

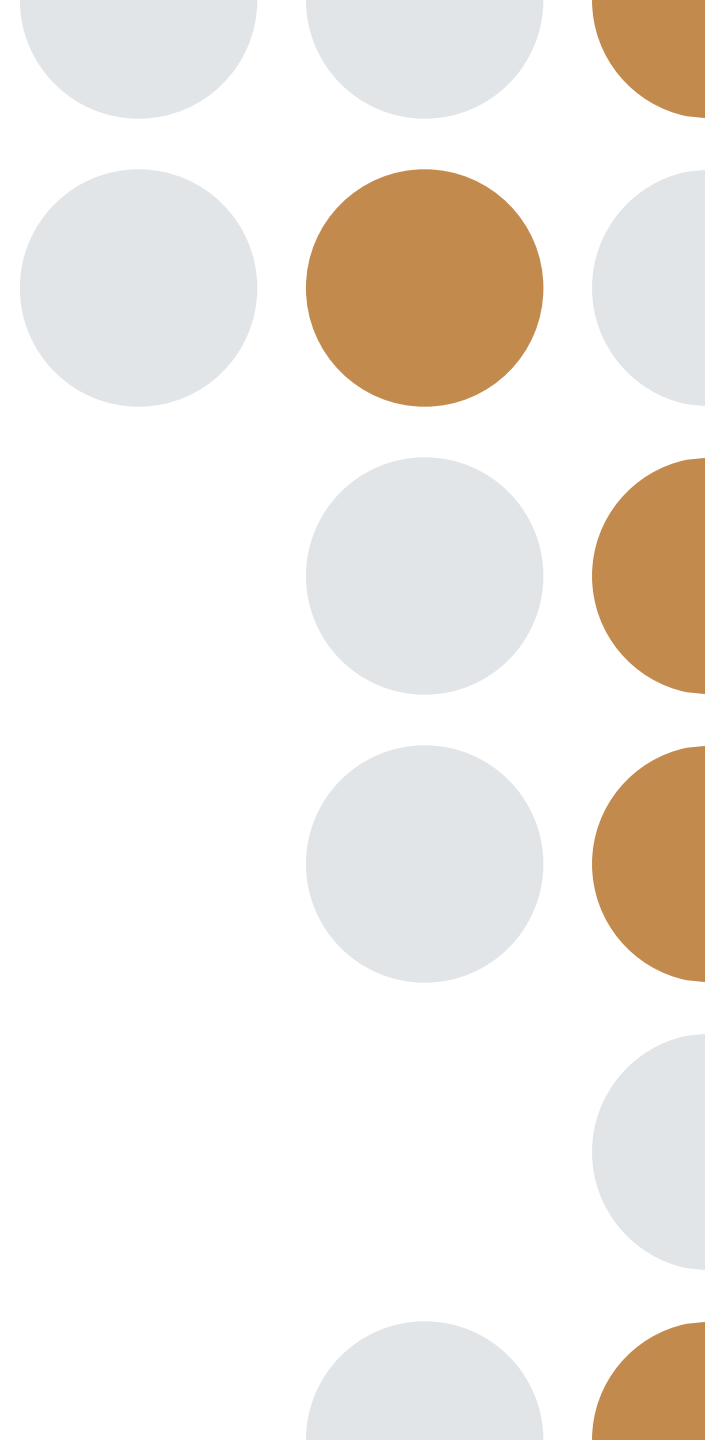


Cascading Style Sheets (CSS)

