BSc CsIt SEM - V
Web technology
Unit 3: Cascading Style Sheets

Syllabus:

Unit 3: Cascading Style Sheets (8 Hrs.)

Introduction; Cascadding Style Sheets (CSS); CSS Syntax; Inserting CSS: Inline, Internal, External, ID and Class Selectors; Colors; Backgrounds; Borders; Text; Font; List; Table; CSS Box Model; Normal Flow Box Layout: Basic Box Layout, Display Property, Padding, Margin; Positioning: Relative, Float, Absolute; CSS3 Borders, Box Shadows, Text Effects and shadow; Basics of Responsive Web Designs; Media Queries, Introduction to Bootstrap

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Introduction: Cascading Style Sheets (CSS)

1.Cascading:

Refers to the procedure that determines which style will apply to a certain section, if you have more than one style rule.

2.Style:

"Style" is a command that you set to tell the browser how a certain section of your webpage should look or how you want a certain part of your page to look. You can set things like color, margins, font, etc for things like tables, paragraphs, and headings.

3.Sheets:

The "sheets" are like templates, or a set of rules, for determining how the webpage will look.

So, CSS (all together) is a styling language – a set of rules to tell browsers how your webpage should look. It describes how HTML elements should be displayed. 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. It is removed style formatting from the HTML page.

A **style sheet** is a syntactic mechanism for specifying style information. The most important benefit of style sheet is their capability of imposing consistency on the style of Web document. For example, they allow author to specify the presentation style of overall document such that they have same appearance.

A **Cascading Style Sheet (CSS)** describes how html element are to be displayed on screen and allows different types of effects to be applied on HTML document. It is a design language used for making websites presentable by applying different kinds of color effects, shading effects etc. With the help of CSS, we can control the color of text, style of fonts, background style and colors, variation in display etc.

CSS are called cascading style because they can be defined at three different levels to specify the style of a document. Lower-level style sheet can override higher level style sheets so the style of the content of an element is determined.

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CSS syntax

A CSS comprises of style rules that are interpreted by the browser and then applied to the corresponding elements in your document. A style rule is made of three parts…

1. **selector**
2. **Property**
3. **value**

1.Selector

A selector is any html tag on which the style is applied. Example <p> ,<h1> , <table> etc.

2.Property

It is attribute of the html tag example. Colour, border etc.

3. Value

It is a value assigned to the property like color:blue etc.

You can put CSS style rule syntax as follows:

Selector {property: value}

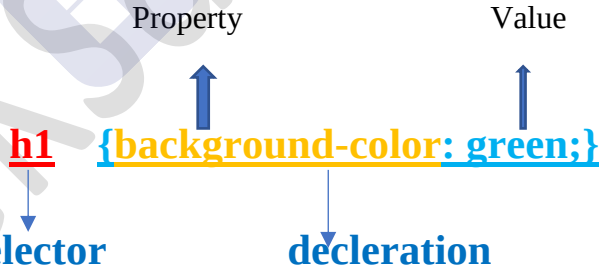
Here the selector points to the HTML elements you want to style.

Example:

1) **P {**
   Color: red;
   Text-align: center;
   }

2) **h1{background-color: green;}**

Diagrammatically it can be explained as follows…



Here,

Declaration = {property: value;}

- **Property**: what aspect you want to change. ex: color, font, margins, etc.
- **Value**: the exact setting for that aspect. ex: red, italic, 40px, etc.

Inserting CSS:

CSS can be inserted in html file by three different ways:

1. Embedded or Inline
2. Internal

3. External

Inline Style sheet

This is mainly used to apply unique style for a single element. In order to apply the specific style, we need to assign value to the style attribute of the individual element.

Inline style sheet applies to the content of a single HTML element and have precedence over external style sheet. For example: if external CSS has applied some effect to the HTML element, then that effect value can be changed if different effect is applied on inline or internal CSS.

Inline CSS appears within the opening tag and apply only to the content of that element. It is used to apply effect for single element only which defeats one of the primary advantages of CSS i.e., imposing uniform style on the element of at least one whole document.

For inline CSS we don't have to use CSS selector but may increase the length of code and mixing CSS and HTML code may create hurdle. In inline CSS, style attribute is used to apply effect on HTML elements.

Hence,

1) An inline CSS is used to apply a unique style to a single HTML element.
2) An inline CSS uses the style attribute of an HTML element.
3) These rules will be applied to the element only.

Syntax:

Style = "property_1: value_1; property_2: value_2; … property_n: value_n;"

Example:

```
<html>
 <head>
   <style>
        body{ background-color:pink;}
    </style>
  </head>

  <body>
        <h1 style="color:maroon; margin-left:40px;">This is a header</h1>
   </body>
</html>
```

Output:

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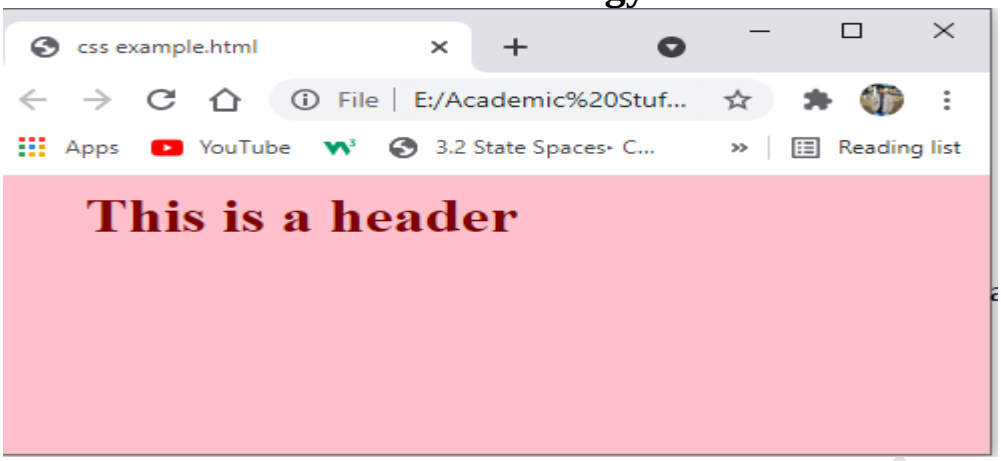


Internal style sheet

It can be used in an individual page to apply the style specifically in that page. It is applied by using the <style > tag inside the <head> tag.

Internal CSS apply to the whole body of a document and have precedence over external CSS. It appears in the document's head section and apply to the entire body of the document. This is an effective way to impose a uniform style on the presentation of all the content of a single document.

Syntax:

```
<style type = "text/css">
    Rule_list
</style>
```

So,

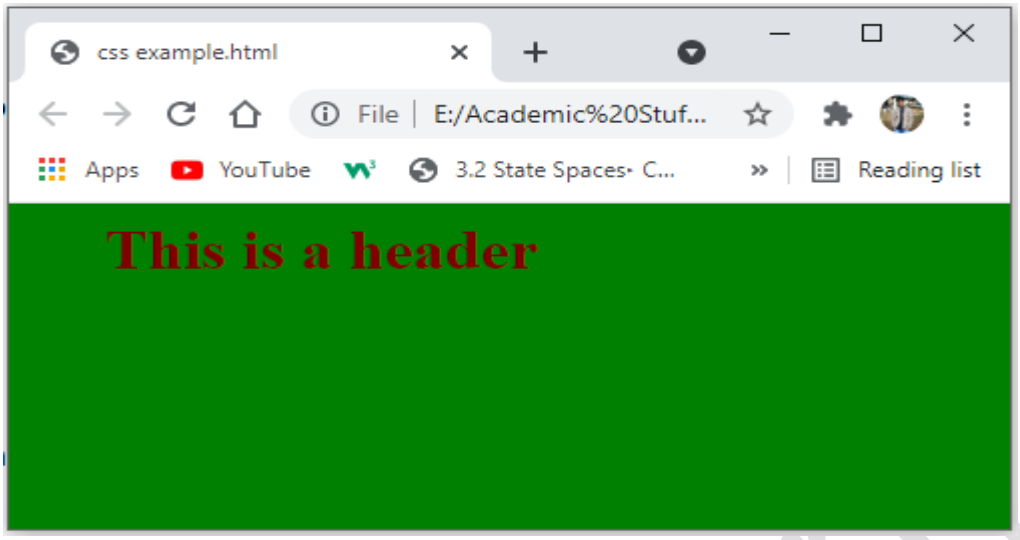
1) An internal CSS is used to define a style for a single HTML page.
2) An internal CSS is defined in the <head> section of an HTML page, within a <style> element:

Example:

```
<html>
<head>
  <style>
        Body {
            background-color:green;
          }

          h1{
              color: maroon;
              margin-left:40px;
            }
  </style>
</head>
<body>
    <h1>This is a header</h1>
</body>
</html>
```

Output:



3.External Style Sheet

The external file can be used to apply the style in the entire web site. Any changes can be made in the external file which is applied to the website directly.

External CSS is written in separate sheet in .css extension and applies to the body of any number of documents. They are stored separately and reference in all documents that use them. It separates the html document and CSS sheet. They are written as text file with the MIME type text/css which can be stored on any computer on the web. The browser fetches external style sheet just as it fetches HTML document.

The link tag is used to specify external style sheet. Within link, rel attribute specify the relationship of linked to the document in which the link appears and href attributes specify the URL of the style sheet document i.e. specify the location of the stylesheet.

Syntax:
<link rel=”stylesheet” type = “text/ css” href = “my.css” />

The link should be appear on head of the html document. As it is good to separate CSS from markup, it is preferable to use external style sheet.

Hence,

1) An external style sheet is used to define the style for many HTML pages.
2) **With an external style sheet, you can change the look of an entire web site, by changing one file!**
3) To use an external style sheet, add a link to it in the <head> section of the HTML page:
4) An external style sheet is a separate text file with **.css** extension. You define all the Style rules within this text file and then you can include this file in any HTML document using <link> element.

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Example

a.html

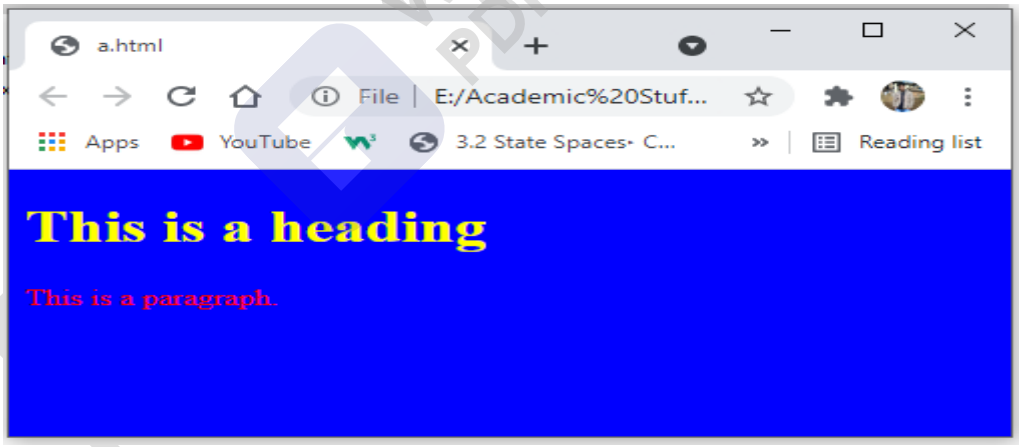
```
<!DOCTYPE html>
        <html>
                <head>
                        <link rel="stylesheet" href="b.css">
                </head>

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

b.css

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

Output:



The <link> Element The <style> Element

The <link> Element

The < link > element is used in web pages to describe the relationship between two documents; for example, it can be used in an HTML page to specify a style sheet that should be used to style a page.

It is a very different kind of link than the < a > element because the two documents are automatically associated — the user does not have to click anything to activate the link.

The < link > element is always an empty element, and when used with style sheets it must carry three attributes: type, rel, and href.

```
< link rel=”stylesheet” type=”text/css” href=”../CSS/b.css” / >
                    Or
< head >
        < title > </title>
            < link rel=”stylesheet” type=”text/css” href=”../styles/b.css” / >

< /head >
```

The rel Attribute

The rel attribute is required and specifies the relationship between the document containing the link and the document being linked to. The key value for working with style sheets is stylesheet.

rel= “stylesheet”

The type Attribute

The type attribute specifies the MIME (**Multipurpose Internet Mail Extensions*)*** type of the document being linked to; in this case, we are dealing with a CSS style sheet, so the MIME type is text/css :

type=”text/css”

The href Attribute

The href attribute specifies the URL for the document being linked to.

href=”../xyz/b.css”

The value of this attribute can be an absolute or relative URL but it is usually a relative URL because the style sheet is part of the site.

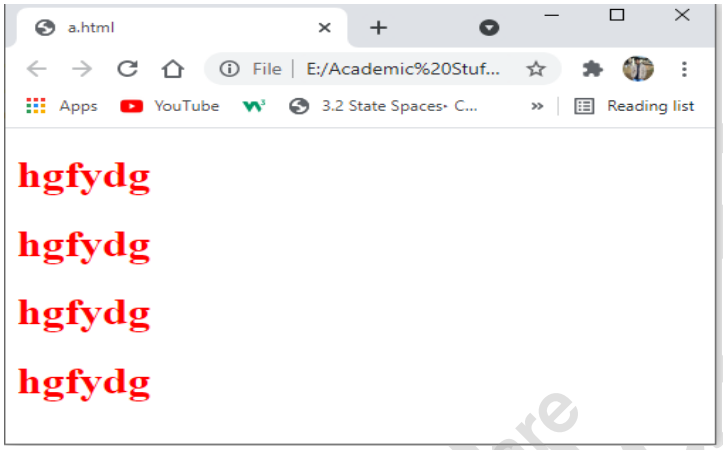
The <style> Element

The < style > element is used inside the < head > element to contain style sheet rules within a web page, rather than linking to an external document. It is also sometimes used when a single page needs to contain just a few extra rules that do not apply to the other pages of the site which all share the same style sheet.

For example.

```
<!DOCTYPE html>
<html>
        <head>
            <title> </title>
            <style type="text/css">
                h1 {color:#FF0000;}
            </style >
```

```
    </head >
    <body>
        <h1>hgfydg</h1>
        <h1>hgfydg</h1>
        <h1>hgfydg</h1>
        <h1>hgfydg</h1>
    </body>
</html>
```



Advantages of External CSS Style Sheets

- It saves you repeating the same style rules in each page.
- You can change the appearance of several pages by altering just the style sheet rather than each individual page.
- Once a visitor to your site has downloaded the CSS style with the first page of your site that uses it, subsequent pages will be quicker to load (because the browser retains a copy of the CSS style sheet and the rules do not have to be downloaded for every page).
- A style sheet can import and use styles from other style sheets, allowing for modular development and good reuse.
- If you remove the style sheet, you can make the site more accessible for those with visual impairments, because you are no longer controlling the fonts and color schemes.

ID and Class Selectors

CSS Selector:

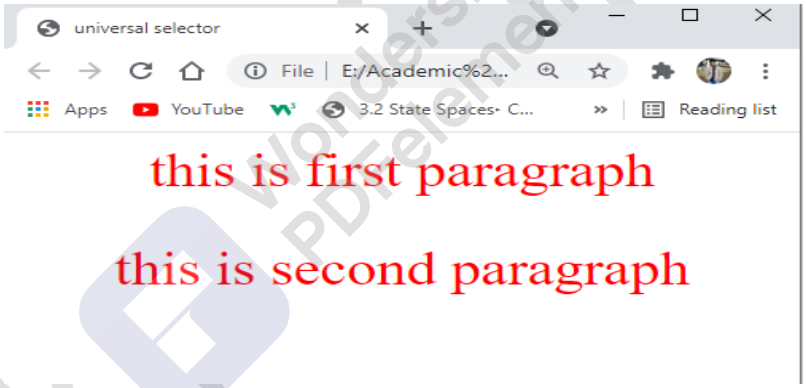
A selector specifies the elements to which the style information is to be applied i.e. used to select the HTML elements to which style have to applied. Some CSS selector are:

1. **Universal Selector:**
   It is denoted by asterisk "*" symbol and applies style to all elements in a document. It selects all the element of web page. If we wanted every element in a document to have a particular set of properties then we could use: * {property-value list}. For example:

Example:

```
<html>
    <head>
        <title> universal selector </title>
        <style type = “text/css”>
        *{
            color: red;
            font-size: 30px;
            text-align: center;
        }
        </style>
    </head>
    <body>
        <p>this is first paragraph </p>
        <p> this is second paragraph </p>
    </body>
</html>
```

Output:



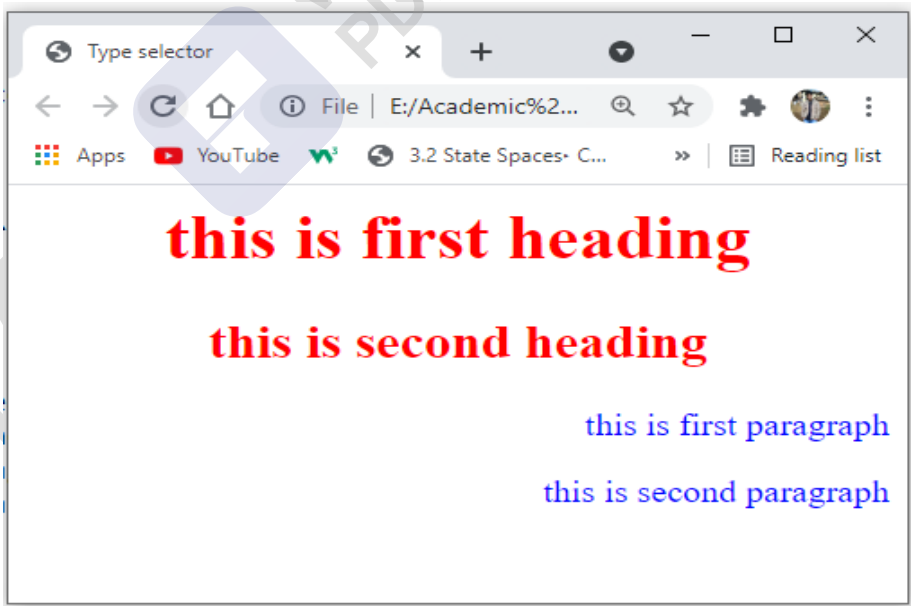
2. **Type Selector:**

This selector is written by its element name and style will be apply for only related element i.e. property values in the rule apply to all occurrence of the named element. This selector could be a list of elements separated by comma and in such case, style will be applied to occurrence of all of the named element. For example:

Example:

```
<html>
    <head>
        <title> Type selector </title>
        <style type = "text/css">
            h1,h2{
                color: red;
                text-align: center;
              }
            p {
                color: blue;
                text-align: right;
              }
        </style>
    </head>
    <body>
        <h1> this is first heading </h1>
        <h2> this is second heading </h2>
        <p>this is first paragraph </p>
        <p> this is second paragraph </p>
    </body>
</html>
```

Output:



3. **The Class Selector:**

Class selector is denoted by dot "." and written for element that has attribute name class. It will change the style for particular class. It allows different occurrence of the same tag to use different style specification. For example:

Example:

```
<html>
    <head>
        <title> class selector </title>
        <style type = "text/css">
            .p1{
                color: red;
                font-size: 30px;
                text-align: center;
            }
            .p2{
                color: blue;
                text-align: right;
        </style>
    </head>
    <body>
        <p class = "p1">this is first paragraph </p>
        <p class = "p2"> this is second paragraph </p>
    </body>
</html>
```

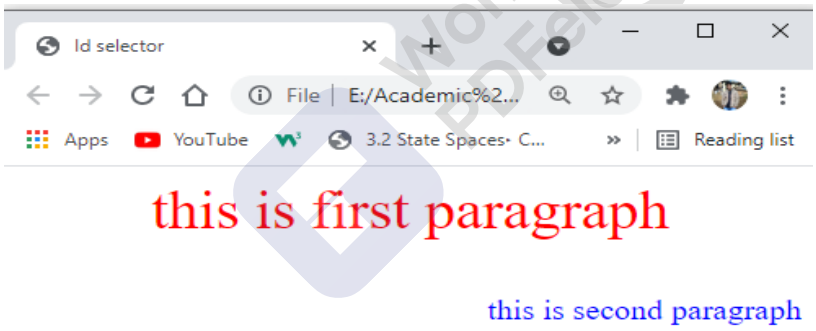
Output:

4. **Id Selector:**
   An Id selector is denoted by "#" and allows the application of a style to one specific element. Id is written in attributes of tag and used to select specific element. Its general form is: # specific-id {property-value list}
   For example:

Example:

```
<html>
    <head>
        <title> Id selector </title>
        <style type ="text/css">
        #p1{
            color: red;
            font-size: 30px;
            text-align: center;
        }
        #p2{
            color: blue;
            text-align: right;
        </style>
    </head>
    <body>
        <p id="p1">this is first paragraph </p>
        <p id="p2"> this is second paragraph </p>
    </body>
</html>
```

Output:



5. **The Descendent Selector:**

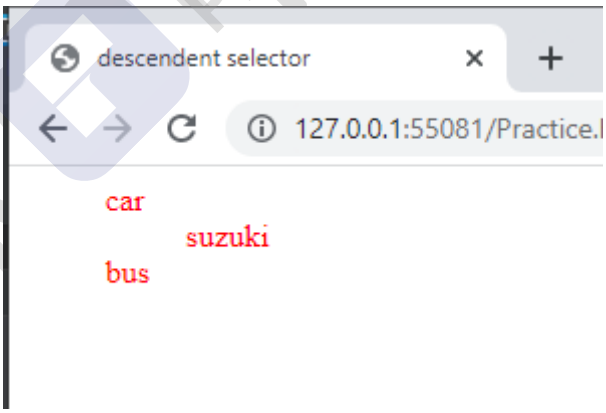
The descendent selector is used for applying style to certain descendent of certain element. The style will apply to element in certain positions in the document i.e. style will apply to all the elements that are under the content of parent elements. Element B is a descendent of element A if it appears in content of A i.e. A is ancestor of B. Space is used to separate the element names. For e.g.

Example:

```
<html>
        <head>
        <title> descendent selector </title>
        <style type = “text/css”>
        ul li {
                display: inline;
                color: red;
            }
        </style>
        </head>
        <body>
                <ul>
                        <li>car</li>
                        <ol>
                                <li>suzuki</li>
                        </ol>
                        <li>bus</li>
                </ul>
        </body>
</html>
```

In above example, style will apply to all list item (li).

Output:

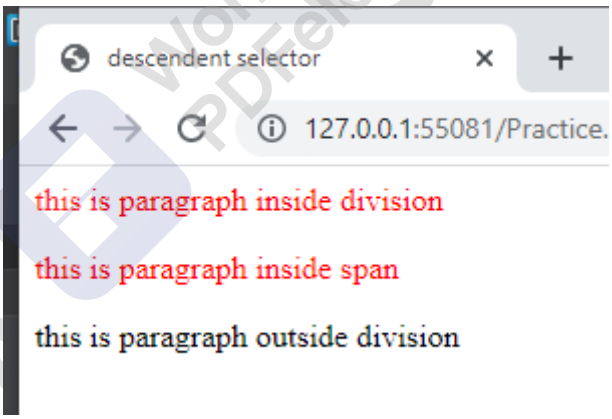


Another example:

```
<html>
<head>
        <title> descendent selector </title>
        <style type = “text/css”>
            #div1 p{
                        color: red;
                        font-size: 30 px;
                    }
        </style>
</head>
<body>
        <div id = “div1”>
                <p> this is paragraph inside division </p>
                <span> <p> this is paragraph inside span </p></span>
        </div>
        <p> this is paragraph outside division </p>
</body>
</html>
```

In above example, style will apply to all the paragraph that are inside division.

Output:



6. **The Child Selector:**

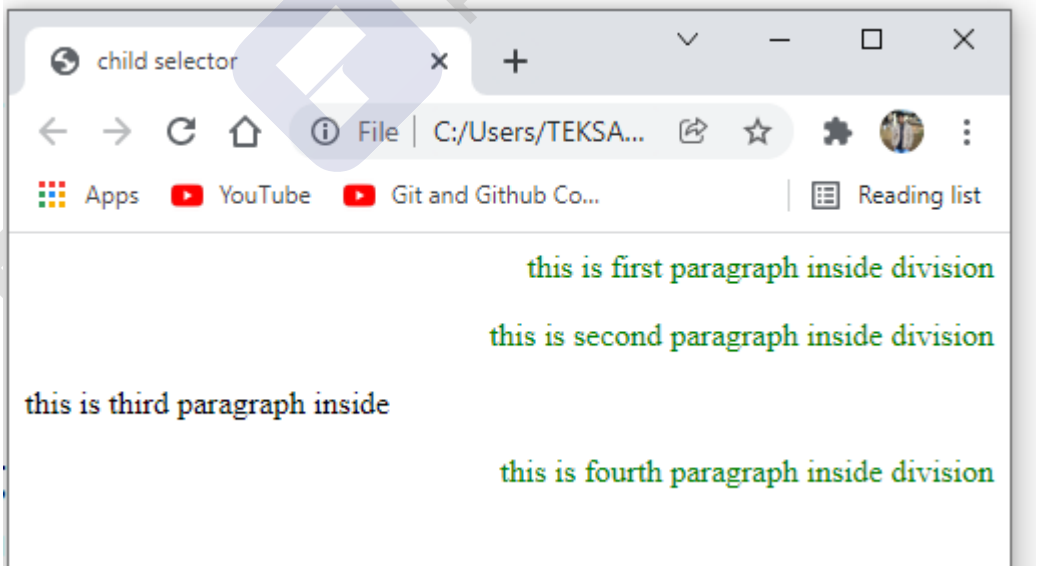
This selector is used to apply style for child of particular element i.e. style will apply only to the element that are inside particular parent class. Greater than symbol “>” symbol is used for child selector. For example:

Example:

```
<html>
    <head>
    <title> child selector </title>
        <style type = “text/css”>
        #div1 > p {
                color: green;
                text-align: right;
            }
        </style>
    </head>
    <body>
        <div id = “div1”>
            <p> this is first paragraph inside division </p>
            <p> this is second paragraph inside division </p>
            <span> <p> this is third paragraph inside </p></span>
            <p> this is fourth paragraph inside division </p>
        </div>
    </body>
</html>
```

In above example, style will apply only to paragraph 1 2 and 4 because they are child of division. Style will not apply to paragraph 3 because it is a child of span not of division.

Output:



7. **Adjacent Sibling Selector:**

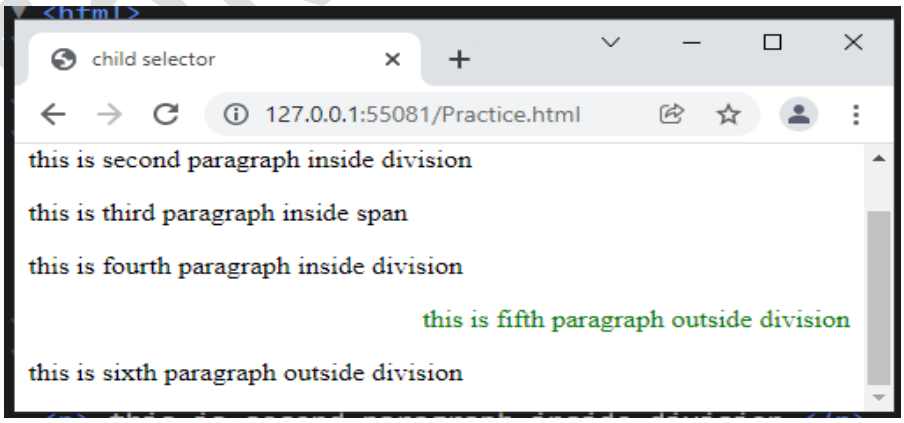
The adjacent sibling selector apply the style to the element that is immediately below the parent element. Plus "+" symbol is used for adjacent sibling selector. For

Example:

```
<html>
    <head>
        <title> child selector </title>
        <style type = "text/css">
        #div1 + p {
                color: green;
                text-align: right;
            }
        </style>
    </head>
    <body>
        <div id = "div1">
            <p> this is first paragraph inside division </p>
            <p> this is second paragraph inside division </p>
            <p> this is fourth paragraph inside division </p>
        </div>
            <p> this is fifth paragraph outside division </p>
           <p> this is sixth paragraph outside division </p>
    </body>
</html>
```

In above example, style will apply to only fifth paragraph because it is immediately following paragraph of division

Output:



8. **General Sibling Selector:**

This selector will apply style to all the elements that are sibling of a specified element. A tidle "~" sign is used for general sibling selector.

For example:

```
<html>
    <head>
    <title> child selector </title>
        <style type ="text/css">
            #div1 ~ p {
                color: green;
                margin-left:20px;
            }
        </style>
    </head>
    <body>
        <div id="div1">
            <p> this is first paragraph inside division </p>
            <p> this is second paragraph inside division </p>
        </div>
        <p> this is third paragraph outside division </p>
        <span>
            <p> this is fourth paragraph outside division but inside span </p>
        </span>
        <p> this is fifth paragraph outside division </p>
    </body>
</html>
```

Output:

this is first paragraph inside division

this is second paragraph inside division

this is third paragraph outside division

this is fourth paragraph outside division but inside span

this is fifth paragraph outside division

In above example, style will apply to third and fifth paragraph.

Selector Description:

Selector	Symbol	Description
Universal selector	*{ }	Apply style to all the element of web page

Type selector	Element name like p, h1 etc	Apply style only to related element
Class selector	.p1	Apply style only to the element that has class name p1
Id selector	#p1	Apply style only to the element that has id p1
Descendent selector	Div1 p	Apply style to <p> element which are inside division
Child selector	Div1>p	Apply style to all <p> elements for which parent is element
Adjacent sibling selector	Div1 + p	Apply style to <p> element that are immediately after element
General sibling selector	Div1 ~ p	Apply style to every <p> element that are preceded by a

Colors:

HTML COLORS

Colors are very important to give a good look and feel to your website. You can specify colors on page level using tag or you can set colors for individual tags using bgcolor attribute.

The <body> tag has following attributes which can be used to set different colors:

- bgcolor - sets a color for the background of the page.
- text - sets a color for the body text.
- alink - sets a color for active links or selected links.
- link - sets a color for linked text.
- vlink - sets a color for visited links - that is, for linked text that you have already clicked on.

W3C Standard 16 Colors

Here is the list of W3C Standard 16 Colors names and it is recommended to use them.

	Black		Gray		Silver		White
	Yellow		Lime		Aqua		Fuchsia
	Red		Green		Blue		Purple
	Maroon		Olive		Navy		Teal

HTML Color Code

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HTML Color Codes are the medium of representing the colors format that a computer could read and display. Common forms of these codes are as a keyword name, a hexadecimal value, a RGB (red, green, blue) triplet, and a HSL (hue, saturation, lightness) triplet, RGBA, or HSLA values. Each form allows a choice of 16,777,216 colors.

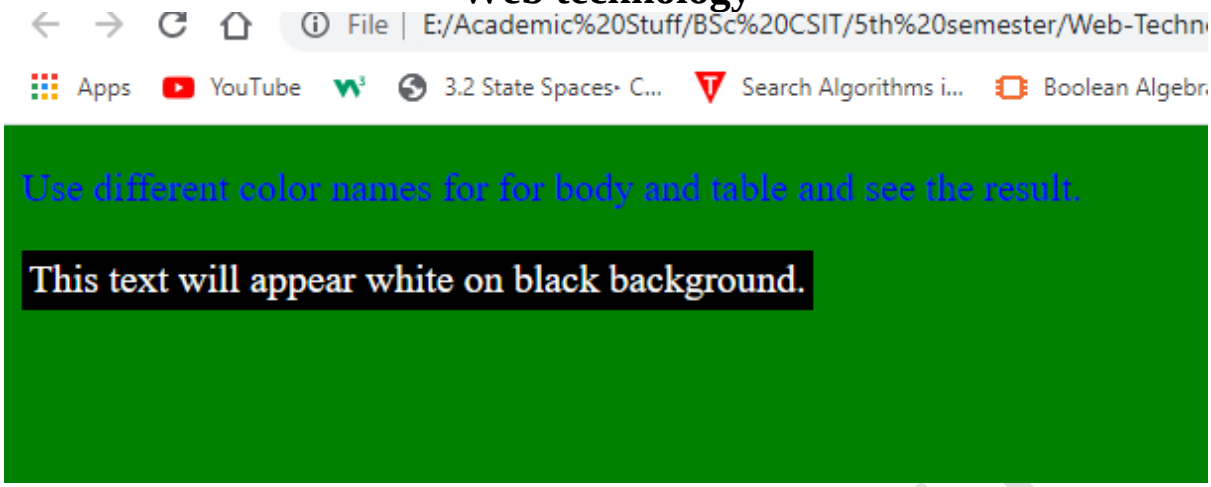
HTML Colors - Color Names

You can sepecify direct a color name to set text or background color. W3C has listed 16 basic color names that will validate with an HTML validator but there are over 200 different color names supported by major browsers.

Examples to set background of an HTML tag by color name:

```
<!DOCTYPE html>
<html>
    <head>
        <title>HTML Colors by Name</title>
    </head>
    <body text="blue" bgcolor="green">
        <p>Use different color names for  body and table and see the result. </p>
        <table bgcolor="black">
            <tr>
                <td>
                    <font color="white">This text will appear white on black
                    background. </font>
                </td>
            </tr>
        </table>
    </body>
</html>
```

Output:



HTML Colors - Hex Codes

Hex codes are three-byte hexadecimal numbers, which consist of six digits. They are a mix of symbols including letters and numbers, which entails the composition of a specific color. The first two digits RR represent a red value, the next two are a green value GG, and the last are the blue value BB.

The bytes included in a specific hex color code represent the color components of red, green, and blue, which may be adjusted through the use of other different codes to get the correct shade of color needed for a specific design.

In a hex code a byte is represented by a number from 00 to FF. If these hexadecimal notation ranges will be used in decimal notation, it will be translated to 0 to 255.

Each hexadecimal code will be preceded by a pound or hash sign #. Following is a list of few colors using hexadecimal notation.

Color	Color HEX
	#000000
	#FF0000
	#00FF00
	#0000FF
	#FFFF00
	#00FFFF
	#FF00FF
	#C0C0C0
	#FFFFFF

Examples to set background of an HTML tag by color code in hexadecimal:

```
<!DOCTYPE htm l>
<html>
    <head>
        <title>HTML Colors by Hex</title>
    </head>
```

```
<body text="#0000FF" bgcolor="#00FF00">
    <p>Use different color hexa for for body and table and see the result.</p>
    <table bgcolor="#000000">
        <tr>
            <td>
                <font color="#FFFFFF">This text will appear white on
                black background.</font>
            </td>
        </tr>
    </table>
</body>
</html>
```

HTML Colors - RGB Values

This color value is specified using the rgb property. This property takes three values, one each for red, green, and blue. The value can be an integer between 0 and 255 or a percentage. Following is a list to show few colors using RGB values.

Color	Color RGB
	rgb0, 0, 0
	rgb255, 0, 0
	rgb0, 255, 0
	rgb0, 0, 255
	rgb255, 255, 0
	rgb0, 255, 255
	rgb255, 0, 255
	rgb192, 192, 192
	rgb255, 255, 255

Example to set background of an HTML tag by color code using rgb values:

```
<!DOCTYPE html>
<html>
    <head>
        <title>HTML Colors by RGB code</title>
    </head>
    <body text="rgb(0,0,255)" bgcolor="rgb(0,255,0)">
        <p>Use different color code for for body and table and see the result.</p>
        <table bgcolor="rgb(0,0,0)">
            <tr>
                <td>
                    <font color="rgb(255,255,255)">This text will appear
                    white on black background.</font>
                </td>
            </tr>
        </table>
    </body>
</html>
```

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HSL Colors

HSL stands for hue, saturation, and lightness. The color values are specified with **hsl(hue, saturation, lightness).**

Hue is a degree on the color wheel from 0 to 360. 0 is red, 120 is green, 240 is blue.

Saturation: Saturation refers to the amount of gray in a color. At maximum saturation, there would be no gray in the color. At minimum saturation, the color would be mostly gray. Saturation is a percentage value; 0% means a shade of gray and 100% is the full color.

Lightness: Lightness is the amount of white (lightness) or black (darkness) in a color. Lightness is represented as a percentage. 0% lightness is black, 100% lightness is white, and 50% lightness is normal. Lightness is sometimes referred to as luminosity.

Example:

```
<!DOCTYPE html>
<html>
        <head>
            <title>Title of the document</title>
             <style>
                    ul {
                         padding: 0;
                       }
                    ul li {
                          display: inline-block;
                          margin-right: 10px;
                          background-color: hsl(180, 50%, 50%);
                          color: hsl(0, 0%, 100%);
                          padding: 20px;
                          }

                   .flower {
                              background: white;
                             }
             </style>
    </head>
    <body>
        <header>
                    <h1>Best Flowers In Nepal</h1>
                    <hr>
                            <nav>
                                    <ul>
                                            <li>Home</li>
                                            <li>About us</li>
                                    </ul>
                            </nav>
                      <hr>
                       <h3>Flowers In Nepal</h3>
                       <p> Marigold, Rose, and Hydrangea are the best flowers found in
                  nepal.</p>
```

```
        </header>

        <article>
            <header>
              <h2> Poppy </h2>
                <p> Poppy flower is one of the best flower, that makes us feel
                fresh. This flower is very beautiful and its dangerous also.
                It is danger because people grow Poppy flower in large scale and
                make Drugs from these plants. The name of Drug made from
                poppy flower is Opium. Some of the color of Poppy flower found
                in Nepal are Red, Pink and Yellow.
                !</p>

                <img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-
                Technology\A online web technology\practical sem
                5\image\Poppy.jpg" alt=" Poppy flower " width="100"
                height="100">

            </header>
        </article>
    </body>
</html>
```

RGBA Color Values

RGBA color values are an extension of RGB color values with an Alpha channel - which specifies the opacity for a color. RGBA color value is specified with, rgba(red, green, blue, alpha). The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (not transparent at all):

Note: - Opacity is the degree to which content behind an element is hidden, and is the opposite of transparency.

rgba(255, 99, 71, 0.5)

Example;

```
<html>
  <head>
      <title>Title of the document</title>
       <style>
            p{
              background-color:rgba(99,255,71,0.4);
              color: rgba(255, 99, 71, 1);
               padding: 20px;
             }
       </style>
  </head>
```

```
<body>

<h2> Poppy </h2>
<p> Poppy flower is one of the best flower, that makes us feel fresh. This flower is very beautiful and its dangerous also.
It is danger because people grow Poppy flower in large scale and make Drugs from these plants. The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.
!</p>

<img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " width="100" height="100">

</body>
</html>
```

HSLA Color Values

HSLA color values are an extension of HSL color values with an Alpha channel - which specifies the opacity for a color. HSLA color value is specified with, hsla(hue, saturation, lightness, alpha) The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (not transparent at all):

```
hsla(0, 100%, 50%, 0.5)
```

Example;

```
<html>
 <head>
        <title>HSLA Color Values</title>
         <style>
                  p{
                  background-color:hsla(180,70%,20%,50%);
                  color:hsla(150,10%,20%,50%);;
                  padding: 20px;
                }

         </style>
 </head>
 <body>

<h2> Poppy </h2>
<p> Poppy flower is one of the best flower, that makes us feel fresh. This flower is very beautiful and its dangerous also.
It is danger because people grow Poppy flower in large scale and make Drugs from these plants. The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.
!</p>
<img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " width="100" height="100">
```

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

CSS Colors

CSS uses color values to specify a color. Typically, these are used to set a color either for the foreground of an element i. e. , its text or for the background of the element. They can also be used to affect the color of borders and other decorative effects. Colors in CSS can be specified by the following methods:

- Hexadecimal colors
- RGB colors
- RGBA colors
- HSL colors
- HSLA colors

CSS Colors - Hex Codes

A hexadecimal is a 6 digit representation of a color. The first two digits RR represent a red value, the next two are a green value GG, and the last are the blue value BB.

A hexadecimal value can be taken from any graphics software like Adobe Photoshop, Jasc Paintshop Pro, or even using Advanced Paint Brush.

Each hexadecimal code will be preceded by a pound or hash sign '#'. Following are the examples to use Hexadecimal notation.

Color	Color HEX
	#000000
	#FF0000
	#00FF00
	#0000FF
	#FFFF00
	#00FFFF
	#FF00FF
	#C0C0C0
	#FFFFFF

Example:

```
<html>
  <head>
        <title> CSS Colors - Hex Codes </title>
         <style>
                div {background-color:#ff00ff;}
                #p1 {color:#ff0000;}
                #p2 {color:#00ff00;}
```

```
        #p3 {color:#0000ff;}
        #p4 {color:#ffff00;}

    </style>
  </head>
 <body>

<h2>HEX colors</h2>
    <p>A hexadecimal color is specified with: #RRGGBB, where the RR (red), GG (green) and BB (blue) hexadecimal integers specify the components of the color. All values must be between 00 and FF.</p>
<div>
    <p id="p1"> Poppy flower is one of the best flower, that makes us feel fresh.</p>
    <p id="p2">This flower is very beautiful and its dangerous also.</p>

    <p id="p3"> It is danger because people grow Poppy flower in large scale and make Drugs from these plants.</p>
    <p id="p4"> The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>
</div>

        <img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " width="100" height="100">


  </body>
</html>
```

CSS Colors - RGB Values

This color value is specified using the rgb property. This property takes three values, one each for red, green, and blue. The value can be an integer between 0 and 255 or a percentage.

Following is the example to show few colors using RGB values.

Color	Color RGB
	rgb0, 0, 0
	rgb255, 0, 0
	rgb0, 255, 0
	rgb0, 0, 255
	rgb255, 255, 0
	rgb0, 255, 255
	rgb255, 0, 255
	rgb192, 192, 192
	rgb255, 255, 255

Example:

```
<html>
 <head>
        <title>RGB colors</title>
         <style>
                #p1 { color:rgb(0,255,0);}
                #p2 {color:rgb(0,0,255);}
                #p3 {color:rgb(0,255,0);}
                 #p4 {color:rgb(0,0,255);}
                 div {background-color:rgb(192,192,192);}
          </style>

 </head>
 <body>

        <h2>RGB colors</h2>
        <p>An RGB color value is specified with the rgb() function: rgb(red, green, blue)</p>
        <p>Each parameter (red, green, and blue) defines the intensity of the color and can be
        an integer between 0 and 255 or a percentage value (from 0% to 100%).</p>

        <div>
                <img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A
                online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower "
                width="100" height="100">
                <p id="p1"> Poppy flower is one of the best flower, that makes us feel
                fresh.</p>
                <p id="p2">This flower is very beautiful and its dangerous also.</p>

                <p id="p3"> It is danger because people grow Poppy flower in large scale and
                make Drugs from these plants.</p>
                <p id="p4"> The name of Drug made from poppy flower is Opium. Some of
                the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>
        </div>
</body>
</html>
```

CSS Colors – RGBA Color

RGBA color values are an extension of RGB color values with an alpha channel - which specifies the opacity of the object. RGBA color is specified with the rgba() function.

rgba(red, green, blue, alpha)

The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (fully opaque).

Example

```
<html>
 <head>
        <title>RGB colors</title>
```

```
        <style>
            #p1 {color:rgba(255,0,0,0.3);}
            #p2 {color:rgba(0,255,0,0.3);}
            #p3 {color:rgba(0,0,255,0.3);}
            #p4 {color:rgba(255,0,255,0.3);}
           div {background-color:rgba(255,255,0,0.3);}
        </style>
 </head>
<body>

        <h2>RGB colors with opacity</h2>
        <p>RGBA color values are an extension of RGB color values with an alpha channel - which specifies the opacity of the object.</p>

    <div>
        <img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " width="100" height="100">
        <p id="p1"> Poppy flower is one of the best flower, that makes us feel fresh.</p>
        <p id="p2">This flower is very beautiful and its dangerous also.</p>

        <p id="p3"> It is danger because people grow Poppy flower in large scale and make Drugs from these plants.</p>
        <p id="p4"> The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>
    </div>
/body>
</html>
```

CSS Colors – HSL Color

HSL stands for hue, saturation, and lightness - and represents a cylindrical-coordinate representation of colors. An HSL color value is specified with the hsl() function, which has the following syntax:

hsl(hue, saturation, lightness)

Hue is a degree on the color wheel (from 0 to 360) - 0 (or 360) is red, 120 is green, 240 is blue. Saturation is a percentage value; 0% means a shade of gray and 100% is the full color. Lightness is also a percentage; 0% is black, 100% is white.

Example

```
<html>
        <head>
            <title>HSL colors</title>
             <style>
                #p1 {color:hsl(120,100%,50%);}
                #p2 {color:hsl(120,100%,75%);}
                #p3 {color:hsl(120,100%,25%);}
                #p4 {color:hsl(120,60%,70%);}
                div {background-color:hsl(290,100%,50%);}
```

```
        </style>
    </head>
    <body>
        <h2>HSL colors</h2>
        <p>HSL stands for hue, saturation, and lightness - and represents a cylindrical-coordinate representation of colors.</p>
        <p>An HSL color value is specified with the hsl() function: hsl(hue, saturation, lightness)</p>

        <div>
            <img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " width="100" height="100">
            <p id="p1"> Poppy flower is one of the best flower, that makes us feel fresh.</p>
            <p id="p2">This flower is very beautiful and its dangerous also.</p>
            <p id="p3"> It is danger because people grow Poppy flower in large scale and make Drugs from these plants.</p>
            <p id="p4"> The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>
        </div>
    </body>
</html>
```

CSS Colors – HSLA Color

HSLA color values are an extension of HSL color values with an alpha channel - which specifies the opacity of the object. HSLA color value is specified with the hsla() function, which has the following syntax:

hsla(hue, saturation, lightness, alpha)

The alpha parameter is a number between 0.0 (fully transparent) and 1.0 (fully opaque).

Example

```
<html>
    <head>
        <title>HSLA colors</title>
        <style>
            #p1 { color:hsla(120,100%,50%,0.3);}
            #p2 { color:hsla(120,100%,75%,0.3);}
            #p3 { -color:hsla(120,100%,25%,0.3);}
            #p4 { color:hsla(120,60%,70%,0.3);}
            div {background-color:hsla(290,100%,50%,0.3);}
        </style>
    </head>
    <body>
```

```
<h2>HSL colors with opacity</h2>
<p>HSLA color values are an extension of HSL color values with an alpha channel - which specifies the opacity of the object.</p>
<div>
<img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " width="100" height="100">
<p id="p1"> Poppy flower is one of the best flower, that makes us feel fresh.</p>
<p id="p2">This flower is very beautiful and its dangerous also.</p>
<p id="p3"> It is danger because people grow Poppy flower in large scale and make Drugs from these plants.</p>
<p id="p4"> The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>
</div>
</body>
</html>
```

Backgrounds

The background property in CSS allows you to control the background of any element. It is a shorthand property that let you set the values of multiple other CSS properties simultaneously i.e., way to specify the values of multiple CSS background properties in a single declaration.

Background is made up of following properties:

Value	Description
background-color	Specifies the background color to be used
background-image	Specifies ONE or MORE background images to be used
background-position	Specifies the position of the background images
background-size	Specifies the size of the background images
background-repeat	Specifies how to repeat the background images
background-origin	Specifies the positioning area of the background images
background-clip	Specifies the painting area of the background images
background-attachment	Specifies whether the background images are fixed or scrolls with the rest of the page
initial	Sets this property to its default value.
inherit	Inherits this property from its parent element.

You can use any combination of these properties that you like, in almost any order. If there is not specify any background property then it is automatically set to its default. Default Values of Background Properties are listed below.

PROPERTY	DEFAULT VALUE
background-image	none
background-position	0% 0% (this is the same as top left)
background-size	auto
background-repeat	repeat
background-attachment	scroll
background-origin	padding-box
background-clip	border-box
background-color	transparent

Background-color

The background-color property in CSS applies solid colors as background on an element.

Example:

```
<html>
 <head>
        <title >Background colors</title>
         <style>
                  #p1 {color:hsl(120,100%,50%);}
                  #p2 {color:hsl(120,100%,75%);}
                  #p3 {color:hsl(120,100%,25%);}
                  #p4 {color:hsl(120,60%,70%);}
                 body {
                         background-color:blue;
                       }
         </style>
   </head>
   <body>
    <h2 align="center">Background colors</h2>
   <div id="div1">
        <img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " width="100" height="100" >

<p id="p1"> Poppy flower is one of the best flower, that makes us feel fresh.</p>
<p id="p2">This flower is very beautiful and its dangerous also.</p>
<p id="p3"> It is danger because people grow Poppy flower in large scale and make Drugs from these plants.</p>
<p id="p4"> The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>
</div>
</body>
</html>
```

Output:

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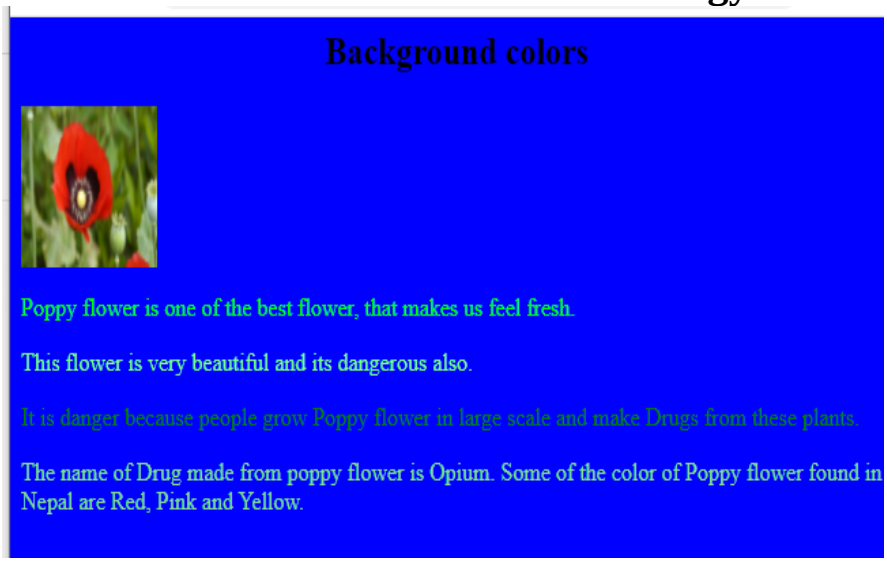

Background-image

The background-image property is used to set an image as a background of an element. By default, the image covers the entire element.

Example:

```
<html>
  <head>
        <title>HSL colors</title>
         <style>
            body{
                  background-image: url("E:/Academic Stuff/BSc CSIT/5th semester/Web-Technology/A online web technology/practical sem 5/image/Poppy.jpg");
                }
       div {
             background-color: #82a43a;
             margin-left:100px;
           }
       </style>
  </head>
  <body>
    <h2>Background image</h2>
        <p>The background-image property in CSS applies a graphic (e.g. PNG, SVG, JPG, GIF, WEBP) or gradient to the background of an element.</p>

     <p> Poppy flower is one of the best flower, that makes us feel fresh.</p>
<p>This flower is very beautiful and its dangerous also.</p>
<p> It is danger because people grow Poppy flower in large scale and make Drugs from these plants.</p>
<p> The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>

  </body>
</html>
```

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Output:

Background-position

The background-position property sets the starting position of a background image.

Syntax

background-position: value;

Property Values

Value	Description
left top left center left bottom right top right center right bottom center top center center center bottom	If you only specify one keyword, the other value will be "center"
x% y%	The first value is the horizontal position and the second value is the vertical. The top left corner is 0% 0%. The right bottom corner is 100% 100%.
xpos ypos	The first value is the horizontal position and the second value is the vertical. The top left corner is 0 0.
initial	Sets this property to its default value.
inherit	Inherits this property from its parent element.

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Code:

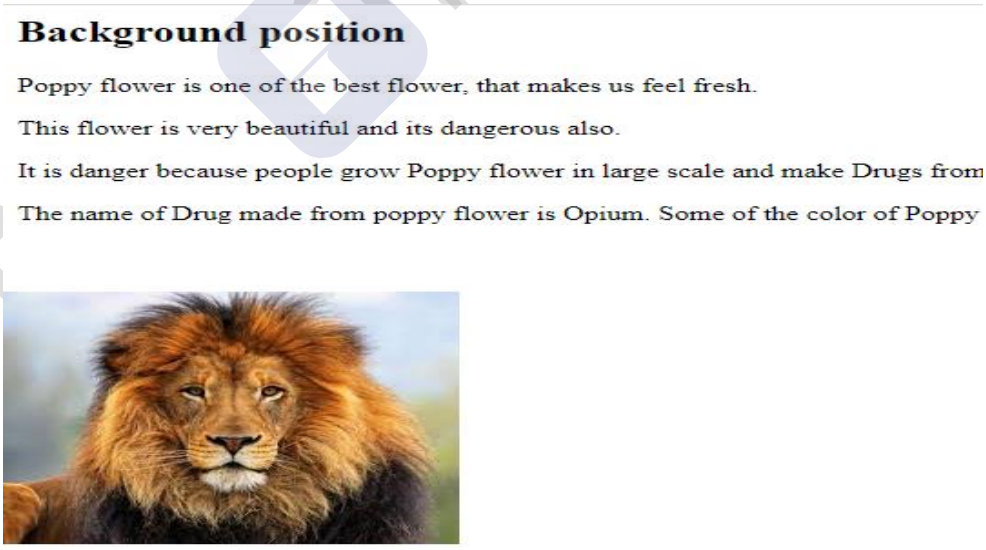
```
<html>
  <head>
        <title>Backgrounf position</title>
         <style>
        body{

                background-image: url("E:/Academic Stuff/BSc CSIT/5th semester/Web-Technology/A online web technology/practical sem 5/image/lion.jpg");
                background-position:left center;
                background-repeat:no-repeat;
            }

       </style>
  </head>
  <body>
<h2>Background position</h2>
<p> Poppy flower is one of the best flower, that makes us feel fresh.</p>
<p>This flower is very beautiful and its dangerous also.</p>
<p> It is danger because people grow Poppy flower in large scale and make Drugs from these plants.</p>
<p> The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>

  </body>
</html>
```

Output:



Background-size

The background-size property specifies the size of the background images.

CSS Syntax

background-size: auto|length|cover|contain|initial|inherit;

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Property Values

Value	Description
auto	Default value. That is image's original size
length	Sets the width and height of the background image.
percentage	Sets the width and height of the background image in percent of the parent element.
cover	Resize the background image to cover the entire container, even if it has to stretch the image or cut a little bit off one of the edges
contain	Resize the background image to make sure the image is fully visible
initial	Sets this property to its default value.
inherit	Inherits this property from its parent element.

Code:

```
<html>
  <head>
        <title>Background Size</title>
         <style>
         body{

                    background-image: url("E:/Academic Stuff/BSc CSIT/5th semester/Web-Technology/A online web technology/practical sem 5/image/lion.jpg");
                    background-position:left center;
                    background-size: 75% 50%;
                    background-repeat:no-repeat;
             }

        </style>
   </head>
   <body>
<h2>Background size</h2>
<p> Poppy flower is one of the best flower, that makes us feel fresh.</p>
<p>This flower is very beautiful and its dangerous also.</p>
<p> It is danger because people grow Poppy flower in large scale and make Drugs from these plants.</p>
<p> The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>

   </body>
</html>
```

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Output

Background size

Poppy flower is one of the best flower, that makes us feel fresh.

This flower is very beautiful and its dangerous also.

It is danger because people grow Poppy flower in large scale and make Drugs from these plants.

The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.

Background-origin

The background-origin property specifies the origin position (the background positioning area) of a background image.

CSS Syntax

background-origin: padding-box|border-box|content-box|initial|inherit;

Property Values

Value	Description
padding-box	The background image starts from the upper left corner of the padding edge
border-box	The background image starts from the upper left corner of the border
content-box	The background image starts from the upper left corner of the content
initial	Sets this property to its default value.
inherit	Inherits this property from its parent element.

Code

```
<html>
  <head>
        <title>Background origin</title>
         <style>
              body{
                    background-image: url("E:/Academic Stuff/BSc CSIT/5th semester/Web-Technology/A online web technology/practical sem 5/image/lion.jpg");
                    background-position:left center;
```

```
                background-size: 75% 50%;
                background-repeat:no-repeat;
                background-origin: content-box, padding-box;
            }
        </style>
    </head>
    <body>
        <h2>Background Origin</h2>
        <p> Poppy flower is one of the best flower, that makes us feel fresh.</p>
        <p>This flower is very beautiful and its dangerous also.</p>
        <p> It is danger because people grow Poppy flower in large scale and make Drugs from these plants.</p>
        <p> The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>

    </body>
</html>
```

Output:

Background-clip

The background-clip property defines how far the background (color or image) should extend within an element.

CSS Syntax

background-clip: border-box|padding-box|content-box|initial|inherit;

Property Values

Value	Description
border-box	The background extends behind the border
padding-box	The background extends to the inside edge of the border

content-box	The background extends to the edge of the content box
initial	Sets this property to its default value
inherit	Inherits this property from its parent element.

Code

```
<html>
  <head>
        <title>Background origin</title>
         <style>
        body{

                    background-image: url("E:/Academic Stuff/BSc CSIT/5th semester/Web-Technology/A online web technology/practical sem 5/image/lion.jpg");
                    background-position:left center;

                    background-repeat:no-repeat;
                    background-origin: content-box, padding-box;
                        background-clip: padding-box;
            }
           </style>
   </head>
   <body>
<h2>Background Origin</h2>
<p> Poppy flower is one of the best flower, that makes us feel fresh.</p>
<p>This flower is very beautiful and its dangerous also.</p>
<p> It is danger because people grow Poppy flower in large scale and make Drugs from these plants.</p>
<p> The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>

   </body>
</html>
```

Output:

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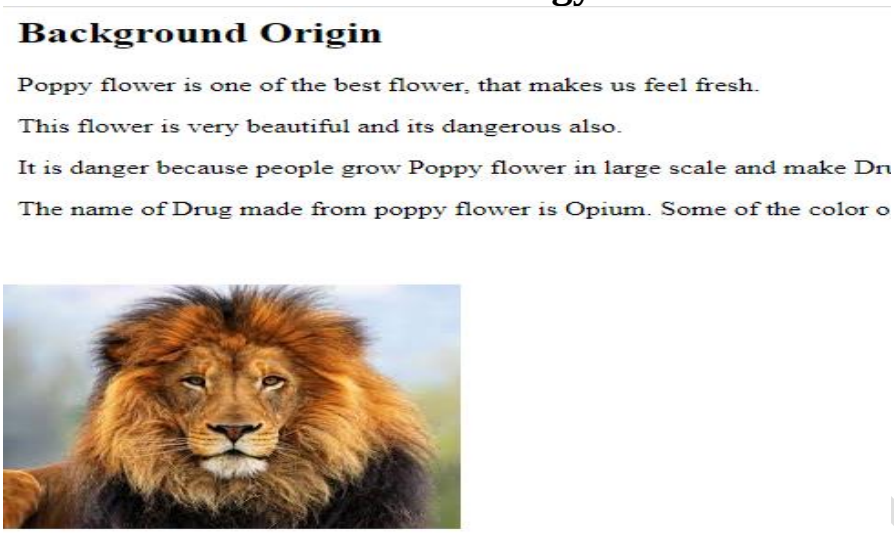


Background-attachment

The background-attachment property sets whether a background image scrolls with the rest of the page, or is fixed.

CSS Syntax

background-attachment: scroll|fixed|local|initial|inherit;

Property Values

Value	Description
scroll	The background image will scroll with the page. This is default
fixed	The background image will not scroll with the page
local	The background image will scroll with the element's contents
initial	Sets this property to its default value.
inherit	Inherits this property from its parent element.

Code

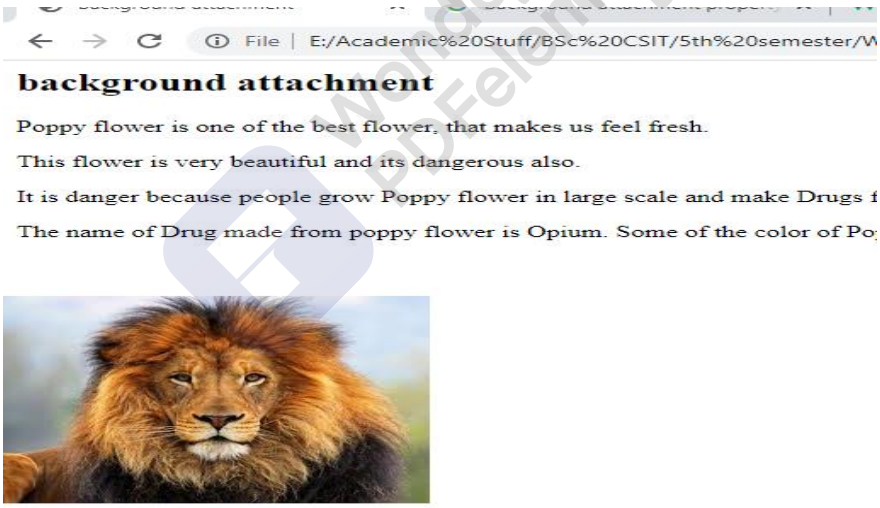
```
<html>
  <head>
        <title>Background attachment</title>
         <style>
```

```
        body{
                background-image: url("E:/Academic Stuff/BSc CSIT/5th semester/Web-Technology/A online web technology/practical sem 5/image/lion.jpg");
                background-position:left center;

                background-repeat:no-repeat;
                background-attachment: fixed;
            }
           </style>
  </head>
  <body>
<h2>background attachment</h2>
<p> Poppy flower is one of the best flower, that makes us feel fresh.</p>
<p>This flower is very beautiful and its dangerous also.</p>
<p> It is danger because people grow Poppy flower in large scale and make Drugs from these plants.</p>
<p> The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>

  </body>
</html>
```

Code:



Inherit

The inherit keyword specifies that a property should inherit its value from its parent element

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Code:

```
<!DOCTYPE html>
<html>
<head>
   <style>
      body {
          background-image:url("E:/Academic Stuff/BSc CSIT/5th semester/Web-Technology/A online web technology/practical sem 5/image/Poppy.jpg");
          }
        p  {
            color: blue;
            border: 1px solid black;
          }
 .extra  p {
            color: inherit;
          }
         </style>
</head>
 <body>
        <p>Poppy flower is one of the best flower, that makes us feel fresh.</p>
        <div class="extra" >
            <p>This flower is very beautiful and its dangerous also.</p>
        </div>
</body>
</html>
```

Output:

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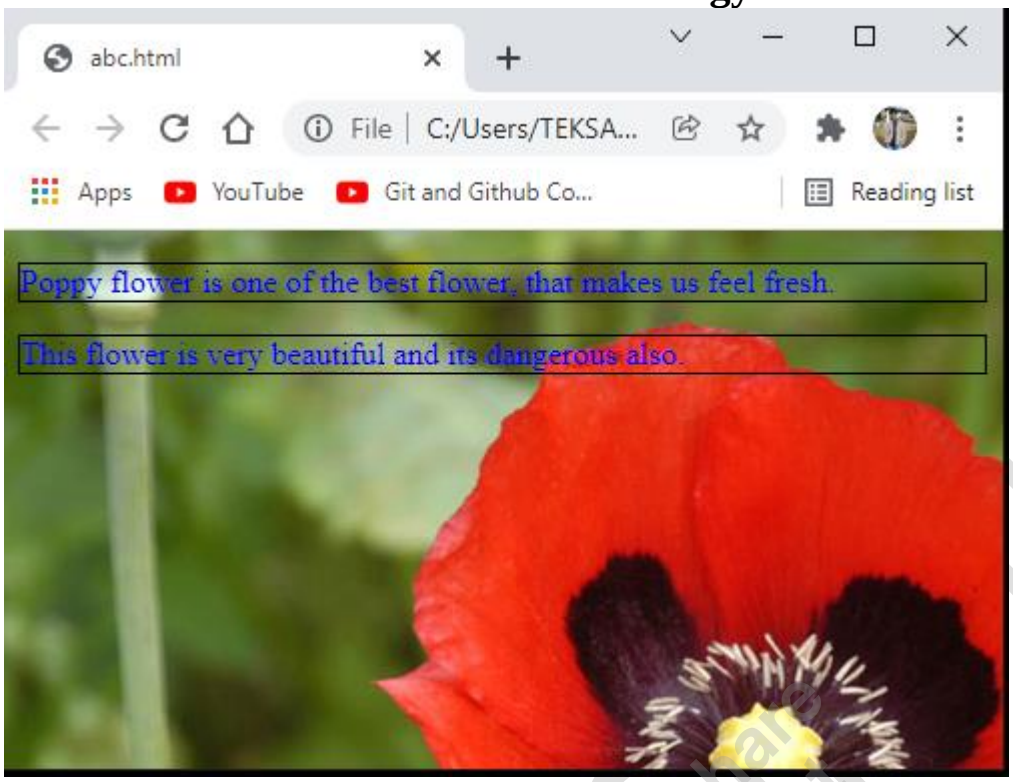

Border

The border property in CSS is used to style the border of an element. That is, they are used to specify the style, color and size of the border of an element.

The CSS border properties are given below

- border-style
- border-color
- border-width
- border-radius

border-style

The border-style property sets the style of an element's four borders. This property can have from one to four values.

Examples:

1.border-style: dotted solid double dashed;

- top border is dotted
- right border is solid
- bottom border is double
- left border is dashed

2.border-style: dotted solid double;

- top border is dotted
- right and left borders are solid
- bottom border is double

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3.border-style: dotted solid;

- top and bottom borders are dotted
- right and left borders are solid

4.border-style: dotted;

- all four borders are dotted

Property Values

Value	Description
none	Default value. i.e. no border
hidden	The same as "none"
dotted	dotted border
dashed	dashed border
solid	solid border
double	double border
groove	3D grooved border.
ridge	3D ridged border.
inset	3D inset border.
outset	3D outset border.
initial	Sets this property to its default value.
inherit	Inherits this property from its parent element.

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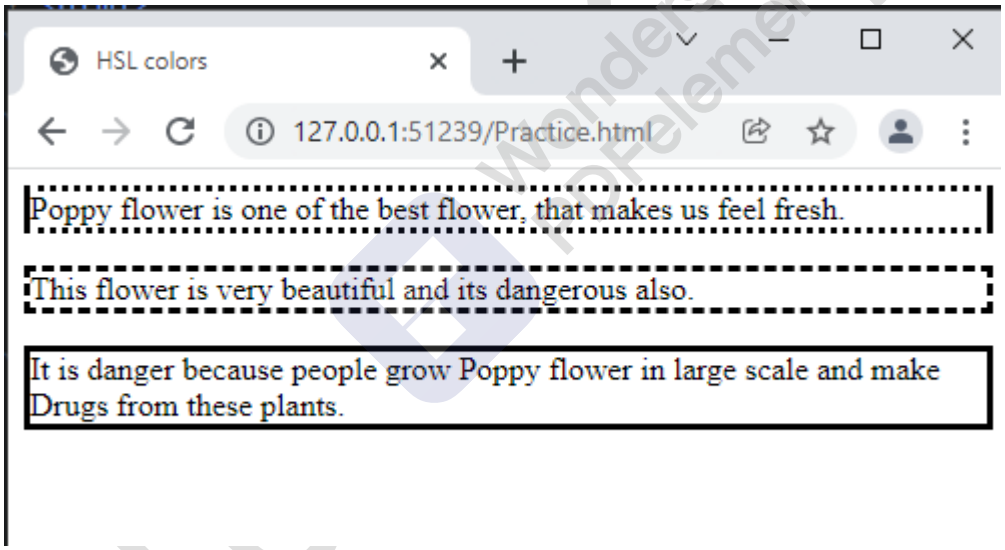
Code

```
<html>
        <head>
            <title>HSL colors</title>
             <style>
                p.dotted {border-style: dotted solid;}
                p.dashed {border-style: dashed;}
                p.solid {border-style: solid;}
            </style>
        </head>
        <body>
            <p class="dotted"> Poppy flower is one of the best flower, that makes us feel
            fresh.</p>
            <p class="dashed">This flower is very beautiful and its dangerous also.</p>
            <p class="solid"> It is danger because people grow Poppy flower in large
            scale and make Drugs from these plants.</p>

        </body>
</html>
```

Output:



Border color:

The border-color property sets the color of an element's four borders. This property can have from one to four values.

If the border-color property has four values:

1.border-color: red green blue pink;

- top border is red
- right border is green
- bottom border is blue
- left border is pink

2.If the border-color property has three values:

border-color: red green blue;

- top border is red
- right and left borders are green
- bottom border is blue

3. If the border-color property has two values:

border-color: red green;

- top and bottom borders are red
- right and left borders are green

4.If the border-color property has one value:

border-color: red;

- all four borders are red

Property Values

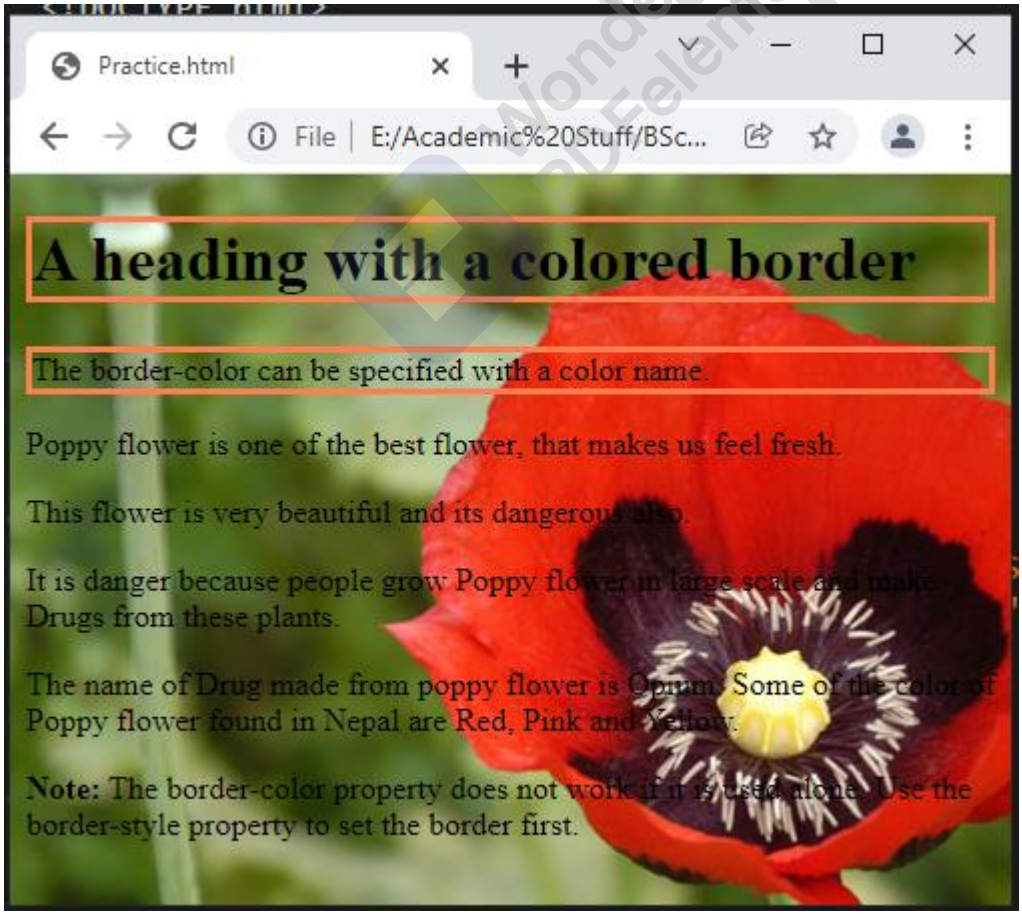
Value	Description
color	Specifies the border color.
transparent	Specifies that the border color should be transparent
initial	Sets this property to its default value.
inherit	Inherits this property from its parent element.

Code

```
<!DOCTYPE html>
<html>
<head>
<style>
h1 {
  border-style: solid;
  border-color: coral;
}

div {
  border-style: solid;
  border-color: coral;
}
body{
      background-image: url("E:/Academic Stuff/BSc CSIT/5th semester/Web-Technology/A online web technology/practical sem 5/image/Poppy.jpg");
                  }
```

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

<h1>A heading with a colored border</h1>

<div>The border-color can be specified with a color name.</div>

<p> Poppy flower is one of the best flower, that makes us feel fresh.</p>
<p>This flower is very beautiful and its dangerous also.</p>
<p> It is danger because people grow Poppy flower in large scale and make Drugs from these plants.</p>
<p> The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>

<p><strong>Note:</strong> The border-color property does not work if it is used alone. Use the border-style property to set the border first.</p>

</body>
</html>
```

Output:



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Border-width

The border-width property sets the width of an element's four borders. This property can have from one to four values.

