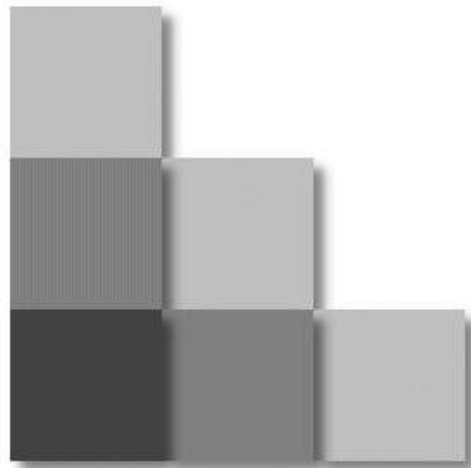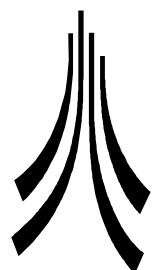# Introduction to Cascading Style Sheets

A Workbook & Guide

LANCASTER
UNIVERSITY
**Information Systems
Services**

Introduction to CSS - A Workbook & Guide

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Introduction to this Guide

This workbook introduces the use of Cascading Style Sheets in HTML and Web Authoring. The course covers the following topics:

- creating external Style Sheets and linking them to your html document
- applying styles to html elements
- applying layout to web pages.

Pre-requisites

In order to get the most out of this course you should be familiar with Windows 2000 and World Wide Web, have basic knowledge of HTML and basic understanding of building a web site.

Summary

This guide is divided up into sections:

Creating a CSS – creating a style sheet file and linking it to an html file

Text and Font Properties – styling text and headings.

Backgrounds, colours and Images – adding background images and colours.

Box Properties – setting up margins, padding and borders for various elements

Classes – applying styles to selected elements.

Using This Workbook
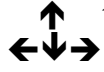
This Workbook is laid out with:

- step by step instructions for you to follow on the left-hand page.
- relevant illustrations and examples on the right-hand page.

It is highly recommended to open out the workbook and view both pages at once.

Exercise 1	Example
1. copy the example. 2. save the file. 3. close application…	

Conventions Used in this Workbook

Keyboard	Explanation
press Enter	press the large 'Enter' key to the right of the main letter keys. This key is sometimes known as 'return'.
move cursor to....	use the cursor direction keys ↑ to move the cursor box along, up or down ←↓→ the screen. You can also use the mouse.
press: Delete key	use the key marked 'Delete' in the group of six keys, which are just to the right of the 'Enter' key.
press: Backspace key	tap the ⬅ Backspace key to delete text to the left of the flashing cursor bar. The 'Backspace' key is above the large 'Enter' key.
press: Tab key	tap the ⇆ (Tab) key to demote bullet points. Hold down the Shift key & press ⇆ key to promote bullet points.
press Ctrl & (letter)	hold down the Ctrl key and press the letter. The Ctrl is at the bottom left of the keyboard and is also known as 'Control'.
Mouse	**Explanation**
click on 'File' menu (or other feature)	move the mouse over the desk so that the pointer moves to the specified location ('File' menu in our example) then press the left mouse button down briefly.
double click on filename	move the mouse so that the pointer points to the filename (in this case) then press down the left mouse button twice in quick succession.
right click on (feature)	move the mouse pointer over the feature, then click once with the **right** mouse button.
drag to (location)	press and hold down the left button, move the mouse to the new location then release the left button.

Section 1 – Creating a CSS

In this section you will learn how to:

- create an external CSS
- link it to your html file
- edit a style sheet

Exercise 1.1 – Creating a CSS

Introduction

Cascading Style Sheets were introduced in HTML 4. Using Style Sheets enables web authors to separate web page content and web page layout and therefore:

- create more sophisticated page design (page style and layout)

- manage the complex web sites: develop, maintain and keep sites consistant

- make web pages accessible to as many readers as possible, regardless of the device they use to read a page.

Creating a Style Sheet

We are going to create an external style sheet that will apply

      - background colour to the web page,

      - style to `h1`

      - colour to the horizontal rule (`<hr>`) .

Lets do the following:

1. start Notepad.

2. type in the instructions below – see Example A.

   ```
   BODY {background-color: seashell;}

   H1 {
   font-family: arial, sans-serif;
   color: sienna;
   }

   HR {color: sienna;}
   ```

3. save your style sheet to A drive and give it 's*tyle1.css*' name – see Example B.

Case Convention

Although browsers are not case sensitive and can interpret a style sheet written in any case, there is a convention to type the selectors (HTML tags in the example above) in upper case and everything else in lower case.

Naming Convention.

Save your style sheet as a 'plain text' file. Give your style sheet a *.css* file extension.

Your Style Sheet filename may have letters (a-z) and numbers (0-9) and should start with a letter.

Never use white spaces and special characters in CSS file names.

Example A – Creating a Style Sheet
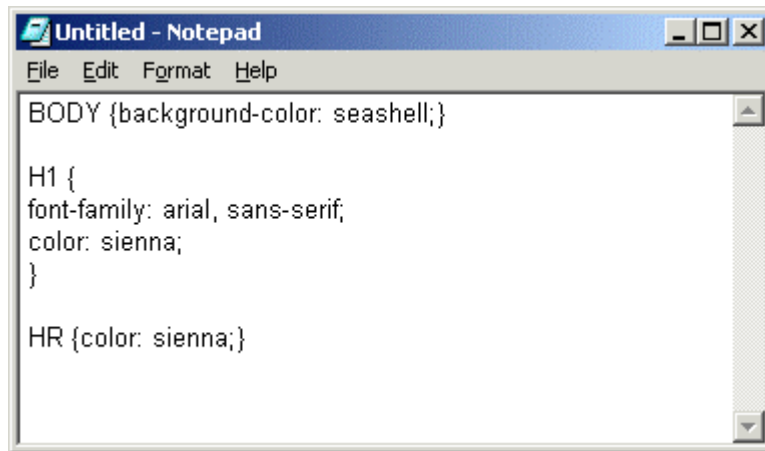
Example B – Saving a Style Sheet
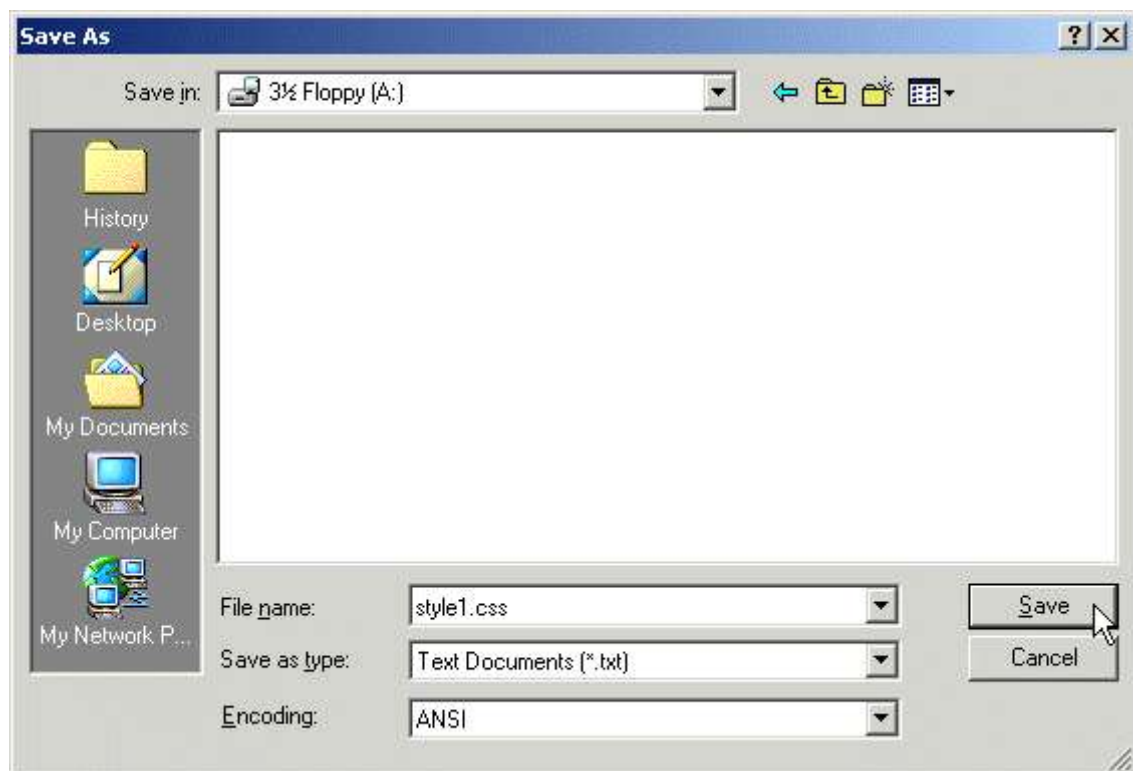
Exercise 1.2 – Linking Style Sheet to an HTML document

Now when we have created a style sheet we can use it to change an appearance of a web page. Let's tell a browser to get styling information from *style1.css*.

