>The text-transform Property</h1>
<h2>text-transform: Uppercase</h2>
        <div class="a">Have a nice day</div>
<h2>text-transform: Lowercase</h2>
        <div class="b">Have a nice day</div>
<h2>text-transform: Capitalize</h2>
        <div class="c">Have a nice day</div>
<h2>text-transform: None</h2>
        <div class="d">Have a nice day</div>
</body>
</html>
```

Output:



The text-transform Property

text-transform: Uppercase

HAVE A NICE DAY

text-transform: Lowercase

have a nice day

text-transform: Capitalize

Have A Nice Day

text-transform: None

Have a nice day

Text Manipulation: text-align

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

Syntax:

text-align: left|right|center|justify;

- left: It is used to set the text-alignment into left. This is the default property.
- right: It is used to set the text-alignment to right.
- center: It is used to set the text-alignment into the center.
- justify: It is used to spreads the words into the complete line i.e., by stretching the content of an element.
- initial: It is used to set an element's CSS property to its default value.
- inherit: It is used to inherit a property to an element from its parent element property value.

Example:

```
<html>
<head>
<style>
.a {
        text-align: center;
        }
.b {
        text-align: left;
        }
.c {
        text-align: right;
        }
.d {
        text-align: justify;
        }
</style>
</head>
<body>
<h1>The text-align Property</h1>
<h2>text-align: center:</h2>
<p class="a">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.</p>
<h2>text-align: left:</h2>
<p class="b">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.</p>
<h2>text-align: right:</h2>
<p class="c">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.</p>
<h2>text-align: justify:</h2>
<p class="d">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.</p>
</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 Fonts

- Choosing the right font has a huge impact on how the readers experience a website.
- The right font can create a strong identity for your brand.
- Using a font that is easy to read is important. The font adds value to your text. It is also important to choose the correct color and text size for the font.

These are some important font attributes:

- **CSS Font color:** This property is used to change the color of the text. (Already studied before color property to change color of the font)
- **CSS Font family:** This property is used to change the face of the font.
- **CSS Font size:** This property is used to increase or decrease the size of the font.
- **CSS Font style:** This property is used to make the font bold, italic or oblique.
- **CSS Font variant:** This property creates a small-caps effect.
- **CSS Font weight:** This property is used to increase or decrease the boldness and lightness of the font.

Font families:
In CSS, we use the font-family property to specify the font of a text.
Note: If the font name is more than one word, it must be in quotation marks, like: "Times New Roman".

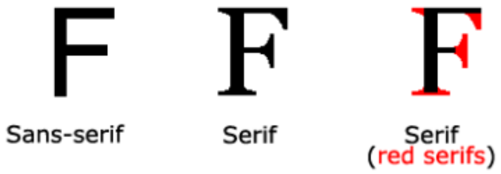
1. **Serif fonts** have a small stroke at the edges of each letter. They create a sense of formality and elegance. Serif fonts include small lines at the end of characters.
Example of serif: Times new roman, Georgia etc.

2. **Sans-serif fonts** have clean lines (no small strokes attached). They create a modern and minimalistic look. A sans-serif font doesn't include the small lines at the end of characters.
Example of Sans-serif: Arial, Verdana etc.

3. **Monospace fonts** - here all the letters have the same fixed width. They create a mechanical look.

4. **Cursive fonts** imitate human handwriting.

5. **Fantasy fonts** are decorative/playful fonts.



Generic Font Family	Examples of Font Names
Serif	Times New Roman
	Georgia
	Garamond
Sans-serif	Arial
	Verdana
	Helvetica
Monospace	Courier New
	Lucida Console
	Monaco
Cursive	Brush Script MT
	Lucida Handwriting
Fantasy	Copperplate
	Papyrus

Example:

```
<head>
<style>
.p1 {font-family: "Times New Roman", Times, serif;}
.p2 {    font-family: Arial, Helvetica, sans-serif;}
.p3 {    font-family: "Lucida Console", "Courier New", monospace;}
</style>
</head>
<body>
<h1>CSS font-family</h1>
        <p class="p1">This is a paragraph, shown in the Times New Roman font.</p>
        <p class="p2">This is a paragraph, shown in the Arial font.</p>
        <p class="p3">This is a paragraph, shown in the Lucida Console font.</p>
</body>
```

Output:

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.

Font style

The font-style property is mostly used to specify italic text. Possible values for these properties are:

1) **Normal**: The text is shown normally

2) **Italic**: The text is shown in italics

Example:

```
<html>
<head>
<style>
p.normal {
        font-style: normal;
        }
p.italic {
        font-style: italic;
        }
</style>
</head>
<body>
<h1>The font-style property</h1>
        <p class="normal">This is a paragraph in normal style.</p>
        <p class="italic">This is a paragraph in italic style.</p>
</body>
</html>
```

Output:

The font-style property

This is a paragraph in normal style.

This is a paragraph in italic style.

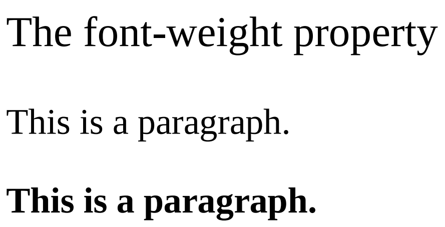
Font weight

- The font-weight property specifies the weight of a font:

Example:

```
<html>
<head>
<style>
p.normal {
            font-weight: normal;
           }
p.thick {
            font-weight: bold;
           }
</style>
</head>
<body>
<h1>The font-weight property</h1>
           <p class="normal">This is a paragraph.</p>
           <p class="thick">This is a paragraph.</p>
</body>
</html>
```

Output:



The font-weight property

This is a paragraph.

This is a paragraph.

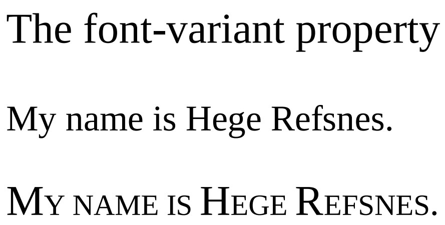
Font variant

- The font-variant property specifies whether or not a text should be displayed in a small caps font.
- In a small-caps font, all lowercase letters are converted to uppercase letters. However, the converted uppercase letters appears in a smaller font size than the original uppercase letters in the text.

Example:

```
<html>
<head>
<style>
p.normal {
            font-variant: normal;
           }
p.small {
            font-variant: small-caps;
           }
</style>
</head>
<body>
<h1>The font-variant property</h1>
           <p class="normal">My name is Hege Refsnes.</p>
           <p class="small">My name is Hege Refsnes.</p>
</body>
</html>
```

Output:



The font-variant property

My name is Hege Refsnes.

MY NAME IS HEGE REFSNES.

Font size

- The font-size property sets the size of a font.