Introduction

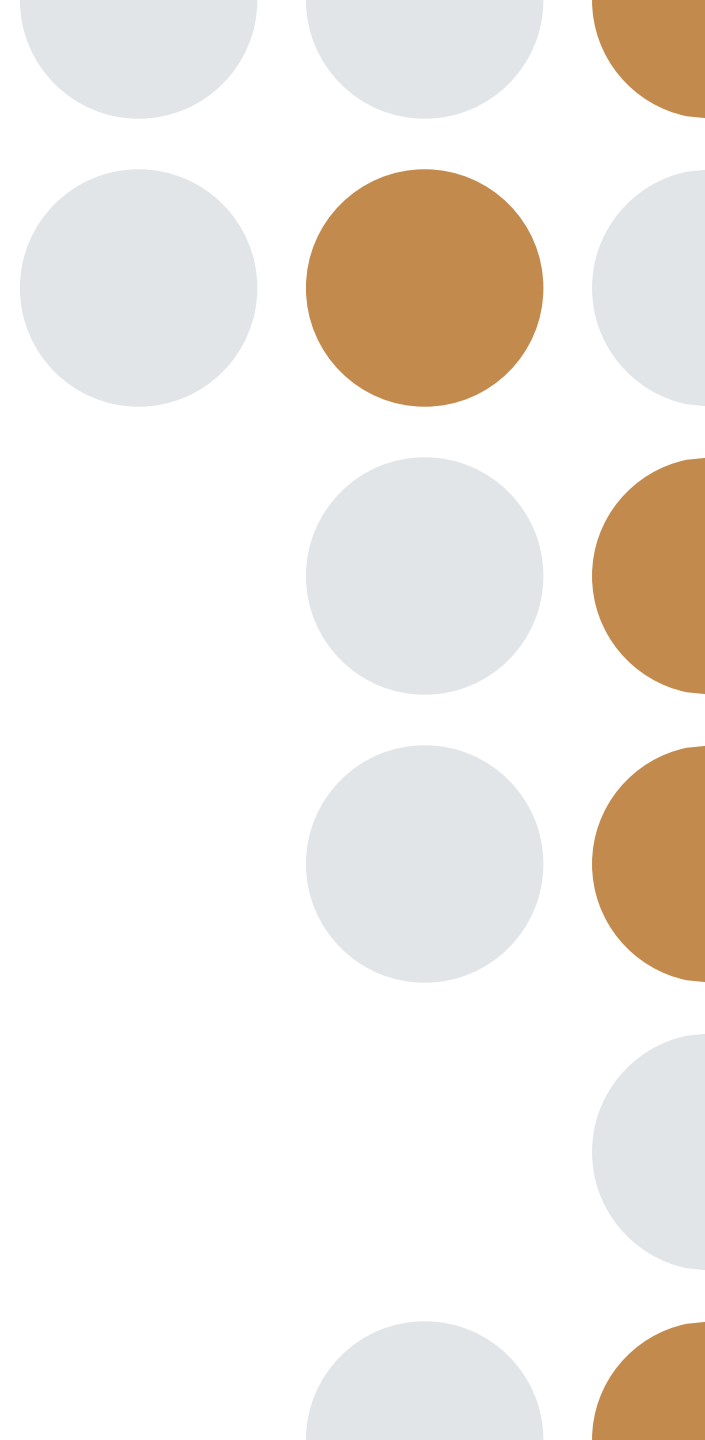
- CSS is responsible for styling the web
- HTML - responsible for page structure
- CSS- Layout, Look
- General CSS Syntax:

Selector{property: value; property: value}



Loading CSS to HTML

- There are 3 ways to do this:
 - Inline CSS
 - Internal CSS
 - External CSS
-



Inline CSS

- CSS can be included directly inside HTML elements
- This is the most basic way of adding CSS and as the number of elements and properties increases, it clogs up the HTML code

E.g. 1: `<h1 style="color:purple"> Let's learn CSS </h1>`

E.g. 2: `<h1 style="color:purple; font-size :30pt">`

Internal CSS

- Internal CSS is added in the head section and placed within `<style> </style>` tags

E.g.:

```
<head>
```

```
<style>
```

```
  h1{color: purple; }
```

```
</style>
```

```
</head>
```

- Internal CSS lacks flexibility for multiple pages
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External CSS

- An external stylesheet is used to include CSS
- The stylesheet should have the .css extension and its link should be included in the HTML document as follows:

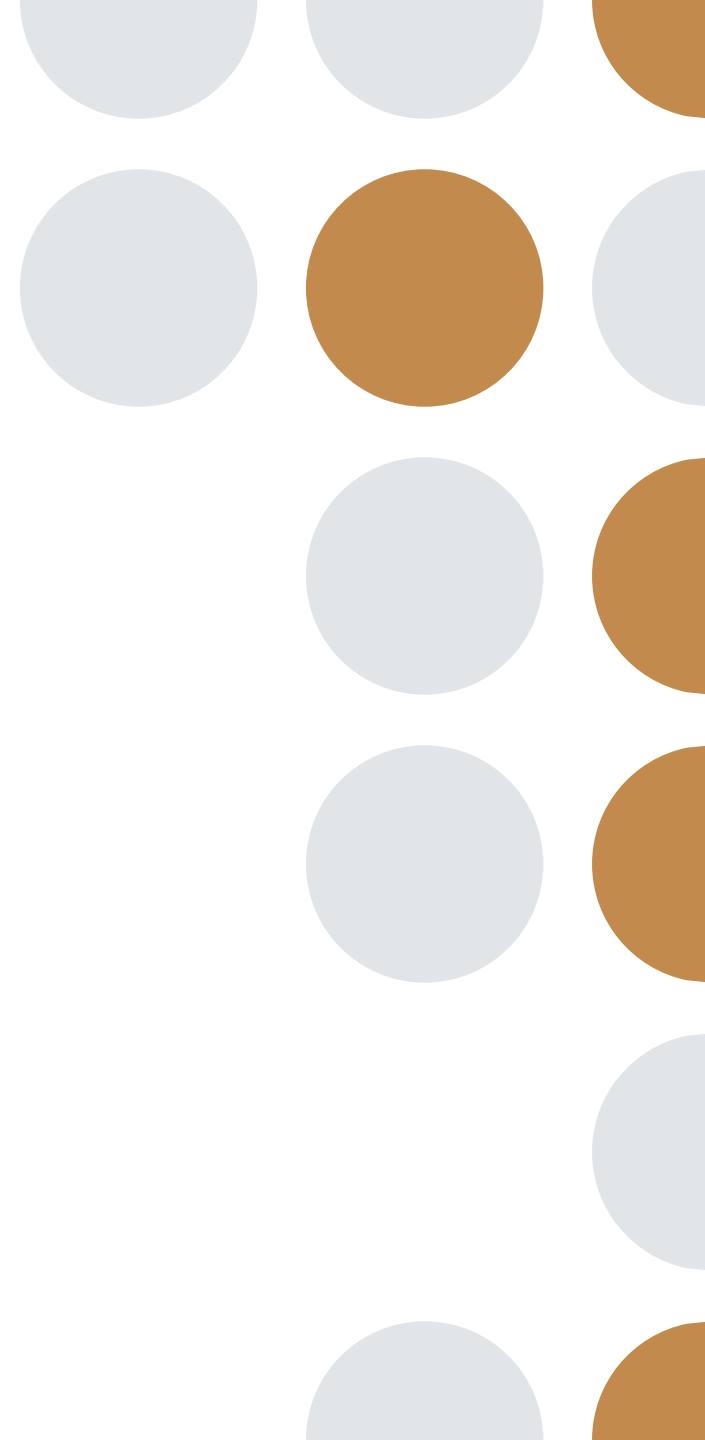
```
<head>
```

```
<link rel="stylesheet" href="style.css" type="text/css">
```

```
</head>
```

