HTML & CSS – The Box Model

CSS treats each HTML element (tag) as if it lives in its own box. There are several properties that that affect the appearance these boxes, such as:

- Control the dimensions of your boxes
- Create borders around boxes
- Set margins and padding for boxes.

Box Dimensions

1. Open the html file **`box-dimentions.html`** from unit 20, lesson 6 section of Moodle and inspect the code:

```
<!DOCTYPE html>
<html>
	<head>
		<title>Width Height</title>
		<style type="text/css">
			body {
				font-family: Arial, Verdana, sans-serif;
				color: #111111;
			}
			div {
				height: 300px;
				width: 400px;
				height: 300px;
				background-color: #5858FA;
			}
			p {
				height: 75%;
				width: 75%;
				background-color: #e1ddda;
			}
		</style>
	</head>
	<body>
		<div>
			<p>The Smiths formed in 1982 in Manchester and probably the
			finest band to have ever performed. Although only 4 albums
			were made, they are without doubt the finest 4 albums to
			have ever been produced.</p>
		</div>
	</body>
</html>
```

You can see from the code that it is possible to set the height and width of a an element. In the example the **`<div>`** is set to a fixed width of 300 pixels height and 400 pixels wide. The

<p> element is then set to have a width and height of 75% that of the ** **. As the **<p>** element is inside the ** ** it bases it's dimensions on those of the ** .**

2. Change the pixel (px) dimensions of the ** ** element and look at the effect it has upon the **<p>** element. The **<p>** section should automatically adjust to stay at 75% size of the ** **.
3. There are CSS properties for max-width, min-width, max-height and min-height which sets maximum and minimum sizes for a box. Change the code to include these properties and then see what happens when you re-size the browser window.

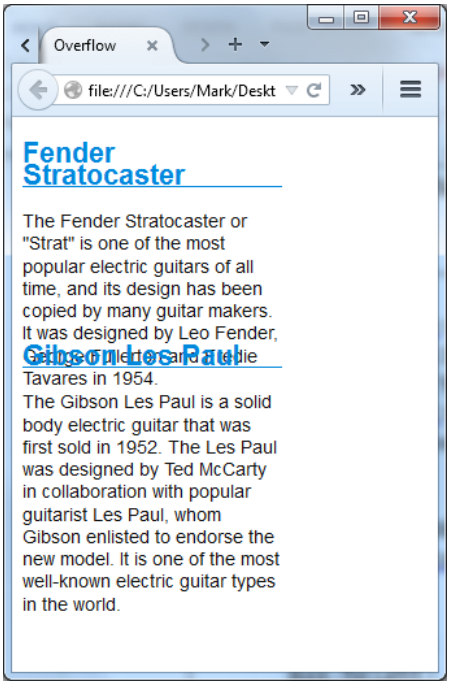
Overflowing Content

4. Open the html file **overflow.html** from unit 20, lesson 6 section of Moodle and inspect the CSS code:

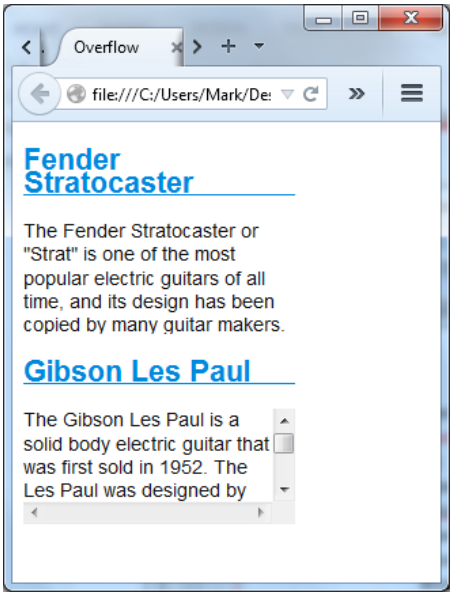
```
body {
      font-family: Arial, Verdana, sans-serif;
      color: #111111;
      font-size: 90%;
      line-height: 1.2em;
      width: 200px;}

h2 {
      color: #0088dd;
      border-bottom: 1px solid #0088dd;}

p {
      min-height: 30px;
      max-height: 85px;}

p.one {
      overflow: hidden;}

p.two {
      overflow: scroll;}
```

5. Remove the overflow properties one at a time from the code to see the effect it has upon the web page.
6. The **overflow** property tells the browser what to do if the content contained in a box is larger than the box itself. The **overflow** property is vital when limiting the size of a box as it will avoide clashing code:

Without **`overflow`** porperty:



With **`overflow`** property:



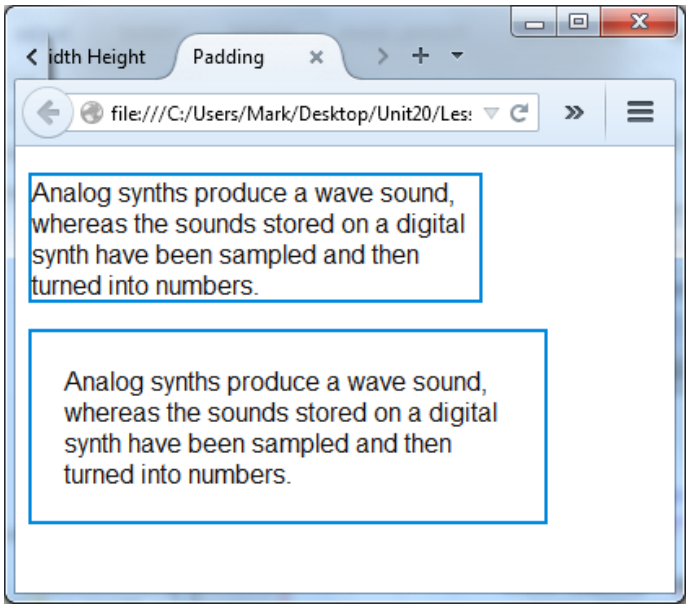
Border, Margin and Padding

Every box has three properties that can be adjusted to control its appearance:

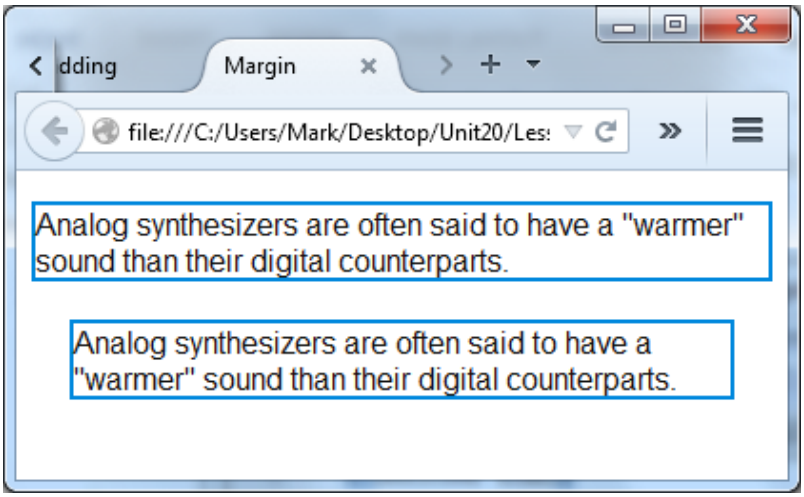
- Border (orange)
- Margin (yellow)
- Padding (pink)

If you set a width for a box, then the borders, margin and padding are all added to its width and height.

Padding
Two identical paragraphs, first with no padding and second with padding of 20px:



Margin
Two identical paragraphs, with no padding but a margin of 20px around the second paragraph:



Border
There are three main border properties:

- border-width;
- border-style;
- border-color.

Check out the following code and example:

```
body {
	font-family: Arial, Verdana, sans-serif;
	color: #111111;}

p {
	width: 200px;
	border-style: solid;}

p.one {
	border-width: 2px;
	border-color: red;}

p.two {
	border-width: thick;
	border-color: green;
	border-style: dashed;}

p.three {
	border-width: 1px 4px 12px 4px;
	border-color: blue red green orange;}
```

With the CSS applied:

Assignment Alert!

You will be required to show you can apply padding, borders, margins and width in variety of ways and to a range of different elements. You will also be required to discuss the difference between padding, borders and margins and how they affect the overall width (and height) of an element.

For example what is the total width of the following box:

Width : 400px;
border: 20px;
padding: 10px
margin: 30px
total width = width + border + padding + margin = ?

Activity

In a previous lesson you were introduced to the online tutorials at:
http://www.w3schools.com/css/default.asp .

A. You need to now make sure that you build-up your experience of working with the width, margin, border and padding CSS properties. Use the tutorials to start with to see how the properties affect the size of a box.

B. Once you have worked through the tutorials you must make your own web pages that demonstrate you understanding of the different box properties. Each page must have a title and a heading, you should make the following pages as a minimum:

   i) A page that demonstrates the effect of different padding sizes
   ii) A page that demonstrates the effect of border sizes
   iii) A page that demonstrates the effect of margin sizes
   iv) A page that shows the effect of applying these properties on the width of a box.

Points to remember

- CSS treats all HTML elements as boxes.
- The width of a box is made up of width, padding, border and margin dimensions.
- Box model properties are used in the same way in each of the 3 methods of implementing CSS.
- Altering box model properties can make text easier to read and make pages look cleaner, but be sure to test changes regularly as if they are applied poorly they can have badly affect the presentation of a page.