Examples:

- **border-width: thin medium thick 10px;**
  - top border is thin
  - right border is medium
  - bottom border is thick
  - left border is 10px
- **border-width: thin medium thick;**
  - top border is thin
  - right and left borders are medium
  - bottom border is thick
- **border-width: thin medium;**
  - top and bottom borders are thin
  - right and left borders are medium
- **border-width: thin;**
  - all four borders are thin

Property Values

Value	Description
medium	Specifies a medium border. This is default
thin	Specifies a thin border
thick	Specifies a thick border
length	Allows you to define the thickness of the border.
initial	Sets this property to its default value.
inherit	Inherits this property from its parent element.

Code:

```
<!DOCTYPE html>
<html>
<head>
<style>
h1 {
  border-style: solid;
  border-color: coral;
  border-width: medium;
```

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```
}
}

div {
  border-style: solid;
  border-color: coral;
}
body{
      background-image: url("E:/Academic Stuff/BSc CSIT/5th semester/Web-Technology/A online web technology/practical sem 5/image/Poppy.jpg");
                  }

</style>
</head>
<body>

<h1>A heading with a colored border</h1>

<div>The border-color can be specified with a color name.</div>

<p> Poppy flower is one of the best flower, that makes us feel fresh.</p>
<p>This flower is very beautiful and its dangerous also.</p>
<p> It is danger because people grow Poppy flower in large scale and make Drugs from these plants.</p>
<p> The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>

<p><strong>Note:</strong> The border-color property does not work if it is used alone. Use the border-style property to set the border first.</p>

</body>
</html>
```

Output

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Text Formatting Properties:

1. **Color Properties:**

The color properties is used to specify the foreground and back ground color of HTML element. Different forms of colors can be used:

Using hexadecimal code:

```
#p{
        Color: #ffff;
   }
```

Using rgb color: produce mixture of red, green and blue color. Values of each color is 0 to 255.

```
#p {
        Color: rgb(123,32,32);
    }
```

Using color name:

```
#p{
        Color: red;
}
```

2. **Text Align Property:**

It determines the position of text to be appeared. Some of the text align property are:

```
#p{
        Text-align: center/right/left/justify
   }
```

3. **Text Decoration:**

It is used to specify some special features of text. The available values are line through (to cut text), overline, underline and none.

```
#p{
        Text-decoration: none/overline/underline/line-through;
}
```

4. **Text- indent:**

It is used to indent the first line of a paragraph i.e. put some gap while starting to write a text.

```
#p{
        Text-indent: 5px/5%;
   }
```

5. **Text-Shadow Property:**

Used to put shadow on text. The single value will apply shadow to all side of text. The four different values will apply effect to four side of text. If given only two values it will apply effect to two sides from first value and another two sides from another two values.

```
#p{
        Text-shadow: 2px 4px 3px 1px;
}
```

6. **Text-Transform:**
   Used to modify the text appearance. Possible values are uppercase, lowercase, capitalize etc.
   #p{
   Text-transform: uppercase/lowercase/capitalize;
   }
7. **Letter Spacing:**
   It controls the amount of space between the letters in words. This spacing is called tracking. The possible values are normal or any length (positive values increase amount of space whereas negative value decrease amount of space).
   #p{
   Letter-spacing: 10px/none/-10px;
   }
8. **Word Spacing:**
   It controls space between words in text. Possible values are none or any length.
   #p{
   Word-spacing: 1px/none/-1px;
   }
9. **White Space Property:**
   Used for giving spacing between words.
   #P{
   White-space: 2px;
   }
10. **Direction Property:**
    Specifies a starting point of text. Possible values are ltr and rtl. If used rtl then text will be start appearing from right side.
    #p{
    Direction:rtl;
    }
11. **V- align (vertical align):**
    Vertical-align: baseline/ length/ sub/ super/ top/ text-top/ middle/ bottom/ text-bottom/ initial/ inherit

Code

```
<html>
<head>
<title> Text Formatting Properties </title>
<style type ="text/css">
      #p1{
         Color:red;
        }
      #p2{
        Text-align:center;
        }
      #p3{
        Text-decoration:line-through;
      }
```

```
        #p4{
           Text-indent: 5px;
           }
        #p5{
           Text-shadow: 2px ;
        }

        #p6{
           Text-transform:capitalize;
        }
        #p7{
           Letter-spacing: 10px;
        }
        #P8{
           White-space:2px;
        }
        #p9{
           Direction:ltr;
        }
      #p10{
          Vertical-align: baseline;
        }

</style>
</head>
<body>
<div id ="div1">
<p> this is a paragraph for  </p>
   <p id="p1"> this is a paragraph for Color </p>
   <p id="p2"> this is a paragraph for </p>
   <p id="p3"> this is a paragraph for Text-align </p>
   <p id="p4"> this is a paragraph for Text-decoration </p>
   <p id="p5"> this is a paragraph for Text-indent </p>
   <p id="p6"> this is a paragraph for Text-shadow </p>
   <p id="p7"> this is a paragraph for Text-transform </p>
   <p id="p8"> this is a paragraph for Letter-spacing </p>
   <p id="p9"> this is a paragraph for Direction </p>
   <p id="p10"> this is a paragraph for Vertical-align </p>

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

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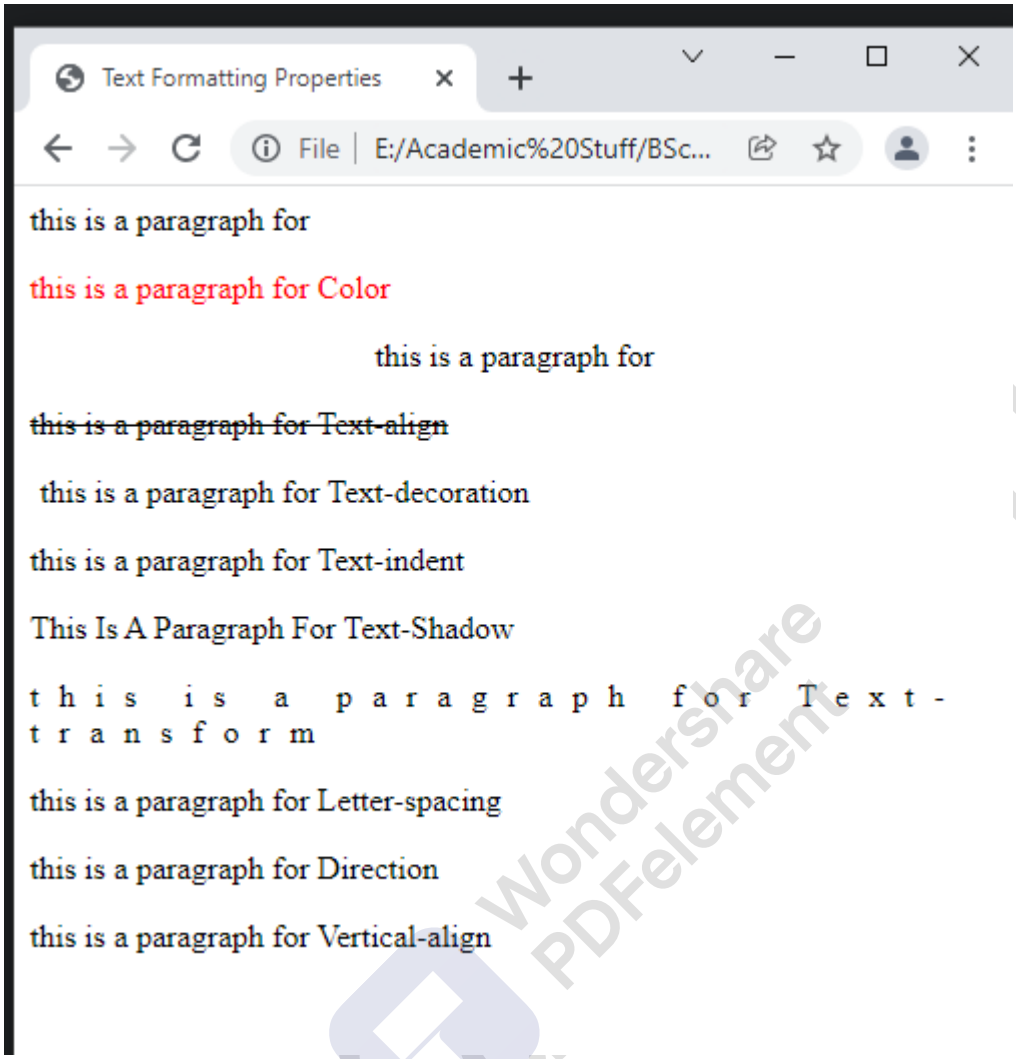
Output:



Text Controlling Styles:

1. **Font Family:**
   Used to specify list of font names. The browser uses the first font in the list that is supports. For e.g. font-family: Arial, Helvetica, Calibri. Tells the browser to use Arial if it supports. If it does not support it will use Helvetica or Calibri. A generic font can be specified as a font-family value. Every browser has a font defined for each of these generic names. A good approach is to use generic font as the last font in the value of font-family property. If a name of a font family has more than one word it should be delimited by single quote. For e.g.
   Font- family: Arial, Helvetica, 'Times New Roman' sans-serif;
   Some of the generic fonts are:

Generic name	Examples
Serif	Times New Roman, Garamond, Georgia

Sans-serif	Arial, Verdana, Helvetica
Cursive	Caflisch Scripts, Zapf – Chanchery
Fantasy	Critter, Cottonwood
Monospace	Courier, prestige

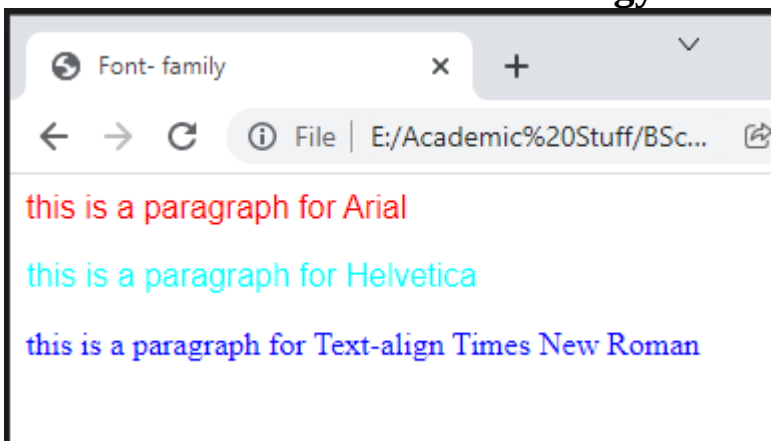
Code:

```
<html>
<head>
<title> Font- family </title>
<style type ="text/css">
        #p1{
            Font-family:Arial;
          color: red;
          }
       #p2{
          Font-family:Helvetica;
          color: aqua;
          }
       #p3{
          Font-family:Times New Roman;
          color: blue;
       }

</style>
</head>
<body>
<div id ="div1">

    <p id="p1"> this is a paragraph for Arial </p>
    <p id="p2"> this is a paragraph for Helvetica </p>
    <p id="p3"> this is a paragraph for Text-align Times New Roman </p>

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



2. **Font Size:**

Species the size of the font. There are two categories of font-size values: absolute and relative. In **absolute category**, the size value could be given as length value in points, picas or pixel or as a keyword from the list: xx-small, x-small, small, medium, large, x-large, xx-large. Absolute size sets the text to specified size and do not display in the same size on different computer. It is useful when the physical size of the output is known.

The **relative** size is smaller and larger which adjust the font size relative to the font size of the parent element. Percentage value can also be used to adjust the font size relative to the font size of parent element. A number with the unit em can also be used for relative property. 16px = 1 em. If a relative size is given, the font size will be scaled relative to a new default set by the user. Therefore, percentage and em are good choice for setting font size.

Font-size: xx-small/x-small/small/medium/large/x-large/xx-large/20px/100%/1.5em

3. **Font Style:**

Font style property is usually used to specify italic text. Possible values are normal, italic, oblique and inherit. For e,g.

```
#p{
    Font-style: italic/normal/oblique/initial/inherit
}
```

4. **Font-Weight:**

Used to specify a degree of boldness. Beside boldness possible values can be normal, bolder and lighter. For example:

Font-weight: normal/bold/bolder/lighter

5. **Font Variant:**

It specifies whether or not a text should be displayed in a small caps (change a text into uppercase but appear in smaller size) font. The possible values are:

Font-variant: normal/ small-caps/initial/ inherit

6. **Font Stretched:**

Font-stretch: ultra-condensed/extra-condensed/semi-condensed/normal/semi-expanded/ normal/extra-expanded/ulra-expanded

7. **Font Shorthands:**
   If more than one font property must be specified, values can be started in a list as the value of the font property. The browser then determines which properties to assign from the forms of the values. For example:

   Font: bold calibri inh

Link Property:

Link can be style in different ways using CSS like changing color, font-family, back ground, text decoration etc. Style can also be applied depending upon the state of link like visited, hover etc. for example:

- a:link – a link which is unvisited
- a:visited – a link that a user has visited
- a:hover – a link when the user put mouse cursor over it
- a:active – a link the moment it is clicked

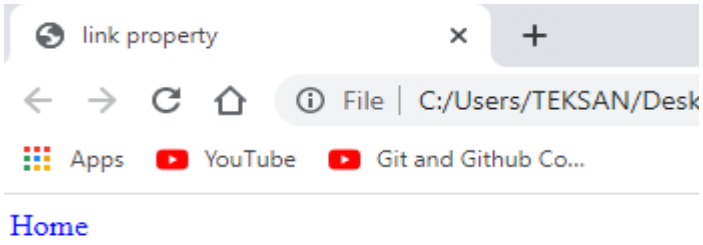
Syntax:

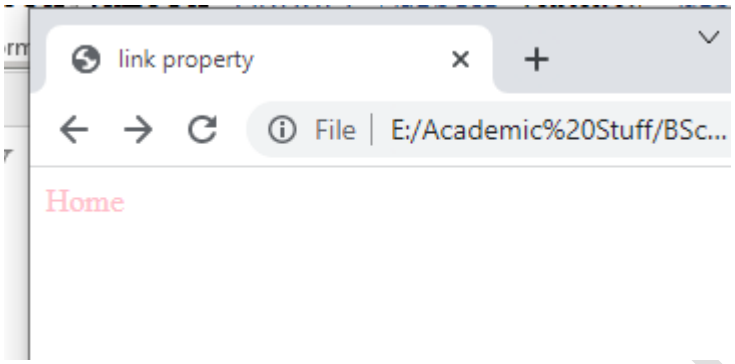
```
a:link{color:red}
a:visited{color:green}
a:hover{ color: pink}
a:active{color:blue}
```

Note: hover must come after link and visited and active must come after hover to be effective. For example:

```
<html>
<head>
<title> link property </title>
<style type="text/css">
a:link{         color:red;
                text-decoration:none;
        }
a:visited{
                color:blue;
                text-decoration: underline;
        }
a:hover {
                color:pink;
        }
a:active{
                Color:green
}
</style>
</head>
<body>
<p> <a href="abc.html"> Home </a> </p>
</body>
</html>
```

Output:





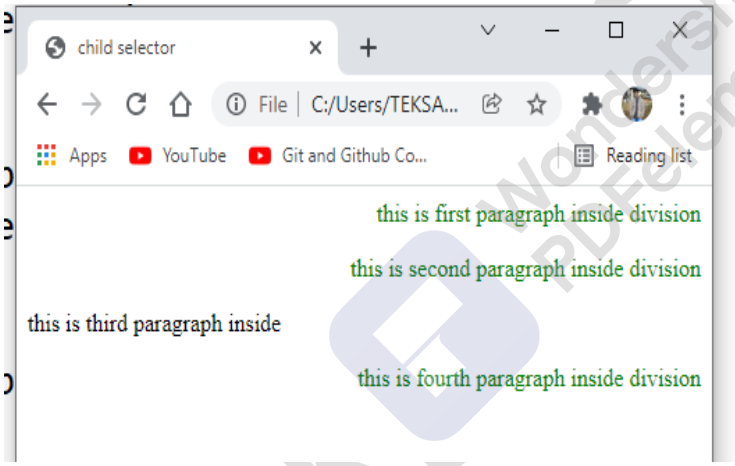


Table Property:

1. **Border:**
   Specifies border of table. If use in column produces border for all table element. If use in table, then produces border around a table.

```
table, th, td{
        border: 1 px solid red;
}
```

2. **Border Spacing:**
   Produces space between border.

```
Table{
        border-spacing: 15 px;
}
```

3. **Collapse Table Border:**
   Collapse table border into a single border.
   ```
   Table{
                   border-collapse: collapse;
           }
   ```
4. **Table Width and Height:**
   ```
   Table{
                   Width: 100% / 30px;
                   Height; 50%/50px
   }
   ```
5. **Text Align on Table:**
   ```
   th{
           text-align: center/left/right;
   }
   ```
6. **Vertical Alignment:**
   It sets vertical alignment like top, bottom, middle of the content of td and <th>.
   ```
   td{
           Vertical-align: right/bottom/top/center/left;
   }
   ```
7. **Table Padding:**
   Specifies space between the border and the content of table.
   ```
   th, td {
                   padding: 3px;
   }
   ```
8. **Horizontal Divider (Border-Bottom):**
   ```
   th, td {
                   Border-bottom: 1px solid black;
   }
   ```
9. **Hoverable Table:**
   Used to change a style when user put mouse cursor over it.
   ```
   tr:hover {
                   Color: red;
            }
   ```
10. **Stripped Table:**
    Used to apply effect to only related column or rows of table. Nth-child () property is used for this.
    ```
    tr:nth-child(odd){
                                    background-color: green;
                    }
    ```
11. **Table Color:**
    Used for applying color on elements of table:
    ```
    th{
            Color: red;
    }
    ```

12. **Empty Cell Property:**

Used to specify whether a empty field should be make visible or not.

