

# Style Sheets

## 3.1 Introduction

The Cascading Style Sheet is a markup language used in the web document for presentation purpose. The primary intention of CSS was to separate out the web content from the web presentation. Various elements such as text, font and color are used in CSS for presentation purpose. Thus CSS specification can be applied to bring the styles in the web document.

In this chapter, with the help of illustrative examples, we will learn how to use cascading style sheets in web document.

### 3.1.1 Need for CSS

- By combining CSS with the html document, considerable amount of flexibility into the content submission can be achieved.
- Similarly, separating out the style from actual contents help in managing large-scale complex sites. Thus CSS facilitates publication of content in multiple presentation formats.
- If CSS is used, effectively then global style sheet can be applied to a web document. This helps in maintaining the consistency in the web document.
- If a small change needs to be done in the style of web content, then CSS makes it more convenient.

These all above mentioned advantages of CSS shows the need for it in web development.

## 3.2 Basic Syntax and Structure

There are three levels of cascading style sheets -

- Inline style sheet
- Document level style sheet
- External level style sheet

### 3.2.1 Inline Style Sheet

The inline cascading style sheet is a kind of style sheet in which the styles can be applied to HTML tags. This tag can be applied using following rule -

```
Tag  
{  
property: value  
}
```

For example:

```
<p style="font-family: Arial; color: red">
```

Here for the tag p two properties are used such as **font-family** and **color** and those are associated with the values such as Arial and red respectively.

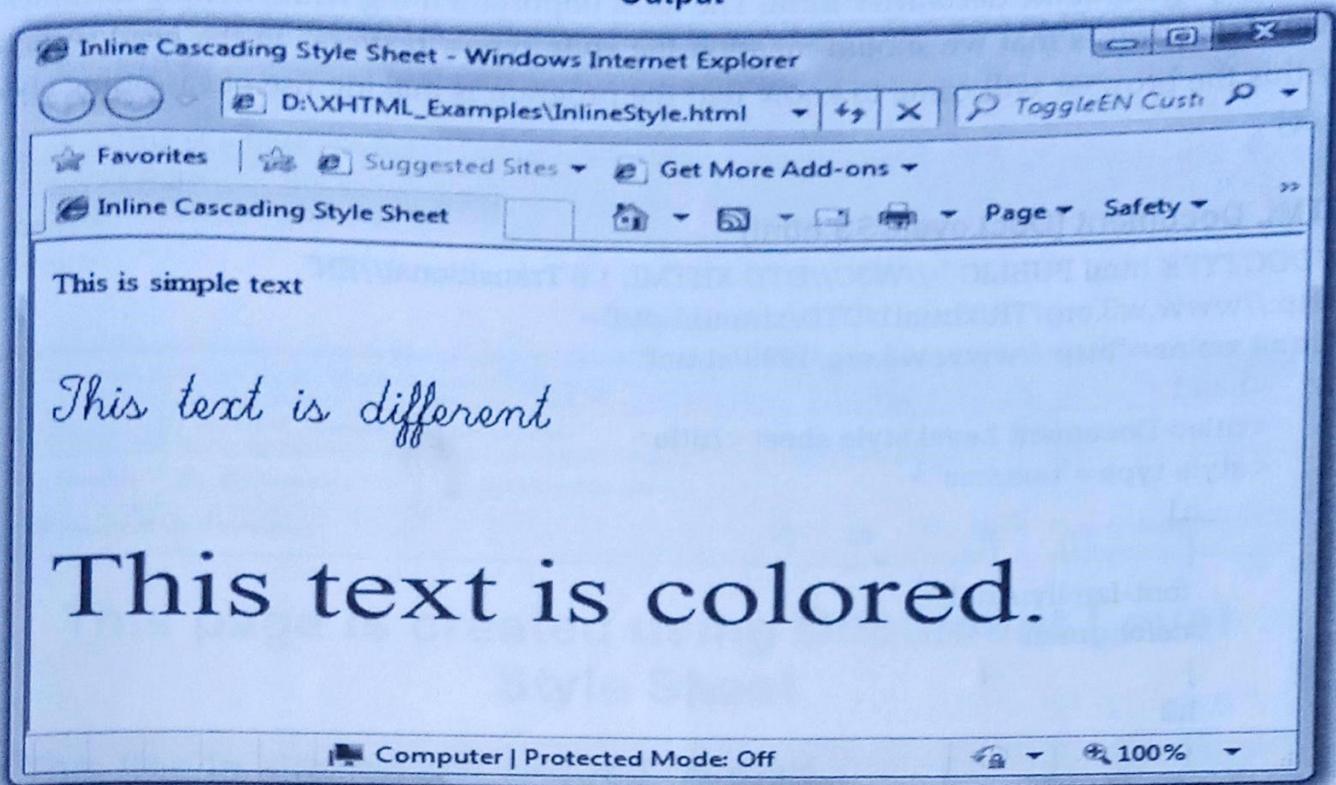
Note that if we want to use more than one property then we have to use separator such as semicolon. In the following HTML document we have used cascading style sheet-

