Importance of CSS

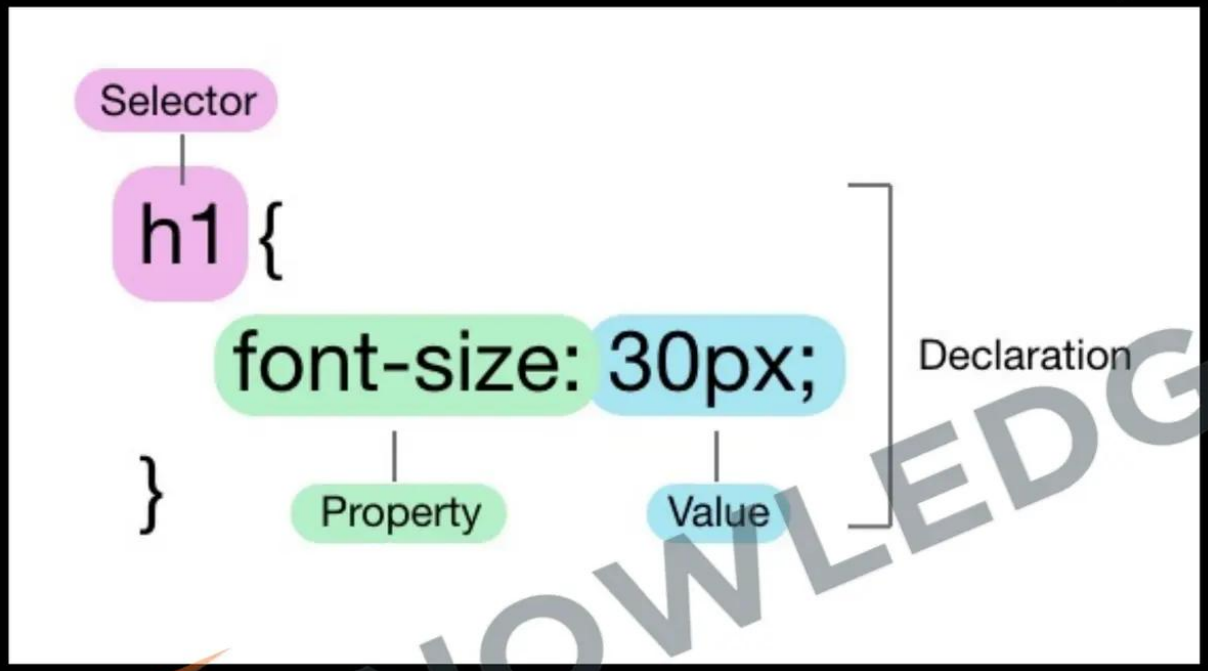
Premium Website

Premium Brand

Premium Customer

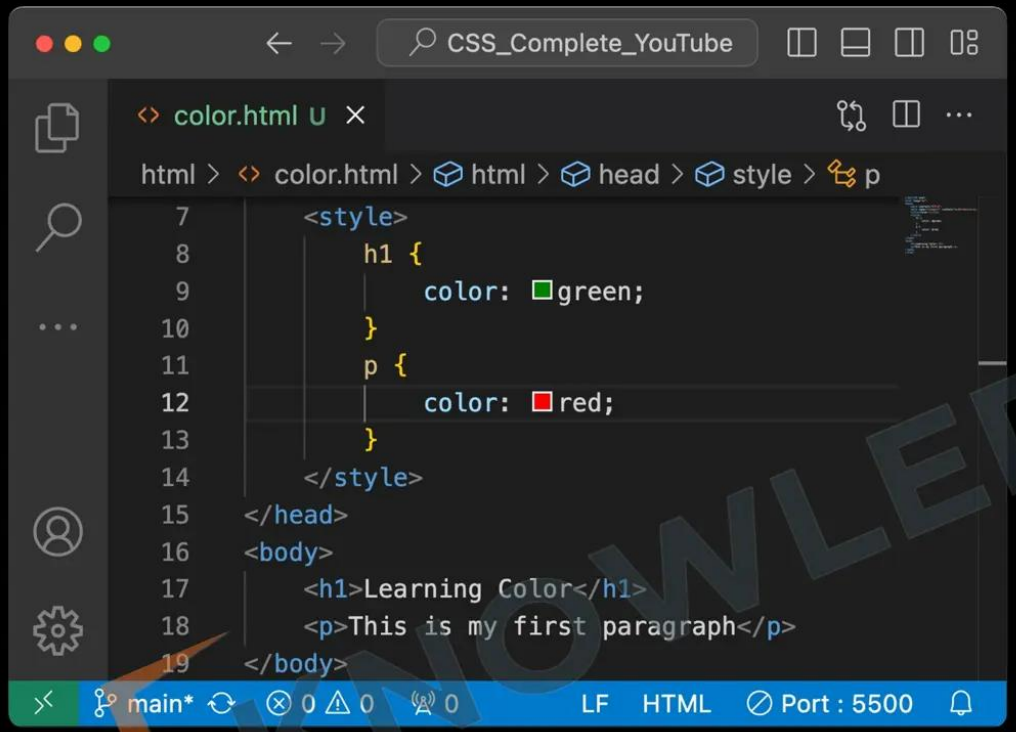
High Salary Developer

1. Basic Syntax



- **Selector**: The HTML element that you want to style.
- **Property**: The attribute you want to change (like font, color, etc.).
- **Value**: The specific style you want to apply to the property (like red, bold, etc.).

2. Color Property



- **Definition:** The CSS color property defines the text color or foreground color in an HTML element.
- **Enhancement:** Use it to emphasize sections and elevate webpage aesthetics.

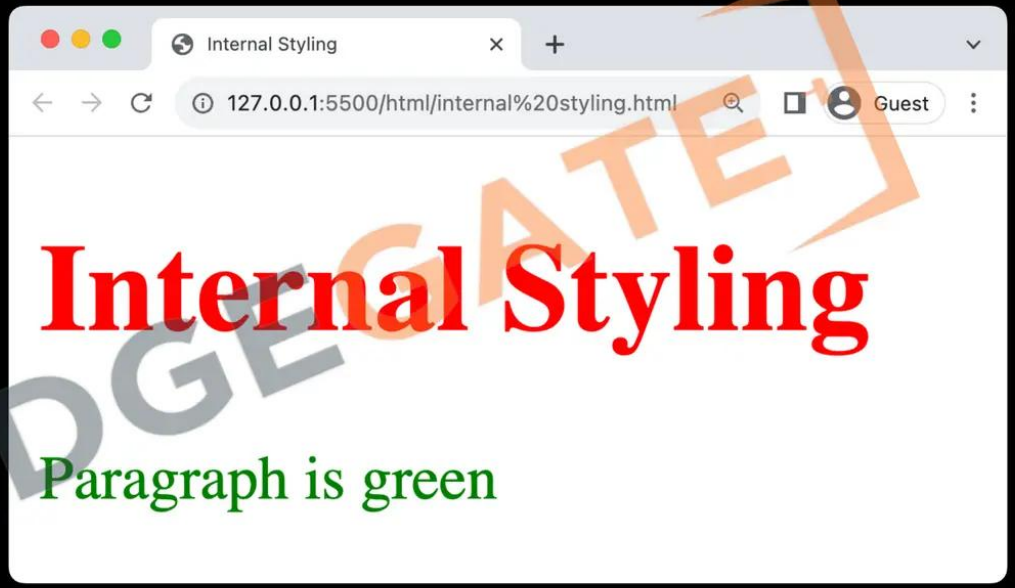
3. Including Styles (Inline Styling)

```
html > inline styling.html > html
1   <!DOCTYPE html>
2   <html lang="en">
3   <head>
4       <title>Inline Styling</title>
5   </head>
6   <body>
7       <h1 style="color: red;">Inline Styling</h1>
8       <p style="color: green;">Paragraph is green</
        p>
9   </body>
10  </html>
```

- **Direct Application:** Apply styles directly to HTML elements using the style attribute.
- **One-off Changes:** Ideal for single, unique style alterations.
- **Can Be Cluttered:** May lead to cluttered HTML if used extensively.
- **Limited Reusability:** Reduces the reusability of CSS rules in larger projects.

3. Including Styles (Internal Styling)

```
3   <head>
4       <title>Internal Styling</title>
5       <style>
6           h1 {color: red;}
7           p {color: green;}
8       </style>
9   </head>
10  <body>
11      <h1>Internal Styling</h1>
12      <p>Paragraph is green</p>
13  </body>
14  </html>
```



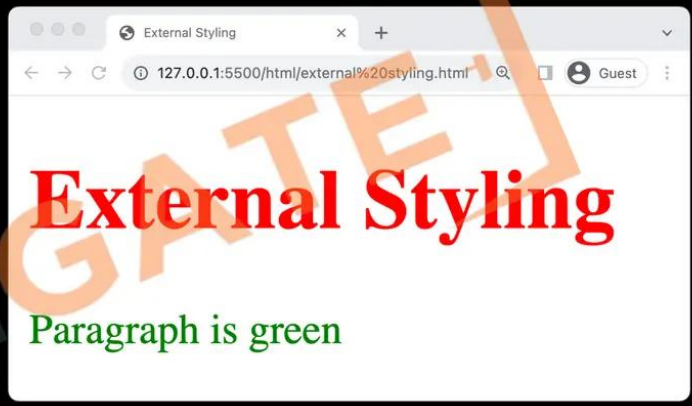
- **Embedded CSS:** Styles are placed within **<style>** tags in the HTML head section.
- **Cleaner than Inline:** **More organized** compared to inline styles.
- **Reusable Styles:** Allows for some **reuse** of styles across the page.

3. Including Styles (External Styling)

```html
<head>
    <title>External Styling</title>
    <link rel="stylesheet" href="../css/external styling.css">
</head>
<body>
    <h1>External Styling</h1>
    <p>Paragraph is green</p>
</body>
```

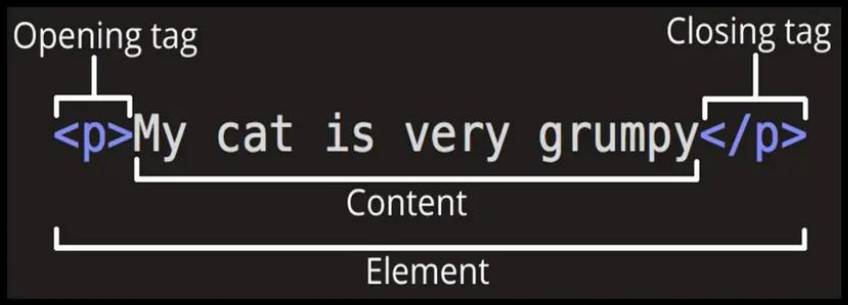
css > # external styling.css > p

```css
h1 {
    color: red;
}

p {
    color: green;
}
```

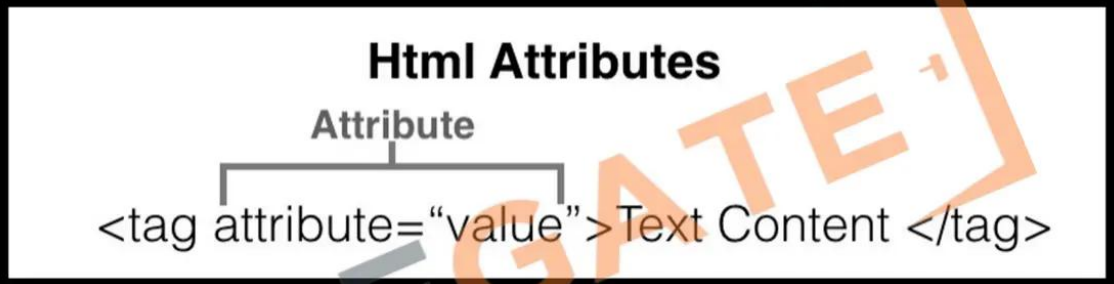


- **Separate CSS File**: Stores styles in a **separate .css file**, linked to HTML.
- **Reusable**: Enables style **reuse** across multiple webpages.
- **Link in HTML**: Use the **<link>** tag within the **<head>** section to link the CSS.
- **Relative or Absolute Path**: The href attribute can contain a relative or absolute path to the CSS file.

4. HTML Refresher (Tags & Attributes)

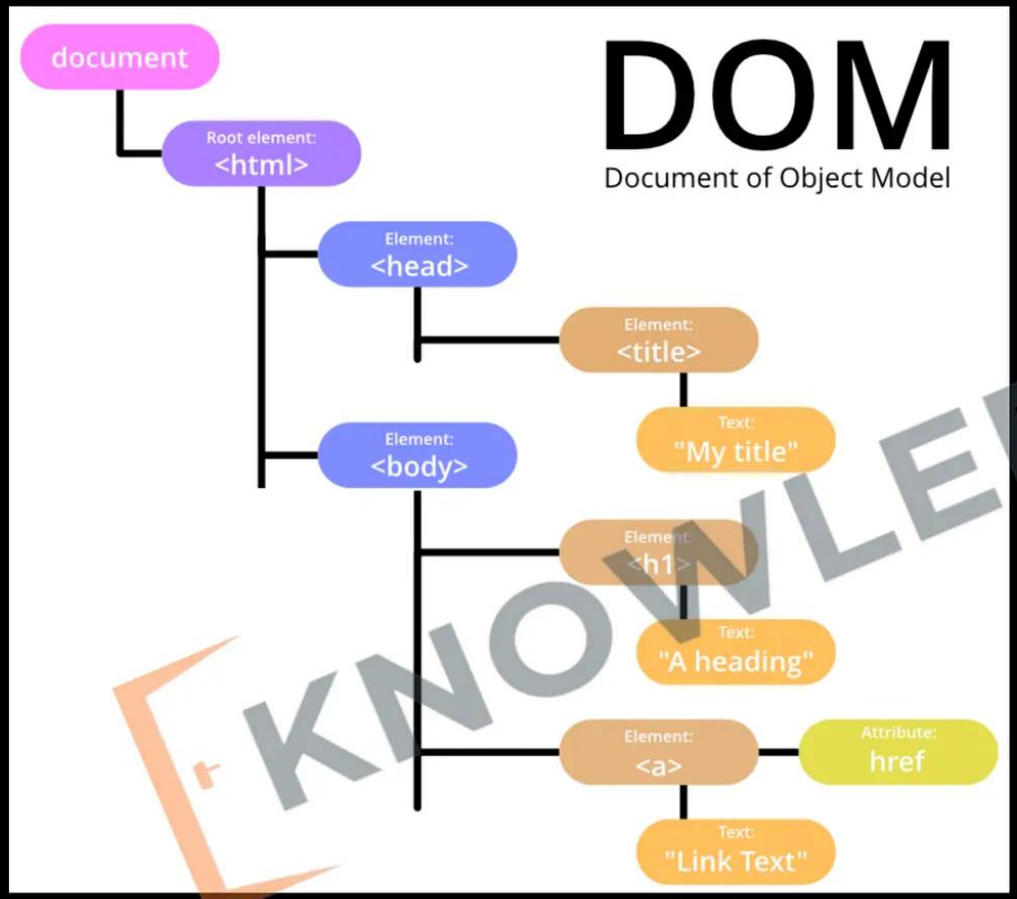


1. Elements that are used to create a website are called HTML Tags.
2. Tags can contain content or other HTML tags.
3. Define elements like text, images, links



1. Provides additional information about elements
2. Use name=value format

4. HTML Refresher (DOM)

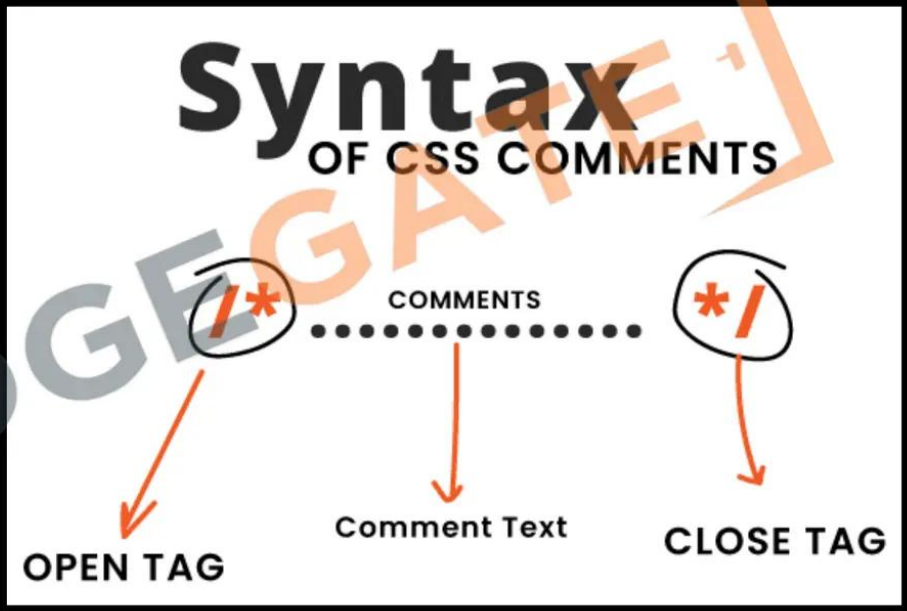


1. Structure Understanding: Helps in understanding the **hierarchical structure** of a webpage, crucial for applying targeted CSS styles.

2. Dynamic Styling: Enables learning about dynamic styling, allowing for **real-time changes** and interactivity through CSS.

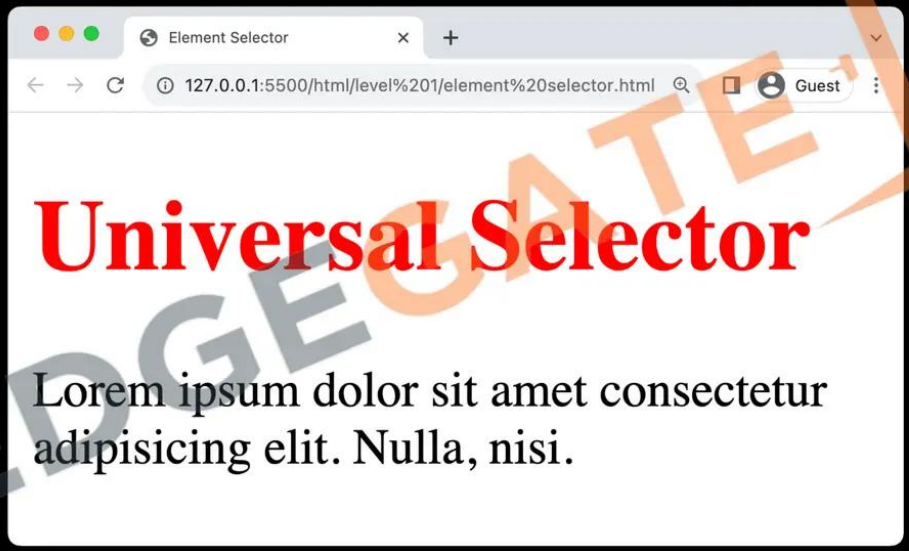
5 Comments

1. Used to add notes in HTML or CSS code
2. Not displayed on the web page
3. Syntax: <!-- Comment here -->
4. Helpful for code organization
5. Can be multi-line or single-line



8. Selectors (Element selector)

```
3   <head>
4       <title>Element Selector</title>
5       <style>
6           h1 {
7               color: red
8           }
9       </style>
10  </head>
11  <body>
12      <h1>Universal Selector</h1>
13      <p>Lorem ipsum dolor sit amet consectetur
        adipisicing elit. Nulla, nisi.</p>
14  </body>
```



- **Targets Elements**: Selects HTML elements based on their tag name.
- **Syntax**: Simply use the element's name
- **Uniform Styling**: Helps in applying consistent styles to all instances.
- **Ease of Use**: Straightforward and easy to implement for basic styling.

