

What is CSS?

- **CSS** stands for **Cascading Style Sheets**.
- CSS is used to define styles for your web pages, including the design, layout and variations in display for different devices and screen sizes.
- **CSS** describes how HTML elements are to be displayed on screen, paper, or in other media.

Benefits of CSS

- **CSS saves time :**
 - You can write CSS once and then reuse the same sheet in multiple HTML pages.
- **Easy maintenance:**
 - To make a global change, simply change the style, and all elements in all the web pages will be updated automatically.
- **Global web standards:**
 - It's a good idea to start using CSS in all the HTML pages to make them compatible with future browsers.
- **Platform Independence:**
 - The Script offer consistent platform independence and can support latest browsers as well.

CSS Comments

- Comments are used to explain the code, and may help when you edit the source code at a later date.
- Comments are ignored by browsers.
- A CSS comment is placed inside the `<style>` element, and starts with `/*` and ends with `*/`
- Syntax:
`/* This is CSS Comment Text */`

Types Of CSS / Stylesheet

- CSS can be added to HTML documents in 3 ways:
 1. **Inline** - by using the style attribute inside HTML elements
 2. **Internal** - by using a `<style>` element in the `<head>` section
 3. **External** - by using a `<link>` element to link to an external CSS file
 4. **Multiple CSS**
- The most common way to add CSS, is to keep the styles in external CSS files.

1. Inline CSS :

- An inline CSS is used to apply a unique style to a single HTML element.
- An inline CSS uses the `style` attribute of an HTML element.
- Example:

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

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

2. Internal CSS :

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

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<style>
```

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

```
h1 {color: blue;}
```

```
p {color: red;}
```

```
</style>
```

```
</head>
```

```

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

```

3. External CSS :

- An external style sheet is used to define the style for many HTML pages.
- To use an external style sheet, add a link to it in the <head> section of each HTML page:
- Example:

```

<!DOCTYPE html>
<html>
  <head>
    <link rel="stylesheet" type="text/css" href="style.css">
  </head>
  <body>
    <h1>This is a heading</h1>
    <p>This is a paragraph.</p>
  </body>
</html>

```

style.css

```

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

```

4. Multiple CSS :

- Actually Multiple Style Sheet is not a type of Style Sheets but it is a combination of
 - External Style Sheet,
 - Internal Style Sheet and
 - Inline Style Sheet
 - as per designers requirement.
- We can use more then one style sheet in a HTML document file.
- This method of working with more then one style sheet that's why it is known as Multiple Style Sheet.
- Example:

```

<!DOCTYPE html>
<html>
<head>
  <link rel="stylesheet" type="text/css" href="style.css">
  <style>
    h1 {color: blue;}
    p {color: red;}
  </style>
</head>
<body>
  <h1>This is a heading</h1>
  <p style="font-size:20px;" >This is a paragraph.</p>
</body>
</html>

```

style.css

```

body
{
  background-color: powderblue;
}
p
{
  background-color: yellow;
}

```

CSS Slectors

- There are two types of selector:

1. Class
2. ID

1. Class :

- The `.class` selector selects elements with a specific class attribute.
- To select elements with a specific class, write a period (.) character, followed by the name of the class.
- HTML elements can also refer to more than one class (look at Example 2 below).
- Syntax :

```
.class {  
    css declarations;  
}
```

- Example :

```
<html>  
<head>  
  <style>  
    p.center {  
      text-align: center;  
      color: red;  
    }  
    p.large {  
      font-size: 30px;  
    }  
  </style>  
</head>  
<body>  
  <p class="center large">This paragraph refers to two classes.</p>  
</body>  
</html>
```

2. ID :

- The **#id** selector styles the element with the specified id.
- Syntax :

```
#id {  
    css declarations;  
}
```

- Example :

```
<html>  
<head>  
    <style>  
        #firstname {  
            font-size: 25px;  
            color: blue;  
        }  
    </style>  
</head>  
<body>  
    <p id="firstname">This paragraph refers to two classes.</p>  
</body>  
</html>
```

CSS Font Properties

- The CSS font properties allow you to change the font family, boldness, size and the style of a text.

[1] Font-family Property

[2] Font-style Property

[3] Font-weight Property

[4] Font-size Property

[5] Font-variant Property

1. Font-family :

- The **font-family** property specifies the font for an element.
- There are two types of font family names:
 - **family-name** - The name of a font-family, like "times", "courier", "arial", etc.
 - **generic-family** - The name of a generic-family, like "serif", "sans-serif", "cursive", "fantasy", "monospace".
- Syntax :

font-family: *family-name|generic-family*

- Example :

