

Cascading Style Sheets (CSS)

- CSS are a way to control the look and feel of your HTML documents in an organized and efficient manner.
- CSS defines HOW HTML elements are to be displayed.
- Development of large web sites, where fonts and color information were added to every single page, became a long and expensive process.
- To solve this problem, the World Wide Web Consortium (W3C) created CSS.
- In HTML 4.0, all formatting could be removed from the HTML document, and stored in a separate CSS file.
- Styles are normally saved in external .css files. External style sheets enable you to change the appearance and layout of all the pages in a Web site, just by editing one single file!

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CSS Parts

 A CSS rule has two main parts: a selector, and one or more declarations:

h1 {color:blue; font-size:12px;}

Property Value Property Value

- The selector is normally the HTML element you want to style.
- Each declaration consists of a property and a value.
- The property is the style attribute you want to change. Each property has a value.
- A CSS declaration always ends with a semicolon, and declaration groups are surrounded by curly brackets.

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```
Comments

• Comments are ignored by browsers.

/*This is a comment*/
p
{
    text-align:center;
    /*This is another comment*/
    color:black;
    font-family:arial;
    }

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```

```
CSS Demo
<html>
                                     <body>
<head>
                                       <h1>CSS example!</h1>
<style type="text/css">
                                       This is a paragraph.
body
                                     </body>
{ background-color:#d0e4fe; }
                                     </html>
{ color:orange;
  text-align:center; }
  font-family: "Times New Roman";
   font-size:20px; }
</style> </head>
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```

```
The id Selector
    The id selector is used to specify a style for a single, unique element.
<html>
                            <body>
                            Hello World!
<head>
<style type="text/css">
                            This paragraph is not affected by the
                              style.
#para1
                             The id selector uses the
{ text-align:center;
                              id attribute of the HTML element, and
  color:red; }
                              is defined with a "#". The style rule
#para2
                              below will be applied to the element
{ text-align:right;
                              with id="para2" 
 color:blue; }
                            </body>
</style> </head>
                            </html>
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```

```
The class Selector
• It is used to specify a style for a
                                    <html>
  group of elements.
                                    <head>
• It uses the HTML class attribute,
                                    <style type="text/css">
  and is defined with a "."
                                    .redcenter
• Eg: .center {text-align:center;}
                                    { text-align:center;

    You can also specify that only

                                       color:red: }
  specific HTML elements should be
                                    </style></head>
  affected by a class.
                                    <body>
• Eg: p.center {text-align:center;}
                                    <h1 class="redcenter">Center-
                                      aligned heading</h1>
                                    Center-
                                      aligned paragraph.
                                    </body></html>
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```

Three Ways to Insert CSS

- External style sheet
- Internal style sheet
- Inline style

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Internal Style Sheet

• An internal style sheet should be used when a single document has a unique style. You define internal styles in the head section of an HTML page, by using the <style> tag, like this:

```
<head>
    <style type="text/css">
        hr {color:red;}
        p {margin-left:20px;}
        body {background-image:url("images/back40.gif");}
    </style>
</head>
```

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External Style Sheet

An external style sheet is ideal when the style is applied to many pages.
 With an external style sheet, you can change the look of an entire Web site by changing one file. Each page must link to the style sheet using the link > tag.

 An external style sheet can be written in any text editor. The file should not contain any html tags. Your style sheet should be saved with a .css extension.