CSS Selector types

- Universal selector
 - Type selector
 - Id selector
 - Class selector
-

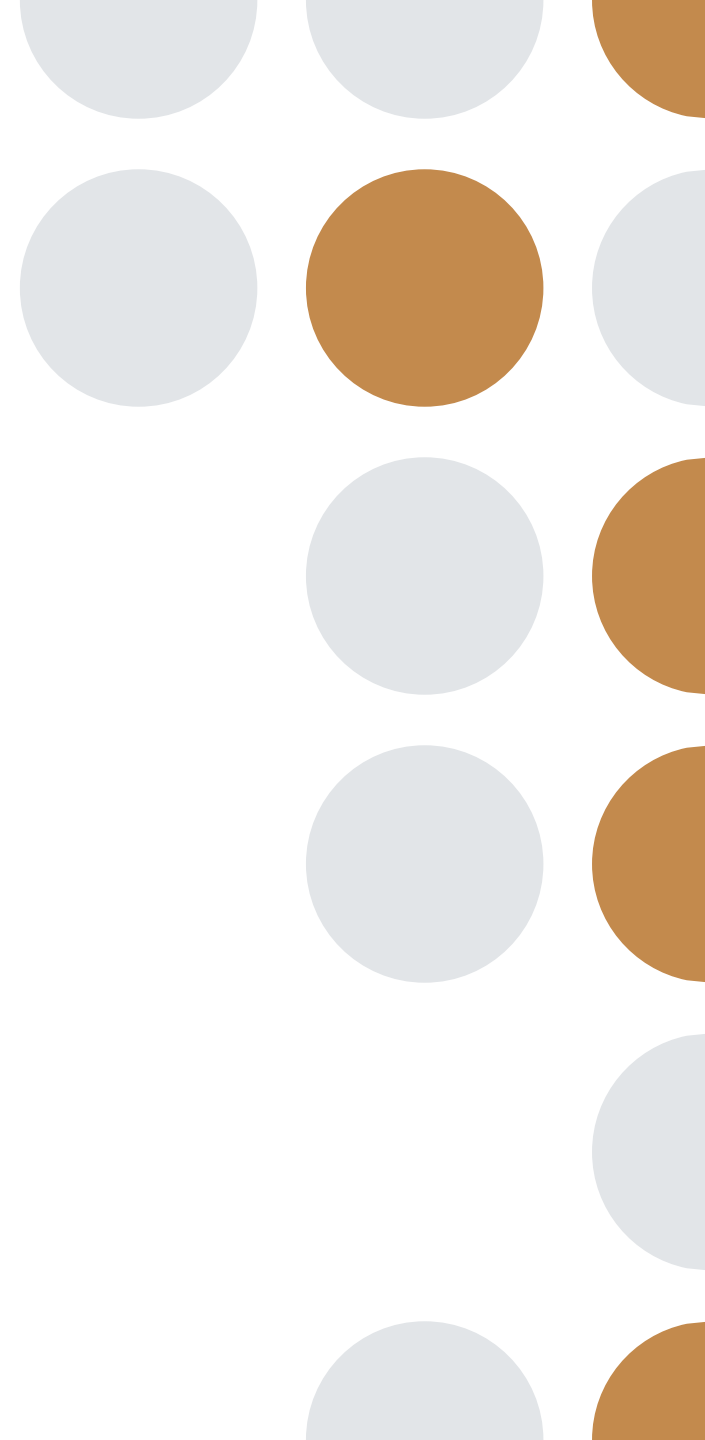


Universal selector

- Applies to all elements in the document

E.g.:

```
*{  
color: purple;  
font-family:arial  
}
```



Type selector


- Selects all the elements with the given type(element name) in an HTML document

e.g.: p{
color: chocolate;
font-size: 12pt;
}

Id selector

- Matches an element whose **id** attribute has a value that matches the one specified after the pound or hash symbol

```
<h1 id="winter">Winter 2022</h1>  
<p>Lorem ipsum dolor sit amet  
consectetur adipisicing elit.</p>