```
table{
        empty-cell: hide/show;
}
```

13. **Caption Side Property:**

Used to specify position of caption of table:

```
Table{
        Caption-side: bottom/top;
    }
```

CSS Box Model:

Box model is a tool used to layout webpage in a number of individual boxes or containers. Box model is a box that wraps around every HTML elements which contains margin, padding, border and actual content.

The amount of space between the content of an element and its border is known as **padding.** It clears an area around the content and appears as transparent. The padding properties are named as padding which applies to all four side i.e. padding-left, padding-right, padding-top and padding bottom.

The space between the border and adjacent element is known as **margin.** It clears an area outside a border and appears as transparent. The margin properties are named as margin which applies effect to all four sides: margin-left, margin-right, margin-top and margin-bottom.

Boarder is a box that goes around content and padding. Border-style property is used to control the style of the border and possible values for border-style are dotted, solid, dashed and double. The border-width properties can be used to set the thickness of border and possible values for border-width are thin, thick, medium and length in pixel (20px, 30px etc.). the border-color property can be used to set the color of border. The shorthand property can be used for setting all the border property. For example:

Border: 2px solid red;

Here 2px is border-width, solid is border-style and red is border-color;

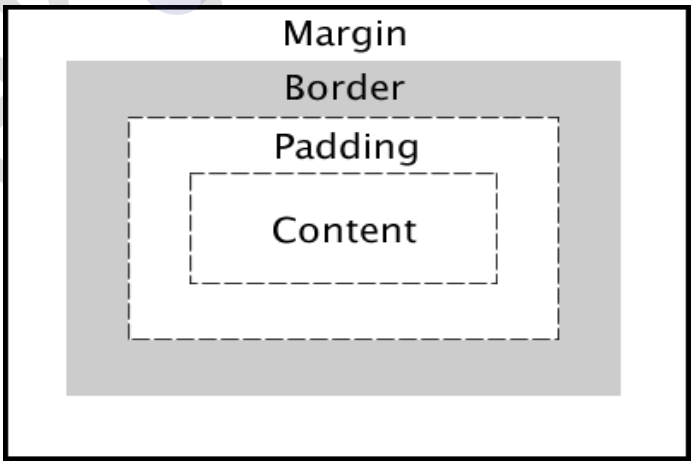


Figure: Box Model

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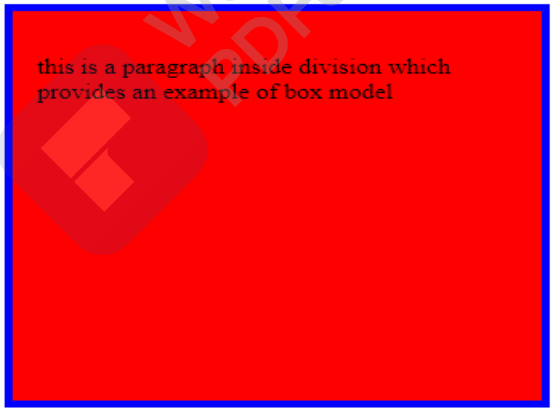
Example of Box Model:

```
<html>
<head>
<title> box model example </title>
<style type = “text/css”>
#div1{
        width: 300px;
        height: 250px;
        background-color: red;
        border: 5px solid blue;
        margin: 15px;
        padding: 15px;
      }
</style>
</head>
<body>
<div id = “div1”>
<p> this is a paragraph inside division which provides an example of box model </p>
</div>
</body>
</html>
```

Output:



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Normal Flow Box Layout

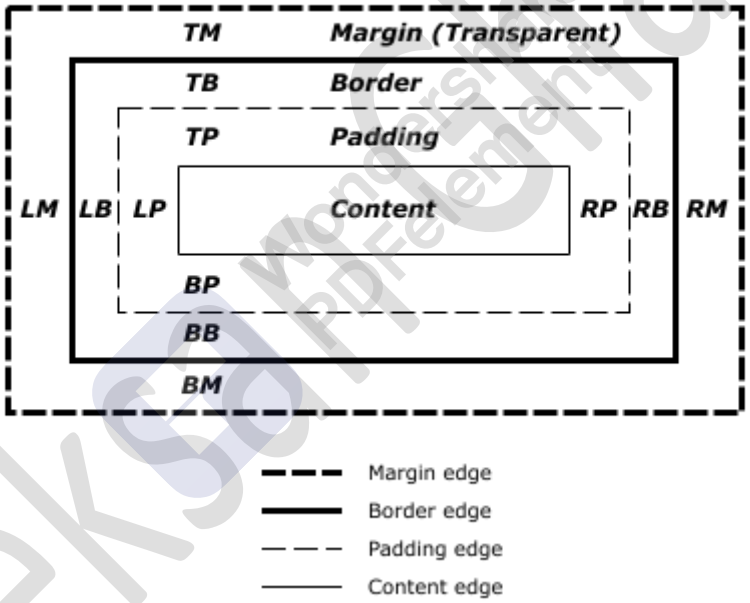
In the early days of writing HTML, before the advent of CSS, using tables was the only way to have discreet content in separate boxes on a page. But tables were originally conceived to display tabular information.

With the advent of CSS floating and positioning, there is no longer a need to use tables for layout. The box model, describes the rectangular boxes that are generated for elements in the document tree and laid out according to the visual formatting model".

Basic Box Layout

According to the standard CSS basic box model, when laying out a document, the browser's rendering engine represents each element as a rectangular box. CSS determines the size, position, and properties (color, background, border size, etc.) of these boxes.

Every box is composed of four parts/areas, the content edge, padding edge, border edge, and margin edge.



Content area

The content area, bounded by the content edge, contains the "real" content of the element, such as text, an image, or a video player. Its dimensions are the content width (or content-box width) and the content height (or content-box height). It often has a background color or background image.

Padding area

The padding area, bounded by the padding edge, extends the content area to include the element's padding. Its dimensions are the padding-box width and the padding-box height.
The thickness of the padding is determined by the padding-top, padding-right, padding-bottom, padding-left.

The padding property can have from one to four values.

If the padding property has four values:

- padding:10px 5px 15px 20px;
  - top padding is 10px
  - right padding is 5px
  - bottom padding is 15px
  - left padding is 20px

If the padding property has three values:

- padding:10px 5px 15px;
  - top padding is 10px
  - right and left padding are 5px
  - bottom padding is 15px

If the padding property has two values:

- padding:10px 5px;
  - top and bottom padding are 10px
  - right and left padding are 5px

If the padding property has one value:

- padding:10px;
  - all four paddings are 10px

Border area

The border area, bounded by the border edge, extends the padding area to include the element's borders. Its dimensions are the border-box width and the border-box height.

Margin area

The margin area, bounded by the margin edge, extends the border area to include an empty area used to separate the element from its neighbors. Its dimensions are the margin-box width and the margin-box height.

Example:

```
<!DOCTYPE html>
<html>
  <head>
    <style>
      div {
          background-color: lightgrey;
          width: 300px;
          border: 15px solid green;
          padding: 35px 70px 50px 90px;
          margin: 20px;
        }
    </style>
  </head>
  <body>

    <h2>Box Layout</h2>
```

```
<p>The CSS box model is essentially a box that wraps around every HTML element. It consists of: borders, padding, margins, and the actual content.</p>

<div>
<img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " width="200" height="100" >

<p> Poppy flower is one of the best flower, that makes us feel fresh. This flower is very beautiful and its dangerous also. It is danger because people grow Poppy flower in large scale and make Drugs from these plants. The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>

<p>This text is the content of the box. We have added a 35px top,70px right, 50px buttom and 90px left padding, 20px margin and a 15px green border.</p>

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

Output:

Box Layout

The CSS box model is essentially a box that wraps around every HTML element. It consists of: borders, padding, margins, and the actual content.

Poppy flower is one of the best flower, that makes us feel fresh. This flower is very beautiful and its dangerous also. It is danger because people grow Poppy flower in large scale and make Drugs from these plants. The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.

This text is the content of the box. We have added a 35px top,70px right, 50px buttom and 90px left padding, 20px margin and a 15px green border.

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Display Property

The display property specifies the display behavior (the type of rendering box) of an element. In HTML, the default display property value is taken from the HTML specifications or from the browser/user default style sheet.

Syntax

display: value;

Property Values

Value	Description
inline	Displays an element as an inline element (like). Any height and width properties will have no effect
block	Displays an element as a block element (like <p>). It starts on a new line, and takes up the whole width
contents	Makes the container disappear, making the child elements children of the element the next level up in the DOM
flex	Displays an element as a block-level flex container
grid	Displays an element as a block-level grid container
inline-block	Displays an element as an inline-level block container. The element itself is formatted as an inline element, but you can apply height and width values
inline-flex	Displays an element as an inline-level flex container
inline-grid	Displays an element as an inline-level grid container
inline-table	The element is displayed as an inline-level table
list-item	Let the element behave like a element
run-in	Displays an element as either block or inline, depending on context
table	Let the element behave like a <table> element
table-caption	Let the element behave like a <caption> element
table-column-group	Let the element behave like a <colgroup> element
table-header-group	Let the element behave like a <thead> element
table-footer-group	Let the element behave like a <tfoot> element

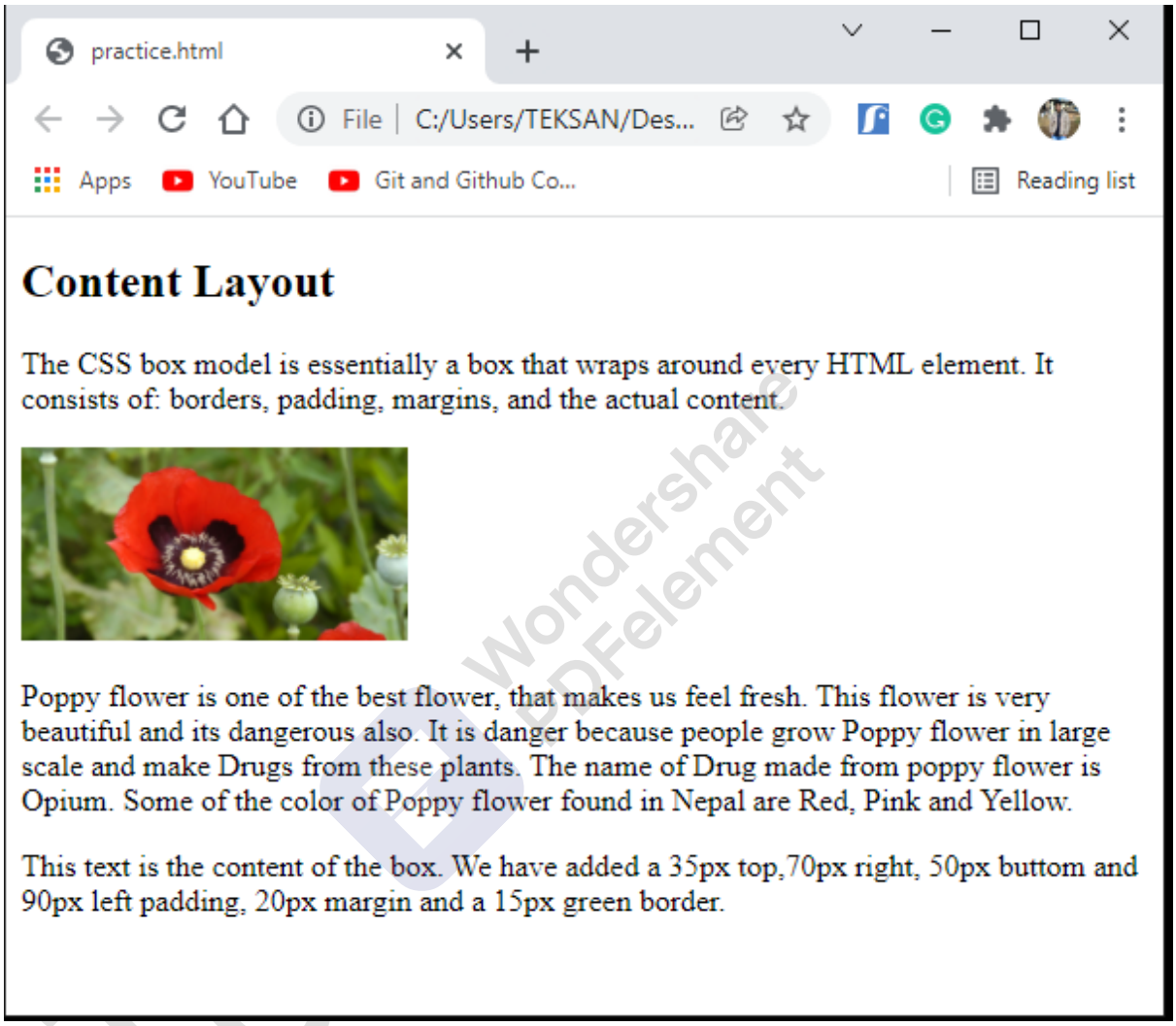
table-row-group	Let the element behave like a <tbody> element
table-cell	Let the element behave like a <td> element
table-column	Let the element behave like a <col> element
table-row	Let the element behave like a <tr> element
none	The element is completely removed
initial	Sets this property to its default value.
inherit	Inherits this property from its parent element.

Example:

```
<!DOCTYPE html>
<html>
   <head>
      <style>
         div {
               display:contents;
               background-color: lightgrey;
               width: 300px;
               border: 15px solid green;
               padding: 35px 70px 50px 90px;
               margin: 20px;
            }
      </style>
   </head>
   <body>

      <h2>Content Layout</h2>
      <p>The CSS box model is essentially a box that wraps around every HTML element. It consists of: borders, padding, margins, and the actual content.</p>

      <div>
       <img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " width="200" height="100">

        <p> Poppy flower is one of the best flower, that makes us feel fresh. This flower is very beautiful and its dangerous also. It is danger because people grow Poppy flower in large scale and make Drugs from these plants. The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>

        <p>This text is the content of the box. We have added a 35px top,70px right, 50px buttom and 90px left padding, 20px margin and a 15px green border.</p>
```

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

Output:



Positioning: Relative, Float, Absolute

The position property specifies the type of positioning method used for an element. There are five different position values:

- static
- relative
- fixed
- absolute
- sticky

Elements are then 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 position value.

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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:

Following element has position: static;

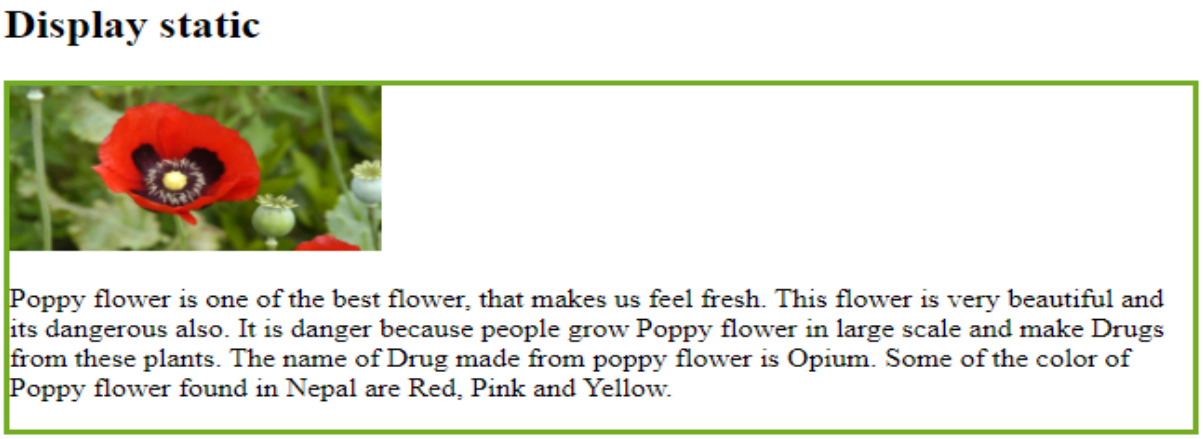
Code:

```
<!DOCTYPE html>
<html>
  <head>
    <style>
      div.static
        {
          position: static;
          border: 3px solid #73AD21;
        }
    </style>
  </head>
  <body>

    <h2>Display static</h2>
    <div class="static">
      <img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " width="200" height="100"

      <p> Poppy flower is one of the best flower, that makes us feel fresh. This flower is very beautiful and its dangerous also. It is danger because people grow Poppy flower in large scale and make Drugs from these plants. The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>
    </div>
  </body>
</html>
```

Output:



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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.

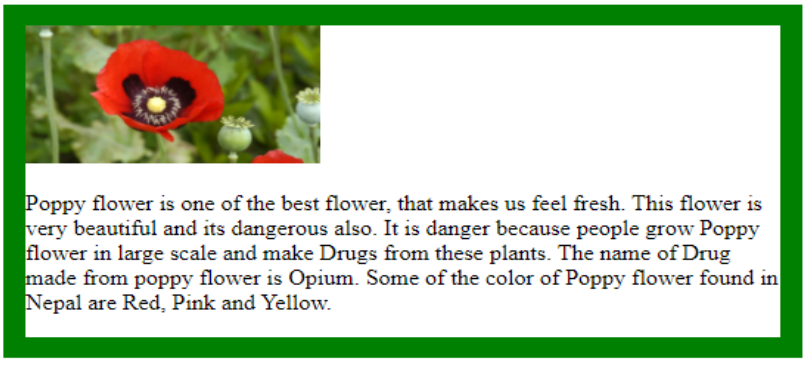
Following element has position: relative;

Code:

```
<!DOCTYPE html>
<html>
  <head>
    <style>
      div.relative {
                position: relative;
                left: 30px;
                margin: 50px;
                border: 15px solid green;
              }
    </style>
  </head>
  <body>
     <h2>Display relative</h2>
     <div class="relative">
      <img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " width="200" height="100">
       <p> Poppy flower is one of the best flower, that makes us feel fresh. This flower is very beautiful and its dangerous also. It is danger because people grow Poppy flower in large scale and make Drugs from these plants. The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>
    </div>
  </body>
</html>
```

Output:

Display relative



Poppy flower is one of the best flower, that makes us feel fresh. This flower is very beautiful and its dangerous also. It is danger because people grow Poppy flower in large scale and make Drugs from these plants. The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.

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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.

