

COMPSCI 111/111G SS2020



HTML and CSS

Essential Tags

- **HTML5 requires the following tags to be in your html source file:**
 - html
 - head
 - title
 - body

Example Source Code

```
<!DOCTYPE html>

<html lang="en">

<head>
<meta charset="UTF-8">
<title>A sample page</title>
</head>

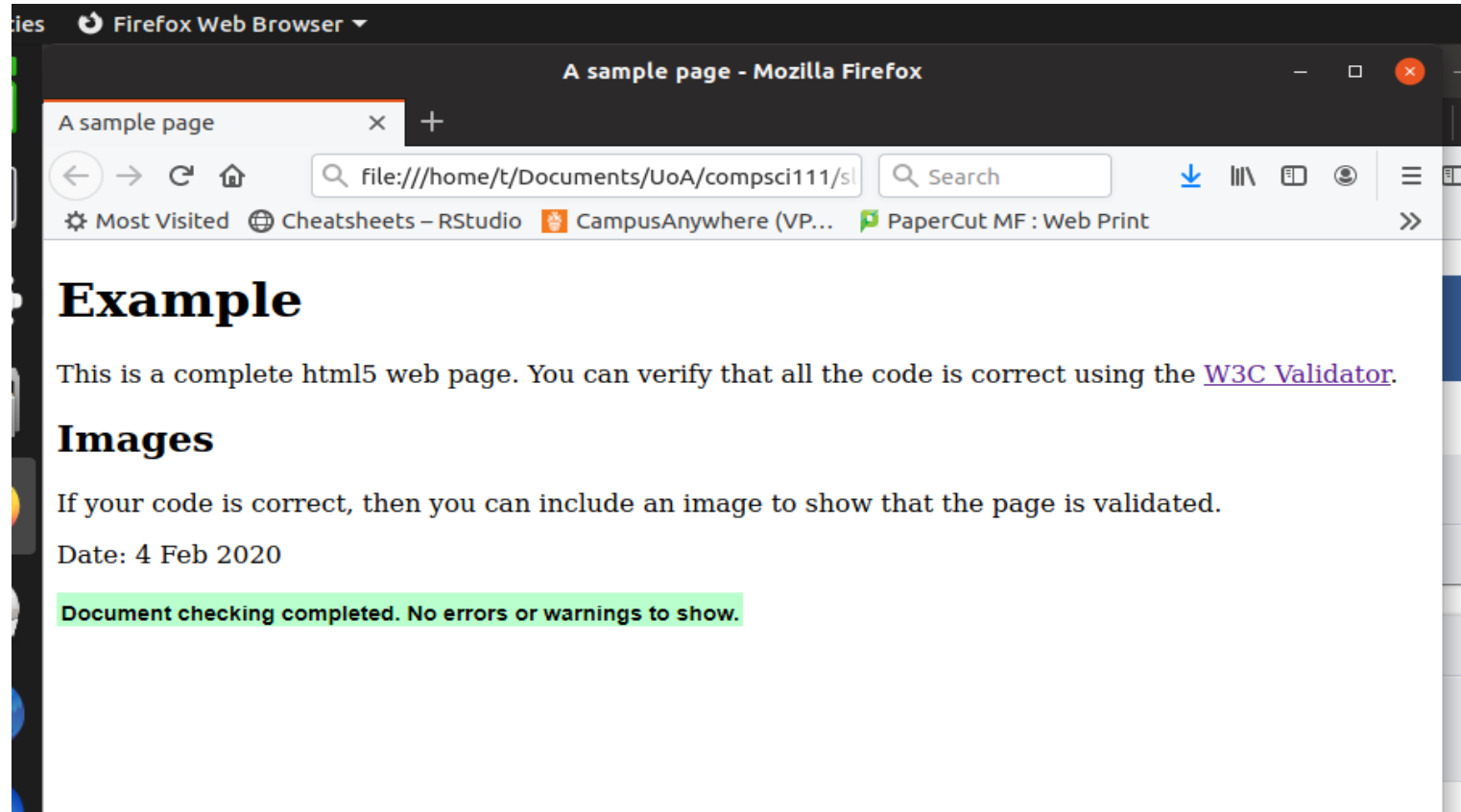
<body>
<h1>Example</h1>
<p>This is a complete html5 web page. You can verify that all
the code is correct using the
<a href="http://validator.w3.org">W3C Validator</a>.</p>

<h2>Images</h2>
<p>If your code is correct, then you can include an image to
show that the page is validated.</p>
<p>Date: 4 Feb 2020</p>
<p></p>

</body>

</html>
```

