

Technical tutorial

Basic Cascading Style Sheets

In this tutorial you are going to learn how to:

- create an internal style sheet
- apply text formatting
- creating an external style sheet and linking it to all of your Web pages

As we learnt from the last tutorial, (X)HTML gives your web pages their basic structure, but it has limited formatting abilities. (X)HTML is designed to work with CSS (Cascading Style Sheets). CSS defines the appearance of your pages.

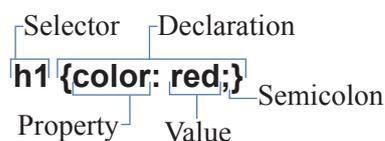
A style sheet is simply a text file that contains one or more *rules* that determine – through *properties* and *values* – how certain elements in your web page should be displayed.

There are various versions of CSS, however, the version we will be looking at is CSS 2 as it is the best supported. No major current browser supports it all, but most browsers support most of CSS 2.

You can create *inline styles*, *internal style sheets* or *external style sheets*. In this tutorial we'll start off with inline styles and then we're going to create a simple internal style sheet. Internal style sheets only apply to the html file you have created it in. An external style sheet is created separately from your html pages. You can define all your styles in an external style sheet and then tell each of your html pages to use the external sheet. This ensures that all the pages in your site have a common look. More about external style sheets later.

CSS basics

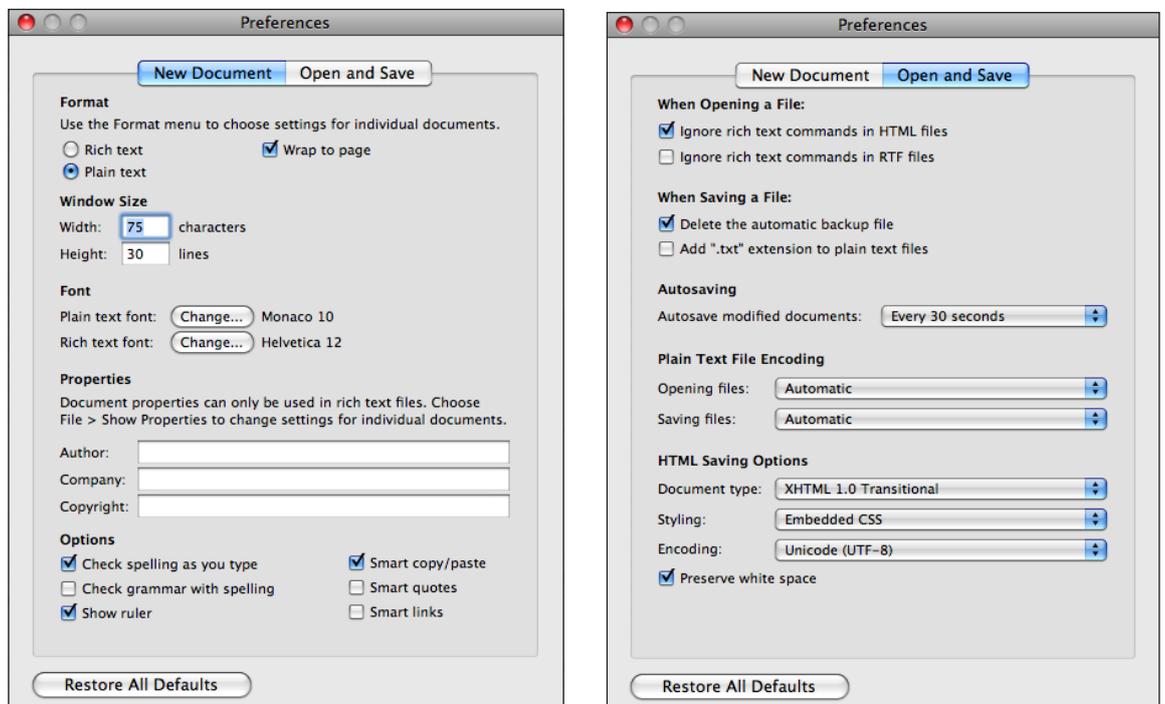
Each style rule in a style sheet has two main parts: the *selector*, which indicates which elements are to be formatted and the *declaration*, made up of one or more property/value pairs, specifying what should be done.



