CSS:

CSS stands for Cascading Style Sheets. It is used to describe the look and formatting of a document written in mark-up language. It provides an additional feature and powerful control over HTML. It changes the style of web pages and user interfaces. CSS makes the website more stylish, attractive and responsive. CSS was first proposed by Hakon Wium Lie on October 10, 1994. Its first version CSS1 was released in 1996 by World Wide Web Consortium (W3C). Bert Bos is regarded a co-creator of CSS because CSS1 was influenced by him.
Version of CSS

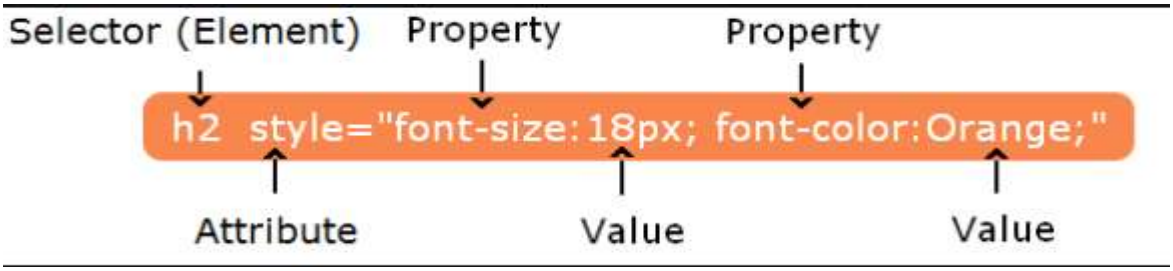
- CSS1 - published on December 17, 1996.
- CSS2 - published on May 1998.
- CSS3 - published on June 1999.

There are three types of CSS which are given below:

1. Inline CSS
2. Internal or Embedded CSS
3. External CSS

1)Inline CSS:

Inline CSS contains the CSS property in the body section attached with element is known as inline CSS. This kind of style is specified within an HTML tag using the style attribute.



```
<!DOCTYPE html>
 <html>
    <head>
       <title>Inline CSS</title>
    </head>

    <body>
       <p style = "color:#009900; font-size:50px;
             font-style:italic; text-align:center;">
          html class
       </p>
    </body>
 </html>
```

Disadvantages of Inline CSS

- You cannot use "quotations" within inline CSS. If you use quotations the browser will interpret this as an end of your style value.
- These styles cannot be reused anywhere else.
- These styles are tough to be edited because they are not stored at a single place.
- Inline CSS does not provide browser cache advantages.

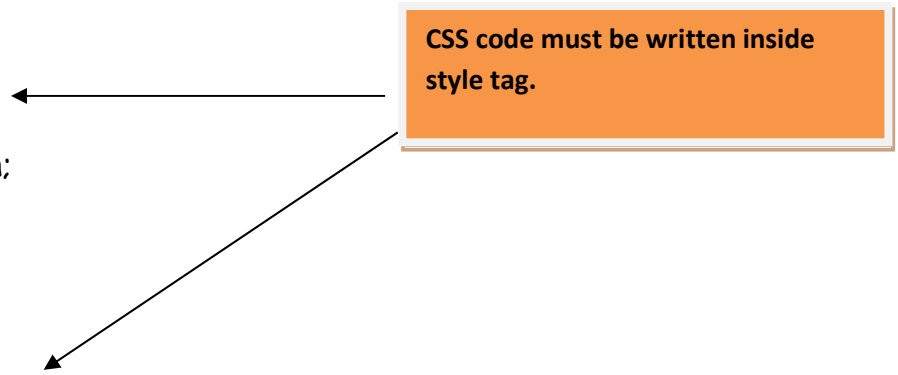
Internal CSS

The internal style sheet is used to add a unique style for a single document. It is defined in <head> section of the HTML page inside the <style> tag.

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
    background-color: linen;
}
h1 {
    color: Red;
    margin-left: 80px;
}

p {
    color: Green;
    margin-left: 90px;
}


</style>
</head>
<body>
<h1>The internal style sheet is applied on this heading.</h1>
<p>This paragraph in green color.</p>
</body>
</html>
```



Note: Similarly we can define properties for other headings as well.

External CSS:

The external style sheet is generally used when you want to make changes on multiple pages. It is ideal for this condition because it facilitates you to change the look of the entire web site by changing just one file.

It uses the <link> tag on every pages and the <link> tag should be put inside the head section.

Syntax(this syntax will be written in HTML):

