

HTML Basics

Definition of HTML HTML stands for HyperText Markup Language. It's the standard markup language used to create web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

Heading Tags HTML provides six levels of headings from <h1> to <h6>

<h2>Subheading</h2>

Paragraph Tag The <p> element represents a paragraph of text, displayed as a block.

<p>Paragraph text here.</p>

Div Tag The <div> element is a generic container for flow content, with no semantic meaning.

<div>Div content</div>

Comments in HTML HTML comments are used to explain and clarify code or to prevent execution

<!-- This is another comment -->

HTML Attributes

Global Attributes Global attributes are attributes that can be applied to any HTML element.

<div id="container" class="main-content"></div> // id and class are global attributes.

id Attribute The id attribute specifies a unique id for an HTML element.

<p id="paragraph1">This is a paragraph.</p>

class Attribute The class attribute specifies one or more class names for an element.

<div class="box highlight"></div> // class attribute with multiple values.

style Attribute The style attribute specifies an inline style for an element.

Blue text

href Attribute The href attribute specifies the URL of a link.

```
<a href="https://www.example.com">Visit Example</a>
```

src Attribute The src attribute specifies the URL of the media file or script.

```

```

alt Attribute The alt attribute provides alternative information for an image.

```

```

title Attribute The title attribute specifies extra information about an element.

```
<abbr title="Hypertext Markup Language">HTML</abbr>
```

HTML Layout

Semantic HTML Semantic HTML uses elements with meaningful names to convey the purpose of the content.

```
<article>
```

```
  <h1>Blog Post Title</h1>
```

```
  <p>Blog post content...</p>
```

```
</article>
```

Header The <header> element represents a container for introductory content or a set of navigational links.

```
<header>
```

```
  <h1>Website Title</h1>
```

```
  <nav>...</nav>
```

```
</header>
```

Footer The <footer> element defines a footer for a document or section, typically containing authorship or copyright information.

```
<footer>
```

```
  <p>Copyright © 2023</p>
```

</footer>

Section The <Section> element defines sections in a document, such as chapters, headers, footers, or any other sections.

```
<section>
  <h2>Section Heading</h2>
  <p>Section content...</p>
</section>
```

Aside The <aside> element is used for content that is tangentially related to the content around it.

```
<aside>
  <h4>Related Topics</h4>
  <ul>
    <li>Topic 1</li>
    <li>Topic 2</li>
  </ul>
</aside>
```

HTML Lists

Ordered Lists An ordered list is a sequence of items that are numbered, indicating a particular order.

```
<ol>
  <li>First item</li>
  <li>Second item</li>
</ol>
```

Unordered Lists An unordered list is a collection of items with no specific order, typically rendered with bullet points.

```
<ul>
  <li>Item 1</li>
  <li>Item 2</li>
</ul>
```

Definition List A definition list is used to define terms and their corresponding definitions. It is typically rendered with terms followed by their definitions.

<dl>

<dt>Term 1</dt>

<dd>Definition 1</dd>

<dt>Term 2</dt>

<dd>Definition 2</dd>

</dl>

HTML FORMS

HTML Forms HTML forms collect user input and send it to a server.

```
<form action="url" method="post"></form>
```

Form Elements Form elements include input, textarea, button, select, and more.

```
<input type="text" name="username">
```

Input Element The input element is the most commonly used form field.

```
<input type="text" name="firstname">
```

Select Element Select element allows users to pick from a dropdown list.

```
<select name="cars"><option value="volvo">Volvo</option></select>
```

Option Element Option element defines an item within a select dropdown.

```
<option value="audi">Audi</option>
```

Label Element Label element associates text with a form control.

```
<label for="username">Username:</label>
```

Legend Element Legend element provides a caption for fieldset content.

```
<legend>Payment Details</legend>
```

GET vs POST GET appends form data to URL, POST sends data as HTTP message body.

```
<form method="get"></form>
```

```
<form method="post"></form>
```

Button Element Button element is clickable and can submit a form or execute a script.

```
<button type="submit">Submit</button>
```

HTML ViewPort

Viewport meta tag The viewport meta tag instructs the browser on how to control the page's dimensions and scaling.

