HTML and CSS

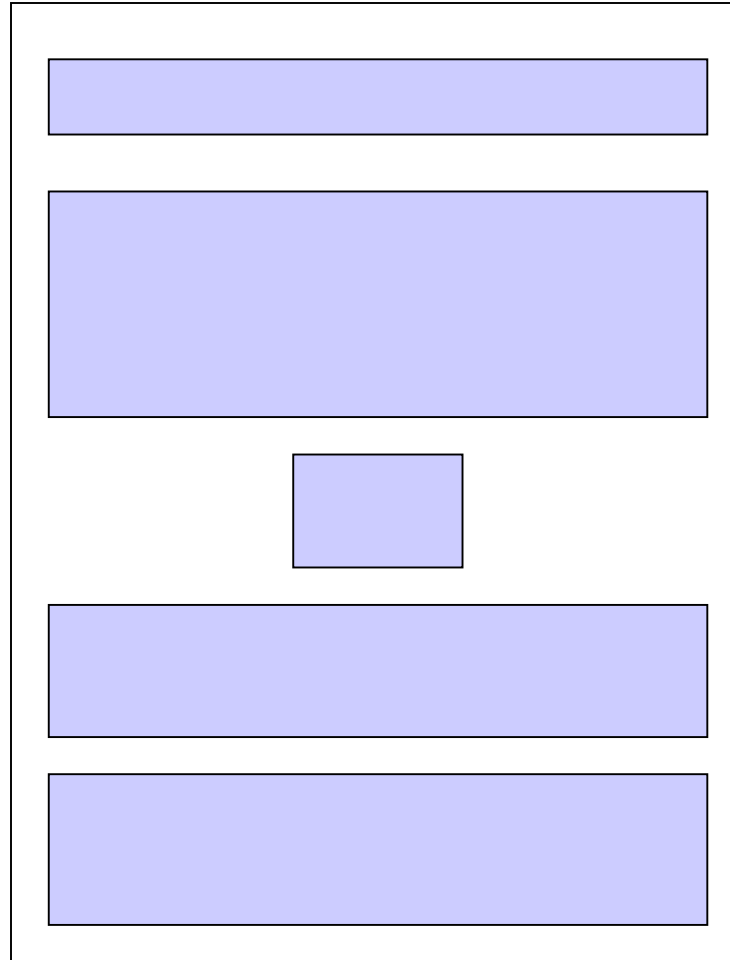Lecture 15 – COMPSCI111/111G SS 2018

Essential Tags

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

Block-level tags

Define the structure of a "block"

- Headings
- Paragraphs
- Lists
- Tables
- Preformatted text

Paragraphs

`<p>`

- ▶ Defines a paragraph of text

```
<html lang="en">
<head>
<meta charset="UTF-8">
<title>Introduction to tags</title>
</head>
<body>
<p>This is a very simple web page</p>
<p>
It contains two different paragraphs
of text.
</p>
</body>
</html>
```

Introduction to tags - Mozilla Firefox

File   Edit   View   Go   Bookmarks   Tools   Help

This is a very simple web page

It contains two different paragraphs of text.

Exercises

Create a complete HTML5 document with the title "Simple page". The only text that should appear on the page is "Hello World".

Headings

Six levels of headings

- `<h1>` # First level heading
- `<h2>` ## Second level heading
- `<h3>` ### Third level heading
- `<h4>` #### Fourth level heading
- `<h5>` ##### Fifth level heading
- `<h6>` ###### Sixth level heading

Headings

```
<html lang="en">
<head>
<meta charset="UTF-8">
<title>Introduction to tags</title>
</head>
<body>
<h1>A very simple web page</h1>
<p>It contains two paragraphs and two
headings</p>
<h2>Second section</h2>
<p>This section is less important</p>
</body>
</html>
```