#### HTML Document [InlineStyle.html]

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"  
"http://www.w3.org/TR/xhtml1/DTD/xhtml11.dtd">  
<html xmlns="http://www.w3.org/1999/xhtml">  
  <head>  
    <title>Inline Cascading Style Sheet</title>  
  </head>  
  <body>  
    <p>This is simple text</p>  
    <p style="font-size: 30pt; font-family: Script">This text is different </p>  
    <p style="font-size: 40pt; color: #ff0000">This text is colored.</p>  
  </body>  
</html>
```

In this document, in the body section the style sheets are created. In this section first of all we have displayed a simple sentence This is simple text. There is no style for this sentence. In the next line, we have applied style in which **font-size** is set to the size of 30 point and **font-family** is set by the font name "Script" This can be very well illustrated in output.

## Output



Thus the inline style specification appears within the opening tag and can be applied to the contents of that tag. This method is called **in-line** style sheet because the style is applied at the occurrence of the HTML element. Using the **style** attribute the desired style can be set to the selector.

### Advantage

Using inline style sheet we can apply the uniform style on tags for the whole document.

### Disadvantage

Basically inline style sheet is not much suitable for web page designing because the actual contents of the web page are mixed with the presentation.

Hence let us move ahead with a more commonly used style sheet and that is document level style sheet or embedded style sheet.

### 3.2.2 Document Level Style Sheet

This type style sheet appears only in the head section and in the body section newly defined Selector tags are used with the actual contents.

For example

In the following HTML script we have defined **h1**, **h2**, **h3** and **p** selectors. For each of these **selectors** different property and values are set. Such setting will help us to represent

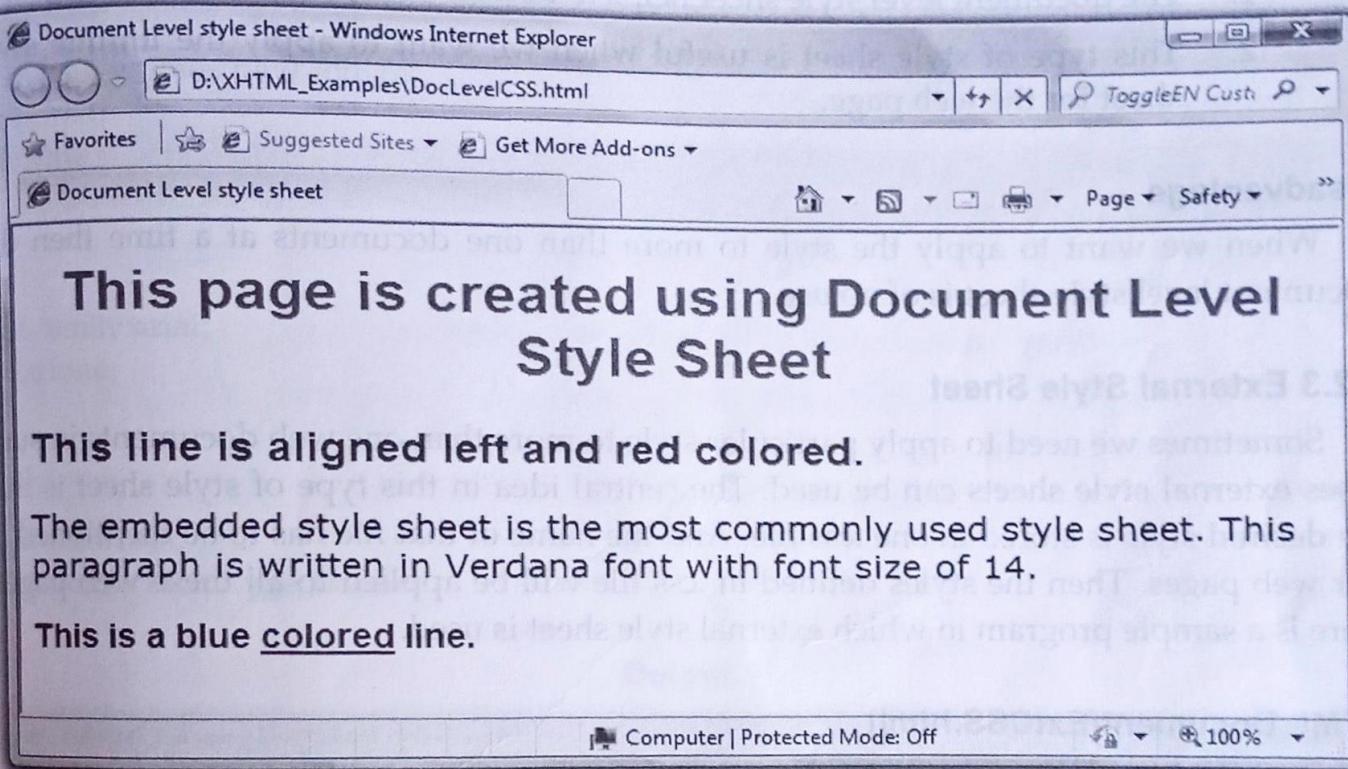
our web page in some decorative form. The most important thing while writing our document level style sheet is that we should mention the `style type="text/css"` in the head section. By this the browser will come to know that the program is making use of cascading style sheet.

## HTML Document [DocLevelCSS.html]

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"  
"http://www.w3.org/TR/xhtml1/DTD/xhtml11.dtd">  
<html xmlns="http://www.w3.org/1999/xhtml">  
  <head>  
    <title>Document Level style sheet</title>  
    <style type="text/css">  
      h1  
      {  
        font-family:Arial;  
        color:green  
      }  
      h2  
      {  
        font-family:Arial;  
        color:red;  
        left:20px  
      }  
      h3  
      {  
        font-family:arial;  
        color:blue;  
      }  
      p  
      {  
        font-size:14pt;  
        font-family:verdana  
      }  
    </style>  
  </head>  
  <body>  
    <h1>  
      <center>  
        This page is created using Document Level Style Sheet  
      </center>  
    </h1>  
    <h2>  
      This line is aligned left and red colored.  
    </h2>  
    <p>
```

```
The embedded style sheet is the most commonly used style sheet.  
This paragraph is written in Verdana font with font size of 14.  
</p>  
<h3>  
This is a blue <a href="colorname.html">colored</a> line.  
</h3>  
</body>  
</html>
```

## Output



In above program, we have defined all the selectors in the head sections only. And these HTML elements are then used along with the web page contents. The setting defined in the selectors will affect the web page contents. For example we have defined the selector h2 as

```
h2  
{  
    font-family:Arial;  
    color:red;  
    left:20px  
}
```

and then in the body section we have written -

```
<h2> This line is aligned left and red colored.</h2>
```

Now as h2 defines font to be "Arial" with color as "red" having left alignment of 20 pixels, the sentence "This line is aligned left and red colored." will be displayed in Arial

font, which is red colored and aligned from left by 20 pixels. Surely we can see this effect on our web browser.

