
CSS3

Topics to be discussed.....

- Introduction
- Types Of CSS
- Box Model And Text Flow
- Grouping Or Nesting
- Pseudo-class, Pseudo-element
- Navigation Bar
- Image Manipulation
- Media Types
- Attribute Selectors, Borders, Gradients, Text Effect, Animations)

INTRODUCTION

- CSS stands for Cascading Style Sheets
- CSS describes how HTML elements are to be displayed on screen, paper, or in other media.
- It is a powerful process for adding styles in the Web pages.
- CSS is a style language that defines layout of HTML documents.
- For example CSS covers fonts, colors, margins, lines, height, width, background images, advanced positions and many other things.
- A CSS provides attributes that create dynamic effects.
- HTML is used to **structure content** while CSS is used for **formatting structured content**

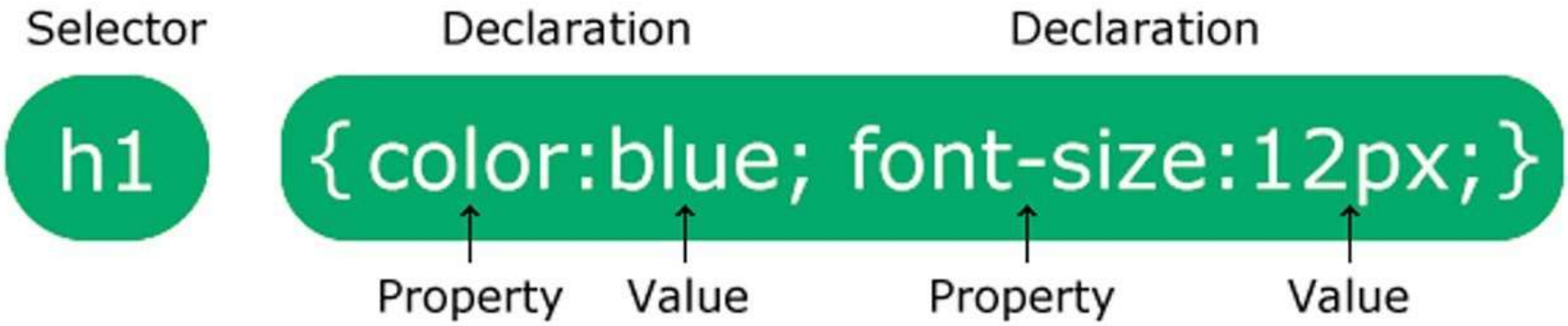
INTRODUCTION

- A CSS provides attributes that create dynamic effects.
- We can add CSS with <STYLE> tag.
- **Syntax:**

```
?style type= “text/css”>
selector {
        attribute: value;
        attribute: value;
        attribute: value;
        …… K
</style>
```

CSS syntax

- The CSS syntax is made up of three parts:
  - selector
  - property
  - value



Selector

- The selector is normally the HTML tag and the property is the attribute and each property can take a value and the property and value are separated by a colon and enclosed by curly braces.
- If the value is multiple words then put **quotes** around the value.
- If you wish to specify more than one property then you must separate each property with a **semi-colon.**

Property and values

- The property is the attribute and each property can take a value and the property and value are.
- Property / attributes are the thing that used to change the formatting of any object
- Values represent the value of attribute.

<STYLE> tag

- The Style tag is represented by the **<STYLE> and </STYLE>** tags.
- <STYLE> written between the **<HEAD> and </HEAD>** tags.
- Between the <STYLE> and </STYLE>, HTML tags and specific style attributes are listed.

Class selector
&
ID selector

Class Selector

- The class selector selects HTML elements with a specific class attribute.
- To select elements with a specific class:
  - write a **period (.)** character, followed by the class name.
- **Syntax:**

```
.class{
        // declarations of CSS
        }
```

ID Selector

- The id selector uses the id attribute of an HTML element to select a specific element.
- The id of an element is unique within a page.
- To select an element with a specific id:
  - write a **hash (#)** character, followed by the id of the element.
- **Syntax:**

```
#id{
        // declarations of CSS
    }
```

Class selector example

```
<html>
<head>
   <style>
      .ex1{
            text-align: center;
            color: blue;
            background-color: pink;
            }
     </style>
</head>
```

```
<body>
<p class = “ex1">
This paragraph will be affected.
</p>
</body>
</html>
```

OUTPUT:

This paragraph will be affected.

