

# HTML and CSS

Lecture 15 - COMPSCI111/111G SS 2018



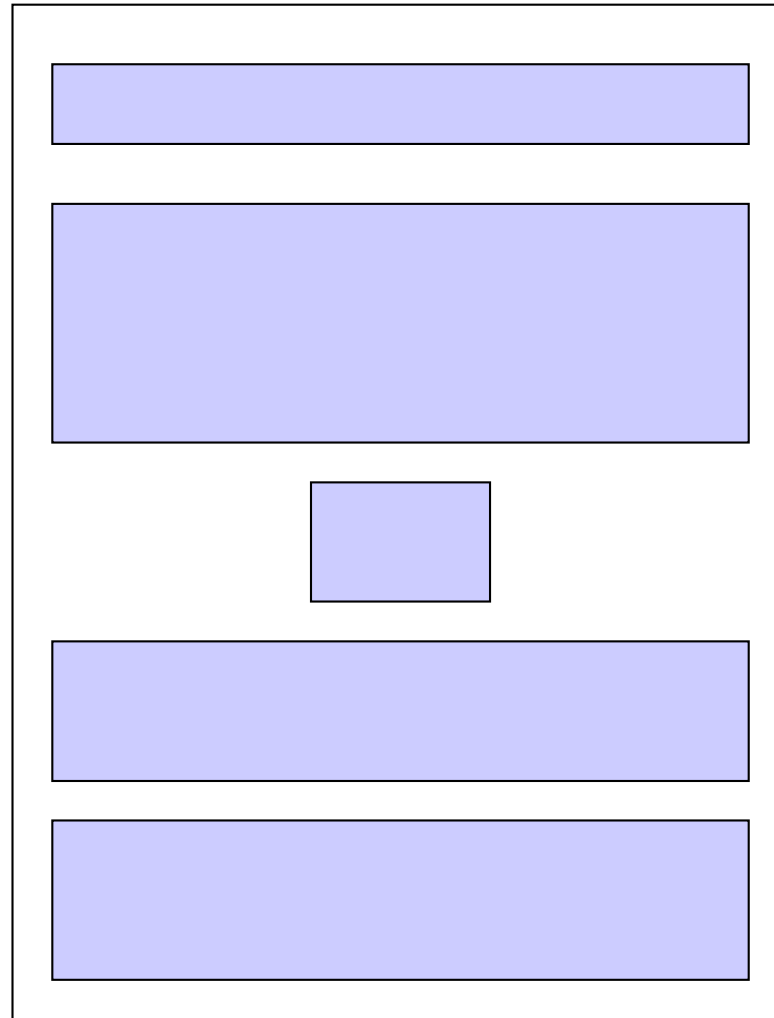
# Essential Tags

- **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>
```



# Exercises

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

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
<title>Simple Page</title>
</head>
<body>
<p>Hello World</p>
</body>
</html>
```

# 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>
```

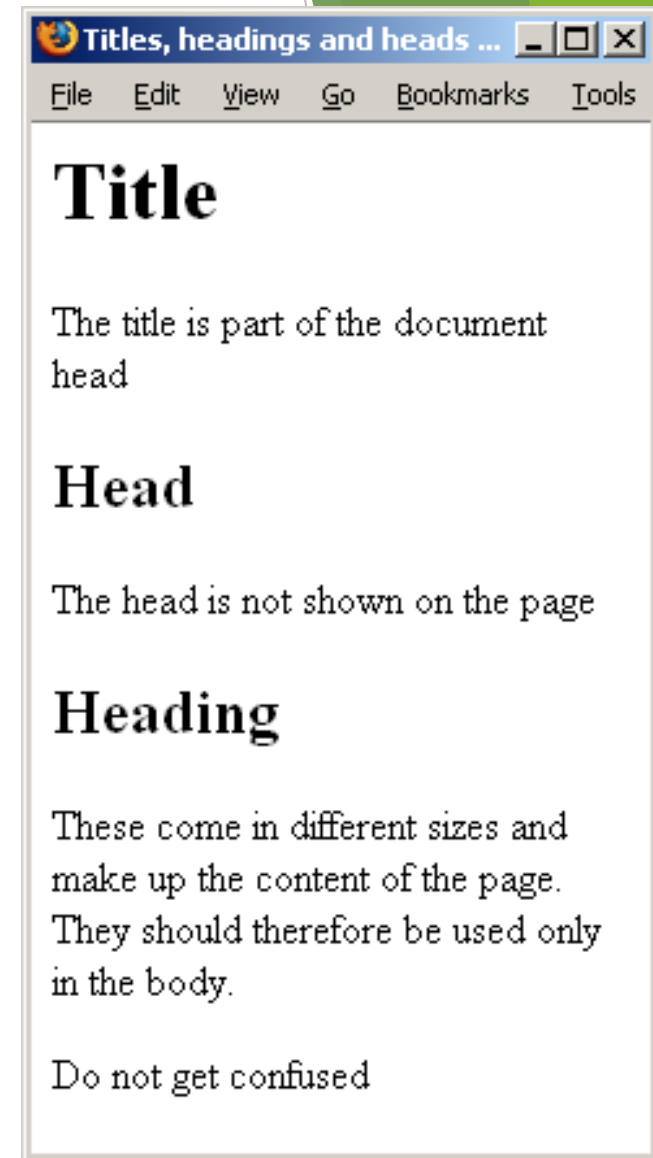


# Example of Head, Heading and Title

