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Web and Database Computing •

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Style & CSS: Introduction to CSS

Previously in WDC

We looked at HTML and how it is used to express the content and structure of a Web Page

- Basic Syntax.
- Tags and Attributes.
- Validation.

Adding Style to your webpages

You can follow along in the lecture slides,
but also following the guide at <https://www.w3schools.com/css/>

We're not so different, you and I ...



What is CSS

Cascading **S**tyles **S**heets is a set of layered rules that describe how the elements of a HTML document should appear.

- HTML was never designed to hold style information.
- The introduction of basic style attributes and tags made documents messy and hard-to-maintain.
- CSS separates the the style information from the elements.
- CSS allows us to style multiple web pages with a single stylesheet.

An example from w3schools:

CSS demo from W3Schools

CSS Syntax

```
h1 {  
    col or :  r ed;  
    font - f am i l y :  ' N o t o S a n s ' ;  
}
```

CSS Syntax

```
h1 {  
  color: red;  
  font-family: 'Not o Sans';  
}
```

Each set of CSS rules is represented by a block of declarations applied to a selector.

- The **selector** specifies the HTML element(s) that the style rules will be applied to.
- The **declaration block** contains a set of **declarations** separated by semicolons (;). These are the style rules that will be applied to the selected element(s).
- Each **declaration** consists of a **property-value** pair separated by a colon (:)

CSS Syntax

CSS also supports comments:

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

- Comments start with `/*` and end with `*/`
- Comments may span multiple lines

Adding CSS to our webpages

There are 3 ways you can add style information to a document:

1. Using an External Style Sheet

Place your CSS in a separate file e.g. `style.css`

```
h1 {  
  color: red;  
  font-family: 'Noto Sans';  
}
```

Link the stylesheet using a link tag in your document's head:

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

Adding CSS to our webpages

There are 3 ways you can add style information to a document:

2. Using an Internal Style Sheet

Place your CSS in a `<style>` tag in your document's head

```
<head>
  <style>
    h1 {
      color: red;
      font-family: 'Noto Sans';
    }
  </style>
</head>
```

Adding CSS to our webpages

There are 3 ways you can add style information to a document:

3. Inline directly on the element you want to style

Use a style attribute on the chosen element

```
<body>  
  <h1 style="color: red; font-family: 'Noto Sans';">This is a heading</h1>  
</body>
```

Where possible, always use *external* style sheets

Basic styles



CSS Colours

You can set the colour of:

- Text, using the **color** property
- Backgrounds, using the **background-color** property
- Borders, using the **border-color** property

HTML Result



[Edit in JSFiddle](#)

```
<style>
  div {
    background-color: skyblue;
    color: grey;
    border-color: blue;
  }
</style>

<div>
  <h1>Colours!</h1>
</div>
```

CSS Colours Notation

You can represent colour using:

- **Standard names**

HTML includes [140 standard colours](#) usable by name

e.g. **Red**, **DarkBlue**, **LightSlateGrey**

- **RGB value**

Specified based on their Red, Green, and Blue components

Each component takes an intensity value from 0 to 255

e.g. **rgb(255, 0, 0)**, **rgb(0, 0, 139)**, **rgb(119, 136, 153)**

- **HEX value**

A Hexadecimal representation of the RGB value.

e.g. **#FF0000**, **#00008B**, **#778899**

HTML Result



Edit in JSFiddle

```
<div style="background-color: MediumSeaGreen">MediumSeaGreen</div>
<div style="background-color: LightSteelBlue ">LightSteelBlue
<div style="background-color: Tomato">Tomato</div>
<br />
<div style="background-color: rgb(60, 179, 113)">rgb(60, 179,
<div style="background-color: rgb(176, 196, 222)">rgb(176, 196
<div style="background-color: rgb(255, 99, 71)">rgb(255, 99, 7
<br />
<div style="background-color: #3cb371">#3cb371</div>
<div style="background-color: #b0c4de">#b0c4de</div>
<div style="background-color: #ff6347">#ff6347</div>
<br />
<div style="background-color: hsl(147, 50%, 47%)">hsl(147, 50%
<div style="background-color: hsl(214, 41%, 78%)">hsl(214, 41%
<div style="background-color: hsl(9, 100%, 64%)">hsl(9, 100%,
<br />
<div style="width: 50%; overflow-x: visible; background-color:
  <div style="width: 200%; background-color: rgba(60, 179, 113
  <div style="width: 200%; background-color: rgba(176, 196, 22
  <div style="width: 200%; background-color: rgba(255, 99, 71,
</div>
```