```
<html>
<head>
  <style>
    p {
      font-family: "calibri", Times, serif;
    }
  </style>
</head>
<body>
  <h1>The font-family Property</h1>
  <p>This is a paragraph, shown in the Times New Roman font.</p>
</body>
</html>
```

2. Font-style :

- The **font-style** property specifies the font style for a text.
- Syntax :

font-style: normal | italic | oblique;

- Example :

```
<html>
<head>
  <style>
    p {
      font-style: italic;
    }
  </style>
</head>
<body>
  <h1>The font-family Property</h1>
  <p>This is a paragraph, shown in the Times New Roman font.</p>
</body>
</html>
```

3. Font-weight :

- The **font-weight** property sets how thick or thin characters in text should be displayed.
- Syntax :

font-weight: normal | bold | bolder | lighter | number

- Example :

```
<html>
<head>
  <style>
    p {
      font-weight: bold;
    }
  </style>
</head>
<body>
  <p>This is a paragraph.</p>
</body>
</html>
```


4. Font-size :

- The `font-size` property sets the size of a font.
- Syntax :

`font-size` : medium | xx-small | x-small | small | large | x-large |
xx-large | smaller | larger | length | % | px

- Example :

```
<html>
<head>
  <style>
    p { font-size: xx-large; }
    font { font-size: xx-small; }
  </style>
</head>
<body>
  <p>This is a xx-large paragraph.</p>
  <font>This is a xx-small paragraph.</font>
</body>
</html>
```

5. Font-variant :

- In a small-caps font, all lowercase letters are converted to uppercase letters.
- Syntax :

`font-variant` : normal | small-caps

- Example :

```
<html>
<head>
  <style>
    h1 { font-variant: small-caps; }
  </style>
</head>
<body>
  <h1> Play with the two different font variants!</h1>
</body>
</html>
```

CSS Text Properties

- The CSS text properties allow you to change the appearance of text.
- It is possible to change the color of text, increase or decrease the space between characters in a text, align a text, decorate a text, indent the first line in a text and more.

[1] Color Property

[2] Text-align Property

[3] Text-decoration Property

[4] Text-transform Property

[5] Word-spacing Property

[6] Letter-spacing Property

1. Color :

- The `color` property specifies the color of text.
- Syntax :

Color : colorname;

- Example :

```
<html>
<head>
  <style>
    body { color: red; }
    h1 { color: #00ff00; }
    font { color: rgb(0,0,255); }
  </style>
</head>
<body>
  <h1>This is heading 1</h1>
```

```
<p>This is an ordinary paragraph. Notice that this text is red. The
default text-color for a page is defined in the body selector.</p>
```

```
<font>This is a paragraph with font. This text is blue.</font>
</body>
</html>
```

2. Text-align :

- The `text-align` property specifies the horizontal alignment of text in an element.
- Syntax :

`text-align: left | right | center | justify ;`

- Example :

```
<html>
<head>
  <style>
    p { text-align: center; }
  </style>
</head>
<body>
```

`<p>`This is an ordinary paragraph. Notice that this text is red. The default text-color for a page is defined in the body selector.`</p>`

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

3. Text-decoration :

- The `text-decoration` property specifies the decoration added to text, and is a shorthand property for.
 - text-decoration-line (required)
 - text-decoration-color
 - text-decoration-style
- Syntax :

`text-decoration: [text-decoration-line] [text-decoration-color] [text-decoration-style];`

- Example :

```
<html>
<head>
  <style>
    h1 { text-decoration: overline; }
    h2 { text-decoration: line-through; }
    h3 { text-decoration: underline; }
    h4 { text-decoration: underline overline; }
```

```

        </style>
    </head>
    <body>

        <h1>This is heading 1</h1>
        <h2>This is heading 2</h2>
        <h3>This is heading 3</h3>
        <h4>This is heading 4</h4>

    </body>
</html>

```

4. Text-transform :

- The `text-transform` property controls the capitalization of text.
- Syntax :

`text-transform` : none | capitalize | uppercase | lowercase

- Example :

```

<html>
<head>
    <style>
        h1 { text-transform : capitalize; }
        h2 { text-transform : uppercase; }
        h3 { text-transform : lowercase; }
    </style>
</head>
<body>

    <h1>This is capitalize text.</h1>
    <h2>This is uppercase text.</h2>
    <h3>This is lowercase.</h3>

