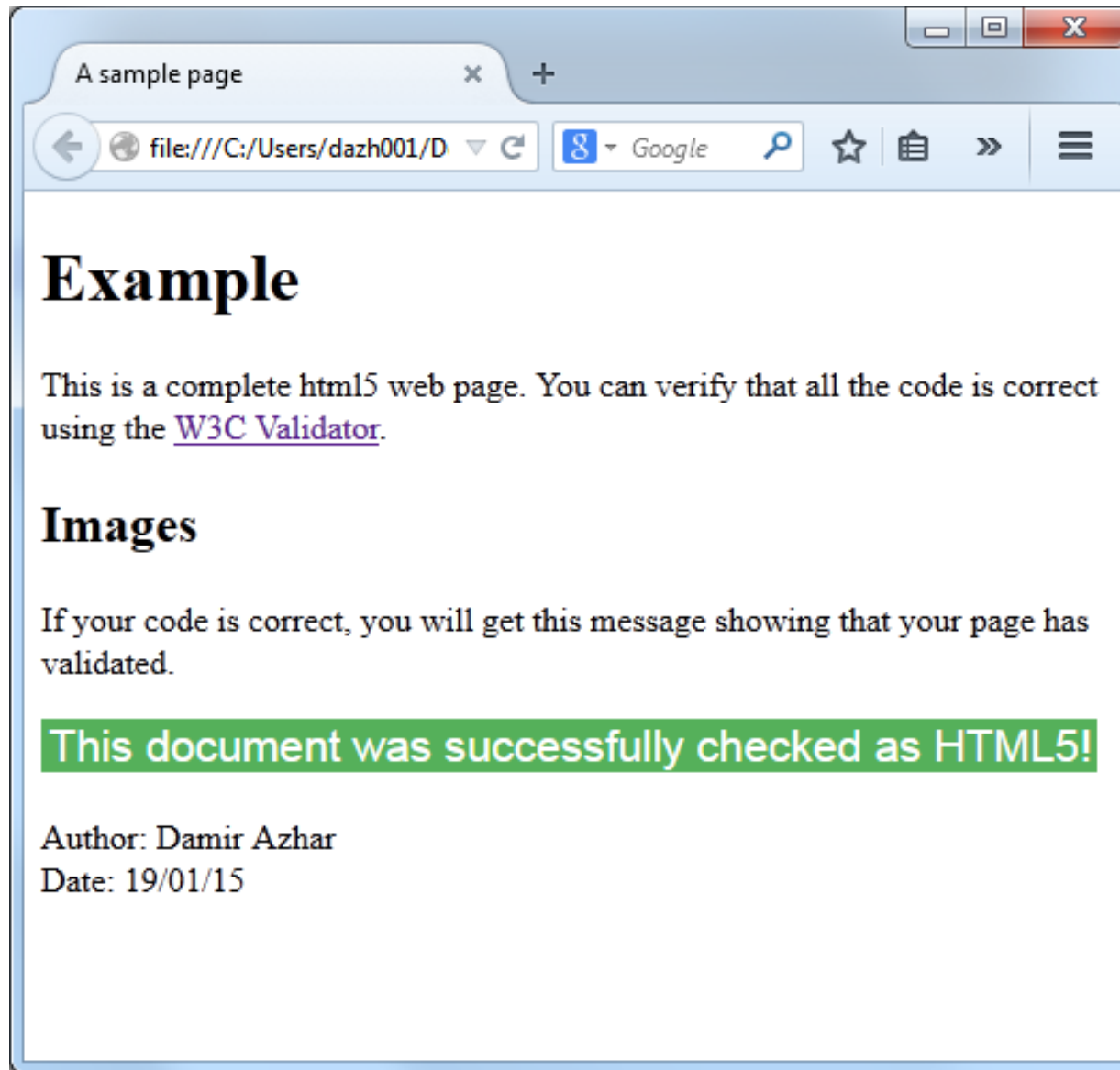


CSS

Lecture 23 – COMPSCI 111/111G SS 2019