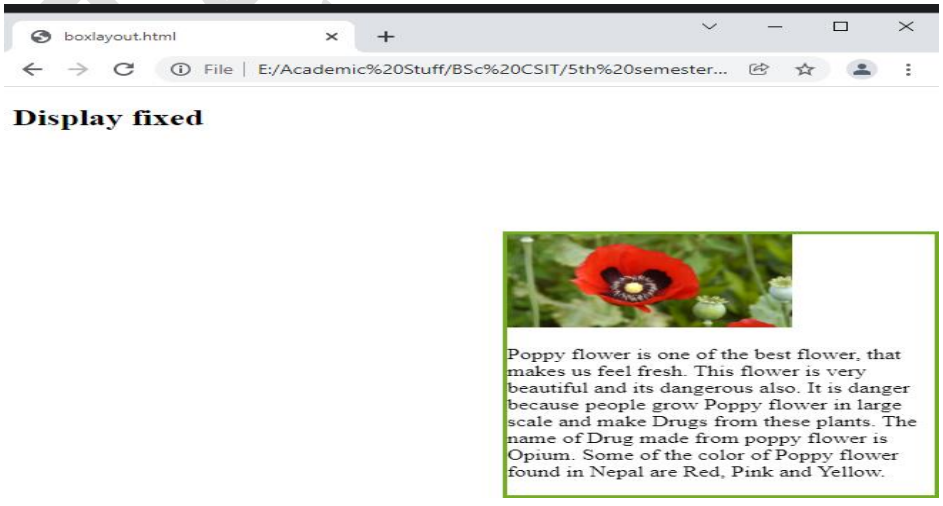
A fixed element does not leave a gap in the page where it would normally have been located.

Code:

```
<!DOCTYPE html>
<html>
  <head>
    <style>
      div.fixed {
                    position: fixed;
                    bottom: 0;
                    right: 0;
                    width: 300px;
                    border: 3px solid #73AD21;
                }
    </style>
  </head>
  <body>
    <h2>Display fixed</h2>
     <div class="fixed">
       <img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " width="200" height="100">

       <p> Poppy flower is one of the best flower, that makes us feel fresh. This flower is very beautiful and its dangerous also. It is danger because people grow Poppy flower in large scale and make Drugs from these plants. The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>
    </div>
  </body>
</html>
```

Output:



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Position: absolute

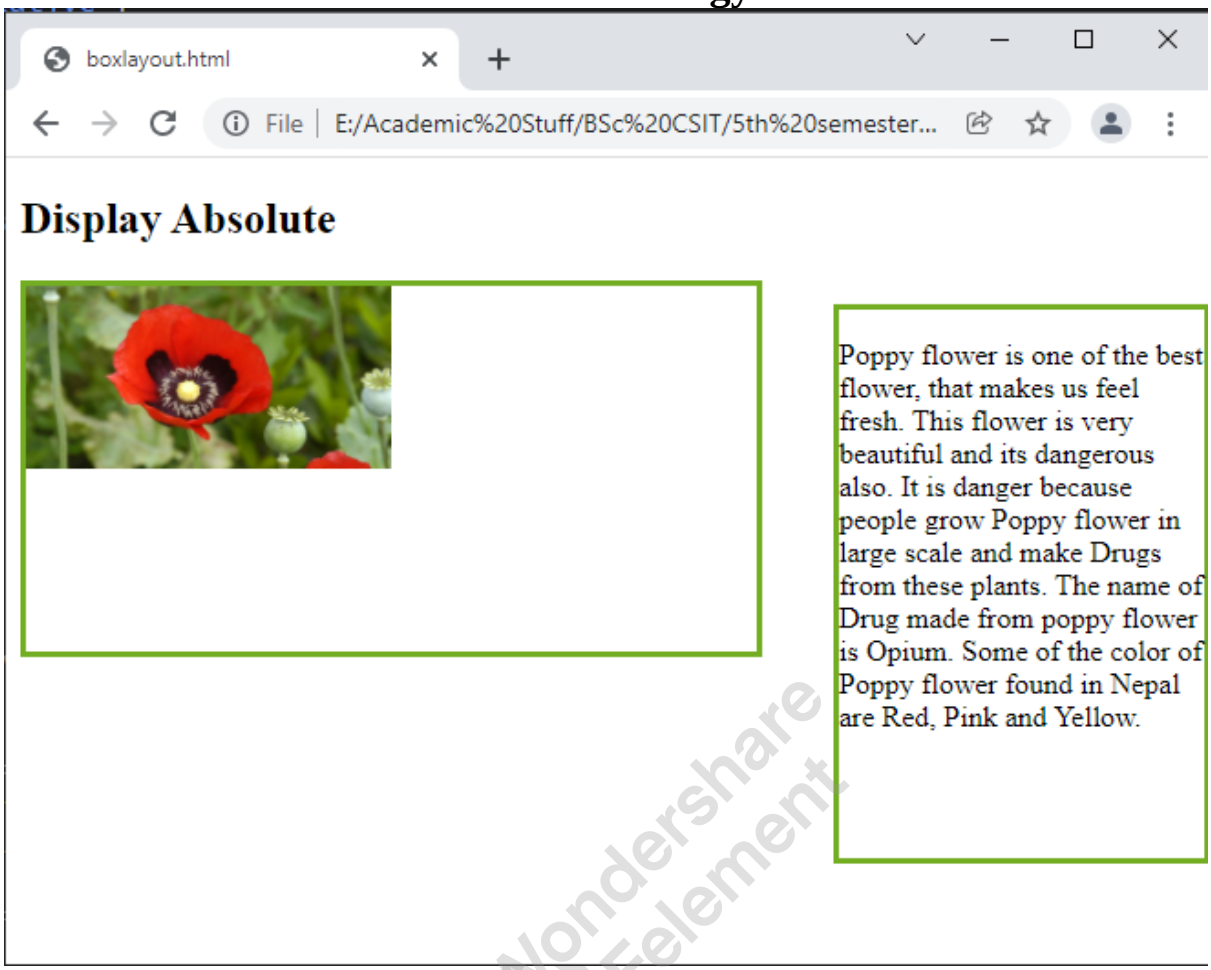
An element with position: absolute; is positioned relative to the nearest positioned ancestor. However; if an absolute positioned element has no positioned ancestors, it uses the document body, and moves along with page scrolling.

Code:

```
<!DOCTYPE html>
<html>
  <head>
    <style>
      div.relative {
                position: relative;
                width: 400px;
                height: 200px;
                border: 3px solid #73AD21;
              }
      div.absolute {
                position: absolute;
                top: 80px;
                right: 0;
                width: 200px;
                height: 300px;
                border: 3px solid #73AD21;
              }
    </style>
  </head>
  <body>

    <h2>Display Absolute</h2>
      <div class="relative">
      <img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " width="200" height="100" >
      </div>
      <div class="absolute">
      <p> Poppy flower is one of the best flower, that makes us feel fresh. This flower is very beautiful and its dangerous also. It is danger because people grow Poppy flower in large scale and make Drugs from these plants. The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>
    </div>
  </body>
</html>
```

Output:



Position: sticky

An element with position: sticky; 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).

Code:

```
<!DOCTYPE html>
<html>
  <head>
    <style>
      div.sticky {
                    position: -webkit-sticky;
                    position: sticky;
                    top: 0;
                    padding: 5px;
                    background-color: #cae8ca;
                    border: 2px solid #4CAF50;
                }
    </style>
  </head>
  <body>
```

```
    <h2>Display Sticky</h2>
    <div class="sticky">this is sticky!</div>
    <div style="padding-bottom:2000px">
      <br>
      <img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " width="200" height="100" >

      <p> Poppy flower is one of the best flower, that makes us feel fresh. This flower is very beautiful and its dangerous also. It is danger because people grow Poppy flower in large scale and make Drugs from these plants. The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>
      <p>In this example, the sticky element sticks to the top of the page (top: 0), when you reach its scroll position.</p>
      <p>Scroll back up to remove the stickyness.</p>
      <p>Some text to enable scrolling.. Lorem ipsum dolor sit amet, illum definitiones no quo, maluisset concludaturque et eum, altera fabulas ut quo. Atqui causae gloriatur ius te, id agam omnis evertitur eum. Affert laboramus repudiandae nec et. Inciderint efficiantur his ad. Eum no molestiae voluptatibus.</p>

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

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The float Property

The float property is used for positioning and formatting content.

The float property can have one of the following values:

- left - The element floats to the left of its container
- right - The element floats to the right of its container
- none - The element does not float (will be displayed just where it occurs in the text). This is default
- inherit - The element inherits the float value of its parent

In its simplest use, the float property can be used to wrap text around images.

Code:

```
<!DOCTYPE html>
<html>
   <head>
      <style>
        img {
              float: left;
            }
      </style>
   </head>
   <body>

     <h2>Float Left</h2>

      <div >
         <br>
          <p> <img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " style="width:170px;height:170px;margin-right:15px;" >

          Poppy flower is one of the best flower, that makes us feel fresh. This flower is very beautiful and its dangerous also. It is danger because people grow Poppy flower in large scale and make Drugs from these plants. The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>
      </div>
   </body>
</html>
```

Output:

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Float Left

Poppy flower is one of the best flower, that makes us feel fresh. This flower is very beautiful and its dangerous also. It is danger because people grow Poppy flower in large scale and make Drugs from these plants. The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.

Box-shadow

The box-shadow property in CSS is used to give a shadow-like effect to the frames of an element. The multiple effects can be applied to the element's frame which is separated by the comma. The box-shadow can be described using X and Y offsets relative to the element, blur and spread radius, and color.

Syntax:

box-shadow: h-offset v-offset blur spread color |none|inset|initial|
inherit;

Syntax

```
/* Keyword values */
box-shadow: none;

/* offset-x | offset-y | color */
box-shadow: 60px -16px teal;

/* offset-x | offset-y | blur-radius | color */
box-shadow: 10px 5px 5px black;

/* offset-x | offset-y | blur-radius | spread-radius | color */
box-shadow: 2px 2px 2px 1px rgba(0, 0, 0, 0.2);

/* inset | offset-x | offset-y | color */
box-shadow: inset 5em 1em gold;

/* Any number of shadows, separated by commas */
box-shadow: 3px 3px red, -1em 0 0.4em olive;

/* Global keywords */
box-shadow: inherit;
box-shadow: initial;
box-shadow: revert;
box-shadow: unset;
```

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Property Values

Value	Description
none	Default value. No shadow is displayed
h-offset	Required. The horizontal offset of the shadow. A positive value puts the shadow on the right side of the box, a negative value puts the shadow on the left side of the box
v-offset	Required. The vertical offset of the shadow. A positive value puts the shadow below the box, a negative value puts the shadow above the box
blur	Optional. The blur radius. The higher the number, the more blurred the shadow will be
spread	Optional. The spread radius. A positive value increases the size of the shadow, a negative value decreases the size of the shadow
color	Optional. The color of the shadow. The default value is the text color
inset	Optional. Changes the shadow from an outer shadow (outset) to an inner shadow
initial	Sets this property to its default value.
inherit	Inherits this property from its parent element.

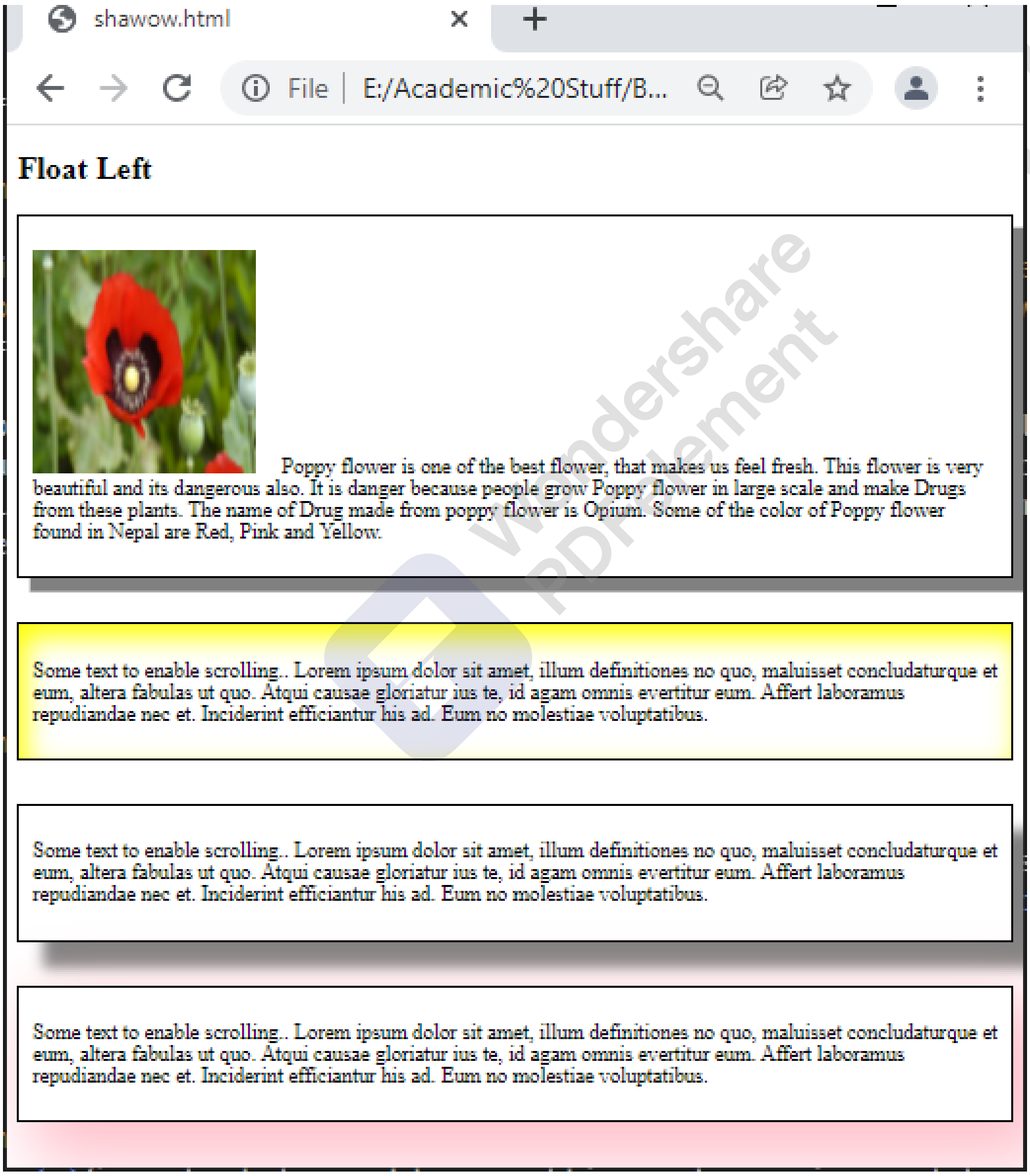
Code:

```
<!DOCTYPE html>
<html>
  <head>
    <style>
      #shadow1 {
            border: 1px solid;
            padding: 10px;
            box-shadow:10px 10px grey;
          }

      #shadow2 {
            border: 1px solid;
            padding: 10px;
            box-shadow: 5px 10px 20px yellow inset;
          }
      #shadow3 {
```

```
                border: 1px solid;
                padding: 10px;
                box-shadow:20px 20px 10px grey;
            }
        #shadow4 {
                border: 1px solid;
                padding: 10px;
                 box-shadow:20px 20px 50px 10px pink;
            }
    </style>
</head>
<body>

  <h2>Float Left</h2>

    <div id="shadow1">

        <p> <img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " style="width:170px;height:170px;margin-right:15px;" >

        Poppy flower is one of the best flower, that makes us feel fresh. This flower is very beautiful and its dangerous also. It is danger because people grow Poppy flower in large scale and make Drugs from these plants. The name of Drug made from poppy flower is Opium. Some of the color of Poppy flower found in Nepal are Red, Pink and Yellow.</p>
     </div>
    <br>
    <br>

    <div id="shadow2">
            <p>Some text to enable scrolling.. Lorem ipsum dolor sit amet, illum definitiones no quo, maluisset concludaturque et eum, altera fabulas ut quo. Atqui causae gloriatur ius te, id agam omnis evertitur eum. Affert laboramus repudiandae nec et. Inciderint efficiantur his ad. Eum no molestiae voluptatibus.</p>


    </div>
      <br>
    <br>
    <div id="shadow3">
            <p>Some text to enable scrolling.. Lorem ipsum dolor sit amet, illum definitiones no quo, maluisset concludaturque et eum, altera fabulas ut quo. Atqui causae gloriatur ius te, id agam omnis evertitur eum. Affert laboramus repudiandae nec et. Inciderint efficiantur his ad. Eum no molestiae voluptatibus.</p>


    </div>
      <br>
    <br>
    <div id="shadow4">
```

```
            <p>Some text to enable scrolling.. Lorem ipsum dolor sit amet, illum definitiones no quo, maluisset concludaturque et eum, altera fabulas ut quo. Atqui causae gloriatur ius te, id agam omnis evertitur eum. Affert laboramus repudiandae nec et. Inciderint efficiantur his ad. Eum no molestiae voluptatibus.</p>


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

<u>Output:</u>



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Text Effects

Text Effects allows us to apply different types of effect on text used in an HTML document.

Below are some of the properties in CSS that can be used to add effects to text:

- **text-overflow: -** Specifies how overflowed content that is not displayed should be signalled to the user
- **word-wrap: -** Allows long words to be able to be broken and wrap onto the next line
- **word-break: -** Specifies line breaking rules for non-CJK scripts (**CJK** script is the characters that is a collective term for the Chinese, Japanese, and Korean languages,)
- **writing-mode: -** Specifies whether lines of text are laid out horizontally or vertically

Word-break

It specifies how words should break at the end of the line. It defines the line break rules.

Syntax

word-break: normal |keep-all | break-all |inherit;

The default value of this property is normal. So, this value is automatically used when we don't specify any value.

Values

- **keep-all:** It breaks the word in the default style.
- **break-all:** It inserts the word break between the characters in order to prevent the word overflow.

Example

```
<!DOCTYPE html>
<html>
  <head>
    <title>break-all</title>
    <style>
      .breakall{
        width: 250px;
        border: 2px solid black;
        word-break: break-all;
        text-align: left;
        font-size: 25px;
        color: blue;
      }
      .keepall{
        width: 250px;
        border: 2px solid black;
        word-break: keep-all;
        text-align: left;
        font-size: 25px;
        color: blue;
```

```
        }
      </style>
   </head>
   <body>
     <center>
        <h2>word-break:break-all;</h2>
          <p class="breakall">
        It inserts the word break between the characters in order to prevent the word overflow.
      </p>
      <h2>word-break: keep-all;</h2>
      <p class="keepall">
        It breaks the word in the default style in order to prevent the word overflow </p>
</center>
   </body>
</html>
```

Output:

word-break:break-all;

It inserts the word break between the characters i n order to prevent the w ord overflow.

word-break: keep-all;

It breaks the word in the default style in order to prevent the word overflow

Word-wrap

CSS word-wrap property is used to break the long words and wrap onto the next line. This property is used to prevent overflow when an unbreakable string is too long to fit in the containing box.

