css Sub: Web Programming
Unit I

What is CSS

CSS stands for Cascading Style Sheets. It is a style sheet language which is used to describe the look and formatting of a document written in markup language. It provides an additional feature to HTML. It is generally used with HTML to change the style of web pages and user interfaces. It can also be used with any kind of XML documents including plain XML, SVG and XUL.

CSS is used along with HTML and JavaScript in most websites to create user interfaces for web applications and user interfaces for many mobile applications.

What does CSS do

- You can add new looks to your old HTML documents.
- You can completely change the look of your website with only a few changes in CSS code.

Why use CSS

1) Solves a big problem

Before CSS, tags like font, color, background style, element alignments, border and size had to be repeated on every web page. This was a very long process. For example: If you are developing a large website where fonts and color information are added on every single page, it will be become a long and expensive process. CSS was created to solve this problem. It was a W3C recommendation.

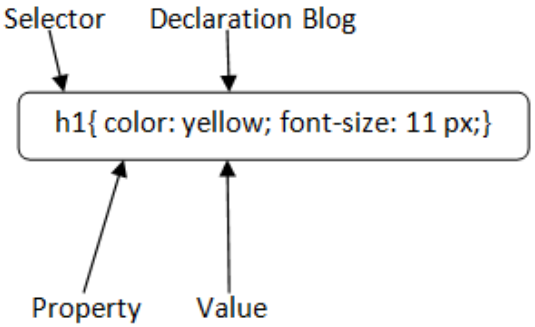
2) Saves a lot of time

CSS style definitions are saved in external CSS files so it is possible to change the entire website by changing just one file.

3) Provide more attributes

CSS provides more detailed attributes than plain HTML to define the look and feel of the website.

CSS Syntax



Selector: Selector indicates the HTML element you want to style. It could be any tag like <h1>, <title> etc.

Declaration Block: The declaration block can contain one or more declarations separated by a semicolon. For the above example, there are two declarations:

Property: A Property is a type of attribute of HTML element. It could be color, border etc.

Value: Values are assigned to CSS properties. In the above example, value "yellow" is assigned to color property.

CSS Selector

1) 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: red;
}
</style>
</head>
<body>
<p id="para1">Hello World!</p>
<p id=”para1”>This paragraph is not affected by the style.</p>
</body>
</html>
```

Output:

Hello World!

This paragraph is not affected by the style.

2) 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: red;
}
</style>
</head>
<body>

<h1 class="center">Red and center-aligned heading</h1>
<p class="center">Red and center-aligned paragraph.</p>

</body>

</html>
```

Output:

Red and center-aligned heading

Red and center-aligned paragraph.

Using CSS

CSS can be added to HTML documents in 3 ways:

- **Inline** - by using the style attribute inside HTML elements
- **Internal** - by using a <style> element in the <head> section
- **External** - by using a <link> element to link to an external CSS file

Inline CSS

We can apply CSS in a single element by inline CSS technique.

The inline CSS is also a method to insert style sheets in HTML document. This method mitigates some advantages of style sheets so it is advised to use this method sparingly.

Example:

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

<h1 style="color:blue;">A Blue Heading</h1>

<p style="color:red;">A red paragraph.</p>

</body>
</html>
```

Output

CSS can be added to HTML documents in 3 ways:

- **Inline** - by using the style attribute inside HTML elements
- **Internal** - by using a <style> element in the <head> section
- **External** - by using a <link> element to link to an external CSS

How to add CSS

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:

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

<h1 style="color:blue;">A Blue Heading</h1>

<p style="color:red;">A red paragraph.</p>

</body>
</html>
```

Output:

Internal CSS

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 red. In addition, the page will be displayed with a "powderblue" background color:

```
<!DOCTYPE html>
<html>
<head>
<style>
body {background-color: powderblue;}
h1   {color: blue;}
p    {color: red;}
</style>
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

Output:

External CSS

An external style sheet is used to define the style for many HTML pages.

To use an external style sheet, add a link to it in the <head> section of each HTML page:

```
<!DOCTYPE html>
<html>
<head>
  <link rel="stylesheet" href="styles.css">
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