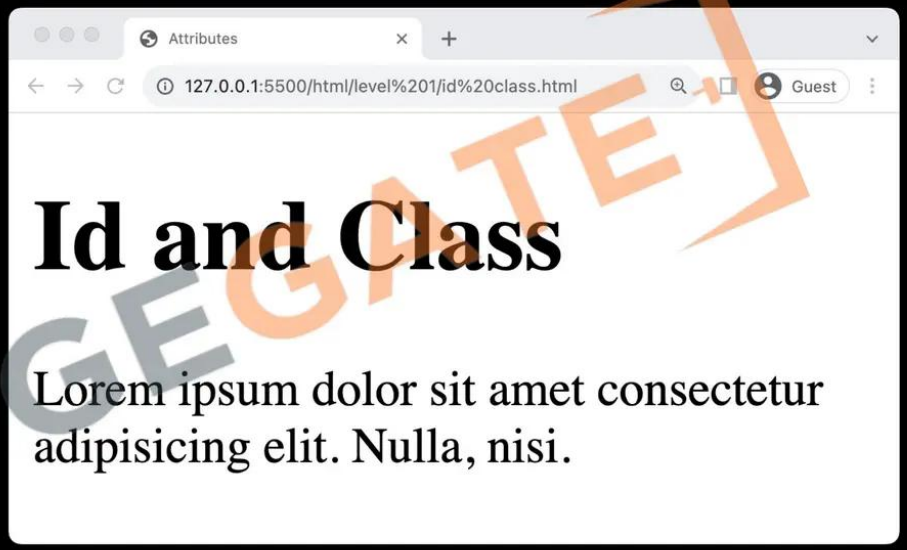
8. Selectors (Universal selector)

```
3   <head>
4       <title>Universal Selector</title>
5       <style>
6           * {
7               color: red
8           }
9       </style>
10  </head>
11  <body>
12      <h1>Universal Selector</h1>
13      <p>Lorem ipsum dolor sit amet consectetur
        adipisicing elit. Nulla, nisi.</p>
14  </body>
```

- **Matches All**: Targets and styles all elements on a webpage.
- **Syntax**: Utilized as an asterisk (*).
- **Resets Styles**: Commonly used to reset margins and paddings globally.
- **Broad Styling**: Useful for setting universal attributes like font or color.
- **Usage Caution**: Can cause style conflicts due to its wide-reaching effects.

8. Selectors (id & class property)

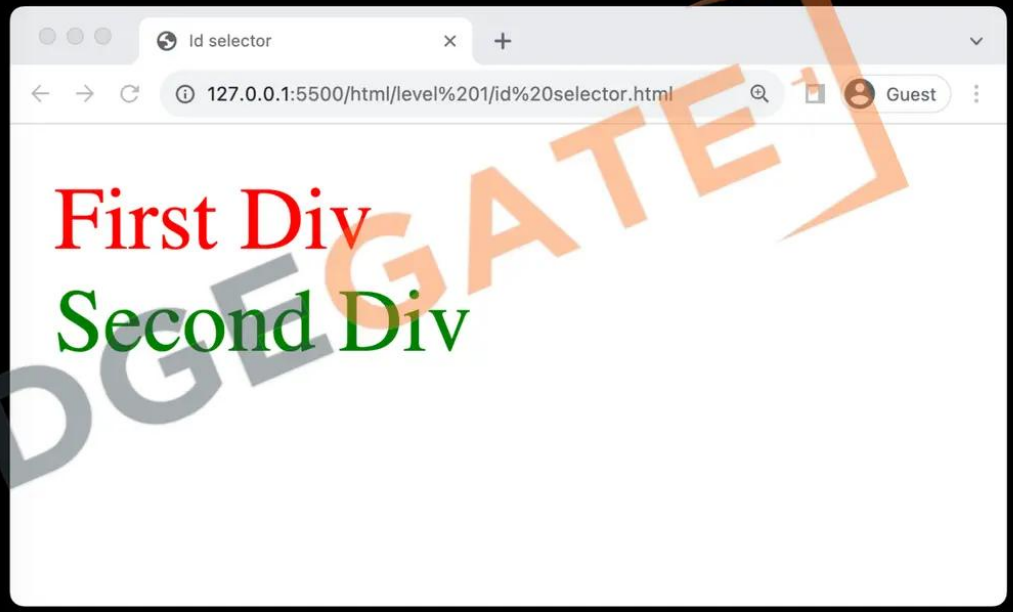
```html
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Attributes</title>
</head>
<body>
    <h1 id="top_heading">Id and Class</h1>
    <p class="article">Lorem ipsum dolor sit amet consectetur adipisicing elit. Nulla, nisi.</p>
</body>
</html>
```



- **ID Property**: Assigns a unique identifier to a single HTML element.
- **Class Property**: Allows grouping of multiple HTML elements to style them collectively.
- **Reusable Classes**: Class properties can be reused across different elements for consistent styling.
- **Specificity and Targeting**: Both properties assist in targeting specific elements or groups of elements for precise styling.

8. Selectors (Id selector)

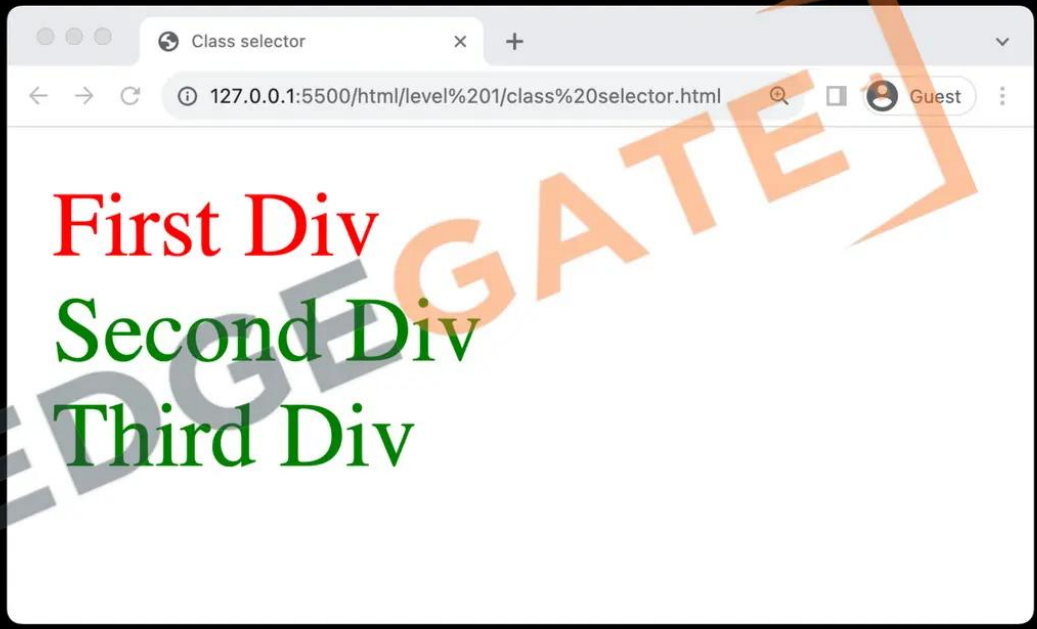
```
3   <head>
4       <title>Id selector</title>
5       <style>
6           #first { color: red; }
7           #second { color: green; }
8       </style>
9   </head>
10  <body>
11      <div id="first">First Div</div>
12      <div id="second">Second Div</div>
13  </body>
```



- **Unique Identifier**: Targets a specific element with a unique ID attribute.
- **Syntax**: Uses the hash (#) symbol
- **Single Use**: Each ID should be used once per page for uniqueness.
- **Specific Targeting**: Ideal for styling individual, distinct elements.

8. Selectors (Class selector)

```html
<head>
    <title>Class selector</title>
    <style>
        #first { color: red; }
        .second { color: green; }
    </style>
</head>
<body>
    <div id="first">First Div</div>
    <div class="second">Second Div</div>
    <div class="second">Third Div</div>
</body>
```



- **Group Styling**: Allows styling of multiple elements grouped under a class.
- **Syntax**: Utilizes the dot (.) symbol.
- **Reusable**: Can be used on multiple elements for consistent styling.
- **Versatility**: Ideal for applying styles to a category of elements.

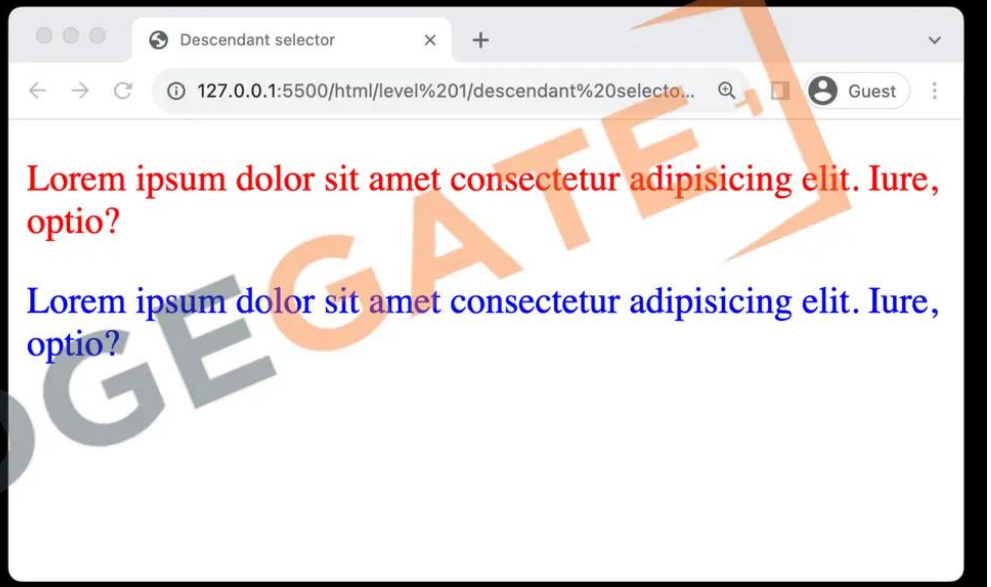
8. Selectors (Group selector)

```html
<head>
    <title>Group selector</title>
    <style>
        h1, h2, h3 {
            color: red
        }
    </style>
</head>
<body>
    <h1>Heading 1</h1>
    <h2>Heading 2</h2>
    <h3>Heading 3</h3>
    <h4>Heading 4</h4>
</body>
```

- **Multiple Elements**: Styles multiple elements simultaneously.
- **Syntax**: Separates selectors with commas.
- **Efficiency**: Reduces code redundancy and saves time.

8. Selectors (Descendant selector)

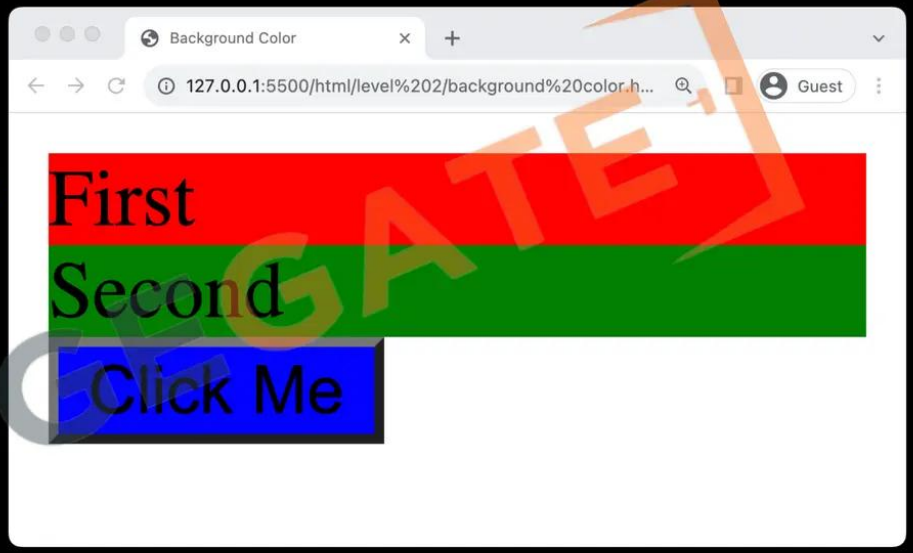
```html
<head>
    <title>Descendant selector</title>
    <style>
        div p { color: red }
        p { color: blue }
    </style>
</head>
<body>
    <div>
        <p>
            Lorem ipsum dolor sit amet consectetur adipisicing
            elit. Iure, optio?
        </p>
    </div>
    <p>
        Lorem ipsum dolor sit amet consectetur adipisicing
        elit. Iure, optio?
    </p>
</body>
```



- **Nested Targeting**: Styles elements nested within a specified element.
- **Syntax**: Separate selectors with spaces.
- **Hierarchy-Based**: Allows styling based on the hierarchical structure of HTML.
- **Specific Styling**: Facilitates more targeted and specific styling of elements.

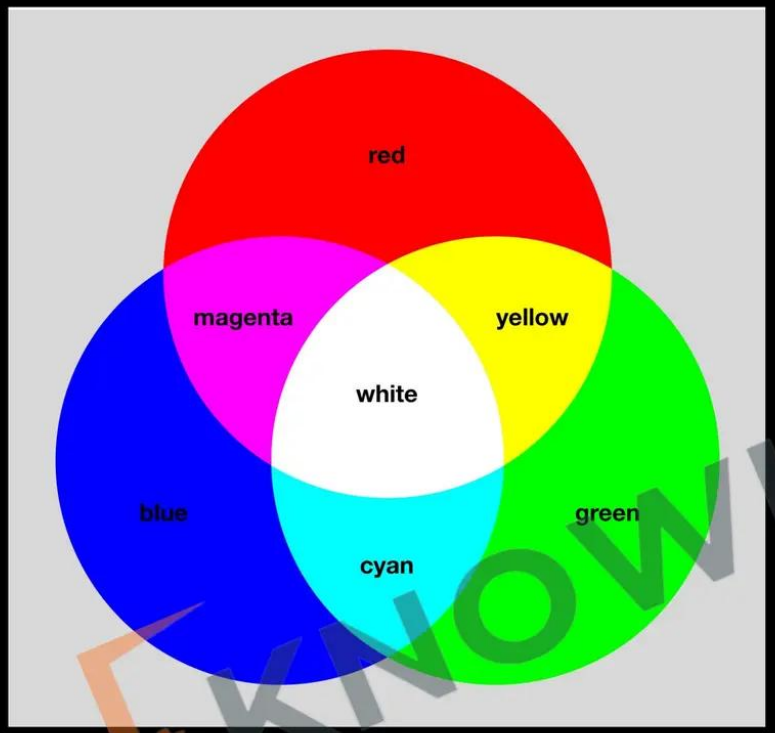
9. Background Color

```html
<head>
    <title>Background Color</title>
    <style>
        #first { color: black; background-color: red; }
        #second { color: black; background-color: green; }
        button { color: black; background-color: blue; }
    </style>
</head>
<body>
    <div id="first">First</div>
    <div id="second">Second</div>
    <button>Click Me</button>
</body>
```



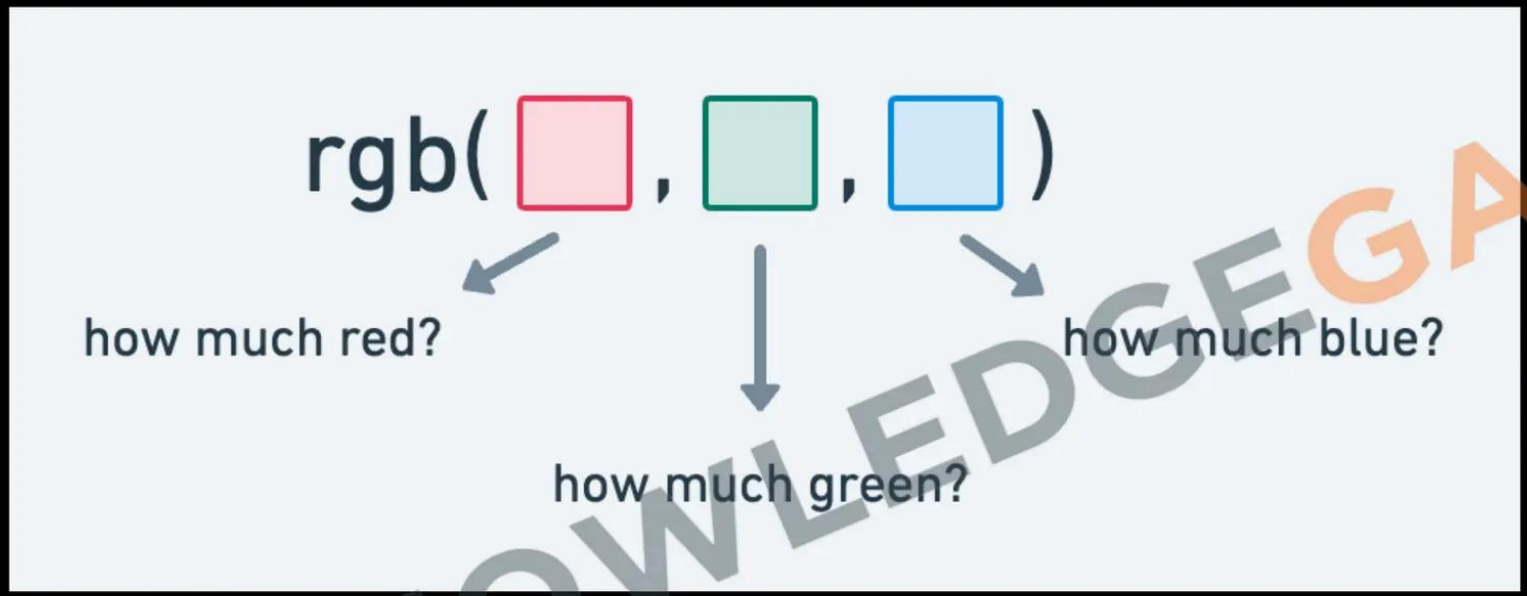
- **Definition**: Sets the background color of an element.
- **Syntax**: Utilized as background-color: color;
- **Visual Appeal**: Enhances the visual appeal and contrast of webpage elements.

10. Color System (Color Theory)



- **RGB Model**: Creates colors by mixing Red (R), Green (G), and Blue (B) light sources.
- **Additive Model**: More light means increased brightness.
- **Primary Colors**: R, G, and B are the foundational colors.
- **White & Black**: All combined yield white; absence equals black.
- **Color Depth**: Allows for millions of color variations.

10. Color System (RGB Color Model)



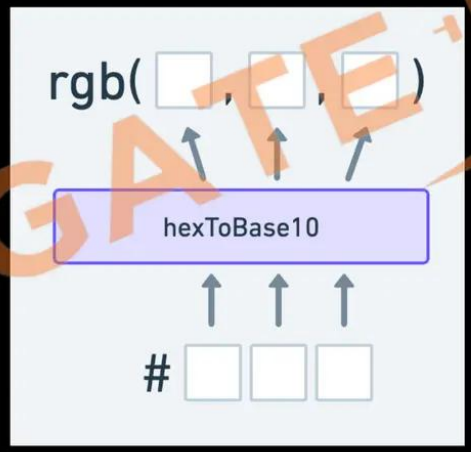
- **Three Channels**: Consists of Red (R), Green (G), and Blue (B) channels to create a variety of colors.
- **Syntax**: Utilized as rgb(r, g, b) where r, g, and b are values between 0 and 255.