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

width=device-width Sets the width of the viewport to the width of the device, which allows the page to match the screen's width in device-independent pixels.

```
<meta name="viewport" content="width=device-width">
```

initial-scale=1.0 Defines the initial zoom level when the page is first loaded by the browser.

```
<meta name="viewport" content="initial-scale=1.0">
```

user-scalable=no Prevents users from zooming in or out, which can be useful for applications or to maintain layout integrity.

```
<meta name="viewport" content="user-scalable=no">
```

maximum-scale Specifies the maximum level of zoom allowed, often used in conjunction with user-scalable=no.

```
<meta name="viewport" content="maximum-scale=1.0">
```

minimum-scale Specifies the minimum level of zoom allowed, providing control over how small content can scale.

```
<meta name="viewport" content="minimum-scale=1.0">
```

Viewport Units Viewport units are relative units based on the dimensions of the viewport.

```
h1 { font-size: 4vw; } // Font size is 4% of viewport width.
```

HTML Computer Code Elements

<code> The element displays its contents styled in a fashion intended to indicate computer code.

```
<code>let x = 10;</code> // Renders 'let x = 10;' in a monospaced font.
```

<kbd> The element represents user input and produces inline text which simulates keyboard input.

```
<kbd>Ctrl + S</kbd> // Suggests pressing 'Ctrl + S' as a keyboard command.
```

<samp> The element is used to enclose sample output from a computer program.

```
<samp>Error: File not found.</samp> // Displays sample error output.
```

<var> The element is used to denote a variable in a mathematical expression or programming context.

```
<var>x</var> = <var>y</var> + 2; // Illustrates variables in an equation.
```

<pre> The `<pre>` element is used to display preformatted text, preserving both spaces and line breaks.

```
<pre>Text in a pre element
```

```
    is displayed in a fixed-width
```

```
    font, and it preserves
```

```
    both spaces and line breaks.</pre>
```

HTML Video

HTML <video>Element The `<video>` element is used to embed video content in an HTML document.

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

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

Attributes HTML `<video>` element attributes configure video playback and behavior.

```
<video src="movie.mp4" controls autoplay loop muted></video>
```

Source Element The <source> element specifies multiple video sources for <video>, for different formats.

```
<video controls>
```

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

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

Preload Attribute The preload attribute hints how much of the video should be loaded on page load.

```
<video preload="auto">
```

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

```
</video>
```

Muted Attribute The muted attribute specifies that the video's audio output should be muted.

```
<video autoplay muted>
```

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

Controls Attribute The controls attribute adds video controls like play, pause, and volume.

```
<video controls>
```

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

Autoplay Attribute The autoplay attribute causes the video to start playing automatically on load.

```
<video autoplay muted>
```

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

HTML- HyperLinks

HTML Link An HTML link is an anchor to another resource, typically another web page or a specific section within a page. HTML links are created using the anchor tag <a> with the href attribute specifying the URL.

```
<a href="https://www.example.com">Visit Example.com</a>
```

Internal Links Internal links navigate within the same webpage, using IDs to jump to specific sections.

```
<a href="#section1">Jump to Section 1</a>
```

External Links External links navigate to different webpages or websites by specifying absolute URLs.

```
<a href="https://www.google.com">Go to Google</a>
```

Target Attribute The target attribute specifies where to open the linked document, such as a new window.

```
<a href="https://www.example.com" target="_blank">Open in New Tab</a>
```

HTML Favicons

Definition of Favicon A favicon is a small, iconic image that represents a website in browser tabs, bookmarks, and history.

```
<link rel="shortcut icon" href="favicon.ico" type="image/x-icon">
```

Purpose of Favicon Favicons are used to improve user experience by providing visual identification for a website.

```
<link rel="icon" href="favicon.png" type="image/png" sizes="16x16">
```

Favicon File Types Common favicon file types include .ico, .png, .gif, and .svg for various browser support.

```
<link rel="icon" href="favicon.svg" type="image/svg+xml">
```

Favicon Sizes Favicons come in multiple sizes, such as 16x16, 32x32, or 48x48 pixels, to support different contexts.

```
<link rel="icon" href="favicon.png" sizes="32x32" type="image/png">
```

Adding Favicon to HTML To add a favicon to an HTML page, use the element within the <head> section.

```
<link rel="icon" href="favicon.ico" type="image/x-icon">
```

Favicon and Accessibility A well-designed favicon can be an accessibility aid by helping users quickly identify a website.

```
<link rel="icon" href="favicon.ico" type="image/x-icon" alt="Company Logo">
```

HTML - IFrames

Attributes of Iframe Iframes have attributes like src, width, height, frameborder, etc.

```
<iframe src="url" width="300" height="200" frameborder="0"></iframe>
```