Introduction to tags - Mozilla Firefox

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A very simple web page

It contains two paragraphs and two headings

Second section

This section is less important

Example of Head, Heading and Title

```html
<html>
<head>
    <meta charset="UTF-8">
    <title> Titles, headings and heads</title>
</head>
<body>
    <h1>Title</h1>
    <p>The title is part of the document head</p>

    <h2>Head</h2>
    <p>The head is not shown on the page</p>

    <h2>Heading</h2>
    <p>These come in different sizes
    and make up the content of the page.
    They should therefore be used only
    in the body.</p>
    <p>Do not get confused</p>
</body>
</html>
```
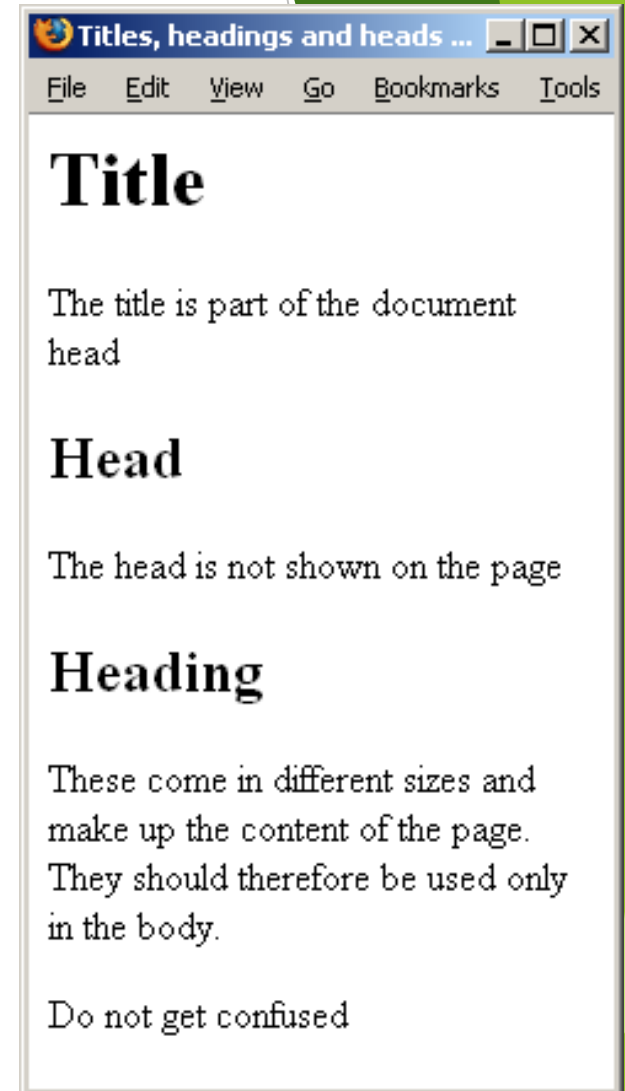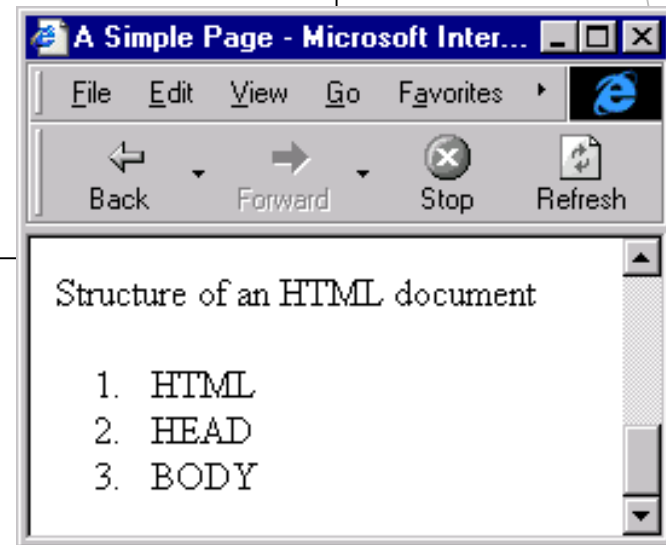

Titles, headings and heads ...

File Edit View Go Bookmarks Tools

Title

The title is part of the document head

Head

The head is not shown on the page

Heading

These come in different sizes and make up the content of the page. They should therefore be used only in the body.