You can add multiple property/value pairs in the declaration, but they must be separated by a semicolon. You can just list them underneath each other.

1. Open your index.html file from the HTML exercise, in TextEdit, Notepad or another text editor (not Word) (ctrl-click (Mac) or right-click (Windows) and your html file and choose the program).
2. Your preferences should be as we set them up for the HTML tutorial so your files don't open as Rich Text, but here's how they should be set up. For **Notepad** there's no need to change the preferences.
 - In the menu bar at the top select TextEdit > Preferences.

- In ‘New Document’ section, choose Plain text and check ‘Wrap to page’ in the Format section.
- In ‘Open and save’ section, check ‘Ignore rich text commands in HTML files’ and uncheck ‘Add “.txt” extension to plain text files.’
- In ‘HTML Saving Options’ select ‘XHTML 1.0 Transitional’ and leave everything else as is.



- Close the window.

Basic inline text formatting

The easiest way to introduce formatting is to use *inline* styles.

3. We’re going to create some formatting for our header tags. To do this:

- Click in the h1 tag between the 1 and the > add a space and type
style="color: red; font-family: Arial, sans serif; text-align: center;"

This is using the *style* attribute to format the header 1 tag to be red, the typeface to be Arial Black or another sans serif typeface, and to be centred.

Note that it has to be ‘color’ and not ‘colour’ and ‘center’ and not ‘centre’

- Click in the h2 tag between the 2 and the > add a space and type
style="font-family: Arial, sans serif; text-align: left;"
- Click in both your h4 tags and type
style="font-family: Arial, sans serif; text-align: left;"

Your code should look like this:

```
index.html
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title> Angelina Jolie - Introduction</title>
</head>
<body>
<h1 style="color: red; font-family: Arial, sans serif; text-align: centre;">The Internet</h1>
<h2 style="font-family: Arial, sans serif; text-align: left;">History</h2>
<h4 style="font-family: Arial, sans serif; text-align: left;">Early History</h4>

<p>The Internet was the results of efforts in the late 1960s to create a network that would survive a nuclear attack. In the event that the
Communists attacked Chicago, the US Military wanted to make sure they could still communicate with their various agencies.<br />
A network was born!<br />
The Internet was originally used by the Military and scientific organisations. In the 80s it was also used by the academic fraternity.</p>
<h4 style="font-family: Arial, sans serif; text-align: left;">The 90s</h4>
<p>In the 90s, the development of the <b>World Wide Web</b> (WWW) forged the Internet into the Information Superhighway it is today.</p>
<p><b>Tim Berners-Lee</b>, a physicist working at the European Organisation for Nuclear Research (CERN) in Geneva, Switzerland, created a
quick and simple authoring and browsing system to share documents. It was called <i>Hypertext Mark-up Language</i>.</p>
<a href="page2.html">go to page 2</a>
</body>
</html>
```

View it in a browser

You could create all your formatting like this but it's not very practical. This is very similar to the old way of formatting using html tags.

We can create style sheets that we can apply to different attributes without having to retype them each time. Here we're going to create an *internal* style sheet.

4. Delete the inline css styles you have just created, so your coding is back to the h1, h2 and h4 tags only.



View part 1 of this video series for a demo on where we are so far.

http://www.youtube.com/watch?v=zKUcJeOF9aI&feature=mfu_in_order&list=UL

Creating an internal style sheet

5. To start our internal style sheet:

- click in the <head> tag under the <title> tags and type <style type="text/css">
- On the next line type </style> to complete the style sheet.

This tells the browser that you are using a style sheet.