Iframe src The src attribute specifies the URL of the page the iframe displays.

```
<iframe src="https://www.example.com"></iframe>
```

Iframe width and height Width and height attributes define the size of the iframe on the page.

```
<iframe src="url" width="600" height="400"></iframe>
```

Iframe frameborder The frameborder attribute specifies if a border should be displayed.

```
<iframe src="url" frameborder="1"></iframe>
```

Iframe allowfullscreen The allowfullscreen attribute lets the iframe content be displayed in full screen.

```
<iframe src="url" allowfullscreen></iframe>
```

File Paths

Absolute File Paths An absolute file path describes the full URL to a resource, including the protocol and domain name.

```
<a href="http://www.example.com/images/picture.jpg">Link</a>
```

Relative File Paths A relative file path points to a file relative to the current page's location.

```
<a href="images/picture.jpg">Link</a>
```

Root-Relative File Paths A root-relative path starts from the root of the website, regardless of the current page's directory.

```
<a href="/images/picture.jpg">Link</a>
```

Document-Relative File Paths Document-relative paths are relative to the document in which they appear, navigating from that directory.

```
<a href="../images/picture.jpg">Link</a>
```

HTML - Tables

Introduction to Tables HTML tables are used to display data in a tabular format, organized into rows and columns.

```
<table>
```

```
  <tr>
```

```
    <td>Cell 1</td>
```

```
    <td>Cell 2</td>
```

```
  </tr>
```

```
</table>
```

Table Headers Table headers are defined with the element, typically bold and centered by default.

```
<table>
```

```
  <tr>
```

```
<th>Header 1</th>
<th>Header 2</th>
</tr>
</table>
```

Row and Column Spanning Rowspan and colspan attributes allow cells to span multiple rows or columns.

```
<table>
  <tr>
    <td rowspan="2">Two-row span</td>
    <td>Cell 1</td>
  </tr>\n <tr>
    <td>Cell 2</td>
  </tr>
</table>
```

Table Caption The <caption> element specifies a title or explanation for the table, displayed above it.

```
<table>
  <caption>Monthly Sales</caption>
  <tr>
    <th>Product</th>
    <th>Sales</th>
  </tr>
</table>
```

Css

CSS BASICS

What is CSS? CSS (Cascading Style Sheets) is a language used to separate the content and styling of a webpage, making it easier to maintain and modify the design of the website.

How to add CSS CSS can be added inline, embedded in the head of HTML. It can also be added externally.

```
link rel="stylesheet" type="text/css" href="styles.css"/*externally adding*/
```

CSS Properties Properties are aspects of style applied to elements, such as color, margin, or font-size. The CSS property contains two parts property_name, and property_value.

```
width: 100px;
```

```
color:black;
```

```
margin:5px;
```

CSS Comments Comments are used to explain the code and are ignored by browsers. They help in code maintenance.

```
/* This is a comment */
```

Rulesets A ruleset consists of a selector and a declaration block.

```
h1 { font-size: 2em; } // A ruleset for <h1> elements.
```

CSS Borders

border-style The border-style property specifies the style of an element's border.

```
p { border-style: solid; }
```

```
p { border-style: dotted; }
```

```
p { border-style: dashed; }
```

border-width The border-width property sets the width of an element's border.

```
div { border-width: 2px; }
```

border-color The border-color property defines the color of an element's border.

```
h1 { border-color: #ff0000; }
```

border-radius The border-radius property is used to create rounded corners for elements.

```
img { border-radius: 8px; }
```

CSS Margins

Margin Shorthand The margin shorthand sets all four margins (top, right, bottom, left) in a single property.

```
p { margin: 10px 20px 15px 5px; } /* top, right, bottom, left */
```

Margin Auto Setting margin to auto will center an element horizontally within its container.

```
div { width: 50%; margin: 0 auto; } /* Centers the div */
```

Margin Percentages Margin set in percentages is relative to the width of the containing block.

```
div { margin-left: 20%; } /* 20% of containing block's width */
```

CSS Box Model

Box Model The CSS Box Model describes how HTML elements are modeled in browser rendering, including dimensions and spacing.