Do not get confused

Ordered Lists

Ordered Lists

- ▶ Automatically numbered
- ▶ **
** ... **
** Contains the entire list
- ▶ **
** ... **
** Used for each list item

```
<p>Structure of an HTML document</p>
<ol>
<li>HTML</li>
<li>HEAD</li>
<li>BODY</li>
</ol>
```
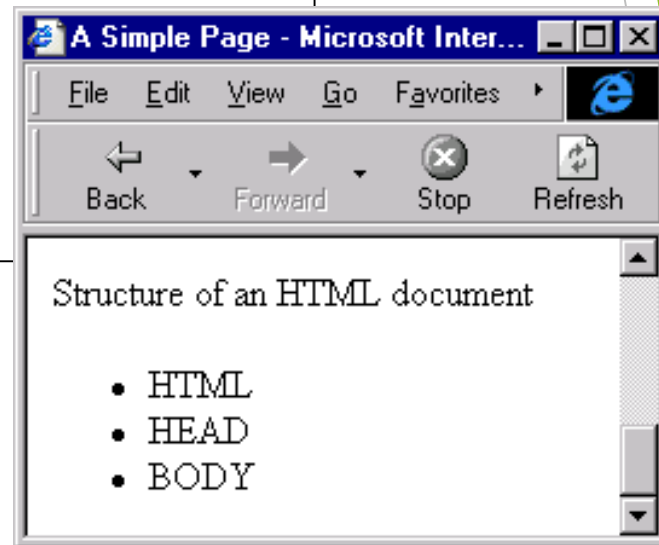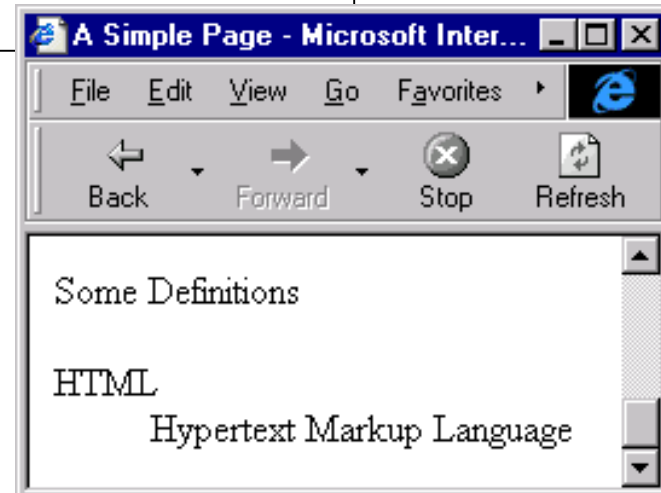
A Simple Page - Microsoft Inter...

File Edit View Go Favorites ▶

Back   Forward   Stop   Refresh

Structure of an HTML document

1. HTML
2. HEAD
3. BODY

Unordered Lists

Unordered Lists

- ▶ Bullet Points

- ▶ **
** ... **
**   Contains the entire list

- ▶ **
** ... **
**   Used for each list item

```
<p>Structure of an HTML document</p>
<ul>
<li>HTML</li>
<li>HEAD</li>
<li>BODY</li>
</ul>
```

Description Lists

Terms and explanations

- **<dl>** … **</dl>**   Contains the entire list
- **<dt>** … **</dt>**   Defines a term in a description list
- **<dd>** … **</dd>**   Is used to describe a term in a description list

```
<p>Some definitions</p>
<dl>
<dt>HTML</dt>
<dd>Hypertext Markup Language</dd>
</dl>
```

A Simple Page - Microsoft Inter...