10. Color System (RGB Color Model)

```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>RGB Color</title>
</head>
<body>
    <div style="background-color: rgb(255,0,0);">First</div>
    <div style="background-color: rgb(0,255,0);">Second</div>
    <div style="background-color: rgb(0,0,255);">Third</div>
    <div style="background-color: rgb(29, 133, 48);">Fourth</div>
</body>
</html>
```

10. Color System (HEX Color Model)

- **Hexadecimal Codes**: Represents colors using hexadecimal values, consisting of 6 digits combined from numbers and letters (A-F).
- **Syntax**: Written as #RRGGBB
- **Easy Color Matching**: Facilitates easy color matching with graphic design tools and branding colors.
- **Web Standards**: Widely supported and a common standard for defining colors in web design



10. Color System (HEX Color Model)

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Hex Color</title>
</head>
<body>
    <div style="background-color: #ff0000">First</div>
    <div style="background-color: #00ff00">Second</div>
    <div style="background-color: #0000ff">Third</div>
    <div style="background-color: #402ae9">Fourth</div>
</body>
</html>
```

10. Color System (Alpha Channel)

- **RGBA**: RGB's extension, includes alpha for opacity control (0-1 range).
- **Transparency Control**: Facilitates the adjustment of transparency levels in colors.
- **Visual Effects**: Enables the creation of visual effects like shadows and overlays.
- **Layering**: Assists in layering elements with varying degrees of visibility.

10. Color System (Alpha Channel)

```
<h1 style="color: rgb(255,0,0,0.1);">First</div>
<h1 style="color: rgb(255,0,0,0.25);">First</div>
<h1 style="color: rgb(255,0,0,0.5);">First</div>
<h1 style="color: rgb(255,0,0,0.75);">First</div>
<h1 style="color: rgb(255,0,0,1.0);">First</div>
```

First
First
First
First
First

11. Absolute Units

- **Definition**: Pixels (px) are fixed-size units, representing a dot on a computer screen.
- **Precision**: Allows for precise control over element dimensions.
- **Graphics & Web Design**: Commonly used in graphics and web design for setting font sizes, margins, and more.
- **Cross-Browser Consistency**: Provides consistency across different browsers.
- **High-DPI Displays**: Can vary in appearance on high-DPI (dots per inch) displays.

12. Height & Width Property

```html
<head>
    <title>Height</title>
    <style>
        .box { height: 40px; width: 40px;}
        #box1 {background-color: red;}
        #box2 {background-color: blue;}
        #box3 {background-color: green;}
    </style>
</head>
<body>
    <div id="box1" class="box">Box 1</div> <br>
    <div id="box2" class="box">Box 2</div> <br>
    <div id="box3" class="box">Box 3</div>
</body>
```

- **Dimensions Control**: Used to specify the height and width of elements.
- **Unit Variability**: Can use units like pixels (px)
- **Box Model Component**: Influences padding, border, and margin.
- **Min and Max Values**: Can utilize min-height, max-height, min-width, and max-width to set restrictions on dimensions.

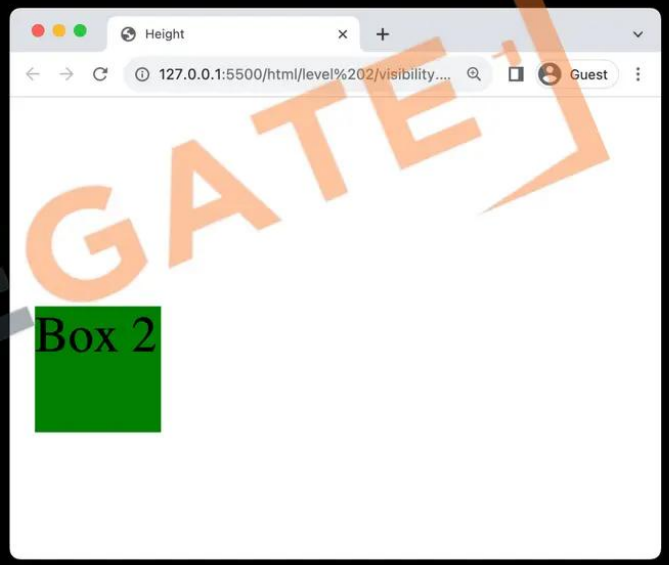
13. Background image Property

- **Usage**: Adds an image as a background to elements.
- **Syntax**: Defined using background-image: url('path/to/image');.
- **Repetition**: Control image repetition using background-repeat.
- **Positioning**: Adjust image position using background-position.
- **Size Control**: Manipulate image size using background-size.
- **Background-Attachment**: Sets whether the background image scrolls with the element or remains fixed.
- Shorthand (color, image, repeat, attachment, position)

```html
<head>
    <title>Background Image</title>
    <style>
        #box1 {
            background-image: url(../../images/css.png);
            height: 500px;
            width: 500px;
        }
    </style>
</head>
<body>
    <div id="box1"></div>
</body>
```

14. Visibility Property

```html
<head>
    <title>Visibility</title>
    <style>
        .box { height: 40px; width: 40px;}
        #box1 {background-color: red; visibility: hidden;}
        #box2 {background-color: green; visibility: visible;}
    </style>
</head>
<body>
    <div id="box1" class="box">Box 1</div> <br>
    <div id="box2" class="box">Box 2</div> <br>
</body>
```



- **Usage**: Controls the visibility of elements without changing the layout.
- **Values**: Can take visible, hidden, or collapse as values.
- **Space Occupancy**: Even when hidden, the element occupies space.
- **Interactivity**: Hidden elements are not accessible to user interactions.

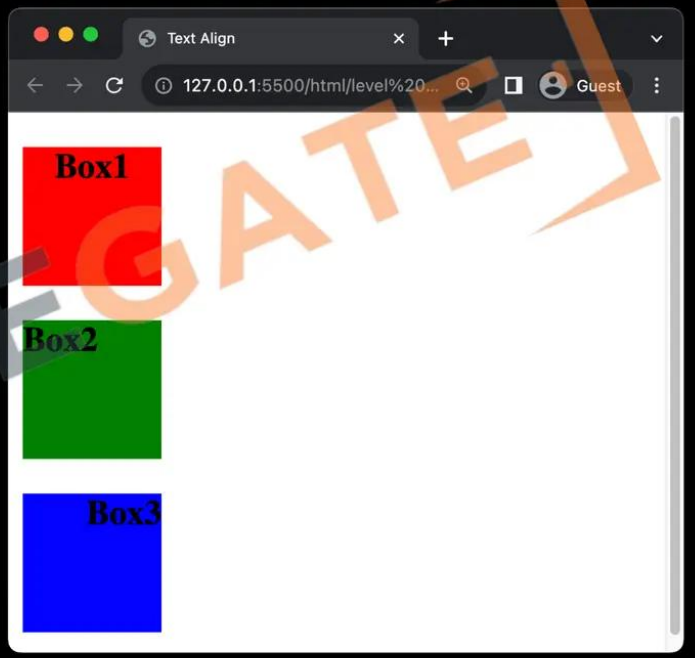
Level 3

Text Properties

15. Text-Align Property
16. Text-Decoration Property
17. Text-Transform Property
18. Line-Height Property
19. Font Properties
20. Font Family
21. Icon using fonts

15.Text-Align Property

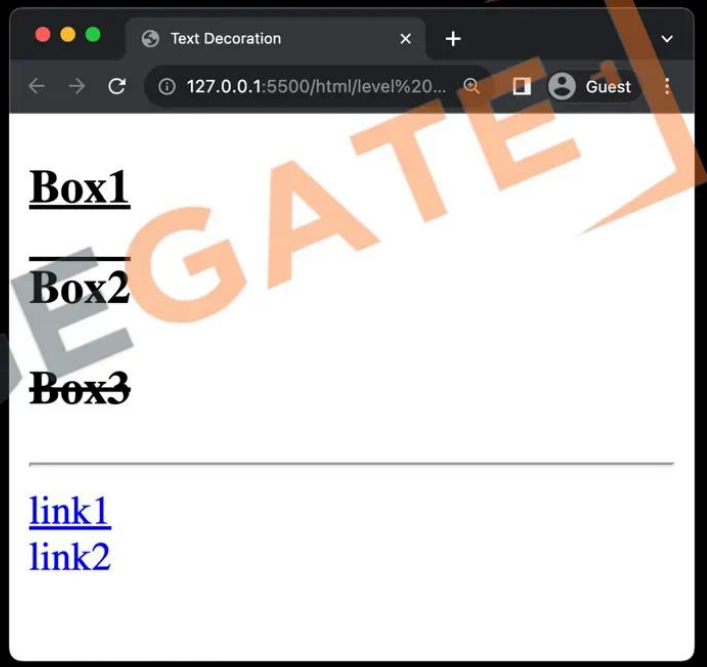
```html
<head>
    <title>Text Align</title>
    <style>
        .box {height: 100px; width: 100px;}
        #box1 {background-color: red; text-align: center;}
        #box2 {background-color: green; text-align: left;}
        #box3 {background-color: blue; text-align: right;}
    </style>
</head>
<body>
    <h3 id="box1" class="box">Box1</h3>
    <h3 id="box2" class="box">Box2</h3>
    <h3 id="box3" class="box">Box3</h3>
</body>
```



- **Usage**: Controls the horizontal alignment of text within an element.
- **Values**: Can take values like left, right, center, and justify.
- **Visual Appeal**: Enhances readability and visual appeal by organizing text neatly.

16. Text-Decoration Property

```html
<head>
    <title>Text Decoration</title>
    <style>
        #box1 {text-decoration: underline;}
        #box2 {text-decoration: overline;}
        #box3 {text-decoration: line-through;}
    </style>
</head>
<body>
    <h3 id="box1" class="box">Box1</h3>
    <h3 id="box2" class="box">Box2</h3>
    <h3 id="box3" class="box">Box3</h3> <hr>
    <a href="#">link1</a> <br>
    <a href="#" style="text-decoration: none;">link2</a>
</body>
```



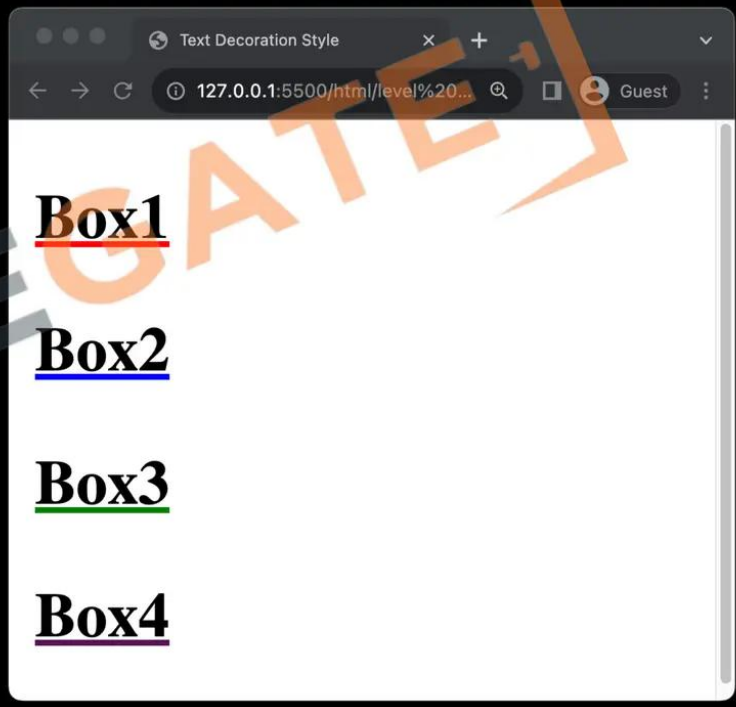
- **Usage**: Modifies the appearance of inline text.
- **Values**: Options include none, underline, overline, and line-through.
- **Hyperlinks**: Commonly used to remove underlines from hyperlinks for aesthetic purposes.

16. Text-Decoration Property (style)

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Text Decoration Style</title>
    <style>
        .box {text-decoration: underline;}
        #box1 {text-decoration-style: dashed;}
        #box2 {text-decoration-style: double;}
        #box3 {text-decoration-style: solid;}
        #box4 {text-decoration-style: wavy;}
    </style>
</head>
<body>
    <h3 id="box1" class="box">Box1</h3>
    <h3 id="box2" class="box">Box2</h3>
    <h3 id="box3" class="box">Box3</h3>
    <h3 id="box4" class="box">Box4</h3>
</body>
</html>
```

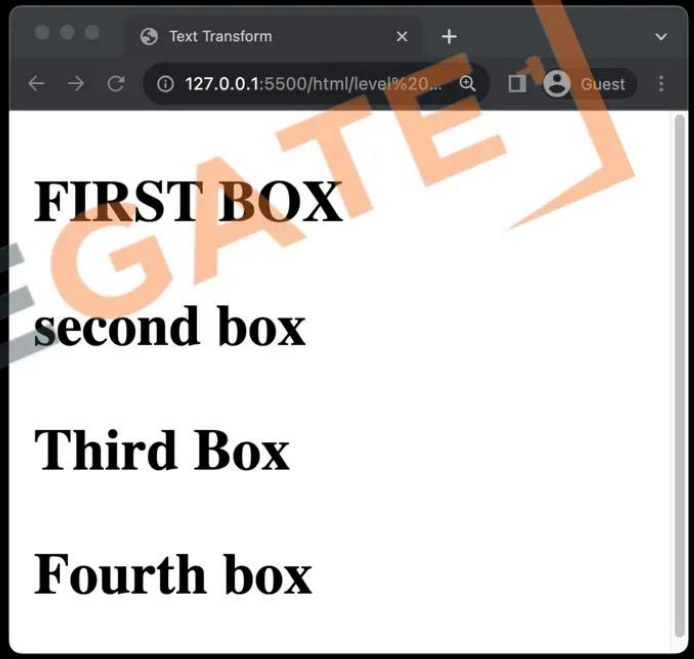
16. Text-Decoration Property (color)

```html
<head>
    <title>Text Decoration Style</title>
    <style>
        .box {text-decoration: underline;}
        #box1 {text-decoration-color: red;}
        #box2 {text-decoration-color: blue;}
        #box3 {text-decoration-color: green;}
        #box4 {text-decoration-color: rgb(86, 20, 86);}
    </style>
</head>
<body>
    <h3 id="box1" class="box">Box1</h3>
    <h3 id="box2" class="box">Box2</h3>
    <h3 id="box3" class="box">Box3</h3>
    <h3 id="box4" class="box">Box4</h3>
</body>
```



17. Text-Transform Property

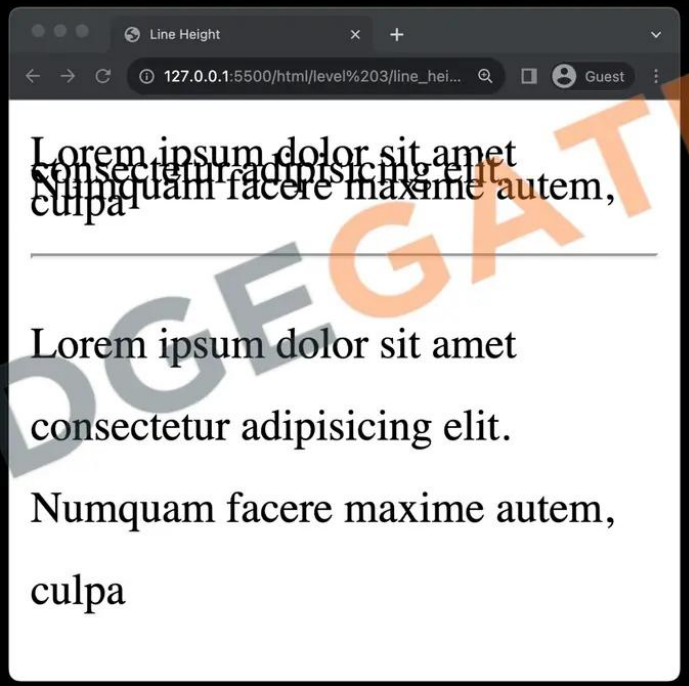
```html
<head>
    <title>Text Transform</title>
    <style>
        #box1 {text-transform: uppercase;}
        #box2 {text-transform: lowercase;}
        #box3 {text-transform: capitalize;}
        #box4 {text-transform: none;}
    </style>
</head>
<body>
    <h3 id="box1" class="box">First box</h3>
    <h3 id="box2" class="box">Second box</h3>
    <h3 id="box3" class="box">Third box</h3>
    <h3 id="bo43" class="box">Fourth box</h3>
</body>
```



- **Usage**: Controls the capitalization of text.
- **Common Values**: Can be uppercase, lowercase, or capitalize.
- **None Value**: none value disables text transformations.
- **Typography**: Useful for setting text style and improving typography in web design.

18. Line Height

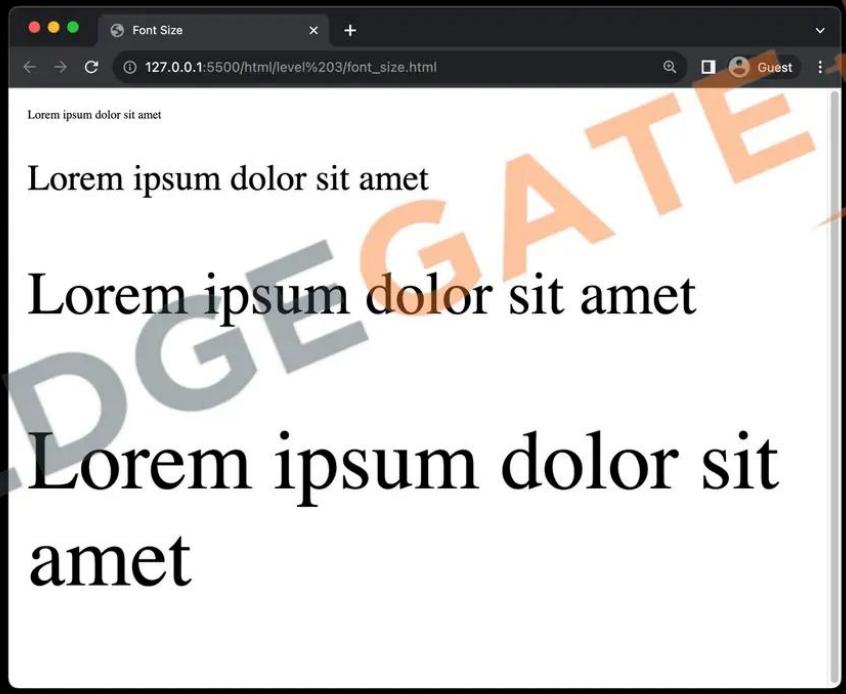
```
<head>
    <title>Line Height</title>
    <style>
        #first { line-height: 6px; }
        #second { line-height: 30px; }
    </style>
</head>
<body>
    <p id="first">Lorem ipsum dolor sit amet
    consectetur adipisicing elit. Numquam facere
    maxime autem, culpa</p> <hr>
    <p id="second">Lorem ipsum dolor sit amet
    consectetur adipisicing elit. Numquam facere
    maxime autem, culpa</p>
</body>
```



- **Usage**: Adjusts the amount of space above and below inline elements.
- **Readability**: Enhances text readability by preventing overcrowding.
- **Vertical Spacing**: Useful for controlling vertical spacing between lines of text.

19. Font Property (font-size)

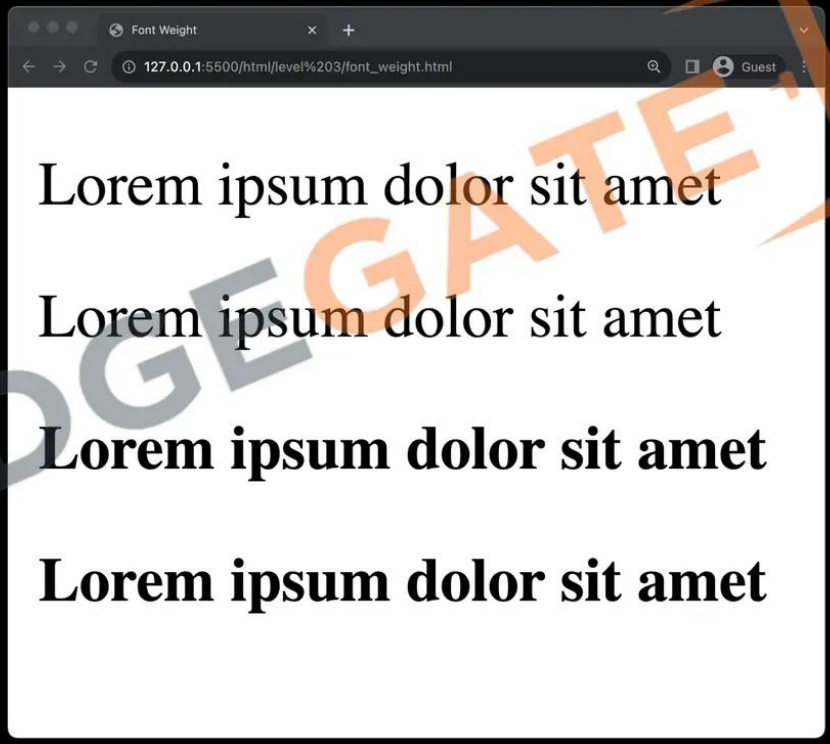
```html
<head>
    <title>Font Size</title>
    <style>
        #first {font-size: 5px;}
        #second {font-size: 15px;}
        #third {font-size: 25px;}
        #fourth {font-size: 35px;}
    </style>
</head>
<body>
    <p id="first">Lorem ipsum dolor sit amet</p>
    <p id="second">Lorem ipsum dolor sit amet</p>
    <p id="third">Lorem ipsum dolor sit amet</p>
    <p id="fourth">Lorem ipsum dolor sit amet</p>
</body>
```



- **Usage**: Sets the size of the font in web content.
- **Responsiveness**: Helps in creating responsive designs adaptable to various screen sizes.
- **Readability**: Crucial for ensuring the readability of text on websites.