ID selector example

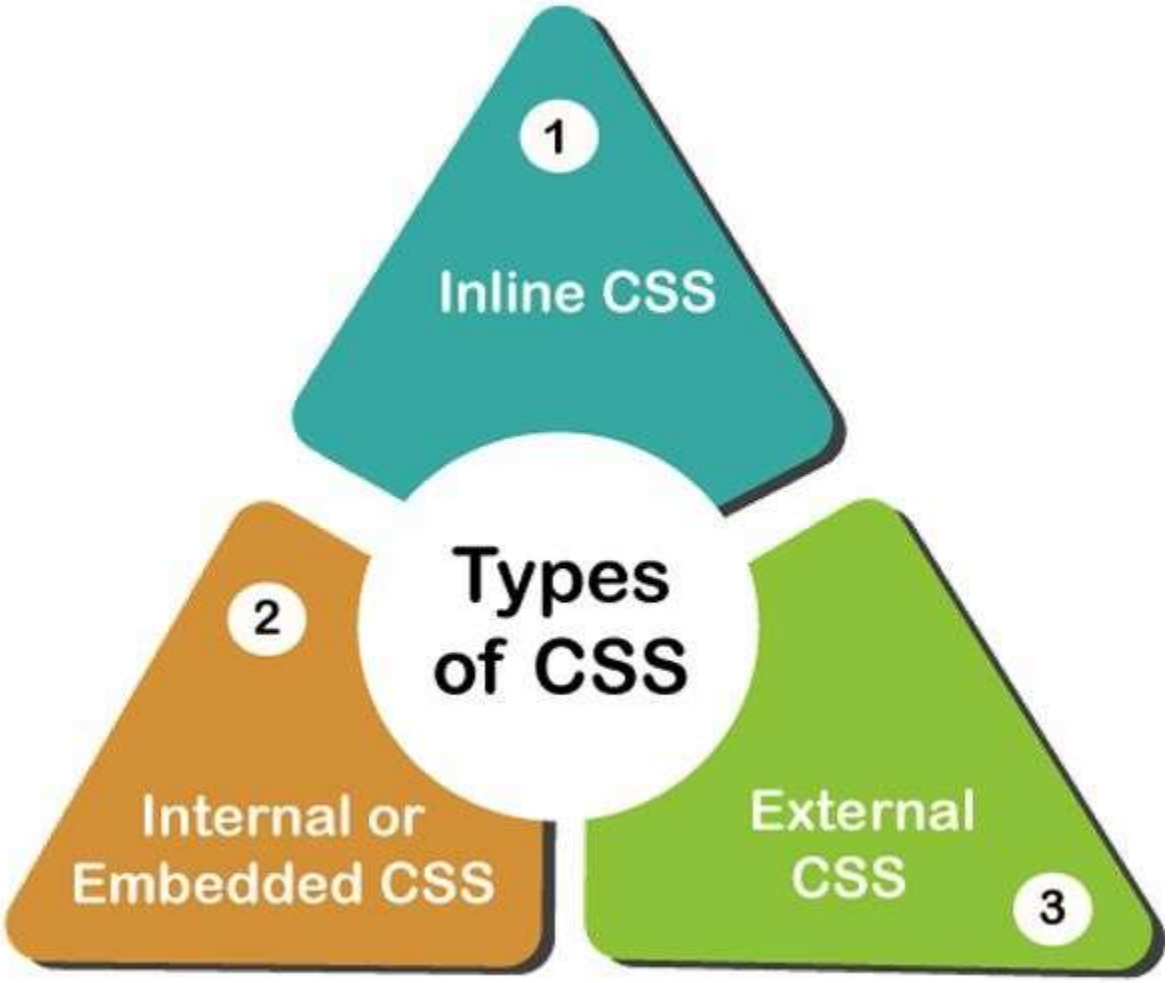
```
<html>
<head>
   <style>
      #para {
            text-align: center;
            color: blue;
            background-color: pink;
            }
    </style>
</head>
<body>
<p id = "para">
This paragraph will be affected.
</p>
</body>
</html>
```

OUTPUT:

This paragraph will be affected.

Types of CSS

Types of CSS


1
Inline CSS
Types of CSS
2
Internal or Embedded CSS
External CSS
3

Inline CSS

- The Inline style is specific to the tag itself.
- The inline style uses the HTML "*style*" attribute to style a specific tag.
- The Inline style is good for one an individual CSS change that you do not use repeatedly through the site.
- **Example:**

```
<p style="color:blue ;font-family:courier; ">INLINE CSS ?/p>
```

Internal CSS

- Internal styles are placed in <HEAD> section of a particular web page using <style> tag.
- These styles can be used only for the web page in which they are embedded.
- **Example:**

```
<html>
<head>
<style>
        p    {color: red;}
</style>
</head>
<body>
        <p>This is a paragraph.</p>
</body>
</html>
```

External CSS

- External style sheets are separate files full of CSS instructions
- Each page must link to the style sheet using the <link> tag. The <link> tag goes inside the head section.
- **Example:**

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

Style.css

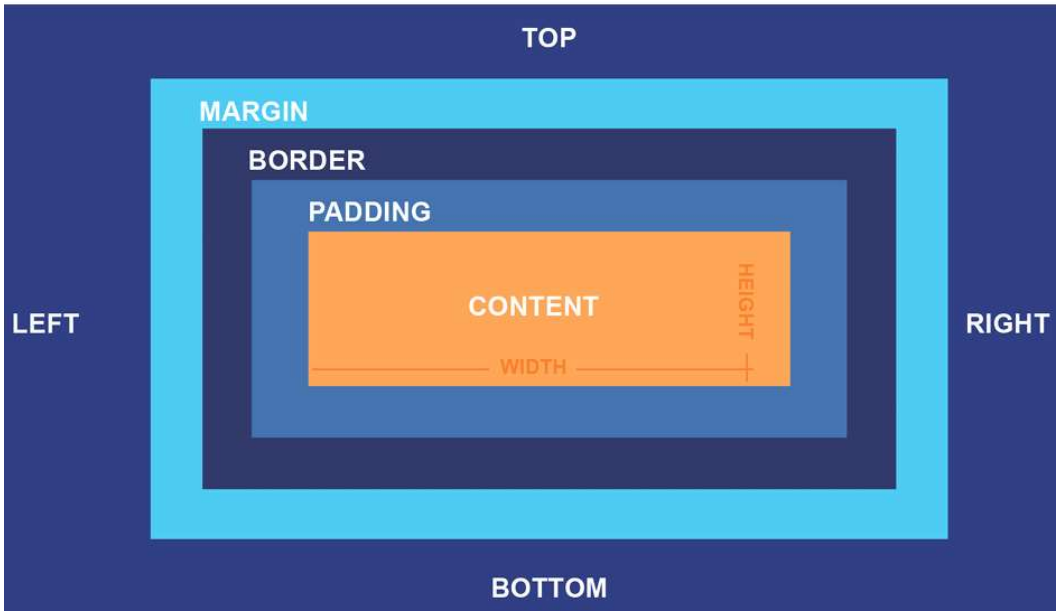
```
<html>
<head>
  <link rel="stylesheet" href="styles.css">
</head>
<body>
            <p>This is a paragraph.</p>

</body>
</html>
```