</body>
</html>

```

5. Word-spacing :

- The `word-spacing` property increases or decreases the white space between words.
- Syntax :

`text-spacing` : normal | *length*

- Example :

```
<html>
<head>
  <style>
    p { word-spacing: 30px; }
  </style>
</head>
<body>
  <p>This is some text. This is some text.</p>
</body>
</html>
```

6. letter-spacing :

- The `letter-spacing` property increases or decreases the space between characters in a text.
- Syntax :

`Letter-spacing` : normal | *length*

- Example :

```
<html>
<head>
  <style>
    p { letter-spacing: 5px; }
  </style>
</head>
<body>
  <p>This is some text. This is some text.</p>
</body>
</html>
```

CSS Background Properties

- The CSS Background properties allow you to control the background color of an element.
- Set an image as the background, repeat a background image, vertically or horizontally and position an image on a page.

[1] Background-color Property

[2] Background-image Property

[3] Background-repeat Property

[4] Background-attachment Property

[5] Background-position Property

1. Background-color :

- The **background-color** property sets the background color of an element.
- Syntax :

background-color: color | transparent;

- Example :

```
<html>
<head>
  <style>
    body { background-color: orange; } OR
    body { background-color: #ff9900; } OR
    body { background-color: rgb(255,130,255); }
  </style>
</head>
<body>

  <h1>The background-color Property</h1>
  <p>The background color can be specified with a color name.</p>

</body>
</html>
```

2. Background-image :

- The **background-image** property sets one or more background images for an element.
- By default, a background-image is placed at the top-left corner of an element, and repeated both vertically and horizontally.
- Syntax :

background-image: URL | none;

- Example :

```
<html>
<head>
  <style>
    body { background-color: url("nature.jpg"); }
  </style>
</head>
<body>

  <h1>The background-image Property</h1>
  <p>Hello World!</p>

</body>
</html>
```

3. Background-repeat :

- The **background-repeat** property sets if/how a background image will be repeated.
- By default, a background-image is repeated both vertically and horizontally.
- Syntax :

background-repeat: repeat | repeat-x | repeat-y | no-repeat;

Value	Description
repeat	The background image is repeated both vertically and horizontally
repeat-x	The background image is repeated only horizontally
repeat-y	The background image is repeated only vertically
no-repeat	The background-image is not repeated. The image will only be shown once

- Example :

```

<html>
<head>
  <style>
    body {
      background-color: url("pattern.jpg");
      background-repeat: no-repeat;
    }
  </style>
</head>
<body>

  <h1>The background-repeat Property</h1>
  <p> Here, the background image is repeated only vertically.</p>

</body>
</html>

```

4. Background-attachment :

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

background-attachment: scroll | fixed;

Value	Description
scroll	The background image will scroll with the page. This is default
fixed	The background image will not scroll with the page

- Example :

```

<html>
<head>
  <style>
    body {
      background-color: url("pattern.jpg");
      background-repeat: no-repeat;
      background-attachment: fixed;
    }
  </style>
</head>
<body>

```



```

        </style>
    </head>
    <body>

        <h1>The background-attachment Property</h1>
        <p> The background-image is fixed. Try to scroll down the
        page..</p>
        .
        .
        .
        <p> The background-image is fixed. Try to scroll down the
        page..</p>

    </body>
</html>

```

5. Background-position :

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

background-position: value;

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%.
xpos ypos	The first value is the horizontal position and the second value is the vertical. The top left corner is 0 0.

- Example :

```
<html>
<head>
  <style>
    body {
      background-color: url("pattern.jpg");
      background-repeat: repeat;
      background-position: center bottom;
    }
  </style>
</head>
<body>

  <h1>The background-repeat Property</h1>
  <p> Here, the background image is repeated only vertically.</p>

</body>
</html>
```

CSS List-style Properties

- The **list-style** property is a shorthand for the following properties:
 - list-style-type
 - list-style-position
 - list-style-image
- Syntax :

`list-style: list-style-type list-style-position list-style-image;`

1. List-style-type :

- The **list-style-type** specifies the type of list-item marker in a list.
- Syntax :

`list-style-type: value;`

Value	Description
none	No marker is shown
disc	Default value. The marker is a filled circle
circle	The marker is a circle
square	The marker is a square
decimal	The marker is a number
lower-alpha	The marker is lower-alpha (a, b, c, d, e, etc.)
lower-greek	The marker is lower-greek
lower-latin	The marker is lower-latin (a, b, c, d, e, etc.)
lower-roman	The marker is lower-roman (i, ii, iii, iv, v, etc.)
upper-alpha	The marker is upper-alpha (A, B, C, D, E, etc.)
upper-greek	The marker is upper-greek
upper-latin	The marker is upper-latin (A, B, C, D, E, etc.)
upper-roman	The marker is upper-roman (I, II, III, IV, V, etc.)
almenian	The marker is traditional Armenian numbering

- Example :