6. We're going to set a style for our header 1. This is called a rule.

- Click after <style type="text/css"> (in between your opening and closing tags) and hit the return key to create a new line
- Type h1 {color:red;
font-family:"Arial", sans serif;
text-align: center;}

This is specifying that we want the font colour of our header 1 to be red (one of the 16 predefined web colours); the typeface to be Arial (if the computer has this typeface) or if not another sans serif typeface, and for the heading to be centred.

Therefore the *selector* is specifying header 1 and we have three *declarations*:–

- the colour
- the typeface
- the alignment

and the *values* for each.

Rules must be enclosed by the { } brackets. In an *inline* style you don't need the brackets.

7. On the next line we're going to set a style for header 2 & 4. We can create the same rule for both as they have the same formatting properties and values. This is called *selector grouping*.

- Type h2, h4 {font-family:"Arial", sans serif;
text-align: left;}

Here we've specified for both header 2 and 4 to be set in Arial or another sans serif typeface, and to be aligned left.

We're applying the style to two elements, therefore the *selector* is specifying both header 2 and 4; the *property* in the first *declaration* is the font family and in the second *declaration* is the alignment of the text; the *value* in the first *declaration* is Arial Black or another sans serif typeface; and in the second the *declaration* is left.

Note: While you can specify whatever font you want, just be aware that your audience will only see that font if they also have it installed on their computer. Therefore it's a good idea to use fonts that you know are common to most computers.

Your coding should look like this:



```
index.html
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title> Angelina Jolie - Introduction</title>

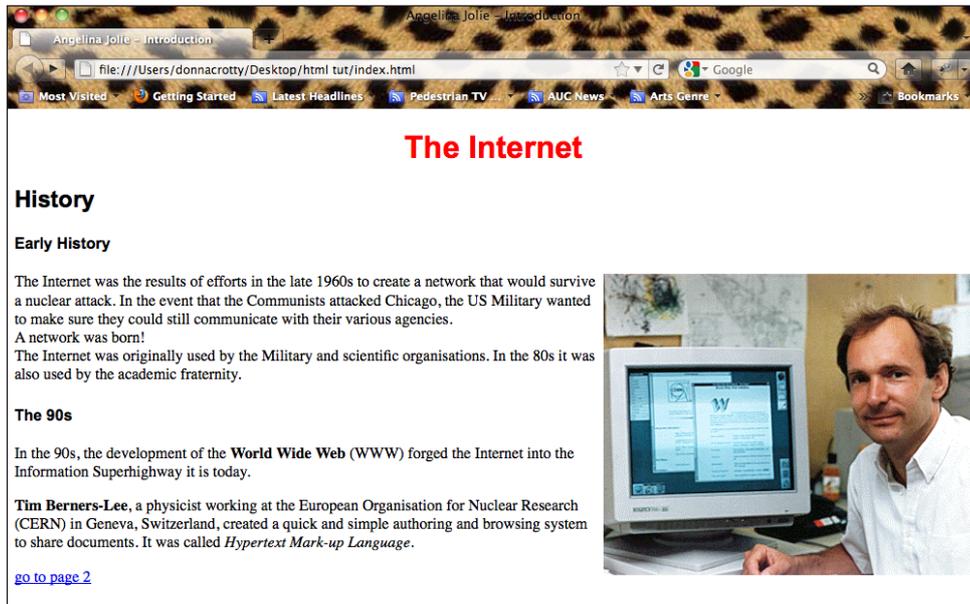
<style type="text/css">
h1 {color:red;
font-family:"Arial", sans serif;
text-align: center;}
h2, h4 {font-family:"Arial", sans serif;
text-align: left;}
</style>

</head>

<body>

<h1>The Internet</h1>
```

Now have a look in a browser.



