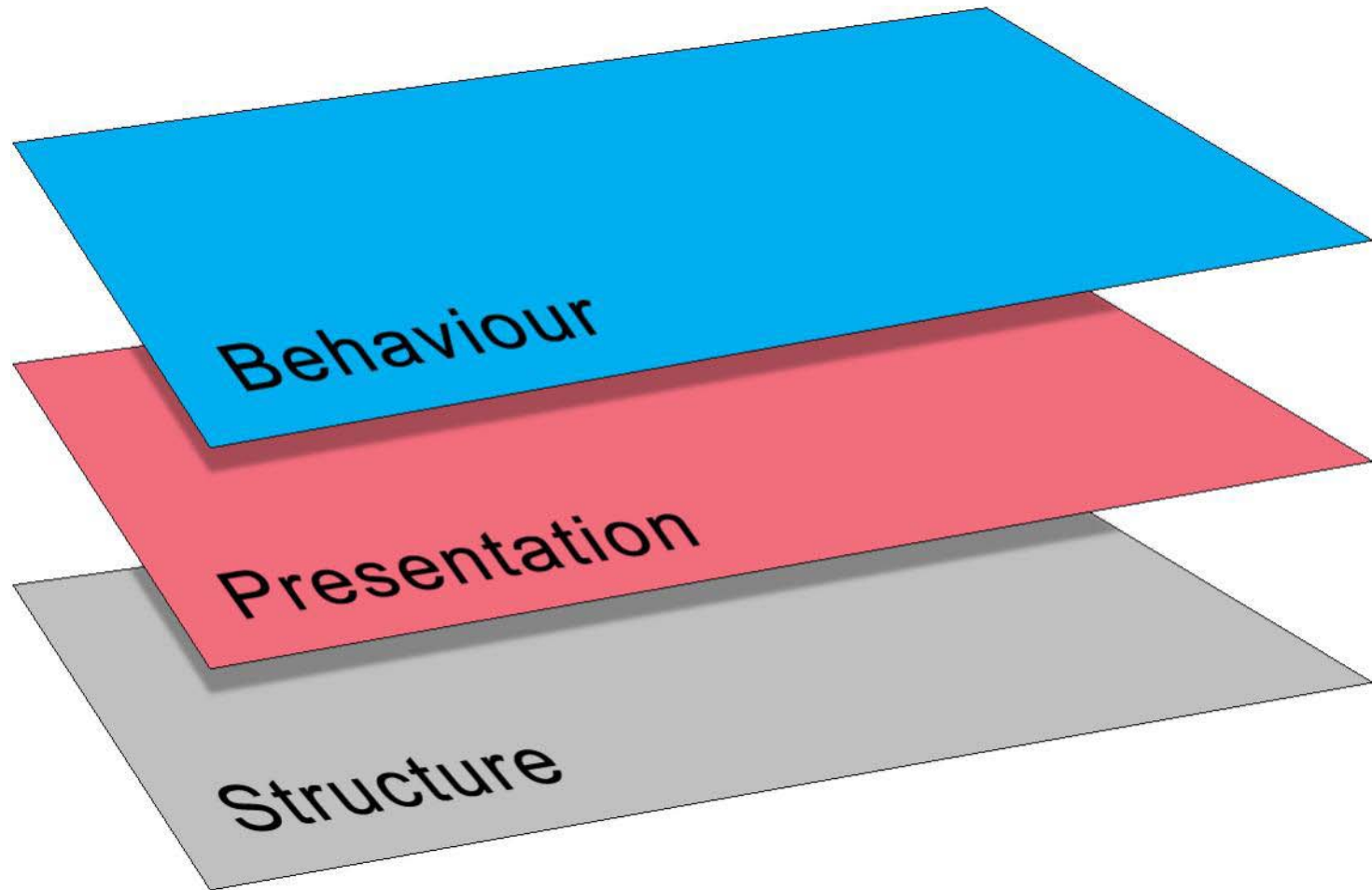


# The Presentation Layer (Cascading Style Sheets)

## Webpage Design

# Anatomy of a webpage



# What is CSS?

- Separating content from presentation
- Smaller files = quicker load
- Much greater control over formatting
- Easier site maintenance
- Improves accessibility

# How does it work?

Markup (XHTML)

+

Style Rules (CSS)

=

Rendered result in browser

# Style Rules

Selector

Declaration

```
h1 {color: red}
```

Property

Value

[http://www.w3schools.com/css/css\\_syntax.asp](http://www.w3schools.com/css/css_syntax.asp)

<http://css.maxdesign.com.au/selectutorial/rule.htm>

# Multiple Declarations

```
h1 {  
color: red;  
background-color: yellow;  
margin-bottom: 25px;  
}
```

One CSS rule can contain many declarations.

The semicolon character is used as a separator between property/value pairs (declarations) within a single rule. The rule above has 3 declarations and requires 2 semicolons. Most coders add a semicolon to the end of every declaration even though it's not needed.

# Grouping Selectors

```
h2, h3, h4 {  
font-family: arial, helvetica, sans-serif;  
font-weight: normal;  
color: #343F4E;  
}
```

In the above example, the same rule applies to h2, h3 and h4.