```
<html>
<head>
  <style>
    ul {
      list-style-type: decimal;
    }
  </style>
</head>
<body>
  <ul>
    <li>Coffee</li>
    <li>Tea</li>
    <li>Coca Cola</li>
  </ul>
</body>
</html>
```

2. List-style-position :

- The **list-style-position** property specifies the position of the list-item markers (bullet points).
- Syntax :

list-style-position: inside | outside;

1. **inside** : The bullet points will be inside the list item
2. **outside** : The bullet points will be outside the list item. This is default

- Example :

```
<html>
<head>
  <style>
    ul {
      list-style-position: inside;
    }
  </style>
</head>
<body>
```

```

        <ul>
            <li>Coffee</li>
            <li>Tea</li>
            <li>Coca Cola</li>
        </ul>
    </body>
</html>

```

3. List-style-image :

- The **list-style-image** property replaces the list-item marker with an image.
- Syntax :

list-style-image: none | URL;

- Example :

```

<html>
<head>
    <style>
        ul {
            list-style-image: url('square.png');
        }
    </style>
</head>
<body>
    <ul>
        <li>Coffee</li>
        <li>Tea</li>
        <li>Coca Cola</li>
    </ul>
</body>
</html>

```

CSS Padding Properties

- An element's padding is the space between its content and its border.
- This 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
- `padding-top: 10px;`
- `padding-bottom: 10px;`
- `padding-left: 10px;`
- `padding-right: 10px;`
- **Note:** Negative values are not allowed.

- Syntax:

padding: length;

- *length* - specifies a padding in px, pt, cm, etc.
- % - specifies a padding in % of the width of the containing element.

- Example:

```
<html>
<head>
  <style>
    p {
      padding: 70px;
    }
  </style>
</head>
<body>
  <p>
    This element has a padding of 70px.
  </p>
</body>
</html>
```

CSS Margin Properties

- The CSS **margin** properties are used to create space around elements, outside of any defined borders.
- This property can have from one to four values.
 - **If the margin property has four values:**
 - **margin** :10px 5px 15px 20px;
 - top margin is 10px
 - right margin is 5px
 - bottom margin is 15px
 - left margin is 20px
 - **If the margin property has three values:**
 - **margin** :10px 5px 15px;
 - top margin is 10px
 - right and left margin are 5px
 - bottom margin is 15px
 - **If the margin property has two values:**
 - **margin** :10px 5px;
 - top and bottom margin are 10px
 - right and left margin are 5px
 - **If the margin property has one value:**
 - **margin** :10px;
 - all four margin are 10px
- **margin-top**: 10px;
- **margin-bottom**: 10px;
- **margin-left**: 10px;
- **margin-right**: 10px;
- **Note**: Negative values are allowed.

- Syntax:

margin: length | auto;

- *length* - specifies a padding in px, pt, cm, etc.
 - *%* - specifies a padding in % of the width of the containing element.
 - *Auto* - The browser calculates a margin
- Example:

```
<html>
<head>
  <style>
    p {
      margin: 30px;
    }
  </style>
</head>
<body>
  <p>
    This element has a margin of 30px.
  </p>
  <p>
    This element has a margin of 30px.
  </p>
</body>
</html>
```

CSS Border Properties

- The CSS **border** properties allow you to specify the style, width, and color of an element's border.
- The border property is a shorthand property for:
 - border-width
 - border-style (required)
 - border-color
- Syntax :

border: border-width border-style border-color;

1. Border-width :

- The **border-width** property sets the width of an element's four borders. This property can have from one to four values.
- The width can be set as a specific size (in px, pt, cm, em, etc) or by using one of the three pre-defined values: thin, medium, or thick.
- Syntax:

border-width: medium | thin | thick | *length*;

- **If the border-style property has four values:**

- **border-width**: thin medium thick 10px;
 - top border is thin
 - right border is medium
 - bottom border is thick
 - left border is 10px

- **If the border-style property has three values:**

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

- If the border-style property has two values:
 - border-width: thin medium;
 - top and bottom borders are thin
 - right and left borders are medium
- If the border-style property has one values:
 - border-width: thin;
 - all four borders are thin
- border-top-width: 10px;
- border-bottom-width: 10px;
- border-left-width: 10px;
- border-right-width: 10px;
- Example : **HTML Code :**