Setting type weight and style

8. We're going to change the formatting of the heading font to bold. To do this:
 - On the next line after font family type font-weight: bold; in both your style rules.
 - To create italics type font-style: italic
 - To remove italics type font-style: normal
 - To remove bold formatting type font-weight: normal

Experiment with these different ways.

```
index.html
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title> Angelina Jolie - Introduction</title>

<style type="text/css">
h1 {color:red;
    font-family:"Arial", sans serif;
    font-weight: bold;
    text-align: center;}
h2, h4 {font-family:"Arial", sans serif;
        font-weight: bold;
        text-align: left;}
</style>
</head>
```

Troubleshooting

You must make sure you have deleted the inline style, otherwise this will override the stylesheet. This is how the cascading works.

If your headings don't show up as bold in the browser try either Arial Bold or Arial Black for the font family. It will depend on what typeface you have available on your computer (and ultimately your audience's computer).

Setting the font size

9. In your header 1 rule somewhere before the closing } type font-size: 40px;

px means pixels. Browsers also recognise em as a size measurement. So you could type 2.5em. We'll keep with px.

Play around with different font sizes and check them out in the browser.

Setting a paragraph style

10. We're going to create a rule for our paragraph style now. To do this:

- Under the rule for your header 2 and 4 type

```
p {color:#003D39;
    font-family:"Arial", sans serif;
    font-weight: normal;
    font-size: 12px;}
```

We've set the colour of our text as well as the font, the weight and the size of the font. The p attribute indicates the paragraph tag.

11. We can add indents to our paragraphs

- Underneath font-size but before the closing } type text-indent: 18px;

Controlling spacing and line height

You can add or reduce spacing between words (tracking), between letters (kerning), or between each line of your text.

12. To specify tracking type word-spacing: 5px;

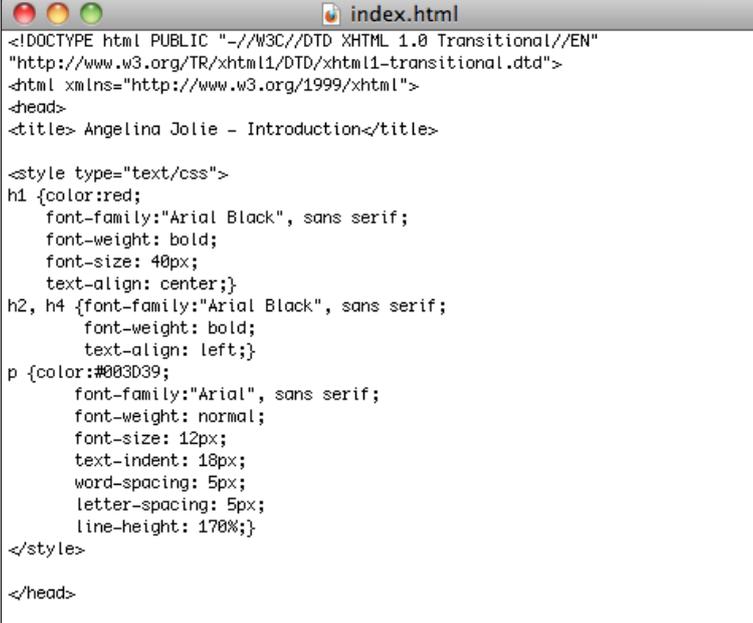
13. To specify kerning type letter-spacing: 5px;

14. You can specify a line height in a percentage of the font size:

- type line-height: 170%;

15. Then type } to close the paragraph rule

When you view this in a browser you'll find that the letter spacing is difficult to read. You may want to change this or take it out completely.



```
index.html
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title> Angelina Jolie - Introduction</title>

<style type="text/css">
h1 {color:red;
    font-family:"Arial Black", sans serif;
    font-weight: bold;
    font-size: 40px;
    text-align: center;}
h2, h4 {font-family:"Arial Black", sans serif;
    font-weight: bold;
    text-align: left;}
p {color:#003D39;
    font-family:"Arial", sans serif;
    font-weight: normal;
    font-size: 12px;
    text-indent: 18px;
    word-spacing: 5px;
    letter-spacing: 5px;
    line-height: 170%;}
</style>
</head>
```

Changing the background colour

16. To change the background colour of your page:
 - After your p rule, on the next line type `body {background:#D5EAE9;}` or choose your own hexadecimal colour. Remember, it's a background with text that needs to be readable.