Resulting Web Page



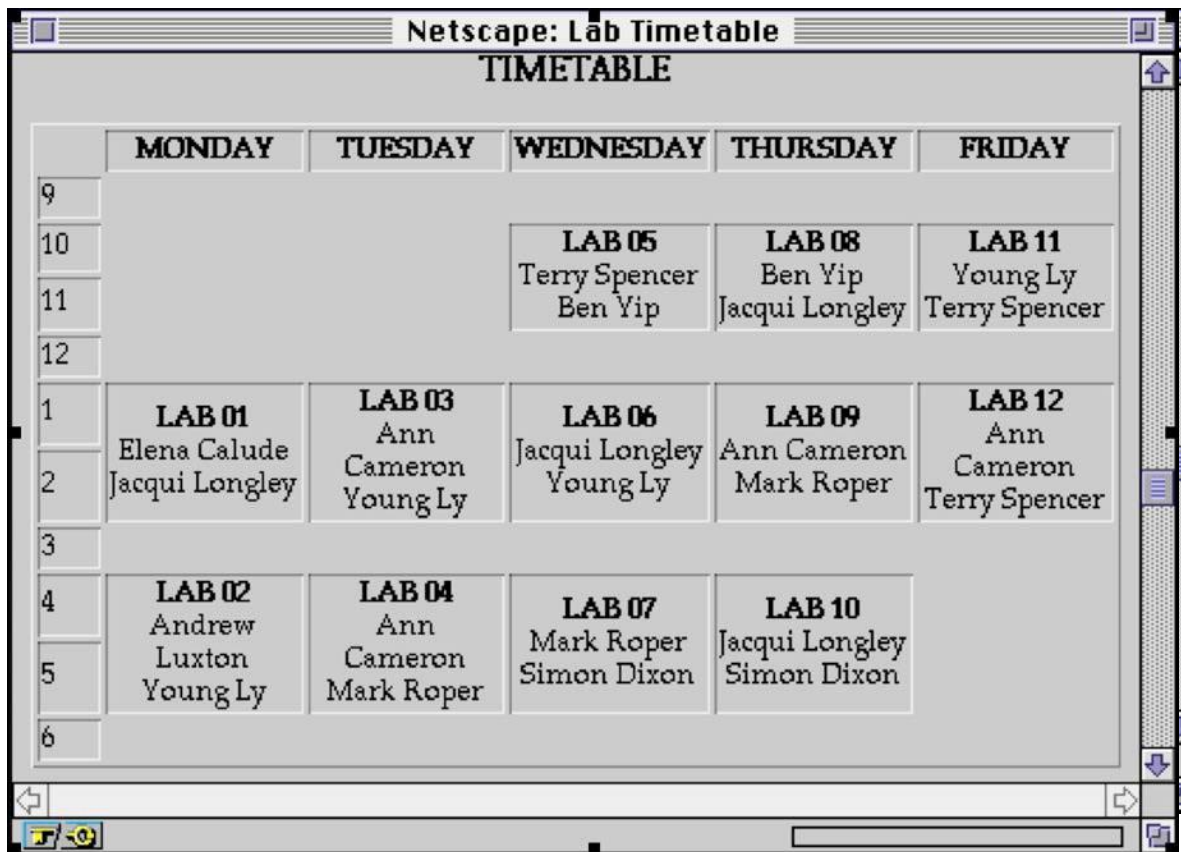
Today's lecture

- **Tables in HTML**
- **Style sheets**

Tables

<table>

- Used to format tables of information
- By default, there are no borders shown

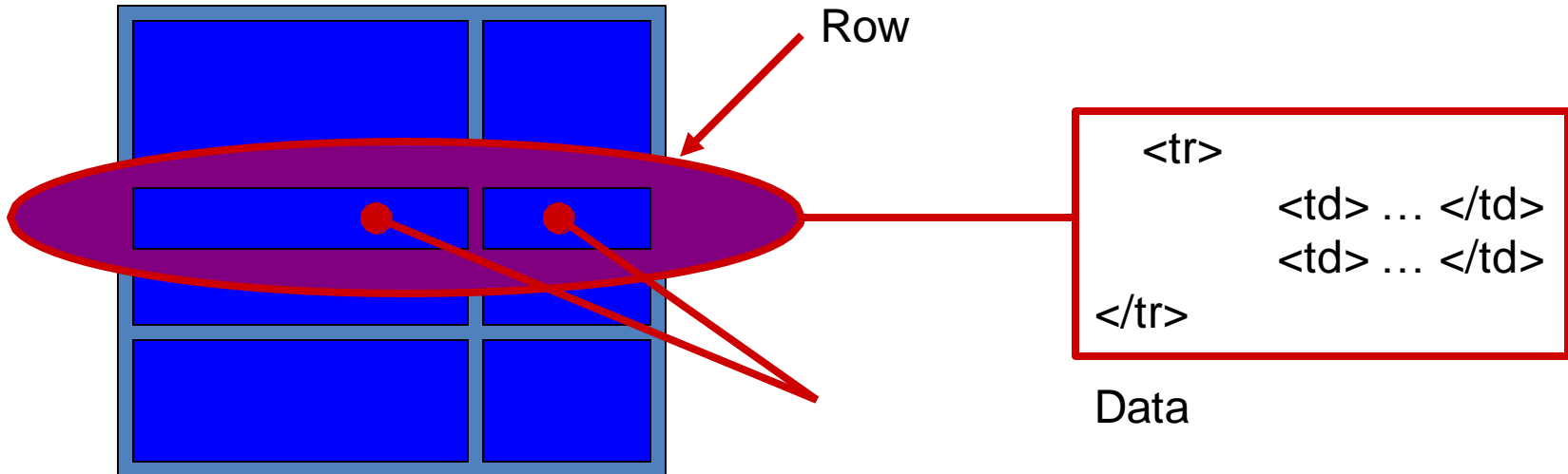


The screenshot shows a Netscape browser window titled "Netscape: Lab Timetable". The main content is a table with the following structure:

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
9					
10			LAB 05 Terry Spencer Ben Yip	LAB 08 Ben Yip Jacqui Longley	LAB 11 Young Ly Terry Spencer
11					
12					
1	LAB 01 Elena Calude Jacqui Longley	LAB 03 Ann Cameron Young Ly	LAB 06 Jacqui Longley Young Ly	LAB 09 Ann Cameron Mark Roper	LAB 12 Ann Cameron Terry Spencer
2					
3					
4	LAB 02 Andrew Luxton Young Ly	LAB 04 Ann Cameron Mark Roper	LAB 07 Mark Roper Simon Dixon	LAB 10 Jacqui Longley Simon Dixon	
5					
6					

Tags required to format Tables

Tags		
–	<code><table> ... </table></code>	Surrounds the entire table
	border attribute	Used to display table border
–	<code><tr> ... </tr></code>	Identifies a row in the table
–	<code><td> ... </td></code>	Each element/cell of data in the row



A simple table example

```
<html>
  <head>
    <title>TABLES</title>
  </head>
  <body>
    <p>What follows is a simple table</p>

    <table border="1px">
      <tr>
        <td>One row</td><td>Two Columns</td>
      </tr>
    </table>

  </body>
</html>
```



Table Exercise