# Pseudo-Class Rules

```
a {  
  color:#009;  
  text-decoration: none;  
}  
a:hover {  
  text-decoration:  
  underline;  
}
```

[http://www.w3schools.com/css/css\\_pseudo\\_classes.asp](http://www.w3schools.com/css/css_pseudo_classes.asp)

[http://css.maxdesign.com.au/selectutorial/selectors\\_pseudo\\_class.htm](http://css.maxdesign.com.au/selectutorial/selectors_pseudo_class.htm)

# Types of CSS Rule

HTML Selector      **h1 {color: red;}**

Class Selector      **.review {color: red;}**

ID Selector      **#footer {color: red;}**

Class and ID names can be anything you like (provided they begin with a letter) but they should be semantic i.e. they should describe or give meaning to the content they contain.

# HTML Selector Rule in Action

CSS Rule

```
h2 {color: red;}
```

Markup

```
<h2>Heading</h2>
```

Rendered Result

Heading

All text within <h2> tags will be rendered red.

# Class Selector Rule in Action

General CSS Rule or...

```
.review {color: red;}
```

Specific CSS Rule

```
p.review {color: red;}
```

Markup

```
<p class="review">Lorem ipsum...</p>
```

Rendered Result

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Aliquam in nisi ac felis condimentum laoreet ac a eros. Vivamus commodo luctus massa sed consectetur. Aliquam elementum malesuada viverra.

All text within <p> tags with the “review” class will be rendered red. There may be one or more review class paragraph tags.

# ID Selector Rule in Action

CSS Rule

```
#footer {color: red;}
```

Markup

```
<p id="footer">Copyright 2010</p>
```

Rendered Result

Copyright 2010

All text within a `<p>` tag with the “footer” ID will be rendered red. An ID is an unique identifier – only one footer should exist on each page.

# Adding Styles to Webpages

Inline style

```
<h1 style="color:red">...</h1>
```

Embedded style  
in <head>

```
<style type="text/css">  
h1{color: red;}  
</style>
```

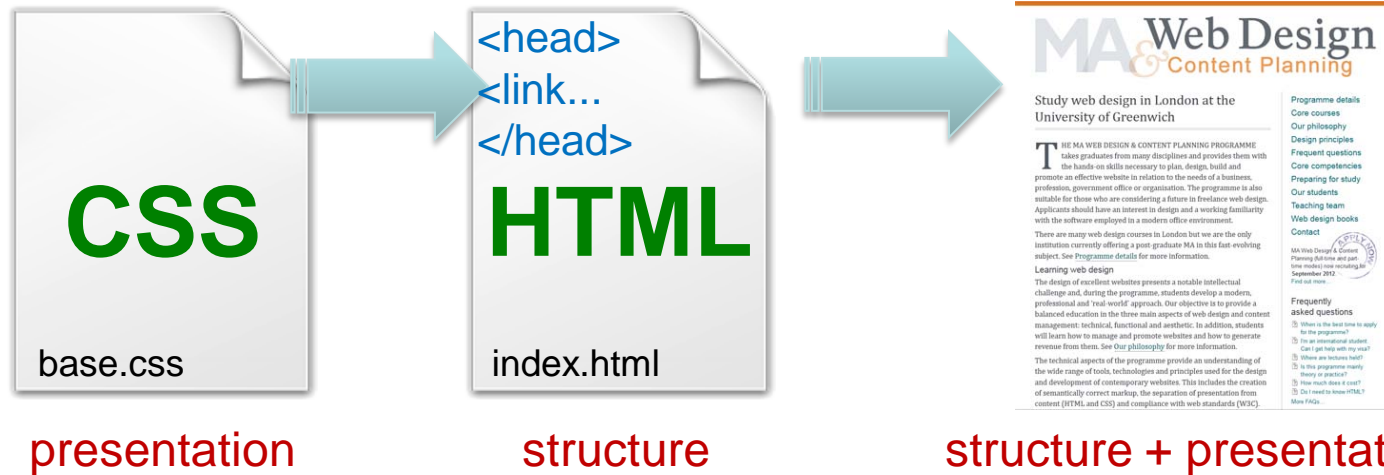
Linked style  
in <head>

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

Inline styles are added to markup elements in the <body> of the document.  
Embedded and Linked styles are added to the <head> of the document.

# Linked Stylesheets are Best

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



Linked or “external” stylesheets are considered best practice because they allow the separation of style from content (keeping the structure and presentation layers apart) and storing them in separate files. You may sometimes see `@import` used to import stylesheets rather than link to them. The key reason you would do this is to hide styles from older browsers. See the link below for more details.

[http://webdesign.about.com/od/beginningcss/f/css\\_import\\_link.htm](http://webdesign.about.com/od/beginningcss/f/css_import_link.htm)

# The <span> and <div> Tags

- No inherent formatting (they do nothing)
- Ideal for applying classes
- The <span> tag is an “inline” element
- The <div> tag is used to define content sections (a block-level element)

```
<div class="indent">
```

```
<p>
```