File   Edit   View   Go   Favorites

Back   Forward   Stop   Refresh
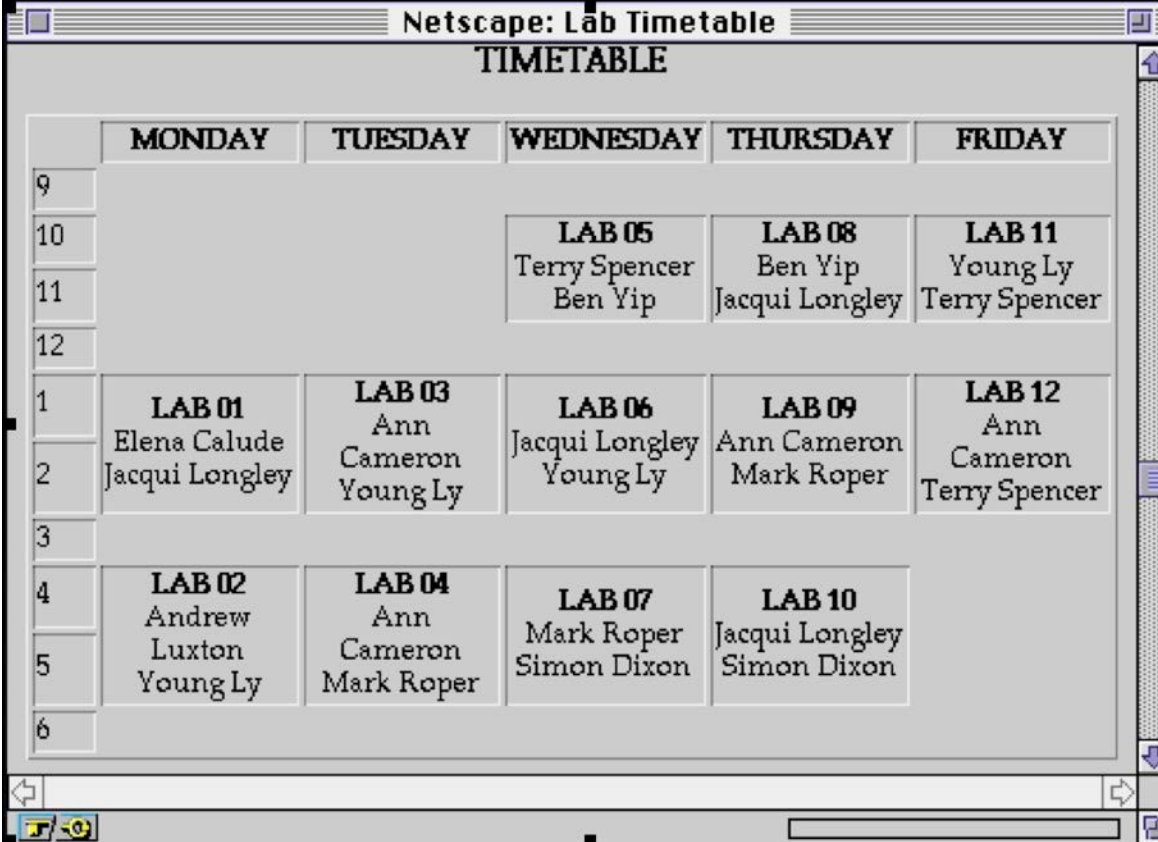
Some Definitions

HTML
        Hypertext Markup Language

Tables

`<table>`

– Used to format tables of information

– By default, there are no borders shown

Tags required to format Tables

Tags

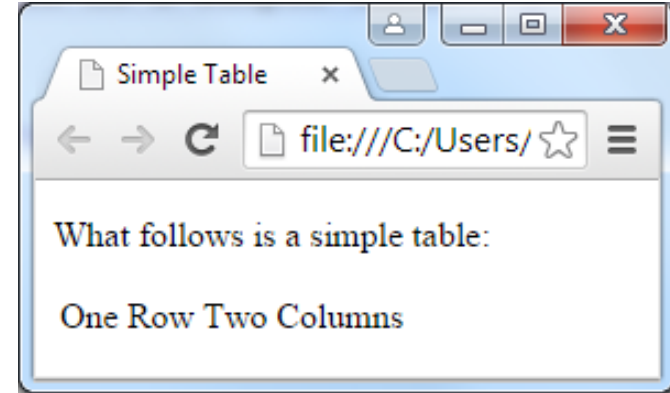- <table> ... </table>   Surrounds the entire table
- <tr> ... </tr>   Identifies a row in the table
- <td> ... </td>   Each element/cell of data in the row