Adding your own style

17. Now that you are familiar with the control you can have with CSS change the style of the page to whatever typeface, size and colours you like by following the keys at the w3schools website.

You can change colours by using the hexadecimal color key at:

http://www.w3schools.com/CSS/css_colors.asp

You can change fonts:

http://www.w3schools.com/CSS/css_font.asp

You can format your text:

http://www.w3schools.com/CSS/css_text.asp

You can change your background:

http://www.w3schools.com/CSS/css_background.asp



View part 2 of this video series for a demo on where we are so far.

<http://www.youtube.com/watch?v=GoypQrrkkNE&NR=1&feature=fvwp>

Note: You'll notice that the instructor adds his internal style sheet outside of the head tags. Although the browser still recognises the styling, this is not good practice in terms of web standards. The style sheet should sit within the body tags. See step 5 in this tutorial.

Creating an external style sheet

Once you are happy with your style sheet, rather than copying and pasting it into each page, you can create one external style sheet and link it to all of your pages. Very handy if you have quite a lot of pages in your website.

18. Open a new file in TextEdit / Notepad
19. Select all of the rules that you have created for your style sheet and cut and paste them into your new text document, including the beginning and end style tags.
20. Save your document in a text only format (Plain Text) as you have with your html pages, but this time give it the `.css` extension. This is very important as it designates the document as a Cascading Style Sheet. Call your style sheet '**mystyle.css**'
 - Make sure your external Cascading Style Sheet is saved in the same folder as your html files.
 - Remember to include all your rules that you have set up for all of your pages. We have only created rules in this html file, but if we had opened one of the other linked html pages that we created last tutorial, these must be included in an external style sheet. If one of your pages doesn't have the elements for a certain rule, then it simply won't apply it to that page.

```

index.html
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title> Angelina Jolie - Introduction</title>
<style type="text/css">
h1 {color: red;
font-family:"Arial Black", sans serif;
font-weight: bold;
font-size: 40px;
text-align: center;}
h2, h4 {font-family:"Arial Black", sans serif;
font-weight: bold;
text-align: left;}
p {color:#003D39;
font-family:"Arial", sans serif;
font-weight: normal;
font-size: 12px;
text-indent: 18px;
word-spacing: 5px;
line-height: 170%;}
body {background:#D5EAE9;}
</style>
</head>
<body>

```

```

mystyle.css
h1 {color: red;
font-family:"Arial Black", sans serif;
font-weight: bold;
font-size: 40px;
text-align: center;}
h2, h4 {font-family:"Arial Black", sans serif;
font-weight: bold;
text-align: left;}
p {color:#003D39;
font-family:"Arial", sans serif;
font-weight: normal;
font-size: 12px;
text-indent: 18px;
word-spacing: 5px;
line-height: 170%;}
body {background:#D5EAE9;}

```

21. Delete the style tags, `<style type="text/css">` and `</style>`, in your external stylesheet. Browsers will know it is a style sheet from the file name.
22. Make sure the internal style sheet has been deleted from your index.html page that is in the head tag

Linking your External Style Sheet

The easiest and most common way to apply the rules in a style sheet to a web page is to link to the external style sheet. To link your external style sheet:

23. In the head section of each of your html pages in which you wish to use the style sheet type `<link rel="stylesheet" type="text/css" href="mystyle.css" />`

This means we're indicating the style sheet is written in css ("text/css"), the href is the link tag and our file we're linking to (**mystyle.css**)

```

<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title> Angelina Jolie - Introduction</title>
<link rel="stylesheet" type="text/css" href="mystyle.css" />
</head>
<body>

```

When you make a change to an external style sheet, all the pages that reference it are automatically updated as well.