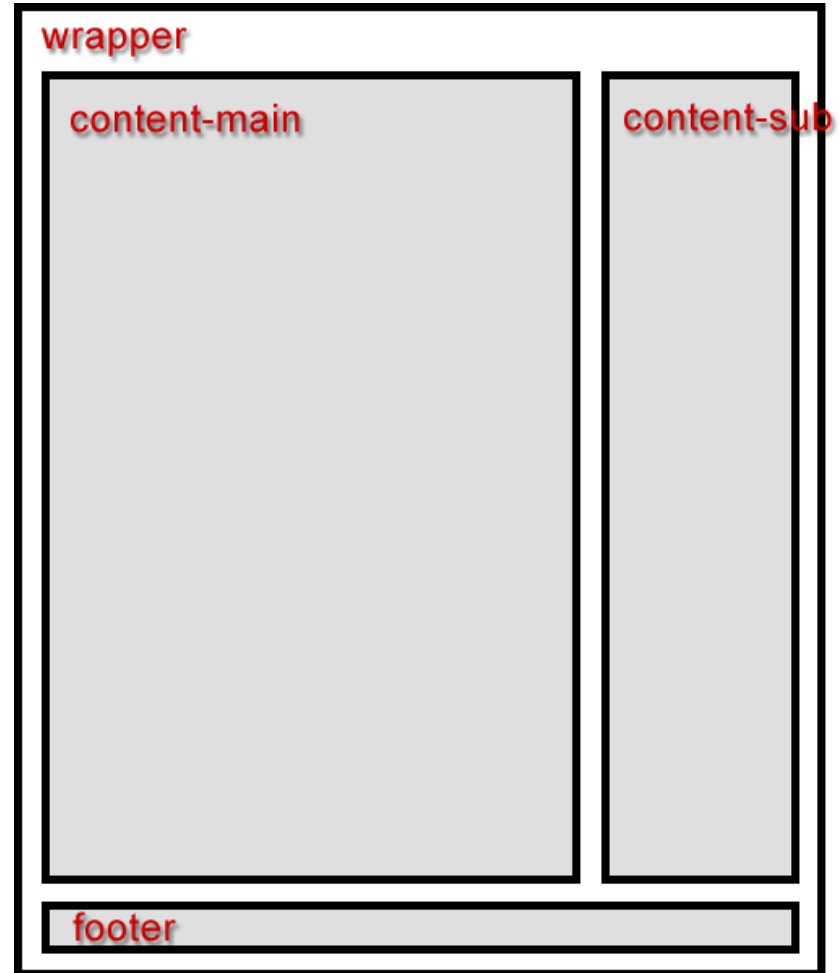
```
This is <span class="imp">very</span> important
```

```
</p>
```

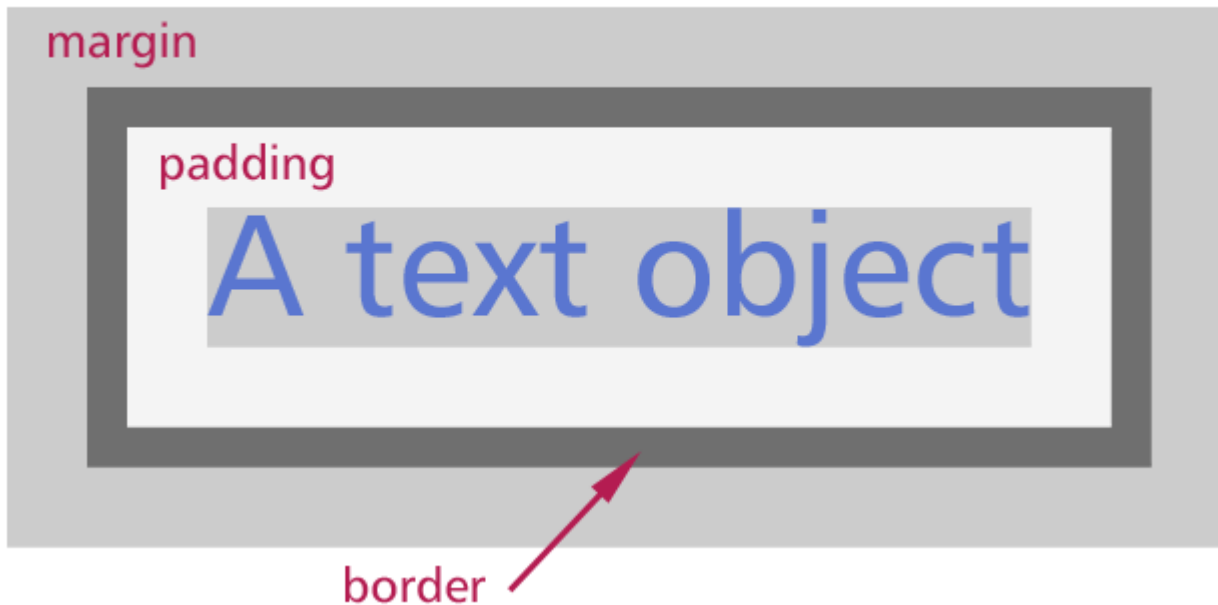
```
</div>
```

# Page Structure with <div>

```
<body>
<div id="wrapper">
  <div id="content-main">
    <h1>Page title</h1>
    <p>Some text...</p>
    <h2>Sub-heading</h2>
    <p>More text...</p>
  </div> <!-- close content-main -->
  <div id="content-sub">
    <h2>Sub-heading</h2>
    <p>More text...</p>
  </div> <!-- close content-sub -->
  <div id="footer">
    <p>More text...</p>
  </div> <!-- close footer -->
</div> <!-- close wrapper -->
</body>
```