Box Model
And
Text Flow

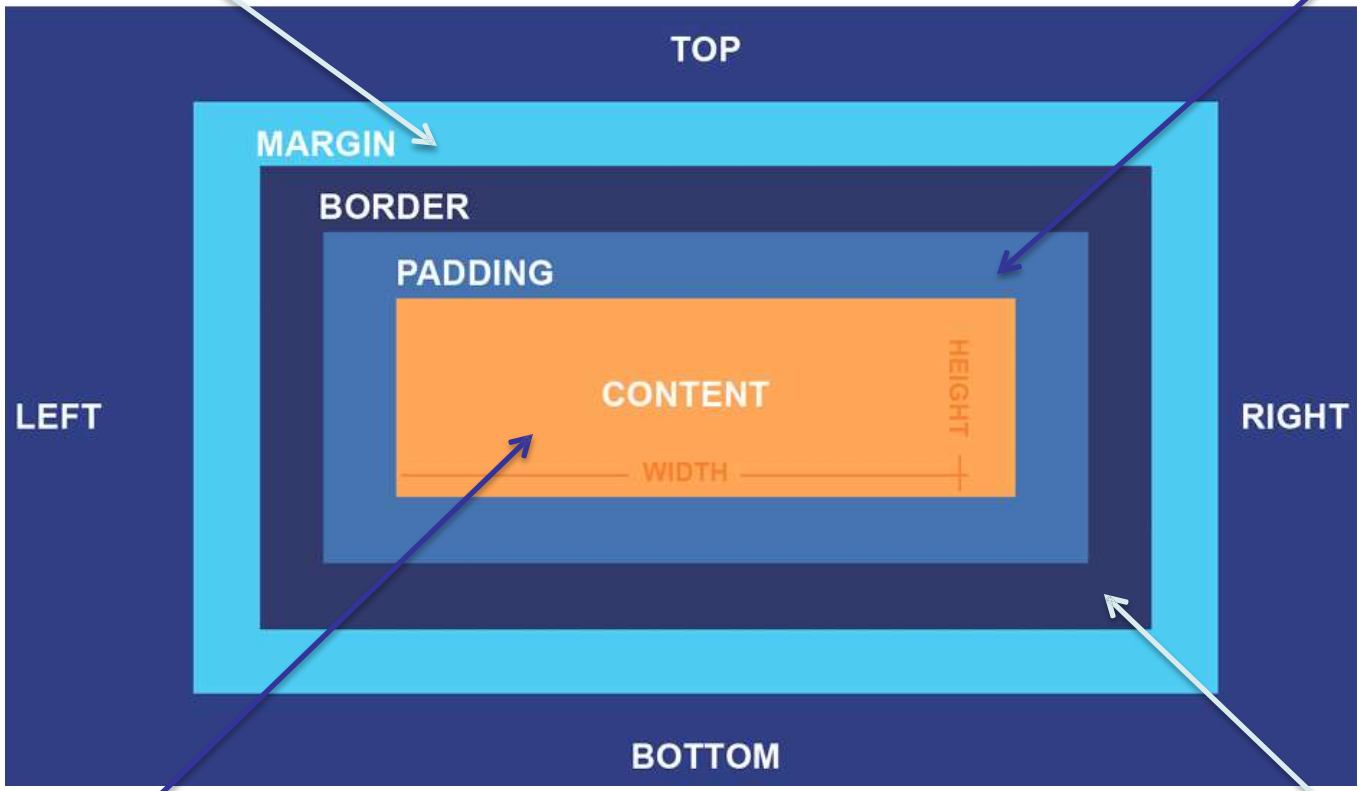
Box Model

- In CSS, the **box model** means every element is treated like a box.
- It means a box that wraps around every HTML element.
- It consists of: content, padding, borders and margins.



an area outside the border.

