Lesson 2 - Cascading Style Sheets
dedicated to Spennorex and Grumpah

1 Introduction

This time we'll work on the design and styling of our web page. Style is important, because it makes pages look beautiful and sometimes helps to find features easier, due to certain conventions, choice of color, etc.

2 CSS Structure

A basic CSS document, would look like this:

```
1  body {
2      background-color: dodgerblue;
3      color: #DC143C;
4  }
```

Listing 1: Sample CSS Script

This basic style sheet, would cause the `<body>` to have a dodgerblue background color and a crimson font color. There are a few pre-defined colors, which I'll show you later and you can pick any custom color using the hexadecimal color codes, which you can get from most color pickers. There are a lot more CSS Properties, so let's dive right into it.

3 CSS Properties

'background-color' or 'color' are called **CSS properties**. I'll give you a list of these properties with examples - most of these properties are pretty intuitive. As for the background we have multiple CSS properties:

⋄ background-color: chocolate;
⋄ background-image: url"(./img/test.png");
⋄ opacity: 0.5;
⋄ color: cornsilk;
⋄ font: 20px Arial, sans-serif;
⋄ font-weight: bold;
⋄ display: block;
⋄ margin: 10px;
⋄ padding: 10px;
⋄ border: 10px solid black;
⋄ border-radius: 4px;

The margin, padding, border and border radius properties can be explained using the css box-model:
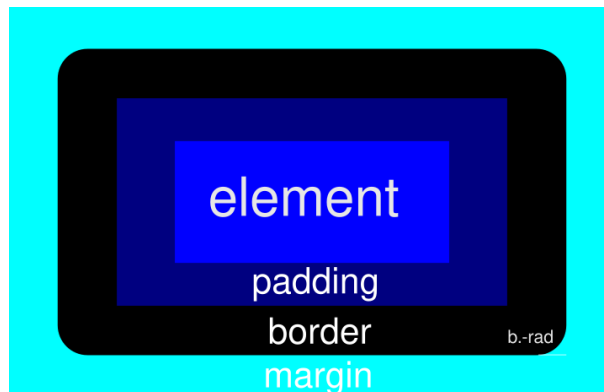

Figure 1: CSS Box Model

The element is the whole element with its contents, such as in the case of `<p>Text</p>`: "Text". The element can have a border, and you can set the space between the element and the border using the padding property. To adjust the spacing between two elements you can increase the margin. There are different units for measuring distance, which we'll cover soon.

There are also background properties, such as the 'background-color' and the 'background-image'. These allow you to give an element a certain background-color or in the case of body, you can give the whole page a background-color or image, also the opacity property allows to control the alpha-channel of the background, while the color allows you to pick a font-color, to use on the element.

Another very important property is the 'display' property, which defines how the element is displayed (in context of other elements). There are following values for the display property:

⋄ none
⋄ inline
⋄ block
⋄ inline-block

The 'none' is pretty intuitive: it doesn't show the element at all, 'inline' means, that the element just get's packed with the neighbour elements in one line. 'block' means that we pack the element into below the previous element and give the element width and height properties, which can be changed to increase / decrease the element box. Same goes for 'inline-block' except for not being placed below, but next to the previous element.

4   CSS Units

Here you have a small (distance) unit reference:
Let's start off with the Absolute Lengths:

cm	Centimeters
mm	Millimeters
in	Inches
px	Pixels (1/96th of an Inch)
pt	Points (1/72th of an Inch)
pc	Picas (1/6th of an Inch)

And follow up with the relative ones:

em	Relative to the font-size of the element
ex	Relative to the x-height of the current font
ch	Relative to the width of the "0" (a character)
rem	Relative to font-size of the root element
vw	Relative to 1% of the width of the viewport*
vh	Relative to 1% of the height of the viewport*
%	Relative to the parent element

5   CSS Colors

Now let's cover the different predefined CSS colors. Here you'll have a colorpalette of those:

AliceBlue	AntiqueWhite	Aqua
Bisque		BlanchedAlmond
Blue	BlueViolet	Brown
BurlyWood	CadetBlue	Chartreuse
Chocolate	Coral	CornflowerBlue
Cornsilk	Crimson	Cyan
DarkBlue	DarkCyan	DarkGoldenRod
DarkGray	DarkGrey	DarkGreen
DarkKhaki	DarkMagenta	DarkOliveGreen
DarkOrange	DarkOrchid	DarkRed
DarkSalmon	DarkSeaGreen	DarkSlateBlue
DarkSlateGray	DarkSlateGrey	DarkTurquoise
DarkViolet	DeepPink	DeepSkyBlue
DimGray	DimGrey	DodgerBlue
FireBrick	FloralWhite	ForestGreen
Fuchsia	Gainsboro	GhostWhite
Gold	GoldenRod	Gray
Grey	Green	GreenYellow
HoneyDew	HotPink	IndianRed
Indigo	Ivory	Khaki
Lavender	LavenderBlush	LawnGreen
LemonChiffon	LightBlue	LightCoral