# The CSS “Box Model”

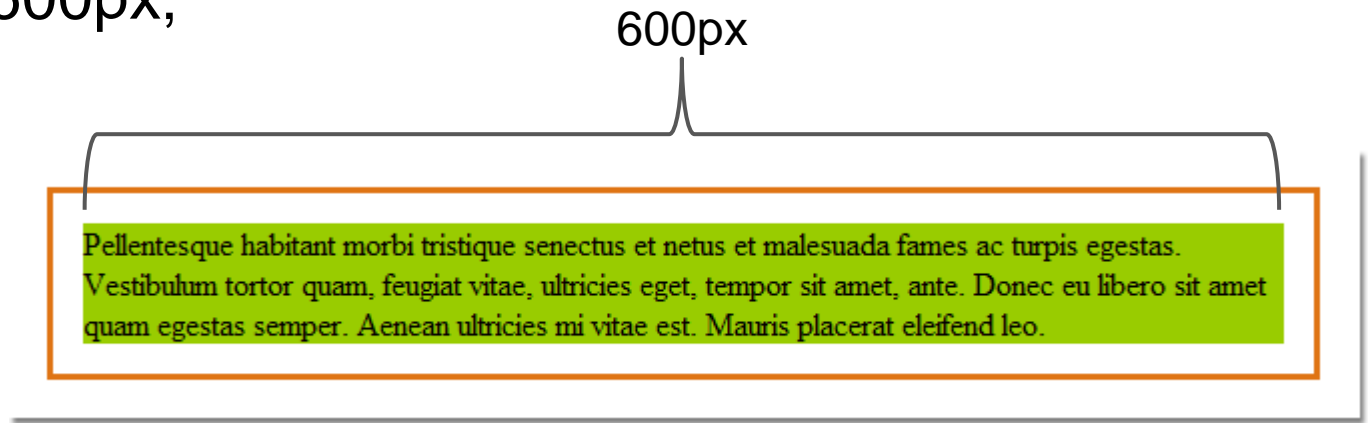


<http://www.w3.org/TR/REC-CSS2/box.html>

<http://www.hicksdesign.co.uk/boxmodel>

# Box Model Declarations

```
#content-main{  
padding: 15px;  
border: 3px solid #DF7414;  
margin: 20px;  
width: 600px;  
}
```



Element width does not include padding, border or margin

# Padding, Border and Margin

```
#content-main {  
margin: 20px;  
}
```

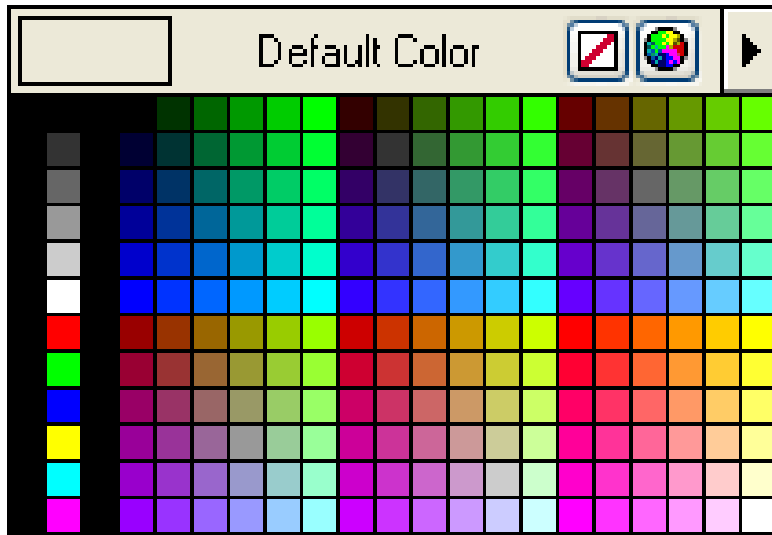
All three rules on the left are equivalent – all four margins are set to 20px.

```
#content-main {  
margin-top: 20px;  
margin-right: 20px  
margin-bottom: 20px  
margin-left: 20px  
}
```

Note that it is possible to set the width of padding, border and margin for the top, right, bottom and left of any element independently.

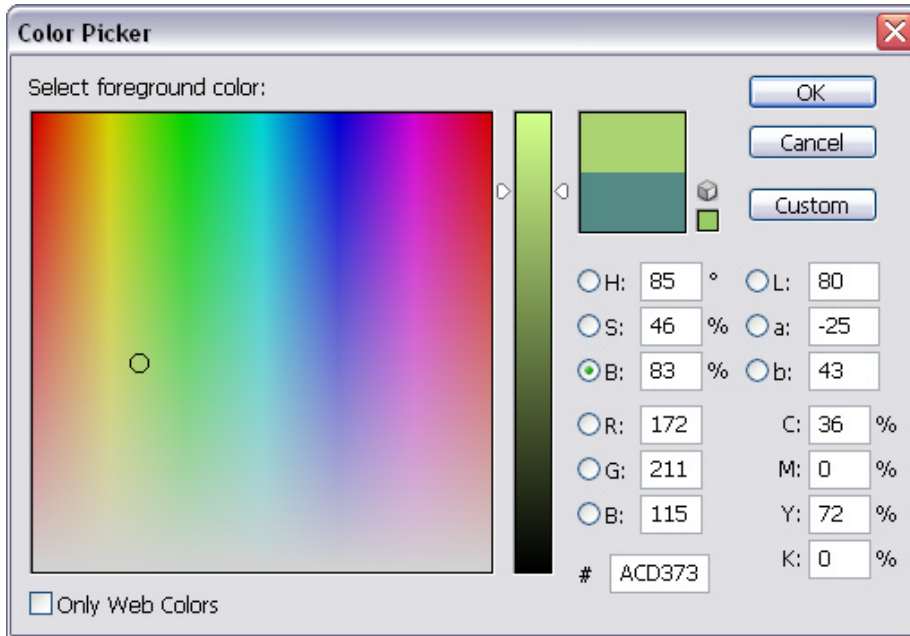
```
#content-main {  
margin: 20px 20px 20px 20px;  
}
```

