CSS

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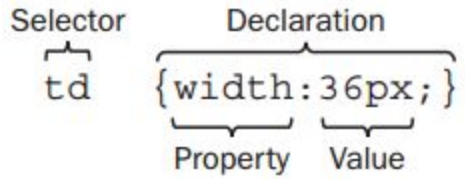
Lecture 5

- CSS Introduction
- CSS Selectors
- Ways to Insert CSS
- Multiple Style Sheets
- Inheritance in CSS
- Advantages of External CSS Style Sheets
- CSS Properties Summary
- Controlling Text
- Text Formatting

CSS Introduction

- **Take control of the style of your pages**, including the colors and size of fonts, the width and colors of lines, and the amount of space between items on the page.
- **Allow you to specify rules** that say how the content of elements within your document should appear.
- CSS rule made up of two parts:
  - The **selector** , which indicates which element or elements the declaration applies to (if it applies to more than one element, you can have a comma - separated list of several elements)
  - The **declaration** , which sets out how the elements referred to in the selector should be styled
  - The declaration has two parts, separated by a colon:
    - A **property** , which is the property of the selected element(s) that you want to affect, in this case the width property.
    - A **value** , which is a specification for this property; in this case it is that the table cells should be 36 pixels wide.



CSS Introduction

- HTML was NEVER intended to contain tags for formatting a document, it was intended to **define the content** of a document
- The style definitions are normally saved in external .css files.
- A CSS declaration always ends with a semicolon, and declaration groups are surrounded by curly braces:

CSS Selectors

- CSS selectors are used to "find" (or select) HTML elements based on their id, class, type, attribute, and more.
- **Universal Selector**
  - The universal selector is an asterisk; it is like a wildcard and matches all element types in the document e.g.

    ```
    *{  }
    ```
- **The element/Type Selector**
  - Based on the element name e.g.

    ```
    p {
       text-align: center;
       color: red;
    }
    ```
  - All <p> elements will be center-aligned, with a red text color
- **The id Selector**
  - Uses the id attribute of an HTML element
  - The followoing applied to the HTML element with id="para1”

```
#para1 {
       text-align: center;
       color: red;
    }
```

CSS Selectors

- **The class Selector**
  - Selects elements with a specific class attribute
  - All HTML elements with class="center" will be center-aligned

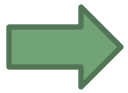
```
.center {
    text-align: center;
    color: red;
}
```

- **Grouping Selectors**
  - You can group the selectors, to minimize the code.
  - To group selectors, separate each selector with a comma.

```
h1 {
    text-align: center
;
    color: red;
}
```

```
h2 {
    text-align: center
;
    color: red;
}
```

```
p {
    text-align: center
;
    color: red;
}
```



```
h1, h2, p {
    text-align: center;
    color: red;
}
```

CSS Selectors

- **The Child Selector**
  - The child selector matches an element that is a direct child of another.
  - The names of the two elements are separated by a greater - than symbol to indicate that b is a child of td (>) which is referred to as a combinator :

    td > b {}
- **The Descendant Selector**
  - The descendant selector matches an element type that is a descendant of another specified element (or nested inside another specified element), not just a direct child.
  - Example:

    table b {}
- **The Adjacent Sibling Selector**
  - An adjacent sibling selector matches an element type that is the next sibling of another.

    h1+p {}
- **The General Sibling Selector**
  - The general sibling selector matches an element type that is a sibling of another, although it does not have to be the directly preceding element

    h1~p {}

CSS Selectors

- **Attribute Selectors**
  - Attribute selectors enable you to use the attributes that an element carries, and their values, in the selector

Selector	Example	Example description
[*attribute*]	[target]	Selects all elements with a target attribute
[*attribute=value*]	[target=_blank]	Selects all elements with target="_blank"
[*attribute~=value*]	[title~=flower]	Selects all elements with a title attribute containing the word "flower"
[*attribute|=value*]	[lang|=en]	Selects all elements with a lang attribute value starting with "en"
[*attribute^=value*]	a[href^="https"]	Selects every <a> element whose href attribute value begins with "https"
[*attribute$=value*]	a[href$=".pdf"]	Selects every <a> element whose href attribute value ends with ".pdf"
[*attribute*=value*]	a[href*="w3schools"]	Selects every <a> element whose href attribute value contains the substring "w3schools"

Ways to Insert CSS

There are three ways of inserting a style sheet:

- **External Style Sheet**
  - Ideal when the style is applied to many pages
  - The file should not contain any html tags. The style sheet file must be saved with a .css extension.
  - Each page must include a link to the style sheet with the <link> tag.

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

- **Internal Style Sheet**
  - Used when a single document has a unique style
  - Define internal styles in the head section of an HTML page, inside the <style> tag

```
<head>
<style>
body {
    background-color: linen;
}
h1 {
    color: maroon;
    margin-left: 40px;
}
</style>
</head>
```

- **Inline Styles**
  - Loses many of the advantages of a style sheet (by mixing content with presentation).
  - Use this method sparingly!
  - The style attribute can contain any CSS property

```
<h1 style="color:blue;margin-left:30px;">This is a heading.</h1>
```

Multiple Style Sheets

- If some properties have been set for the same selector in different style sheets, the values will be inherited from the more specific style sheet.

- What style will be used when there is more than one style specified for an HTML element?
  - Generally speaking we can say that all the styles will "cascade" into a new "virtual" style sheet by the following rules, where number four has the highest priority:
    1. Browser default
    2. External style sheet
    3. Internal style sheet (in the head section)
    4. Inline style (inside an HTML element)

- If the link to the external style sheet is placed after the internal style sheet in HTML <head>, the external style sheet will override the internal style sheet!