```
hr{color:sienna;}
p {margin-left:20px;}
body {background-image:url("images/back40.gif");}
```

 <u>Note:</u> Do not leave spaces between the property value and the units! "margin-left:20 px"



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Inline Styles

- An inline style loses many of the advantages of style sheets by mixing content with presentation.
- To use inline styles you use the style attribute in the relevant tag. The style attribute can contain any CSS property.
- This is a paragraph.

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Multiple Style Sheets

- If some properties have been set for the same selector in different style sheets, the values will be inherited from the more specific style sheet.
- For example, properties for the h3 selector:

External style sheet Internal style sheet internal style sheet h3 also links to the external style sheet color:red; text-align:right; as final: text-align:left; font-size:20pt; color:red: font-size:8pt; text-align:right; font-size:20pt; V.MAREESWARI / AP / SITE 8 July 2014

CSS - Background Properties

- CSS background properties are used to define the background effects of an element.
- CSS properties used for background effects:
- ▶ background-color
- ➤ background-image
- ➤ background-repeat
- ➤ background-attachment
- > background-position

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Cascading Order

- Browser default
- External style sheet
- Internal style sheet (in the head section)
- Inline style (inside an HTML element)
- So, an inline style (inside an HTML element) has the highest priority, which means that it will override a style defined inside the <head> tag, or in an external style sheet, or in a browser (a default value).
- **Note:** If the link to the external style sheet is placed after the internal style sheet in HTML <head>, the external style sheet will override the internal style sheet!



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background-color

- body {background-color:#b0c4de;}
- p {background-color:#e0ffff;}
- div {background-color:#b0c4de;}
- h4 { background-color: white; }
- ul { background-color: rgb(149, 206, 145); }

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background-image

- By default, the image is repeated so it covers the entire element body {background-image:url("paper.gif");}
- You can have a background image repeat vertically (y-axis), horizontally (x-axis), in both directions, or in neither direction.
- p { background-image: url("smallPic.jpg"); background-repeat: repeat; }
- h4 { background-image: url("../smallPic.jpg"); background-repeat: repeat-y; }
- ol { background-image: url("../image/smallPic.jpg"); background-repeat: repeat-x;}
- ul { background-image: url("c:/IWP/image/smallPic.jpg"); background-repeat: no-repeat;}

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background-position

- If you would like to define where exactly an image appears within an HTML element, you may use CSS's background-position.
- Three different ways of defining position:
 - length, percentages, and keywords.
- p { background-image: url(smallPic.jpg);

background-position: 20px 10px; }

h4 { background-image: url(smallPic.jpg);

background-position: 30% 30%; }

ol { background-image: url(smallPic.jpg);

background-position: top center; }

 The location of the image will be (A)px from the left of the screen and (B)px from the top of the screen.



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Background-attachment

- You may choose to have your background scroll naturally, or to have it in a fixed position.
- body {

background-image: url(smallPic.jpg);

background-attachment: fixed; }

body {

background-image: url(smallPic.jpg);

background-attachment: scroll;}

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Background - Shorthand property

 To shorten the code, it is also possible to specify all the properties in one single property. This is called a shorthand property.

body {background:#ffffff url("img_tree.png") no-repeat right top;}

- When using the shorthand property the order of the property values are:
 - background-color
 - background-image
 - background-repeat
 - background-attachment
 - background-position
- It does not matter if one of the property values is missing, as long as the ones that are present are in this order.



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CSS – Text Properties

Text Color

The color property is used to set the color of the text.

```
body{color:blue;}
h1{color:#00ff00;}
h2 {color:rgb(255,0,0);}
```

Text Alignment

- The text-align property is used to set the horizontal alignment of a text.
- Text can be centered, or aligned to the left or right, or justified.
- When text-align is set to "justify", each line is stretched so that every line has
 equal width, and the left and right margins are straight (like in magazines and
 newspapers).

```
h1 {text-align:center;}
p.main {text-align:justify;}
```



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Text Transformation

It can be used to turn everything into uppercase or lowercase letters, or capitalize the first letter of each word.

p {text-transform:uppercase;} → lowercase or capitalize

• Text Indentation

It is used to specify the indentation of the first line of a text.

```
p {text-indent:50px;}
```

Word Spacing

It is used to specify the exact value of the spacing between your words.

p { word-spacing: 10px; }

Letter Spacing

It is used to specify the exact value of the spacing between your letters.

```
p { letter-spacing: 3px; }
```



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Text Decoration

 The text-decoration property is used to set or remove decorations from text.