# Web Safe Colours?



There are 216 colours in the “web safe” colour palette. This was devised to help web designers choose colours that would reproduce reliably on older hardware. These days, the vast majority of monitors can display “true colour” and the restricted palette is rarely considered – it is an historical curiosity.

# Hexadecimal Colours



Hexadecimal (base 16) colours are based on the Red-Green-Blue (RGB) colour space. Any colour can be described using the varying amount of those 3 colours in a range from 0 to 255. Hexadecimal is simply a shorthand . Rather than using 3 decimal numbers (one for each colour), it uses 3 base 16 pairs with a “#” prefix.

Red: AC Green: D3 Blue: 73 = **#ACD373**

is the same as:

Red: 172 Green: 211 Blue: 115 in decimal

The Photoshop colour picker can be used to select the colour you want and it will calculate the hexadecimal value for you.

# Web Safe Fonts?

Arial

Comic Sans MS

Georgia

**Impact**

Times New Roman

Trebuchet MS

Verdana



The standard Windows fonts

A browser can only display the fonts specified in CSS rules if that font is available on the client computer.

Web safe fonts are those that we can be sure exist on the viewer's computer. For example, all the standard Windows or MacOS fonts that are installed with the operating system.

CSS3 reintroduces the @fontface method that allows fonts to be displayed even if not stored locally but our focus is on CSS 2.1.

# Styling Fonts

```
h1{
```

```
font-family: Georgia, "Times New Roman", Times, serif;
```

```
color: #534741;
```

```
padding-bottom: 5px;
```

```
border-bottom: 3px solid #DF7414;
```

```
}
```

The font-family declaration is used to specify fonts. Rather than specifying one font, it's good practice to specify a "font stack". If the first font is not available, the second will be used and so on. In the example above, Georgia is the preferred font but if it's not available, Times New Roman will be used. In general, a stack should have a minimum of 3 fonts; one for Windows, one for MacOS and a default generic font for anything else.

# CSS in Action

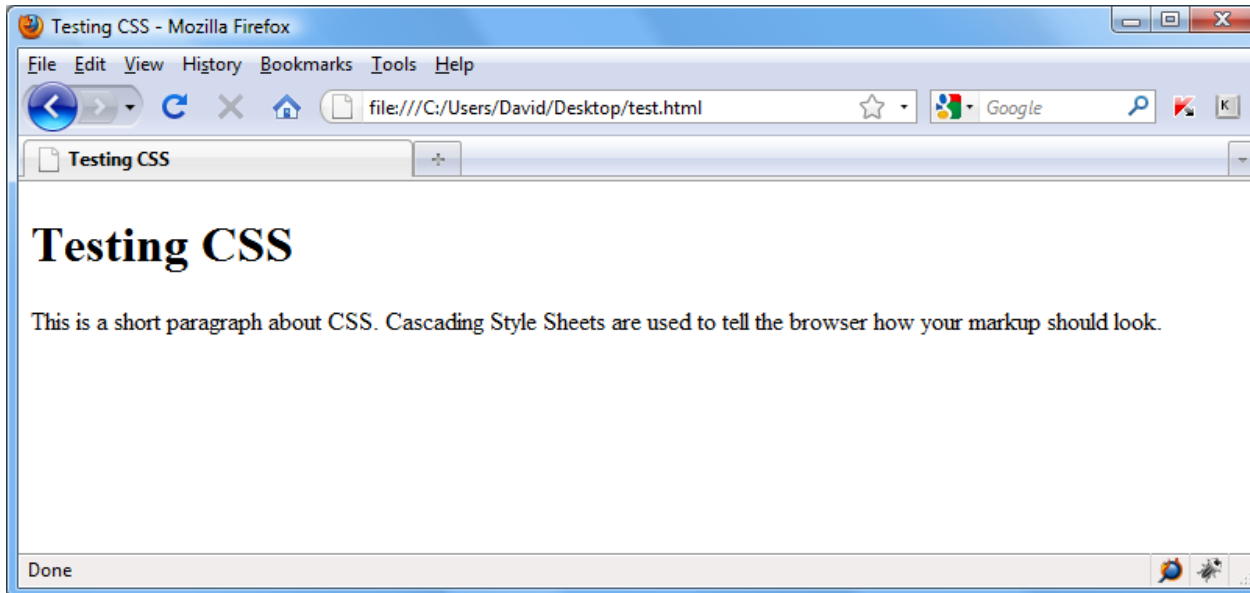
```
<div id="content">
```

```
<h1>Testing CSS</h1>
```

```
<p>This is a short paragraph about CSS.
```

Cascading Style Sheets are used to tell the browser how your markup should look.</p>

```
</div> <!-- close content -->
```



Without CSS, the browser displays markup using default styles.