19. Font Property (font-weight)

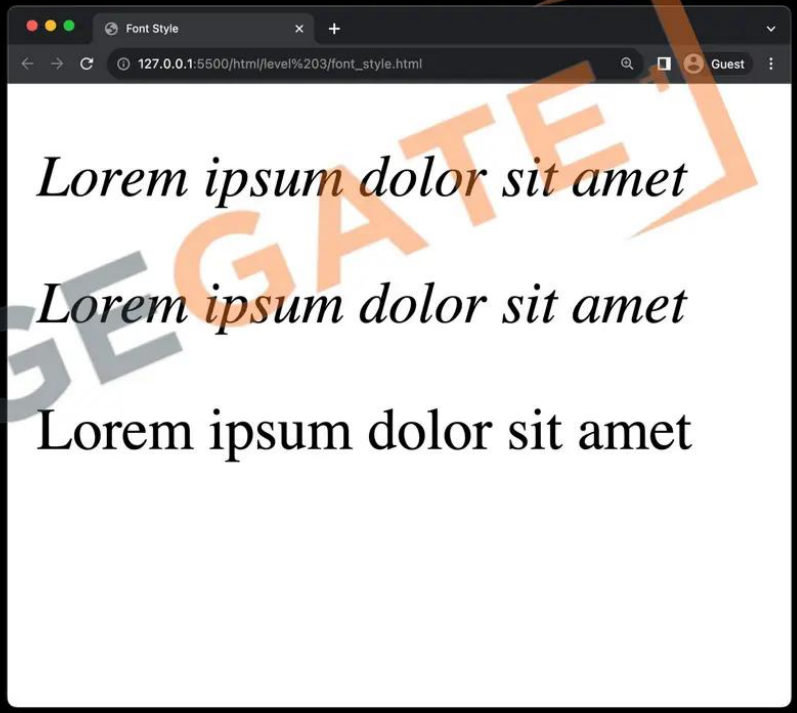
```html
<head>
    <title>Font Weight</title>
    <style>
        #first {font-weight: 100;}
        #second {font-weight: 400;}
        #third {font-weight: 600;}
        #fourth {font-weight: 900;}
    </style>
</head>
<body>
    <p id="first">Lorem ipsum dolor sit amet</p>
    <p id="second">Lorem ipsum dolor sit amet</p>
    <p id="third">Lorem ipsum dolor sit amet</p>
    <p id="fourth">Lorem ipsum dolor sit amet</p>
</body>
```



- **Usage**: Defines the thickness of characters in a font.
- **Values**: Can take values like normal, bold, bolder, or numeric values (100 to 900).
- **Text Emphasis**: Utilized to emphasize text or create contrast between text elements.

19. Font Property (font-style)

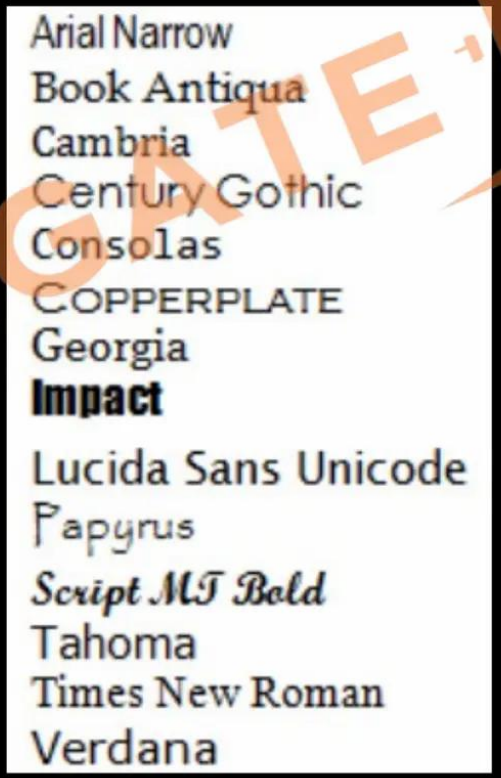
```html
<head>
    <title>Font Style</title>
    <style>
        #first {font-style: italic;}
        #second {font-style: oblique;}
        #third {font-style: normal;}
    </style>
</head>
<body>
    <p id="first">Lorem ipsum dolor sit amet</p>
    <p id="second">Lorem ipsum dolor sit amet</p>
    <p id="third">Lorem ipsum dolor sit amet</p>
</body>
```



- **Usage**: Controls the style of the font, mainly affecting its inclination.
- **Values**: Common values are normal, italic, and oblique.
- **Text Formatting**: Useful for highlighting or distinguishing certain text segments.

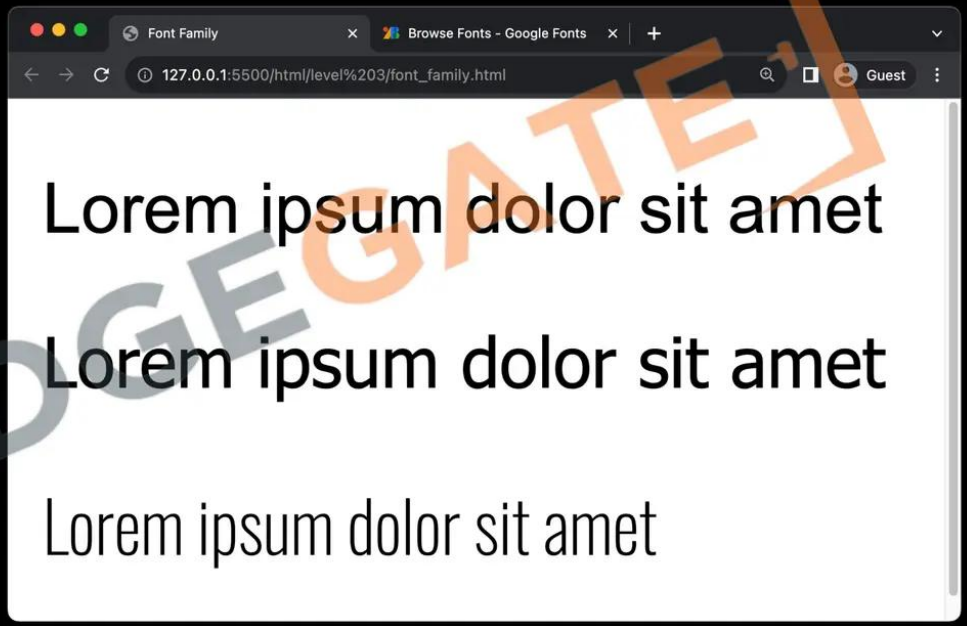
20. Font Family

- **Usage**: Defines which font should be used for text within an element.
- **Specific Fonts**: Common choices include Arial, Segoe UI, Times New Roman, and others.
- **Fallback Mechanism**: Incorporate a fallback font family in case the primary font is unavailable; helps in maintaining the site aesthetics.
- **Web Safe Fonts**: Employ web-safe fonts to ensure consistency across different browsers and operating systems.
- **Generic Family**: Always end the font family list with a generic family like serif or sans-serif as a last resort option.



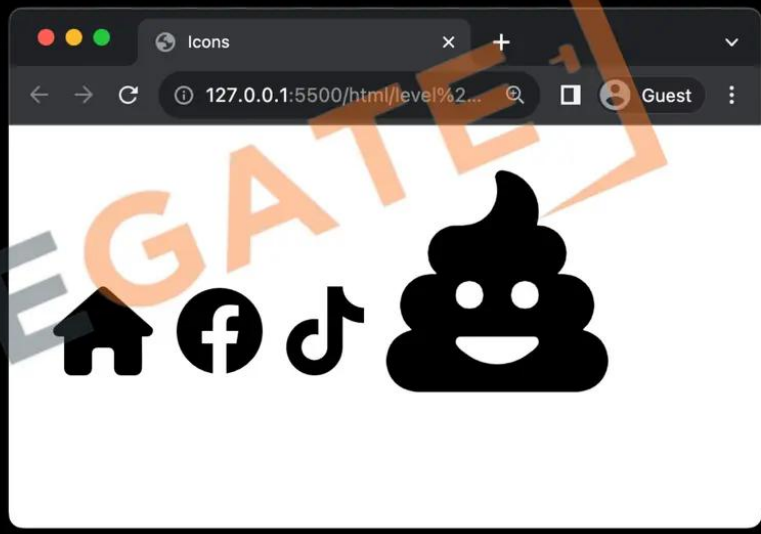
20. Font Family

```html
<head>
    <title>Font Family</title>
    <link rel="preconnect" href="https://fonts.googleapis.com">
<link rel="preconnect" href="https://fonts.gstatic.com" crossorigin>
<link href="https://fonts.googleapis.com/css2?family=Oswald:wght@200&
display=swap" rel="stylesheet">
    <style>
        #first {font-family: Arial, Helvetica, sans-serif;}
        #second {font-family: 'Segoe UI', Tahoma, Geneva, Verdana,
        sans-serif;}
        #third {font-family: 'Oswald', sans-serif;}
    </style>
</head>
<body>
    <p id="first">Lorem ipsum dolor sit amet</p>
    <p id="second">Lorem ipsum dolor sit amet</p>
    <p id="third">Lorem ipsum dolor sit amet</p>
</body>
```



21. Icons using Fonts

```
<head>
    <title>Icons</title>
    <script src="https://kit.fontawesome.com/43290fa92d.
    js" crossorigin="anonymous"></script>
</head>
<body>
    <i class="fa-solid fa-house"></i>
    <i class="fa-brands fa-facebook"></i>
    <i class="fa-brands fa-tiktok"></i>
    <i class="fa-solid fa-poo" style="font-size: 40px;"></
    i>
</body>
```



Using https://fontawesome.com

Level 4

Box Model

22. What is Box Model
23. Padding Property
24. Margin Property
25. Border Property

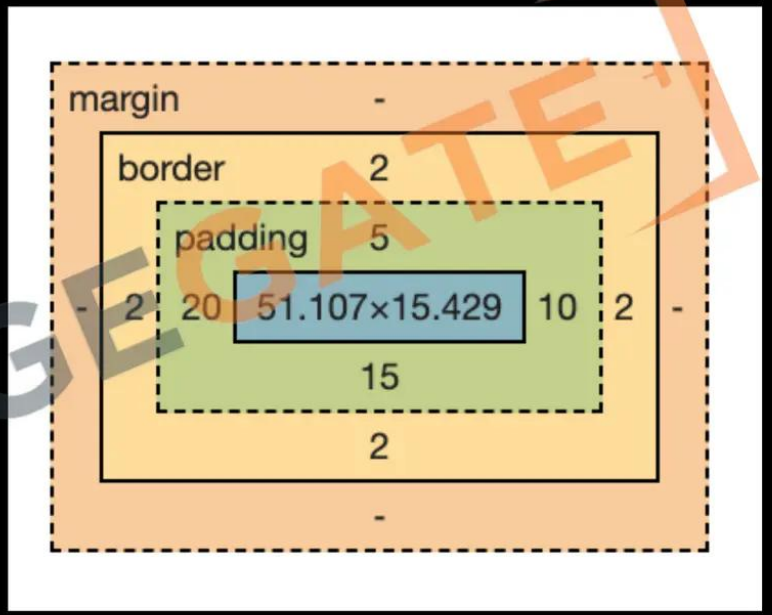
22. What is Box Model

मिठाई भण्डार पे चलो

- **Core Concept**: Central concept in CSS that outlines the design and layout of elements on the web page.
- **Components**: Consists of four main components - margin, border, padding, and content.
- **Margin**: The space outside the border, separating the element from others.
- **Border**: The outline that encapsulates the padding and content.
- **Padding**: The space between the border and the actual content, providing a buffer.
- **Content**: The innermost layer where text, images, or other media are housed.

23. Padding Property

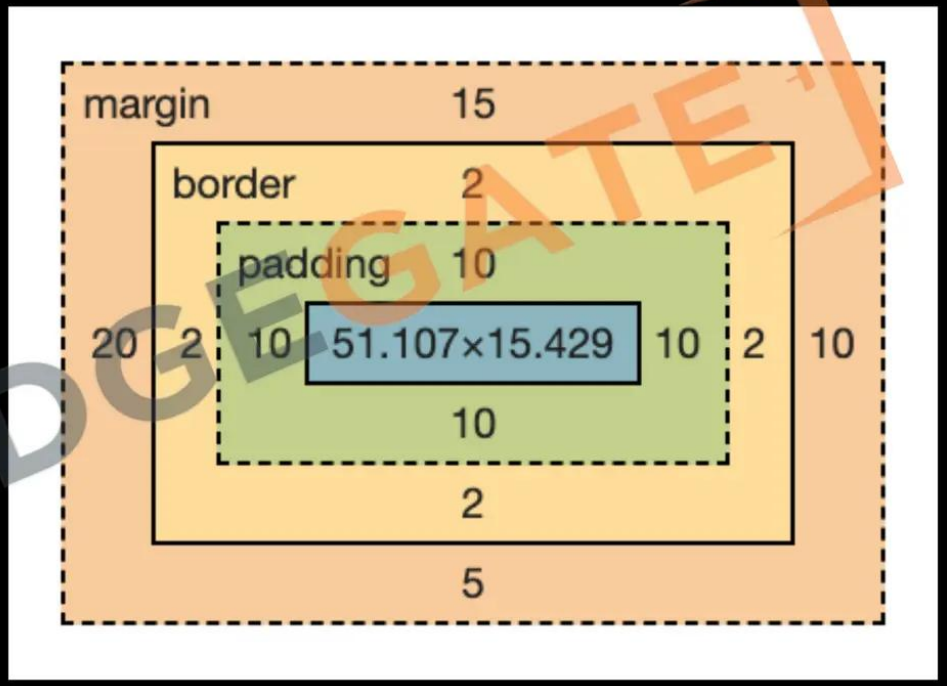
```
<head>
    <title>Padding</title>
    <style>
        * { margin: 0; padding: 0; }
        #button1 {
            padding: 5px 10px 15px 20px;
            background-color: aquamarine;
        }
    </style>
</head>
<body>
    <button id="button1">Click Me</button>
</body>
```



- **Usage**: Defines the space between the content of an element and its border.
- **Individual Sides**: Allows setting padding for individual sides using padding-top, padding-right, padding-bottom, and padding-left.
- **Shorthand**: Can use shorthand property padding to set all sides at once, e.g., padding: 10px 20px 10px 20px.

24. Margin Property

```html
<head>
    <title>margin</title>
    <style>
        * { margin: 0; padding: 0; }
        #button1 {
            margin: 15px 10px 5px 20px;
            padding: 10px;
            background-color: aquamarine;
        }
    </style>
</head>
<body>
    <button id="button1">Click Me</button>
</body>
```



- **Functionality**: Sets the space around elements, separating them from others.
- **Individual Sides**: Customizable for top, right, bottom, and left sides.
- **Shorthand**: Allows quick setup, e.g., margin: 10px 20px. (clockwise)
- **Auto Value**: Can be used for central alignment with auto value.

24. Border Property

```
<head>
    <title>Border</title>
    <style>
        * { margin: 0; padding: 0; }
        #button1 {
            height: 100px; width: 100px;
            border: 5px dashed black;
            background-color: aquamarine;
        }
    </style>
</head>
<body>
    <button id="button1">Click Me</button>
</body>
```

- **Usage**: Creates an outline around HTML elements.
- **Components**: Defined by width, style, and color attributes.
- **Styles**: Includes options like solid, dashed, and dotted.
- **Shorthand**: Can set attributes at once, e.g., border: 2px solid black.

24. Border Property (border radius)

```html
<head>
    <title>Border Radius</title>
    <style>
        * { margin: 0; padding: 0; }
        #button1 {
            height: 100px; width: 100px;
            border: 5px solid black;
            border-radius: 30px;
            background-color: aquamarine;
        }
    </style>
</head>
<body>
    <button id="button1">Click Me</button>
</body>
```

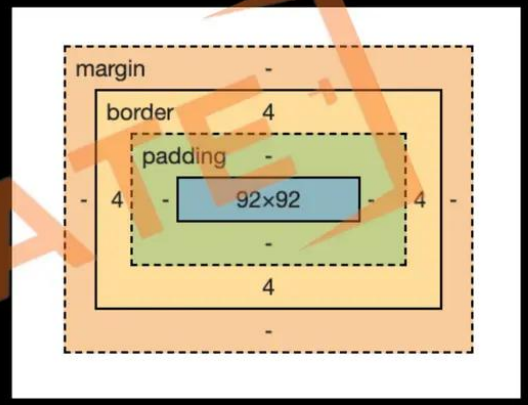
- **Usage**: Used to create rounded corners for elements.
- **Individual Corners**: Allows setting different radii for each corner.
- **Shorthand**: e.g., border-radius: 10px 20px.

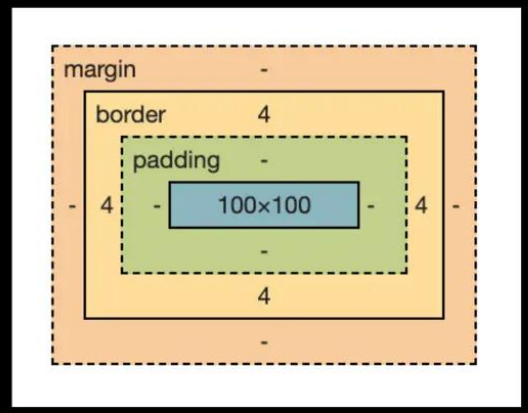
24. Border Property (box sizing)

```
<head>
    <title>Box Sizing</title>
    <style>
        * { margin: 0; padding: 0; }
        button {
            height: 100px; width: 100px;
            border: 4px solid black;
            background-color: aquamarine;
        }
        #button1 { box-sizing: border-box; }
        #button2 { box-sizing: content-box; }
    </style>
</head>
<body>
    <button id="button1">Click Me</button>
    <button id="button2">Click Me</button>
</body>
```

Click Me

Click Me



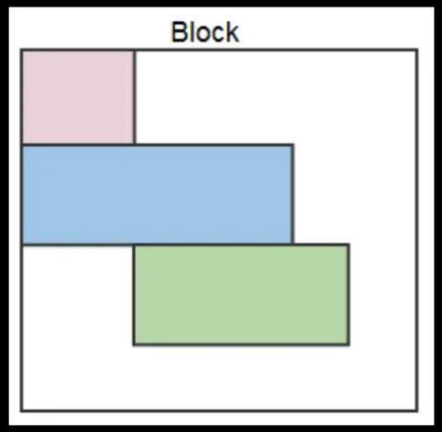


Level 5

Display and Position

26. Display Property
27. Responsive Websites
28. Relative Units
29. Position Property
30. Semantic Tags

26. Display Property (Block / Inline Elements)



Block Elements

- New Line: Start on a new line.
- Full Width: Take up all horizontal space.
- Styling: Can have margins and padding.
- Size: Width and height can be set.
- Examples: , <p>, <h1>, <ul>, <li>.

Inline Elements

- Flow: Stay in line with text.
- Width: Just as wide as the content.
- No Break: No new line between elements.
- Limited Styling: Can't set size easily.
- Examples: , <a>, , .