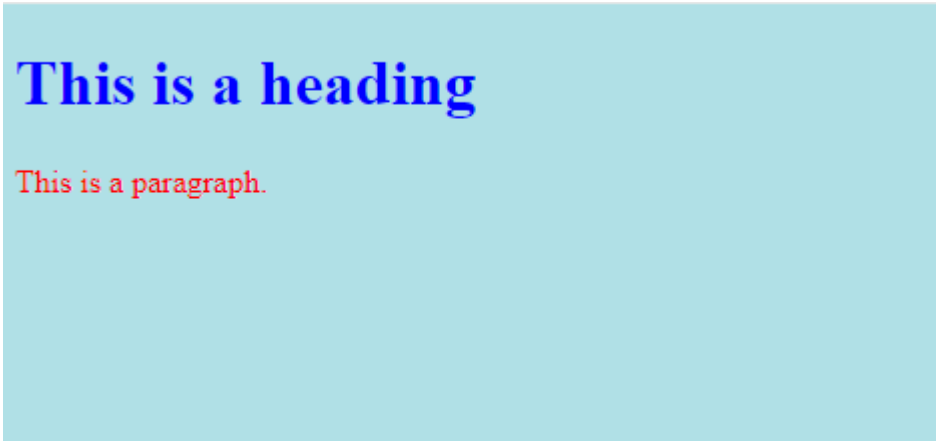
The external style sheet can be written in any text editor. The file must not contain any HTML code, and must be saved with a .css extension.

Here is how the "styles.css" file looks like:

"styles.css":

```
body {
  background-color: powderblue;
}
h1 {
  color: blue;
}
p {
  color: red;
}
```

output:



CSS properties:

CSS Background

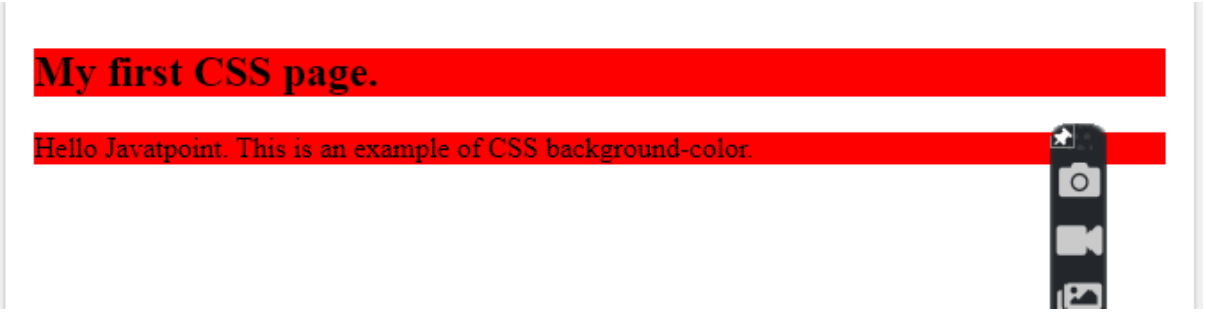
CSS background property is used to define the background effects on element. There are 5 CSS background properties that affects the HTML elements:

1. background-color
2. background-image
3. background-repeat
4. background-attachment
5. background-position

CSS background-color

The background-color property is used to specify the background color of the element.

```
<!DOCTYPE html>
<html>
<head>
<style>
h2,p{
   background-color: red;
}
</style>
</head>
<body>
<h2>My first CSS page.</h2>
<p>Hello Javatpoint. This is an example of CSS background-color.</p>
</body>
</html>
```




```
<!DOCTYPE html>
<html>
<head>
<style>

body{background-color:yellow;}
h2,p{color:red;}
</style>
</head>
<body>
<h2>My first CSS page.</h2>
<p>Hello Javatpoint. This is an example of CSS background-color.</p>
</body>
</html>
```

2) CSS background-image

The background-image property is used to set an image as a background of an element. By default the image covers the entire element. You can set the background image for a page like this.