Row

<tr>
      <td> ... </td>
      <td> ... </td>
</tr>

Data
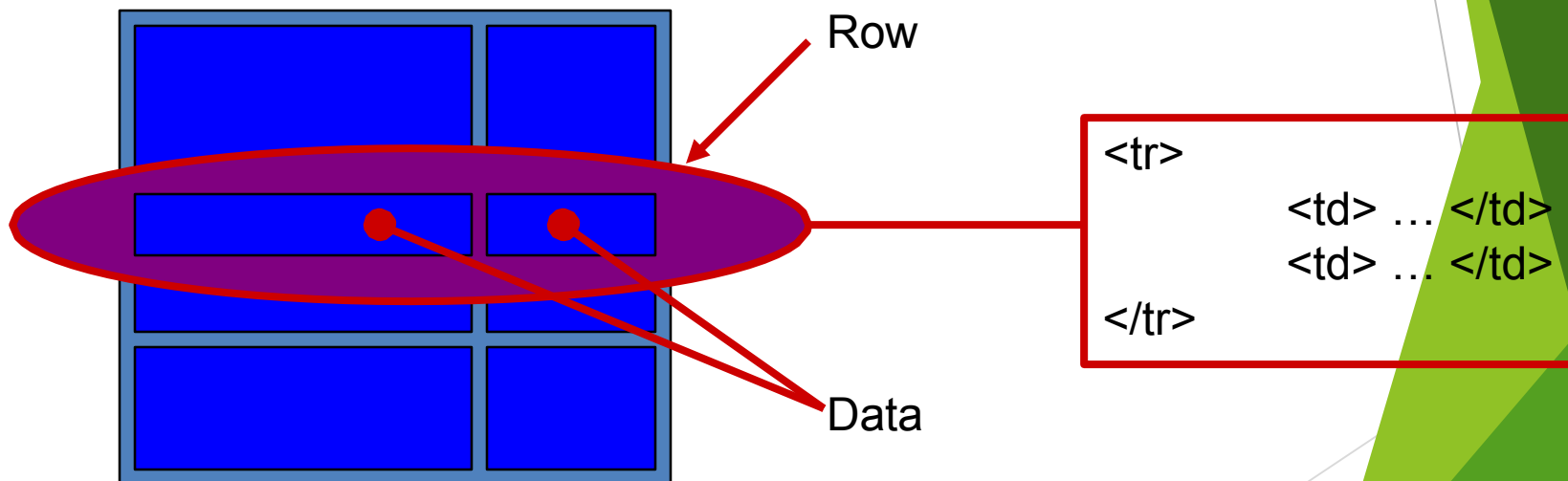
A simple table example

```
<html lang="en">
 <head>
   <meta charset="UTF-8">
      <title>Simple Table</title>
  </head>
  <body>
  <p>What follows is a simple table:</p>
  <table>
   <tr>
     <td>One Row</td><td>Two Columns</td>
    </tr>
  </table>
 </body>
</html>
```

Exercises

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".

Inline tags

- Appear within the blocks
  - Apply to words within paragraphs etc.

- Common inline tags
  - Line Breaks
  - Images
  - Hypertext References

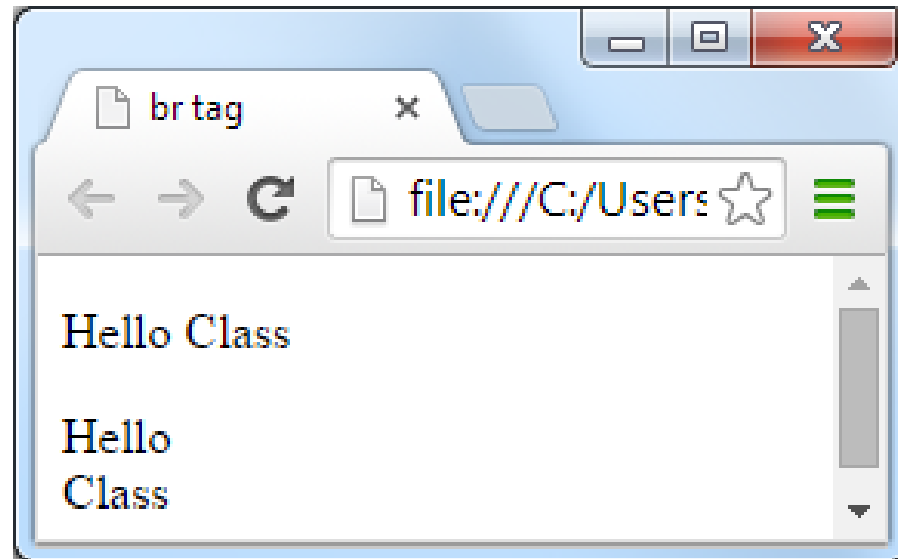# Empty tags

- Tags that apply at a given point
  - Do not format content
  - Only the opening tag is required.

