

## Audio Content

The `<audio>` tag is used to embed sound content in a document, such as music or other audio streams:



### `<audio controls>`

```
<source src="horse.ogg" type="audio/ogg">
```

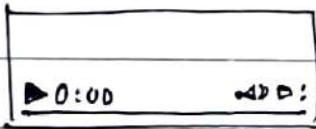
```
<source src="horse.mp3" type="audio/mpeg">
```

Your browser does not support the audio tag.

```
</audio>
```

## Video Content

The `<video>` tag is used to embed video content in a document, such as a movie clip or other video streams.



```
<video width="320" height="240" controls>
```

```
<source src="movie.mp4" type="video/mp4">
```

```
<source src="movie.ogv" type="video/ogv">
```

Your browser does not support the video tag.

```
</video>
```

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## CSS (Cascading Style Sheets)

- CSS is the acronym for "Cascading style sheet"
- It's a style sheet language used for describing the presentation of a document written in a markup language like HTML.
- CSS1 is the first version and the latest version is CSS4.
- CSS styles the website

color, size, layout, background, text, tables, images . . .

### CSS Syntax

```
selector {  
    property: value;  
}
```

→ Selector : CSS selectors are used to select the HTML element or groups of elements you want to style on a web page.

→ Property : A CSS property is characteristic of an HTML element that can be styled or modified using CSS such as color, font-size, or margin.

→ Value : Values are assigned to properties -

for example, color property can have value like red, blue, green etc.

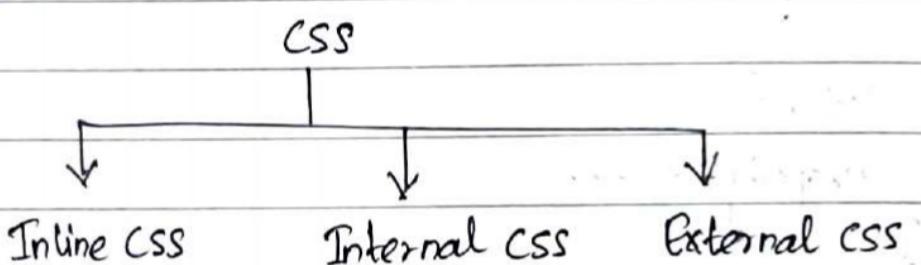
→ selector declaration

```
p {color: blue;}
```

↑              ↑  
property      value



## Different types of CSS (CSS Inclusion)



- CSS Inclusion is the way in which the css file can be included in the a html page.

- Inline CSS —

Inline CSS is applied directly to an HTML element using the style attribute.

```
<!DOCTYPE html>
<html>
<head>
<title> HTML frames </title>
</head>
<body>
<p style="color: red; font-size: 16px;">
This line is an in-line styled paragraph.
</p>
</body>
</html>
```

Output:

This line is an in-line styled paragraph → red color.

- Internal CSS -

Internal CSS is defined within the `<style>` tag inside the `<head>` section of an HTML document.

```

<!DOCTYPE html>
<html>
<head>
<title>
</head>
<body> <!DOCTYPE html>
<html>
<head>
<style>
  p {color:green; font-size:18px;}
</style>
</head>
<body>
<p>This line is styled using internal CSS.</p>
</body>
</html>

```

Output:

This line is styled using internal CSS. green color



## .. External CSS —

External CSS is written in a separate .css file and linked to the HTML document using the <link> tag. This is the recommended method for large projects as it improves maintainability.

<!-- HTML file -->

<head>

<link rel="stylesheet" href="style.css">

</head>

<body>

<p> This link is styled using external CSS. </p>

</body>

/\* style.css \*/

p { color: red; font-size: 20px; }

## Text styling (External CSS)

→ Open a new file and save it as style.css.