Content The content area is the space where the actual content like text or images is placed.

```
div { width: 300px; height: 200px; }
```

Padding Padding is the space between the content area and the border, inside the element's box.

```
div { padding: 20px; }
```

Border The border encloses the padding and content and can have style, width, and color.

```
div { border: 1px solid #000; }
```

Margin Margin is the outermost layer, defining space between the element's border and its surroundings.

```
div { margin: 15px; }
```

Height The CSS height property specifies the height of an element.

```
div { height: 100px; } /* Sets the height of a div to 100 pixels.*/
```

Width The CSS width property defines the width of an element's content area.

```
div { width: 50%; } /* Sets the width of a div to 50% of its parent.*/
```

CSS Outline

outline-width The outline-width property specifies the thickness of an element's outline.



outline-style The outline-style property sets the style of an element's outline, such as solid or dashed.

```
p { outline-style: dashed; }
```

outline-color The outline-color property defines the color of an element's outline.

```
p { outline-color: #ff0000; }
```

outline-offset The outline-offset property adds space between an outline and the edge or border of an element.

```
p { outline-offset: 5px; }
```

CSS Fonts

font-family The font-family property specifies the font for an element.

```
body { font-family: 'Arial', sans-serif; }
```

font-size The font-size property sets the size of the font.

```
h1 { font-size: 2em; }
```

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

```
strong { font-weight: bold; }
```

font-style The font-style property specifies the font style for a text.

```
em { font-style: italic; }
```

line-height The line-height property specifies the height of a line.

```
p { line-height: 1.6; }
```

font-variant The font-variant property specifies whether or not a text should be displayed in a small-caps font.

```
p { font-variant: small-caps; }
```

CSS Icons

CSS icons are icons made using CSS and HTML without relying on image files. These icons can be created using various techniques, including CSS libraries like Font Awesome, Bootstrap Icons, Material Icons, and custom CSS. **Font Awesome**

```
<link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/6.0.0-beta3/css/all.min.css">
```

```
<i class="fas fa-home"></i> <!-- Home icon -->
```

```
<i class="fas fa-user"></i> <!-- User icon -->
```

CSS Display property

block An element that has the display property set to block starts on a new line and takes up the available screen width.

```
div { display: block; } /* div will be a block-level element.*/
```

inline Setting the display property to "inline" makes an element behave like an inline element.

```
span { display: inline; } /*SPAN will be an inline element.*/
```

inline-block The "inline-block" value allows an element to be inline, but with block-level styling.

```
button { display: inline-block; } /* BUTTON will be inline but with block styling.*/
```

none Setting display to "none" will hide an element from the document layout.

```
div.hidden { display: none; } /* DIV will be completely hidden.*/
```

Flexbox Flexbox is a CSS3 layout mode that arranges elements in a predictable way for different screen sizes and browsers.

```
div { display: flex; justify-content: space-between; }
```

Grid Layout CSS Grid Layout is a two-dimensional layout system for the web, allowing us to design complex responsive layouts easily.

```
div { display: grid; grid-template-columns: 1fr 2fr; }
```

CSS Background Properties

background-color The background-color property sets the background color of an element.


```
body { background-color: #92a8d1; }
```

background-image The background-image property sets one or more background images for an element.

```
div { background-image: url('image.jpg'); }
```

background-repeat The background-repeat property sets if/how a background image is repeated.

```
div { background-repeat: no-repeat; }
```

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

```
div { background-attachment: fixed; }
```

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

```
div { background-size: cover; }
```

Transparent Background The background-color can be set to transparent, allowing underlying colors to show.

```
div { background-color: transparent; }
```

CSS background-attachment Property

scroll The background-attachment property set to "scroll" moves the background with the scrolling of the element.

```
body { background-attachment: scroll; }
```

fixed When set to "fixed", the background image does not move with the scrolling of the page.

```
body { background-attachment: fixed; }
```

local The "local" value makes the background scroll with the element's contents.

```
div { background-attachment: local; }
```

CSS UNITS

Absolute Units Absolute units are fixed and display consistently as per the specified size on any output device.

```
p { font-size: 16px; } /* 'px' is an absolute unit.*/
```

Relative Units Relative units are scalable and relate to another length property.

```
div { font-size: 2em; } /* 'em' is a relative unit (2em means 2 times the size of the current font).*/
```

Percentage Units Percentage units are relative to the parent element's property value.

```
div { width: 50%; } /* Width is 50% of the parent's width.*/
```

Viewport Units Viewport units are relative to the size of the browser's viewport.

```
h1 { font-size: 5vw; } /* 'vw' relates to viewport width.*/
```

Points and Picas Points and picas are traditional print units, often used for text sizes.

```
body { font-size: 12pt; } /* 'pt' is a point unit. (1pt = 1/72 of 96px)*/
```

```
body {  
    font-size: 1pc; /* 1 pica = 12 points */  
}
```