- Line breaks
  - `<br>`

- Images
  - `<img>`

Line break

- Breaks a line
  - Same as hitting the Enter key
  - Use **
**

```
<p>Hello Class</p>
<p>Hello<br>Class</p>
```

Images

- Pages may contain images
    - But images are not plain text
    - Can't be inserted directly into HTML page

- Solution
    - Store the image on the internet (or locally on disk)
    - Tag contains the address of the image
    - Web browser loads image when required
    - Only use images the browser understands
    - GIF, JPG, PNG

Image tag

`<img>`

- ▶ Insert an image at this location

`src`

- ▶ The source file of the image
- ▶ Attribute that specifies the file name

`alt`

- ▶ Attribute to specify alternate text
- ▶ Displayed if the image can't load
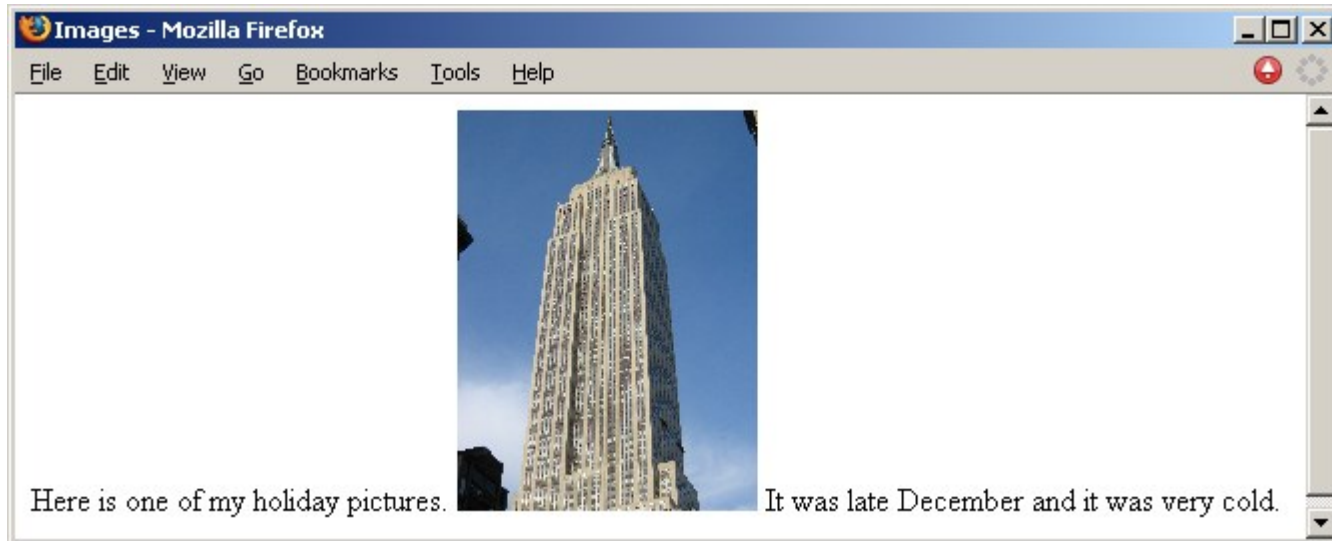- ▶ Important for people with visual impairment

`<img src="filename" alt="description">`

`<img>` example

An image is inserted inline, so it is used inside a block-level element (a paragraph in this example).

```
<p>
Here is one of my holiday pictures.
<img src="Empire.jpg" alt="The Empire State Building">
It was late December and it was very cold.
</p>
```

Hypertext reference

A link to another resource on the WWW

- ▶ References to other documents
- ▶ Pages, images, files, sections

`<a>`

- ▶ **Anchor tag**

`href`

- ▶ Attribute used to specify the destination of the link
- ▶ URL

```
<a href="…url…">link text</a>
```

URLs

Fully specified

- ▶ Protocol
- ▶ Host name
- ▶ Path
- ▶ File

Relative

- ▶ Omit the first parts
- ▶ Path and file
- ▶ File

```
http://www.cs.auckland.ac.nz/courses/compsci111/index.html
/courses/compsci111/index.html
lectures/index.html
index.html
```