It is also possible to display some hyperlink on the web browser using `href`. In above HTML document, we have set a hyperlink on the word "colored", if we click on this word the web page "colorname.html" should get opened up.

## Advantages

1. The document level style sheet helps to decide the layout of the web page.
2. This type of style sheet is useful when we want to apply the **unique** style sheet for the web page.

## Disadvantage

When we want to apply the style to more than one documents at a time then the document level style sheet is of no use.

### 3.2.3 External Style Sheet

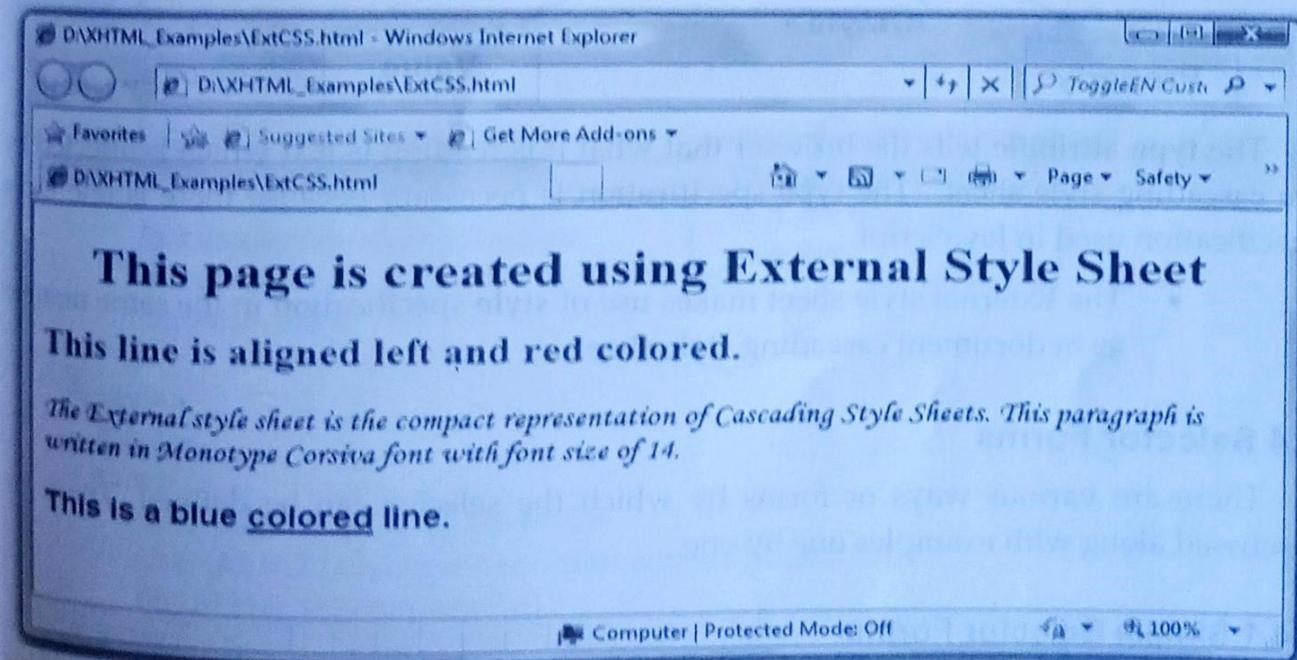
Sometimes we need to apply particular style to more than one web documents in such cases external style sheets can be used. The central idea in this type of style sheet is that the desired style is stored in one .css file. And the name of that file has to be mentioned in our web pages. Then the styles defined in .css file will be applied to all these web pages. Here is a sample program in which external style sheet is used.

#### HTML Document[ExtCSS.html]

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml11.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <link rel="stylesheet" type="text/css" href="ex1.css" />
  </head>
  <body>
    <h1 class="special"> <center> This page is created using External Style
Sheet </center> </h1>
    <h2>
      This line is aligned left and red colored.
    </h2>
    <p>
      The External style sheet is the compact representation of Cascading Style Sheets.
      This paragraph is written in Monotype Corsiva font with font size of 14.
    </p>
    <h3>
      This is a blue <a href="colorname.html">colored</a> line.
    </h3>
```