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
background-image: url("paper1.gif");
margin-left:100px;
}
</style>
</head>
<body>
<h1>Hello Javatpoint.com</h1>
</body>
</html>
```

CSS Colors, Fonts and Sizes

Here, we will demonstrate some commonly used CSS properties. You will learn more about them later.

The CSS `color` property defines the text color to be used.

The CSS `font-family` property defines the font to be used.

The CSS `font-size` property defines the text size to be used.

```
<!DOCTYPE html>
<html>
<head>
<style>
h1 {
  color: blue;
  font-family: verdana;
  font-size: 300%;

}
p  {
  color: red;
  font-family: courier;
  font-size: 160%;
}
</style>
</head>
<body>
<h1>This is a heading</h1>
<p>This is a paragraph.</p>
</body>
</html>
```

This is a heading

This is a paragraph.

CSS Border

The CSS `border` property defines a border around an HTML element.

Tip: You can define a border for nearly all HTML elements.

Example

CSS Border

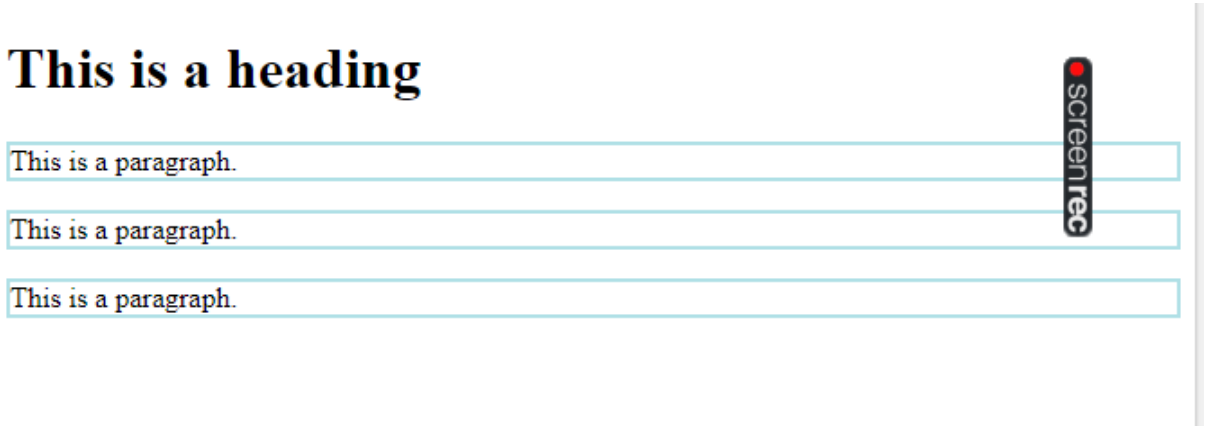
The CSS `border` property defines a border around an HTML element.

Tip: You can define a border for nearly all HTML elements.

Example

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
  border: 2px solid powderblue;
}
</style>
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

<p>This is a paragraph.</p>
<p>This is a paragraph.</p>
</body>
```