→ h1 (selector)

- text-align
- text-transform
- color
- font-family

→ p (paragraph)

- font-size
- font-family
- color
- text-transform

### inline.html

```
<!DOCTYPE html>
<html lang="en" dir="ltr">
<head>
  <link rel="stylesheet" href="style.css">
  <meta charset="utf-8">
  <title> </title>
</head>
<body>
  <h1> Text Styling </h1>
  <p> This is a paragraph </p>
  <p> This is a second paragraph </p>
</body>
</html>
```

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## style.css

```
body {
    background-color: #E4F2F2;
}
```

```
h1 {
    text-align: center;
    text-transform: uppercase;
    color: gold;
    font-family: serif;
}
```

```
p {
    font-size: 30px;
    font-family: fantasy;
    color: #FF8B17;
    text-transform: lowercase;
}
```

## Text formatting [Example for internal css]

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
    background-color: lightgrey;
    color: blue;
}

h1{
    background-color: black;
    color: white;
}

div{
    background-color: blue;
    color: white;
}

</style>
</head>
<body>
<h1>This is a heading </h1>
<p>This page has a grey background color <p>
    and all blue text

<div>This is a div </div>
</body>
</html>
```

## CSS fonts

→ font family : used to set the font face of the text on the webpage .

font-family : courier ; monospace ;

→ font size : css font-size property sets the size or height of the text .

font-size : 42 px ;

→ font style : css font-style property is used to style a font either with a normal, italic, or oblique face.

font-style : normal

→ font stretch : css font-stretch property is used to widen or narrow the text by allowing us to select a normal, expanded or condensed face from the font's family .

font-stretch : condensed ;

→ font variant : css font-variant is used to set the text to small-caps (uppercase letters but in smaller font size .

font-variant : small-caps ;

→ Font weight : css font-weight determines the lightness or boldness of the text. It can be specified by using numeric or pre-defined keywords such as bold, lighter.

`font-weight: bold;`

## Text formatting

→ Text Decoration : This property is used to decorate the appearance of text using various lines.

• It can be underline, overline, line-through and none.

~~text-decoration: underline;~~

→ Text Transform : css text-transform property is used to change the case of a text.

`text-transform: none | capitalize | uppercase | lowercase | initial | inherit;`

→ letter Spacing :

`letter-spacing: letter-spacing: 2px .`

`word-spacing: word-spacing: 6px ;`

`text-indent: text-indent: 40px ;`

`line-height: line-height: 2 ;`

→ text shadow :

css text-shadow property is used to add shadow to the text.

`h1 {text-shadow: 1px 1px 2px red;}`

→ **Text-align :** This property is used to horizontally align the text in an element.

**text-align :** left | right | center | justify

## CSS Borders

CSS Borders are used to add the visual border around the elements of the webpage.

h1 {

border: 8px solid blue;

}

→ **border-style :** specifies the styles of the border.

p {

background-color: yellow;

border-style: solid;

}

values: dotted, solid, dashed.

→ **border-width :** Sets the width of the border.

p {

background-color: yellow;

border-width: 5px;

}

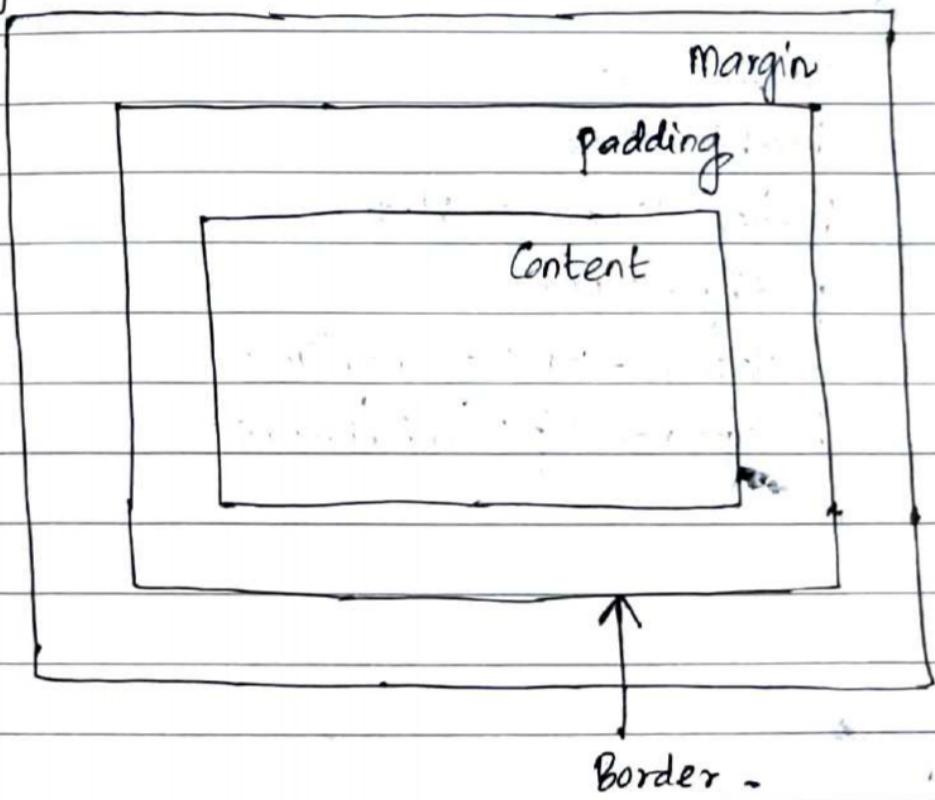
→ border-color :- Sets the color of the border  