```
h1 {text-decoration:overline;}
```

h2 {text-decoration:line-through;}

h3 {text-decoration:underline;}

h4 {text-decoration:blink;}

- a {text-decoration:none;} → remove underlines from links
- Note: The "blink" value is not supported in IE, Chrome, or Safari.



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Font Properties

Font Family

- If the name of a font family is more than one word, it must be in quotation marks, like font-family: "Times New Roman".
- More than one font family is specified in a comma-separated list:

p{font-family: "Times New Roman"; }

Font Style

- This property has three values:
 - normal The text is shown normally
 - italic The text is shown in italics
 - oblique The text is "leaning" (oblique is very similar to italic, but less supported)

p{font-style:normal;}



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```
Eont Size - sets the size of the text.
        p {font-size:14px;}
        p {font-size:0.875em;} /* 14px/16=0.875em */
        p { font-size: 20%; }

    The default text size in browsers is 16px. So, the default size of 1em is 16px.

Font Color
        h4 { color: red; }
Font Weight
 If you want to control the weight of your font (its thickness), using font weight
 is the best way to go about it.
 You only use font-weight in multiples of 100 (e.g. 200, 300, etc) . The values
  range from 100 (thin)-900 (thick).
        p { font-weight: 100; }
        ul{ font-weight: bolder; }

    Available key terms for font-weight: bold or bolder, lighter and normal.

Font Variant - allows you to convert your font to all small caps.
        p { font-variant: small-caps; }
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```

```
Text Decoration

a:link {text-decoration:none;}
a:visited {text-decoration:none;}
a:hover {text-decoration:underline;}
a:active {text-decoration:underline;}

Background Color

The background-color property specifies the background color for links:
a:link {background-color:#B2FF99;}

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```

```
Link Properties
• The four links states are:
     a: link - a normal, unvisited link
     a:visited - a link the user has visited
     a:hover - a link when the user mouses over it
    a:active - a link the moment it is clicked
 a:link {color:#FF0000;} /* unvisited link */
 a:visited {color:#00FF00;} /* visited link */
a:hover {color:#FF00FF;} /* mouse over link */
 a:active {color:#0000FF;} /* selected link */
When setting the style for several link states, there are some order
 rules:
    a:hover MUST come after a:link and a:visited
    a:active MUST come after a:hover
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```
<html> <head>
                                          a.five:visited {color:#0000ff;
<style type="text/css">
                                              text-decoration:none;}
a.one:link {color:#ff0000;}
                                          a.five:hover{text-decoration:underline;}
a.one:visited {color:#0000ff;}
                                          a.six:link,a.six:visited
a.one:hover {color:#ffcc00;}
                                          { display:block;
a.two:link {color:#ff0000;}
                                          font-weight:bold;
a.two:visited {color:#0000ff;}
                                          color:#FFFFFF:
a.two:hover {font-size:150%;}
                                          background-color:#98bf21;
a.three:link {color:#ff0000;}
                                          width:120px;
a.three:visited {color:#0000ff;}
                                          text-align:center;
a.three:hover {background:#66ff66;}
                                          padding:4px;
a.four:link {color:#ff0000;}
                                          text-decoration:none;}
a.four:visited {color:#0000ff;}
                                          a.six:hover.a.six:active
a.four:hover {font-family:monospace;}
                                          { background-color: #7A991A;
a.five:link { color:#ff0000;
                                          text-decoration:underline: }
  text-decoration:none; }
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                                           </style> </head>
```

```
<body>
Mouse over the links to see them change layout.
<b><a class="one" href="default.asp" target="_blank">This link
 changes color</a></b>
<b><a class="two" href="default.asp" target="_blank">This link
 changes font-size</a></b>
<b><a class="three" href="default.asp" target="_blank">This link
 changes background-color</a></b>
<b><a class="four" href="default.asp" target="_blank">This link
 changes font-family</a></b>
<b><a class="five" href="default.asp" target="_blank">This link
 changes text-decoration</a></b>
<b><a class="six" href="../tutorial.html" target=" blank">This
 link changes Box Color</a></b>
</body></html>
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```