An area around the content



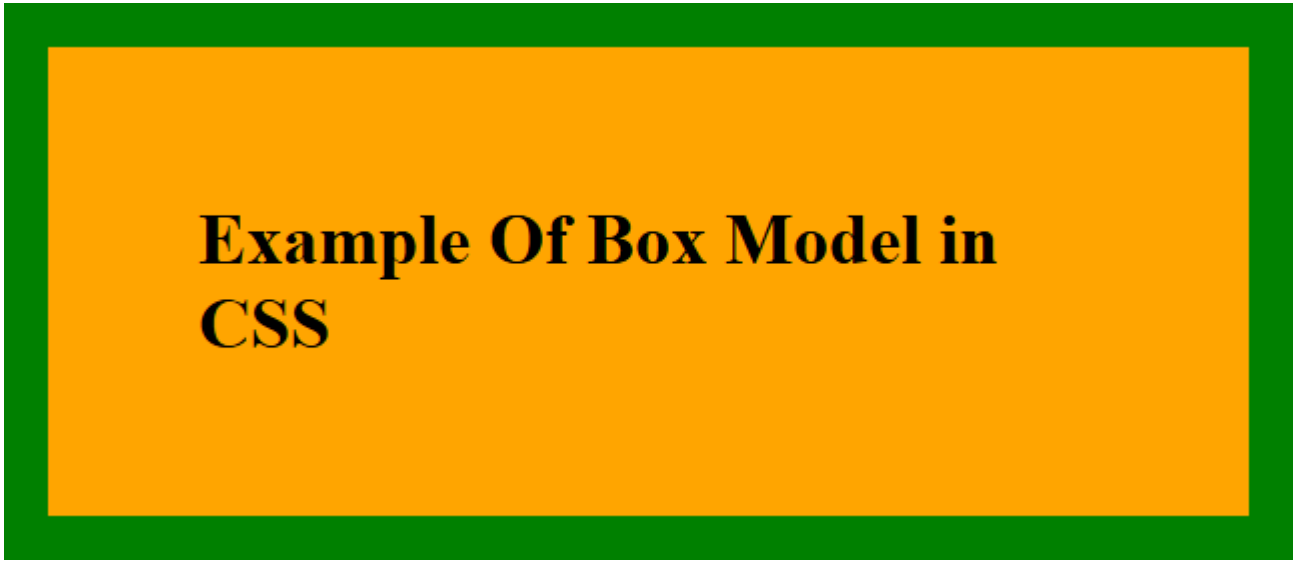
Content of the box – text , image

border around padding and content

Box Model attributes

Content	❑ The content consists of content like image, text, or other forms of media content. ❑ The height and width properties help to modify the box dimensions.
Padding	❑ An area around the content ❑ It can be applied to all sides of the box- **left, right, bottom, and top**.
Border	❑ The border area surrounds the padding and the content. ❑ It can be applied to all sides of the box- **left, right, bottom, and top**.
Margin	❑ Margin is an area outside the border. ❑ It is used to create space around an element. ❑ Use margin property of CSS.

Example



Example

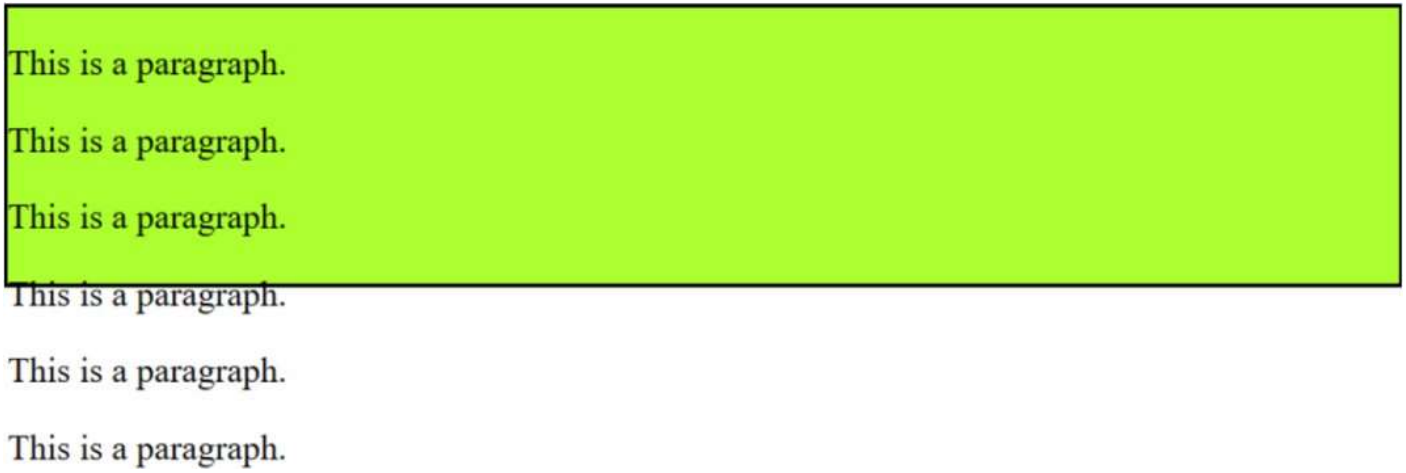
```
<html>
<head>
   <style>
      .a1{
            background-color: orange;
            width: 300px;
             border: 15px solid green;
            padding: 50px;
            }
     </style>
</head>
<body>

<h2 class=‘a1'>
Example Of Box Model in CSS
</h2>


</body>
<html>
```