LightCyan	LightGoldenRodYellow	LightGray
LightGrey	LightGreen	LightPink
LightSalmon	LightSeaGreen	LightSkyBlue
LightSlateGray	LightSlateGrey	LightSteelBlue
LightYellow	Lime	LimeGreen
Linen	Magenta	Maroon
MediumAquaMarine	MediumBlue	MediumOrchid
MediumPurple	MediumSeaGreen	MediumSlateBlue
MediumSpringGreen	MediumTurquoise	MediumVioletRed
MidnightBlue	MintCream	MistyRose
Moccasin	NavajoWhite	Navy
OldLace	Olive	OliveDrab
Orange	OrangeRed	Orchid
PaleGoldenRod	PaleGreen	PaleTurquoise
PaleVioletRed	PapayaWhip	PeachPuff
Peru	Pink	Plum
PowderBlue	Purple	RebeccaPurple
Red	RosyBrown	RoyalBlue
SaddleBrown	Salmon	SandyBrown
SeaGreen	SeaShell	Sienna
Silver	SkyBlue	SlateBlue
SlateGray	SlateGrey	Snow
SpringGreen	SteelBlue	Tan
Teal	Thistle	Tomato
Turquoise	Violet	Wheat
White	WhiteSmoke	Yellow

6 CSS Selectors

At last before implementing our stylesheet into our web page, we need to discuss how to assign our **CSS Rules** to the correct elements:

If you're referring to a ..., you need to use...

element e	e {}
class c	.c {}
id i	#i {}
element e with class c	e.c {}
element e inside element a	a e {}
element attribute a	[a] {}

There are a few more things, but you'll see them live in action in the next Listing :).

7 Implementing into our Web Page

```html
<html>
    <head>
        <title></title>
        <style>
        </style>
    </head>
    <body>
    </body>
</html>
```

Listing 2: Updated Wireframe

Now let's decorate our previous site, with a bit of css.

```html
<html>
    <head>
        <title>My Profile</title>
        <style>
        body {
            background-image: url(https://external-content.duckduckgo.
    com/iu/?u=http%3A%2F%2Fwallsdesk.com%2Fwp-content%2Fuploads%2F2016%2
    F05%2FSakura-images.jpg&f=1&nofb=1);
            background-size: cover;
            background-position: center;
            background-repeat: no-repeat;
            height: 100%;
        }
        .text {
          background-color: rgb(0,0,0);
          background-color: rgba(0,0,0, 0.65);
          color: powderblue;
          font-weight: bold;
          border: 3px solid #f1f1f1;
          position: absolute;
          top: 30vh;
          left: 30vw;
          width: 40vw;
          padding: 20px;
        }
        </style>
    </head>
    <body>
        <div class="text">
            <h1>My Profile Page</h1>
            <p>Here's who I am :)</p>
            <ol>
              <li>Name: Doomer</li>
              <li>How many Discord Notifications do you have? 0</li>
              <li>Gender: genderfluid</li>
              <li>Birthday: 22nd of December</li>
              <li>Timezone: UTC+2 (CET)</li>
              <li>Languages Spoken: English, Russian, German</li>
              <li>Favorite Colors: Black, Blue, Purple</li>
              <li>...</li>
            </ol>
            <p>I think that's enough <br/> for an example.</p>
        </div>
    </body>
</html>
```

Listing 3: Content Update

8   Excercises

These excercises are optional and you can do them if you want to get experience and feel comfortable using the style sheets:

1. Try to interpret unknown elements, attributes and and understand the parts of Listing 3.

2. Style the pages from Lesson 1. Go wild!

9   Final Notes

Thanks a lot for reading this lesson! Hope it tought you something. As always, if you have questions, drop them in Discord (Doomer#1718). I think this was a rather large script, with a lot of theory, maybe that's because of the color table, maybe, because of the last listing - I don't know, but I'm satisfied. If you have any suggestions on how to improve the script, e.g. if I forgot something, made a typo somewhere or left out an important concept. If you want to show me your page or want to have tips regarding it, simply ask and would be good if you'd provide the affected code snippets. See ya in the next one, I guess.