```
List Properties

PropertyDescription

Iist-style-image → Specifies an image as the list-item marker

Iist-style-position → Specifies if the list-item markers should appear inside or outside the content flow

Iist-style-type → Specifies the type of list-item marker

Iist-style → Sets all the properties for a list in one declaration
```

```
<html> <head>
                                 ol.t {list-style-type:upper-
                                   roman: }
<style type="text/css">
                                 ol.u {list-style-type:none;}
ul.a {list-style-type:circle;}
                                 ol.v {list-style-image:
ul.b {list-style-type:disc;}
                                   url("sqpurple.gif");}
ul.c {list-style-type:square;}
                                 </style> </head>
ol.f {list-style-type:decimal;}
                                 <body>
ol.q {list-style-type:decimal-
                                 leading-zero;}
                                 Circle type
ol.n {list-style-type:lower-alpha;}
                                 ol.q {list-style-type:lower-
 roman;}
                                 <Ii>Disc type</Ii>
ol.r {list-style-type:upper-alpha;}
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```

```
<Ii>Upper-alpha type</Ii>
Square type
                            </01>

  class="f">

                           Decimal type
                           <Ii>Upper-roman type</Ii>

  class="q">

                            </01>
<Ii>Decimal-leading-zero

  class="u">

 type
                           <Ii>None type</Ii>
</01>
                            </01>

  class="v">

<Ii>Lower-alpha type</Ii>
                           <Ii>Image type</Ii>
 </01>
                           </0|>
</body></html>
<Ii>Lower-roman type</Ii>
</01>
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```

Table Properties Table Borders table, th, td { border: 1px solid red; } Notice that the table in the example above has double borders. This is because both the table and the th/td elements have separate borders. To display a single border for the table, use the border-collapse property.

```
Table Text Alignment

The text in a table is aligned with the text-align and vertical-align properties.

The text-align property sets the horizontal alignment, like left, right, or center td { text-align:right; }

The vertical-align property sets the vertical alignment, like top, bottom, or middle: td { height:50px; vertical-align:bottom; }

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```

```
Collapse Borders
                                    Table Width and Height

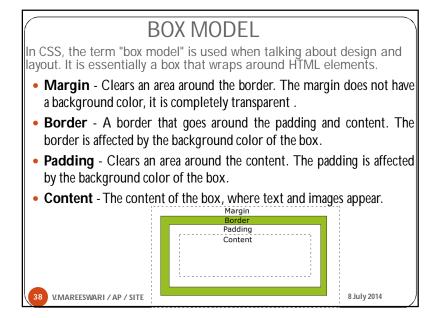
    The border-collapse property sets

    Width and height of a table is

 whether the table borders are
                                      defined by the width and height
 collapsed into a single border or
                                      properties.
 separated:
                                             table
 table
                                             width:100%;
 border-collapse:collapse;
                                             th
 table, td, th
                                             height:50px;
       border:1px solid red;
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```

```
    Table Padding
    To control the space between the border and content in a table, use the padding property on td and th elements:
        td
        {
            padding:15px;
        }
        Table Color
        The example below specifies the color of the borders, and the text and background color of th elements:
        table, td, th
        {
            border:1px solid green;
        }
        th
        {
            background-color:green;
        color:white;
      }
```

```
<body>
<html> <head>
                             <style type="text/css">
                            table
                              Student Name
     border-collapse:collapse;
                              Seminar Topic
     width:50%; }
                            th
                            height:50px;
                              Madhusuthanan P
     vertical-align:center; }
                              Internet, Intranet and
td
                                  WWW
     text-align:right;
                            table,th,td
                              Roopa S
                              Internet Protocols
     border:1px solid red;
                              </body> </html>
</style> </head>
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```