Ex and Ch Units Ex is related to the x-height of a font; ch is the width of the '0' character.

```
p { line-height: 1.5ex; } /*'ex' is relative to the x-height of the current font*/
```

Rem Units Rem units are relative to the font-size of the root element.

```
html { font-size: 14px; } body { font-size: 1.1rem; }
```

CSS Text-Formatting

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

```
p { text-align: center; } /*Aligns text to the center.*/
```

text-decoration The text-decoration property adds decoration to text such as underline, overline, line-through.

```
p { text-decoration: underline; } /* Underlines the text.*/
```

text-transform The text-transform property manages the capitalization of text.

```
p { text-transform: uppercase; } /* Transforms text to uppercase.*/
```

text-indent The text-indent property specifies the indentation of the first line in a text block.

```
p { text-indent: 20px; } /* Indents the first line by 20 pixels.*/
```

Text Decoration

underline Applies an underline text decoration to the content.

```
a { text-decoration-line: underline; } /* Underlines all anchor tags.*/
```

overline Applies an overline text decoration above the content.

```
span { text-decoration-line: overline; } /*Adds overline to span elements.*/
```

line-through Applies a line-through text decoration, striking through the content.

```
del { text-decoration-line: line-through; } /* Strikes through <del> elements.*/
```

multiple decorations Allows multiple text decorations to be applied simultaneously.

```
p { text-decoration-line: underline overline; } /*Both underline and overline on a paragraph.*/
```

text-decoration-style The CSS text-decoration-style property sets the style of the text decoration line.

```
p { text-decoration-style: dotted; }
```

solid The "solid" value creates a single, solid line for text decoration.

```
p { text-decoration-line: underline; text-decoration-style: solid; }
```

double The "double" value creates two parallel lines for text decoration.

```
p { text-decoration-line: underline; text-decoration-style: double; }
```

dashed The "dashed" value creates a dashed line for text decoration.

```
p { text-decoration-line: underline; text-decoration-style: dashed; }
```

wavy The "wavy" value creates a wavy line for text decoration.

```
p { text-decoration-line: underline; text-decoration-style: wavy; }
```

CSS Flex Box

Flex Container A flex container is an element defined with "display: flex" or "display: inline-flex".

```
display: flex;
```

Flex Item Flex items are the immediate children of a flex container.

```
div { display: flex; }
```

flex-direction The flex-direction property defines the direction flex items are placed in the container.

flex-direction: row;

justify-content This property aligns flex items along the main axis of the container.

justify-content: center;

flex-wrap The flex-wrap property specifies whether flex items should wrap or not.

flex-wrap: wrap;

flex-grow The flex-grow property defines the ability for a flex item to grow if necessary.

flex-grow: 1;

flex-shrink This property defines the ability for a flex item to shrink if necessary.

flex-shrink: 1;

flex-basis The flex-basis property sets the initial main size of a flex item.

flex-basis: 200px;

CSS Colors

Named Colors CSS supports 140 named colors, such as red, blue, green, black, white, etc

body {

```
color: red;
}
```

Hexadecimal Colors Hexadecimal colors are defined using a # followed by six or three hexadecimal digits

```
body {
  color: #ff0000; /* Red */
}
```

RGB Colors RGB colors are defined using the rgb() function, which specifies the intensity of red, green, and blue on a scale from 0 to 255.

```
body {
  color: rgb(255, 0, 0); /* Red */
}
```

RGBA RGBA colors are defined using the rgba() function, which specifies the intensity of red, green, blue and alpha, where alpha value lies between 0 to 1.

```
body {
  color: rgba(255, 0, 0, 1); /* Red with full opacity */
}
```

CSS Text Shadow

Definition The CSS text-shadow property adds shadow to text.

```
h1 { text-shadow: 2px 2px 2px #000000; }

/* text-shadow: h-shadow v-shadow blur-radius
color|none|initial|inherit;*/
```

Horizontal Shadow The first value specifies the horizontal distance of the shadow.

```
p { text-shadow: 5px 0 0 #FF0000; }
```

Vertical Shadow The second value sets the vertical distance of the shadow.

```
p { text-shadow: 0 5px 0 #00FF00; }
```

Blur Radius The third value is the blur radius, creating a blur effect.

```
p { text-shadow: 0 0 10px #0000FF; }
```

Shadow Color The fourth value is the color of the shadow.

```
p { text-shadow: 3px 3px 0 rgba(255, 0, 0, 0.7); }
```