```
<html>
<head>
  <style>
    p {
      border-style: solid;
      border-width: thin 20px medium;
    }
  </style>
</head>
<body>

  <p>Some Text Here.</p>

</body>
</html>
```

2. Border-style :

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

border-style: none | hidden | dotted | dashed | solid | double | groove | ridge | inset | outset;

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

- **If the border-style property has four values:**
 - **border-style:** dotted solid double dashed;
 - top border is dotted
 - right border is solid
 - bottom border is double
 - left border is dashed
- **If the border-style property has three values:**
 - **border-style:** dotted solid double;
 - top border is dotted
 - right and left borders are solid
 - bottom border is double
- **If the border-style property has two values:**
 - **border-style:** dotted solid;
 - top and bottom borders are dotted
 - right and left borders are solid

- If the **border-style** property has one values:
 - **border-style**: dotted;
 - all four borders are dotted
- **border-top-style**: dotted;
- **border-bottom-style**: dashed;
- **border-left-style**: double;
- **border-right-style**: solid;
- Example : **HTML Code** :

```

<html>
<head>
  <style>
    p {
      border-style: dotted;
    }
  </style>
</head>
<body>

  <p>Some Text Here.</p>

</body>
</html>

```

3. Border-color :

- The **border-color** property is used to set the color of the four borders.
- The color can be set by:
 - ✓ name - specify a color name, like "red"
 - ✓ HEX - specify a HEX value, like "#ff0000"
 - ✓ RGB - specify a RGB value, like "rgb(255,0,0)"
 - ✓ transparent
- Syntax:

border-color: color | transparent;

- If the **border-color** property has four values:
 - **border-color**: red green blue pink;

- top border is red
- right border is green
- bottom border is blue
- left border is pink
- **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
- **If the border-color property has two values:**
 - **border-color:** red green;
 - top and bottom borders are red
 - right and left borders are green
- **If the border-color property has one value:**
 - **border-color:** red;
 - all four borders are red
- **border-top-color:** red;
- **border-bottom-color:** green;
- **border-left-color:** blue;
- **border-right-color:** cyan;
- Example : **HTML Code :**

```

<html>
<head>
  <style>
    p {
      border-color: red;
    }
  </style>
</head>
<body>
  <p>Some Text Here.</p>
</body>
</html>

```

CSS3 Background-Gradients Properties

- CSS3 gradients let you display smooth transitions between two or more specified colors.
- CSS3 defines two types of gradients:
 - **Linear Gradients** (goes down/up/left/right/diagonally)
 - **Radial Gradients** (defined by their center)

1. Linear Gradients:

- To create a linear gradient you must define at least two color stops.
- Color stops are the colors you want to render smooth transitions among.
- You can also set a starting point and a direction (or an angle) along with the gradient effect.
- Syntax :

background: linear-gradient(direction, color-stop1, color-stop2, ...);

- Example :

```
<html>
<head>
  <style>
    div { height: 300px; }
    div.simple { background: linear-gradient(red, yellow); }
    div.side { background: linear-gradient(to right, red , yellow); }
    div.angle { background: linear-gradient(45deg, red , yellow); }
  </style>
</head>
<body>
  <div class="simple">Some Text Here.</div>
  <div class="side">Some Text Here.</div>
  <div class="angle">Some Text Here.</div>
</body>
</html>
```

2. Radial Gradients:

- A radial gradient is defined by its center.
- To create a radial gradient you must also define at least two color stops.
- Syntax :

background: radial-gradient(*shape size at position, start-color, ..., last-color*);

- Example :

```
<html>
<head>
  <style>
    div { height: 300px; }
    div.simple { background: radial-gradient(red, yellow, green); }
    div.stops { background: radial-gradient(red 5%, yellow 15%, green
60%) ; }
    div.shape { background: radial-gradient(circle, red , yellow, green);
    }
  </style>
</head>
<body>
  <div class="simple">Some Text Here.</div>
  <div class="stops">Some Text Here.</div>
  <div class="shape">Some Text Here.</div>
</body>
</html>
```


CSS3 Shadow Properties

- With CSS3 you can add shadow to text and to elements.
- In this chapter you will learn about the following properties:

1. text-shadow

2. box-shadow

1. text-shadow:

- The CSS3 text-shadow property applies shadow to text.
- Syntax :

text-shadow: x y blur color;

- Example :