Syntax

word-wrap: normal| break-word| inherit ;

Values

- **normal:** This property is used to break words only at allowed break points.
- **break-word:** It is used to break unbreakable words.
- **initial:** It is used to set this property to its default value.
- **inherit:** It inherits this property from its parent element.

Example

```
<!DOCTYPE html>
<html>
        <head>
        <style>
        .withoutwWrap{
                        width: 200px;
                        background-color: lightblue;
                        border: 2px solid black;
                        padding:10px;
                        font-size: 20px;

                    }
        .withwWrap {
                        width: 11em;
                        background-color: lightblue;
                        border: 2px solid black;
                        padding:10px;
                        word-wrap: break-word;
                        font-size: 20px;
                    }
        </style>
        </head>
        <body>
                <center>
                        <h1> Without Using word-wrap </h1>
                        <p class="withoutwWrap"> This is a very long word:

                        VerryyyyyyyyyyyyyyyyyyyyyyyyyyLooooooooooooooooooooonggggg
                        gggggggg. </p>
                        <h1> Using word-wrap: break-word; </h1>
                        <p class="withwWrap"> This is a very long word:

                        VerryyyyyyyyyyyyyyyyyyyyyyyyyyLooooooooooooooooooooonggggg
                        gggggggg. The long word will break and wrap to the next line. </p>
                </center>
        </body>
</html>
```

Output:

Without Using word-wrap

This is a very long word: VerryyyyyyyyyyyyyyyyyyyyyyyyyyyyyyLooooooooooooooooooooonggggggggggggg.

Using word-wrap: break-word;

This is a very long word: VerryyyyyyyyyyyyyyyyyyyyyyyyyyyyyyLooooooooooooooooooooonggggggggggggg. The long word will break and wrap to the next line.

Text-overflow

- It specifies the representation of overflowed text, which is not visible to the user. It signals the user about the content that is not visible. This property helps us to decide whether the text should be clipped or show some dots (ellipsis).
- This property does not work on its own. We have to use white-space: nowrap; and overflow: hidden; with this property.

Syntax

Text-overflow: clip | ellipsis;

Property Values

- **clip:** It is the default value that clips the overflowed text.
- **ellipsis**: This value displays an ellipsis (…) or three dots to show the clipped text. It is displayed within the area, decreasing the amount of text.

Example

```
<!DOCTYPE html>
<html>
   <head>
      <style>
       .clips{
                    white-space: nowrap;
                    height: 30px;
                    width: 250px;
                    overflow: hidden;
                    border: 2px solid black;
                    font-size: 25px;
                    text-overflow: clip;
                    text-decoration-color: aqua;
              }
```

```
    .ellipsis{
                    white-space: nowrap;
                    height: 30px;
                    width: 250px;
                    overflow: hidden;
                    border: 2px solid black;
                    font-size: 25px;
                    text-overflow: ellipsis;
                    text-decoration-color: aqua;
                }

      h2   {
                color: blue;
               }

  div:hover{
                    overflow: visible;
                }

           p{
                    font-size: 25px;
                    font-weight: bold;
                    color: darkgreen;
                }
    </style>
  </head>

<body>
  <center>

    <p> Hover over the bordered text to see the full content. </p>

    <h2>
          text-overflow: clip;
    </h2>

    <div class="clips">
          It is the default value that clips the overflowed text.
    </div>

    <h2>
          text-overflow: ellipsis;
    </h2>

    <div class="ellipsis">
          This value displays an ellipsis (…) or three dots to show the clipped text.
    </div>
    </center>
  </body>
</html>
```

Output:

Hover over the bordered text to see the full content.

text-overflow: clip;

It is the default value tha

text-overflow: ellipsis;

This value displays an...

Writing-mode

It specifies whether the text will be written in the horizontal or vertical direction. If the writing direction is vertical, then it can be from left to right (vertical-lr) or from right to left (vertical-rl).

Syntax

writing-mode: horizontal-tb | vertical-lr | vertical-rl | inherit ;

Property values

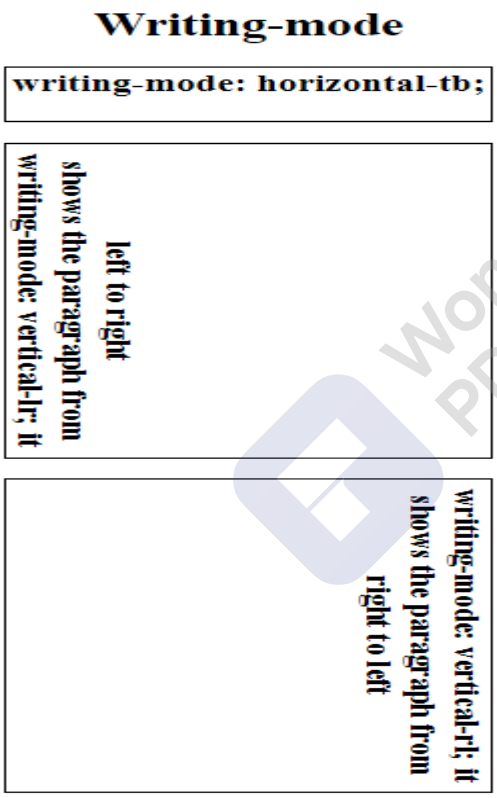
- **horizontal-tb:** It is the default value of this property in which the text is in the horizontal direction and read from left to right and top to bottom.
- **vertical-rl:** It displays the text in the vertical direction, and the text is read from right to left and top to bottom.
- **vertical-lr:** It is similar to vertical-rl, but the text is read from left to right.

Example

```
<!DOCTYPE html>
<html>
 <head>
  <style>
   h2 {
    border: 2px solid black;
    width: 300px;
    height: 50px;
   }
   #tb {
    writing-mode: horizontal-tb;
   }

   #lr {
    writing-mode: vertical-lr;
   }

   #rl {
     writing-mode: vertical-rl;
   }
  </style>
```

```
</head>

<body>
   <center>
  <h1> Writing-mode  </h1>
  <h2 id="tb"> writing-mode: horizontal-tb; </h2>
  <h2 id="lr" style= "height: 300px;"> writing-mode: vertical-lr; it shows the paragraph
      from left to right</h2><br>
  <h2 id="rl" style= "height: 300px;"> writing-mode: vertical-rl; it shows the paragraph
      from right  to left </h2>
  </center>
 </body>
</html>
```

Output:



Text shadow

The CSS text-shadow property applies shadow to text. The text-shadow property adds shadow to text. This property accepts a comma-separated list of shadows to be applied to the text.

Syntax

text-shadow: h-shadow v-shadow blur-radius color|none|initial|inherit;
To add more than one shadow to the text, add a comma-separated list of shadows.

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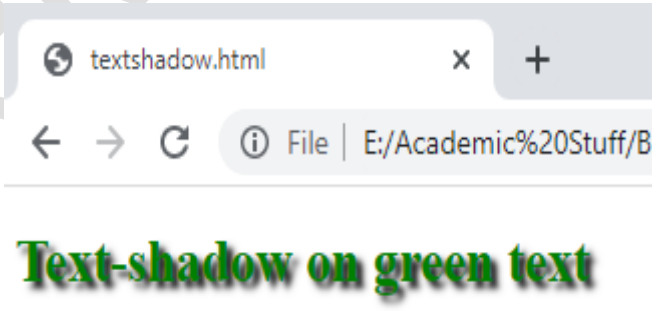
Property Values

Value	Description
h-shadow	Required. The position of the horizontal shadow. Negative values are allowed
v-shadow	Required. The position of the vertical shadow. Negative values are allowed
blur-radius	Optional. The blur radius. Default value is 0
color	Optional. The color of the shadow.
none	Default value. No shadow
initial	Sets this property to its default value.
inherit	Inherits this property from its parent element.

Example:

```
<!DOCTYPE html>
  <html>
        <head>
              <style>
                    h1 {
                          color:green;
                          text-shadow: 4px 4px 4px black;
                        }
              </style>
        </head>
        <body>
              <h1>Text-shadow on green text</h1>
        </body>
  </html>
```

Output:



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Basics of Responsive Web Designs

In the early days of web design, pages were built to target a particular screen size. If the user had a larger or smaller screen than the designer expected, results ranged from unwanted scrollbars to overly long line lengths, and poor use of space. As more diverse screen sizes became available, the concept of responsive web design (RWD) appeared, a set of practices that allows web pages to alter their layout and appearance to suit different screen widths, resolutions, etc.

Responsive web design is a modern web design approach that allows websites and pages to render (or display) on all devices and screen sizes by automatically adapting to the screen, whether it's a desktop, laptop, tablet, or smartphone.

Responsive web design works through CSS, using various settings to serve different style properties depending on the screen size, orientation, resolution, color capability, and other characteristics of the user's device. A few examples of CSS properties related to responsive web design include the viewport and media queries.

Components of responsive web design

Responsive website design consists of the following three main components:

1. **flexible layouts,**
2. **media queries and**
3. **flexible media.**

Flexible layouts

Flexible grids are created using CSS. Web layout consists of columns that automatically rearrange themselves to fit the size of the screen or browser window that is it will dynamically resize to any width.

The flexible grid control allows you to divide a layout into multiple columns and rows in which you can place UI elements. You can also customize the grid by aligning and arranging your elements to suit your content.

Since the flexible grid behaves responsively, it is suitable for both desktop and mobile devices. Depending on the available screen width, an optimized layout is loaded to ensure the best possible user experience on each device.

Creating a fluid grid from scratch is not an easy task and will require time and effort. The example below shows a three-column track grid with new rows created at a minimum of 100 pixels and a maximum of auto. Items have been placed onto the grid using line-based placement.

Basic example

Keep in mind that the elements placed in your grid are empty containers. Therefore, your grid layout is invisible until there is content in them to display.

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Code:

```
<!DOCTYPE html>
<html>
<head>
        <style>
          .wrapper {
                        display: grid;
                        gap: 10px;
                        grid-auto-rows: minmax(100px, auto);
                        border: 3px solid #73AD21;
                        background-color: lime;
                    }
            .one {
                        grid-column: 1;
                        grid-row: 1;
                        border: 3px solid red;
                    }

            .two {
                        grid-column: 2 / 4;   // grid-column: main-start / main-end;
                        grid-row: 1 / 3;
                        border: 3px solid green;
                    }

            .three {
                        grid-column: 1;
                        grid-row: 2 / 5;
                        border: 3px solid yellow;
                    }

            .four {
                    grid-column: 3;
                    grid-row: 3;
                    border: 3px solid blue;
                }

            .five {
                        grid-column: 2;
                        grid-row: 4;
                        border: 3px solid black;
                    }

             .six {
                        grid-column: 3;
                        grid-row: 4;
                        border: 3px solid pink;
                    }
          </style>
        </head>
```

```
<body>
<div class="wrapper" >
    <div class="one">
        <img src="E:\Academic Stuff\BSc CSIT\5th semester\Web-Technology\A online web technology\practical sem 5\image\Poppy.jpg" alt=" Poppy flower " width="200" height="100">
        <p> one</p>
    </div>
    <div class="two">
        <p>two</p>
        <p> Poppy flower is one of the best flower, that makes us feel fresh.</p>
    </div>
    <div class="three">Three</div>
    <div class="four">Four</div>
    <div class="five">Five</div>
    <div class="six">Six</div>
</div>
</body>
</html>
```

Output:

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Use the flexible grid if:

1. You want to display your content in columns and rows so that it adapts flexibly to changes in the screen size.
2. You want to display your content in full-page layouts so that your content flows but stays aligned and spaced out evenly.
3. The focus of your layout is on flexibility and responsiveness, not on constraining the content to grid cells.
4. You want to include explicit or nested grid elements to have your elements or content adapt to any row or column size and to any breakpoints.
5. You want to have only one implementation for all devices.
6. You want to embed elements from another page into one of the columns.

Do not use the flexible grid if:

1. Your content is not appropriate for a card-like format, or for simple forms. For example, do not use the flexible grid for displaying a list or table that a user can edit or that needs to show a large number of items. Use a grid table instead.
2. You want to manage complex content, such as datasets that need to be extensively sorted, grouped, filtered, or edited. In this case, use a grid table instead.
3. You want to display a set of items on a grid. Consider using the grid list instead.
4. Your layout needs to be defined only by columns or only by rows, not both. Use a flex box instead.

Media queries

The Media query in CSS is used to create a responsive web design. It means that the view of a web page differs from system to system based on screen or media types.

Media queries can be used to check many things:

- width and height of the viewport
- width and height of the device
- Orientation
- Resolution

A media query consists of a media type that can contain one or more expression which can be either true or false. The result of the query is true if the specified media matches the type of device the document is displayed on. If the media query is true then a style sheet is applied.

syntax:

```
@media media-type (media-feature)
  {
     /*Styles go here*/
  }
```

The @media rule is used in media queries to apply different styles for different media types/devices.

The media type refers to the category of media for the device. The different media types include all, print, screen and speech.

- all - works for all devices
- print - works for devices where the media is in print preview mode
- screen - works for devices with screens
- speech - works for devices like screen readers where the content is read out loud to the user

In addition to media types, there are also **media features**. Media features provide more specific details to media queries, by allowing to test for a specific feature of the user agent or display device. For example, you can apply styles to only those screens that are greater, or smaller, than a certain width.

OR

CSS Syntax(css2)

```
@media not|only mediatype and (mediafeature and|or|not mediafeature)
  {
    CSS-Code;
  }
```

Here,

1. **not:** The not keyword inverts the meaning of an entire media query.
2. **only:** The only keyword prevents older browsers that do not support media queries with media features from applying the specified styles. It has no effect on modern browsers.
3. **and:** The and keyword combines a media feature with a media type or other media features. They are all optional. However, if you use not or only, you must also specify a media type.

You can also have different stylesheets for different media, like this:

```
<link rel="stylesheet" media="screen and (min-width: 900px)" href=”abc.css">

<link rel="stylesheet" media="screen and (max-width: 600px)" href="xyz.css">
....
```

Media Types

Value	Description
all	Default. Used for all media type devices
print	Used for printers
screen	Used for computer screens, tablets, smart-phones etc.
speech	Used for screenreaders that "reads" the page out loud

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Media Features

Value	Description
any-hover	Does any available input mechanism allow the user to hover over elements? (added in Media Queries Level 4)
any-pointer	Is any available input mechanism a pointing device, and if so, how accurate is it? (added in Media Queries Level 4)
aspect-ratio	The ratio between the width and the height of the viewport
color	The number of bits per color component for the output device
color-gamut	The approximate range of colors that are supported by the user agent and output device (added in Media Queries Level 4)
color-index	The number of colors the device can display
grid	Whether the device is a grid or bitmap
height	The viewport height
hover	Does the primary input mechanism allow the user to hover over elements? (added in Media Queries Level 4)
inverted-colors	Is the browser or underlying OS inverting colors? (added in Media Queries Level 4)
light-level	Current ambient light level (added in Media Queries Level 4)
max-aspect-ratio	The maximum ratio between the width and the height of the display area
max-color	The maximum number of bits per color component for the output device
max-color-index	The maximum number of colors the device can display
max-height	The maximum height of the display area, such as a browser window
max-monochrome	The maximum number of bits per "color" on a monochrome (greyscale) device
max-resolution	The maximum resolution of the device, using dpi or dpcm
max-width	The maximum width of the display area, such as a browser window

min-aspect-ratio	The minimum ratio between the width and the height of the display area
min-color	The minimum number of bits per color component for the output device
min-color-index	The minimum number of colors the device can display
min-height	The minimum height of the display area, such as a browser window
min-monochrome	The minimum number of bits per "color" on a monochrome (greyscale) device
min-resolution	The minimum resolution of the device, using dpi or dpcm
min-width	The minimum width of the display area, such as a browser window
monochrome	The number of bits per "color" on a monochrome (greyscale) device
orientation	The orientation of the viewport (landscape or portrait mode)
overflow-block	How does the output device handle content that overflows the viewport along the block axis (added in Media Queries Level 4)
overflow-inline	Can content that overflows the viewport along the inline axis be scrolled (added in Media Queries Level 4)
pointer	Is the primary input mechanism a pointing device, and if so, how accurate is it? (added in Media Queries Level 4)
resolution	The resolution of the output device, using dpi or dpcm
scan	The scanning process of the output device
scripting	Is scripting (e.g. JavaScript) available? (added in Media Queries Level 4)
update	How quickly can the output device modify the appearance of the content (added in Media Queries Level 4)
width	The viewport width

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Example 1.

```
<!DOCTYPE html>
<html>
	<head>
		<meta name="viewport" content="width=device-width, initial-scale=1">
		<style>
			div.example
			  {
				background-color: yellow;
				padding: 20px;
			  }

			@media screen and (max-width: 600px)
			   {
				div.example
				  {
				    display: none;
				  }
			   }
		</style>
	</head>
	<body>
		<h2>Hide elements on different screen sizes</h2>
		<div class="example">Example DIV.</div>
		<p>When the browser's width is 600px wide or less, hide the div element. Resize the browser window to see the effect.</p>

	</body>
</html>
```

Flexible images and videos

As viewports begin to change the size, images, videos, and other media types should be scalable, adjusting their size as the size of the viewport changes.

Introduction to Bootstrap

========== End of Unit-3 ==========

Unit 3: Cascading Style Sheets (8 Hrs.)

Introduction; Cascadding Style Sheets (CSS); CSS Syntax; Inserting CSS: Inline, Internal, External, ID and Class Selectors; Colors; Backgrounds; Borders; Text; Font; List; Table; CSS Box Model; Normal Flow Box Layout: Basic Box Layout, Display Property, Padding, Margin; Positioning: Relative, Float, Absolute; CSS3 Borders, Box Shadows, Text Effects and shadow; Basics of Responsive Web Designs; Media Queries, Introduction to Bootstrap