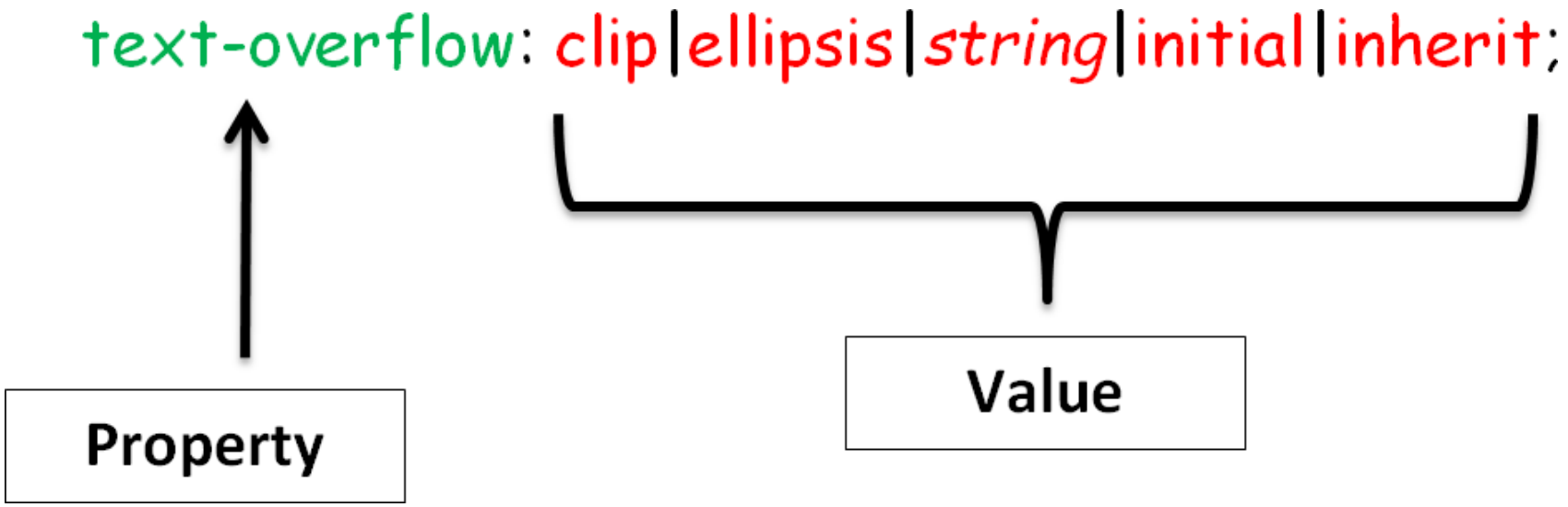
Text overflow

- The text-overflow property in CSS controls what happens when text overflows its container.
- It’s mainly used when text is too long to fit in a fixed-size box.
- To make text overflow its container, you have to set other CSS properties: overflow and white-space.



Text overflow

- Syntax:



Text overflow – clip

The text-overflow property in CSS controls what happens when text overflows its container.

The text-overflow property in CSS controls wh

Text-overflow: clip-> cut of the text

Text overflow – ellipsis

The text-overflow property in CSS controls what happens when text overflows its container.

The text-overflow property in CSS controls …

Text-overflow: ellipsis-> Adds "..." at the end to show that the text is cut off.

Text overflow – string

The text-overflow property in CSS controls what happens when text overflows its container.

The text-overflow property in CSS control-----

Text-overflow: string-> Adds your own string. (supported in firefox only)

Text-overflow values

Clip	❑ Default value. ❑ The text is cut-off if its overflow.
ellipsis	❑ Adds "**...**" at the end to show that the text is cut off..
String	❑ Adds string at the end to show that the text is cut off. ❑ Here you can set you own user define string
Initial	❑ Sets this property to its default value
inherit	❑ Inherits this property from its parent element.

Example

```
<html>
<head><style>
.p1
{       border:2px solid blue;
        white-space:nowrap;
        width:5px;
  }
.p2
{       border:2px solid blue;
        white-space:nowrap;
        width:20px;
        overflow:hidden;
        text-overflow:clip;
}
</style></head>
<Body>
<p class=“p1>
This is demo
</p>
<p class=“p2>
This is demo
</p>
</body>
</html>
```

Grouping Or Nesting

Groping

- In CSS, **grouping** means applying the same styles to multiple elements at once.
- Instead of writing separate rules for each element, you can list them together, separated by commas.
- This makes your code shorter and easier to manage.
- **Syntax:**

```
selector1, selector2, selectorN { property: value; }
```

Example

```
<html>
<head><style>
h1
{       border:2px solid blue;
        color:red;
        font-family:”courier”;
 }
h2
{       border:2px solid blue;
        color:red;
        font-family:”courier”;
}
</style></head>
<Body>
<h1>
        CSS Grouping & Nesting
</h1>
<h2>
        CSS Grouping & Nesting
</h2>

</body>
</html>
```

CSS Grouping & Nesting

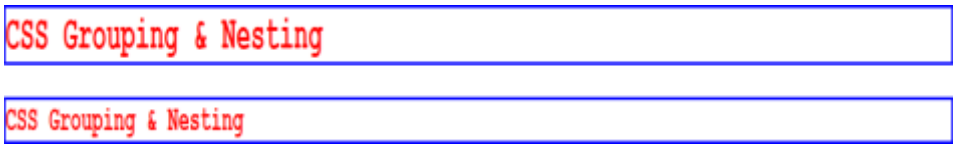
CSS Grouping & Nesting

Grouping Example

```
<html>
<head><style>
h1,h2
{       border:2px solid blue;
        color:red;
        font-family:”courier”;
 }
</style>
</head>
<Body>
<h1>
        CSS Grouping & Nesting
</h1>
<h2>
        CSS Grouping & Nesting
</h2>

</body>
</html>
```

OUTPUT:



Nesting

- The CSS nesting (&) selector is used to apply styles for an element within the context of another element.
- Nesting reduces the need to repeat selectors for related elements.
- **Syntax:**

```
Class selector1 class selector2 IDselector

{ property: value; }
```

Nesting Example

```
<html>
<head>
<style>
.box {
  border: 2px solid green;
  background-color: beige;
  font-size: 20px;
        a {
              color: red;
          }
}
</style>
</head>
<body>

<p class="box">

Demo of Nesting. For more
information :
<a href="#">Click Here</a>.

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

OUTPUT:

Pseudo-class, Pseudo-element

Pseudo class

- A pseudo-class styles an element based on its state or position.
- It help style specific elements.
- They provide more flexibility and interactivity in CSS without needing to modify the HTML structure.
- Names of the pseudo-class are **not case-sensitive.**
- Pseudo-class starts with a **colon (:)**
- **Syntax:**