```
</body>
</html>
The cascading style sheet ex1.css can be
<-- The file name ex1.css and can be opened in notepad...>
h1
{
font-family:Arial
}
h2
{
font-family:times new roman;
color:red;
left:20px
}
h3
{
font-family:arial;
color:blue;
}
p
{
font-size:14pt;
font-family:Monotype Corsiva
}
```

### Output



When we want to link the external style sheet then we have to use <link> tag which is to be written in the head section.

- link tells the browser some file must be linked to the page.

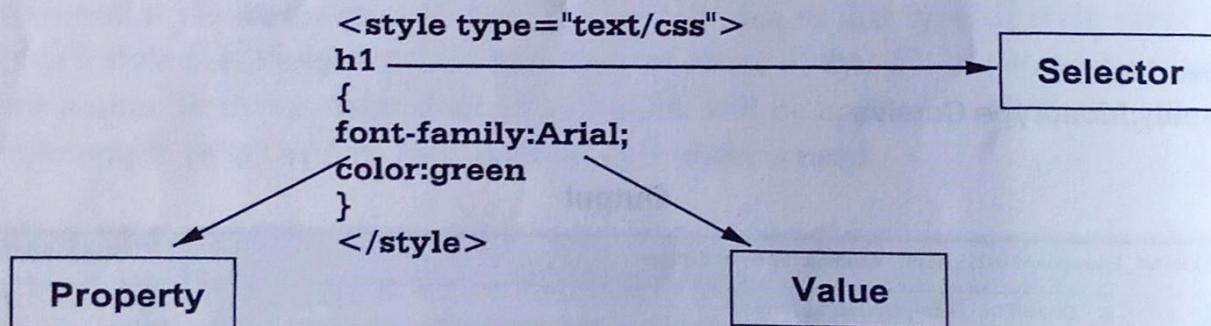
- `rel=stylesheet` tells the browser that this linked thing a style sheet.
- `href=" "` denotes the path name of style sheet file.
- `type="text/css"` tells the browser that what it is reading is text which is affected by the cascading style sheet.

The biggest **advantage** of using external style sheet is that if we want to change any style then we have to modify only one file. Note that in our main program we have simply used the tag elements and the styles for these tag elements are defined in `ex1.css` file.

### 3.3 Style Specification Format

The style specification is specified differently for each different level. For instance:

- For inline cascading style sheets the **style** appears inside the tag for defining the value.  
`<p style="font-size: 30pt; font-family: Script">`
- For the document cascading style sheet the **style** specification appear as the content of a **style** element within the header of a document.



The `type` attribute tells the browser that what it is reading is text which is affected by the cascading style sheet. The type specification is necessary because there is one more specification used in JavaScript.

- The External style sheet makes use of **style** specification in the same manner as in document cascading style sheet.

### 3.4 Selector Forms

There are various ways or forms by which the selector can be defined. These are discussed along with examples one by one.

#### 3.4.1 Simple Selector Forms

The simple selector form is a single element to which the property and value is applied.

For example

```
h1
{
    font-size:20pt;
    color:red;
}
```

```
h2,h3
{
    font-family:script;
    font-size:28pt;
    color:blue;
}
```

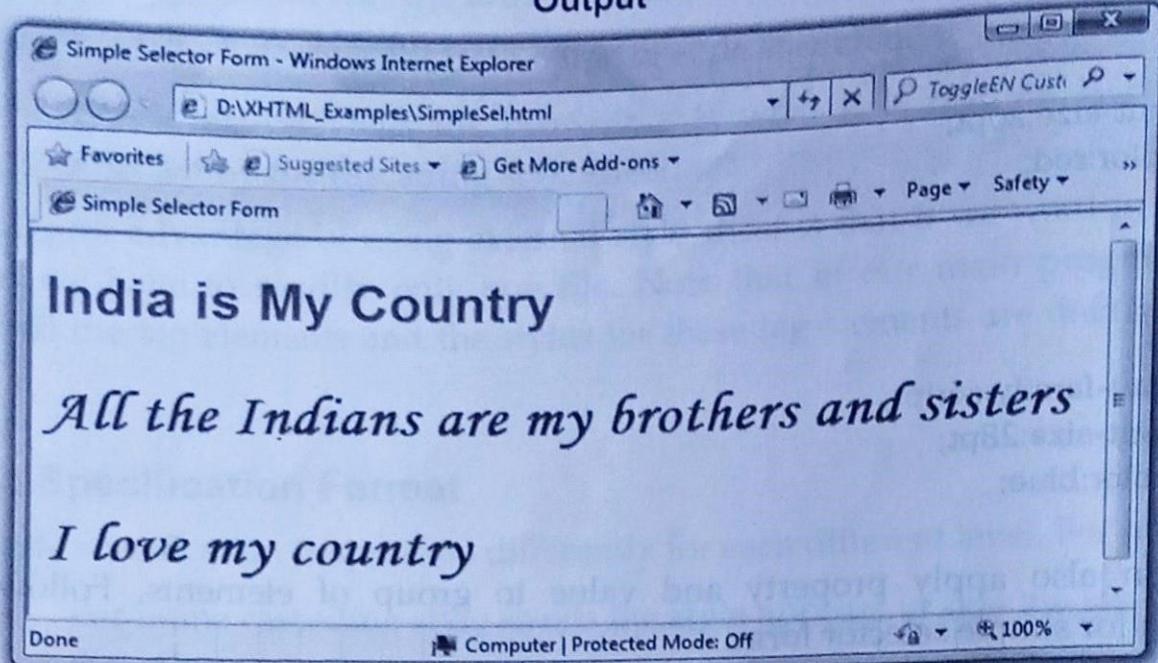
We can also apply property and value to group of elements. Following is an illustration for simple selector form.

#### HTML Document[SimpleSel.html]

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml11.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
    <head>
        <title>Simple Selector Form</title>
        <style type="text/css">
            h1
            {
                font-family:Arial;
                color:green;
            }
            h2,h3
            {
                font-family:Monotype Corsiva;
                color:red;
                font-size: 28pt;
            }
        </style>
    </head>
    <body>
        <h1>India is My Country</h1>
        <h2>All the Indians are my brothers and sisters</h2>
        <h3>I love my country</h3>
    </body>
</html>
```

We can apply style  
to more than one  
selector.

## Output



Similarly the style can also be applied to the elements at specific positions.

**For example:**

```
body b p {font-size:18pt;}
```

Note that there are more than one element to which the style is applied and these elements are separated by the white spaces.

### 3.4.2 Class Selectors

Using class selector we can assign different styles to the same element. These different styles appear on different occurrences of that element.