Inheritance in CSS

- When a property has been applied to one element, it will often be inherited by child elements
- This saves you from having to repeat the same rules for every single element that makes up a web page.

<link> element

- The < link > element is used in web pages to describe the relationship between two documents
  - The < link > element is always an empty element, and when used with style sheets it must carry three attributes: type , rel , and href

  < link rel=”stylesheet” type=”text/css” href=”../CSS/interface.css” />
  - The “**rel**” attribute specifies the relationship between the document containing the link
  - The **type** attribute specifies the MIME type of the document being linked to.
  - The **href** attribute specifies the URL for the document being linked to.
  - The **hreflang** attribute specifies the language that the resource specified is written in
  - The **media** attribute specifies the output device that is intended for use with the document

Advantages of External CSS Style Sheets

- It saves you repeating the same style rules in each page.
- You can change the appearance of several pages by altering just the style sheet rather than each individual page.
- Once a visitor to your site has downloaded the CSS style with the first page of your site that uses it, subsequent pages will be quicker to load.
- The style sheet can act as a style template to help different authors achieve the same style of document without learning all of the individual style settings.
- Because the web pages do not contain the style rules, different style sheets can be attached to the same document.
- A style sheet can import and use styles from other style sheets, allowing for modular development and good reuse. (For example, I have a style sheet that I import into other style sheets whenever I want to include examples of programming code in a web page — I do not need to write the style rules again and again.)
- If you remove the style sheet, you can make the site more accessible for those with visual impairments, because you are no longer controlling the fonts and color schemes.

CSS Properties Summary

- The properties are grouped together into related functionality
  - for example, there are properties that allow you to control the presentation of tables, lists, and backgrounds

FONT

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

TEXT

color
direction
letter-spacing
text-align
text-decoration
text-indent
text-shadow
text-transform
unicode-bidi
white-space
word-spacing

BACKGROUND

background
background-attachment
background-color
background-image
background-position
background-repeat

BORDER

border
border-color
border-style
border-width
border-bottom
border-bottom-color
border-bottom-style
border-bottom-width
border-left
border-left-color
border-left-style
border-left-width
border-right
border-right-color
border-right-style
border-right-width
border-top
border-top-color
border-top-style
border-top-width

MARGIN

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

PADDING

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

DIMENSIONS

height

line-height

max-height

max-width

min-height

min-width

width

POSITIONING

bottom

clip

left

overflow

right

top

vertical-align

z-index

OUTLINES

outline

outline-color

outline-style

outline-width

TABLE

border-collapse

border-spacing

caption-side

empty-cells

table-layout

LIST and MARKER

list-style

list-style-image

list-style-position

list-style-type

marker-offset

GENERATED CONTENT

content

counter-increment

counter-reset

quotes

CLASSIFICATION

clear

cursor

display

float

position

visibility

Controlling Text

- Split into two groups:
  - Those that directly affect the font and its appearance (including the typeface used, whether it is regular, bold or italic, and the size of the text)

Property	Purpose
font	Allows you to combine several of the following properties into one
font-family	Specifies the typeface or family of font that should be used
font-size	Specifies the size of a font
font-weight	Specifies whether the font should be normal or bold
font-style	Specifies whether the font should be normal, italic, or oblique
font-stretch	Allows you to control the width of the actual characters in a font
font-variant	Specifies whether the font should be normal or small caps
font-size-adjust	Allows you to alter the aspect ratio of the size of the font's characters

Controlling Text

- Those that would have the same effect on the text irrespective of the font used (these include color of the text and the spacing between words or letters)
- Perhaps most importantly, a font is not the same thing as a typeface:
  - A **typeface** is a family of fonts, such as the Arial family.
  - A **font** is a specific member of that family, such as Arial 12 - point bold. You will often see the terms used interchangeably, but it is helpful to be aware of the distinction.

Text Formatting

Property	Purpose
`color`	Specifies the color of the text
`text-align`	Specifies the horizontal alignment of the text within its containing element
`vertical-align`	Specifies the vertical alignment of text within containing element
`text-decoration`	Specifies whether the text should be underlined, overlined, strikethrough, or blinking text
`text-indent`	Specifies an indent from the left border for the text
`text-transform`	Specifies that the content of the element should all be uppercase, lowercase, or capitalized
`text-shadow`	Specifies that the text should have a drop shadow
`letter-spacing`	Controls the width between letters (known to print designers as *tracking*)
`word-spacing`	Controls the amount of space between each word
`white-space`	Specifies whether the white space should be collapsed, preserved, or prevented from wrapping
`direction`	Specifies the direction of text (similar to the `dir` attribute)

Lengths

- There are three ways lengths can be specified in CSS:
  - Relative units
  - Absolute units
  - Percentages
- **Relative Units**
  - Following are relative units:
    - **pixels**, which relate to the resolution of the screen
      - A pixel is the smallest unit of resolution on a screen
      - Unit of measurement can depend upon the viewing medium
    - **em ' s**
      - An em is equivalent to the height of the current font, and because the size of fonts can vary throughout a document, the height of the em unit can be different in different parts of the document.
      - Used for measurements of elements that contain text and for controlling spacing between text

Lengths

- **Absolute Units**
  - absolute units are used far less than relative units

Unit	Full Name
pt	A point
pc	A pica
in	An inch
cm	A centimeter
mm	A millimeter

- **Percentages**
  - Give a value in relation to another value
  - For example, if your page only contained two paragraphs, and you wanted each to take up half of the width of the browser, then the paragraphs might be given a width property with a value of 50%

THANKS. ANY QUESTIONS?