# CSS in Action

```
<div id="content">
```

```
<h1>Testing CSS</h1>
```

```
<p>This is a short paragraph about CSS.
```

Cascading Style Sheets are used to tell the browser how your markup should look.</p>

```
</div> <!-- close content -->
```

```
h1 {
```

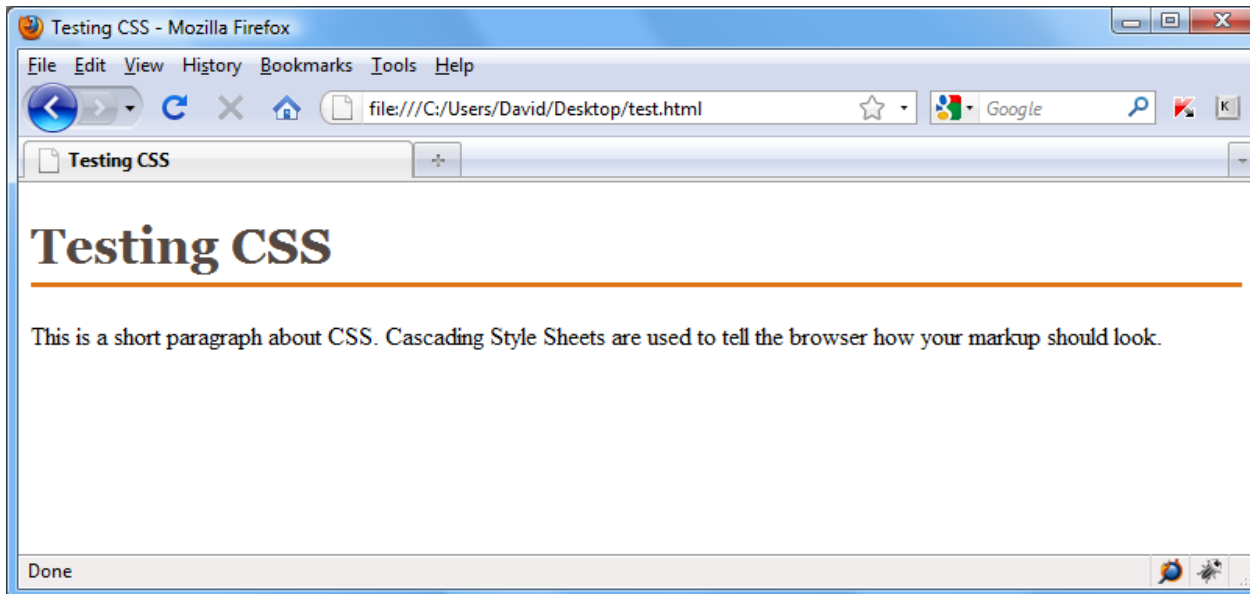
```
font-family:Georgia, "Times New Roman", Times, serif;
```

```
color:#534741;
```

```
padding-bottom:5px;
```

```
border-bottom:3px solid #DF7414;
```

```
}
```



A CSS rule for the h1 tag is added. This rule sets the font-family, the colour, the padding and the bottom border (underline). Note that colours are defined using hexadecimal.

# CSS in Action

```
<div id="content">
```

```
<h1>Testing CSS</h1>
```

```
<p>This is a short paragraph about CSS.  
Cascading Style Sheets are used to tell the  
browser how your markup should look.</p>
```

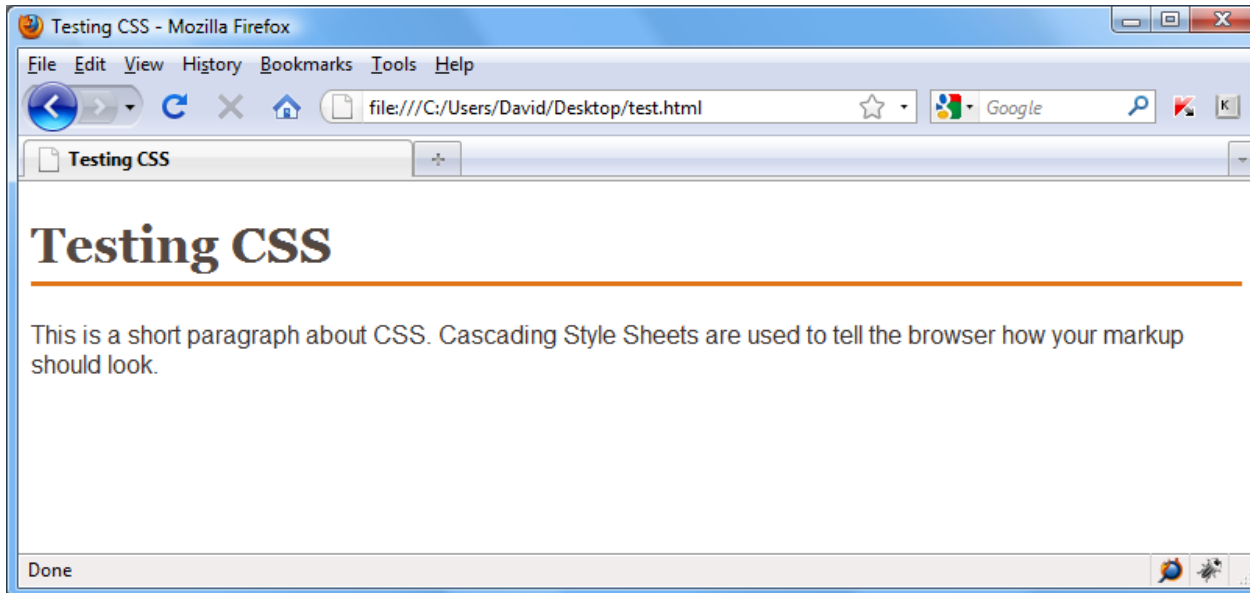
```
</div> <!-- close content -->
```

```
p {
```

```
font-family:Arial, Helvetica, sans-  
serif;
```

```
color:#362F2D;
```

```
}
```