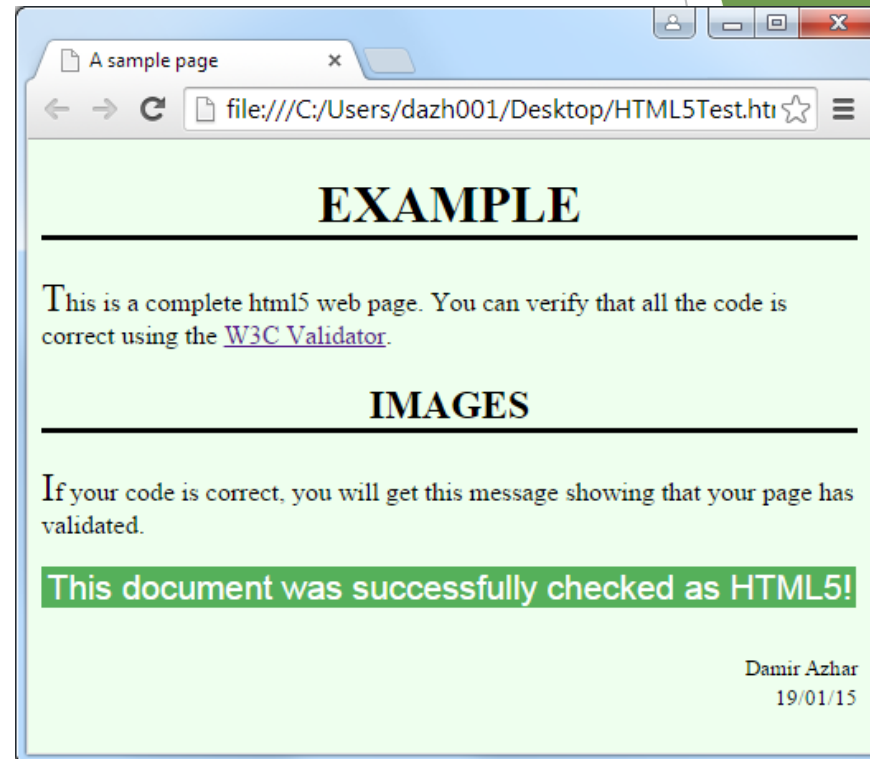
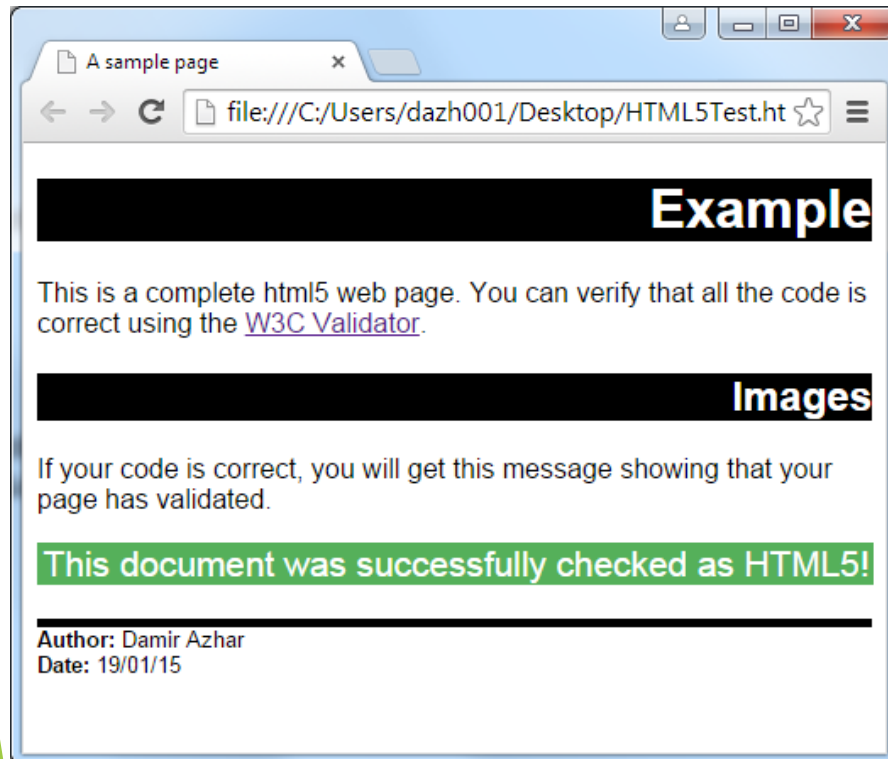
No CSS