Formatting link elements

We can also create a style for the colour of our hypertext links based on their current state, that is whether they have been visited, whether the visitor is hovering their cursor over the top etc.

30. In your **mystyle.css** file click after your background rule and type

```
a:link {color:purple;}
a:visited {color:orange;}
a:hover {color:red;}
a:active {color:blue;}
```

Where **a** is the name of the link tag

link is how a link appears on the page before it has been clicked on.

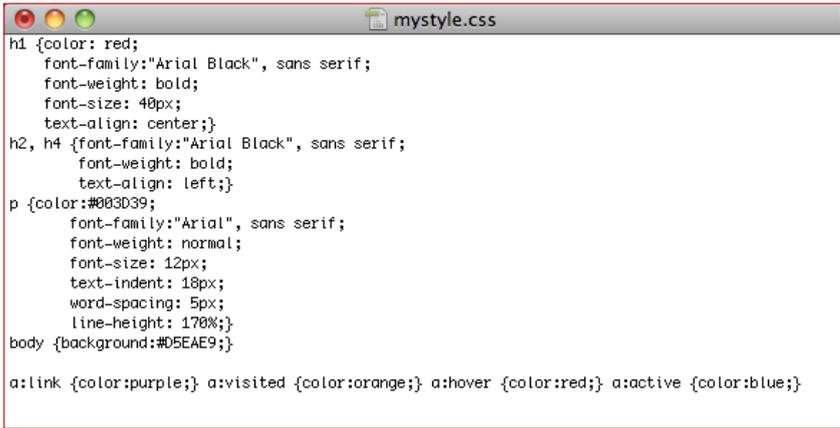
visited changes links that the visitor has already clicked

hover changes the appearance of links when pointed to

active changes the appearance of links when clicked

These are called psuedo class selectors and apply to elements like links where a link can have different appearances depending on what is being done to it.

Your stylesheet should look like this:



```
h1 {color: red;
    font-family:"Arial Black", sans serif;
    font-weight: bold;
    font-size: 40px;
    text-align: center;}
h2, h4 {font-family:"Arial Black", sans serif;
        font-weight: bold;
        text-align: left;}
p {color:#003D39;
   font-family:"Arial", sans serif;
   font-weight: normal;
   font-size: 12px;
   text-indent: 10px;
   word-spacing: 5px;
   line-height: 170%;}
body {background:#05EAE9;}
a:link {color:purple;} a:visited {color:orange;} a:hover {color:red;} a:active {color:blue;}
```

Note: There are some order rules if you are setting styles for your links:

a:hover **MUST** come after a:link and a:visited

a:active **MUST** come after a:hover

31. Spend some time formatting your links using the styling key at:

http://www.w3schools.com/CSS/css_link.asp

You can also change the colours according your colour scheme.

View your page in the browser.

Note: It you make a change to your stylesheet or your html pages you must save them first, otherwise the changes will not be read in the browser. If you already have your html pages open in a browser you must also refresh the page the view the changes.

Creating more pages

In these next steps we're going to create three more pages by simply saving a copy of our 'index.html' and replacing the content for our new pages. This is just so we don't have to re-type everything again. Of course, you can if you want.

Before you start you may want to save a copy of the images and other files we will be adding to our pages into your html tutorial folder. You will find these in the zipped folder in Topic 3 of the Study Guide. Copy the htmltext.doc file as well.

It is important to have all your HTML files and any other files such as images etc (assets) saved in the one folder.

32. Save your page and then go Save As, and call your new page 'tim.html'
33. Delete everything between the body tags except the links to page 2 and page 3 (the line just below the body tag).