```

```
#winter{  
  color:  chocolate;  
}
```

Class selector

- Class Selector - Matches an element whose **class** attribute has a value that matches the one specified after the period (or full stop) symbol

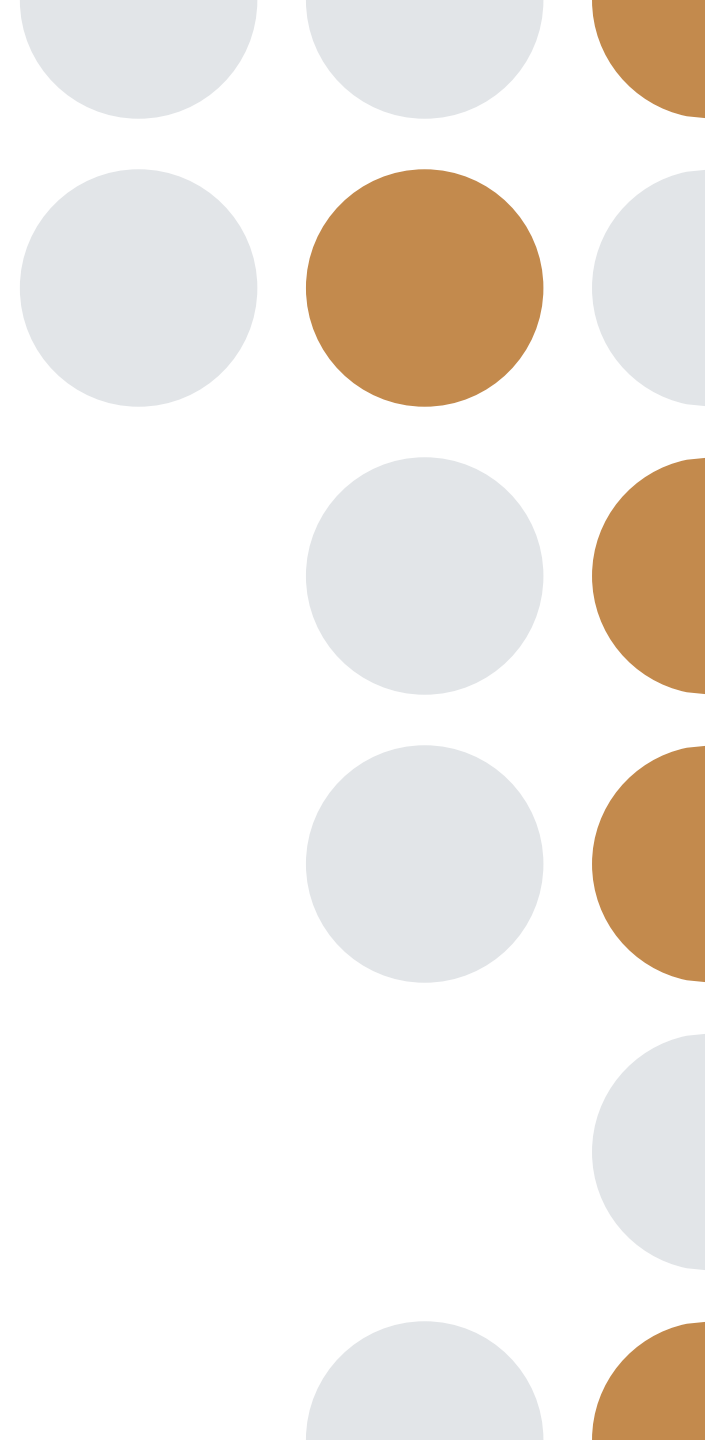
```
<h1 id="winter">Winter 2022</h1>  
<p class="para1">Lorem ipsum dolor sit amet consectetur adipisicing elit.</p>  
<h1>Summer 2022</h1>
```

```
.para1{  
  background: lightblue;  
  color: coral;  
  font-size: 20pt;  
}
```

Grouping elements

- We can group elements if they hold the same styles.

```
✓ h1,h2{  
  color: ■ aqua;  
  background: ■ lightcyan;  
}
```