Syntax:

font-size: medium|xx-small|x-small|small|large|x-large|xx-large|px|%

Example:

```
<html><head>
<style>
.a { font-size: 15px;}
.b {font-size: large;}
.c { font-size: 150%;}
.d { font-size: small;}
.e {font-size: x-small;}
.f {font-size: xx-small;}
</style>
</head>
<body>
<h1>The font-size Property</h1>
        <p class="a">This is some text.</p>
        <p class="b">This is some text.</p>
        <p class="c">This is some text.</p>
        <p class="d">This is some text.</p>
        <p class="e">This is some text.</p>
        <p class="f">This is some text.</p>
</body>
</html>
```

Output:

```
The font-size Property

This is some text.

This is some text.

This is some text.

This is some text.

This is some text.

This is some text.
```

CSS text controls: Letter spacing

- The letter-spacing property is used to specify the space between the characters in a text.
- This CSS property used to control the space between every letter inside an element or the block of text. It modifies the space between the adjacent characters.
- Using this property, we can increase or decrease the space between the characters of the text.

Syntax: letter-spacing: normal | length

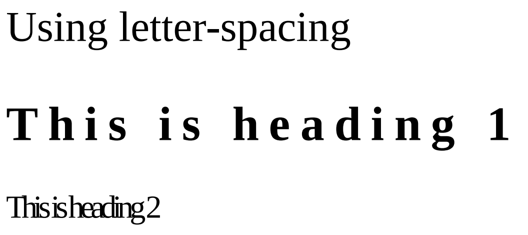
normal: It is the default value that does not provide any space between the characters. It does not change the default spacing between the letters. It is similar to set the value to 0.

length: It is used to specify an additional space between the characters. It allows the negative values also. The greater length implies the maximum space between the letters. This value supports the font-relative values (em, rem), absolute values (px).

Example:

```
<html>
<head>
<style>
        h2 {
            letter-spacing: 5px;
        }
        h3 {
           letter-spacing: -2px;
        }
</style>
</head>
<body>
        <h1>Using letter-spacing</h1>
        <h2>This is heading 1</h2>
        <h3>This is heading 2</h3>
</body>
</html>
```

Output:



Using letter-spacing

This is heading 1

This is heading 2

CSS text controls: Word spacing

- The word-spacing property is used to specify the space between the words in a text.
- This CSS property is used to control the space between the words.
- Using this property, we can increase or decrease the space between the words.
- It is similar to the **letter-spacing** property, but instead of specifying the space between the individual characters, this CSS property defines the space between the words in the piece of text.
- A large negative or positive value of **word-spacing** will make the word unreadable.
- A very large negative value will overlap the word to each other, which makes the word unrecognizable.

Syntax : word-spacing: normal | length

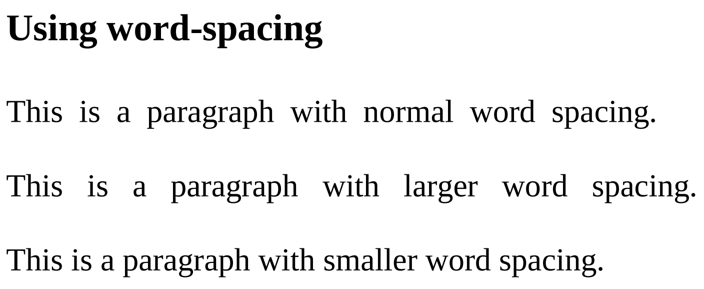
normal: It is the default value that defines the normal space (0.25em) between the words. It is used to specify the space which is defined by the browser.

length: It specifies an extra space between the words in terms of length (in **pt, px, em, cm,** etc.). It allows negative values.

Example:

```
<html>
<head>
<style>
        p.one {word-spacing: 10px;}
        p.two {word-spacing: -2px;}
</style>
</head>
<body>
        <h1>Using word-spacing</h1>
        <p>This is a paragraph with normal word spacing. </p>
        <p class="one">This is a paragraph with larger word spacing. </p>
        <p class="two">This is a paragraph with smaller word spacing. </p>
</body>
</html>
```

Output:



Using word-spacing

This is a paragraph with normal word spacing.

This is a paragraph with larger word spacing.

This is a paragraph with smaller word spacing.

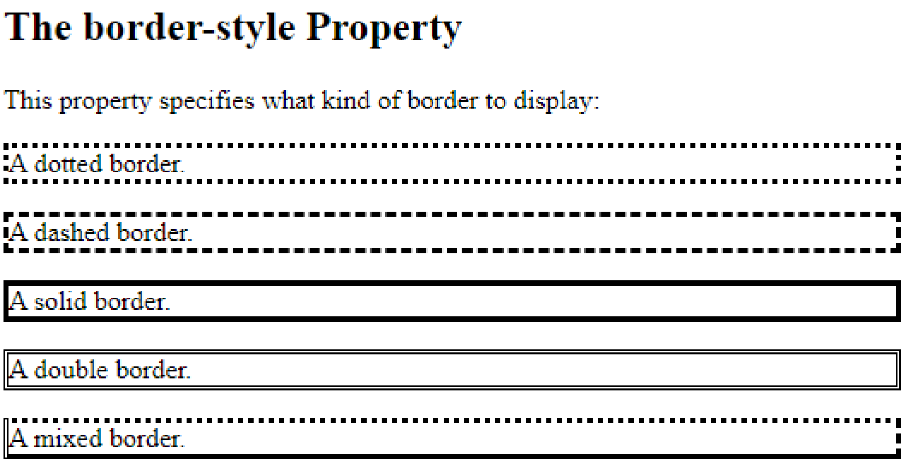
CSS Borders

- The CSS border properties allow you to specify the style, width, and color of an element's border.
- The border-style property specifies what kind of border to display.
- Possible values are: **solid, dotted, dashed, double, none.**

Example:

```
<html>
<head>
<style>
        p.dotted {border-style: dotted;}
        p.dashed {border-style: dashed;}
        p.solid {border-style: solid;}
        p.double {border-style: double;}
        p.mix {border-style: dotted dashed solid double;}
</style>
</head>
<body>
<h2>The border-style Property</h2>
<p>This property specifies what kind of border to display:</p>
        <p class="dotted">A dotted border.</p>
        <p class="dashed">A dashed border.</p>
        <p class="solid">A solid border.</p>
        <p class="double">A double border.</p>
        <p class="mix">A mixed border.</p>
</body>
</html>
```

Output:



The border-style Property

This property specifies what kind of border to display:

A dotted border.

A dashed border.

A solid border.

A double border.

A mixed border.