Exercise 1: Write a fragment of HTML5 code that will generate a table with 2 rows and 1 column. The text in the first row should be “first row” and the text in the second row should be “second row”. The table should have a 1 pixel border.

Styles: Cascading Style Sheets

A style changes the way the HTML code is displayed

- Same page displayed using different CSS styles
- **Saves a lot of work.** It can control the layout of multiple web pages all at once.

Example

This is a complete html5 web page. You can verify that all the code is correct using the [W3C Validator](#).

Images

If your code is correct, then you can include an image to show that the page is validated.

Date: 4 Feb 2020

Document checking completed. No errors or warnings to show.

EXAMPLE

This is a complete html5 web page. You can verify that all the code is correct using the [W3C Validator](#).

IMAGES

If your code is correct, then you can include an image to show that the page is validated.

Date: 4 Feb 2020

Document checking completed. No errors or warnings to show.

<http://csszengarden.com>

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

Property **Value**

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

Selector

A diagram illustrating the components of a CSS rule. The rule is shown as 'h1 {color: green; }'. A red T-shaped bracket is positioned below 'h1', with the label 'Selector' centered underneath it. Another red T-shaped bracket is positioned below 'color:', with the label 'Property' centered above it. A third red T-shaped bracket is positioned below 'green;', with the label 'Value' centered above it.