```
<head>
<link rel="stylesheet" type="text/css" href="a.css">
</head>
```

a.css:

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

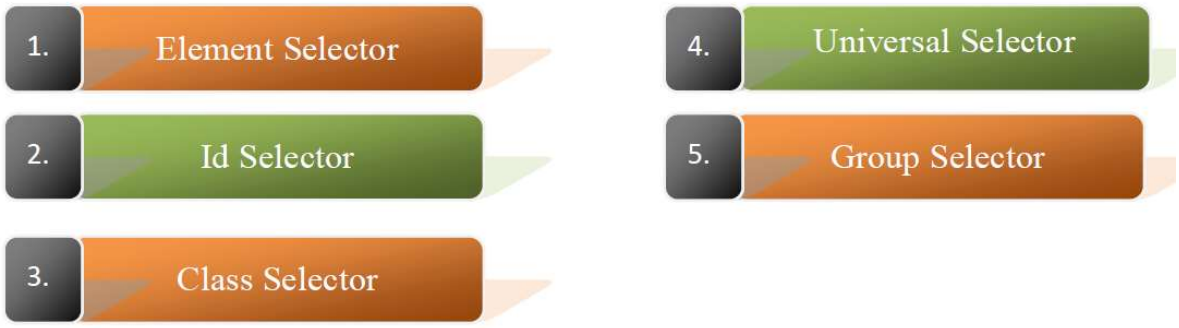
CSS Comments

CSS comments are generally written to explain your code. It is very helpful for the users who reads your code so that they can easily understand the code. Comments are ignored by browsers.

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
   color: blue;
   /* This is a single-line comment */
   text-align: center;
}
/* This is
a multi-line
comment */
</style>
</head>
<body>
<p>Hello o level class</p>
<p>This statement is styled with CSS.</p>
<p>CSS comments are ignored by the browsers and not shown in the output.</p>
</body>
</html>
```

CSS Selectors:

CSS selectors are used *to select the content you want to style*. Selectors are the part of CSS rule set. CSS selectors select HTML elements according to its id, class, type, attribute etc.



Element Selector

This selector selects the element by specifying the element's name in which CSS property will be applicable.

```
h1 {
background-color: lightblue;
color: darkblue;
text-align:center;  }
```

→ This will set the text color darkblue with centre aligned and background color lightblue of **all <h1> tag in body of the HTML page.**

```
h2 {
background-color: red;
color: darkred;
text-align:left;  }
```

→ This will set the text color darkred with left aligned and background color red of **all <h2> tag of body in the HTML page.**

---

2) CSS Id Selector(#)

The id selector selects the id attribute of an HTML element to select a specific element. An id is always unique within the page so it is chosen to select a single, unique element.
It is written with the hash character (#), followed by the id of the element.

```
<!DOCTYPE html>
<html>
<head>
<style>
#para1 {
   text-align: center;
   color: blue;
}
</style>
</head>
<body>
<p id="para1">Hello class</p>
<p>This paragraph will not be affected.</p>
</body>
</html>
```

3) CSS Class Selector(.)

The class selector selects HTML elements with a specific class attribute. It is used with a period character . (full stop symbol) followed by the class name

```
<!DOCTYPE html>
<html>
<head>
<style>
.center {
   text-align: center;
   color: blue;
}
</style>
</head>
<body>
<h1 class="center">This heading is blue and center-aligned.</h1>
<p class="center">This paragraph is blue and center-aligned.</p>
</body>
</html>
```

CSS Class Selector for specific element

If you want to specify that only one specific HTML element should be affected then you should use the element name with class selector.

```
<!DOCTYPE html>
<html>
<head>
<style>
p.center {
   text-align: center;
   color: blue;
}
</style>
</head>
<body>
<h1 class="center">This heading is not affected</h1>
<p class="center">This paragraph is blue and center-aligned.</p>
</body>
</html>
```

4) CSS Universal Selector

The universal selector is used as a wildcard character(*). It selects all the elements on the pages.

```
<!DOCTYPE html>
<html>
<head>
<style>
* {
  color: green;
  font-size: 20px;
}
</style>
</head>
<body>
<h2>This is heading</h2>
<p>This style will be applied on every paragraph.</p>
<p id="para1">Me too!</p>
<p>And me!</p>
</body>
</html>
```

5) CSS Group Selector

The grouping selector is used to select all the elements with the same style definitions. Grouping selector is used to minimize the code. Commas are used to separate each selector in grouping.

Without grouping

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

With grouping:

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

CSS Backgrounds Properties:

1)CSS background-color:

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

Syntax:

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

```
<!DOCTYPE html>
<html>
<head>
<style>
h1 {
 background-color: green;
}
div {
 background-color: lightblue;
}
p {
 background-color: yellow;
}
</style>
</head>
<body>
<h1>CSS background-color example!</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.
</div>
</body>
</html>
```

Opacity / Transparency

The `opacity` property specifies the opacity/transparency of an element. It can take a value from 0.0 - 1.0. The lower value, the more transparent:

```
div {
  background-color: green;
  opacity: 0.3;
}
```

2)CSS background-image:

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.

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background-image: url("a.jpg");
}
</style>
</head>
<body>
<h1>Hello World!</h1>
<p>This page has an image as the background!</p>
</body>
</html>
```

The background image can also be set for specific elements, like the <p> element:

```
p {
  background-image: url("a.jpg");
}
```

CSS background-repeat:

By default, the background-image property repeats an image both horizontally (repeat-x) and vertically(repeat-x).

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background-image: url("a.jpg");
  background-repeat: repeat-x;
}
</style>
</head>
<body>
<p>Here, a background image is repeated only horizontally!</p>
</body>
</html>
```

CSS background-repeat: no-repeat:

Showing the background image only once is also specified by the `background-repeat` property:

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background-image: url("flower.jpg");
  background-repeat: no-repeat;
}
</style>
</head>
<body>
<h1>Hello World!</h1>
<p> background image example.</p>
</body>
</html>
```

CSS background-position

The `background-position` property is used to specify the position of the background image.