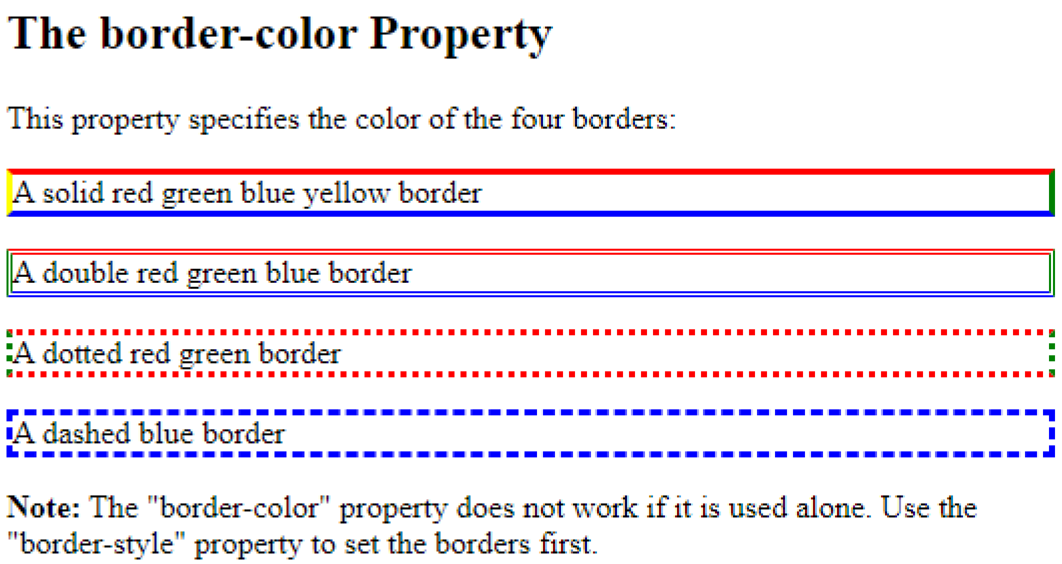
Border color

- The border-color property is used to set the color of the four borders.
- The border-color property can have from one to four values (for the top border, right border, bottom border, and the left border).

Example:

```
<html>
<head>
<style>
p.one {
             border-style: solid;
            border-color: red green blue yellow;
                                  /* red top, green right, blue bottom and yellow left */
            }
p.two {
             border-style: double;
            border-color: red green blue;
            }
p.three {
            border-style: dotted;
            border-color: red green;
            }
p.four {
            border-style: dashed;
            border-color: blue;
            }
</style>
</head>
<body>
<h2>The border-color Property</h2>
<p>This property specifies the color of the four borders:</p>
            <p class="one">A solid red green blue yellow border</p>
            <p class="two">A double red green blue border</p>
            <p class="three">A dotted red green border</p>
            <p class="four">A dashed blue border</p>
<p><b>Note:</b> The "border-color" property does not work if it is used alone.
Use the "border-style" property to set the borders first.</p>
</body>
</html>
```

Output:



The border-color Property

This property specifies the color of the four borders:

A solid red green blue yellow border

A double red green blue border

A dotted red green border

A dashed blue border

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

Border width

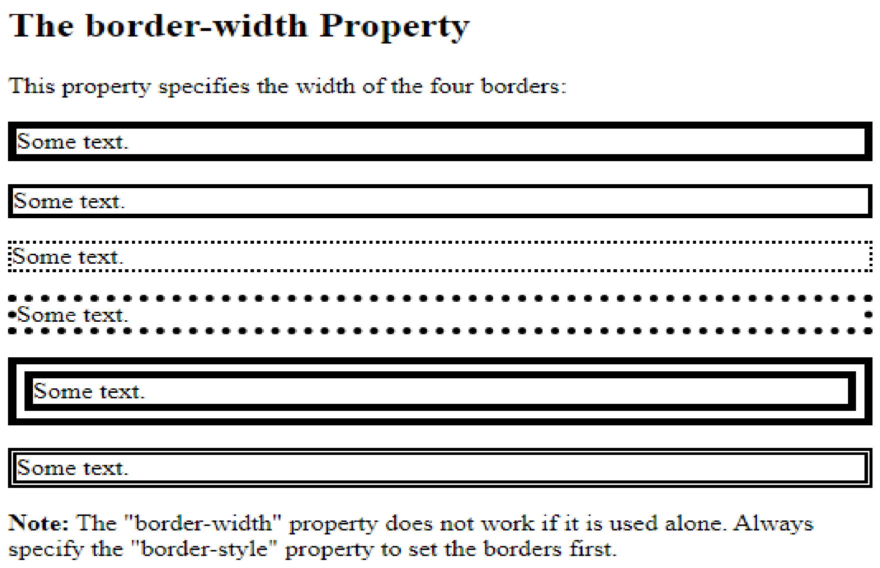
- The border-width property specifies the width of the four borders.
- The width can be set as a specific size (in px, pt, cm, em, etc) or by using one of the three pre-defined values: thin, medium, or thick (Also different values for different sides can assigned)

Example:

```
<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.

Border Shorthand

- To shorten the code, it is also possible to specify all the individual border properties in one property.
- The border property is a shorthand property for the following individual border properties: border-width, border-style(required), border-color.

```
Syntax :  border: 1px solid red
```

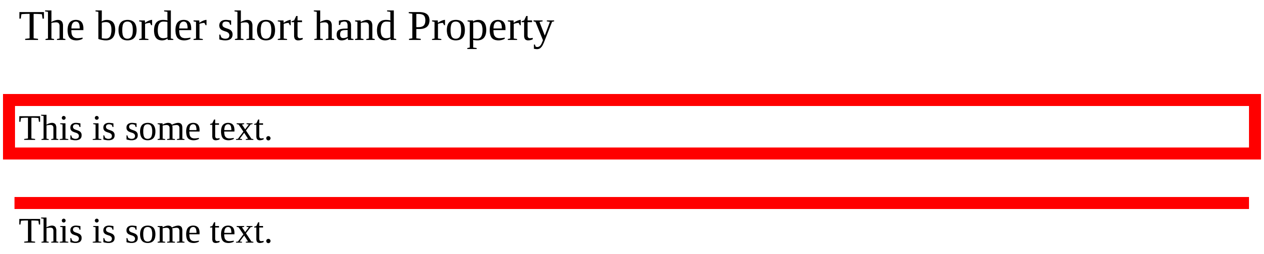
- It can be also specify all the individual border properties for just one side as shown below:
  border-left: 6px solid red;
  border-bottom: 6px solid red;
  border-top: 6px solid red;
  border-right: 6px solid red;

Note: The "border-color" property does not work if it is used alone. Use the "borderstyle" Property to set the borders first. If border-color is not set, it inherits the color of the element.

Example:

```
<head>
<style>
.a {border: 5px solid red;}
.b{ border-top: 5px solid red;}
</style>
</head>
<body>
<h1>The border short hand Property</h1>
        <p class="a">This is some text.</p>
        <p class="b">This is some text.</p>
</body>
</html>
```

Output:



The border short hand Property

This is some text.

This is some text.

Pseudo classes

A pseudo-class is used to define a special state of an element. It can be used to:

1) Style an element when a user mouse over it

2) Style visited and unvisited links differently

3) Style an element when it gets focus

Syntax: selector : pseudo-class { property: value}

:link Pseudo-class:

The **:link** CSS pseudo-class represents an element that has not yet been visited. It matches every unvisited <a> or <area> element that has an href attribute.

:hover Pseudo-class:

This pseudo-class is used to add a special effect to an element when our mouse pointer is over it. For example when you hover on the box, its background color changes or any other defined property changes it's value.

:active Pseudo-class:

This pseudo-class is used to select an element that is activated when the user clicks on it.

:focus Pseudo-class:

This pseudo-class is used to select an element that is currently focused by the user. It works on user input elements used in forms and is triggered as soon as the user clicks on it.

:visited Pseudo-class:

This pseudo-class is used to select the links which have been already visited by the user.

:not pseudo-class:

This pseudo-class is used to select elements that do not match a specific selector.

Example:

```
<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>
<h2>Styling a link depending on state</h2>
<p><b><a href="default.asp" target="_blank">This is a link</a></b></p>

<p><b>Note:</b> a:hover MUST come after a:link and a:visited in the CSS
definition in order to be effective.</p>

<p><b>Note:</b> a:active MUST come after a:hover in the CSS definition in order
to be effective.</p>
</body>
```

Output:

Styling a link depending on state

This is a link

Note: a:hover MUST come after a:link and a:visited in the CSS definition in order to be effective.

Note: a:active MUST come after a:hover in the CSS definition in order to be effective.

Example:

```
<html>
<head>
<style>
a:link{color:blue;}
a:visited{color:blue;}
a:hover{color:yellow;}
a:active{color:cyan;}

ol:hover{color:pink;}
ol:active{color:purple;}

a.highlight:hover{font-size:100px;}
</style>
</head>
<body>
        <a href="http://www.facebook.com" class="highlight" >FACEBOOK</a>
<ol>
        <li>ABC</li>
        <li>PQR</li>
</ol>
</body>
</html>
```

Output:

```
FACEBOOK

    1.  ABC
    2.  PQR
```

Pseudo Elements

A CSS pseudo-element is used to style specified parts of an element. It can be used to:

1) Style the first letter, or line, of an element

2) Insert content before, or after, the content of an element

Syntax: **selector::**pseudo-element{ property: value;……}

The ::first-line Pseudo-element

• The:: first-line pseudo-element is used to add a special style to the first line of a text.

It applies styles to the first line of a block-level element.

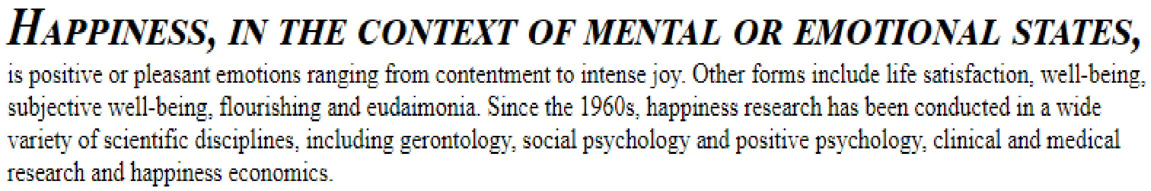
Only a few properties are applied for first-line pseudo-element like font properties, color properties, background properties, word-spacing, letterspacing, text-decoration, text-transform etc.

Example:

```
<html>
<head>
<style>
p::first-line
        {
        font-size:30px;
        font-family:times new roman,sarif;
        font-style:italic;
        font-weight:bold;
        font-variant:small-caps;
        }
</style>
</head>
<body>
<p>Happiness, in the context of mental or emotional states, is
positive or pleasant emotions ranging from contentment to intense joy. Other
forms include life satisfaction, well-being, subjective well-being, flourishing
and eudaimonia.
Since the 1960s, happiness research has been conducted in a wide variety of
scientific disciplines, including gerontology, social psychology and positive
psychology, clinical and medical research and happiness economics.</p>
```

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

Output:



HAPPINESS, IN THE CONTEXT OF MENTAL OR EMOTIONAL STATES,

is positive or pleasant emotions ranging from contentment to intense joy. Other forms include life satisfaction, well-being, subjective well-being, flourishing and eudaimonia. Since the 1960s, happiness research has been conducted in a wide variety of scientific disciplines, including gerontology, social psychology and positive psychology, clinical and medical research and happiness economics.

The ::first-letter Pseudo-element

The ::first-letter pseudo-element is used to add a special style to the first letter of a text.

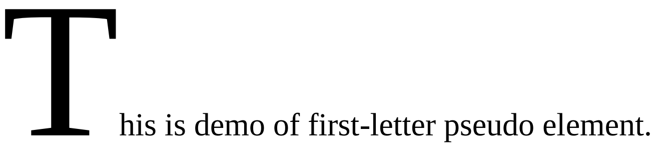
It applies styles to the first letter of the first line of a block-level element, but only when not preceded by other content (such as images or inline tables).

Only a few properties are applied for first-line pseudo-element like font properties, color properties, background properties, word-spacing, letterspacing, text-decoration, text-transform etc.

Example:

```
<html>
<head>
<style>
p::first-letter
        {
        font-size:100px;
        }
</style>
</head>
<body>
        <p>This is demo of first-letter pseudo element. </p>
</body>
</html>
```

Output:



This is demo of first-letter pseudo element.

CSS - The ::before Pseudo-element

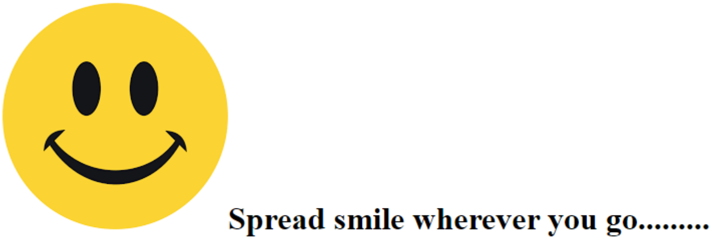
The ::before pseudo-element can be used to insert some content before the content of an element.

- It creates a pseudo-element that is the first child of the selected element.
- It is often used to add cosmetic content to an element with the **content property.**
- It is inline by default.

Example:

```
<html>
<head>
<style>
h1::before
        {
        content:url("smile.png");
        }
</style>
</head>
<body>
        <h1>Spread smile wherever you go.........</h1>
</body>
</html>
```

Output:



Spread smile wherever you go.........

CSS - The ::after Pseudo-element

The ::after pseudo-element can be used to insert some content after the content of an element.

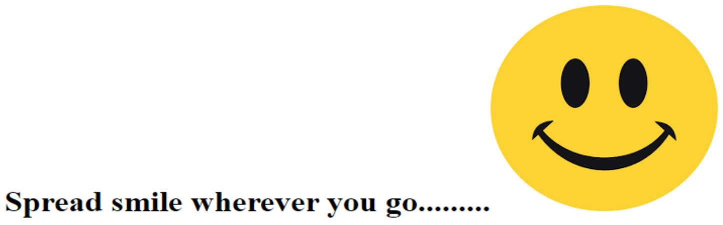
::after Pseudo-element

- It creates a pseudo-element that is the last child of the selected element.
- It is often used to add cosmetic content to an element with the **content property.**
- It is inline by default.

Example:

```
<html>
<head>
<style>
h1::after
          {
          content:url("smile.png");
          }
</style>
</head>
<body>
          <h1>Spread smile wherever you go.........</h1>
</body>
</html>
```

Output:



Spread smile wherever you go.........

CSS - The ::marker Pseudo-element

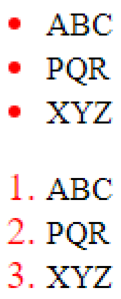
The ::marker pseudo-element selects the markers of list items.

- It selects the marker box of a list item, which typically contains a bullet or number.
- It works on any element or pseudo-element set to display: list-item, such as the <li> and <summary> elements.

Example:

```
<html>
<head>
<style>
        ::marker
        {
            color:red;
            font-size:20px;
        }
</style>
</head>
<body>
<ul>
        <li>ABC</li>
        <li>PQR</li>
        <li>XYZ</li>
</ul>
<ol>
        <li>ABC</li>
        <li>PQR</li>
        <li>XYZ</li>
<ol>
</body>
</html>
```

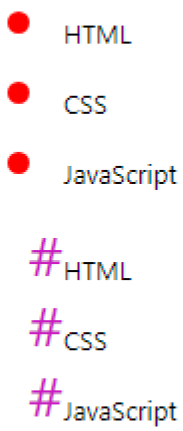
Output:



```
•  ABC
•  PQR
•  XYZ

1. ABC
2. PQR
3. XYZ
```

Example:

```
<html lang="en">
<head>
    <title>marker Demo</title>
    <style>
        .u1 li::marker {
            color: red;
            font-size: 30px;
        }
        .u2 li::marker {
          content:"#";
          color: rgb(201, 27, 192);
          font-size: 30px;
        }
    </style>
</head>
<body>

    <ul class="u1">
        <li>HTML</li>
        <li>CSS</li>
        <li>JavaScript</li>
    </ul>
    <ul class="u2">
      <li>HTML</li>
      <li>CSS</li>
      <li>JavaScript</li>
  </ul>
</body>
</html>
```



```
●   HTML

●   CSS

●   JavaScript

  #HTML
  #CSS
  #JavaScript
```

CSS - The ::selection Pseudo-element

- The ::selection pseudo-element matches the portion of an element that is selected by a user.
- The following CSS properties can be applied to ::selection: color, background, cursor, and outline.

Example:

```
<html>
<head>
<style>
        ::selection
        {
          color:green;
          background-color:yellow;
        }
</style>
</head>
<body>
        <h2>Example of selection pseudo element</h2>
        <p>Select Any Text on this page</p>
</body>
</html>
```

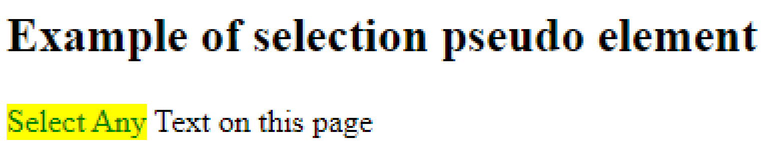
Output:

<u>Before selection of text:</u>

Example of selection pseudo element

Select Any Text on this page

<u>After selection of text:</u>



Example of selection pseudo element

Select Any Text on this page

CSS Box Model

- All HTML elements can be considered as boxes.
- In CSS, the term "box model" is used when talking about design and layout.
- The box model allows us to add a border around elements, and to define space between elements.
- The CSS box model is essentially a box that wraps around every HTML element. It consists of: margins, borders, padding, and the actual content.

Explanation of the different parts:

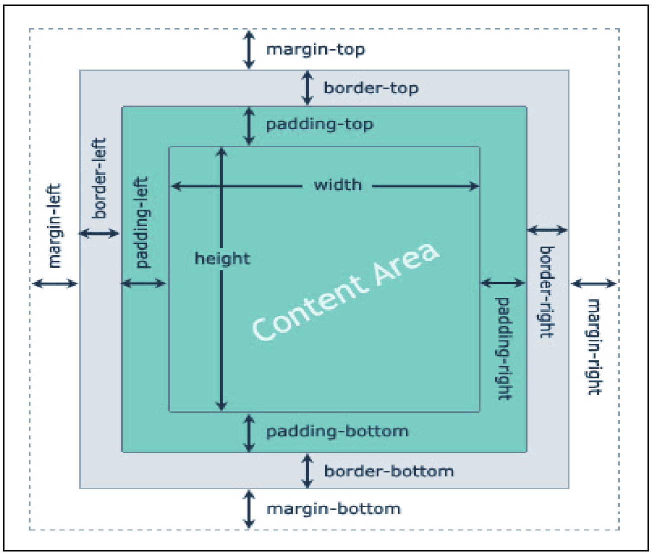
Content - The content of the box, where text and images appear

Padding - Clears an area around the content. The padding is transparent

Border - A border that goes around the padding and content, & also allows setting the style, color, and width of the border.

Margin - Clears an area outside the border. The margin is transparent

The box model allows us to add a border around elements, and to define space between elements.



CSS Padding

- The CSS padding properties are used to generate space around an element's content, inside of any defined borders.
- There are properties for setting the padding for each side of an element (top, right, bottom, and left).

Padding - Individual Sides

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

Padding - Shorthand Property

1. If the padding property has four values:

padding: 25px 50px 75px 100px;
• top padding is 25px
• right padding is 50px
• bottom padding is 75px
• left padding is 100px

2. If the padding property has three values:

padding: 25px 50px 75px;
• top padding is 25px
• right and left paddings are 50px
• bottom padding is 75px

3. If the padding property has two values:

padding: 25px 50px;
• top and bottom paddings are 25px
• right and left paddings are 50px

4. If the padding property has one value:

padding: 25px;
• all four paddings are 25px

CSS Margins : Margins are used to create space around elements, outside of any defined borders.

Margin - Individual Sides

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
Note: Negative values are allowed.

Margin - Shorthand Property

1. If the margin property has four values:

margin: 25px 50px 75px 100px;
• top margin is 25px
• right margin is 50px
• bottom margin is 75px
• left margin is 100px

2. If the margin property has three values:

margin: 25px 50px 75px;
• top margin is 25px
• right and left margins are 50px
• bottom margin is 75px

3. If the margin property has two values:

margin: 25px 50px;
• top and bottom margins are 25px
• right and left margins are 50px

4. If the margin property has one value:

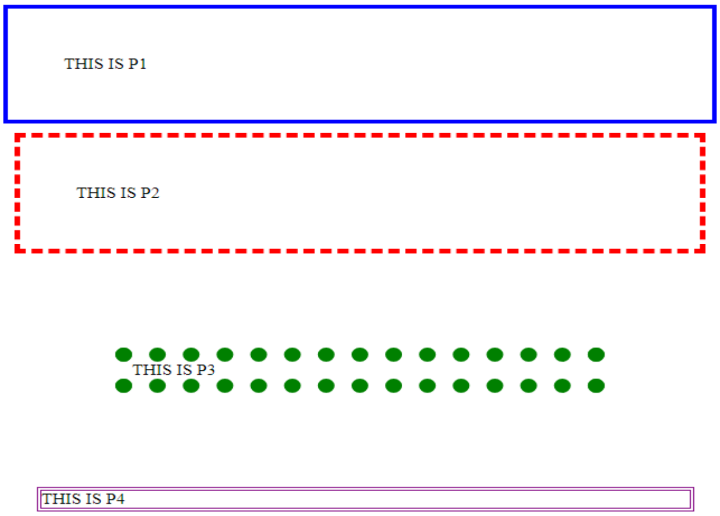
margin: 25px;

• all four margins are 25px

Example:

```
<html>
<body>
<p style="margin:auto; padding:50px; border:4px solid blue">
        THIS IS P1
</p>
<p style="margin:10px; padding:50px 50px; border:5px dashed red">
        THIS IS P2
</p>
<p style="margin:100px 100px; border:15px dotted green">
        THIS IS P3
</p>
<p style="margin:15px 20px 25px 30px;border:4px double purple">
        THIS IS P4
</p>
</body>
</html>
```

Output:



THIS IS P1

THIS IS P2

THIS IS P3

THIS IS P4

CSS positioning

- The position property specifies the type of positioning method used for an element (static, relative, fixed, absolute or sticky).
- Possible values for the position property are:

1) Absolute

2) Relative

3) Fixed

4) Static

position: static:

- HTML elements are positioned static by default.
- Static positioned elements are not affected by the top, bottom, left, and right properties.
- An element with position: static; is not positioned in any special way; it is always positioned according to the normal flow of the page.

position: relative

- An element with position: relative; is positioned relative to its normal position.
- Setting the top, right, bottom, and left properties of a relatively-positioned element will cause it to be adjusted away from its normal position. Other content will not be adjusted to fit into any gap left by the element.

position: fixed

- An element with position: fixed; is positioned relative to the viewport, which means it always stays in the same place even if the page is scrolled.
- The top, right, bottom, and left properties are used to position the element.
- A fixed element does not leave a gap in the page where it would normally have been located.

position-absolute:

- An element with position: absolute; is positioned relative to the nearest positioned ancestor (instead of positioned relative to the viewport, like fixed).
- However; if an absolute positioned element has no positioned ancestors, it uses the document body, and moves along with page scrolling.

Note: Absolute positioned elements are removed from the normal flow, and can overlap elements.

position : sticky (*Ref)

The element is positioned based on the user's scroll position A sticky element toggles between relative and fixed, depending on the scroll position. It is positioned relative until a given offset position is met in the viewport - then it "sticks" in place (like position:fixed).

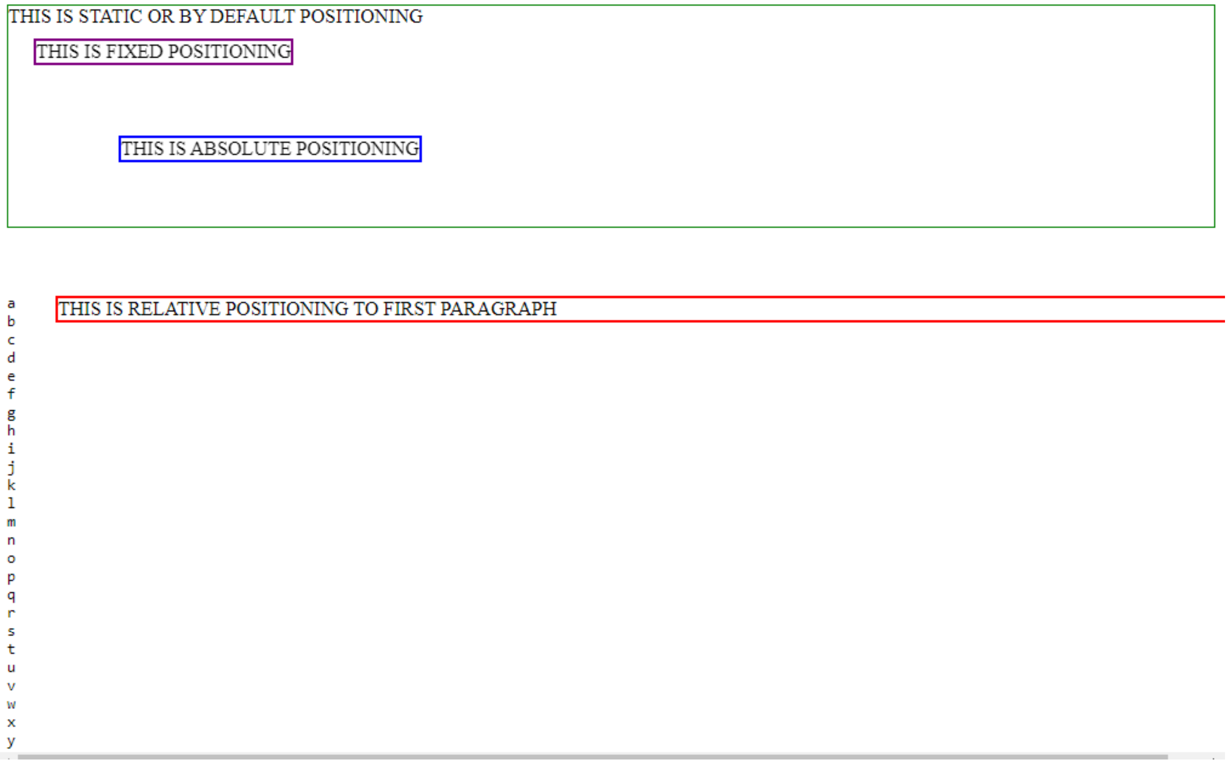
Example:

```
<html>
<head>
<style>
#p1
        {
          position:static;
          border:1px solid green;
         height:30%;
        }
#p2
        {
          border:2px solid red;
          position:relative;
         top:40px;
         left:40px;
        }
#p3
        {
        border:2px solid purple;
        position:fixed;
        top:20px;
        left:30px;
        }
#p4
        {
        border:2px solid blue;
        position:absolute;
        top:100px;
        left:100px;
        }
</style>
</head>
<body>
<p id="p1">
        THIS IS STATIC OR BY DEFAULT POSITIONING
</p>
```

```
<p id="p2">
	THIS IS RELATIVE POSITIONING TO FIRST PARAGRAPH
</p>
<p id="p3">
	THIS IS FIXED POSITIONING
</p>
<p id="p4">
	THIS IS ABSOLUTE POSITIONING
</p>
<pre>
a
b
c
d
e
f
g
h
i
j
k
l
m
n
o
p
q
r
s
t
u
v
w
x
y
z
*
*
*
*
*
*
*
*
```

```
*
*
*
*
*
*
</pre>
</body>
</html>
```

Output:



```
THIS IS STATIC OR BY DEFAULT POSITIONING
THIS IS FIXED POSITIONING

THIS IS ABSOLUTE POSITIONING

THIS IS RELATIVE POSITIONING TO FIRST PARAGRAPH
a
b
c
d
e
f
g
h
i
j
k
l
m
n
o
p
q
r
s
t
u
v
w
x
y
```

Z-index property

Z Index (z-index) is a CSS property that defines the order of overlapping HTML elements. Elements with a higher index will be placed on top of elements with a lower index.

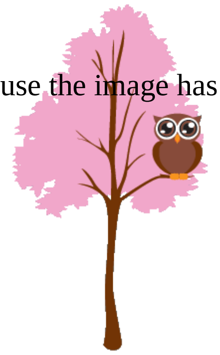
The z-index property specifies the stack order of an element (which element should be placed in front of, or behind, the others).

Z index only works on positioned elements

(position:absolute, position:relative, or position:fixed).

An element can have a positive or negative stack order:

Because the image has a z-index of -1, it will be placed behind the text.



Syntax:

```
z-index: auto|number|initial|inherit;
```

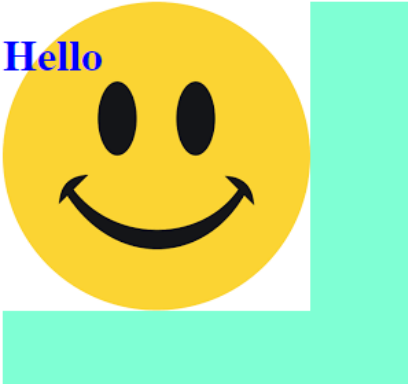
Property values:

- **number:** It means that the element's stack level is set to the given value. It allows negative values.
- **initial:** Sets the property to its default value.
- **inherit:** Inherits the property from the parent element.
- **auto:** It means that the order of the stack is equivalent to the parent, i.e., default.

Example:

```
<html>
<head>
    <style>
div{
   position:fixed;
   width:400px;
   height:300px;
   background-color:aquamarine;
}
img{
   position:absolute;
   left: 0px;
  top: 0px;
  z-index: 1;
}
h1{
   position:relative;
   color:blue;
   z-index: 2;
}

    </style>
</head>

<body>
 <div>
    <h1>Hello</h1>
<img src="nature.png"/>
</div>
</body>
</html>
```

Output:

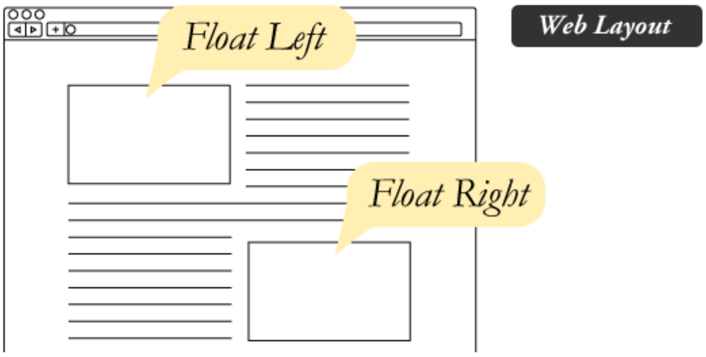


Hello

CSS float property

- The float property specifies whether an element should float to the left, right, or not at all.
- Allowing elements to wrap around it.
- Elements are floated horizontally only.

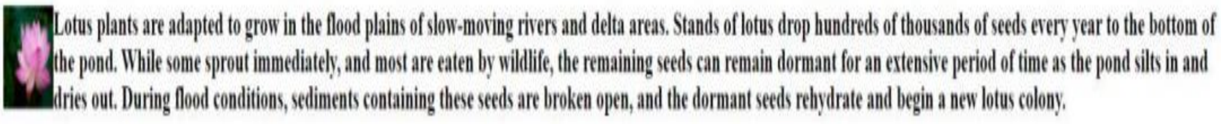
Note: Absolutely positioned elements ignore the float property!



Example:

```
<html>
<head>
<title>css float property</title>
<style>
img
{
        float:left;
        width:50px;
        height:50px;
}
</style>
</head>
<body>
<img src="smile.png"/>
<strong><p>Lotus plants are adapted to grow in the flood plains of
slow-moving rivers and delta areas.
Stands of lotus drop hundreds of thousands of seeds every year to the bottom of
the pond. While some sprout immediately,
and most are eaten by wildlife, the remaining seeds can remain dormant for an
extensive period of time as the pond silts in and dries out.
During flood conditions, sediments containing these seeds are broken open, and
the dormant seeds rehydrate and begin a new lotus colony. </p></strong>
</body>
</html>
```

Output:



Lotus plants are adapted to grow in the flood plains of slow-moving rivers and delta areas. Stands of lotus drop hundreds of thousands of seeds every year to the bottom of the pond. While some sprout immediately, and most are eaten by wildlife, the remaining seeds can remain dormant for an extensive period of time as the pond silts in and dries out. During flood conditions, sediments containing these seeds are broken open, and the dormant seeds rehydrate and begin a new lotus colony.

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

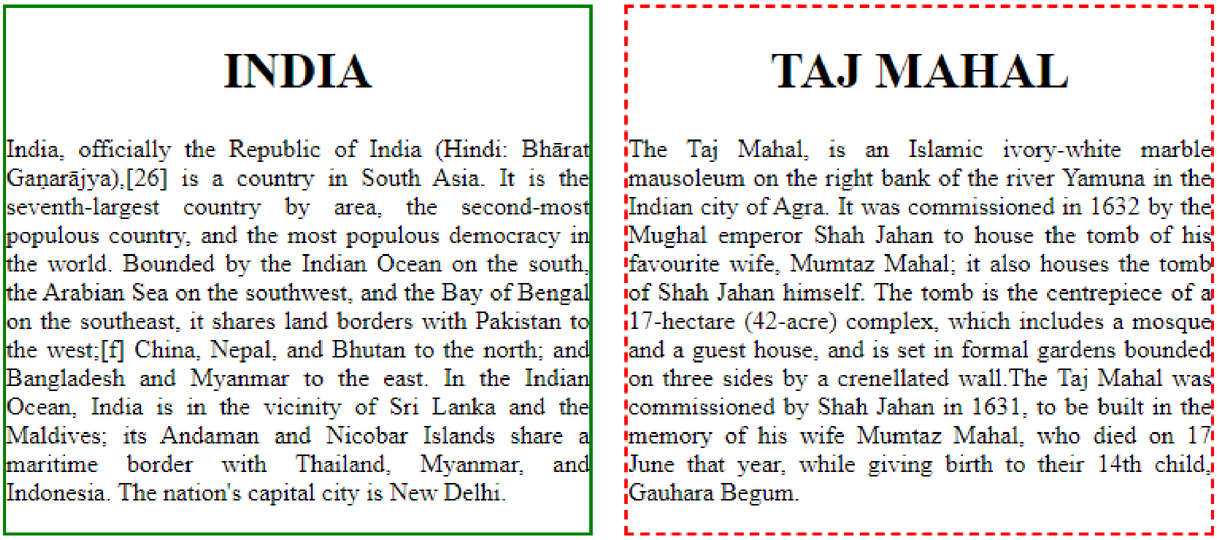
Examples

1) Write HTML and CSS script to display two sections of 40% width using div tag. Both these sections are having title and description. Both these div's should be horizontally adjacent to each other.