**For example**

#### HTML Document[ClassSel.html]

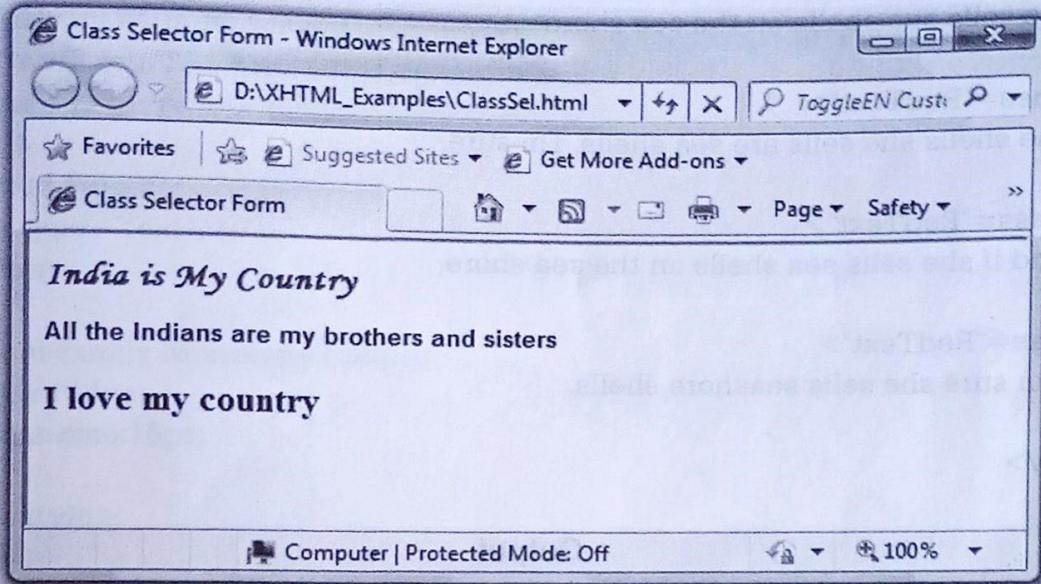
```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"  
"http://www.w3.org/TR/xhtml1/DTD/xhtml11.dtd">  
<html xmlns="http://www.w3.org/1999/xhtml">  
  <head>  
    <title>Class Selector Form</title>  
    <style type="text/css">  
      h1.RedText  
      {  
        font-family:Monotype Corsiva;  
        color:red;  
        font-size: 14pt;  
      }  
      h1.BlueText  
      {
```

```

font-family:Arial;
color:blue;
font-size: 10pt;
}
</style>
</head>
<body>
<h1 class ="RedText">India is My Country</h1>
<h1 class="BlueText">All the Indians are my brothers and sisters</h1>
<h3>I love my country</h3>
</body>
</html>

```

### Output



Note that in above given script we have used two different classes for the element h1. One class selector is for displaying the string in red color and another is for displaying the string in blue color. This definition is given in the head section. In the body section these class names appear in double quotes inside the h1 tag.

### 3.4.3 Generic Selectors

We define the class in generalised form. In the sense, that particular class can be applied to any tag. Here is the HTML document which makes use of such generic selector.

#### HTML Document [ClassSel1.html]

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml11.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>Generic Class Selector Form</title>
<style type="text/css">

```

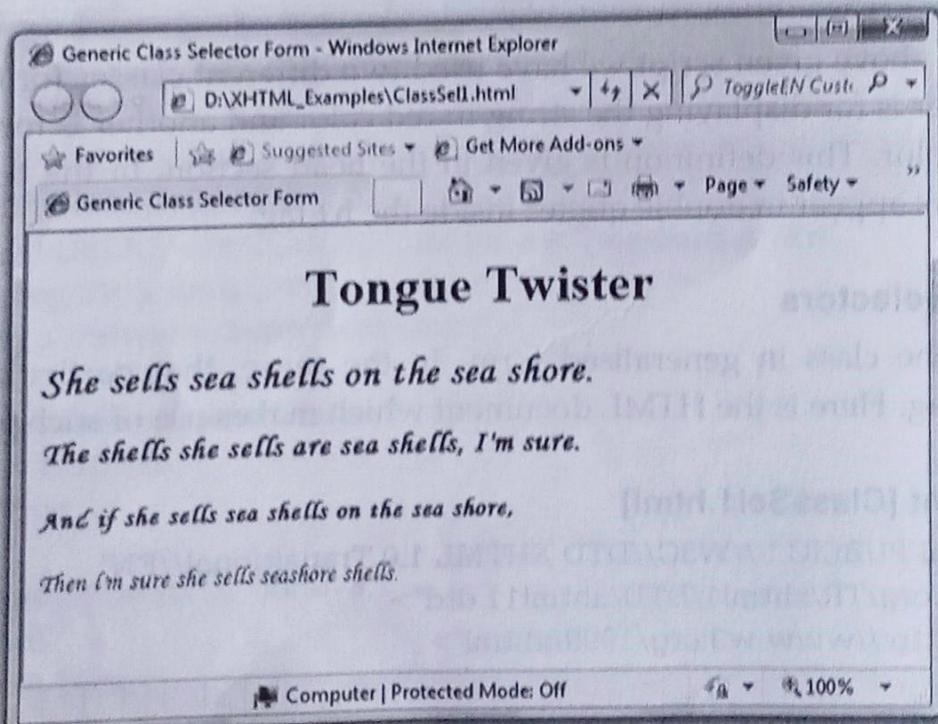
```

.RedText
{
    font-family:Monotype Corsiva;
    color:red;
}
</style>
</head>
<body>
<center>
<h1> Tongue Twister</h1>
</center>