Styles

A style changes the way the HTML code is displayed

- Same page displayed using different styles



<http://csszengarden.com>

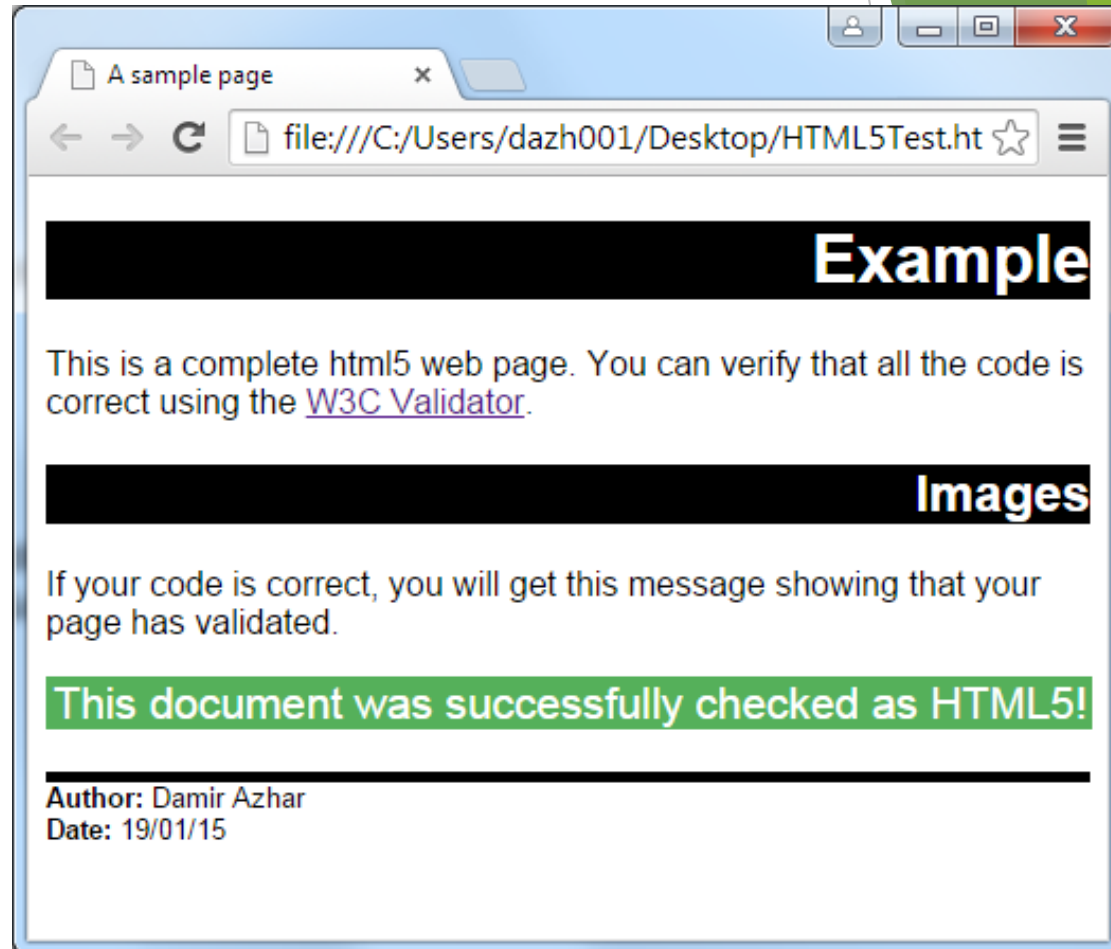
Same page with a style sheet

```
body
{
font-family: sans-serif;
}

h1, h2
{
text-align: right;
background-color: black;
color: white;
}

.footer
{
border-top-width: thick;
border-top-style: solid;
font-size: small;
}

.catName
{
font-weight: bold;
}
```



Same page, different style sheet

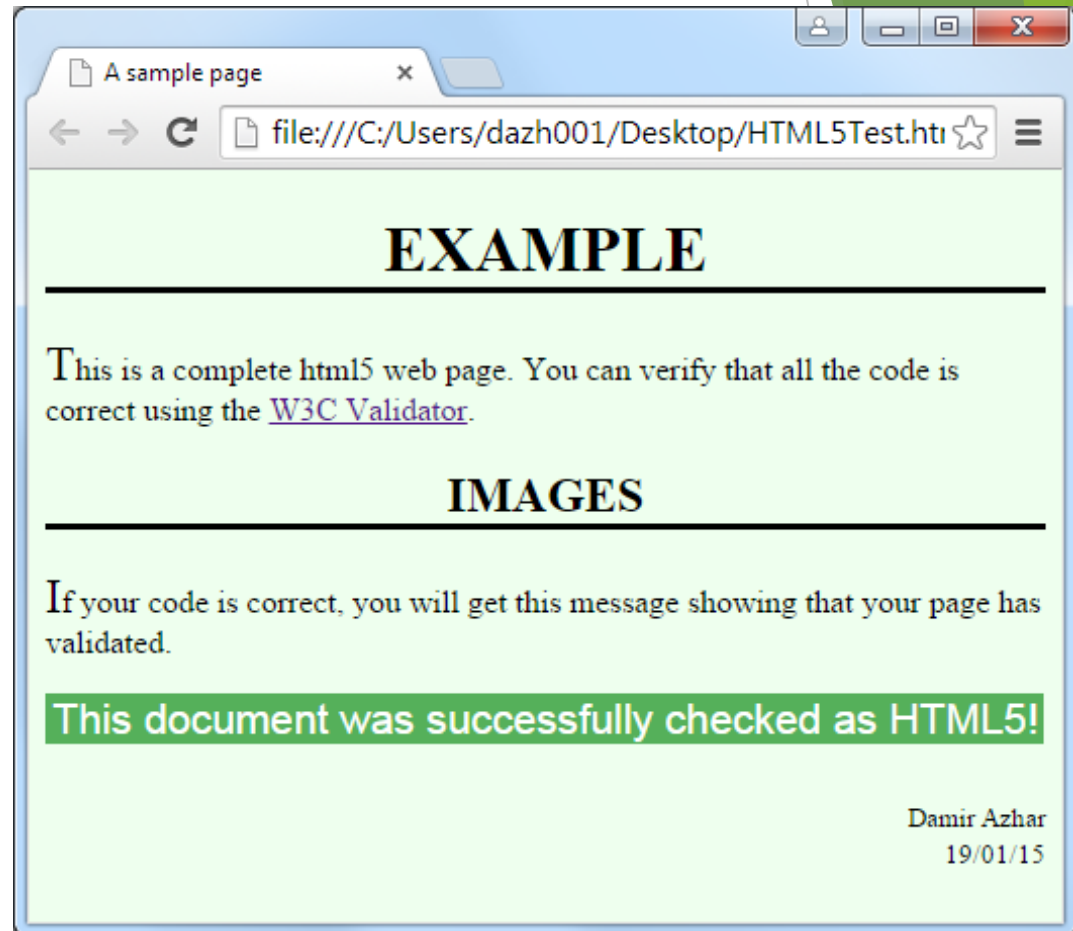
```
body { background-color: #eefee; }
```

```
h1, h2  
{  
text-align: center;  
border-bottom-color: black;  
border-bottom-style: solid;  
color: black;  
text-transform: uppercase;  
}
```

```
p:first-letter  
{  
font-size: x-large;  
}
```

```
.footer  
{  
text-align:  
right; font-size:  
small;  
}
```

```
.catName { visibility: hidden; }
```