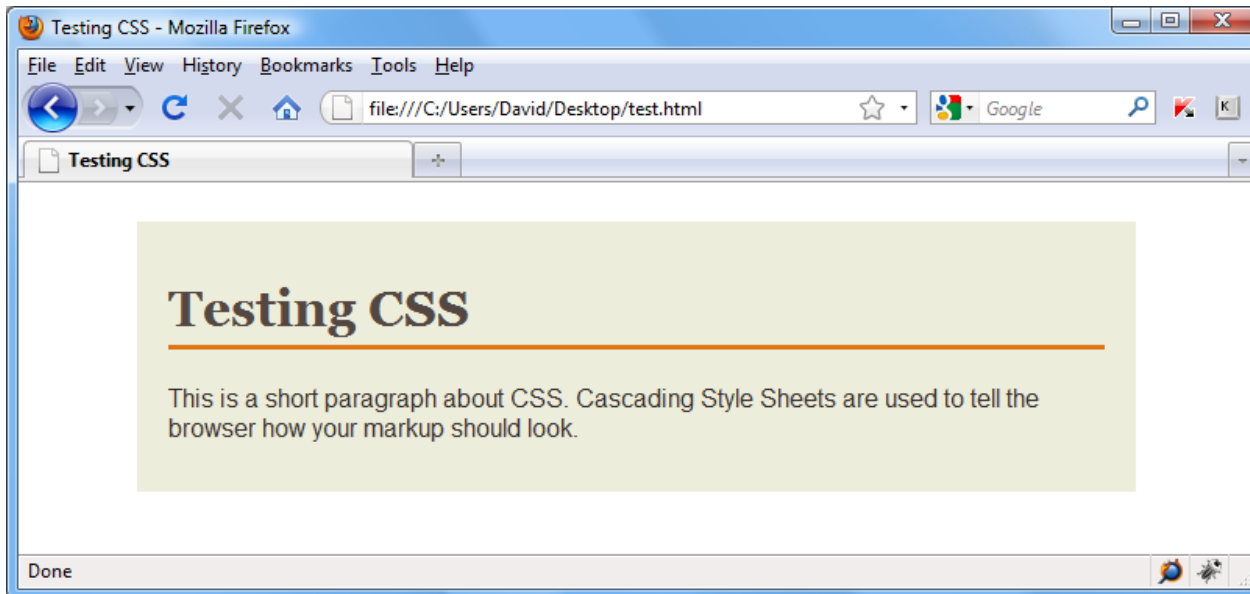


The two declarations which form the rule for <p> set the font-family and the colour. Note the use of different fonts, which form the “font stack”.

# CSS in Action

```
<div id="content">  
<h1>Testing CSS</h1>  
<p>This is a short paragraph about CSS.  
Cascading Style Sheets are used to tell the  
browser how your markup should look.</p>  
</div> <!-- close content -->
```

```
#content {  
width:600px;  
padding:15px 20px;  
margin:25px auto;  
background-color:#EDEDDB;  
}
```



The next rule applies to the content <div>. It sets a fixed width, some padding and a background colour. Left and right margins are set to “auto”, which has the effect of centring the div on the page.

# CSS in Action

```
<div id="content">
```

```
<h1>Testing CSS</h1>
```

```
<p>This is a short paragraph about CSS.
```

Cascading Style Sheets are used to tell the browser how your markup should look.</p>

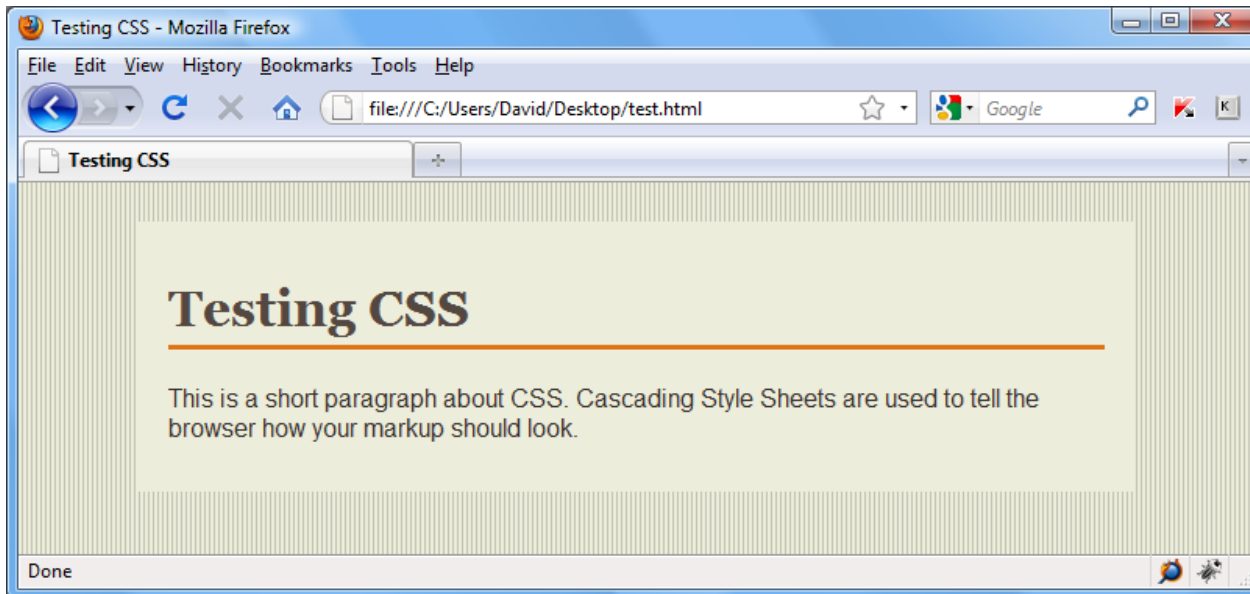
```
</div> <!-- close content -->
```

```
body {
```

```
background-
```

```
image:url(background.png);
```

```
}
```