<h2 class="RedText">
    She sells sea shells on the sea shore.
</h2>
<h3 class="RedText">
    The shells she sells are sea shells, I'm sure.
</h3>
<h4 class="RedText">
    And if she sells sea shells on the sea shore,
</h4>
<p class="RedText">
Then I'm sure she sells seashore shells.
</p>
</body>
</html>

```

### Output



Note that the class selector must be preceded by a dot operator.

### 3.4.4 id Selectors

The id selector is similar to the class selector but the only difference between the two is that class selector can be applied to more than one elements whereas using the id selector the style can be applied to the one specific element.

The syntax of using id selector is as follows -

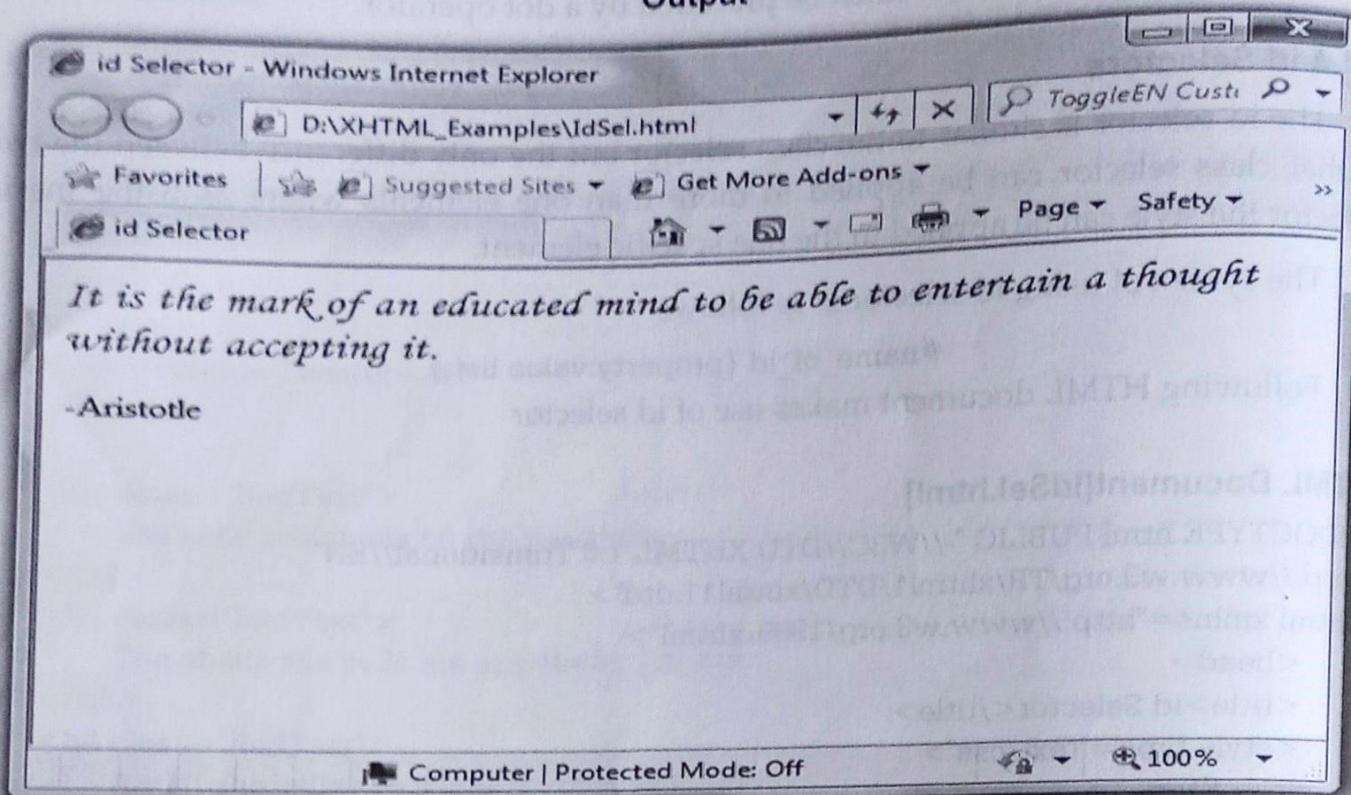
```
#name_of_id {property:value list;}
```

Following HTML document makes use of id selector

#### HTML Document[IdSel.html]

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml11.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>id Selector</title>
    <style type="text/css">
      #top
      {
        font-family:Monotype Corsiva;
        color:blue;
        font-size:16pt;
      }
    </style>
  </head>
  <body>
    <div id="top">
      It is the mark of an educated mind to be able to
      entertain a thought without accepting it.
    </div>
    <p>
      -Aristotle
    </p>
  </body>
</html>
```

## Output



### 3.4.5 Universal Selectors

This selector is denoted by \* (asterisk). This selector can be applied to all the elements in the document.