Defining a style

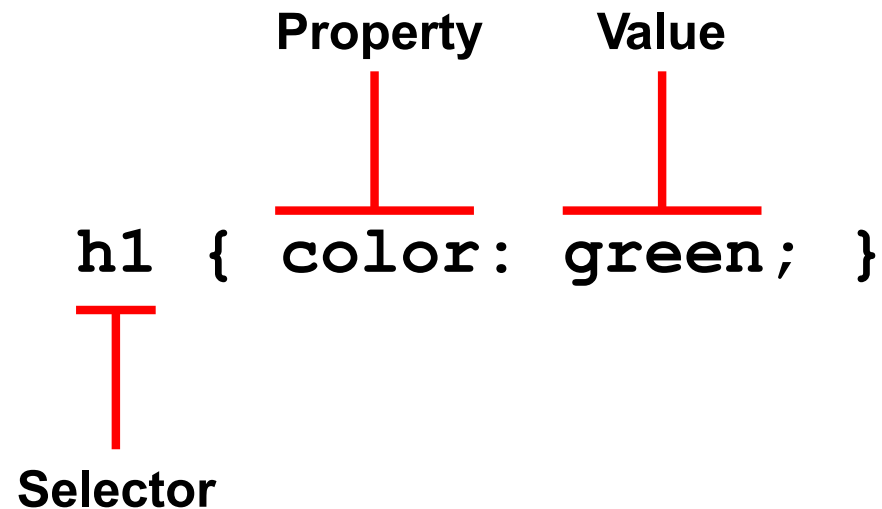
Styles are defined using rules

- Selector – determines what the rule applies to
- Property – the thing that will be changed
- Value – the value that will be used

```
h1 { color: green; }
```

Diagram illustrating the components of a CSS rule:

- Selector**: `h1`
- Property**: `color`
- Value**: `green`



Grouping rules

Multiple tags that use the same rule

- `h1 { font-weight: bold }`
- `h2 { font-weight: bold }`

Same style defined for multiple selectors

- `h1, h2 { font-weight: bold }`



Grouping rules

Same tag using multiple rules

- `h1 { color: green }`
- `h1 { text-align: center }`

Apply multiple properties to the same selector

- `h1 {
 color: green;
 text-align: center;
}`



Class selectors

Sometimes want to apply a style to specified tags

- Most paragraphs are normal
- Some paragraphs are quotes

Define a style that can be applied to a group of tags

- Class selector

```
.className { property: value; }
```

In HTML5 source code

- Assign the tag to the class
- Use an attribute

```
<tag class="className"> ... </tag>
```

Example - class selector

Style defined as follows:

```
.quote
{
    text-align: center;
    font-style: italic;
}
```

HTML5 source code uses the style as follows:

```
<p class="quote">
Let's face it, the average computer user has
the brain of a Spider Monkey --- Bill Gates
</p>
```

ID selectors

Sometimes want to apply a style to a single tag

- E.g. Defining a special heading

Define a style that can be applied to a single tag

- Id selector

```
#idName { property: value; }
```

In HTML5 source code

- Use an attribute to specify the id used for the tag

```
<tag id="idName"> ... </tag>
```

Example - id selector

Style defined as follows:

```
#footer
{
    text-align: center;
    font-style: italic;
}
```