Multiple Shadows Multiple shadows can be applied by separating them with commas.

```
p { text-shadow: 1px 1px #000, 3px 3px #FFF; }
```

CSS Z-index

Definition of z-index The CSS z-index property sets the stack order of positioned elements.

```
div { position: relative; z-index: 10; }
```


z-index with Positioning z-index only affects elements that have a position value other than "static".

```
div { position: fixed; z-index: 100; }
```

Positive z-index Elements with a positive z-index appear above those with a lower or negative z-index.

```
div { position: relative; z-index: 1; }
```

Negative z-index Elements with a negative z-index appear below those with a higher or positive z-index.

```
div { position: absolute; z-index: -1; }
```

z-index with Auto The default z-index value is "auto", which stacks elements in source order.

```
div { position: sticky; z-index: auto; }
```

CSS Overflow

overflow The CSS overflow property specifies how to handle content that's too large for its container.

```
div { overflow: scroll; } /*Adds scrollbars if content overflows.*/
```

overflow-x The overflow-x property specifies handling of overflow in the horizontal direction.

```
div { overflow-x: auto; } /*Horizontal scrollbar if needed.*/
```

overflow-y The overflow-y property specifies handling of overflow in the vertical direction.

```
div { overflow-y: hidden; } /* Hides vertical overflow.*/
```

overflow-wrap The overflow-wrap property deals with how text should wrap when reaching the end of a line.

```
p { overflow-wrap: break-word; } /* Allows unbreakable words to be broken.*/
```

overflow-scrolling The overflow-scrolling property controls the scrolling touch behavior on mobile devices.

```
div { -webkit-overflow-scrolling: touch; } /* Use momentum-based scrolling on iOS.*/
```

CSS Selectors

Selectors Selectors define the HTML elements to which the CSS rules apply.

```
p { color: blue; } /* Selects all <p> elements.*/<br>
```

Universal Selector (*) Universal Selector selects all elements.

```
* {  
  color: blue;  
}
```

Type Selector (Element Selector) It Selects all elements of a given type.

```
p {  
  font-size: 16px;  
}
```

Class Selector (.) It selects all elements with a specific class.

```
.example {  
  background-color: yellow;  
}
```

ID Selector (#) It selects a single element with a specific ID.

```
#unique {  
  font-weight: bold;  
}
```

Attribute Selector Selects elements with a specific attribute.

```
[type="text"] {  
  border: 1px solid #000;
```

```
}
```

CSS Specificity

1. Inline Styles Inline styles are styles applied directly to an HTML element using the style attribute. They have the highest specificity and override any other styles applied to the same element.

```
<div style="color: blue;">This text is blue.</div>
```

2. ID Selector ID selectors target elements based on their unique IDs assigned in the HTML markup. They have a higher specificity than class selectors and type selectors.

```
#main-header {  
    font-size: 24px;  
}
```

3. Class Selectors, Attribute Selectors, and Pseudo-Classes Class selectors, attribute selectors, and pseudo-classes target elements based on their class names, attributes, or states. They have a lower specificity than IDs but higher than type selectors and pseudo-elements.

```
.highlight {  
    background-color: yellow;  
}
```

```
input[type="text"] {  
    border: 1px solid black;  
}
```

```
a:hover {  
    text-decoration: underline;  
}
```

4. Type Selectors and Pseudo-Elements Type selectors target elements based on their HTML tag names, while pseudo-elements target specific parts of elements (e.g., ::before, ::after). They have the lowest specificity and are overridden by other selectors with higher specificity.

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

```
::before {  
    content: "before";  
}
```

!important The !important declaration is a special flag in CSS that can be appended to a style rule to give it the highest specificity, overriding all other declarations, regardless of their specificity.

```
p {  
    color: blue !important; /* Overrides any other color declarations for  
<p> elements */  
}
```

Combinator Selector

Descendant Selector (space) Selects all elements that are descendants of a specified element.

```
div p {
```

```
color: red;
}
```

Child Selector (>) Selects all elements that are direct children of a specified element.

```
ul > li {
    list-style-type: none;
}
```

Adjacent Sibling Selector (+) Selects an element that is directly after another specified element.

```
h1 + p {
    margin-top: 0;
}
```

General Sibling Selector (~) Selects all elements that are siblings of a specified element.

```
h1 ~ p {
    color: green;
}
```

Grouping Selector (,) Used to apply the same styles to multiple elements.

```
h1, h2, h3 {
    margin-bottom: 10px;
}
```