26. Display Property (Block)

```css
.box {
    height: 100px;
    width: 100px;
    background-color: blueviolet;
    margin: 10px;
    text-align: center;
    border: 5px solid black;
    border-radius: 10px;

    display: block;
}
```


```html
<head>
    <title>Display Block</title>
    <link rel="stylesheet" href="../../css/
    level 5/display.css">
</head>
<body>
    <div id="parent">
        <div id="div1" class="box">box1</div>
        <div id="div2" class="box">box2</div>
        <div id="div3" class="box">box3</div>
    </div>
</body>
```

26. Display Property (Inline)

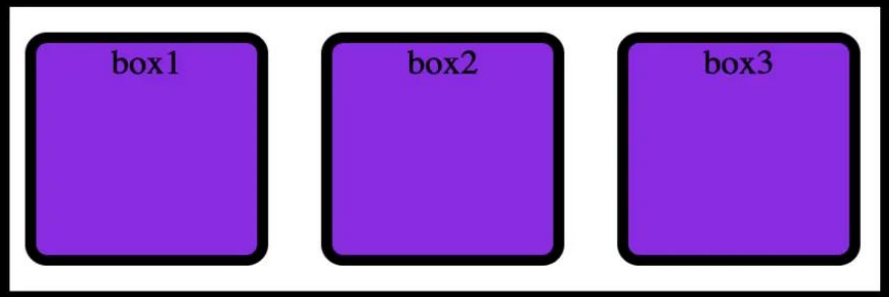
```css
.box {
    height: 100px;
    width: 100px;
    background-color: blueviolet;
    margin: 10px;
    text-align: center;
    border: 5px solid black;
    border-radius: 10px;

    display: inline;
}
```

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Display Inline</title>
    <link rel="stylesheet" href="../../css/
    level 5/display_inline.css">
</head>
<body>
    <div id="parent">
        <div id="div1" class="box">box1</div>
        <div id="div2" class="box">box2</div>
        <div id="div3" class="box">box3</div>
    </div>
</body>
</html>
```

26. Display Property (Inline-Block)

```css
.box {
    height: 100px;
    width: 100px;
    background-color: blueviolet;
    margin: 10px;
    text-align: center;
    border: 5px solid black;
    border-radius: 10px;

    display: inline-block;
}
```

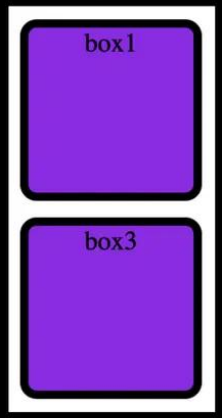
```html
<head>
    <title>Display Inline Block</title>
    <link rel="stylesheet" href="../../css/
    level 5/display_inline_block.css">
</head>
<body>
    <div id="parent">
        <div id="div1" class="box">box1</div>
        <div id="div2" class="box">box2</div>
        <div id="div3" class="box">box3</div>
    </div>
</body>
```



26. Display Property (None)

```css
.box {
    height: 100px;
    width: 100px;
    background-color: blueviolet;
    margin: 10px;
    text-align: center;
    border: 5px solid black;
    border-radius: 10px;
}

#div2 {
    display: none;
}
```

```html
<head>
    <title>Display None</title>
    <link rel="stylesheet" href="../../css/level 5/display_none.css">
</head>
<body>
    <div id="parent">
        <div id="div1" class="box">box1</div>
        <div id="div2" class="box">box2</div>
        <div id="div3" class="box">box3</div>
    </div>
</body>
```



27. Responsive Website

27. Responsive Website

1. Adapts layout for different screen sizes
2. Flexible layouts
3. Optimizes images and assets
4. Enhances user experience on mobile and desktop

28. Relative Units

CSS Units Cheat Sheet

px
Absolute pixel value

%
A percentage of the parent element.
100% is the width of the parent element

em
Relative to the font size of the element

vh
Relative to 1% of the viewport's height

rem
Relative to the font size of the root element

vw
Relative to 1% of the viewport's width

28. Relative Units (Percentage)

```css
#first {
    height: 200px;
    width: 200px;
    background-color: aqua;
    font-size: 25px;
}

#second {
    background-color: blueviolet;
    width: 50%;
    height: 30%;
}
```

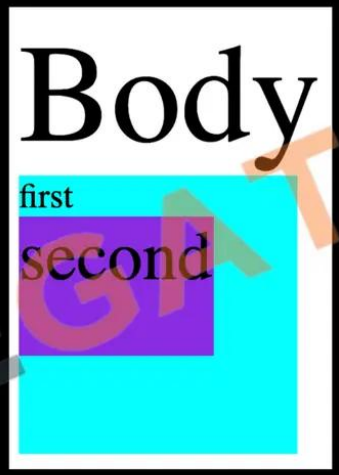
```html
<body>
    <div id="first">
        first
        <div id="second">
            second
        </div>
    </div>
</body>
```

- **Relative Sizing**: Facilitates dynamic sizing relative to parents.
- **Adaptability**: Ensures responsiveness across various screens.
- **Dimensions**: Quickly set width and height as a percentage.

28. Relative Units (EM)

```css
body {
    font-size: 100px;
}

#first {
    height: 200px;
    width: 200px;
    background-color: aqua;
    font-size: 25px;
}

#second {
    background-color: blueviolet;
    width: 70%;
    height: 50%;
    font-size: 2em;
}
```

```html
<body>
    Body
    <div id="first">
        first
        <div id="second">
            second
        </div>
    </div>
</body>
```

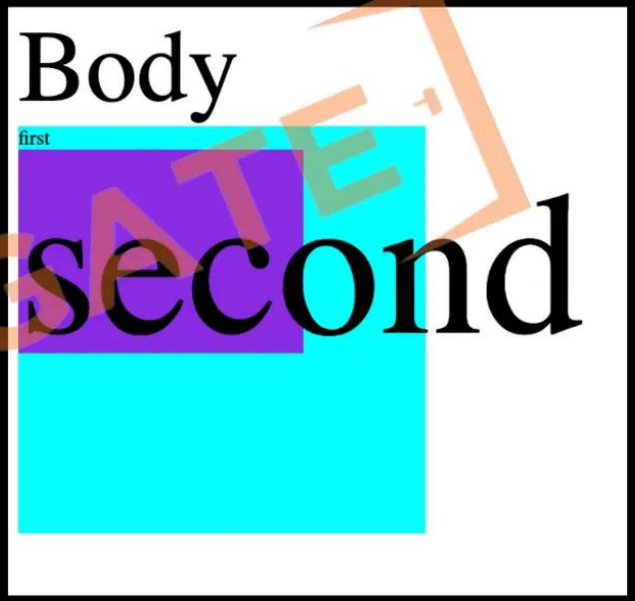


- **Relative Unit**: Sized relative to the parent element's font size.
- **Scalability**: Facilitates easy scaling of elements for responsive design.
- **Font Sizing**: Commonly used for setting font sizes adaptively.

28. Relative Units (REM)

```css
* {
    font-size: 50px;
}

#first {
    height: 200px;
    width: 200px;
    background-color: aqua;
    font-size: 10px;
}

#second {
    background-color: blueviolet;
    width: 70%;
    height: 50%;
    font-size: 2rem;
}
```

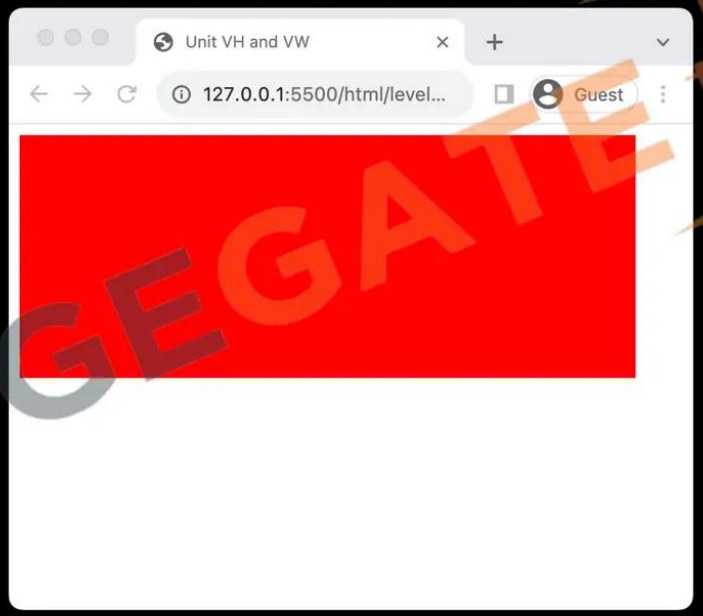
```html
<body>
    Body
    <div id="first">
        first
        <div id="second">
            second
        </div>
    </div>
</body>
```



- **Relative Sizing**: Facilitates dynamic sizing relative to root element.
- **Adaptability**: Ensures responsiveness across various screens.
- **Dimensions**: Quickly set width and height as a percentage.

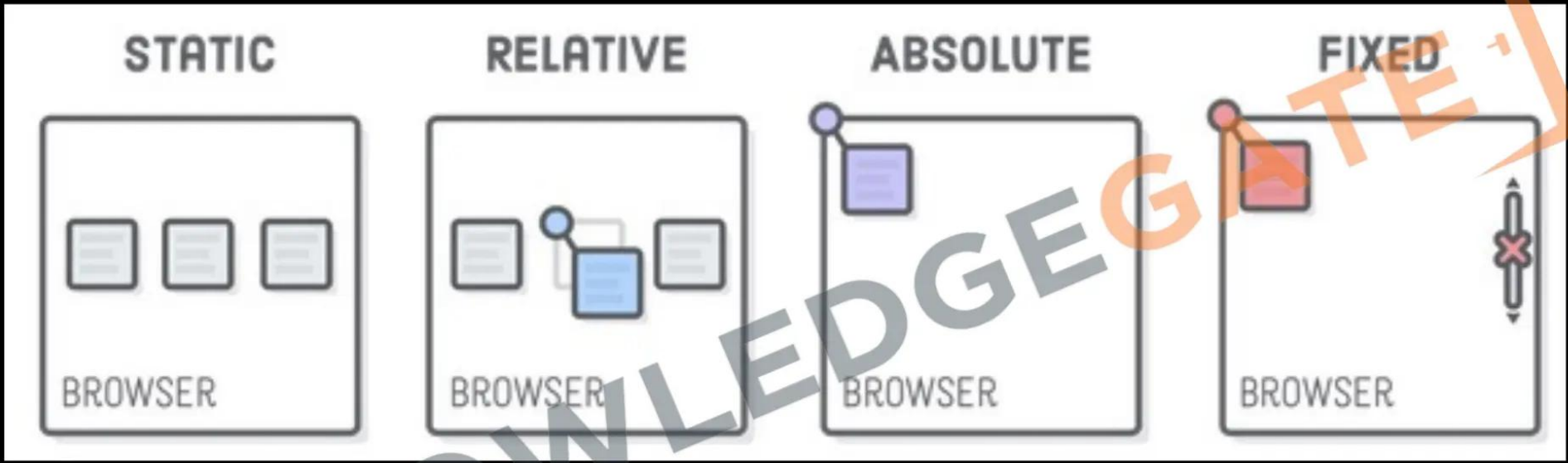
28. Relative Units (VW/VH)

```html
<head>
    <title>Unit VH and VW</title>
    <style>
        #first {
            height: 50vh;
            width: 90vw;
            background-color: red;
        }
    </style>
</head>
<body>
    <div id="first"></div>
</body>
```



- **Viewport Relative Units**: Units based on viewport's width (vw) or height (vh) for responsive design.
- **Responsive Layouts**: Essential for creating adaptive layouts; e.g., height: 100vh for full-screen sections.
- **Element Sizing**: Useful for defining heights and widths that scale with the viewport.

29. Position Property

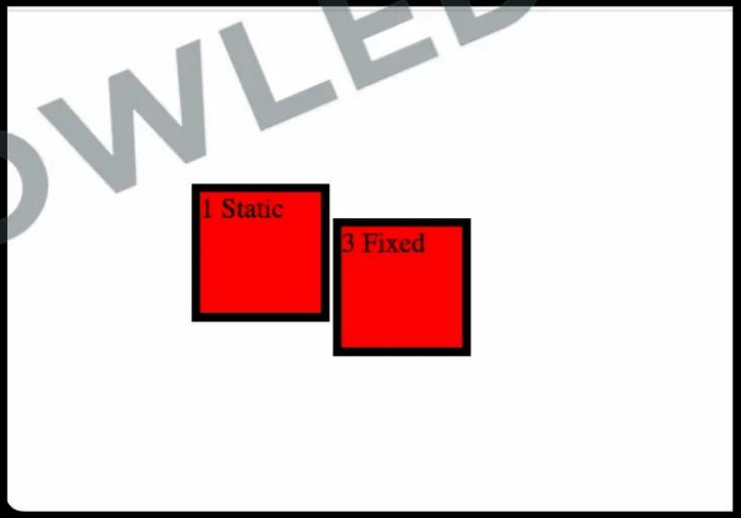


- **Static** (default) : Elements follow the normal document flow. (top, right, bottom, left, z-index would not work)
- **Relative**: Element's position adjusted from its normal position.
- **Absolute**: Positions element relative to the nearest positioned ancestor.
- **Fixed**: Element positioned relative to the viewport, does not move on scroll.

29. Position Property

```css
div {
    height: 70px;
    width: 70px;
    background-color: red;
    border: 5px solid black;
    margin: 20px;
}
#div1 {
    position: static;
}
#div2 {
    position: relative;
    top: 20px;
    left: 90px;
}
#div3 {
    position: fixed;
    top: 20px;
    left: 90px;
}
#div4 {
    position: absolute;
    top: 200px;
    left: 200px;
}
```

```html
<head>
    <title>Position</title>
    <link rel="stylesheet" href="../../
    css/level 5/positions.css">
</head>
<body>
    <div id="div1">1 Static</div>
    <div id="div2">2 Relative</div>
    <div id="div3">3 Fixed</div>
    <div id="div4">4 Absolute</div>
</body>
```

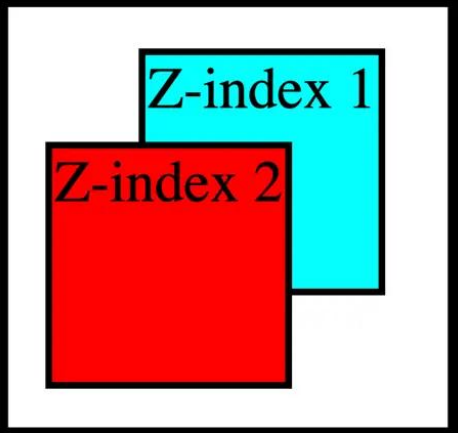


29. Position Property (z index)

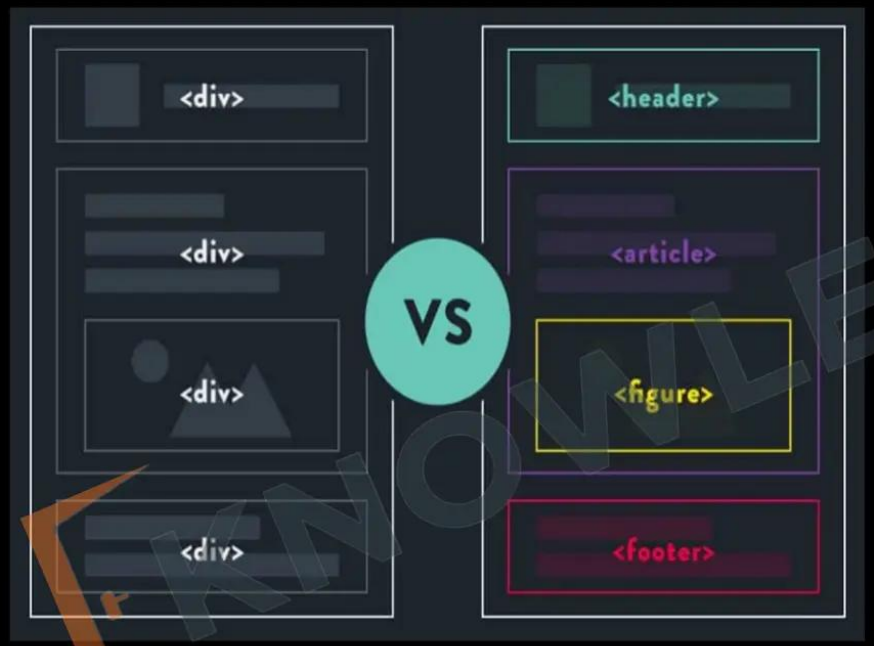
```css
.container {
    position: relative;
}
.box1, .box2 {
    position: absolute;
    border: 3px solid black;
    width: 100px;
    height: 100px;
    text-align: center;
    font-size: 25px;
}
.box1 {
    background-color: red;
    left: 20px;
    top: 60px;
    z-index: 2;
}
.box2 {
    background-color: aqua;
    left: 60px;
    top: 20px;
    z-index: 1;
}
```

- **Stacking Order**: Determines the stacking order of elements along the Z-axis.
- **Position Context**: Only applies to elements with position set to relative, absolute, fixed, or sticky.
- **Integer Values**: Accepts integer values, including negative numbers.
- **Higher Values**: An element with a higher z-index value appears above others.

```html
<head>
    <title>Z-Index</title>
    <link rel="stylesheet" href="../../css/level 5/z-index.css">
</head>
<body>
    <div class="container">
        <div class="box1">Z-index 2</div>
        <div class="box2">Z-index 1</div>
    </div>
</body>
```



30. Semantic Tags



30. Semantic Tags

Semantic Tags

- Meaningful: Describe content.
- SEO: Good for search engines.
- Accessibility: Useful for screen readers.
- Examples: <header>, <footer>, <article>, <section>, <nav>.

Non-Semantic Tags

- Generic: No specific meaning.
- For Styling: Used for layout.
- No SEO: Not SEO-friendly.
- Examples: , , <i>, <b>.

Level 6

Flex Box, Grid and Media Queries

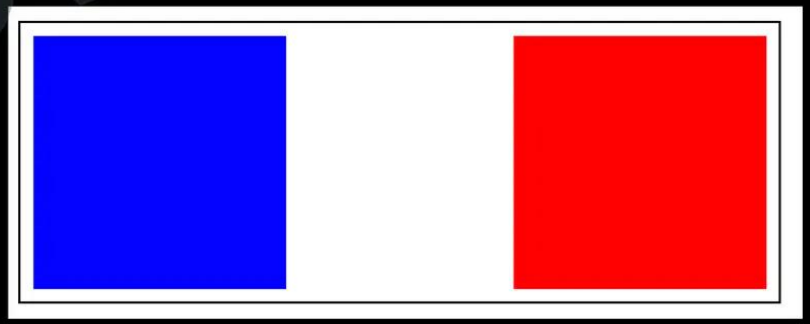
31. Float Property
32. What is Flexbox?
33. Flex Model
34. Flexbox Direction
35. Properties: Flexbox container
36. Properties: Flex Items
37. Grid Layout
38. Media Queries

31. Float Property

```css
.container {
    height: 110px;
    width: 300px;
    border: 1px solid #000;
}