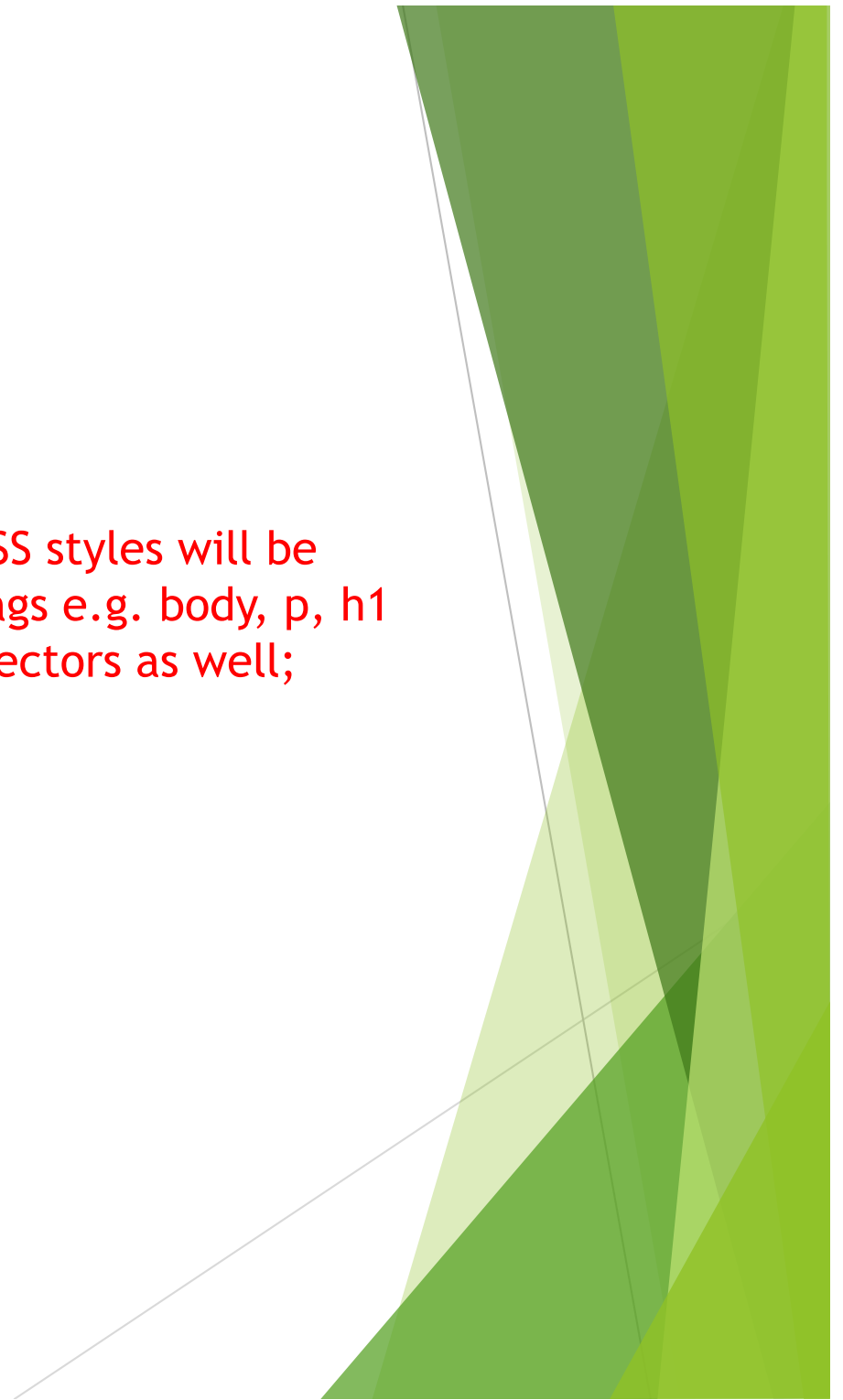
HTML5 source code uses the style as follows:

```
<p id="footer">
Copyright 2015
</p>
```

Exercises

What is a “selector” in a CSS style?

A selector specifies where in a web page CSS styles will be applied. Selectors are typically names of tags e.g. body, p, h1 etc. There are 2 types of user specified selectors as well; class selectors and id selectors.



Location of the styles

Three possible locations

- External style sheet
- Internal style sheet
- Inline styles



External Style Sheet

Styles are defined in a file

- Used when styles apply to more than one web page
- Entire site has a consistent visual theme

```
.quote { text-align: center; }  
h1 { color: green; }
```

Saved in a file
called **theme.css**



Web page must be told where to find the style sheet

- `<link>` tag has 3 attributes:
 - ***rel*** specifies relationship between current document and linked document
 - ***href*** specifies location of linked document
 - ***type*** specifies media type of linked document
- Is an empty tag so only an opening `<link>` tag is required.

```
<head>  
<title> ... </title>  
<link rel="stylesheet" href="theme.css" type="text/css">  
</head>
```

Internal Style Sheet

Styles are defined in the head of the page

- Used when styles apply to only the one web page
- Keeps all the visual formatting located in the same place

`<style type="text/css">`

- Used in the head of the document to contain styles
- *type* attribute specifies media type of the `<style>` tag

```
<head>
<title>Example</title>

<style type="text/css">
.quote { text-align: center; }

h1 { color: green; }
</style>

</head>
```


Inline styles

Styles are defined in the tag

- Used when style is applied only to that tag
- Can be required to override styles
- Rarely used (*why would you?*)

```
<p style="text-align: center;">  
This paragraph will be centred using  
an inline style.  
</p>
```

Cascading Style Sheets

Order to apply styles

1. Browser default
2. External style sheet
3. Internal style sheet
4. Inline styles



Increasing priority

http://en.wikipedia.org/wiki/Cascading_Style_Sheets

[http://en.wikipedia.org/wiki/Comparison_of_layout_engines_\(CSS\)](http://en.wikipedia.org/wiki/Comparison_of_layout_engines_(CSS))

Exercises

Write a simple HTML5 page with the title “Simple CSS example”. The body of the page should contain a single paragraph with the text “Hello”. The text should have the “color” property set to “green”. An internal style sheet should be used to define an appropriate style that can be applied to the paragraph.

```
<html>
<head>
  <meta charset="UTF-8">
  <title>Simple CSS Example</title>
  <style type="text/css">
    p {color: green;}
  </style>
</head>
<body>
  <p>Hello World</p>
</body>
</html>
```

Exercises

Put the following into increasing order of priority. The item at the bottom of the list should have the highest priority.