Make sure you still have the end body tag `</body>` and the end html tag `</html>`.
34. In the title tag delete 'Introduction' and type 'Bio'
35. Replace `go to page 2` with
`Home`
36. Replace `go to page 3` with
`The Information Super Highway`
37. Create a header 1 tag and type 'The Internet'
38. Create a header 2 tag and type 'Tim Berners-Lee'
39. Create a header 4 tag and type 'Bio'
40. Add the image 'tim_b_1.jpg' which you would have downloaded to your folder using the image tag,
 - the width and height of this image is 250 x 164 px; give the image an alignment, and add a description for the alt text.
41. Underneath the image tag copy and paste the text from the first page of the 'htmltext.doc' that you would have also downloaded.
42. Create your headings and paragraphs accordingly.

If you get stuck, follow my code (on the next page).

44. We're going to apply some formatting to the images so we can have some control over how they will be positioned on the web page.

As we've already learnt *selectors* indicate in our style which element a property or properties is going to be applied to. The selectors we've used so far have been html tags such as `h1` and `p`.

But we can also use other attributes. The most common ones apart from tags are the **id** attribute and the **class** attribute.

The value of an **id** attribute (or the name you specify to identify the **id**) must be unique to the document. You can't use that **id** anywhere else in the document.

A **class** selector can be applied to more than one element.

This will start to make more sense when we build on our style sheet.

To apply some formatting to all of our images we're going to use the class attribute as the selector and give it a name.

45. In **mystyle.css** under the link rule type

```
.miniphotos img {padding: 10px; vertical-align:middle;}
```

We've called our selector 'miniphotos img' ('miniphotos' to distinguish it from other class selectors we might have and 'img' because of the image tag). The dot at the beginning indicates it's a **class** selector. We've added 10 px of padding to create some space between each image and we've vertically aligned the images by the middle.

46. We've set up the style rule, now we need to apply it to our images. To do this we can use inline *spans* (a bit like our inline styles). This enables the style sheet to find where in our page we want to apply this particular rule.

- to do this click before our image tags and type `` and then at the end of our last image tag type `` to end the span.

```
<span class="miniphotos img">  
  
  
  
</span>
```

Play around with the padding and some other alignments other than **middle** such as

- **baseline**
- **top**
- **bottom**



If you want to add this style to other images, add the span tag as above.

57. Repeat steps 54 - 56 for the next two points, but keep the `</p>` tag which is at the end of the last point. This is the end tag that corresponds to the `<p>` that is at the beginning of the paragraph starting ‘The Oxford English Dictionary’. Remember, we must always have a closing tag.

- We have to ‘nest’ our tags so click before the `</p>` and type our end list tag `` and then type our end unordered tag (or ordered) ``

The coding should look like this:

```
<ul><li>the January 3, 1983 issue of Newsweek: "...information superhighways being built of fiber-optic cable will link Boston, New York, Philadelphia, and Washington, D. C. in a 776-mile system on the East Coast."</li>
<li>the December 19, 1991 issue of the Christian Science Monitor: "Senator Gore calls NREN the "information superhighway" - a catalyst for what he hopes will become one day a national fiber-optic network."</li>
<li>the October 26, 1993 issue of the New York Times: "One of the technologies Vice President Al Gore is pushing is the information superhighway, which will link everyone at home or office to everything else-movies and television shows, shopping services, electronic mail and huge collections of data."</li></ul></p>
```

Have a look in the browser.

Notice that the list that we’ve created has lost the paragraph formatting that we created. We will have to create a style rule for our lists that is the same as the paragraph rule.