1.   Start Internet Explorer, open *index.html* from A drive – see a web page without any styling.

2.   now open another Notepad window (keep the window with *style1.css* open as well).

3.   in Notepad open *index.html* from the A drive.

4.   put your cursor on the empty line just **above** the closing `</head>` and type the following instruction:

```
<link rel=stylesheet href="style1.css"
type="text/css">
```

5.   save changes to *index.html* in Notepad, refresh the it in browser window to view changes.

Note: if your style sheet is saved to a location different from your web site location (e.g. to a style sheet folder), you need to write a whole path in the `href` attribute of your linking instruction.

Linking another html file

Let's link our second file to the 'style1.css' style sheet:

1.   in Internet Explorer window click on 'Another page' link.

2.   in Notepad window open '*page1.html*'.

3.   in the head section of the document below the page title type

```
<link rel=stylesheet href="style1.css"
type="text/css">
```

4.   save changes to page1.html. View the changes to your web site in a browser window.

Editing a Style Sheet

Let us set up a left margin for any text marked with `<p></p>`. Let's set a 0.4 inch margin:
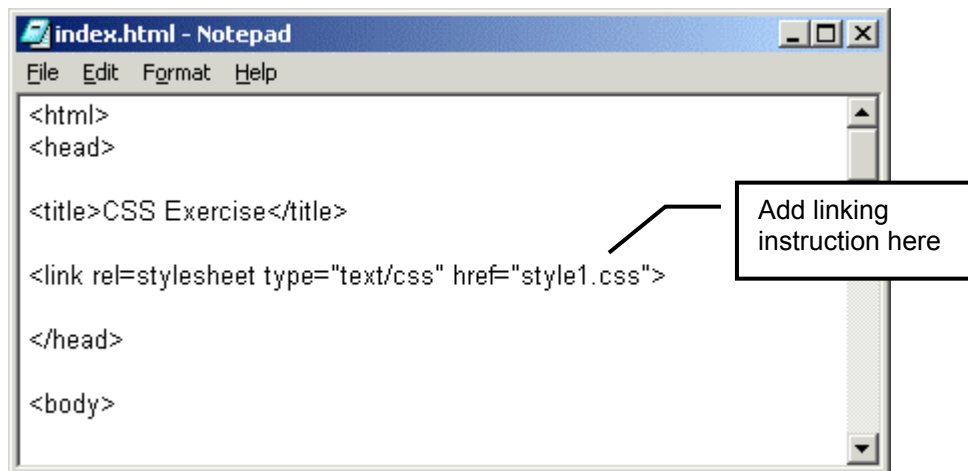
1.   open *style1.css* in notepad (if it is not opened already).

2.   below your styling instructions add one more line – see example B:

```
P {margin-left:0.4in;}
```

Notice that there is no white space between the number 0.4 and the measurement unit `in` (inch).

3.   save changes. Refresh *index.html* and *page1.html* in the Internet Explorer window to view changes.

Example A – Linking a style sheet to a web page
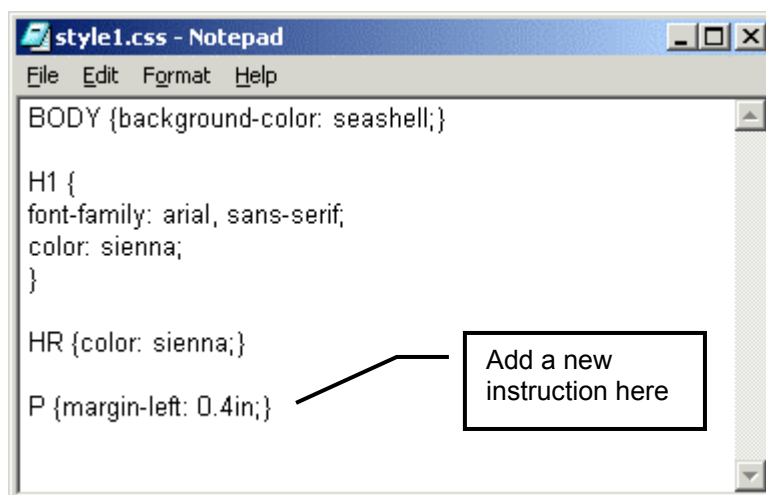
```
index.html - Notepad
File   Edit   Format   Help

<html>
<head>

<title>CSS Exercise</title>

<link rel=stylesheet type="text/css" href="style1.css">

</head>

<body>
```

> Add linking instruction here

Example B – Editing a style sheet

```
style1.css - Notepad
File   Edit   Format   Help

BODY {background-color: seashell;}

H1 {
font-family: arial, sans-serif;
color: sienna;
}

HR {color: sienna;}

P {margin-left: 0.4in;}
```

> Add a new instruction here

Exercise 1.3 – CSS Syntax.

CSS Rules

Each style sheet consists of style **rules.** The simplest rule looks like this:

```
H1 {color:red;}
```

This rule tells the style-conscious browser that all text marked as `<H1></H1>` or `<h1></h1>` should be displayed in red.

If the browser does not support Cascading Style Sheets it will simply ignore it.

CSS Selectors and Declarations

Each style rule consists of a **selector** and a **declaration** in curly brackets(**{ }**). In the example above `H1` is a selector and `color:red;` is a declaration – see example A.

Selector tells the browser to use style from the declaration when displaying it.

Any valid HTML tag can be a selector: `BODY, P, B, EM, STRONG, TD, BLOCKQOUTE, SPAN, DIV,` etc.

CSS Properties and Values

Each declaration consists of a **property**, a colon (**:**) and a **value** – see example B**.** Around each of these there may be white space.

In the above example color is a property and red is its value.

Each property usually has only one value attached to it. There are exceptions – when using either 'shorthand' or font-family property (we will discuss it later in a book).

Note: CSS properties and HTML attributes (although they have a lot in common) are not the same.

Example A – Rules and declarations

```
          ┌─ ─ ─ ─ ─ ─ ─ ─ ─ ┐          Rule
          |        Declaration |
          |                    |
H1{color:red;}
          └─ ─ ─ ─ ─ ─ ─ ─ ─ ┘
```
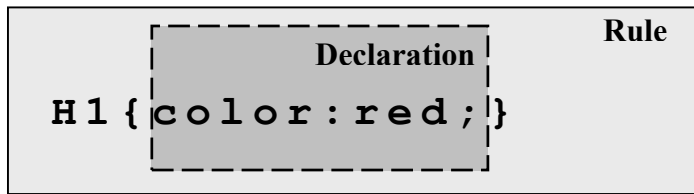
Example B – Selectors, properties and values

```
     H1{color:red;}
     ‾‾‾‾‾‾ ‾‾‾‾‾ ‾‾‾‾
    selector  property   value
```

Exercise 1.4 – CSS editing

Using more then one declaration

If use more then one declaration for the same selector (e.g. h1), separate each with a semi-colon:

```
H1
{
font-family:arial;
text-align:center;
color:red;
}
```

Grouping the Rules

Instead of using three separate rules:

```
H1{font-family: arial;}

H2{font-family: arial;}

H3{font-family: arial;}
```

you can group them together:

```
H1,H2,H3{font-family: arial;}
```

This rule tells the browser that all text marked as `<h1>`, `<h2>` or `<h3>` should be displayed in Arial font. Notice the comas between the selectors!

Grouping the Rules - Exercise

1. make sure that `style1.css` if open in Notepad.

2. edit the line

    ```
    H1{
    ```

    to read (see Example A):

    ```
    H1,H2,H3 {
    ```

3. Save and view changes.

Example A – Grouping the Rules

```
style1.css - Notepad
File  Edit  Format  Help

BODY {background-color: seashell;}

H1, H2, H3 {
font-family: arial, sans-serif;
color: sienna;
}

HR {color: sienna;}

P {margin-left: 0.4in;}
```

Group the
rules here
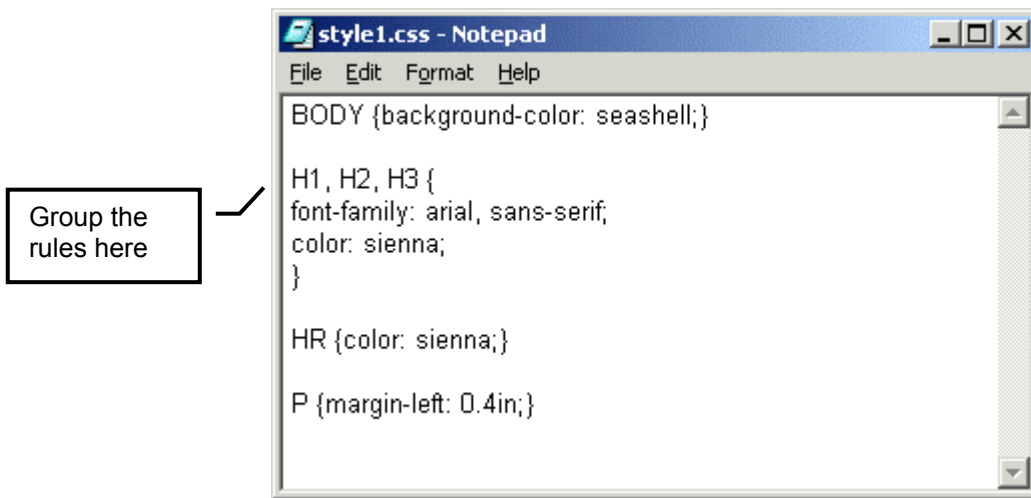
Section 2 – Text Formatting

In this section you will learn how to:

- use font properties.
- use text properties

Exercise 2.1 – Changing Font

Setting the font

Setting the font properties is a common use of style sheets. Let's start with choosing a fontface for a <p> element:

1. make sure that *style1.css* is open in Notepad.