.box {
    width: 100px;
    height: 100px;
    margin: 5px;
}

.box1 {
    background-color: red;
    float: right;
}

.box2 {
    background-color: blue;
    float: left;
}
```

- **Element Alignment**: Allows elements to be aligned to the left or right within their containing element.
- **Values**: Can take values like "left", "right", or "none" to determine the floating direction.
- **Old Layout Technique**: Less commonly used with the advent of Flexbox.

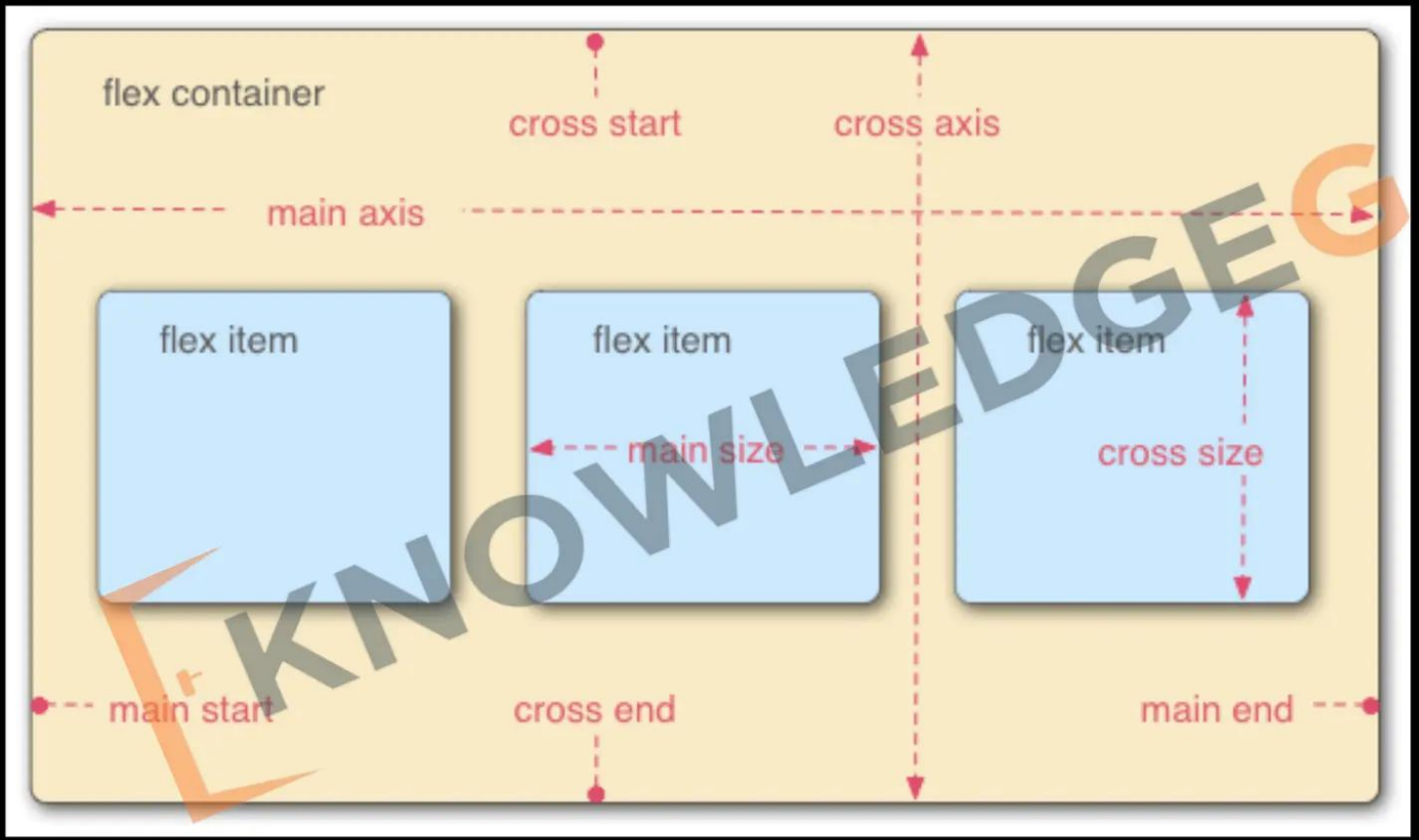
```html
<head>
    <title>Float Property</title>
    <link rel="stylesheet" href="../../css/level 6/float.css">
</head>
<body>
    <div class="container">
        <div class="box box1"></div>
        <div class="box box2"></div>
    </div>
</body>
```



32. What is Flexbox?

Flexbox is a one-dimensional layout method for arranging items in rows or columns.
Items *flex* (expand) to fill additional space or shrink to fit into smaller spaces.

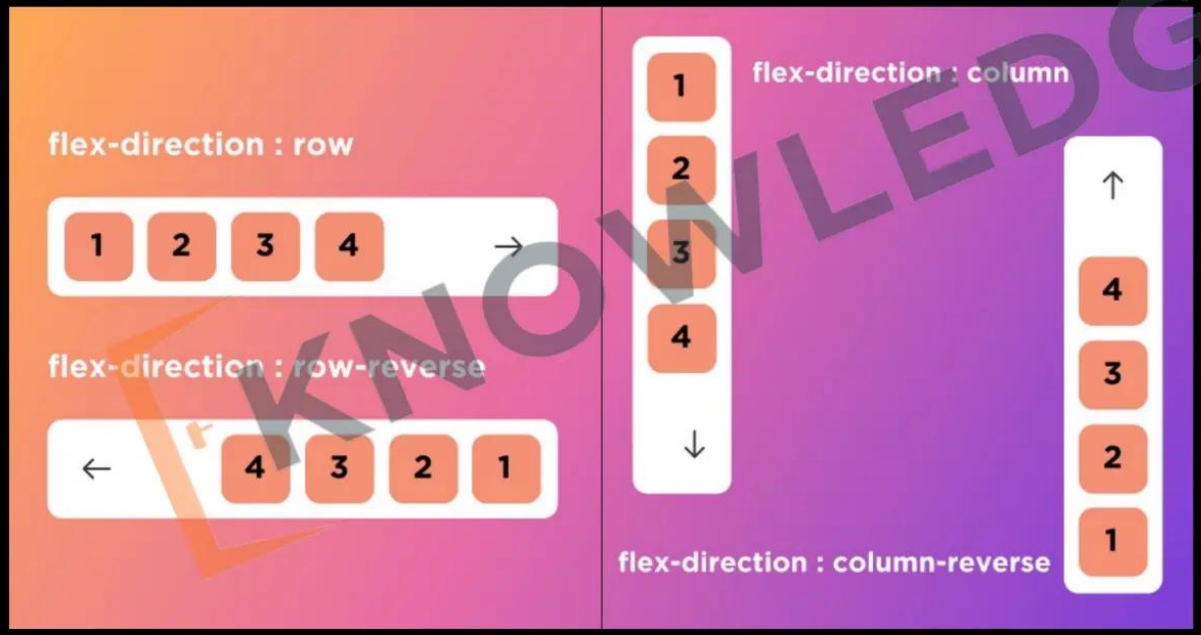
33. Flex Model



display: flex

34. Flexbox Direction

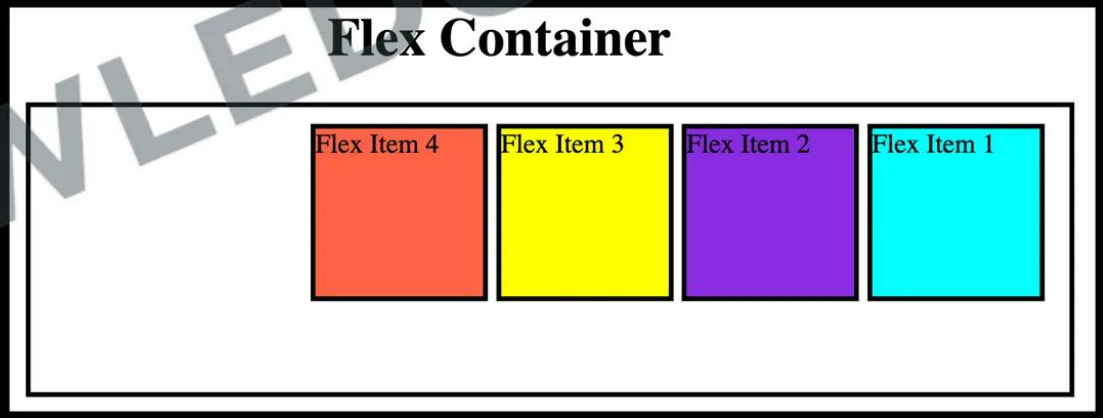
- **Property Name**: flex-direction is the property used to define the direction in a flex container.
- **Row Layout**: row value aligns the flex items horizontally, in a left-to-right fashion.
- **Column Layout**: column value stacks the flex items vertically, from top to bottom.
- **Reverse Direction**: Adding -reverse to row or column (as in row-reverse or column-reverse) reverses the order of the items.



34. Flexbox Direction

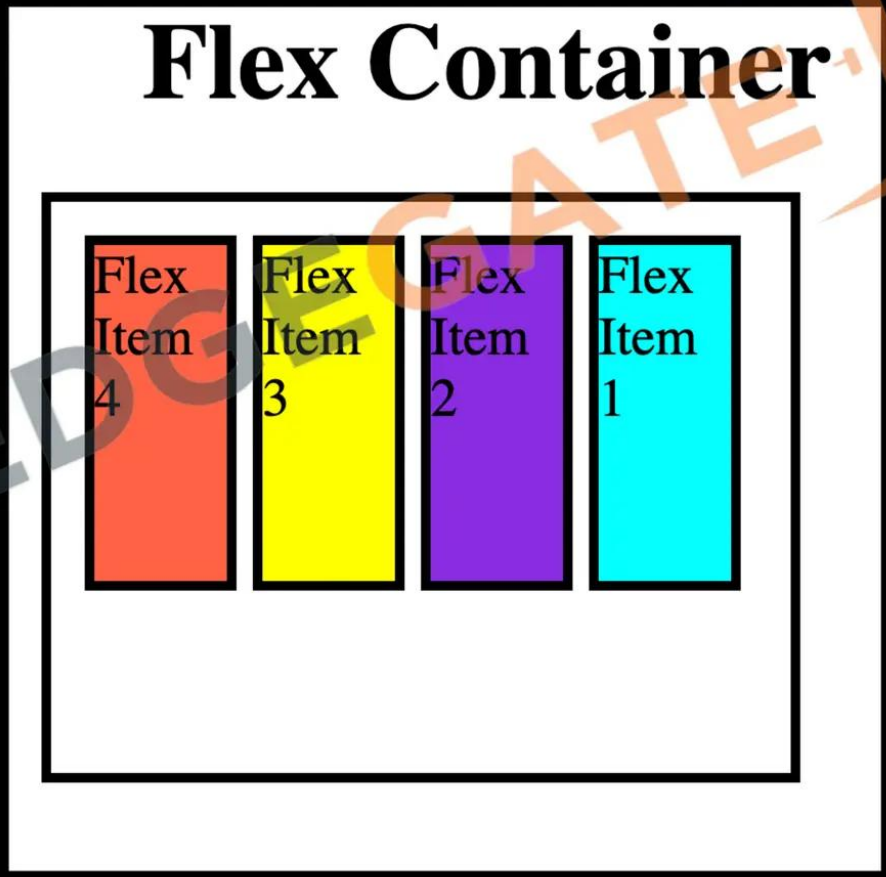
```css
* {
    margin: 0;
    padding: 0;
}
.box {
    height: 100px;
    width: 100px;
    border: 3px solid black;
    margin-right: 5px;
}
#heading {margin-left: 200px;}
#container {
    height: 150px;
    width: 600px;
    padding: 10px;
    margin: 20px;
    border: 3px solid black;

    display: flex;
    flex-direction: row-reverse;
}

#box1 { background-color: aqua;}
#box2 { background-color: blueviolet;}
#box3 { background-color: yellow;}
#box4 { background-color: tomato;}
```

```html
<body>
    <h1 id="heading">Flex Container</h1>
    <div id="container">
        <div id="box1" class="box">Flex Item 1</div>
        <div id="box2" class="box">Flex Item 2</div>
        <div id="box3" class="box">Flex Item 3</div>
        <div id="box4" class="box">Flex Item 4</div>
    </div>
</body>
```

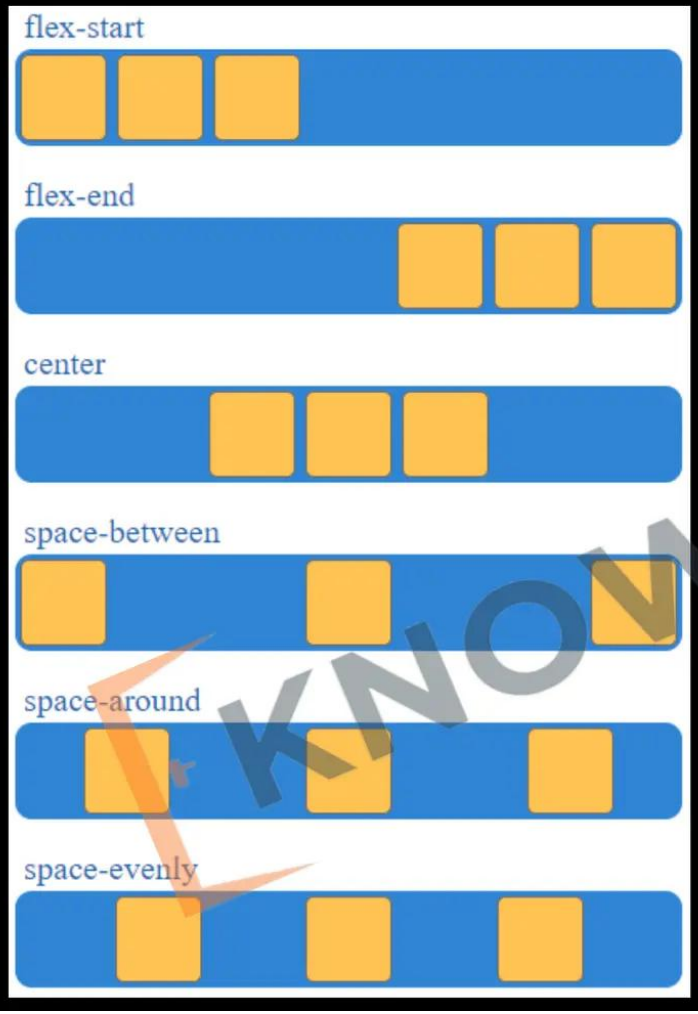


34. Flexbox Direction

```css
.box {
    height: 100px;
    width: 100px;
    border: 3px solid black;
    margin-right: 5px;
}
#heading {margin-left: 50px;}
#container {
    height: 150px;
    width: 200px;
    padding: 10px;
    margin: 20px;
    border: 3px solid black;

    display: flex;
    flex-direction: row-reverse;
}
```

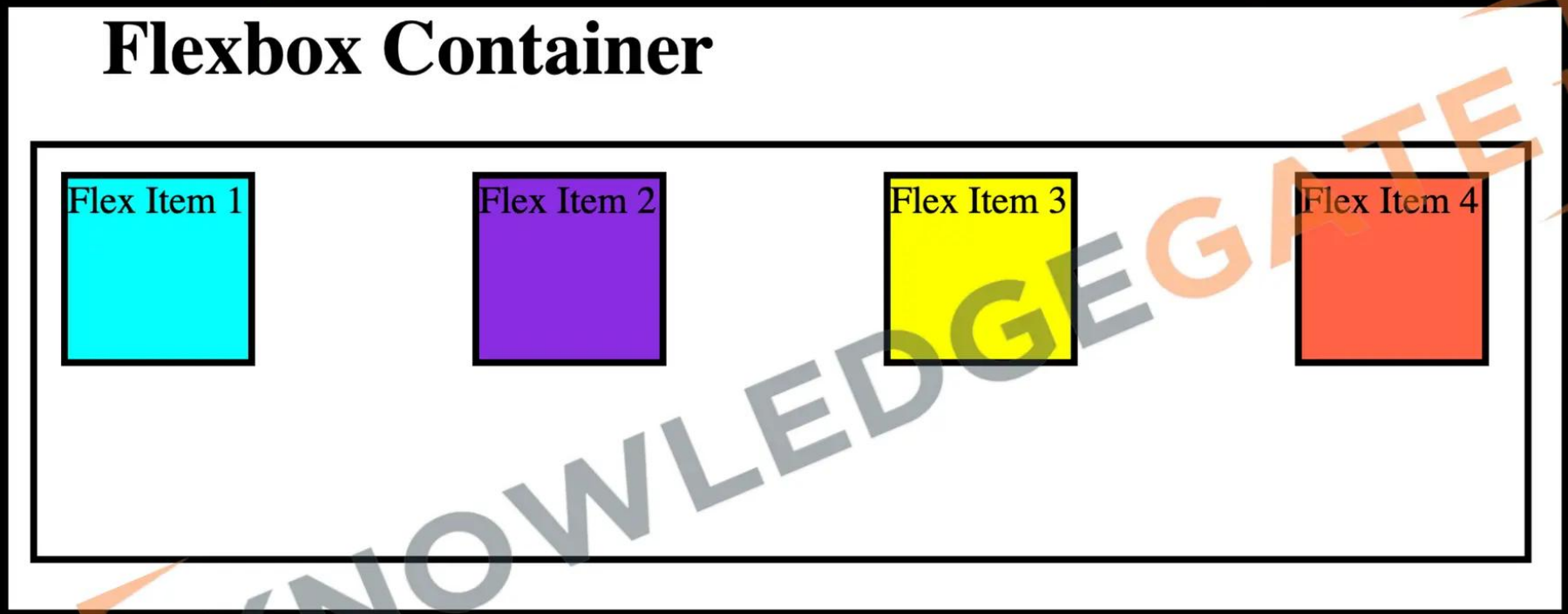


35. Properties: Flexbox container (Justify Content)



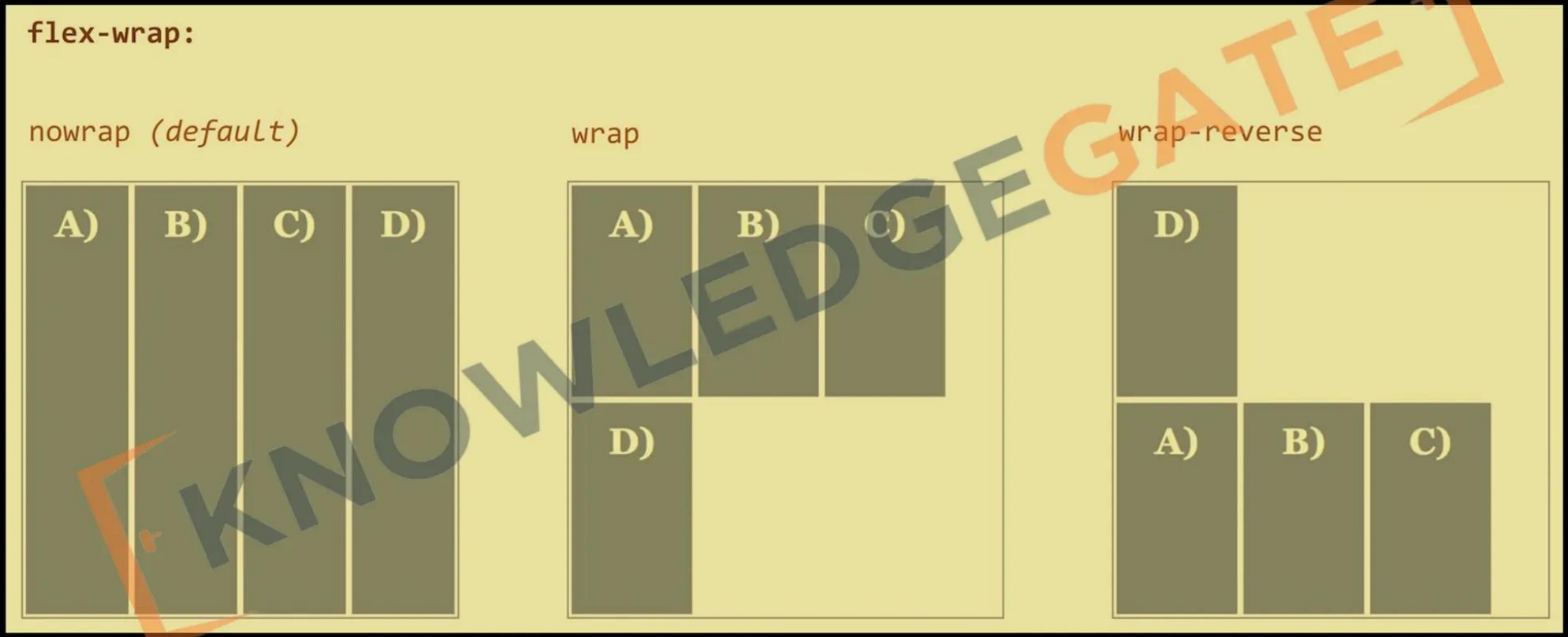
- **Alignment**: Aligns flex items along the main axis.
- **flex-start**: Items align to the start of the flex container.
- **flex-end**: Items align to the end of the flex container.
- **Center**: Items are cantered within the flex container.
- **space-between/space-around/space-evenly**: Distributes space between items evenly.

35. Properties: Flexbox container (Justify Content)



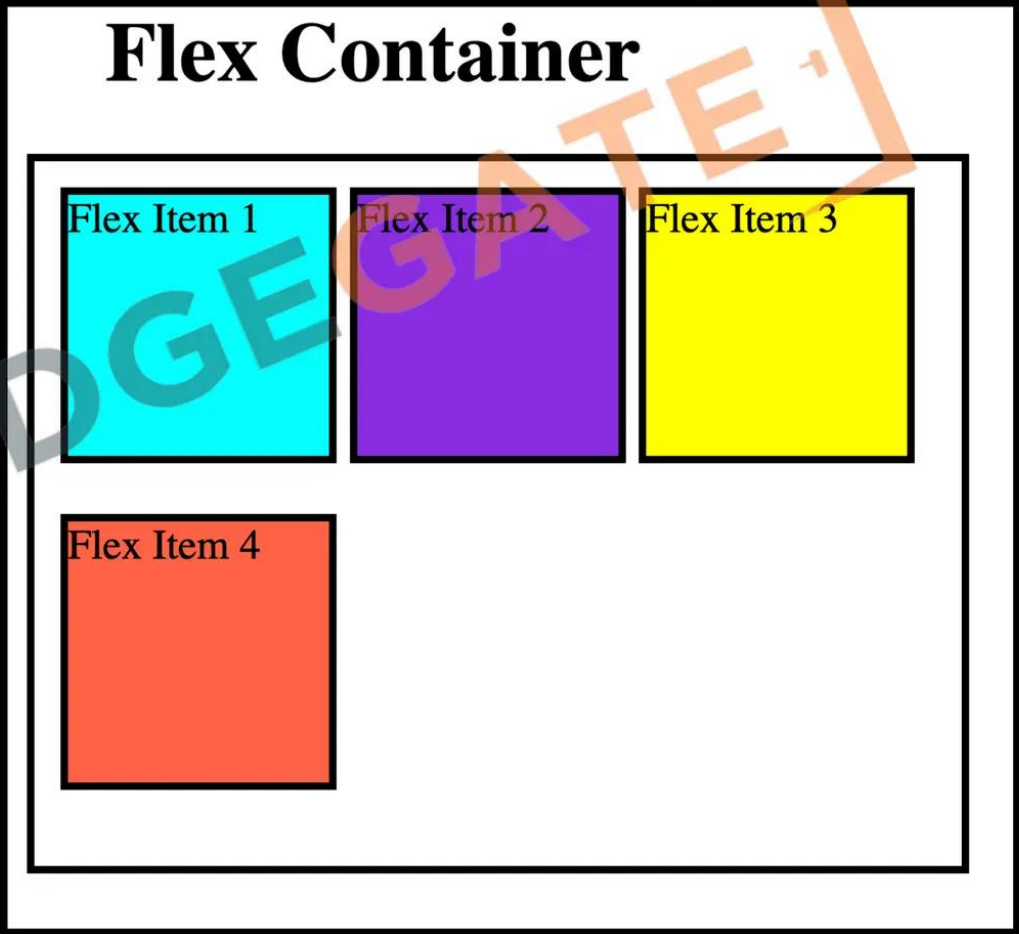