Selector combinations

- **Child selector - `li>a {}`** - Targets any `<a>` elements that are children of an `` element (but not other `<a>` elements in the page)
 - **`p a {}`** - Targets any `<a>` elements that sit inside a `<p>` element, even if there are other elements nested between them
 - **`h1+p {}`** - Targets the first `<p>` element after any `<h1>` element (but not other `<p>` elements)
 - **`h1~p {}`** - If you had two `<p>` elements that are siblings of an `<h1>` element, this rule would apply to both
-

Descendent selectors

- The key to descendant selectors is understanding the pathway to the elements

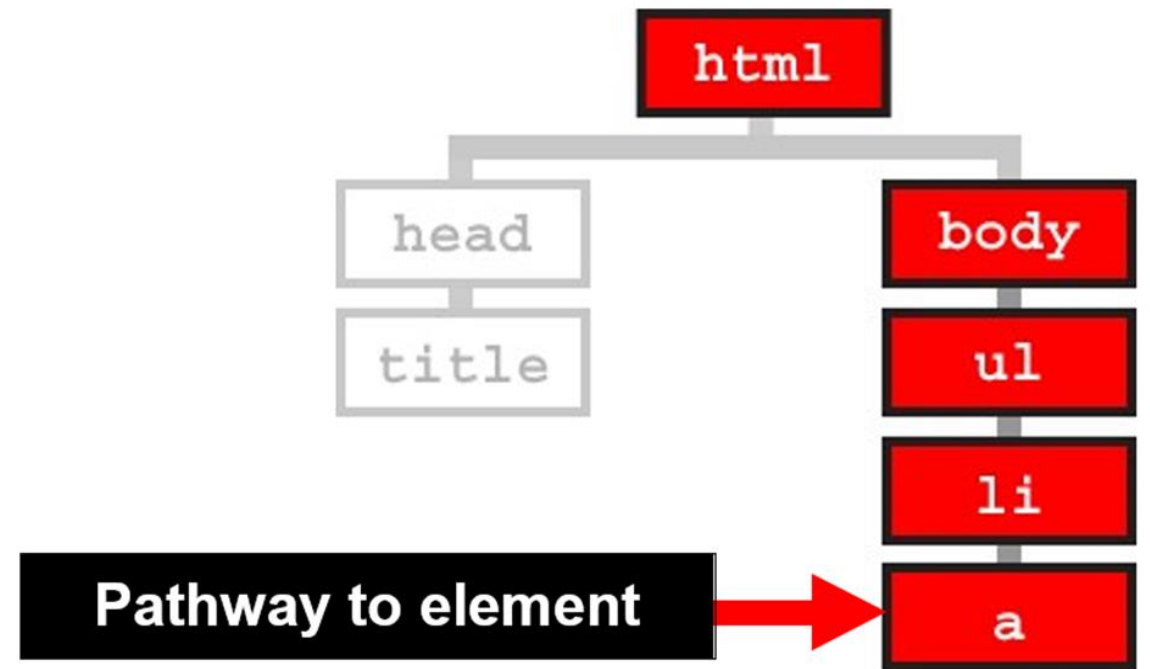
`html body ul li a { }`

`body ul li a { }`

`ul li a { }`

`li a { }`

`a { }`

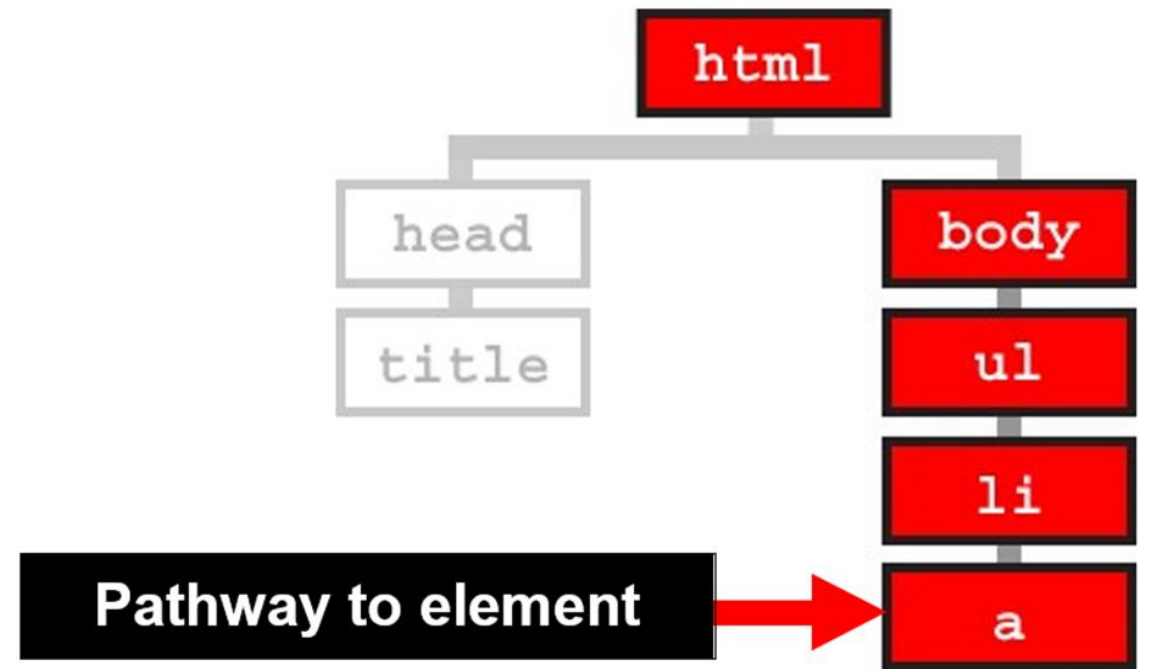


Descendent selectors

- Paths can also skip a level. As long as the path is **correct**, the selector will work

`body a { }`

`ul a { }`



CSS rules

- If the two selectors are identical, the latter of the two will take precedence.