2. add one more declaration to the <P> rule – see Example A:

    ```
    font-family: arial, helvetica, sans-serif;
    ```

3. Save and view the changes.

Font family-names and generic-families

In the above example we have prioritised the fonts we want the browser to use when displaying the <p>element. To do it we have set a value list of fonts with alternative values separated by a comma.

The first value on the list is Arial, the font we want Windows to use when displaying our web site.

Another alternative on the list is a Macintosh font Helvetica, this is used when the web site is open on a Mac.

As the last alternative on the list of fonts you should choose a generic-family font (sans-serif in our exercise above). This is used when the viewer's computer does not have fonts from the beginning of the list.

There are five generic-families:

*   'serif' (e.g. Times New Roman)
*   sans-serif (e.g. Arial)
*   'cursive' (e.g. *MonotypeCorsiva*)
*   'fantasy' (e.g. Western)
*   'monospace' (e.g. `Courier New`)

Note: if a font name contains white spaces, it should be quoted:

```
H4 {font-family: "comic sans ms", fantasy;}
```

Choosing the size of the font

1. in *style1.css* add one more declaration to the P rule – see Example A:
    ```
    font-size: 12 pt;
    ```

2. save and view changes.

This declaration instructs the browser to show any text marked with <p></p> in size 12 pt (1 pt = 1/72 in) – see example B.

Example A – Font-family and Font-size properties

```
style1.css - Notepad
File  Edit  Format  Help

BODY {background-color: seashell;}

H1, H2, H3 {
font-family: arial, sans-serif;
color: sienna;
}

HR {color: sienna;}

P {
font-family: arial, helvetica, sans-serif;
font-size: 12pt;
margin-left: 0.4in;
}
```

Add declarations here
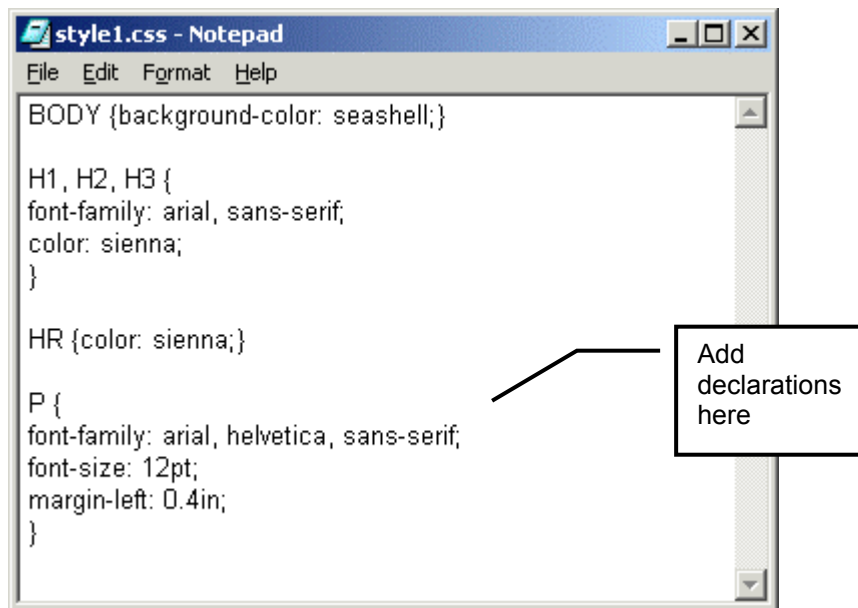
Example B – Measurement Units

Unit	Description
%	a percentage of something
1em	a default size of the viewer's font for the current element
1px	pixel (a dot on a PC monitor)
pt	points, 1 pt = 1/72 in
pc	picas, 1 pc=12 pt=1/6 in
1in	inch
1mm	millimetre
1cm	centimetre

Exercise 2.2 – Changing Font (Continued)

Making changes to html file

1. open *index.html* in a Notepad window.

2. mark the text in the third paragraph with the `<strong>` tag – see example A:

   ```
   <p><strong>This is the third paragraph</strong></p>
   ```

3. save changes to the *index.html*.

Editing a style sheet – making text italic and bold.

Now when we marked text in the third paragraph with `<strong></strong>` tag we can set a rule for a `strong` selector in our style sheet. Let's make it bold and italic:

4. at the end of a style sheet type the following rule – see example B:

   ```
   STRONG {
   font-weight: bold;
   font-style: italic;
   }
   ```

5. save the changes to *style1.css* and view changes to the appearance of a third paragraph of index.html in the browser window.

6. experiment with the styles for the `<strong>` element – see more font properties and values in a table on page 19.

Example A – Editing index.html

```
index.html - Notepad
File  Edit  Format  Help

<body>

<h1>This is header 1</h1>

<hr>

<p>This is a paragraph</p>

<p>This is another paragraph</p>

<p><strong>This is the third paragraph</strong></p>

<hr>
```

> Mark text in this paragraph as <strong>

Example B – Editing a style sheet

```
style1.css - Notepad
File  Edit  Format  Help

BODY {background-color: seashell;}

H1, H2, H3 {
font-family: arial, sans-serif;
color: sienna;
}

HR {color: sienna;}

P {
font-family: arial, helvetica, sans-serif;
font-size: 12pt;
margin-left: 0.4in;
}

STRONG {
font-weight: bold;
font-style: italic;
}
```

> Add a new rule

Exercise 2.3 – Setting Font properties in one declaration

When setting rules for font properties instead of typing

```
H1 {

font-weight: bold;
font-size: 12pt;
font-family: Arial,Helvetica;
font-style: italic;
}
```

you can use a shorthand and type:

```
H1 {font: bold 12pt Arial, Helvetica italic;}
```

Note that the values for font property are listed divided by white spaces.

Using shorthand

1. in the *index.html* at the bottom of the document (just above the closing
   </body> tag) type:

   ```
   <h4>This is heading four text</h4>
   ```

2. repeat the above procedure for the *page1.html*.

3. in your style sheet set the rule for h4 selector using shorthand.

4. save changes and view your web site in browser.

Avoiding Problems

 When using numeric values, length units and percentages in shorthand you rely on
the viewer's browser to interpret which value belongs to what property.

In most cases the values should be listed in a specific order. Unfortunately it might
not help as you are allowed miss out any properties with the default values.

The advice is not to use shorthand with numeric values – spend few extra minutes
typing the rules with properties and values and get a predictable result .

A table of Font Properties and Values

Property[*]	Values	Description
font-family	*family-name* *generic-family*	A prioritised list of font family names and a generic family name for an element
font-size	smaller larger *length* *%*	Sets the size of a font
font-style	normal italic oblique	Sets the style of the font
font-weight	normal bold bolder lighter 100 - 900	Sets the weight of a font (where 400 is equal to normal and 700 is equal to bold)
font-variant	normal small-caps	Displays text in a small-caps font or a normal font
font	*font-style* *font-variant* *font-weight* *font-size* *font-family*	A shorthand property for setting all of the properties for a font in one declaration

[*] The browsers might ignore some of the properties!

Exercise 2.4 – Changing Text Appearance

Changing the colours of the text

Browsers recognise various formats of describing colours. You will find more information colour formats in Appendix 3.

To change a colour of the third paragraph:

1. Make sure you your style sheet *style1.css* is open in Notepad.

2. Add one more declaration to the rule for the 'strong' selector:

   ```
   color: red;
   ```

   so that the whole rule reads as shown below – see example A:

   ```
   STRONG {
   font-weight: bold;
   font-style: italic;
   color: red;}
   ```

3. save changes to your style sheet and view *index.html* in Internet Explorer.

Aligning and stretching the text

4. in *style1.css* put your cursor just above the HR rule and add a new rule :

   ```
   H1 {
   text-align: center;
   letter-spacing: 0.1em;
   }
   ```

   and see all text (in <h1>) aligned to the centre and letter spacing increased by 0.1em – see example A.

   In the above rule we have used em measurement unit. Here 1em is equal to the default font size for the <h1> element. Find more in Appendix A, page 46.