Width and Height of an Element

- When you set the width and height properties of an element with CSS, you
 just set the width and height of the content area.
- The total width of an element should be calculated like this:

Total element width = width + left padding + right padding + left border + right border + left margin + right margin

• The total height of an element should be calculated like this:

Total element height = height + top padding + bottom padding + top border + bottom border + top margin + bottom margin

Example: width:250px; padding:10px;

border:5px solid gray;

margin:10px;

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Browsers Compatibility Issue

- The example above does not display properly in IE8 and earlier versions.
- IE8 and earlier versions includes padding and border in the width, if a **DOCTYPE is NOT declared**.
- To fix this problem, just add a DOCTYPE to the first line of HTML page:

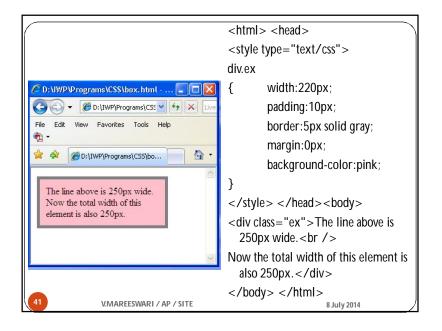
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"

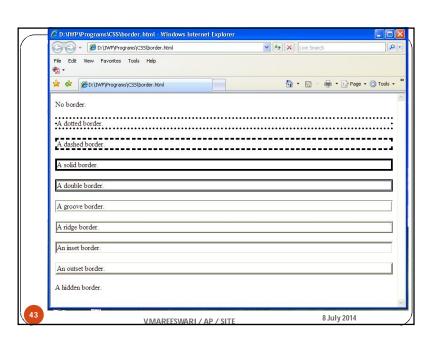
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

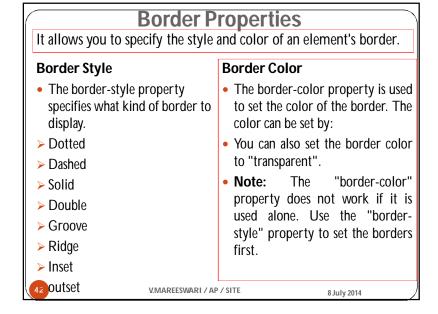
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Border - Individual sides

 In CSS it is possible to specify different borders for different sides.

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

• The border-style property can have from one to four values.

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Example:

- border-style:dotted solid double dashed;
 - top border is dotted
 - right border is solid
 - bottom border is double
 - left border is dashed
- border-style:dotted solid double;
 - top border is dotted
 - right and left borders are solid
 - bottom border is double
- border-style:dotted solid;
 - top and bottom borders are dotted
 - right and left borders are solid
- > border-style:dotted;
- all four borders are dotted

Margin

- The margin clears an area around an element (outside the border). The margin does not have a background color, and is completely transparent.
- The top, right, bottom, and left margin can be changed independently using separate properties. A shorthand margin property can also be used, to change all margins at once.

margin-top:100px; margin-bottom:100px; margin-right:50px; margin-left:50px;



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Padding

- The padding clears an area around the content (inside the border) of an element. The padding is affected by the background color of the element.
- The top, right, bottom, and left padding can be changed independently using separate properties. A shorthand padding property can also be used, to change all paddings at once.

padding-top:25px; padding-bottom:25px; padding-right:50px; padding-left:50px;



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Margin - Shorthand property

Example:

- margin:25px 50px 75px 100px;
- top margin is 25px
- right margin is 50px
- bottom margin is 75px
- left margin is 100px
- margin:25px 50px 75px;
- top margin is 25px
- right and left margins are 50px
- bottom margin is 75px
- margin:25px 50px;
 - top and bottom margins are 25px
 - right and left margins are 50px
- margin:25px;
- all four margins are 25px



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Padding - Shorthand property