- If one selector is more specific than the others, the more specific rule will take precedence over more general ones.

Inline styles

IDs

Classes,
attributes,
pseudo-classes

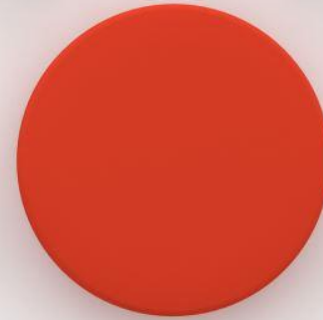
Elements, pseudo-
elements

Highest
specificity

Lowest
specificity

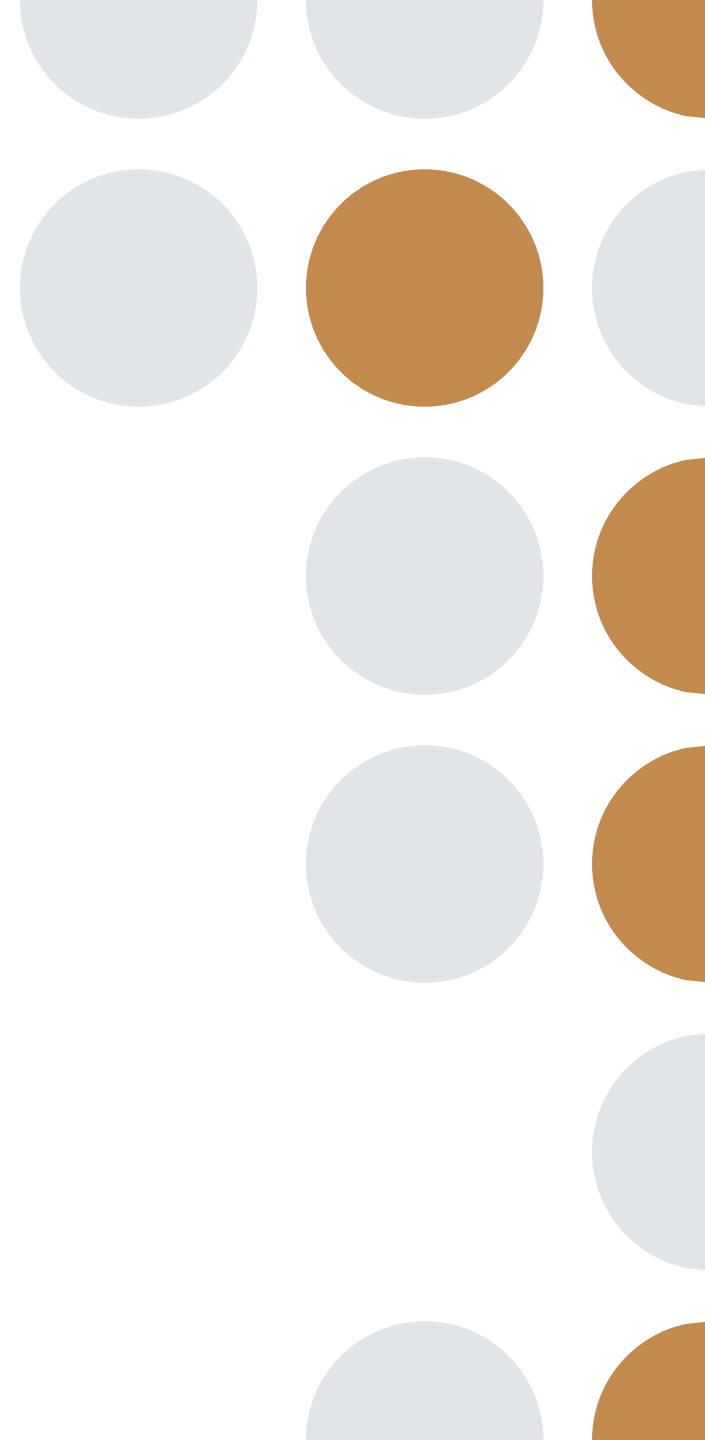


CSS Inheritance



CSS Inheritance

- The styles added to a parent element in HTML will be inherited by its child elements, unless the child elements are specifically styled.
 - E.g.: styling the body element would pass the styles to all elements placed inside it.
-



CSS inheritance

- The 'eldest' element in an HTML document is `<html>`
 - An element is said to be a parent when other elements are nested within it
 - An element is said to be a child when it is nested within another element
 - `<body>` is a child of `<html>`
 - `` is child to ``, making `` a parent
 - `` is child to `<body>`, which makes `<body>` a parent also
 - It is possible for an element to be both a child and parent
-

Are all CSS properties inherited?