#### HTML Document[UniverSel.html]

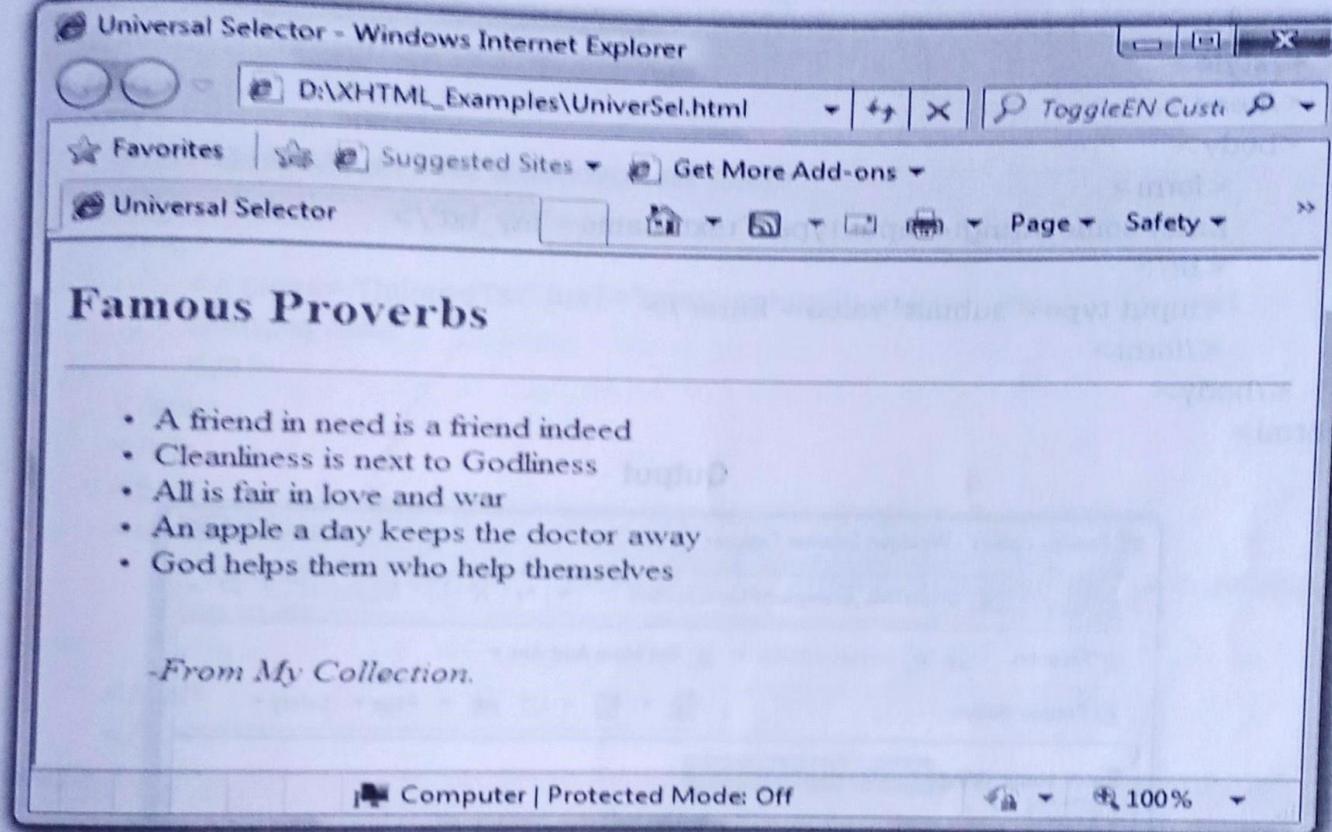
```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"  
"http://www.w3.org/TR/xhtml1/DTD/xhtml11.dtd">  
<html xmlns="http://www.w3.org/1999/xhtml">  
  <head>  
    <title>Universal Selector</title>  
    <style type="text/css">  
      * {  
        color:green;  
      }  
    </style>  
  </head>  
  <body>  
    <h2> Famous Proverbs </h2>  
    <hr/>  
    <ul type="disc">  
      <li>A friend in need is a friend indeed</li>  
      <li>Cleanliness is next to Godliness</li>  
      <li>All is fair in love and war</li>  
      <li>An apple a day keeps the doctor away</li>
```

```

<li>God helps them who help themselves</li>
<br/><br/>
<em>
    -From My Collection.
</em>
</body>
</html>

```

## Output



As we have defined the universal selector that sets the green color. Hence the text that is appearing on the above web page is in green color.

### 3.4.6 Pseudo Classes

Using pseudo classes we can give special effects on the selectors. There some pseudo classes which are more commonly used and those are -

- Focus
- Hover
- Hyperlink

In the following HTML documents we have used these pseudo classes.

#### HTML Document[PseudoCls.html]

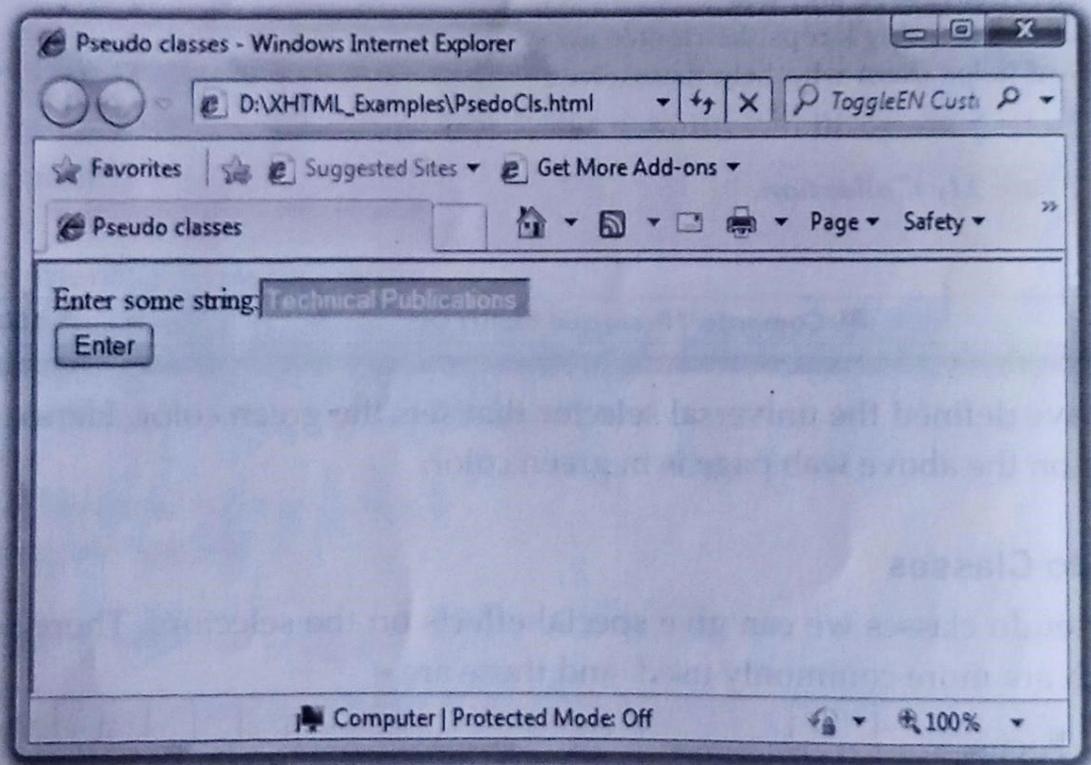
```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml11.dtd">