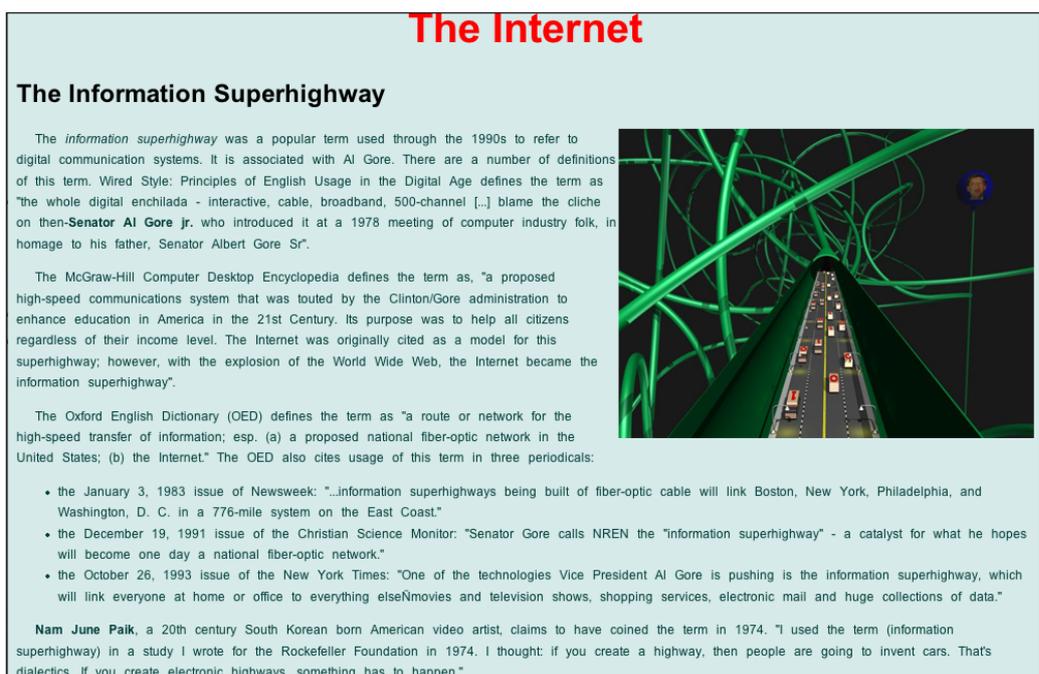
58. Underneath the link rule type `ul` (or `ol` if you created an ordered list) and copy and paste the declarations from the `p` rule

The indents look a little weird in the lists, so you can make your indent ‘0px’ to give them no indents (as your lists are already indented).

Your rule should look like this.

```
a:link {color:purple;} a:visited {color:orange;} a:hover {color:blue;}
ul {color:#003039;
font-family:"Arial", sans serif;
font-weight: normal;
font-size: 12px;
text-indent: 0px;
word-spacing: 5px;
line-height: 170%;}
.miniphotos img {padding: 10px; vertical-align:middle;}
```

Your page should look something like this



59. To put the finishing touches on our webpages we're going to centre our content in the middle of our browser window.

To do this we are going to put the whole of the contents into a div tag. Div tags are containers to keep our content in and to more easily add styling, particularly to layout.

60. In mystyle.css under your last rule type
`#wrapper {width: 80%; margin-left: auto; margin-right: auto}`

We're giving this an **id** attribute, signified by the #, as we don't want this used somewhere else in our file.

61. Save your style sheet.

If we view any of our pages in a browser, we won't see any difference as yet because we haven't added the **id** to our pages.

62. Open index.html (TextEdit / Notepad)

63. Directly under the beginning body tag type `<div id="wrapper">`

64. Just before the closing body tag close the div tag, `</div>`

65. Save your file and view it in a browser.

If you resize your browser window, the content will reposition to always being 80% of the browser window width.

You can give the wrapper a width in pixels which will fix the width if you resize the browser window.

66. In your mystyle.css change the wrapper width to 850 px.

67. Save your file and view your page in the browser.

68. Add this div tag to the rest of your pages.



View part 3 of this video series for a demo on where we are so far.

http://www.youtube.com/watch?v=orDrqqm6Mtw&feature=mfu_in_order&list=UL

Just note that he is still working in an internal style sheet here.

If you are interested in learning more about hand coding I recommend the "Visual Quickstart Guide, *HTML, XHTML & CSS*. Sixth Edition", by Elizabeth Castro, Peachpit Press, 2007.

There is an accompanying website <http://www.cookwood.com/html6ed/>

or the W3Schools website: <http://www.w3schools.com/>