- NO
- If every CSS property was inherited, authors would have to turn off un-wanted styles
 - E.g. the border property – everything would have a border! – not what you want
 - Luckily border is not inherited

```
p{  
  border-style: dotted;  
  border-color: red;  
}  
em{  
  border-style: solid;  
  border-color: green;  
}
```


Lorem ipsum dolor sit amet *Emphasized text* consectetur adipisicing elit.

CSS Colors



CSS3- HSLA

- CSS3 introduces an entirely new and intuitive way to specify colors using hue, saturation, lightness and alpha values.
- Hue is the colloquial idea of color. In HSL colors, hue is often represented as a color circle where the angle represents the color, although it may also be shown as a slider with values from 0 to 360

```
p{  
    border-style: dotted;  
    border-color:  hsla(120, 100%, 50%, 1);  
}
```

Texts

- When choosing a typeface, it is important to understand that a browser will usually, only display it if it's installed on that user's computer.
 - Browsers are supposed to support at least one typeface from each of the groups next slide. For this reason, it is common to add the generic font name after your preferred choice of typefaces.
 - For example, if you wanted serif type, you could write the following:
font-family: Georgia, 'Times New Roman', Times, serif;
 - If the browser does not support the first font, it tries the next font.
-

Selecting typeface for your web application

SERIF

Serif fonts have extra details on the end of the main strokes of the letters.

EXAMPLES:

Georgia

Times

Times New Roman

SANS-SERIF

Sans-serif fonts have straight ends to letters and therefore have a much cleaner design.

EXAMPLES:

Arial

Verdana

Helvetica

Selecting typeface for your web application

MONOSPACE

Every letter in a monospace typeface is the same width. (Non-monospace fonts have different widths.)

EXAMPLES:

Courier

Courier New

CURSIVE

Cursive fonts either have joining strokes or other cursive characteristics, such as handwriting styles.

EXAMPLES:

Comic Sans MS

Monotype Corsiva

FANTASY

Fantasy fonts are usually decorative fonts and are often used for titles. They're not designed for long bodies of text.

EXAMPLES:

Impact

Haettenschweiler



Text properties

- font-family
- font-size
- font-stretch
- font-style
- font-variant
- font-weight

And many more...

CSS distance – common for all elements

Absolute	
2px	pixels
1mm	millimeters
2cm	centimeters
0.2in	inches
3pt	printer point 1/72 inch
Relative	
2em	2 times the element's current font size
3rem	3 times the root element's current font size

Padding, margin, border

width - Override element defaults
height

padding-top
padding-right
padding-bottom
padding-left

margin-top
margin-right
margin-bottom
margin-left

border-bottom-color
border-bottom-style
border-bottom-width
border-left-color
border-left-style
border-left-width
border-right-color
border-right-style
border-right-width
etc.

```
p {  
  border: 5px solid red;  
}
```


Position property

<code>position: static;</code>	(default) - Position in document flow
<code>position: relative;</code>	Position relative to default position via top, right, bottom, and left properties
<code>position: fixed;</code>	Position to a fixed location on the screen via top, right, bottom, and left properties
<code>position: absolute;</code>	Position relative to ancestor absolute element via top, right, bottom, and left properties

Element visibility control properties

`display: none;` - Element is not displayed and takes no space in layout.

`display: inline;` - Element is treated as an inline element.

`display: block;` - Element is treated as a block element.

`display: flex;` - Element is treated as a flex container.

`display: grid;` - Element is treated as a grid container.

`visibility: hidden;` - Element is hidden but space still allocated.

`visibility: visible;` - Element is normally displayed

Some more common properties

`background-image:` image for element's background

`background-repeat:` should background image be displayed in a repeating pattern (versus once only)

`font, font-family, font-size, font-weight, font-style:` font information for text

`text-align, vertical-align:` Alignment: `center, left, right`

`cursor` - Set the cursor when over element (e.g. `help`)

Pseudo selectors

- A pseudo-class is used to define a special state of an element

`hover` - Apply rule when mouse is over element (e.g. tooltip)

```
p:hover, a:hover {  
  background-color: yellow;  
}
```

`a:link, a:visited` - Apply rule when link has been visited or not visited (link)

<pre>a:visited { color: green; }</pre>	<pre>a:link { color: blue; }</pre>
--	--

Styling tables

- Excellent guide at https://developer.mozilla.org/en-US/docs/Learn/CSS/Building_blocks/Styling_tables
 - Be careful where and how you add stripes
 - Make your table markup as simple as possible, and keep things flexible, e.g. by using percentages, so the design is more responsive.
 - Use table-layout: fixed to create a more predictable table layout that allows you to easily set column widths by setting width on their headings (<th>).
 - Use border-collapse: collapse to make table elements borders collapse into each other, producing a neater and easier to control look.
-

Why would I Have more than 1 stylesheet?