5. Try increasing letter-spacing to 0.2em. Save and view the changes. Change it back to 0.1em. Save changes.
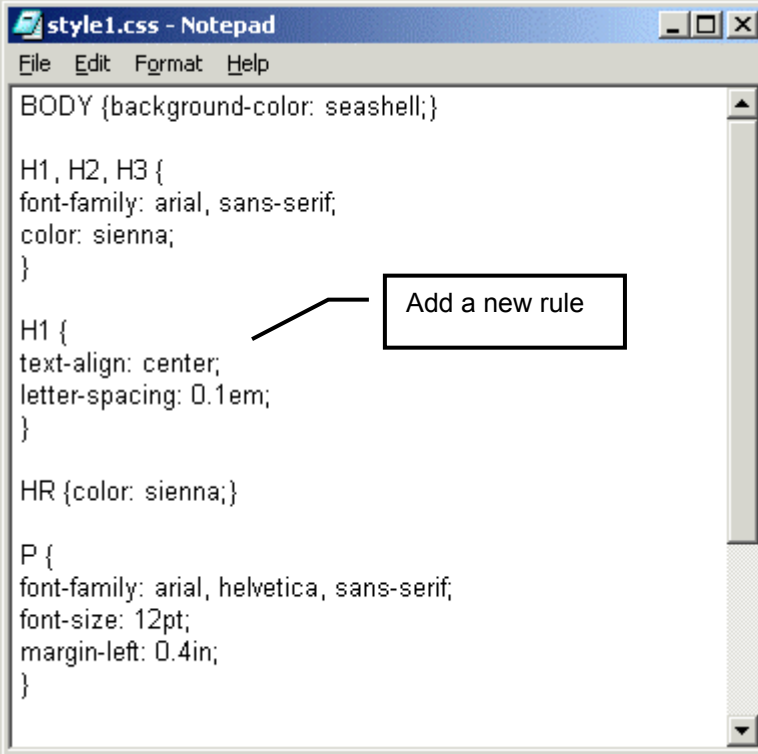
Decorating the text

6. add another declaration to the rule for the 'STRONG' selector:

   ```
   text-decoration: overline;
   ```

7. save your style sheet and view the changes to index.html in Internet Explorer.

8. delete the text-decoration declaration and save the style sheet.

Example A – Setting text properties

```
style1.css - Notepad
File  Edit  Format  Help

BODY {background-color: seashell;}

H1, H2, H3 {
font-family: arial, sans-serif;
color: sienna;
}

H1 {
text-align: center;
letter-spacing: 0.1em;
}

HR {color: sienna;}

P {
font-family: arial, helvetica, sans-serif;
font-size: 12pt;
margin-left: 0.4in;
}
```

Add a new rule

Example B - Text Properties and Values:

Property	Possible Values	Description
color	*color*	Sets the colour of a text
text-align	left right center justify	Aligns the text in an element
text-decoration	none underline overline line-through blink	Adds decoration to text
text-indent	*length* *%*	Indents the first line of text in an element
letter-spacing	normal *length*	Increase or decrease the space between characters

Exercise 2.5 – Hyperlinks

There are four different selectors with respect to hyperlinks.

Selector	Description
A:link	Defines the style for normal unvisited links.
A:visited	Defines the style for visited links.
A:active	Defines the style for active links. A link becomes active once you click on it.
A:hover	Defines the style for hovered links. A link is hovered when the mouse moves over it. Note: Not supported by Netscape browsers prior to version 6.

You can apply whatever style you'd like to each of these selectors, just like you would do with normal text.

Note: there are no white spaces in the hyperlink selectors.

Changing Hyperlinks colours

Let's change the colours of the hyperlinks.

1. at the end of the style sheet document add a set of new rules:

```
A:link {color: brown;}
A:visited {color: brown;}
A:active {color: red;}
```

2. save changes to your style sheet and view the index.html page in browser.

Creating 'rollover' effect

1. Add another rule to your style sheet so that it appears below A:visited rule and above A:active rule[*]:

```
A:hover {color: red;}
```
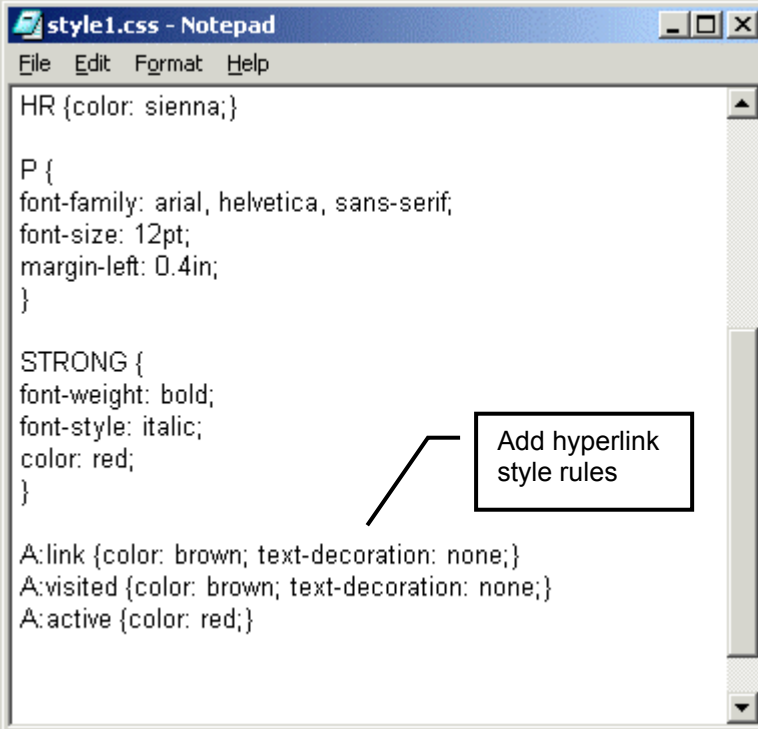
2. save and view the changes.

3. now let's make our links look more sophisticated. Add declarations to the above rules so they read:

```
A:link {color: brown; text-decoration: none;}
A:visited {color: brown; text-decoration: none;}
A:hover {color: red; font-weight: bold;}
A:active {color: red;}
```

4. Save and view changes.

5. Use your skills to set text-decoration to 'underline' for A:hover and then group the selectors. Save your style sheet.

---

[*] **Note** In order to be effective A:hover MUST come after A:link and A:visited in the CSS definition and A:active MUST come after A:hover in the CSS definition.

Example A – Setting hyperlinks colours

```
style1.css - Notepad
File  Edit  Format  Help

HR {color: sienna;}

P {
font-family: arial, helvetica, sans-serif;
font-size: 12pt;
margin-left: 0.4in;
}

STRONG {
font-weight: bold;
font-style: italic;
color: red;
}

A:link {color: brown; text-decoration: none;}
A:visited {color: brown; text-decoration: none;}
A:active {color: red;}
```

Add hyperlink style rules
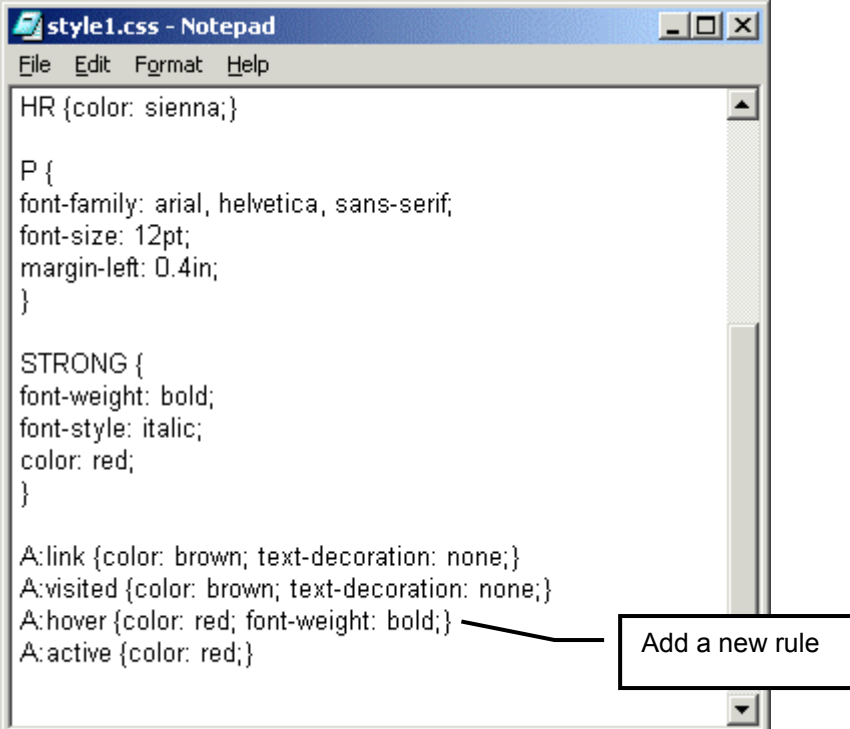
Example B – Creating a 'Rollover' effect

```
style1.css - Notepad
File  Edit  Format  Help

HR {color: sienna;}

P {
font-family: arial, helvetica, sans-serif;
font-size: 12pt;
margin-left: 0.4in;
}

STRONG {
font-weight: bold;
font-style: italic;
color: red;
}

A:link {color: brown; text-decoration: none;}
A:visited {color: brown; text-decoration: none;}
A:hover {color: red; font-weight: bold;}
A:active {color: red;}
```

Add a new rule

Section 3 – Backgrounds and Colours

In this section you will learn how to:

- set background colour
- set an image as a background.
- set fixed background image

Exercise 3.1 – Setting a background colour

Setting background colour to a selector

You can add a background colours to various selectors. In the exercise 1.1 we have already set a background colour for the whole web site. Now we are going to apply background colours to heading elements and to table cell elements.