```
display: flex;
justify-content: space-between;
```

35. Properties: Flexbox container (Flex Wrap)



35. Properties: Flexbox container (Flex Wrap)

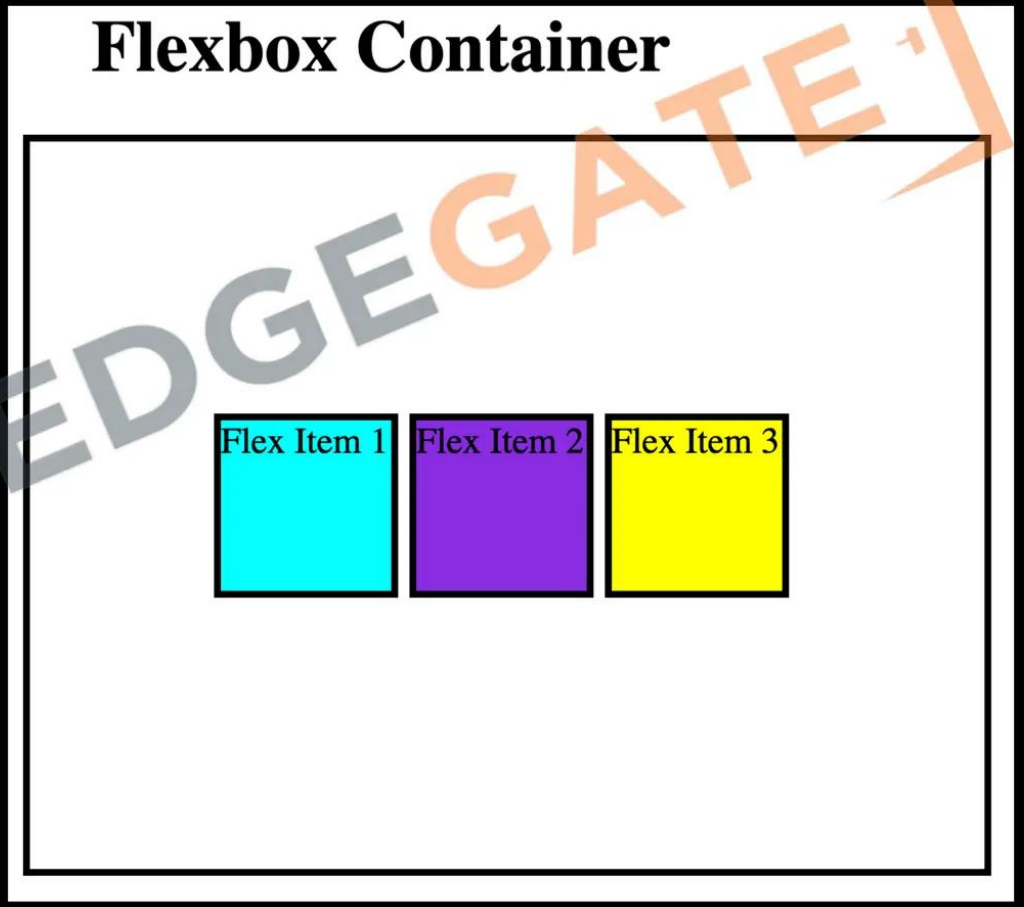
```
#container {
    height: 250px;
    width: 335px;
    padding: 10px;
    margin: 20px;
    border: 3px solid black;

    display: flex;
    flex-wrap: wrap;
}
```



35. Properties: Flexbox container (Align Items)

This property is used to align the flex container's items along the cross-axis, which is perpendicular to the main axis.

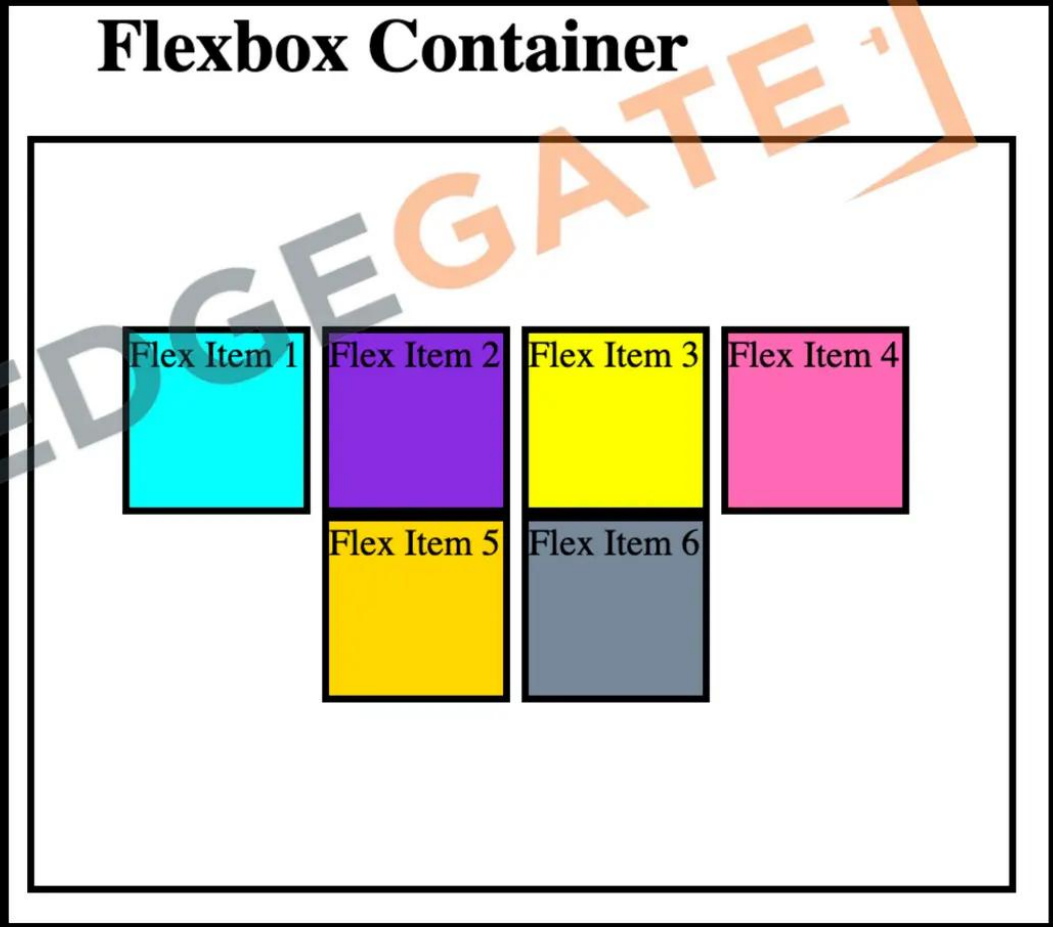
```
display: flex;
flex-direction: row;
justify-content: center;
align-items: center;
```



35. Properties: Flexbox container (Align Content)

It is utilized to adjust the spacing between flex lines within a flex container, particularly when there is extra space along the cross-axis.

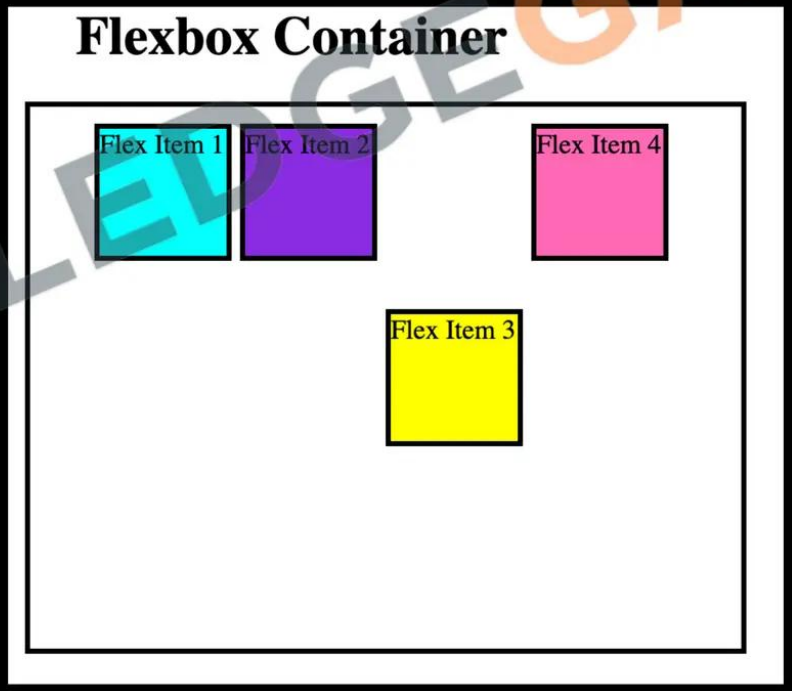
```
display: flex;
flex-direction: row;
justify-content: center;
flex-wrap: wrap;
align-content: center;
```



36. Properties: Flex Items (Align Self)

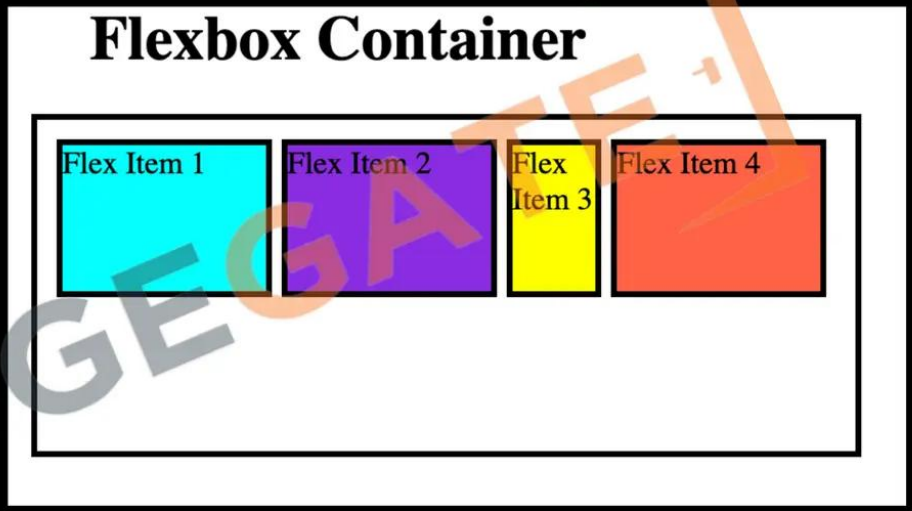
```css
#container {
    height: 300px;
    width: 400px;
    padding: 10px;
    margin: 20px;
    border: 3px solid black;

    display: flex;
    flex-direction: row;
    justify-content: center;
    flex-wrap: wrap;
    align-items: start;
}

#box1 { background-color: aqua;}
#box2 { background-color: blueviolet;}
#box4 { background-color: hotpink;}
#box3 {
    background-color: yellow;
    align-self: center;
}
```

Allows individual flex items to override the container's align-items property, aligning them differently along the cross-axis.



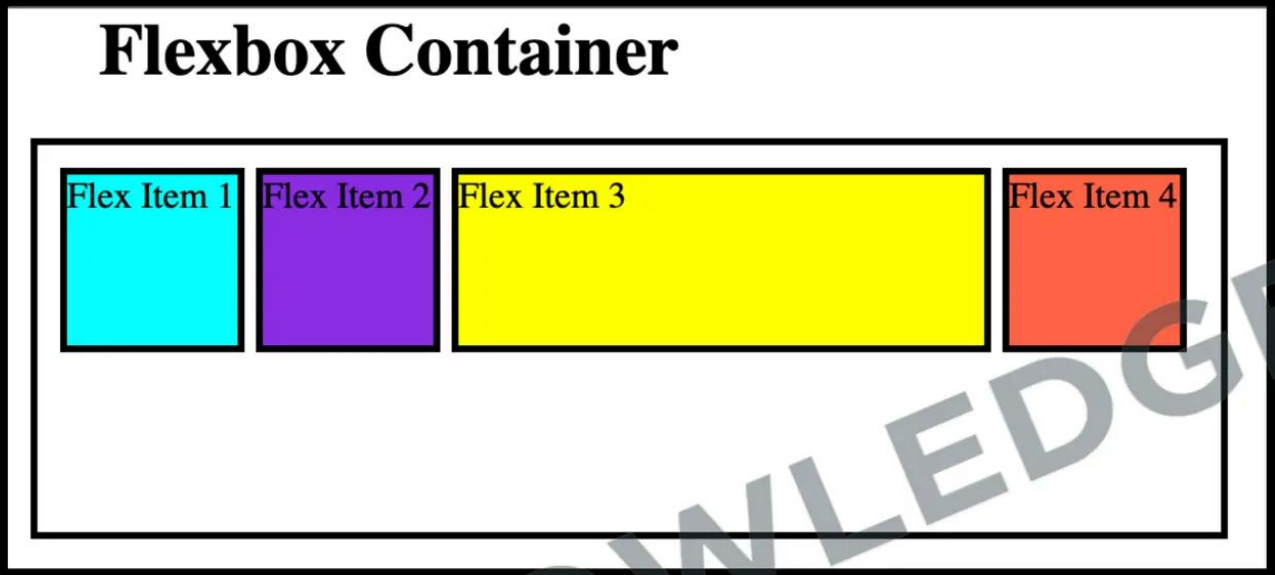
36. Properties: Flex Items (Flex Shrink)

```
#box3 {
    background-color: yellow;
    flex-shrink: 4;
}
```



The "flex-shrink" property in CSS determines how much a flex item will shrink relative to other items in the flex container if there is insufficient space.

36. Properties: Flex Items (Flex Grow)



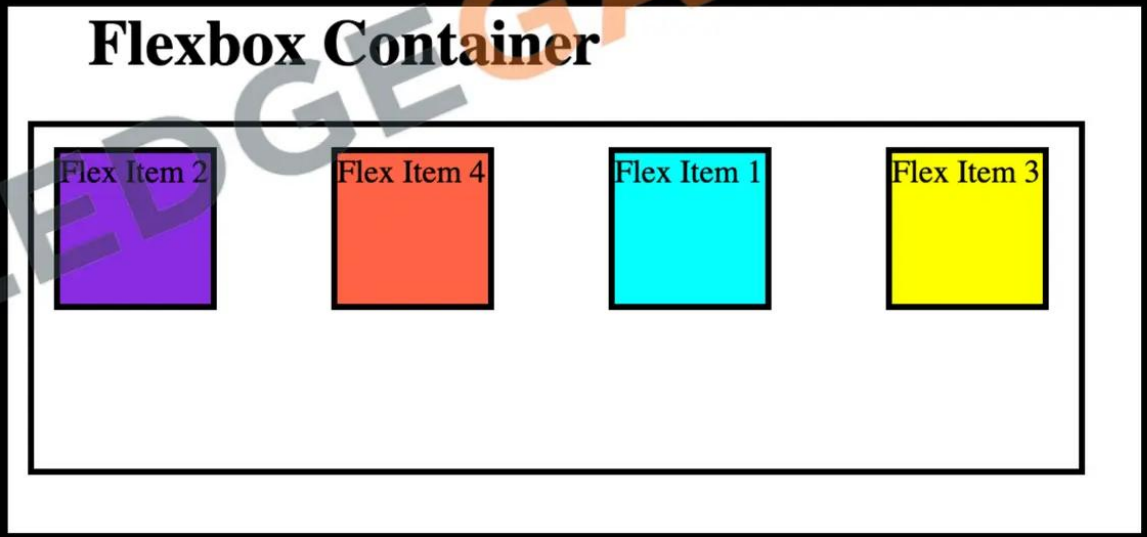

```
#box3 {
    background-color: yellow;
    flex-grow: 1;
}
```


The "flex-grow" property in CSS specifies how much a flex item will grow relative to other items in the flex container when additional space is available.

36. Properties: Flex Items (Order)

```css
#box1 {
    background-color: aqua;
    order: 3
}
#box2 {
    background-color: blueviolet;
    order: 1;
}
#box3 {
    background-color: yellow;
    order: 4;
}
#box4 {
    background-color: tomato;
    order: 2;
}
```

The "order" property in CSS allows you to define the sequence in which flex items appear within the flex container, overriding their original order in the HTML.



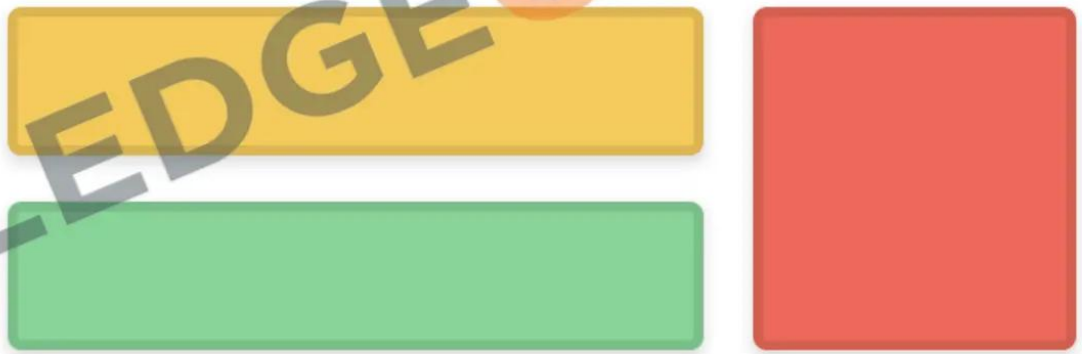
37. Grid

Flexbox

One-dimensional layout

Grid

Multi-dimensional layout



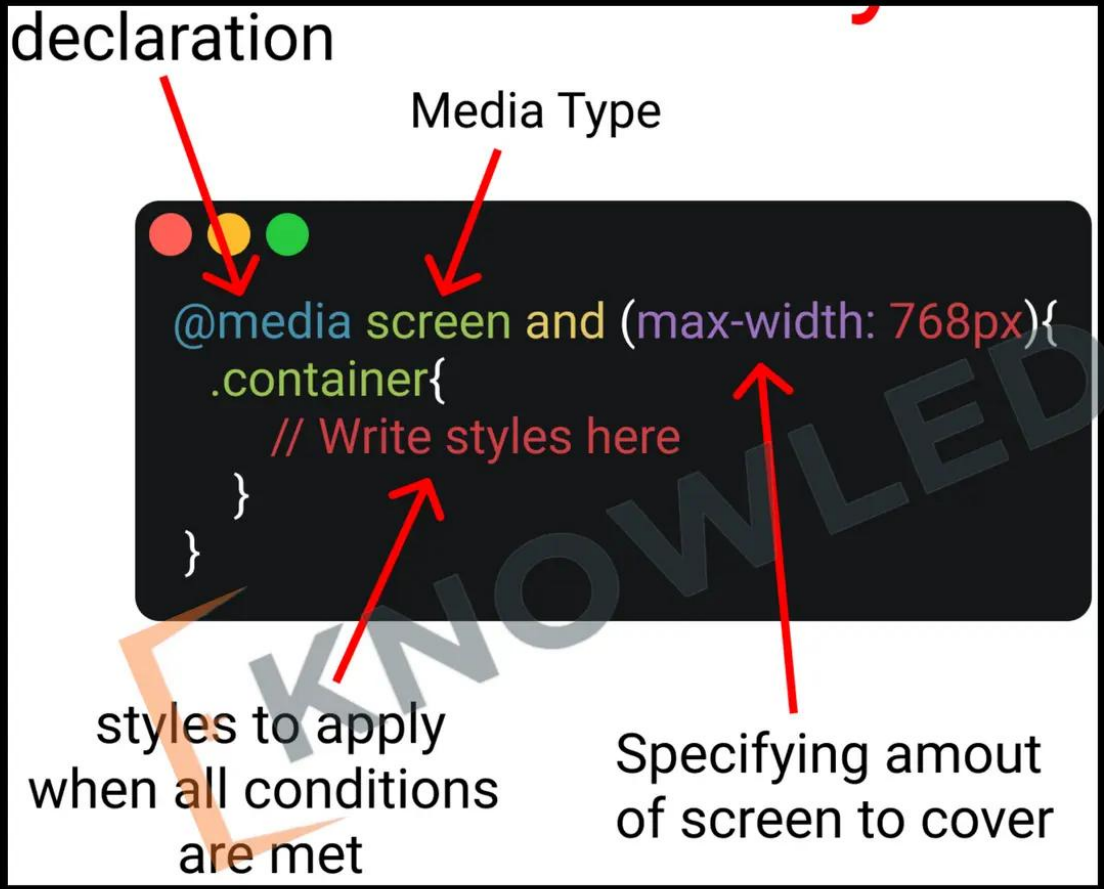
37. Grid