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 HTML 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;
}
```

HTML 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 HTML 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;
}
```

HTML source code uses the style as follows:

```
<p id="footer"> Copyright 2006
</p>
```

CSS Exercise

Exercise 2: What is a “selector” in a CSS style?

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

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

```
<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/Cascading_Style_Sheets)

[http://en.wikipedia.org/wiki/Comparison of layout engines \(CSS\)](http://en.wikipedia.org/wiki/Comparison_of_layout_engines_(CSS))

CSS Exercises

- ***Exercise 3: Write a simple HTML page with the title “Simple CSS example”. The body of the page should contain a main heading with title "Test Page" single paragraph with the text “Hello World”. 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.***

CSS Exercises

Exercise 4: Put the following into decreasing order of priority. The item at the bottom of the list should have the lowest priority.

Internal style sheet, Browser default, Inline styles, External style sheet

<div> and

Two additional tags used with CSS

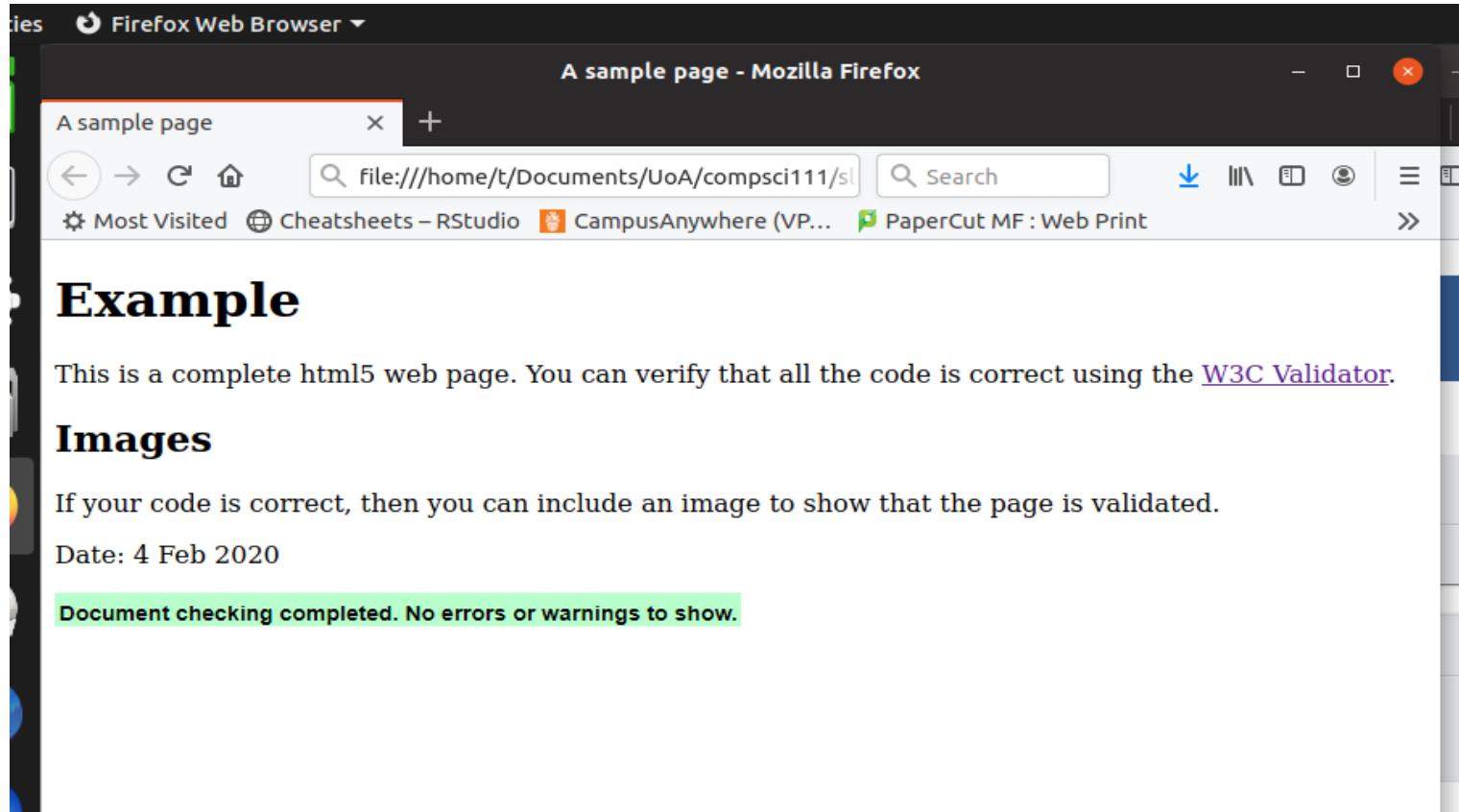
- Allow a style to be applied to arbitrary group of elements
- (such as block of content or part of text)

<div>

- Block-level tag
- May contain other block-level tags
- No required attributes, but style, class and id are common.

- Inline tag
- May contain other inline tags (often used as a container for some text)
- No required attributes, but style, class and id are common.

No CSS



CSS Example