Internal Style, Browser Default, Inline Style, External Style

1. Browser default
2. External style sheet
3. Internal style sheet
4. Inline Style

<div> and

Two additional tags used with CSS

- Allow a style to be applied to arbitrary group of elements

<div>

- Block-level tag
- May contain other block-level tags
- Invisible in HTML5, but can have styles applied

- Inline tag
- May contain other inline tags
- Invisible in HTML5, but can have styles applied

Font

font-family

- serif, sans-serif, cursive, fantasy, monospace

font-size

- xx-small, x-small, small, medium, large, x-large, xx-large, length (e.g. 24pt)

font-style

- normal, italic

font-variant

- normal, small-caps

font-weight

- normal, bold

<http://www.w3.org/Style/Examples/007/fonts.en.html>

Lengths

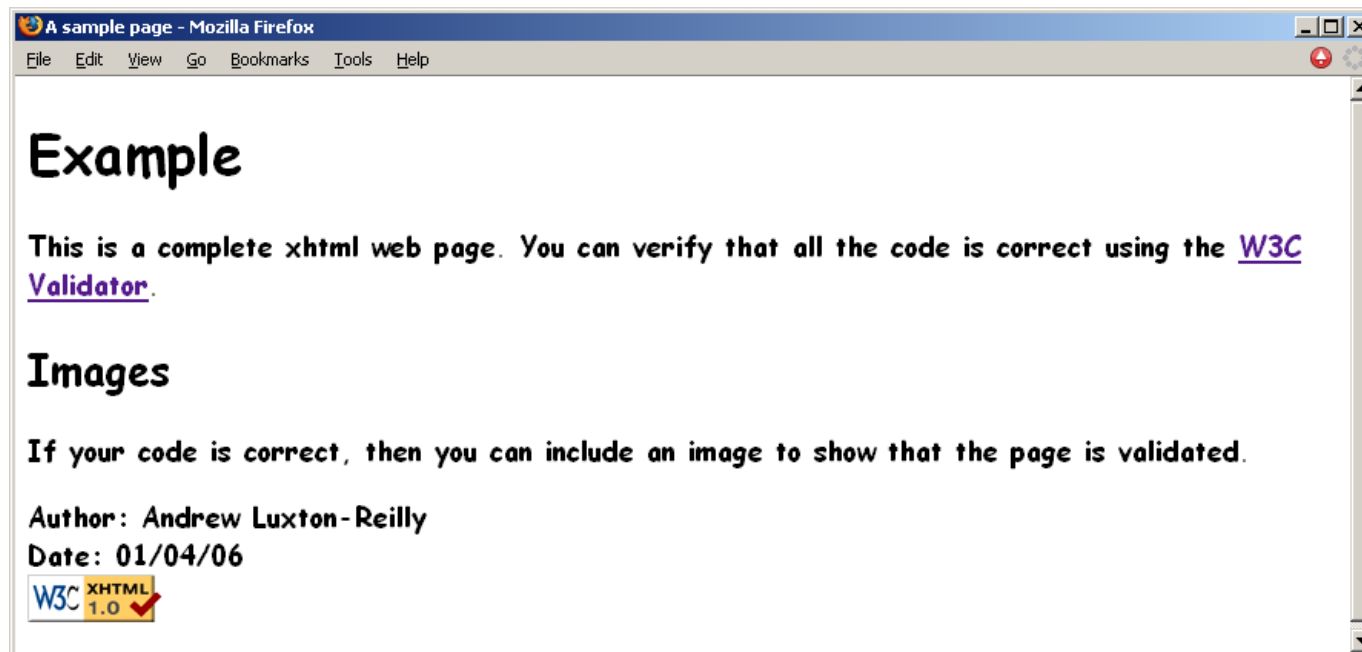
Use a variety of units

- cm
- mm
- pt
- px



Font example

```
body
{
    font-family: "Comic Sans MS", cursive;
    font-size: large;
    font-style: normal;
    font-variant: normal;
    font-weight: bold;
}
```



Exercises

Define a style that is applied to all paragraphs and changes the font so that it is 16pt and bold.

```
p { font-size : 16pt; font-weight : bold; }
```

Define a style that is applied to all h2 headings and changes the font to small caps.

```
h2 { font-variant : small-caps; }
```