border-color : blue;

→ border-radius :- adds the radius to make the rounded border corners.

border-radius : 12px;

## CSS : Box Model

- It is a fundamental concept that defines how the element's dimensions and spacing are calculated.
- It treats every HTML element as a rectangular box consisting of content, padding, border, and margin.



- Content : actual text or image that is displayed in the element.
- Padding : transparent space between the content and the border of an element.

- border : Line that surrounds the padding and content within the element.
- margin : transparent area added outside the border.

Code :

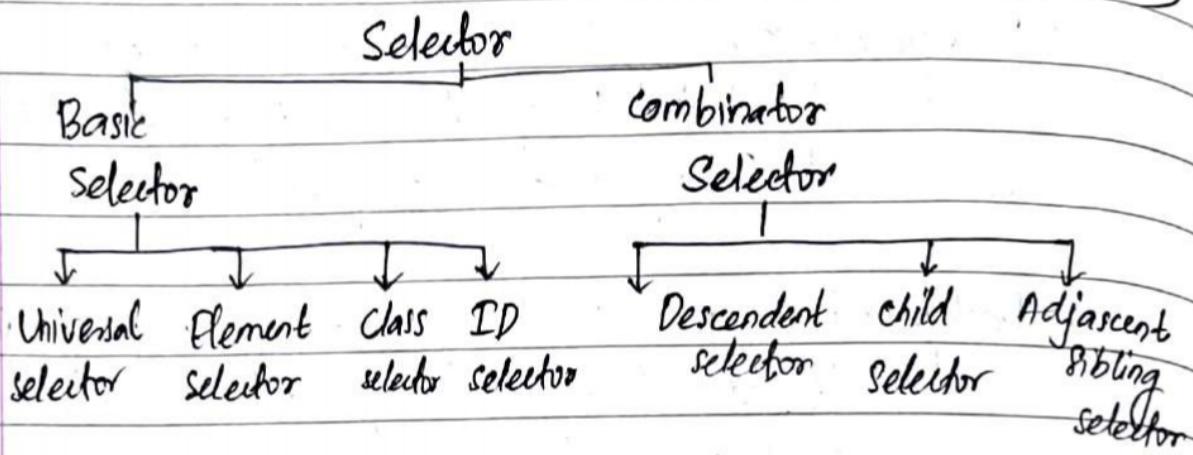
```
div {  
    width : 400 px;  
    height : 80 px;  
    border : 10 px solid black ;  
    padding : 15 px ;  
    background-color : green yellow ;  
    background-clip : content-box ;  
}
```



## CSS Background

- **Background-color :** CSS background-color property is used to set the background color in an element  
`h1 {background-color: orange;}`
- **background-image :** CSS background-image property is used to add a background image on an element or the webpage.

Types of CSS Selector (+) (An element in html can be considered as a selector)



### → Universal Selector [\*]

- represented by [\*]
- Selects all elements on the page and applies the same style universally.
- for example, setting the font color for every element

\* {

color: red;

}

### → Element Selector

- Targets all elements of a specific type such as paragraphs or headers.
- for example, setting a common font size for all paragraphs.

Example:

<style>

p {

font-size: 16px;

}

</style>

## → Class Selector (.)

- It applies styles to elements with a specific class attribute.
- for instance, making all buttons have a blue background.

Example:

<!DOCTYPE html>

<html>

<head>

<title> Class Selector Example </title>

<style>

• highlight {

color: white;

background-color: green;

padding: 10px;

border-radius: 8px;

font-size: 18px

}

</style>

</head>



<body>

<h1 class="highlight"> This heading is styled using a class selector </h1>

<p> This is a normal paragraph without styling. </p>

<p class="highlight"> This paragraph is also styled using the 'highlight' class </p>

</body>

</html>

## → ID Selector (#)

- Styles a single element identified by its unique id.
- For example, changing the background color of a header.

Example:

<!DOCTYPE html>

<html>

<head>

<title>ID Selector Example </title>

<style>

\*Special {

color: white;

background-color: darkred;

padding: 12px;

border-radius: 10px;  
 font-size: 20px;

}

</style>

</head>

<body>

<h1 id="special"> This heading is styled using an ID selector

<p> This paragraph is not styled.</p>

</body>

</html>

## → Descendent Selector

- Targets an element inside another, such as paragraphs inside div.
- For example, styling paragraph inside a div.

Example :

<!DOCTYPE html>

<html>

<head>

<style>

div p {

color: blue;

font-weight: bold;

}

</style>

</head>

<body>

<div>

<p> This paragraph is inside a div. It will be  
blue and bold </p>

</div>

</head>

</body>

</html>

## → Child Selector [>]:

- The child selector (>) selects all elements that are the children of a specified element.
- For example, styling direct children paragraphs of a div.

*p is a child of div*