Try the following:

1. make sure your style sheet is open in Notepad.

2. below the `body` rule:

    ```
    BODY {background-color: seashell;}
    ```

    type the following new rules – see example A:

    ```
    H2 {background-color: yellow;}
    H1 {background-color: transparent;}
    TH {background-color: seashell;}
    TD {background-color: white;}
    ```

3. Save and view changes.

4. Change the background colour of `H1` to the colour of your choice.

Adding Comments

You may add comments to your style sheets. It will make it easier to do the editing of style rules and declarations in the future.

1. put your cursor at the end of the `TH` rule after the closing curly bracket **}** and press a spacebar few times.

2. type on the same line – see example B:
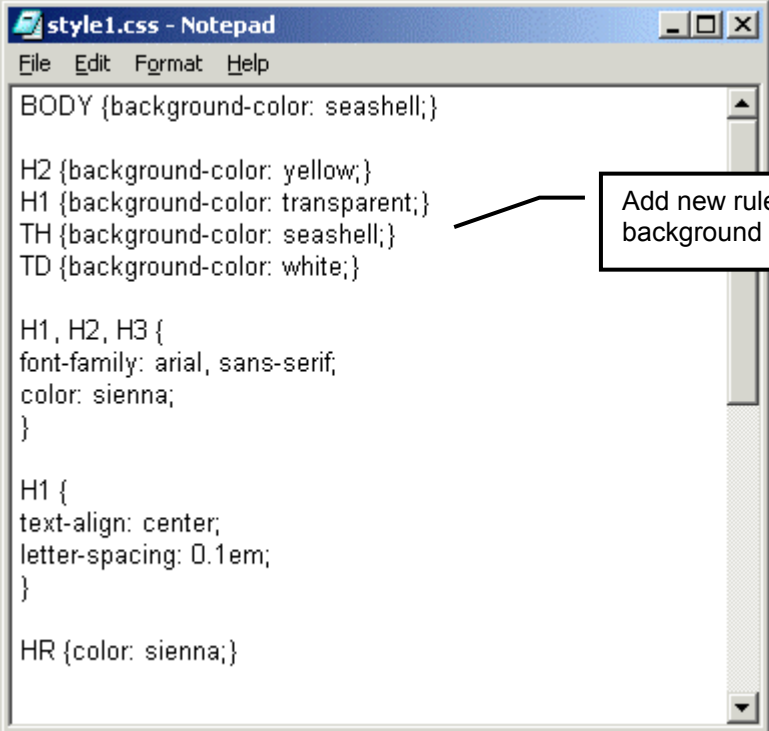
    ```
    /* table heading style */
    ```

3. move your cursor to the end of the `TD` rule and type:

    ```
    /* table cell style */
    ```

4. save changes to the style1.css.

Example A – Setting Background colour to an element
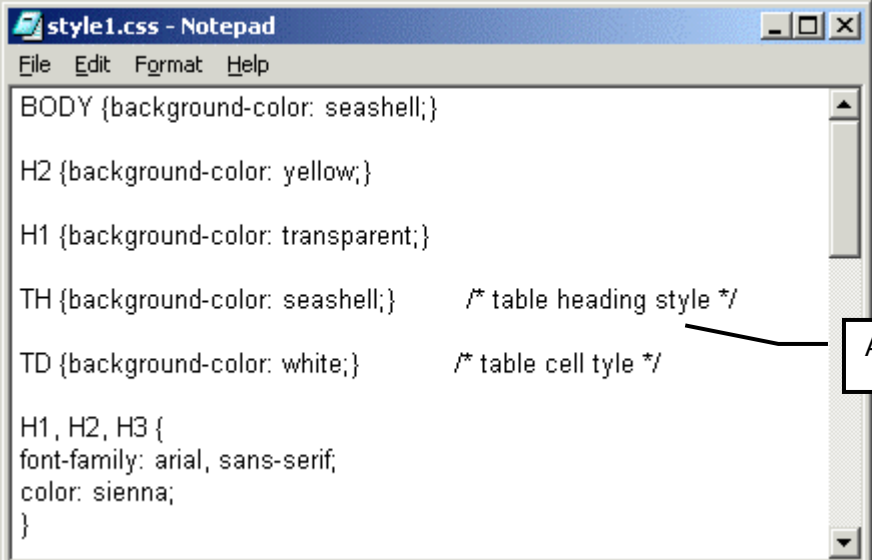
```
style1.css - Notepad
File  Edit  Format  Help

BODY {background-color: seashell;}

H2 {background-color: yellow;}
H1 {background-color: transparent;}
TH {background-color: seashell;}
TD {background-color: white;}

H1, H2, H3 {
font-family: arial, sans-serif;
color: sienna;
}

H1 {
text-align: center;
letter-spacing: 0.1em;
}

HR {color: sienna;}
```

Add new rules to set background colours

Example B – Adding Comments

```
style1.css - Notepad
File  Edit  Format  Help

BODY {background-color: seashell;}

H2 {background-color: yellow;}

H1 {background-color: transparent;}

TH {background-color: seashell;}      /* table heading style */

TD {background-color: white;}         /* table cell tyle */

H1, H2, H3 {
font-family: arial, sans-serif;
color: sienna;
}
```

Add comments

Exercise 3.2 – Setting a background image

To set a background image to a web site we will use a `background-image` property.

1. make sure your *style1.css* is open in Notepad

2. add one more declaration to the `BODY` rule:

    ```
    background-image: url(canvas.gif);
    ```

    so that the whole rule reads as

    ```
    BODY {
    background-color: seashell;
    background-image: url(canvas.gif);
    }
    ```

    Note: there is no white space between `url` and `(canvas.gif)`

3. Save and view changes in browser.

Setting a fixed background

By default your background image will scroll together with the content of your web page.

To make it stay in place add another declaration to the `BODY` rule:
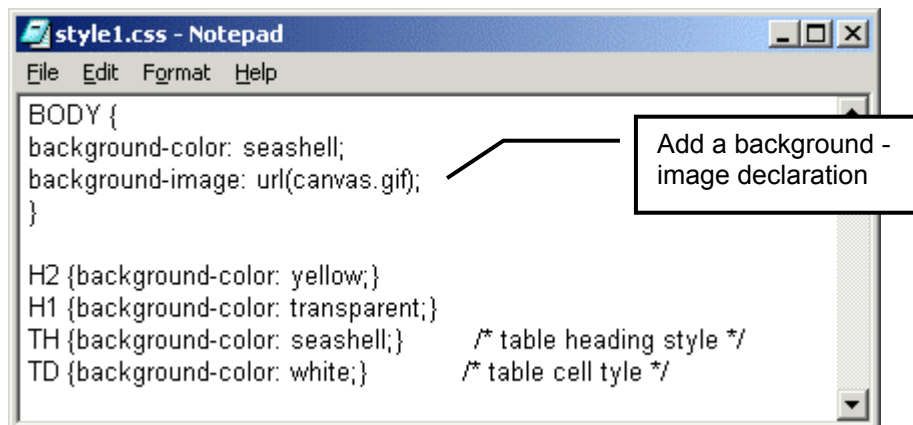
4. type after the `background-image` declaration:

    ```
    background-attachment: fixed;
    ```

    so that the whole rule reads as

    ```
    BODY {
    background-color: seashell;
    background-image: url(canvas.gif);
    background-attachment: fixed;
    }
    ```
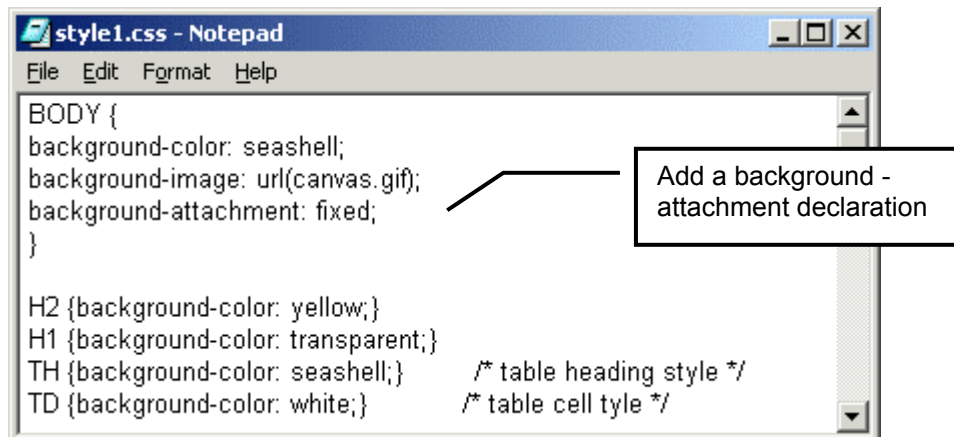
5. save changes to *style1.css*

6. in a browser window refresh the page, then use a side scrollbar to scroll up and down to view the effect.

7. return to a *style1.css*.