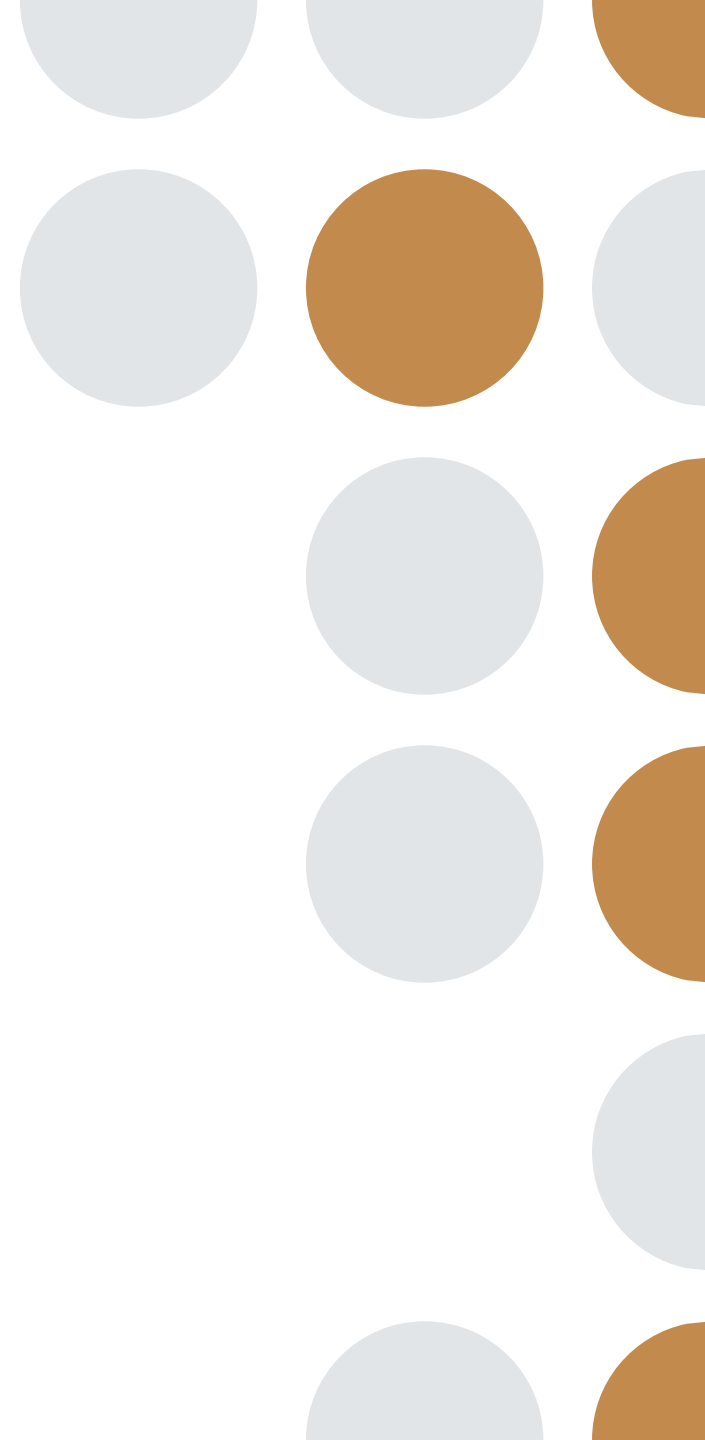
- Standardising the browsers
 - CSS Resets – gets rid of all browser styles - <https://meyerweb.com/eric/tools/css/reset/>
 - CSS normalisation techniques – standardises all styles to a typical default – popular one - <http://necolas.github.io/normalize.css/>
 - THEN you apply your own one
-

Validating HTML and CSS

- You can validate CSS at <https://jigsaw.w3.org/css-validator/>
 - You should validate often – it helps avoid mistakes
 - You can validate HTML at <https://validator.w3.org/>
-

Summary

- Introduction to CSS
 - Inline CSS, Internal CSS and External CSS
 - Types of selectors
 - CSS Properties
 - CSS Inheritance
 - Styling Tables
 - Validating HTML and CSS
-



Homework Activity



Find out the different styling options available for lists



Create a navigation bar using a list and make it look attractive using CSS