```
Selector: pseudo-class {property: value ;}
```

Pseudo class

:hover	❑ It changes the style of an element when the user moves the mouse over it.
:focus	❑ Applies when an element receives focus (e.g., a text input clicked)
:active	❑ Applies when an element is being clicked .
:visited	❑ Applies to links the user has visited.
:checked	❑ Matches checkboxes or radio buttons that are selected.
:read-only	❑ Matches elements that are read-only.

:hover example

- Example:
  - When mouse over on button color of button will be changed
  - When mouse over on heading color , style will be changed
  - When mouse over on link color of link will be changed

Write a code to create when mouse over on button colour of button will be changed

:focus example

Write a code that change textbox background and font size when text box get focus.

:active example

Write a code that change the color of active link also change size.

:active example

Write a code that change the color of visited link.

:checked example

Write a code that change the color of label when user check radio button

:readonly example

Write a code that demonstrate the use of :readonly

Pseudo Element

- A CSS pseudo-element is used to style specific parts of an element.
- Pseudo-elements are keywords added to CSS selectors that allow you to style specific parts of an element.
- They act as sub-elements, providing additional functionality to the selected entity.
- Pseudo elements prefixed with a double colon (::).

Pseudo Elements

- Most used pseudo element in CSS.

::first-letter	It selects the first letter of the text.
::first-line	It styles the first line of the text.
::before	Its used to add something before element's content.
::after	Its used to add something after element's content.
::selection	Its used to select area of element that's selected by user.
::first-letter	It selects the first letter of the text.

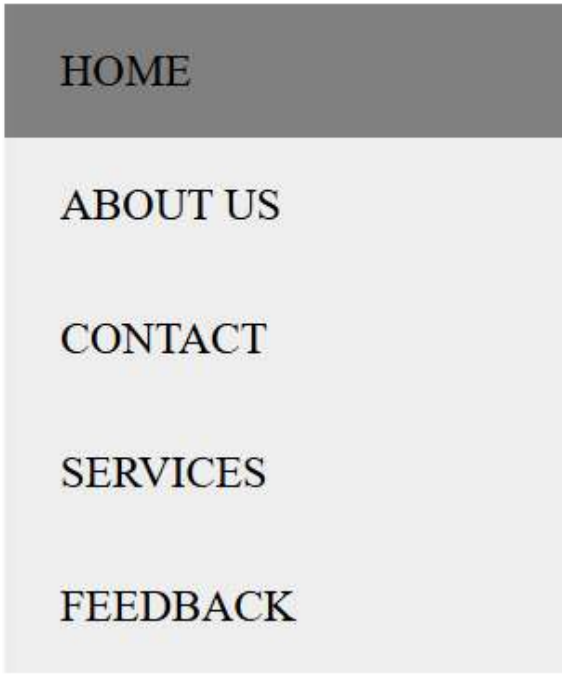
Navigation Bar

Navigation Bar

- A Navigation bar or navigation system comes under GUI that helps the visitors in accessing information.
- Its important for a website to have easy-to-use navigation.
- There are two types of navigation bar: **Horizontal and Vertical**

Navigation Bar

Vertical



Horizontal

Image Manipulation

Image manipulation

- An image is visual content that is displayed on a web page using specified URL.
- CSS offers numerous options to style image on web page.
- CSS helps us to control the display of images in web applications.
- There are multiple CSS properties such as border property, height property, width property etc. that helps us to style an image.

Image manipulation

- By using CSS:
  - Changing the image size
  - Adding a rounded corner to the image
  - Centering Image
  - Creating Responsive Image
  - Creating Transparent Image
  - Creating filter on image

Change image size

- The width and height properties are used to resize the image.

Use height and width property to change the size of image

Adding rounded corner

Use border-radius property for rounded corner

Centering image

Use margin property and set display:block

Creating Thumbnail Image

Set image max-width and use padding property Add Box-shadow

Creating Responsive Image

- Responsive images will automatically adjust to fit the size of the screen.
- Resize the browser window to see the effect
- Use max-width and height property for that.

Creating Transparent Image

opacity property adds transparency to an image. Range b/w 0.0 to 1.0

Creating Filter on Image

- The filter property defines visual effects to an element.

Blur (px)	Apply Applies a blur effect to the image.
Brightness(%)	Adjusts the brightness of the image. 0% will make the image completely black. 100% is default and represents the original image. Values over 100% will provide brighter results. Values under 100% will provide darker results.