Example A – Setting a Background Image

```
style1.css - Notepad
File  Edit  Format  Help

BODY {
background-color: seashell;
background-image: url(canvas.gif);
}

H2 {background-color: yellow;}
H1 {background-color: transparent;}
TH {background-color: seashell;}      /* table heading style */
TD {background-color: white;}        /* table cell tyle */
```

Add a background - image declaration

Example B – Fixing a Background Image

```
style1.css - Notepad
File  Edit  Format  Help

BODY {
background-color: seashell;
background-image: url(canvas.gif);
background-attachment: fixed;
}

H2 {background-color: yellow;}
H1 {background-color: transparent;}
TH {background-color: seashell;}      /* table heading style */
TD {background-color: white;}        /* table cell tyle */
```

Add a background - attachment declaration

Example A – Table of Background properties and values

Property	Possible Values	Description
background-color	color-rgb color-hex color-name transparent	Sets the background color of an element
background-image	url none	Sets an image as the background
background-attachment	scroll fixed	Sets whether a background image is fixed or scrolls with the rest of the page
background	*background-color* *background-image* *background-repeat* *background-attachment* *background-position*	A shorthand property for setting all background properties in one declaration **Note the order of the properties**

Section 4 – Box Properties

In this section you will learn how to:

- set margines
- set borders
- set paddings.

Exercise 4.1 – Box Properties

Each element in an HTML document (e.g. paragraph, heading, table, image, etc.) fits in an 'imaginary' rectangular box. This is the space which browsers reserve for a particular element. Using the properties from this chapter you can control the size and appearance of this box.

Even more, this box can be surrounded by three more boxes: padding, border and margins – see example A.

Setting the padding for a heading text

With the padding you control the amount of space between 'imaginary' borders around the element and the element itself. If the element has a background colour padding inherits it.

Let's try the following:

1. In *style1.css* find the following rule:

    ```
    H2 {background-color: yellow;}
    ```

2. Add the following declaration to the h2 rule – see example B:

    ```
    padding: 2%;
    ```

    so that your rule reads:

    ```
    H2 {
    background-color: yellow;
    padding: 2%;
    }
    ```

3. Save changes and view *index.html* and *page1.html* in browser.
4. Return to your style sheet.

Setting padding in a table.

In our table we have heading cells (TH) and normal cells (TD). Let's set a rule to create padding in TD and TH:

5. at the end of your style sheet type the following rule:

    ```
    TD,TH {padding: 0.2em;}
    ```

6. Save and view changes.
7. Try increasing the value by replacing 0.2em with 0.5em. Save changes and view the result in browser.

In the above example we have used the em length units. Here 1em is equal to the default size of font in the table cell. Find more in the Appendix A, page 46.

Instead of setting the padding to all four sides of the element to the same value you can choose padding-top, padding-right, padding-bottom and padding-left to have different values.

Example A – Box Properties
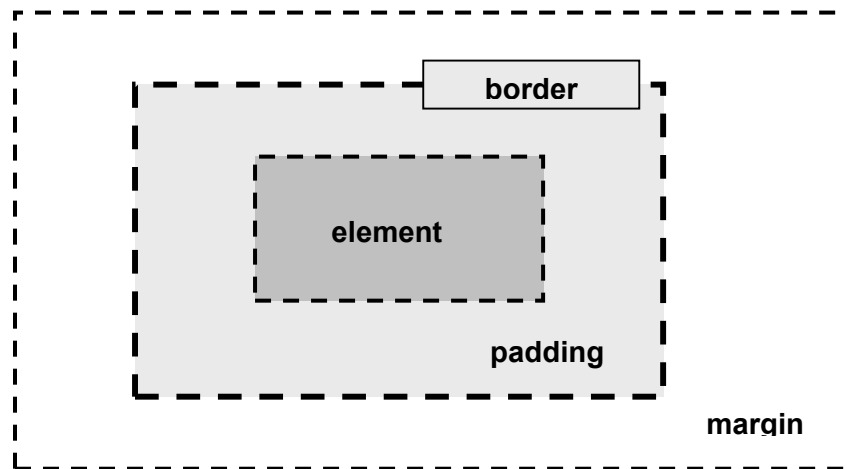
Example B – Setting Heading padding

Example C – Setting Padding in Table Cells

Exercise 4.2 – Setting Margins

When setting margins keep in mind that Netscape browser prior to Netscape 7 do not display margins correctly.

Setting Heading Margins

1. In *style1.css* add the following declaration to the `h2` rule:

    ```
    margin: 5%;
    ```

    so that your rule reads – see example A:
    ```
    h2 {
    background-color: yellow;
    padding: 2%;
    margin: 5%;
    }
    ```

2. Save changes and view *index.html* and *page1.html* in browser.

3. Return to your style sheet.

Setting margins for an image

To create some space between text and image we will use margins. We can't use padding as padding property does not work with the image elements.

First, we will align an image (from page1) to the right and then create a space around it using margins:

1. In style1.css at the end of the document type new rule – see example B:

    ```
    IMG {
    float: right;
    margin: 0.5em;
    }
    ```

2. save changes to *style1.css*.

3. refresh *page1.html* in browser.

Example A – Setting Margins to Heading 2

```
style1.css - Notepad

File   Edit   Format   Help

BODY {
background-color: seashell;
background-image: url(canvas.gif);
background-attachment: fixed;
}

H2 {
background-color: yellow;
padding: 2%;
margin: 5%;
}
```

Add a margin declaration here
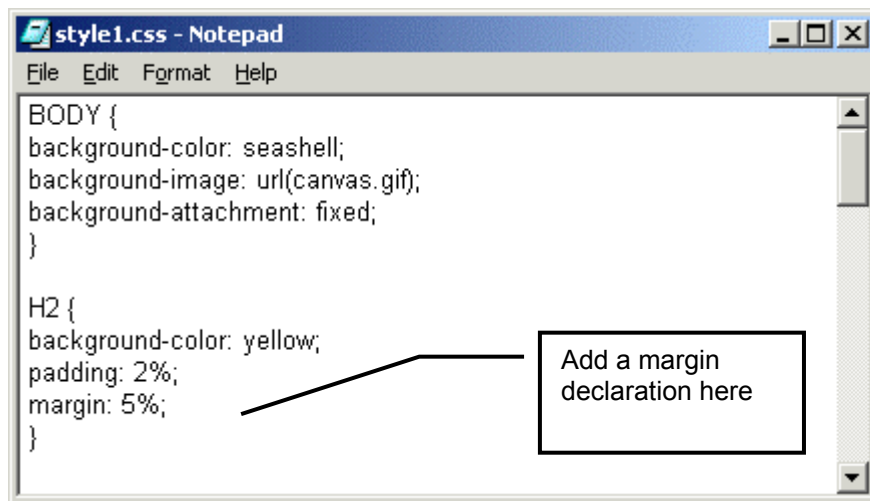
Example B – Setting Margins to a floating image

```
style1.css - Notepad

File   Edit   Format   Help

TD,TH {padding: 0.2em;}

IMG {
float: right;
margin: 0.5em;
}
```

Add a an IMG rule here
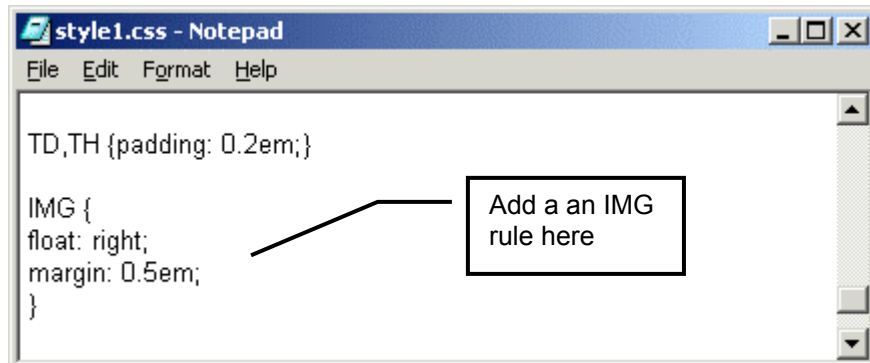
Exercise 4.3 – Borders

When setting up borders of an element you can choose the colour, thickness and style of the borders. Let's apply borders to H1 selector

1. in your style sheet document find a rule:

   ```
   H1 {
   text-align: center;
   letter-spacing: 0.1em;
   }
   ```

2. add to it the following new declarations
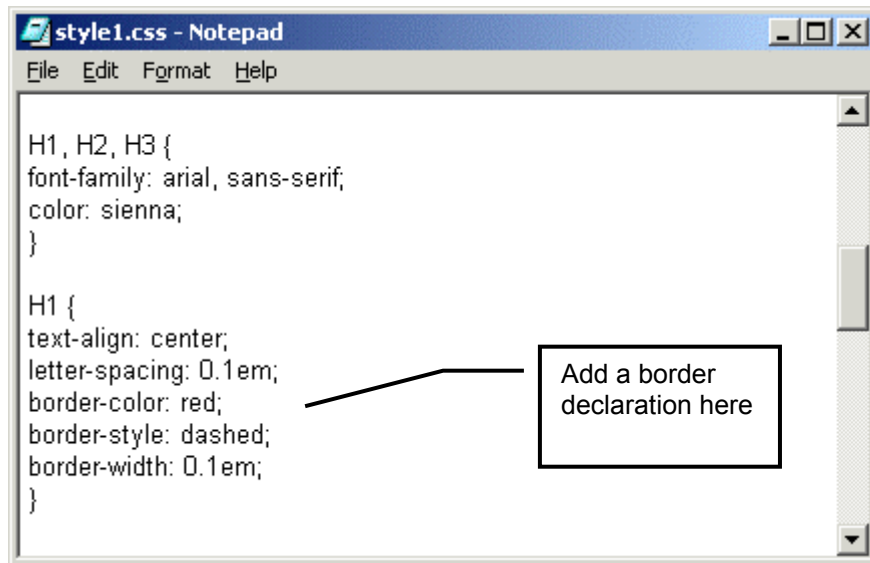
   ```
   border-color: red;
   border-style: dashed;
   border-width: 0.1em;
   ```

   so that the whole rule reads – see example A:

   ```
   H1 {
   text-align: center;
   letter-spacing: 0.1em;
   border-color: red;
   border-style: dashed;
   border-width: 0.1em;
   }
   ```

3. Save changes to your style sheet and view the result in browser.

4. Try other border styles and width from the Example B.

5. Use your skills to create borders around H2 element.

Example A – Adding Borders to a heading

```
style1.css - Notepad
File  Edit  Format  Help

H1, H2, H3 {
font-family: arial, sans-serif;
color: sienna;
}

H1 {
text-align: center;
letter-spacing: 0.1em;
border-color: red;
border-style: dashed;
border-width: 0.1em;
}
```

Add a border declaration here

Example B - A Table of Border properties and Values

Property	Possible Values	Description
border-color	color	Sets the colour of the borders
border-style	none hidden dotted dashed solid double groove ridge inset outset	Sets the style of the four borders
border-width	thin medium thick *length*	Sets the width of four borders
border	*border-width* *border-style* *border-color*	Sets the borders

Section 5 – CSS Classes

In this section you will learn how to:

- set classes
- use span and div
- create a frame effect

Exercise 5.1 – Classes

Classes are used to apply different styles to the same type of elements.

For example you can use classes to have some H3 headings centred and some right aligned.

Creating Classes

Let's create a class to justify the second paragraph and another one to centre <h3> on page1.

1. Type at the end of the style1.css

```
H3.right {text-align: right;}
H3.cent {text-align: center;}
```

2. Save changes.

The first rule in the above exercise creates a class of H3 styles named "right" whose text will be aligned to the right.

The second rule creates a class of heading 3 styles named "cent" that will be centred.

Note the period, which precedes the class name.

Applying Class styles in HTML Document

1. Open *page1.html* in notepad, put your cursor inside the opening <h3> tag and type:

```
class=cent
```

so that the whole instruction reads – see example B:

```
<h3 class=cent>
```

2. After the third paragraph text in *page1.html* add another h3 element:

```
<h3> This is another heading 3 </h3>
```

3. Change the opening code to:

```
<h3 class=right>
```
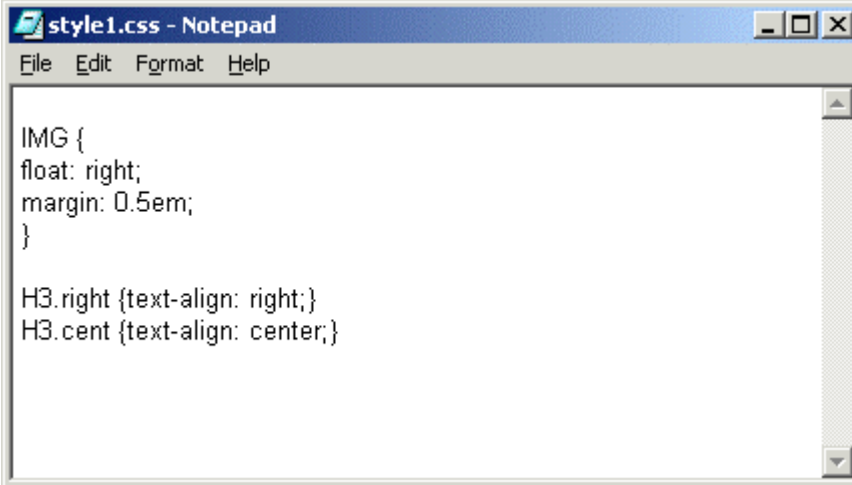
so that the whole instruction reads

```
<h3 class=right> This is another heading 3 </h3>
```

4. Save changes and view *page1.html* in browser.

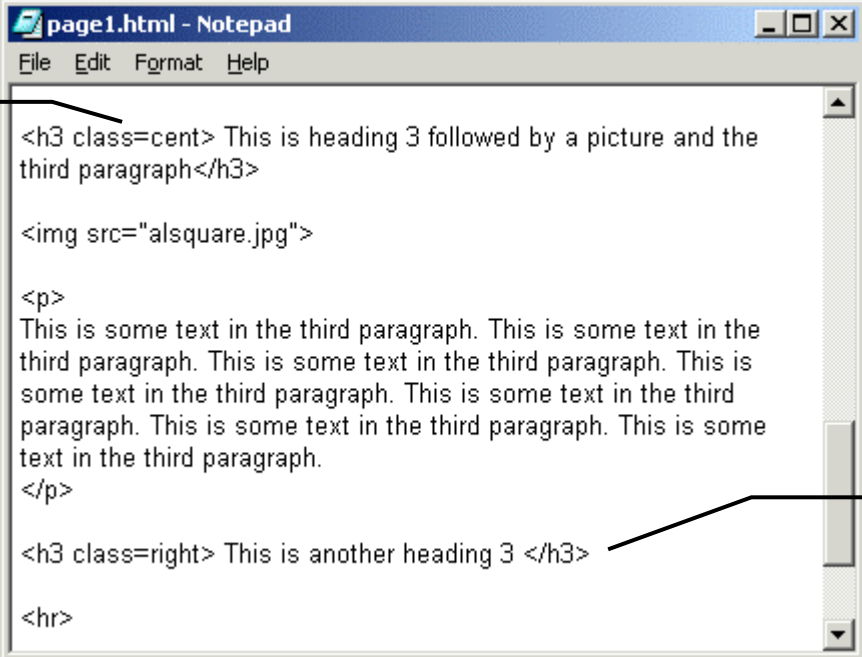Note: text marked as h3 (without class attribute) will not be affected by any class style rules.

Remember: there is a restriction on classes - they cannot be nested. A nested class selector (e.g. `H1.cent.red`) is not allowed in CSS.

Example A – Creating Classes

```
style1.css - Notepad
File  Edit  Format  Help

IMG {
float: right;
margin: 0.5em;
}

H3.right {text-align: right;}
H3.cent {text-align: center;}
```

Example B – Applying Classes in HTML document

Add class attribute here

```
page1.html - Notepad
File  Edit  Format  Help

<h3 class=cent> This is heading 3 followed by a picture and the
third paragraph</h3>

<img src="alsquare.jpg">

<p>
This is some text in the third paragraph. This is some text in the
third paragraph. This is some text in the third paragraph. This is
some text in the third paragraph. This is some text in the third
paragraph. This is some text in the third paragraph. This is some
text in the third paragraph.
</p>

<h3 class=right> This is another heading 3 </h3>

<hr>
```

Add another h3 here

Exercise 5.2 – Block and Inline elements

Div and Span

There are two 'dummy' tags in HTML that don't do anything in themselves: <DIV> and <SPAN>. Therefore, they are excellent for carrying CSS styles as class selectors.

SPAN is an "inline-tag" in HTML, meaning that no automatic line breaks are inserted before or after it. If you need to change the style of just one word or few words in a paragraph mark them with

DIV is a "block tag", meaning that line breaks are automatically inserted to distance the block from the surrounding content (like <p>, <h1> or <table> tags).

Creating a frame effect with <div>.

Let's set a new class DIV.frame which will create a frame effect for our *page1.html*:

1. make sure your *style1.css* file is open.

2. at the end of it type a new rule

    ```
    DIV.frame {
    background-color: seashell;
    margin: 2%;
    border: 2px sienna outset;
    }
    ```

    The shorthand border declaration above will produce the 2 pixel thick border in sienna colour with 3D outset effect (top and left border in lighter sienna colour and right and bottom border in darker sienna colour).