Exercises

What HTML5 code is required to create a hypertext reference that links to a page at the location:

http://www.cs.auckland.ac.nz/courses/compsci111/

The underlined link on the page should be the text "111 home page".

```html
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title>Simple Page</title>
</head>
<body>
<p>
<a href="http://www.cs.auckland.ac.nz/courses/compsci111/">
111 home page</a>
</p>
</body>
</html>
```
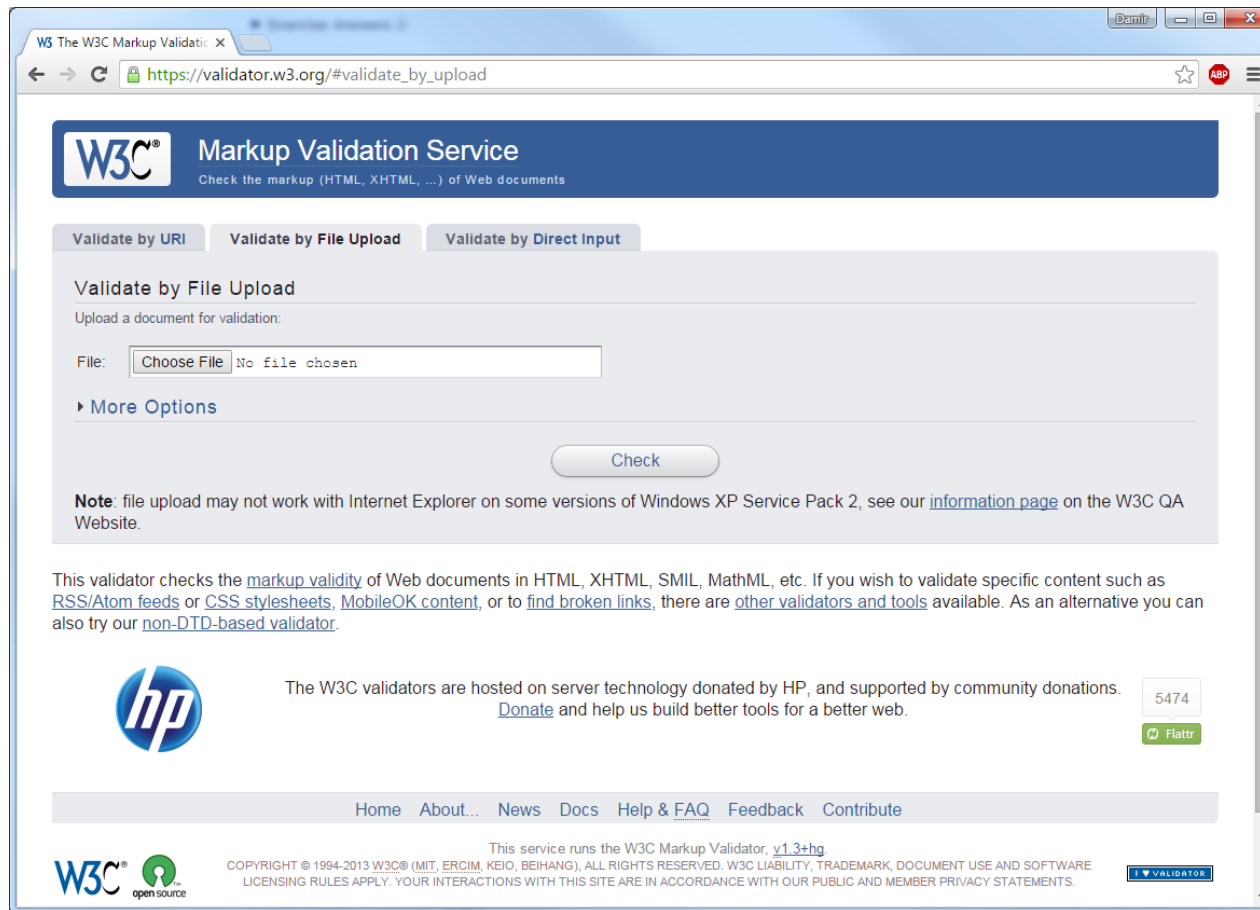
Validated Code

- Online system to check correctness of code
  - Provided by W3C
  - http://validator.w3.org