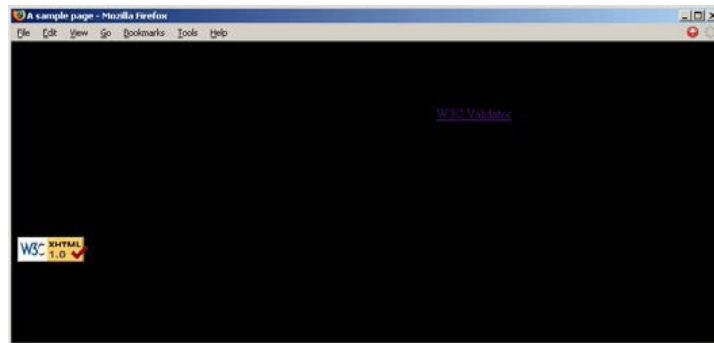
Define the styles required to make all the text in the body of a document use italicised sans-serif font, preferably Verdana or Helvetica.

```
body { font-family: "Verdana", "Helvetica",  
sans-serif; font-style: italic; }
```

Background

background-color

```
body
{
    background-color: black;
}
```



Text

`color`

- `black` (default), `red`, `green`, `blue`, `white`, `yellow`, etc.

`text-align`

- `left` (default), `right`, `center`, `justify`

`text-indent`

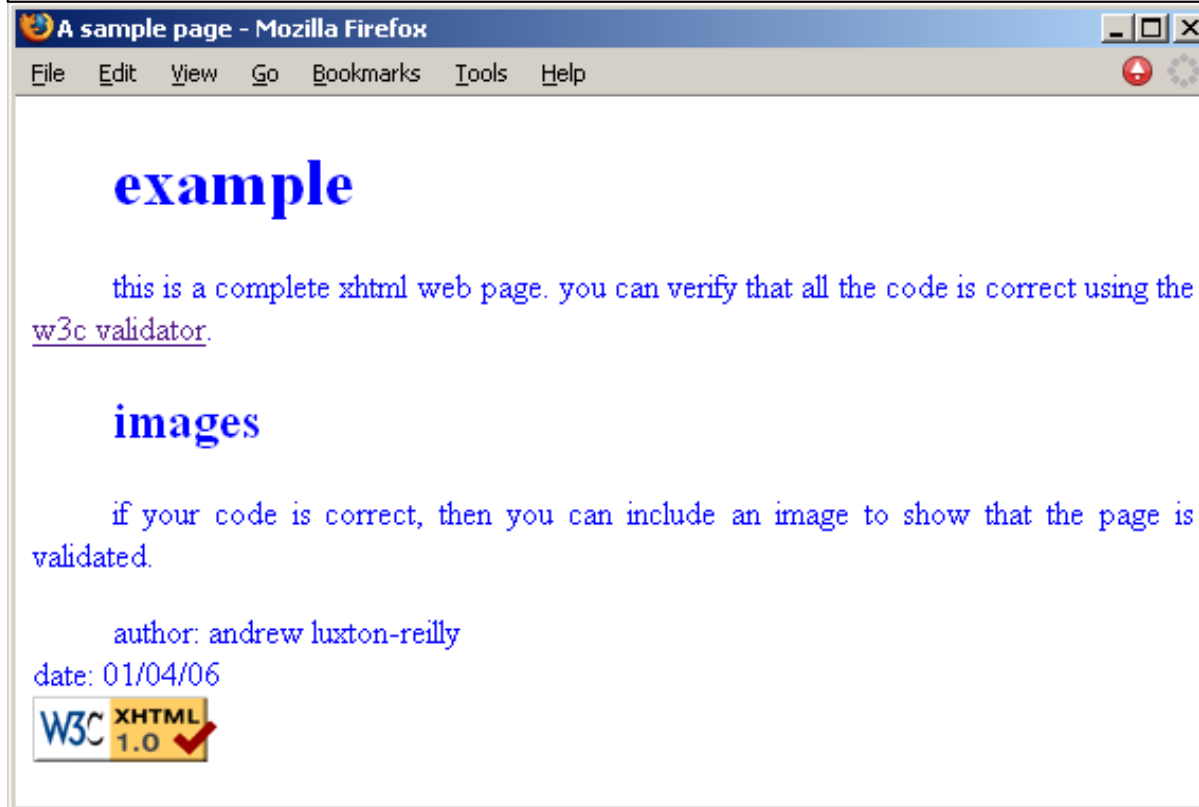
- `length`

`text-transform`

- `none` (default), `capitalize`, `uppercase`, `lowercase`

Text example

```
body
{
    color: blue;
    text-align: justify;
    text-indent: 1cm;
    text-transform: lowercase;
}
```



Colours

Sixteen colour names

- `black, red, green, blue, white, yellow, aqua, fuchsia, gray, lime, maroon, navy, olive, purple, silver, teal`

RGB values

- `rgb(xxx, xxx, xxx)`
- `xxx = 0 - 255`

Hex values

- `#rrggbb`
- `rr, gg, and bb = 0 - 255`
- `values represented in hexadecimal (base 16): 0 - ff`