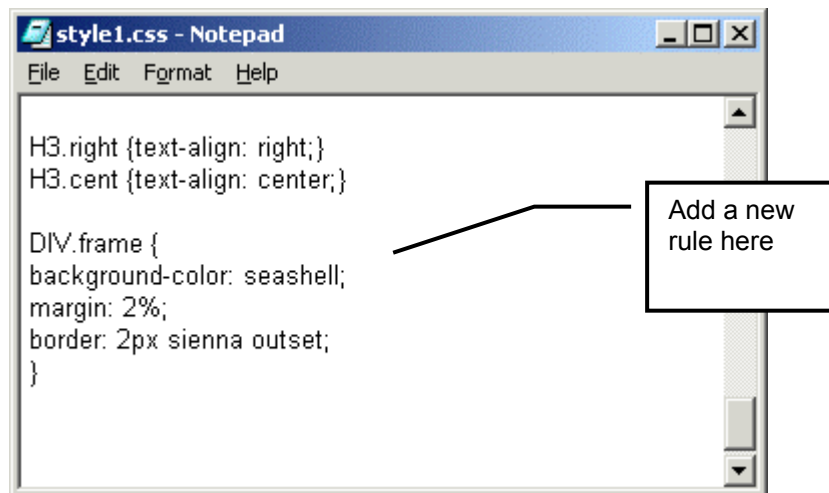3. Open *page1.html* in Notepad and just below the opening <body> tag type

    ```
    <div class=frame>
    ```

4. Above the closing </body> tag type

    ```
    </div>
    ```
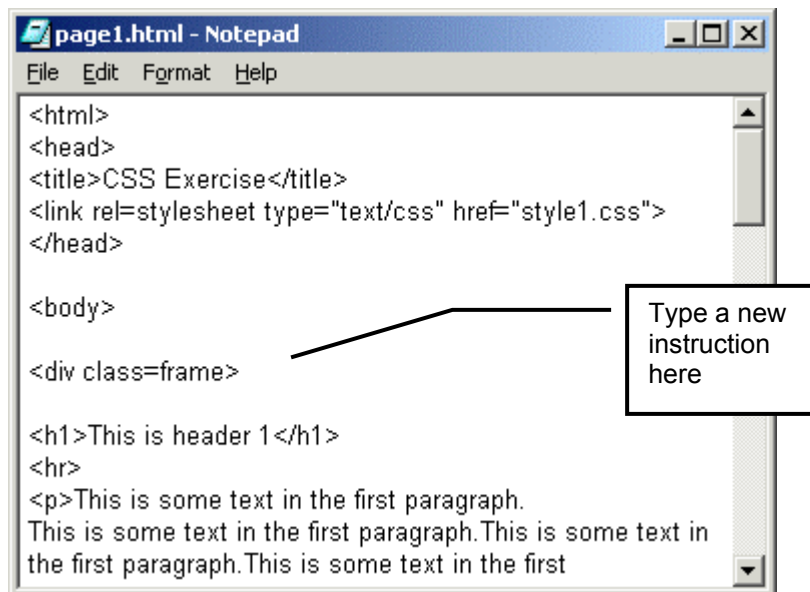
5. Save both documents and view *page1.html* in browser.

Example A – Creating a frame effect

```
style1.css - Notepad
File  Edit  Format  Help

H3.right {text-align: right;}
H3.cent {text-align: center;}

DIV.frame {
background-color: seashell;
margin: 2%;
border: 2px sienna outset;
}
```

Add a new rule here

Example B – Applying 'frame' effect to an HTML document

```
page1.html - Notepad
File  Edit  Format  Help

<html>
<head>
<title>CSS Exercise</title>
<link rel=stylesheet type="text/css" href="style1.css">
</head>

<body>

<div class=frame>

<h1>This is header 1</h1>
<hr>
<p>This is some text in the first paragraph.
This is some text in the first paragraph.This is some text in
the first paragraph.This is some text in the first
```

Type a new instruction here

Exercise 5.3 – Project

Use your skills to:

1. Create a frame effect for *index.html*.

2. Change margins so that the right margin and the left margin of the text match.

3. Change background colour of heading 2 to the colour of your choice.

4. Change borders (or take them out).

5. Insert a picture of the underpass on a page 1,

    a. then create 2 classes for the images: IMG.right and IMG.left

    b. use the classes to float one of the images to the left and another to the right. Do not forget to set margins.

6. Create a one row 4 cell table and use classes to create rollover button effect (tip: use background-color and A:link, A:hover, etc declarations)

Section 6 - Appendices

In this section you will find

- measurement units
- table of CSS properties and values

Appendix A – Measurement Units

A Table of Measurement Units

Unit	Description
%	a percentage of something
1em	a default size of the viewer's font
1px	pixel (a dot on a PC monitor)
pt	points, 1 pt = 1/72 in
pc	picas, 1 pc=12 pt=1/6 in
1in	inch
1mm	millimetre
1cm	centimetre

Absolute and relative units

Both *relative* and *absolute* length units are supported in CSS1.

Relative units give a length relative to another length property, and are preferred since they will better adjust to different media.

- The em values are relative to the HTML element's font size.
- The px values are relative to the output device screen resolution.
- Percentage values are relative to other values, as defined for each property. Most often the percentage value is relative to the element's font size

Absolute length units are highly dependent on the output medium, and so are less useful than relative units.

- Points, picas, inches, millimetres and centimetres set the absolute size/length of an HTML element.

Note: There are **no white spaces** between the number and the two-letter unit code in a lenth value.

Negative values are not alowed[*].

---

[*] There are exeptions: e.g. vertical alignment and margins.

Appendix B – A Table of CSS Properties and Values

Property[*]	Values	Description
font-family	*family-name* *generic-family*	A prioritised list of font family names and a generic family name for an element
font-size	xx-small x-small small medium large x-large xx-large smaller larger *length* *%*	Sets the size of a font
font-style	normal italic oblique	Sets the style of the font
font-weight	normal bold bolder lighter 100 200 300 400 500 600 700 800 900	Sets the weight of a font
font-variant	normal small-caps	Displays text in a small-caps font or a normal font
font-stretch	normal wider narrower condensed expanded	Condenses or expands the current font-family
font	*font-style* *font-variant* *font-weight* *font-size* *font-family*	A shorthand property for setting all of the properties for a font in one declaration

---

[*] The browsers might ignore some of the properties!

Text

Property	Possible Values	Description
color	*color*	Sets the colour of a text
text-align	left right center justify	Aligns the text in an element
text-decoration	none underline overline line-through blink	Adds decoration to text
text-indent	*length* *%*	Indents the first line of text in an element
text-transform	none capitalize uppercase lowercase	Controls the letters in an element
white-space	normal pre nowrap	Sets how white space inside an element is handled
word-spacing	normal *length*	Increase or decrease the space between words
direction	ltr rtl	Sets the text direction
letter-spacing	normal *length*	Increase or decrease the space between characters

Hyperlinks

Selector	Description
a:link	Defines the style for normal unvisited links.
a:visited	Defines the style for visited links.
a:active	Defines the style for active links. A link becomes active once you click on it.
a:hover	Defines the style for hovered links. A link is hovered when the mouse moves over it. Note: Not supported by Netscape browsers prior to version 6.

Background

Property	Possible Values	Description
`background-color`	color-rgb color-hex color-name transparent	Sets the background color of an element
`background-image`	url none	Sets an image as the background
`background-attachment`	scroll fixed	Sets whether a background image is fixed or scrolls with the rest of the page
`background-position`	top left top center top right center left center center center right bottom left bottom center bottom right x-% y-% x-pos y-pos	Sets the starting position of a background image
`background-repeat`	repeat repeat-x repeat-y no-repeat	Sets if/how a background image will be repeated
`background`	*background-color* *background-image* *background-repeat* *background-attachment* *background-position*	A shorthand property for setting all background properties in one declaration **Note the order of the properties**

Margin

Property	Possible Values	Description
margin-top	length %	Sets the top margin of an element
margin-right	length %	Sets the right margin of an element
margin-bottom	length %	Sets the bottom margin of an element
margin-left	length %	Sets the left margin of an element
margin	*margin-top margin-right margin-bottom margin-left*	A shorthand property for setting the margin properties in one declaration

Padding

Property	Possible Values	Description
padding-top	length %	Sets the top padding of an element
padding-right	length %	Sets the right padding of an element
padding-bottom	length %	Sets the bottom padding of an element
padding-left	length %	Sets the left margin of an element
padding	*padding-top padding-right padding-bottom padding-left*	A shorthand property for setting all of the padding properties in one declaration **Note the order!**

Border

Property	Possible Values	Description
`border-color`	color	Sets the colour of the borders
`border-style`	none hidden dotted dashed solid double groove ridge inset outset	**Sets the style of the four borders**: - no border is drawn - - the border is a dotted line - the border is a dashed line - the border is a solid line - the border is a double line - a 3D groove is drawn - a 3D ridge - a 3D inset - a 3D outset Note: Some browsers will interpret all border-styles (except for none and hidden) as 'solid'.
`border-width`	thin medium thick *length*	Sets the width of four borders
`border`	*border-width* *border-style* *border-color*	Sets the borders

Appendix C – CSS Web resources

CSS Tools

http://www.htmlhelp.com/tools/csscheck/ - direct input validation service on-line.

http://jigsaw.w3.org/css-validator/validator-uri.html - another validator on-line.

http://www.w3.org/Style/ - the latest development in CSS.

http://www.w3.org/TR/REC-CSS1 - W3C recommendations.

CSS Tutorials On-line:

http://www.w3schools.com/css/ - good tutorial and examples.

http://www.echoecho.com/css.htm - tutorial and online quiz.

http://www.htmlhelp.com/reference/css/quick-tutorial.html - quick tutorial.

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