```
body {
  background-image: url("flower.jpg");
  background-repeat: no-repeat;
  background-position: right top;
}
```

Properties of image position:

left top
left center
left bottom
right top
right center
right bottom
center top
center center
center bottom

CSS background-attachment

The `background-attachment` property specifies whether the background image should scroll or be fixed (will not scroll with the rest of the page):

```
<style>
body {
  background-image: url("flower.jpg");
  background-repeat: no-repeat;
  background-position: right top;
  margin-right: 200px;
  background-attachment: fixed;
}
</style>
```

The CSS Background Shorthand Property

The background property is a shorthand property for setting all the individual background properties, i.e., background-color, background-image, background-repeat, background-attachment and the background-position property at once.

Before shorthand:

```
body
{ background-color: teal;
background-image: url("a,jpg");
 background-repeat: no-repeat;
 background-attachment: fixed;
 background-position: 250px 25px;
 }
```

After shorthand:

```
body { background: #f0e68c url("flower.jpg") no-repeat fixed 250px 25px; }
```

Note:

When using the `background` shorthand property the order of the property values should be.

```
background: color image repeat attachment position;
```

CSS Borders:

CSS Border Properties:

The CSS border properties allow you to specify the style, width, and color of an element's border.

CSS Border Style:

The border-style property specifies what kind of border to display.

- dotted - Defines a dotted border
- dashed - Defines a dashed border
- solid - Defines a solid border
- double - Defines a double border
- groove - Defines a 3D grooved border. The effect depends on the border-color value
- ridge - Defines a 3D ridged border. The effect depends on the border-color value
- inset - Defines a 3D inset border. The effect depends on the border-color value
- outset - Defines a 3D outset border. The effect depends on the border-color value
- none - Defines no border
- hidden - Defines a hidden border

```
<html>
<head>
<style>
p.dotted {border-style: dotted;}
p.dashed {border-style: dashed;}
p.solid {border-style: solid;}
p.double {border-style: double;}
p.groove {border-style: groove;}
p.ridge {border-style: ridge;}
p.inset {border-style: inset;}
p.outset {border-style: outset;}
p.none {border-style: none;}
p.hidden {border-style: hidden;}
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="groove">A groove border.</p>
<p class="ridge">A ridge border.</p>
<p class="inset">An inset border.</p>
<p class="outset">An outset border.</p>
<p class="none">No border.</p>
<p class="hidden">A hidden border.</p>
<p class="mix">A mixed border.</p>

</body>
</html>
```

CSS 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:

```
<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;
}

</style>
```

Specific Side Widths

The border-width property can have from one to four values (for the top border, right border, bottom border, and the left border):

```
p.one {
  border-style: solid;
  border-width: 5px 20px; /* 5px top and bottom, 20px on the sides */
}

p.two {
  border-style: solid;
  border-width: 20px 5px; /* 20px top and bottom, 5px on the sides */
}

p.three {
  border-style: solid;
  border-width: 25px 10px 4px 35px; /* 25px top, 10px right, 4px bottom and 35px
left */
}
```

CSS Border Color

The border-color property is used to set the color of the four borders.
The color can be set by:

- name - specify a color name, like "red"
- HEX - specify a HEX value, like "#ff0000"
- RGB - specify a RGB value, like "rgb(255,0,0)"
- HSL - specify a HSL value, like "hsl(0, 100%, 50%)"
- transparent

```
p.one {
  border-style: solid;
  border-color: red;
}

p.two {
  border-style: solid;
  border-color: green;
}

p.three {
  border-style: dotted;
  border-color: blue;
}
```

Specific Side Colors

The `border-color` property can have from one to four values (for the top border, right border, bottom border, and the left border).

```
p.one {
  border-style: solid;
  border-color: red green blue yellow; /* red top, green right, blue bottom and yellow left */
}
```

In CSS, there are also properties for specifying each of the borders (top, right, bottom, and left):

```
p {
  border-top-style: dotted;
  border-right-style: solid;
  border-bottom-style: dotted;
  border-left-style: solid;
}
```

CSS Rounded Borders

The `border-radius` property is used to add rounded borders to an element:

```
<!DOCTYPE html>
<html>
<head>
<style>
p.normal {
  border: 2px solid red;
}

p.round1 {
  border: 2px solid red;
  border-radius: 5px;
}

p.round2 {
  border: 2px solid red;
  border-radius: 8px;
}

p.round3 {
  border: 2px solid red;
  border-radius: 12px;
}
```

```
</style>
</head>
<body>

<h2>The border-radius Property</h2>
<p>This property is used to add rounded borders to an element:</p>

<p class="normal">Normal border</p>
<p class="round1">Round border</p>
<p class="round2">Rounder border</p>
<p class="round3">Roundest border</p>

</body>
</html>
```