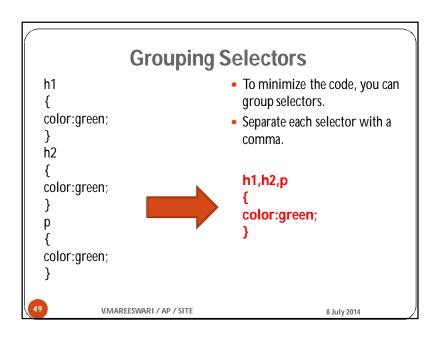
Example:

- padding:25px 50px 75px 100px;
 - top padding is 25px
 - · right padding is 50px
- bottom padding is 75px
- left padding is 100px
- padding:25px 50px 75px;
- top padding is 25px
- right and left paddings are 50px
- bottom padding is 75px
- padding:25px 50px;
 - top and bottom paddings are 25px
 - right and left paddings are 50px
- padding:25px;
 - all four paddings are 25px



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```
<html> <head>
                                  <body>
<style type="text/css">
                                  This is a blue, center-aligned
                                   paragraph.
                                  <div class="marked">
      color:blue:
                                  <h1> Heading 1 </h1>
      text-align:center;
                                  This p element should not be
.marked
                                   blue.
      background-color:red;
                                  </div>
                                  p elements inside a "marked"
                                   classed element keeps the
.marked p
                                    alignment style, but has a
                                   different text color. 
color:white;
                                  </body>
                                  </html>
</style> </head>
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```



Positioning

- The CSS positioning properties allow you to position an element. It can also place an element behind another, and specify what should happen when an element's content is too big.
- Elements can be positioned using the top, bottom, left, and right properties. However, these properties will not work unless the position property is set first. They also work differently depending on the positioning method.
- There are four different positioning methods.
- 1. Static
- Fixed
- 3. Relative
- 4. Absolute



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Fixed Positioning

- An element with fixed position is positioned relative to the browser window.
- It will not move even if the window is scrolled:

```
p.pos_fixed
{
position:fixed;
top:30px;
right:5px;
}
```

- Note: IE7 and IE8 support the fixed value only if a !DOCTYPE is specified.
- Fixed positioned elements are removed from the normal flow. The document and other elements behave like the fixed positioned element does not exist.
- Fixed positioned elements can overlap other elements.



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Static Positioning

- HTML elements are positioned static by default. A static positioned element is always positioned according to the normal flow of the page.
- Static positioned elements are not affected by the top, bottom, left, and right properties.

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Relative Positioning

• A relative positioned element is positioned relative to its normal position.

```
h2.pos_left
{
position:relative;
left:-20px;
}
```

 The content of relatively positioned elements can be moved and overlap other elements, but the reserved space for the element is still preserved in the normal flow.

```
h2.pos_top
{
position:relative;
top:-50px;
}
```

 Relatively positioned elements are often used as container blocks for absolutely positioned elements.

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Absolute Positioning

 An absolute position element is positioned relative to the first parent element that has a position other than static. If no such element is found, the containing block is <html>:

```
h2
{
position:absolute;
left:100px;
top:150px;
}
```

- Absolutely positioned elements are removed from the normal flow. The document and other elements behave like the absolutely positioned element does not exist.
- Absolutely positioned elements can overlap other elements.



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HTML Tag

- The tag is used to group inline-elements in a document.
- The tag provides no visual change by itself.
- The tag provides a way to add a hook to a part of a text or a part of a document.
- When the text is hooked in a element you can add styles to the content, or manipulate the content with for example JavaScript.
- My mother has light blue eyes and my father has dark green eyes.



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Overlapping Elements

- When elements are positioned outside the normal flow, they can overlap other elements.
- The z-index property specifies the stack order of an element (which element should be placed in front of, or behind, the others).
- An element can have a positive or negative stack order:

```
img
{
position:absolute;
z-index:-1
}
```

- An element with greater stack order is always in front of an element with a lower stack order.
- Note: If two positioned elements overlap, without a z-index specified, the element positioned last in the HTML code will be shown on top.

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