```
div > p {
```

color: green;

font-weight: bold;

}

<div>

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

<h1>

<p> This is NOT a direct child paragraph. </p>

</h1>

</div>

The first <p> inside <div> will be styled because it is a direct child.

The second <p> inside <h1> will not be styled.

## → Adjacent Sibling Selector :[+]

- The + selector is used to select an element that is directly after another specific element.
- Used to target an element that is immediately preceded by a specific sibling element.

```
h1+p {
    color: blue;
    font-weight: bold;
}
```

<h1> Heading </h1>

<p> This paragraph will be styled </p>

<p> This paragraph will NOT be styled. </p>

The selector h1+p applies styles only to the first <p> immediately after an <h1>, not to other <p> elements.

## CSS Gradient

- CSS Gradients are the smooth transitions between two or more colors.
- They are used to decorate the background, borders and others elements on a webpage.

Two types : CSS Linear Gradient, CSS Radial Gradient.

→ CSS Linear Gradient:

css linear-gradient() function creates a smooth linear transition between two or more colors.

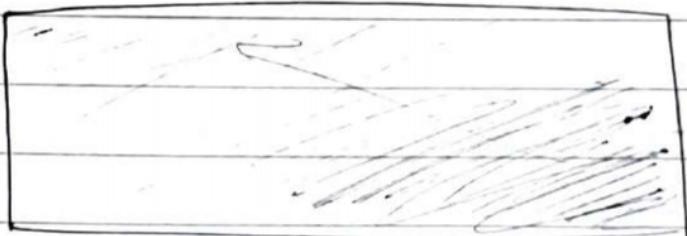
linear-gradient() a function that is used to create linear gradients.