Example

```
<!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, you will get this message showing that
your page has validated.</p>
<p>
<img src="validated.png" alt="Validated html5">
</p>
<p>
Author: Damir Azhar<br>
Date: 19/01/15<br>
</p>
</body>
</html>
```
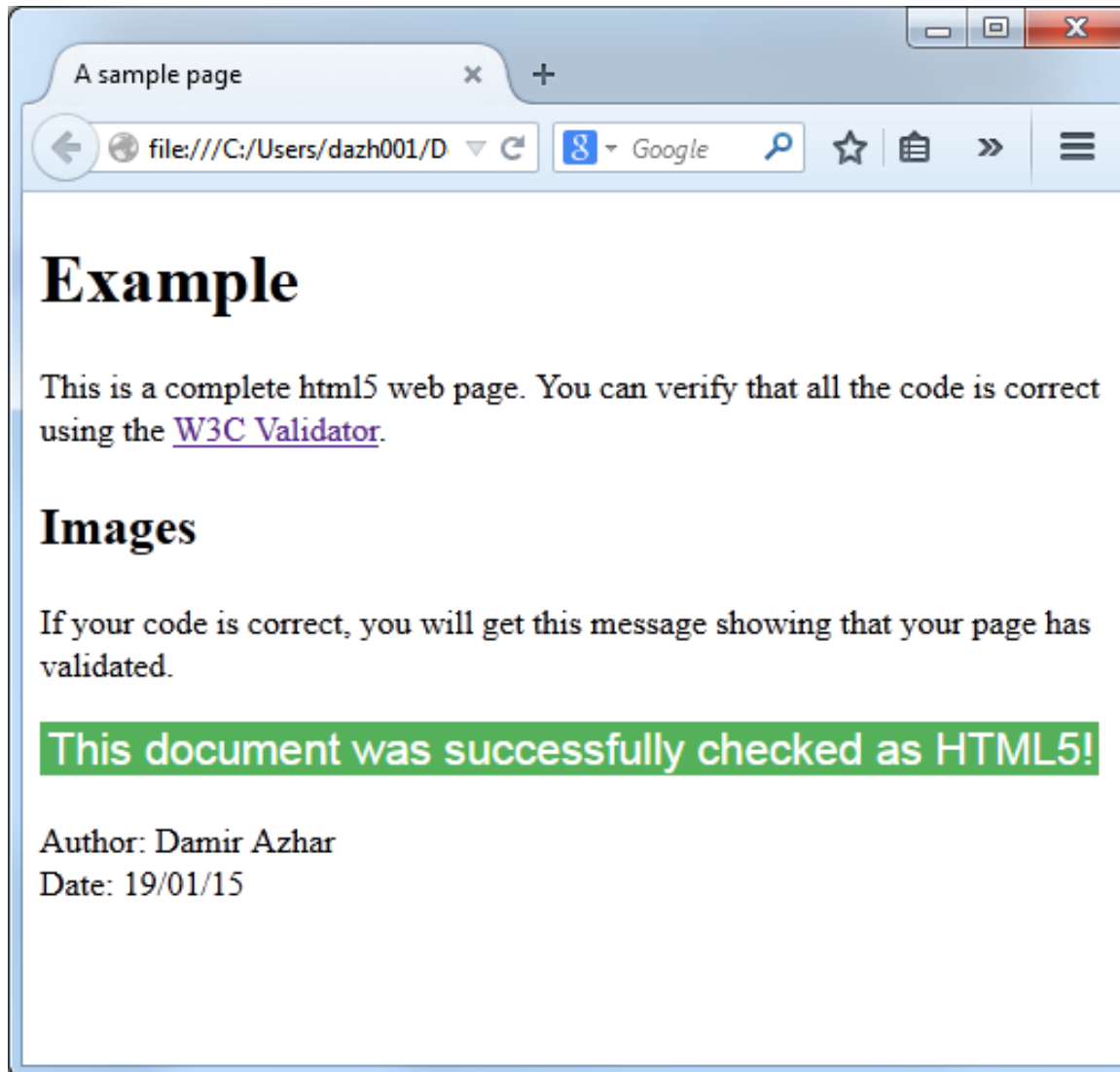
Example page

Sections

- **<section>** tag defines a section in a HTML5 document.

  - Can be used to split a web page into different sections.

- Is an example of a semantic element.

  - An element that clearly defines its content to both the browser and the developer.

<section> example

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title>Section Tag Example</title>
</head>
<body>
<h1>About Me</h1>

<section>
<h2>Work</h2>
<p>Most of my work centres around COMPSCI 111
where I:</p>
<ul>
<li>Lecture</li>
<li>Run labs</li>
</ul>
</section>

<section>
<h2>Interests</h2>
<p>My interests include:</p>
<ul>
<li>Gaming</li>
<li>Reading</li>
</ul>
</section>

</body>
</html>
```