```css
.container {
  display: grid;
  grid-template-columns: 50px 50px;
  grid-template-rows: 50px 50px;
}

.item1 {
  grid-column: 1 / 2;
  grid-row: 1 / 2;
  background-color: lightblue;
}

.item2 {
  grid-column: 2 / 2;
  grid-row: 1 / 2;
  background-color: lightgreen;
}

.item3 {
  grid-column: 1 / 2;
  grid-row: 2 / 2;
  background-color: lightpink;
}

.item4 {
  grid-column: 2 / 2;
  grid-row: 2 / 2;
  background-color: lightyellow;
}
```

```html
<div class="container">
  <div class="item1">Item 1</div>
  <div class="item2">Item 2</div>
  <div class="item3">Item 3</div>
  <div class="item4">Item 4</div>
</div>
```

- 2D layout system for rows & columns.
- Activate with display: grid;.
- Children become grid items.
- Define structure with grid-template properties.
- Individual units called grid cells.

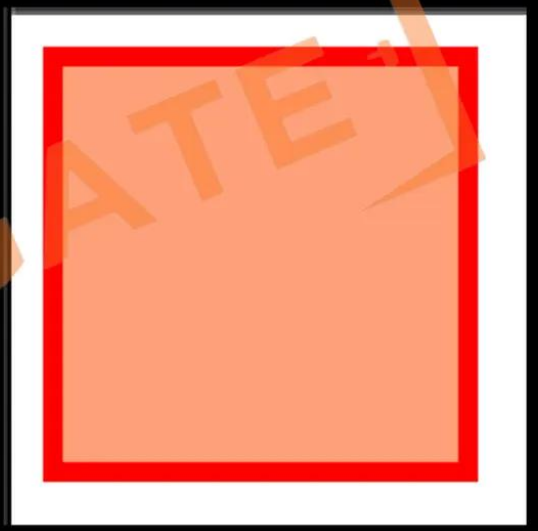
38. Media Queries



- Tailor styles for specific device characteristics.
- Use to create responsive web designs.
- Apply styles based on conditions like screen size.
- Syntax: @media (condition) { CSS rules }.
- Can combine multiple conditions using and, or.

38. Media Queries (width)

```css
.box {
    height: 100px;
    width: 100px;
    background-color: lightsalmon;
}
@media screen and (width: 250px) {
    .box {
        border: 5px solid red;
    }
}
```

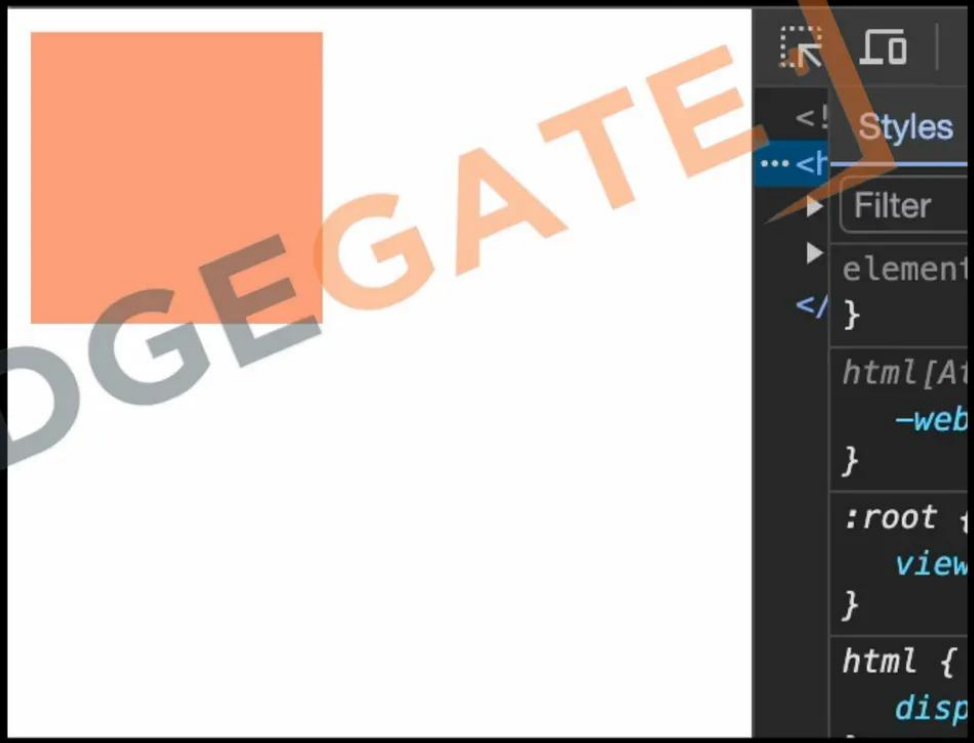


38. Media Queries (min-width)

```css
.box {
    height: 100px;
    width: 100px;
    background-color: lightsalmon;
}
@media screen and (min-width: 300px) {
    .box {
        height: 150px;
        width: 150px;
    }
}
```

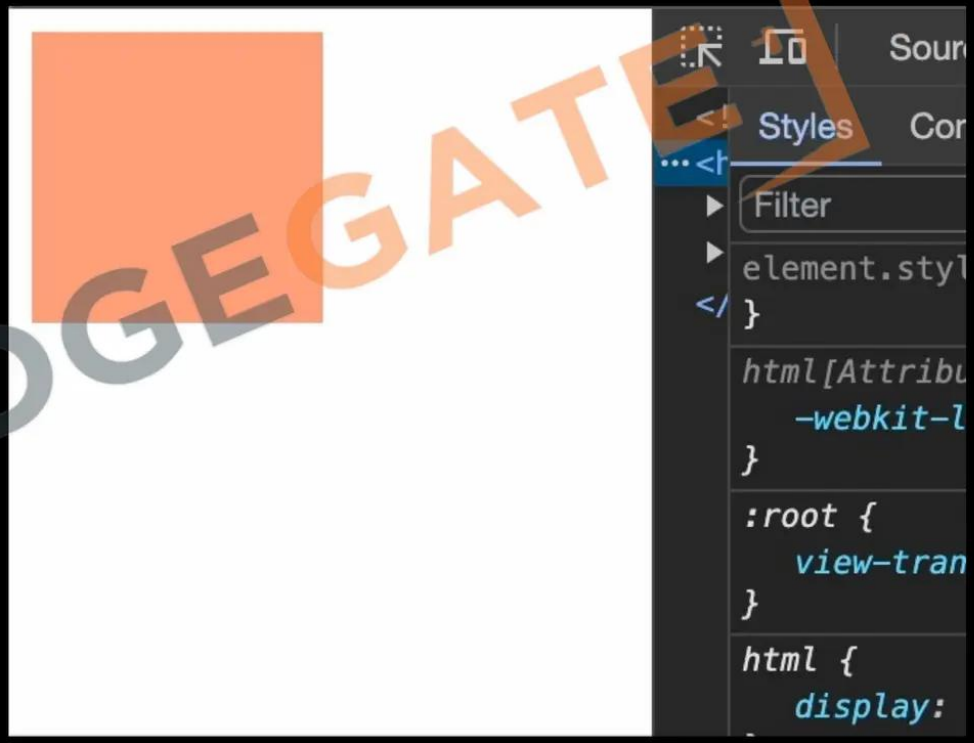
38. Media Queries (max-width)

```css
.box {
    height: 100px;
    width: 100px;
    background-color: lightsalmon;
}
@media screen and (max-width: 250px) {
    .box {
        height: 50px;
        width: 50px;
    }
}
```



38. Media Queries (combination)

```
.box {
    height: 100px;
    width: 100px;
    background-color: lightsalmon;
}
@media screen and (min-width: 250px)
and (max-width: 300px) {
    .box {
        border-radius: 50%;
    }
}
```



Level 7

Animation, Transition & Transform

39. Pseudo Classes
40. Transitions
41. CSS Transform
42. Animation

39. Pseudo Classes

```css
.btn {
    height: 20px;
    width: 70px;
    border: 1px solid blue;
    border-radius: 5px;
    background-color: aliceblue;
}
.btn:hover {
    height: 25px;
    width: 80px;
    border: 1px solid red;
}
.btn:active {
    height: 25px;
    width: 80px;
    border: 1px solid red;
    background-color: indianred;
}
```

- Used to define special states of HTML elements.
- Syntax: selector:pseudo-class { styles }.
- Common examples: :hover, :active, :first-child.
- Target elements based on their position or user action.

40. Transitions

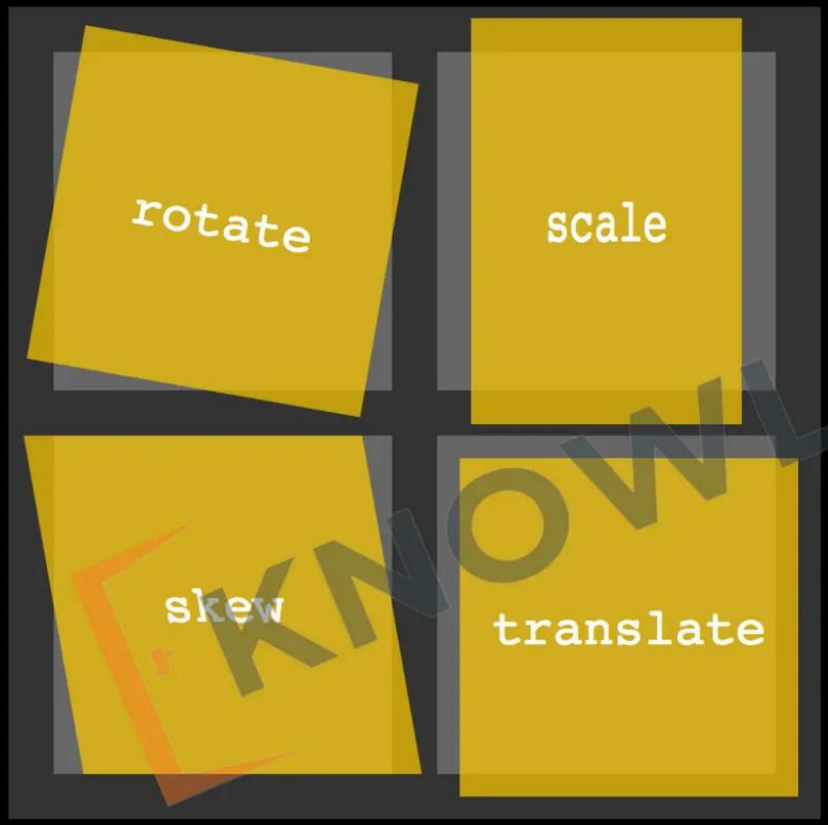
CSS transition is a property that enables smooth animation between changes in CSS property values

- **transition-property**: Defines which CSS properties will transition.
- **transition-duration**: Sets how long the transition lasts.
- **transition-timing-function**: Controls the speed curve of the transition.
- **transition-delay**: Specifies a delay before the transition starts.

40. Transitions

```css
.btn {
    height: 20px;
    width: 70px;
    border: 1px solid blue;
    border-radius: 5px;
    background-color: aliceblue;
    transition-property: all;
    transition-duration: 1s;
    transition-timing-function: ease-in-out;
    transition-delay: 1s;
    /*transition: all 1s ease-in-out 1s;*/
}
.btn:hover {
    height: 25px;
    width: 80px;
    border: 1px solid red;
}
.btn:active {
    height: 25px;
    width: 80px;
    border: 1px solid red;
    background-color: indianred;
}
```

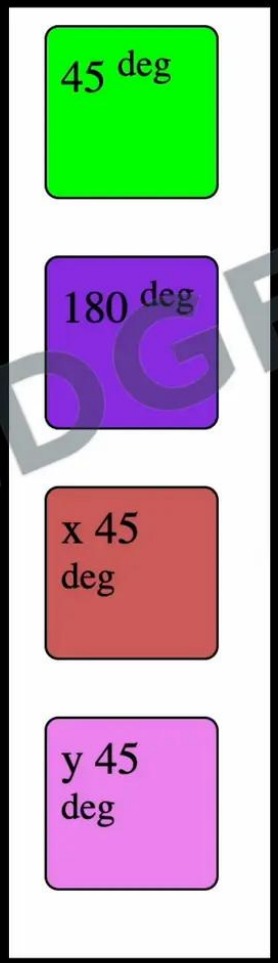
41. CSS Transform



- Allows modification of an element's shape and position.
- Can perform operations like rotate, scale, and translate.
- Does not affect the layout of surrounding elements.
- Used to create visual effects like 3D space transformations.
- Implemented with functions like rotate(), scale(), and translate().

41. CSS Transform (Rotate)

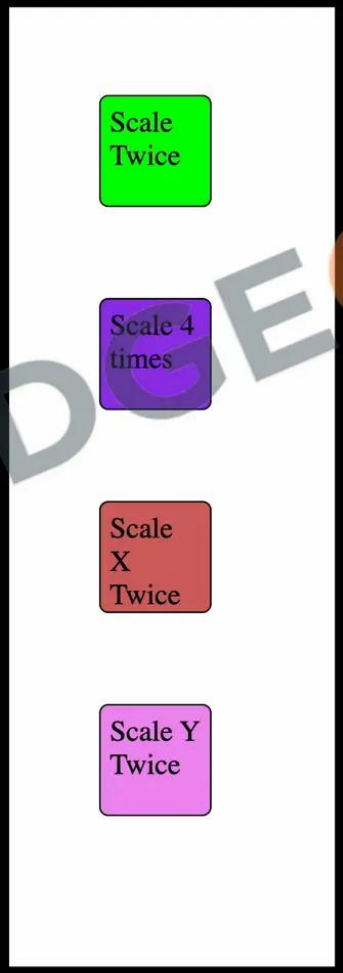
```css
.box {
    height: 50px;
    width: 50px;
    padding: 5px;
    margin: 20px;
    border: 1px solid black;
    border-radius: 5px;
    transition-property: all;
    transition-duration: 1s;
    transition-timing-function: ease-in-out;
}
#box1 { background-color: lime;}
#box1:hover { transform: rotate(45deg); }
#box2 { background-color: blueviolet;}
#box2:hover { transform: rotate(180deg); }
#box3 { background-color: indianred;}
#box3:hover { transform: rotatex(45deg); }
#box4 { background-color: violet;}
#box4:hover { transform: rotatey(45deg); }
```



- Rotates an element around a fixed point.
- Defined using the rotate() function within the transform property.
- Default rotation point is the element's center.

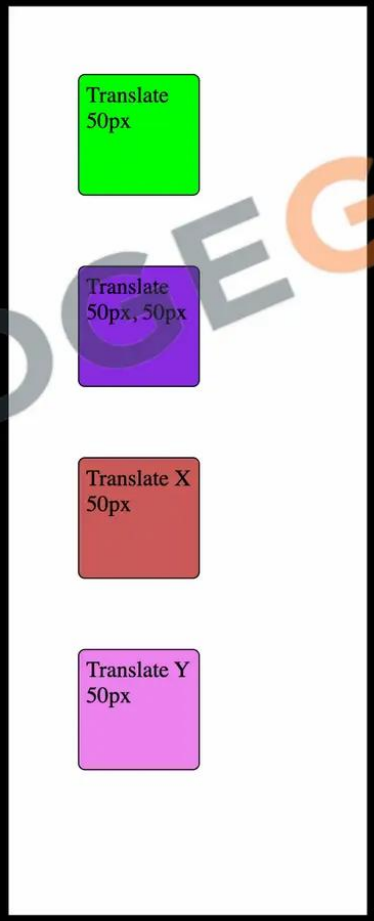
41. CSS Transform (Scale)

```
.box {
    height: 50px;
    width: 50px;
    padding: 5px;
    margin: 50px;
    border: 1px solid black;
    border-radius: 5px;
    transition-property: all;
    transition-duration: 1s;
    transition-timing-function: ease-in-out;
}
#box1 { background-color: lime;}
#box1:hover { transform: scale(2); }
#box2 { background-color: blueviolet;}
#box2:hover { transform: scale(4); }
#box3 { background-color: indianred;}
#box3:hover { transform: scalex(2); }
#box4 { background-color: violet;}
#box4:hover { transform: scaley(3); }
```



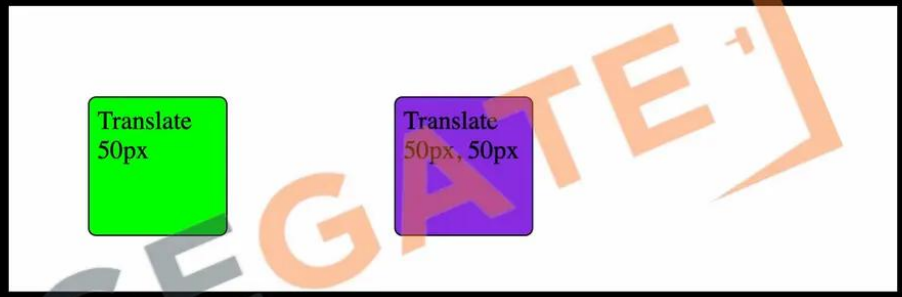
41. CSS Transform (Translate)

```
.box {
    height: 75px;
    width: 75px;
    padding: 5px;
    margin: 50px;
    border: 1px solid black;
    border-radius: 5px;
    transition-property: all;
    transition-duration: 1s;
    transition-timing-function: ease-in-out;
}
#box1 { background-color: lime;}
#box1:hover { transform: translate(50px); }
#box2 { background-color: blueviolet;}
#box2:hover { transform: translate(50px, 50px); }
#box3 { background-color: indianred;}
#box3:hover { transform: translatex(50px); }
#box4 { background-color: violet;}
#box4:hover { transform: translatey(50px); }
```



41. CSS Transform (Skew)

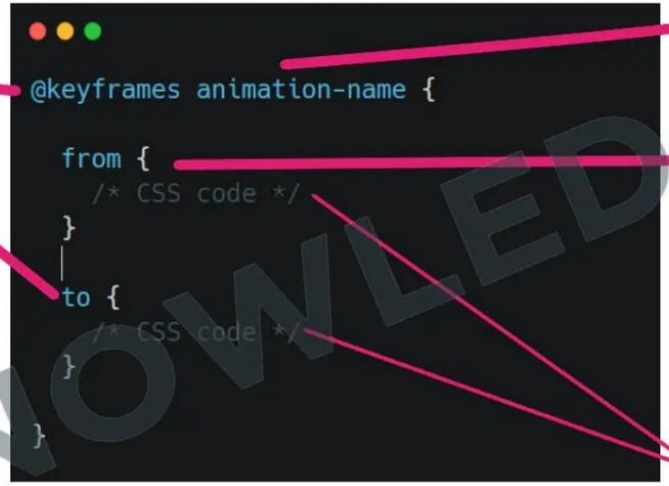
```
.box {
    display: inline-block;
    height: 75px;
    width: 75px;
    padding: 5px;
    margin: 50px;
    border: 1px solid black;
    border-radius: 5px;
    transition-property: all;
    transition-duration: 1s;
    transition-timing-function: ease-in-out;
}
#box1 { background-color: lime;}
#box1:hover { transform: skew(45deg); }
#box2 { background-color: blueviolet;}
#box2:hover { transform: skew(90deg); }
```



42. Animation

The keyframes at rule rule start with "@keyframes" keyword

animation name which is specified in animation-name property



specify where animation should end. You can write 100% as well instead of "to"

Specify when the style change will happen.
You can write 0% as well, which is same as "from"

CSS properties.

42. Animation Properties

- **animation-name**: Specifies the name of the @keyframes defined animation.
- **animation-duration**: Defines the total time the animation takes to complete one cycle.
- **animation-timing-function**: Controls the pacing of the animation (e.g., linear, ease-in).
- **animation-delay**: Sets a delay before the animation starts, allowing for a pause before initiation.
- **animation-iteration-count**: Indicates the number of times the animation should repeat.
- **animation-direction**: Specifies the direction of the animation, allowing for reverse or alternate cycles.

42. Animation

```css
.box {
    height: 75px;
    width: 75px;
    border: 1px solid black;
    border-radius: 5px;
    position: absolute;
    left: 10;
    background-color: lime;

    animation-name: ghumakkad;
    animation-duration: 4s;
    animation-timing-function: ease-in-out;
    animation-delay: 0s;
    animation-iteration-count: 4;

    animation-direction: alternate;

    /* animation: ghumakkad 4s ease-in-out 0s 4
    alternate; */
}

@keyframes ghumakkad {
    from {left: 10px}
    to {left: 300px}
}
```

42. Animation


```
@keyframes ghumakkad {
    0% {left: 10px; top: 0px}
    50% { left: 150px; top: 100px }
    100% {left: 300px; top: 0px}
}
```