```
<!DOCTYPE html>

<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>CSS Example</title>
  <link rel="stylesheet" href="mystyle1.css" type="text/css"></link>
</head>
<body>
  <h1>Example</h1>
  <p>This is a complete html5 web page. You can verify that all
  the code is correct using the <a href="http://validator.w3.org">W3C
  Validator</a>.</p>

  <h2>Images</h2>
  <p>If your code is correct, then you can include an image to show
  that the page is validated.</p>

  <div id="footer">
    <p><span class="emphasize">Date:</span> 4 Feb 2020 <br></p>
    <p></p>
  </div>

</body>
</html>
```

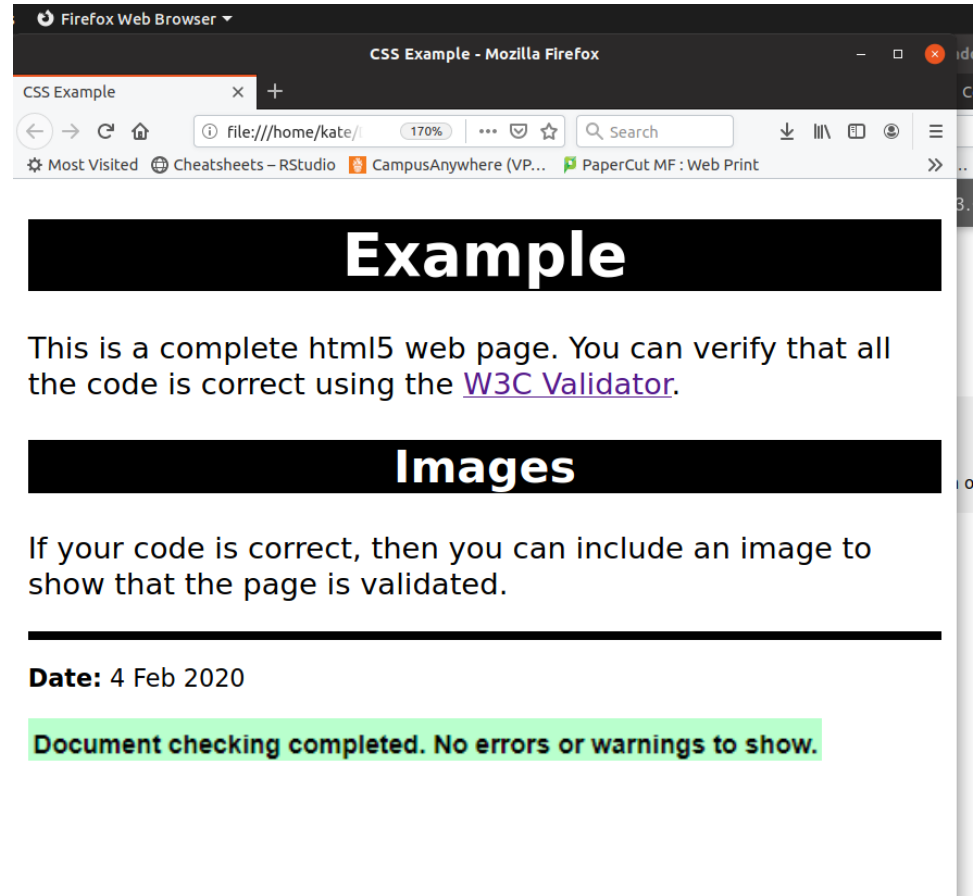
Same page with a style sheet

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

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

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

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



Same page, different style sheet

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

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

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

.emphasize{
font-style: italic;
}
```