CSS Colours Notation

You can represent colour using:

- **HSL value**

Specified based on their Hue (as a value from 0-355), Saturation (as a percentage from 0% to 100%), and Lightness (as a percentage from 0% to 100%) components

e.g. **hsl(0, 100%, 50%)**,

hsl(240, 100%, 27%), **hsl(210, 14%, 53%)**

- **RGBA & HSLA**

Same as RGB and HSL, but includes an Alpha channel (Opacity).

e.g.

rgba(255, 0, 0, 50%)

HTML Result



Edit in JSFiddle

```
<div style="background-color: MediumSeaGreen">MediumSeaGreen</div>
<div style="background-color: LightSteelBlue ">LightSteelBlue
<div style="background-color: Tomato">Tomato</div>
<br />
<div style="background-color: rgb(60, 179, 113)">rgb(60, 179,
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  <div style="width: 200%; background-color: rgba(255, 99, 71,
</div>
```

CSS Backgrounds

Any visible element can have a background.

Backgrounds can be:

- Colours
You've already seen examples of this
- Images & Gradients
Using the **background-image** property

HTML	Result
------	--------

[Edit in JSFiddle](#)

```
<div style="background-color: Salmon; ">
  Some content
</div>
<br />
<div style="background-image: url(https://cdn.pixabay.com/phot
  Some more content
</div>
<br />
<div style="background-image: linear-gradient(to right, skyblu
  Even more content
</div>
```

CSS Backgrounds

Background Images & Gradients can be manipulated using:

- The **background-repeat** property
- The **background-attachment** property
- The **background-position** property
- The **background-size** property

The different background properties can also be shortened into a single **background** property, e.g.

```
background: rgb(220, 220, 220) url("texture.png") no-repeat center top;
```

CSS Result



Edit in JSFiddle

```
body {  
  background-color: PowderBlue;  
  background-image: url(https://i.imgur.com/dofJuza.png), url(  
  background-size: 9em 6em, 7em 7em;  
  background-repeat: repeat;  
}
```

CSS Fonts

The **font-family** property allows you to select the font used.

- You can use any font available on the host system, as well as web fonts.
- Not all systems will have the same fonts e.g.
Windows may not have Helvetica, while Linux doesn't have Arial.
- You can specify fonts in order of preference, and the browser will use the first available one.
font-family: 'Noto Sans', Arial, Helvetica;
- There are several generic font-families **serif**, **sans-serif**, **monospace**, **cursive** that can be used instead of a font name and will select the appropriate system font
font-family: monospace; /* Will select the system's default monospace font */
 - Always include a generic font family as a fall-back in case the selected font is not available.
font-family: 'Courier New', monospace;

CSS Font Style and Weight

The **font-style** property allows you to set a font to be italic.

- **font-style: italic** or **font-style: normal**
- Can also use **inherit** value which uses the same value as its parent element

The **font-weight** property allows you to set a font's weight (i.e. boldness).

- **font-weight: bold** or **font-weight: normal**
- Can also use a weight value: 100,200,300,400(normal),500,600,700(bold),800,900

CSS Font Size

The **font-size** property allows you to select size of the font used.

- Can be a named value e.g. **medium** **xx-small** **small** **large** **x-large** **smaller** **larger**
- Can be a pixel value e.g. **20px**
- Can be a percentage value e.g. **120%**
- Can be a relative value e.g. **1.2em** **Recommended**

Size Units

CSS supports a number of different units that can either specify an absolute or relative size.

Absolute size units include

- **px** pixels
- **cm** centimeters, **mm** millimeters, **in** inches
- **pt** points (1pt = 1/72 of 1in)

Relative units include

- **em** Relative to the font-size of the element (2em means 2 times the size of the current font)
- **rem** Relative to the base font-size of the document
- **%** Relative to the parent element
- **vw, vh** Relative to width/height of the viewport.
- **vmin, vmax** Relative to smallest/largest dimension of the viewport.
- Other relative units that are less commonly used **ex ch**



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