```
div { height: 200px; background: linear-gradient  
      (orange, red); }
```

direction sets the direction of the linear gradient

Color 1 sets the first color in the linear gradient

Color 2 sets the second color in the linear gradient



## CSS Linear Gradient

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="stylesheet" href="style.css">
    <title> CSS Linear gradient </title>
  </head>
  <body>
    <h2> linear-gradient (to bottom, orange, red) </h2>
    <div class="box box1"> </div>
    <h2> linear-gradient (to top, orange, red) </h2>
    <div class="box box2"> </div>
    <h2> linear-gradient (to right, orange, red) </h2>
    <div class="box box3"> </div>
    <h2> linear-gradient (to left, orange, red) </h2>
    <div class="box box4"> </div>
  </body>
</html>
```

## style.css

div. box{

height: 100px;

border: 1px solid black;

margin-bottom: 20px;

}

/\* default direction of linear gradient \*/

div. box1 {

background-image: linear-gradient (to bottom, orange, red);

}

div. box2 {

/\* gradient flows from bottom to top \*/

background-image: linear-gradient (to top, orange, red);

}

div. box3 {

/\* gradient flows from left to right \*/

background-image: linear-gradient (to right, orange, red);

}

div. box4 {

/\* gradient flows from right to left \*/

background-image: linear-gradient (to left, orange, red);

}

`class = "box box1"` — The class attribute assigns one or more CSS class names to this `<div>`.

The box class might define common styles for all boxes.  
(e.g; width, height, border)

The box1 class might define specific styles for this particular box (e.g; color, background image).

## → CSS Radial Gradient

CSS `Radial-Gradient()` function creates a smooth color transition that expands from an origin.

- `shape` - defines the shape of the gradient
- `size` - defines the size of the shape
- `position` - defines the position of the center of the gradient in pixels or percentages.
- `start-color` - defines the starting color of the gradient
- `end-color` - defines the ending "

```

<!DOCTYPE html>
<html lang="en">
  <head>
    <link
      <title>
        </title>
    </head>
  <body>
    <h2>Radial gradient with ellipse </h2>
    <div class="ellipse"></div>
    <h2>Radial gradient with circle </h2>
    <div class="circle"></div>
  </body>
</html>

```

### style.css

```

div {
  height: 250px;
  width: 400px;
}

div.ellipse {
  background-image: radial-gradient(ellipse, blue, red);
}

div.circle {
  /* creates a circular radiant gradient */
  background-image: radial-gradient(circle, blue, red);
}

```

~~Essay~~

## CSS Transition, Transform and Animations

### → CSS Transform

CSS 2D transform property allows the rotation, translation, scale and skew of elements in a two-dimensional plane.

```
div { transform: rotate(20deg); }
```

Here, the rotate() function of the transform property rotates the div element with 20 degrees in the clockwise direction.

- translate() - moves an element both horizontally and vertically.
- rotate() - rotates an element in either clockwise or anti-clockwise direction.
- scale() - increases or decreases the size of an element.
- skew() - distorts an element by tilting along x and/or y-axes.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<link rel="stylesheet" href="style.css" />
<title> CSS 2D Translate </title>
</head>
<body>
<p> Original </p>
```

```

<div></div>
<p> transform: translate (60px, 20px) </p>
<div class="translate"></div>
</body>
</html>

```

### style.css

/\* style both divs \*/

```

div{
    width: 60px;
    height: 50px;
    background-color: red;
    border: 1px solid black;
}

```

}

/\* translates the div 60px horizontally and 20px vertically \*/

div.translate {

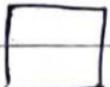
transform: translate (60px, 20px);

}

output:



original



transform: translate (60px, 20px)