The rule for the `<body>` tag is used here to set the background. It uses a small .png image that repeats to form a pattern. Note that the background to the `<div>` is not affected – it is in front.

# The Finished Stylesheet

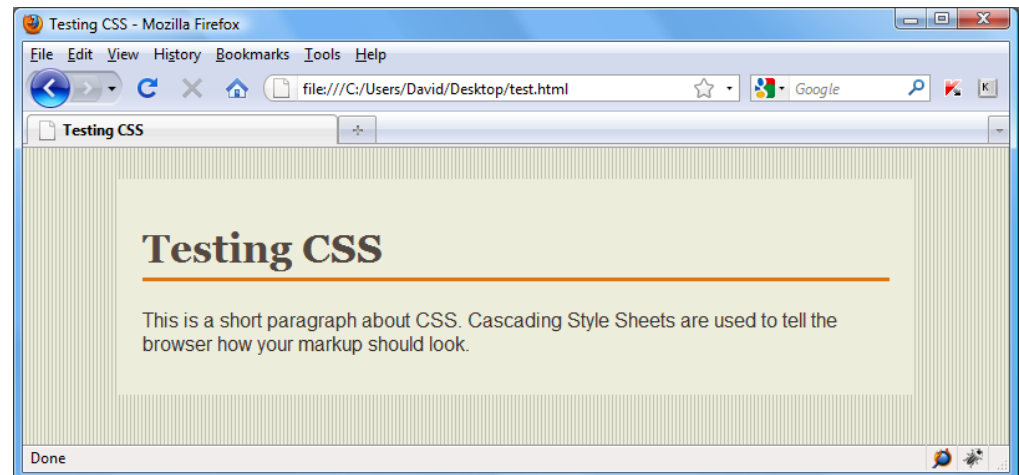
```
body {  
background-image:url(background.png);  
}
```

```
h1 {  
font-family:Georgia, "Times New Roman", Times, serif;  
color:#534741;  
padding-bottom:5px;  
border-bottom:3px solid #DF7414;  
}
```

```
p {  
font-family:Arial, Helvetica, sans-serif;  
color:#362F2D;  
}
```

```
#content {  
width:600px;  
padding:15px 20px;  
margin:25px auto;  
background-color:#EDEDDB;  
}
```

Notice that the order of the CSS rules in the stylesheet are broadly hierarchical. This is not necessary but is good practice and helps locate rules in complex stylesheets.



# Stylesheet Comments

*/\* Global Styles \*/*

```
body {  
background-image:url(background.png);  
}
```

*/\* Typographic Styles \*/*

```
h1 {  
font-family:Georgia, "Times New Roman", Times, serif;  
color:#534741;  
padding-bottom:5px;  
border-bottom:3px solid #DF7414;  
}  
p {  
font-family:Arial, Helvetica, sans-serif;  
color:#362F2D;  
}
```

*/\* Page Structure \*/*

```
#content {  
width:600px;  
padding:15px 20px;  
margin:25px auto; /* centred */  
background-color:#EDEDDB;  
}
```

It is good practice to add explanatory comments to your CSS. This will help others interpret your rules and it will help you when you are developing your own designs.



# Validate



## CSS Validation Service

W3C CSS Validator results for <http://www.websitearchitecture.co.uk> (CSS level 2.1)

Jump to: [Warnings \(4\)](#) [Validated CSS](#)

W3C CSS Validator results for <http://www.websitearchitecture.co.uk> (CSS level 2.1)

### Congratulations! No Error Found.

This document validates as [CSS level 2.1](#) !

To show your readers that you've taken the care to create an interoperable Web page, you may display this icon on any page that validates. Here is the XHTML you could use to add this icon to your Web page:



```
<p>  
<a href="http://jigsaw.w3.org/css-validator/check/referer">  
    
</a>  
</p>
```



```
<p>  
<a href="http://jigsaw.w3.org/css-validator/check/referer">  
    
</a>  
</p>
```

CSS can be validated in the same way as XHTML. Note that we are using CSS level 2.1 in this case.

<http://jigsaw.w3.org/css-validator/>

```
<p class="end">The End</p>
```