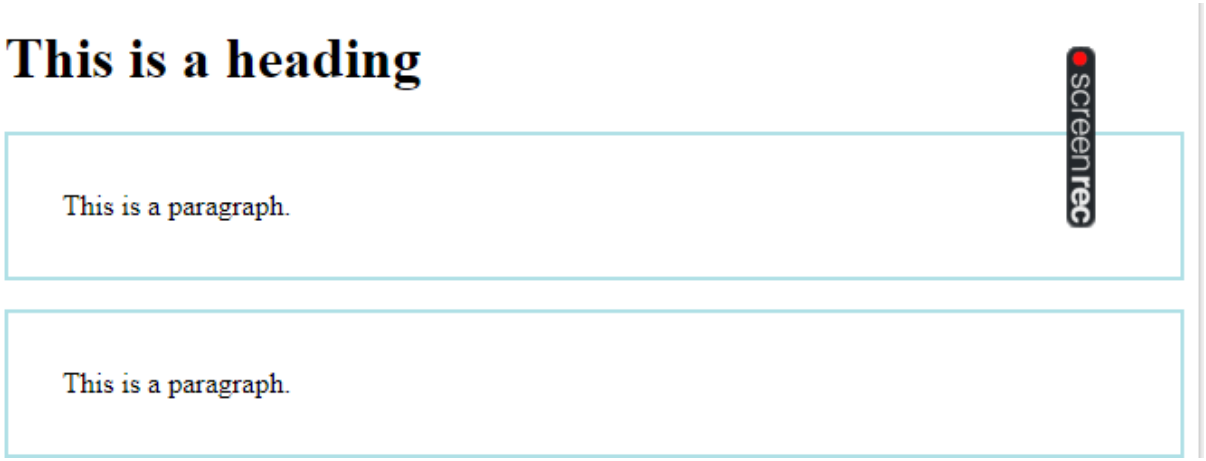
</html>



CSS Padding

The CSS `padding` property defines a padding (space) between the text and the border.

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
  border: 2px solid powderblue;
  padding: 30px;
}
</style>
</head>
<body>

<h1>This is a heading</h1>

<p>This is a paragraph.</p>
<p>This is a paragraph.</p>
<p>This is a paragraph.</p>

</body>
</html>
```



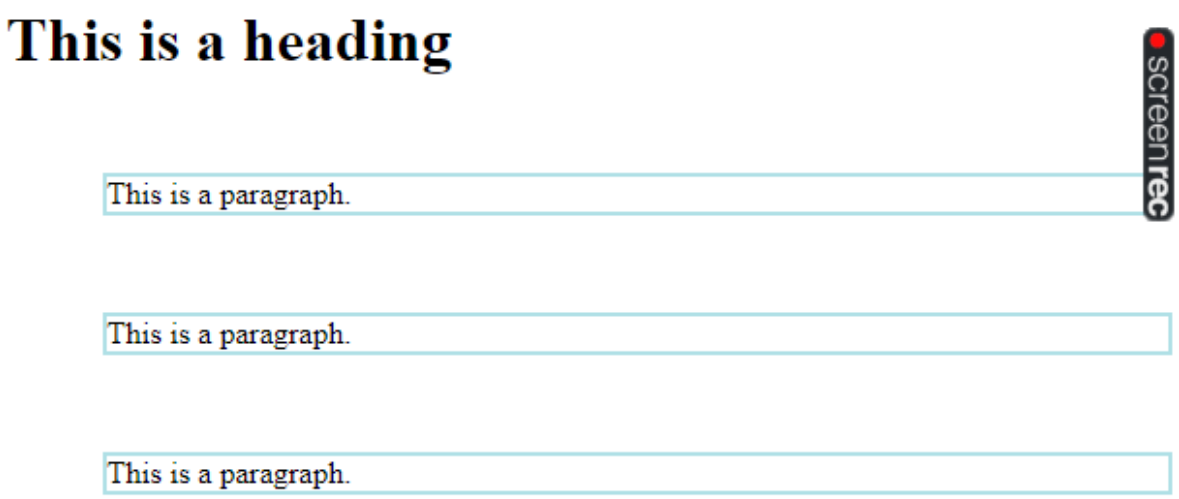
CSS Margin

The CSS `margin` property defines a margin (space) outside the border.

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
  border: 2px solid powderblue;
  margin: 50px;
}
</style>
</head>
<body>

<h1>This is a heading</h1>


<p>This is a paragraph.</p>

<p>This is a paragraph.</p>

<p>This is a paragraph.</p>


</body>

</html>
```

CSS Position

The **CSS position property** is used *to set position for an element*. it is also used to place an element behind another and also useful for scripted animation effect.



CSS Position

The **CSS position property** is used *to set position for an element*. it is also used to place an element behind another and also useful for scripted animation effect.

You can position an element using the top, bottom, left and right properties. These properties can be used only after position property is set first. A position element's computed position property is relative, absolute, fixed or sticky.

<!DOCTYPE html>

<html>

<head>

<style>

```
h2.pos_left {
   position: relative;
   left: -10px;
}
h2.pos_right {
   position: relative;
   left: 30px;
}
</style>
</head>
<body>
<h2>This is a heading with no position</h2>
<h2 class="pos_left">This heading is positioned left according to its normal position</h2>
<h2 class="pos_right">This heading is positioned right according to its normal position</h2>
</body>
</html>
```