```

```
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>Pseudo classes</title>
<style type="text/css">
    input:focus
    {
        background-color:skyblue;
        color:white;
    }
</style>
</head>
<body>
    <form>
        Enter some string:<input type="text" name="my_txt"/>
        <br/>
        <input type="submit" value="Enter"/>
    </form>
</body>
</html>
```

### Output



Let us now see one more illustration in which the pseudo class is used.

#### HTML Document[PsedoCls1.html]

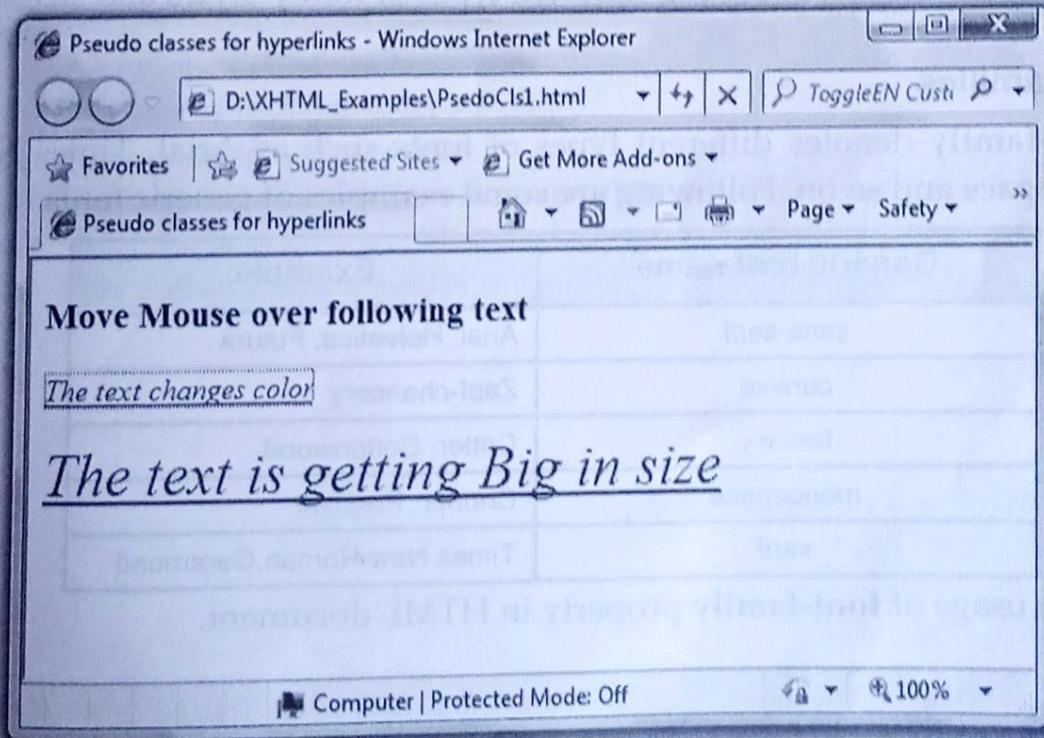
```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml11.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
    <head>
        <title>Pseudo classes for hyperlinks</title>
```

```
<style type="text/css">  
a.ColoredTxt:link {color: red}  
a.ColoredTxt:visited {color: blue}  
a.ColoredTxt:hover {color: green}  
  
a.BigTxt:link {color: red}  
a.BigTxt:visited {color: blue}  
a.BigTxt:hover {font-size: 200%}
```

We have defined two  
pseudo classes named  
ColoredTxt and BigTxt

```
</style>  
</head>  
<body>  
    <h3>Move Mouse over following text</h3>  
    <p>  
        <em>  
            <a class="ColoredTxt" href="mypage.html" target="_blank">The text  
            changes color  
            </a>  
        </em>  
    </p>  
    <p>  
        <em>  
            <a class="BigTxt" href="mypage.html" target="_blank">The text is getting  
            Big in size  
            </a>  
        </em>  
    </p>  
</body>
```

### Output



### 3.5 Property Value Form

In CSS, we define each selector with the help of property and value. There are seven categories of properties-

1. Fonts
2. List
3. Alignment of text
4. color
5. margins
6. background
7. borders

We can assign various values to these properties. For example for the property **font-family** we can assign the font name. If the font name is made up of more than one word then put it in double quotes. The property **font-style**, the italic, normal, underlined all such styles can be mentioned. The size of the font can be given in pixels(px), points(pt), inches(in) or in %.

The **color** property can be assigned with color names or in RGB form or in hexadecimal form. For example : the RGB form for specifying the color would be `rgb(255,0,0)` denoting the color RED.

Let us now get introduced with all such properties with the help of illustrative examples -

### 3.6 Manipulating Text

The font properties can be setting different types of fonts, styles and sizes.

#### 3.6.1 Font Families

The **font-family** denotes different types of fonts such as Arial, Times New Roman, Script, monospace and so on. Following are some examples of generic fonts

Generic font name	Example
sans-serif	Arial, Helvetica, Futura
cursive	Zapf-chancery
fantasy	Critter, Cottonwood
monospace	Courier, Prestige
serif	Times New Roman, Garamond

Let us see usage of **font-family** property in HTML document.