```
<!DOCTYPE html>
<html>
<head>
<style>
.a{
width: 150px;
height: 80px;
background-color: yellow;
transform: rotate(20deg);
}
.b{
width: 150px;
height: 80px;
background-color: yellow;
transform: skewY(20deg);
}
.c{
width: 150px;
height: 80px;
background-color: yellow;
transform: scaleY(1.5);
}
</style>
</head>
```

<body>

<h1> The transform property </h1>

<h2> transform: rotate(20deg); </h2>

<div class="a"> Hello World! </div>

<br>

<h2> transform: skewY(20deg); </h2>

<div class="b"> Hello World! </div>

<br>

<h2> transform: scaleY(1.5); </h2>

<div class="c"> Hello World! </div>

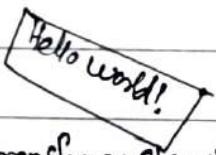
</body>

</html>

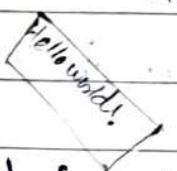
## Output

The transform property.

transform: rotate(20deg);



transform: skewY(20deg);



transform: scaleY(1.5);



## CSS Transition

CSS Transition allows you to change the property values smoothly over a given duration.

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<style>
```

```
div {
```

```
    width: 100px;
```

```
    height: 100px;
```

```
    background: red;
```

```
    transition: width 2s;
```

```
}
```

```
div:hover {
```

```
    width: 300px;
```

```
    height: 300px;
```

```
</style>
```

```
<head>
```

```
<body>
```

```
<h1>The transition property </h1>
```

```
<p>Hover over the div element below, to see the transition effect:</p>
```

```
<div></div>
```

```
</body>
```

```
</html>
```

## CSS Animation

CSS Animations control the movement and appearance of elements on web pages.

- Use @keyframes to define the animation steps
- Apply animations with properties like animation-name and animation-duration.
- Control the animation flow using animation-timing-function and animation-delay.

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

```
width:100px;
height:100px;
background-color:red;
animation-name:example;
animation-duration:4s;
```

```
}
```

```
@keyframes example{
from{background-color:red;}
to{background-color:yellow;}
```

```
}
```

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

<body>

<h1> CSS Animation </h1>

<div></div>

<p><b> Note: </b> when an animation is finished, it goes back to its original style </p>

</body>

</html>

<!DOCTYPE html>

<html>

<head>

<style>

div {

width: 100px;

height: 100px;

background: red;

position: relative;

animation: mymove 5s infinite;

animation-timing-function: linear;

}

@keyframes mymove {

from {left: 0px;}

to {left: 200px;}

}

</style>

</head>

<body>

<h1> the animation-timing-function property </h1>

<p> Play an animation with the same speed from beginning to end; </p>  
<div></div>  
</body>  
</html>

- ease : slow start, faster in middle, slow end -
- ease-in : starts slow, then speeds up .
- ease-out : starts fast, then slows down .
- ease-in-out : slow at start and end , fast in middle .
- linear : same speed all alone .

## CSS Button

```
<!DOCTYPE html>
<html>
<head>
<style>
button {
background-color: #00AA6D;    Green
border: none;
color: white;
padding: 15px 32px;
text-align: center;
font-size: 16px;
margin: 4px 2px;
} cursor: pointer;
```

```

.button2 { background-color: #008CBA; }     blue
.button3 { background-color: #F44336; }     red
.button4 { background-color: #E7E7E7; color: black; }   grey
.button5 { background-color: #555555; }     black

```

</style>

</head>

<body>

<h2>Button colors - </h2>

<button class="button">Green </button>

<button class="button button2"> Blue </button>

<button class="button button3"> Red </button>

<button class="button button4"> Grey </button>

<button class="button button5"> Black </button>

</body>

</html>



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