contrast(%)	Adjusts the contrast of the image. 0% will make the image completely gray. 100% is default, and represents the original image. Values over 100% increases the contrast. Values under 100% decreases the contrast.

Creating Filter on Image

grayscale(%)	Converts the image to grayscale. 0% (0) is default and represents the original image. 100% will make the image completely grayscale
hue-rotate(deg)	Applies a hue rotation on the image. Maximum value is 360deg
invert(%)	Inverts the samples in the image. 0% - default and represents the original image. 100% - image completely inverted.
opacity(%)	Sets the opacity level for the image. The opacity-level describes the transparency-level. Values between 0 to 100%

Creating Filter on Image

saturate(%)	Saturates the image. 0% (0) →completely un-saturated. 100%→ default and original image. > 100% → provides super-saturated results.
sepia(%)	Converts the image to sepia.
drop-shadow (px)	Apply a drop shadow effect to the image: Values(hshadow, vshadow, blur, spread) Blur and spread optional

Borders

Border property

- The CSS border properties allow you to the specify border for an element.
- With the help of border property we can set style, width, and color of an element's border.
- CSS border properties:
  - Border-style
  - Border-color
  - Border-width
  - Border-redius

Border style

- The Border style property is used to specify the border type which you want to display on the web page.
- Possible values can be solid, dashed , inset, outset, ridge, groove etc.

- **Syntax:**

Border-style: <Value>;

Border style

Value	Description
none	It doesn't define any border.
dotted	It is used to define a dotted border.
dashed	It is used to define a dashed border.
solid	It is used to define a solid border.
double	It defines two borders with the same border-width value.
groove	It defines a 3D grooved border.
ridge	It defines a 3d ridged border.
Inset	It defines a 3d inset border.
outset	It defines a 3d outset border.
hidden	It not define any border.

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:<value>;

Border-width

- The border-width property specifies the width of the four borders.
- The width can be set as a specific size or pre-defined values
- Possible values: thin, medium, or thick.
- In size: in px, pt, cm
- **Syntax:**

Border-width: <value>;

Border-radius

- Border-radius property allows you to add rounded corners to elements.
- **Syntax:**

Border-radius: <value>;

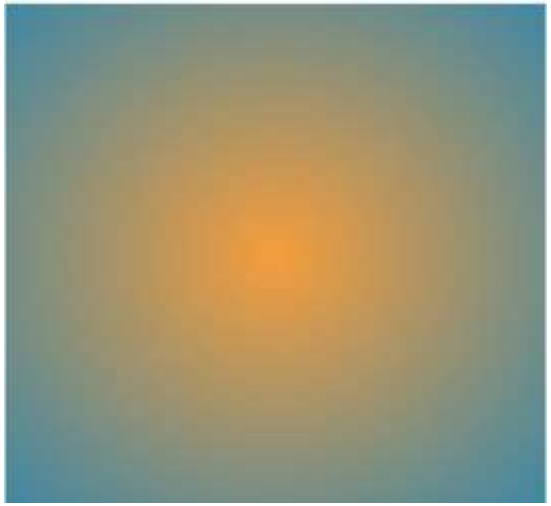
Border example

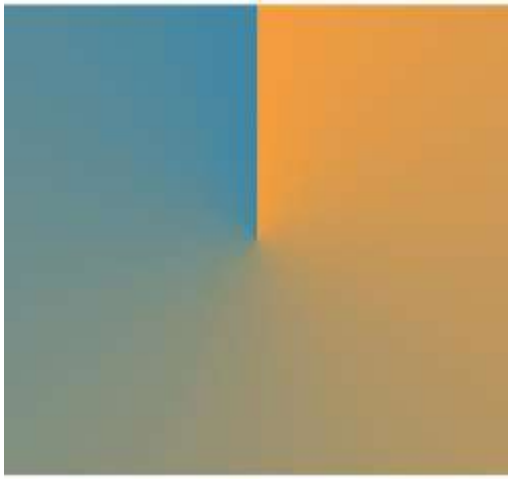
Write a program that apply demonstrate the use of border property.

Gradients

Gradients

- CSS gradient like mixing two or more colors smoothly
- CSS defines three types of gradients:
  - **Linear Gradients**
  - **Radial Gradients**
  - **Conic Gradients**





Linear- Gradients

- Linear-gradient allows you to define two or more color in linear format.
- The color stops are the colors which are used to create a smooth transition.
- Values of direction can be: Top to Bottom (this is default) , Left to Right or in specific angles.
- **Syntax :**

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

Linear- Gradients

Write a program that demonstrate the use of linear-gradients

Radial- Gradients

- Radial-gradient used to create a circular effects of colors.
- In this Colors spread out from a central point.
- To create a radial gradient you must also define at least two color stops.
- By default radial gradient with evenly spaced color stops.
- **Syntax :**

background: radial-gradient (shape size at position, color1, color2, ...);

Radial- Gradients

- In syntax:
  - **shape** → Can be circle (default) or ellipse.
  - **size** → Defines how far the gradient spreads.
  - **position** → Defines where the gradient starts (e.g., center, top left).
  - **colors** → The colors transition smoothly from one to another.
- Example :

background: radial-gradient(circle at top left, purple, pink);

Radial - Gradients

Write a program that demonstrate the use of radial-gradients