```
<html>
<head>
  <style>
    div.simple { text-shadow: 0 0 3px #FF0000; }
    div.multiple { text-shadow: 0 0 3px #FF0000, 0 0 5px #0000FF; }
  </style>
</head>
<body>
  <div class="simple">Some Text Here.</div>
  <div class="multiple">Some Text Here.</div>
</body>
</html>
```

2. box-shadow:

- The CSS3 box-shadow property applies shadow to elements.
- Syntax :

box-shadow: x y blur color;

- Example :

```
<html>
<head>
  <style>
    div {
      height: 300px; box-shadow: 10px 10px 5px gray; }
  </style>
</head>
```

```

<body>
    <div>Some Text Here.</div>
</body>
</html>

```

CSS3 2D/3D Transforms Properties

- CSS3 transforms allow you to translate, rotate, scale, and skew elements.
- A transformation is an effect that lets an element change shape, size and position.
- CSS3 supports 2D and 3D transformations.

1. **translate()**

2. **rotate()** => **rotateX()**, **rotateY()**

3. **scale()**

4. **skew()**

1. **translate:**

- The **translate()** method moves an element from its current position (according to the parameters given for the X-axis and the Y-axis).

- Syntax :

```
transform: translate(x, y);
```

- Example :

```

<html>
<head>
    <style>
        div {
            width: 200px;
            height: 200px;
            background-color: red;
            transform: translate(50px, 100px); }
    </style>
</head>
<body>
    <div>Transformed Element</div>
</body>
</html>

```

2. rotate:

- The rotate() method rotates an element clockwise or counter-clockwise according to a given degree.

- Syntax :

transform: rotate(deg);

- Example :

```
<html>
<head>
  <style>
    div {
      width: 200px;
      height: 200px;
      background-color: red;
      transform: rotate(45deg); }
  </style>
</head>
<body>
  <div>Transformed Element</div>
</body>
</html>
```

3. Scale:

- The scale() method increases or decreases the size of an element (according to the parameters given for the width and height).

- Syntax :

transform: scale(x, y);

- Example :

```
<html>
<head>
  <style>
    div {
      width: 200px;
      height: 200px;
      background-color: red;
      transform: scale(2, 3); }
```

```

        </style>
    </head>
    <body>
        <div>Transformed Element</div>
    </body>
</html>

```

4. skew:

- The skew() method skews an element along the X-axis and Y-axis by the given angle.

- Syntax :

```
transform: skew(x, y);
```

- Example :

```

<html>
<head>
    <style>
        div {
            width: 200px;
            height: 200px;
            background-color: red;
            transform: skew(20deg, 10deg); }
    </style>
</head>
<body>
    <div>Transformed Element</div>
</body>
</html>

```

CSS3 Transition Properties

- To create a transition effect, you must specify two things:
 - the CSS property you want to add an effect to
 - the duration of the effect
- Example :

```
<!DOCTYPE html>
<html>
<head>
<style>
    .div1 {
        width: 100px;
        height: 100px;
        background: red;
        transition: width 2s;
    }
    .div1:hover {
        width: 300px;
    }
</style>
</head>
<body>
```

`<div class="div1">` Hover over the div element above, to see the transition effect.`</div>`

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

CSS3 Position Properties

- The position property specifies the type of positioning method used for an element.
- There are four different position values:
 - **static**
 - **relative**
 - **fixed**
 - **absolute**
- **Example:**
 - HTML elements are positioned static by default.
 - Static positioned elements are not affected by the top, bottom, left, and right properties.

```
<!DOCTYPE html>
<html>
<head>
<style>
    div.static {
        border: 2px green solid;
        position: static;
    }
    div.relative {
        border: 2px green solid;
        position: relative;
        left: 50px;
    }
    div.fixed {
        border: 2px green solid;
        position: fixed;
        right: 50px;
        bottom: 50px;
    }
    div.absolute {
        border: 2px green solid;
        position: absolute;
        top: 100px;
        left: 200px;
```

```
}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<div class="static"> This div element has position: static;</div>
```

```
<div class="relative"> This div element has position: relative;</div>
```

```
<div class="fixed"> This div element has position: static;</div>
```

```
<div class="absolute"> This div element has position: static;</div>
```

```
</body>
```

```
</html>
```