Exercises

Define the styles required to make the background of the entire page silver, and the text coloured black. The main heading should have a black background and white font.

```
body { background-color: silver; }  
h1 { background-color: black; color: white; }
```

Define a style for an id selector called “greenText” so that any element that uses it has green font. You must use hex values for the color. Write a fragment of HTML5 code that applies the style you have defined to the word “grass” in the paragraph “The grass is green”.

```
#greenText { color: #00ff00; }  
  
<p>The <span id="greenText">grass</span> is  
green</p>
```

Borders

`border-color`

- `color`

`border-style`

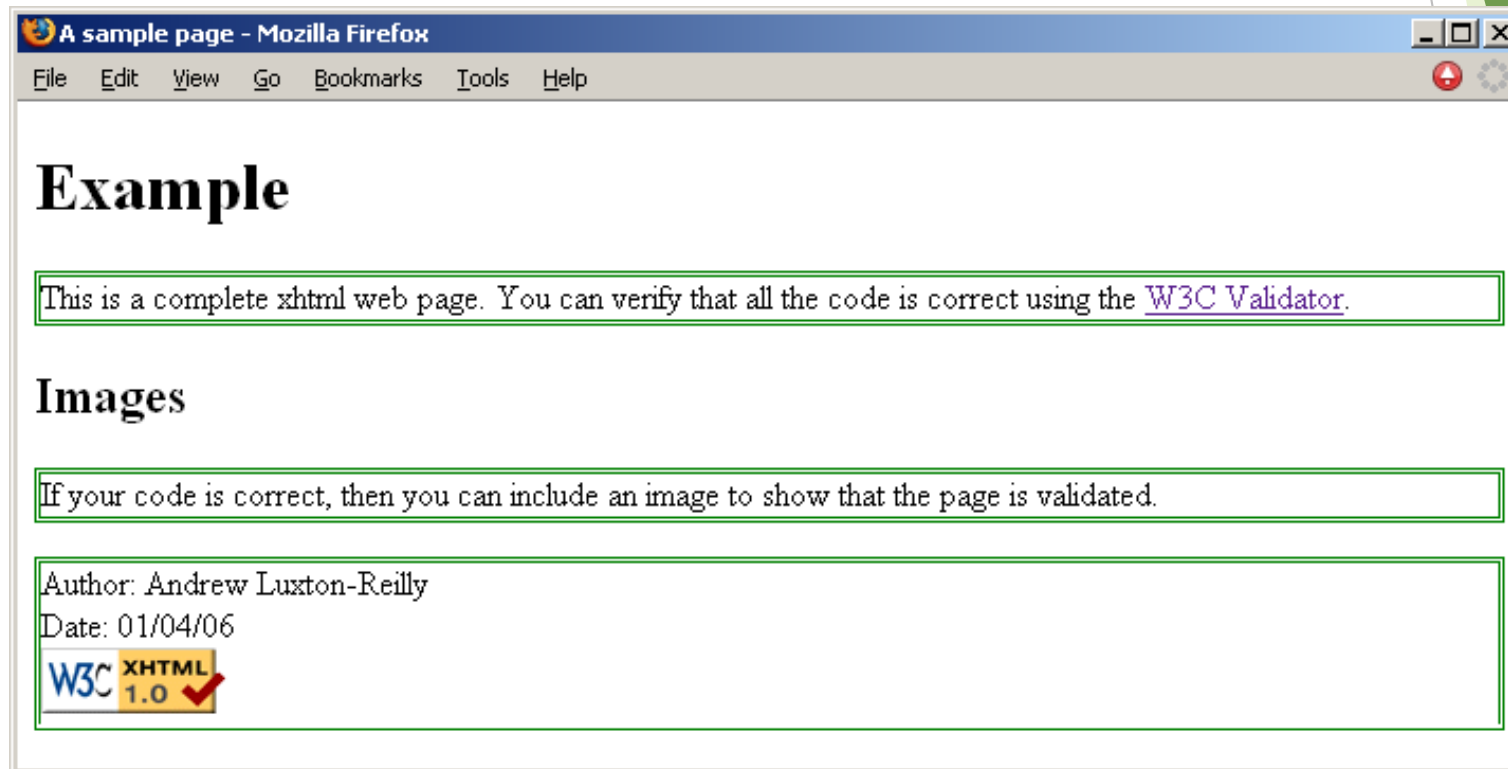
- `none` (default), `dotted`, `dashed`, `solid`, `double`, etc.

`border-width`

- `thin`, `medium`, `thick`, `length`

Borders

```
p
{
    border-color: green;
    border-style: double;
    border-width: medium;
}
```



Borders

- Can set borders individually for each side of the element:
 - **xxx = left, right, top, bottom**
- ▶ `border-xxx-color`
- As for `border-color`
- ▶ `border-xxx-style`
- As for `border-style`
- ▶ `border-xxx-width`
- As for `border-width`



Table Borders

- Property:
 - Border
- Value:
 - width style colour
 - E.g. 1px solid black
- Should be specified for all table elements:

```
table, tr, td {  
    border: 1px solid black;  
}
```