```
<html>

<head>

<title>css float property example</title>

</head>

<div style="width:45%; border:2px solid green; text-align:justify;float:left">

<h1 align="center">INDIA</h1>

<p>India, officially the Republic of India (Hindi: Bhārat Gaṇarājya),[26] is a country in South Asia. It is the seventh-largest country by area, the second-most populous country, and the most populous democracy in the world. Bounded by the Indian Ocean on the south, the Arabian Sea on the southwest, and the Bay of Bengal on the southeast, it shares land borders with Pakistan to the west;[f] China, Nepal, and Bhutan to the north; and Bangladesh and Myanmar to the east. In the Indian Ocean, India is in the vicinity of Sri Lanka and the Maldives; its Andaman and Nicobar Islands share a maritime border with Thailand, Myanmar, and Indonesia. The nation's capital city is New Delhi.</p>

</div>

<div style="width:45%; border:2px dashed red; float:left; text-align:justify; margin:0 0 0 20px">

<h1 align="center">TAJ MAHAL</h1>

<p>The Taj Mahal, is an Islamic ivory-white marble mausoleum on the right bank of the river Yamuna in the Indian city of Agra. It was commissioned in 1632 by the Mughal emperor Shah Jahan to house the tomb of his favourite wife, Mumtaz Mahal; it also houses the tomb of Shah Jahan himself. The tomb is the centrepiece of a 17-hectare (42-acre) complex, which includes a mosque and a guest house, and is set in formal gardens bounded on three sides by a crenellated
```

```
wall.The Taj Mahal was commissioned by Shah Jahan in 1631, to be built in the memory of his wife Mumtaz Mahal, who died on 17 June that year, while giving birth to their 14th child, Gauhara Begum.

</p>

</div>

</html>
```

Output:



INDIA

India, officially the Republic of India (Hindi: Bhārat Gaṇarājya),[26] is a country in South Asia. It is the seventh-largest country by area, the second-most populous country, and the most populous democracy in the world. Bounded by the Indian Ocean on the south, the Arabian Sea on the southwest, and the Bay of Bengal on the southeast, it shares land borders with Pakistan to the west;[f] China, Nepal, and Bhutan to the north; and Bangladesh and Myanmar to the east. In the Indian Ocean, India is in the vicinity of Sri Lanka and the Maldives; its Andaman and Nicobar Islands share a maritime border with Thailand, Myanmar, and Indonesia. The nation's capital city is New Delhi.

TAJ MAHAL

The Taj Mahal, is an Islamic ivory-white marble mausoleum on the right bank of the river Yamuna in the Indian city of Agra. It was commissioned in 1632 by the Mughal emperor Shah Jahan to house the tomb of his favourite wife, Mumtaz Mahal; it also houses the tomb of Shah Jahan himself. The tomb is the centrepiece of a 17-hectare (42-acre) complex, which includes a mosque and a guest house, and is set in formal gardens bounded on three sides by a crenellated wall.The Taj Mahal was commissioned by Shah Jahan in 1631, to be built in the memory of his wife Mumtaz Mahal, who died on 17 June that year, while giving birth to their 14th child, Gauhara Begum.

2) Write following style in separate css file.

1. Heading should have normal font style and size should be 120%

2. Define a class arial for paragraph with arial face, bold text and 3 cm spacing for paragraph initialization.

3. Apply a background image and it should be repeated vertically only.

<u>in Example.html</u>

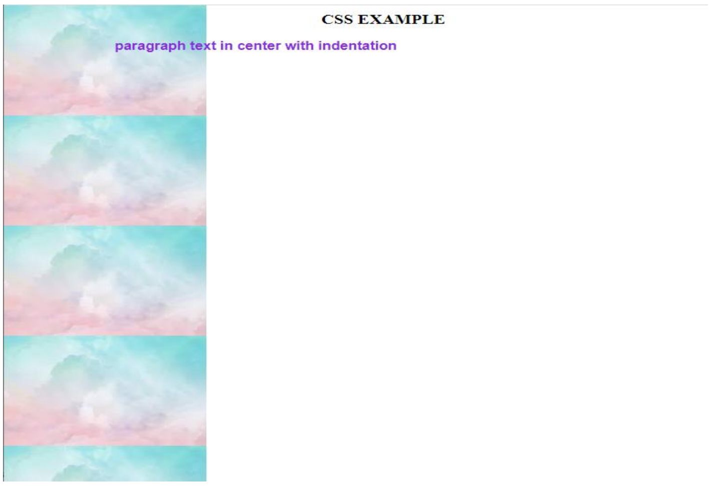
```
<html>
<head>
<link type="text/css" rel="stylesheet" href="demo.css"/>
</head>
<body class="body1">
<h1 class="class1">
        CSS EXAMPLE
</h1>
<p class="arial">
        paragraph text in center with indentation
</p>
```

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

<u>In demo.css</u>

```
.class1
{
        font-style : normal;
         font-size : 120%;
        text-align:center;
}
.arial
{
        font-family : arial;
        font-weight : bold;
         text-indent : 3cm;
        color:blueviolet;
}
.body1
{
        background : url("scenary.jfif") repeat-y;   }
```

Output:



CSS EXAMPLE

paragraph text in center with indentation

3) Write an HTML and CSS script to create a table with 5 rows and 3 columns. Even no of rows should be displayed in red color and odd no of rows should be displayed in yellow color.

<u>In demo.html</u>

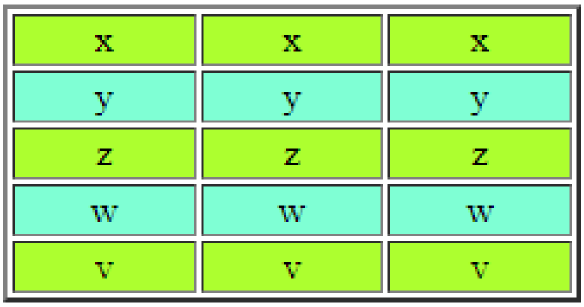
```
<head>
<title>CSS DEMO</title>
        <link type="text/css" rel="stylesheet" href="example3.css"/>
</head>
<body>
```

```
<table border="2" width="30%">
            <tr align="center" class="tr2">
                 <td>x</td>
                 <td>x</td>
                 <td>x</td>
            </tr>
            <tr align="center" class="tr1">
                <td>y</td>
                <td>y</td>
                <td>y</td>
            </tr>
            <tr align="center" class="tr2">
               <td>z</td>
               <td>z</td>
               <td>z</td>
            </tr>
            <tr align="center" class="tr1">
               <td>w</td>
               <td>w</td>
               <td>w</td>
            </tr><tr align="center" class="tr2">
               <td>v</td>
               <td>v</td>
               <td>v</td>
            </tr>
</table>
</body>
```

In example3.css

```
.tr1
{background-color: aquamarine;}
.tr2
{background-color: greenyellow;}
```

Output:



x	x	x
y	y	y
z	z	z
w	w	w
v	v	v