Conic - Gradients

- A conic gradient is a gradient where colors transition around a center point in a circular (cone-like) pattern, similar to a pie chart.
- **Syntax :**

background: conic-gradient (from angle at position, color1, color2, ...);

- In syntax:
  - from angle → Sets the starting angle (default is 0deg).
  - at position → Defines the center of the gradient (default is center).
  - color1, color2, ... → Specifies colors in a circular transition.
- **Example:**

background: conic-gradient(red 45deg, yellow 90deg, green 210deg);

conic - Gradients

Write a program that demonstrate the use of conic-gradients

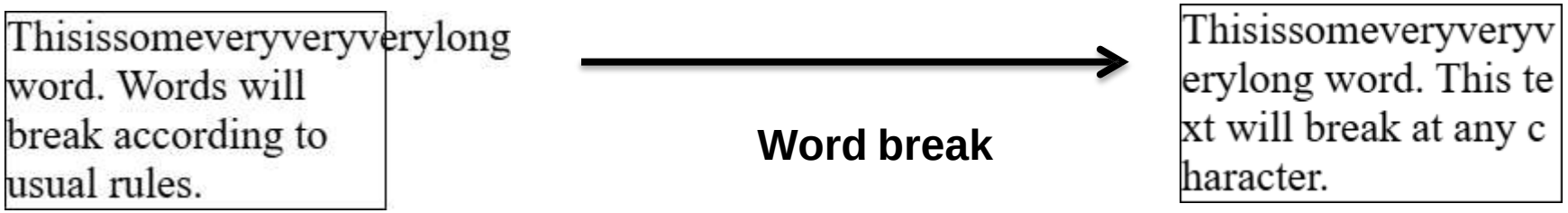
Text Effect

Text-effect

- We can apply different effects on text used within an HTML document.
- Using CSS, we can style web documents and affects text.
- There are some text effect properties in CSS that are listed below:
  - Word-break
  - Text-overflow
  - Word-wrap
  - Writing-mode

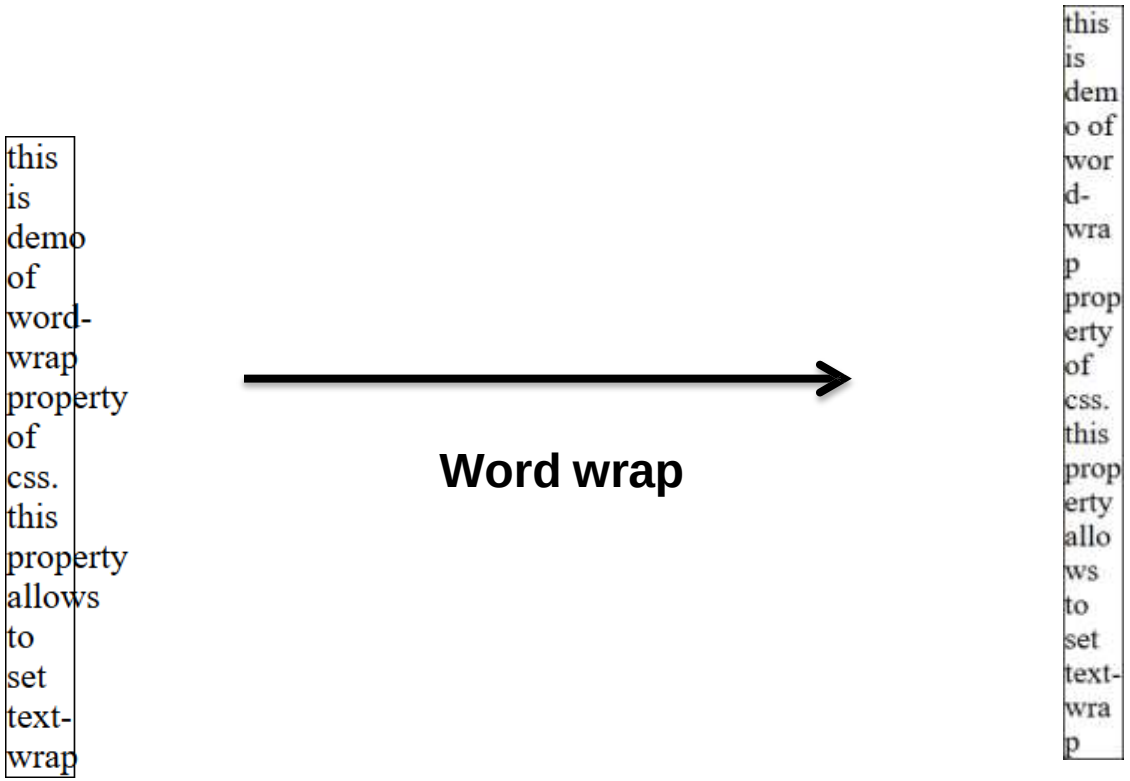
word-break

- This property specifies how words should break when reaching the end of a line.



Word-wrap

- The CSS word-wrap property allows long words to be able to be broken and wrap onto the next line.
- The property allows you to force the text to wrap - even if it means splitting it in the middle of a word.
- Example:



Writing-mode

- This property specifies whether lines of text are laid out horizontally or vertically.

horizontal-tb	Let the content flow horizontally from left to right, vertically from top to bottom
vertical-rl	Let the content flow vertically from top to bottom, horizontally from right to left
vertical-lr	Let the content flow vertically from top to bottom, horizontally from left to right

Animations

Animations

- An animation lets an element gradually change from one style to another.
- **CSS animation** is a way to make things move or change on a website.
- Animations consist of two components.
  - **style :**
    - its describing CSS animation
  - **set of key frames :**
    - its indicate start and end states of animation's style

Media Types

Media types

- One of most important features of style sheets is that they specify how a document is to be presented on different media: on the screen, on paper, with a speech synthesizer, with a braille device, etc.
- We have currently two ways to specify media dependencies for style sheets –
  - Specify target medium from a style sheet with @media or @import at-rules.
  - Specify the target medium within the document language.

Media types

- Specify the target medium from a style sheet with the @media or @import at-rules

@import url("fancyfonts.css") screen;

@media print { /* style sheet for print goes here */ }

Media types

- Specify the target medium within the document language. For example, in HTML 4 ([HTML4]), the "media" attribute on the LINK element specifies the target media of an external style sheet:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN"> <HTML>
<HEAD>
    <TITLE>Link to a target medium</TITLE>
    <LINK REL="stylesheet" TYPE="text/css" MEDIA="print,
    handheld" HREF="foo.css">
</HEAD>
<BODY>
 <P>The body...
</BODY>
</HTML>
```

Attribute Selectors

Attribute select

- The **CSS Attribute Selector** allows you to style HTML elements based on the presence or value of their attributes.
- It's super handy when you want to target elements more precisely without adding extra classes or IDs.

Attribute select

[attribute]	Used to select elements with a specified attribute.
[attribute = “value”+	Selects elements where the attribute value is exactly equal to the given string.
[attribute~="value"]	Selects elements where the attribute value is a space-separated list of words, one of which is exactly "value".
*attribute^=”value”+	Selects elements whose attribute value starts with a specific string.
*attribute$=”value”+	selector selects the element whose attribute value ends with the particular value.