```
<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>
```



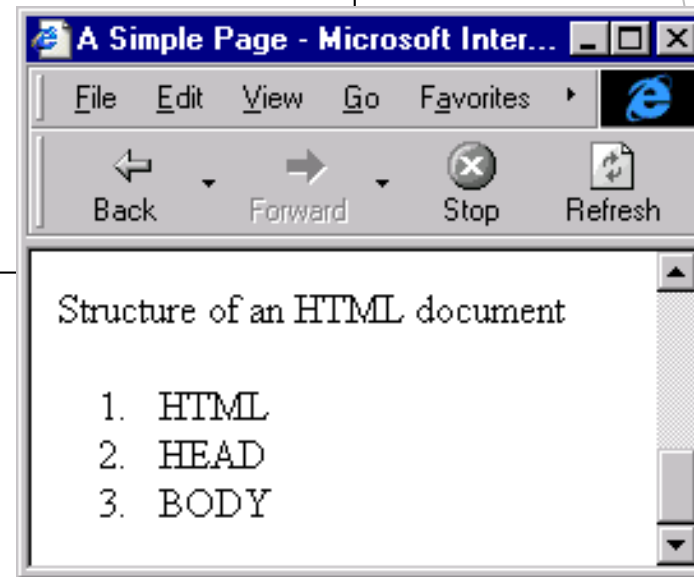


# Ordered Lists

## Ordered Lists

- ▶ Automatically numbered
- ▶ `<ol> ... </ol>` Contains the entire list
- ▶ `<li> ... </li>` Used for each list item

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

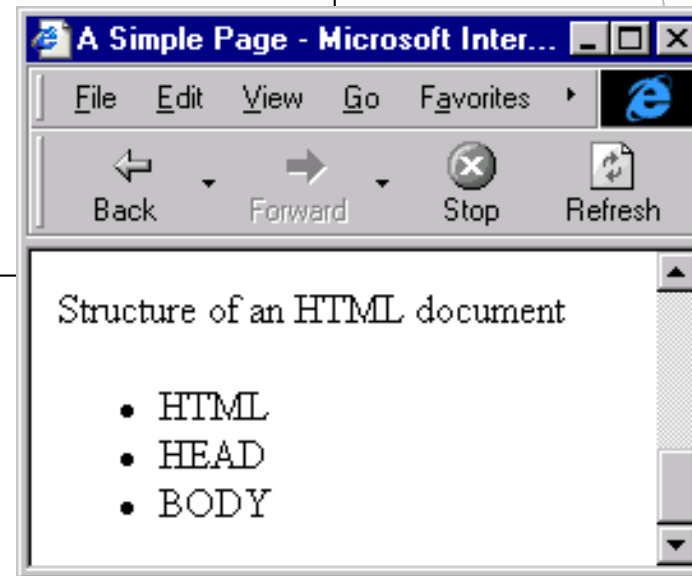


# Unordered Lists

## Unordered Lists

- ▶ Bullet Points
- ▶ `<ul> ... </ul>` Contains the entire list
- ▶ `<li> ... </li>` Used for each list item

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

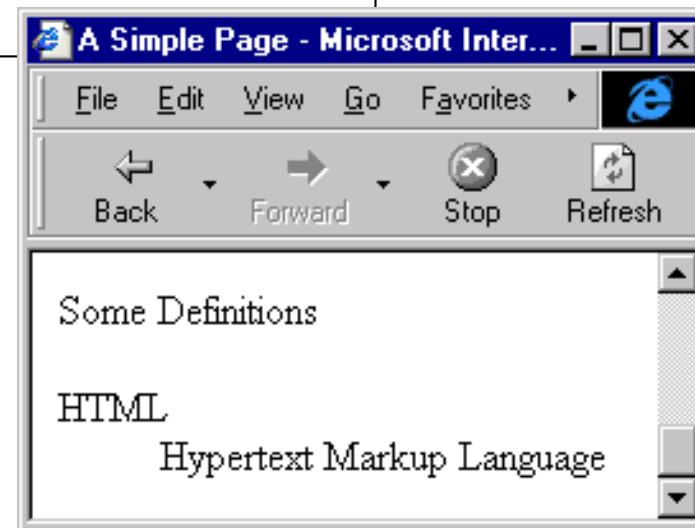


# Description Lists

## Terms and explanations

- ▶ `<d1> ... </d1>` 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

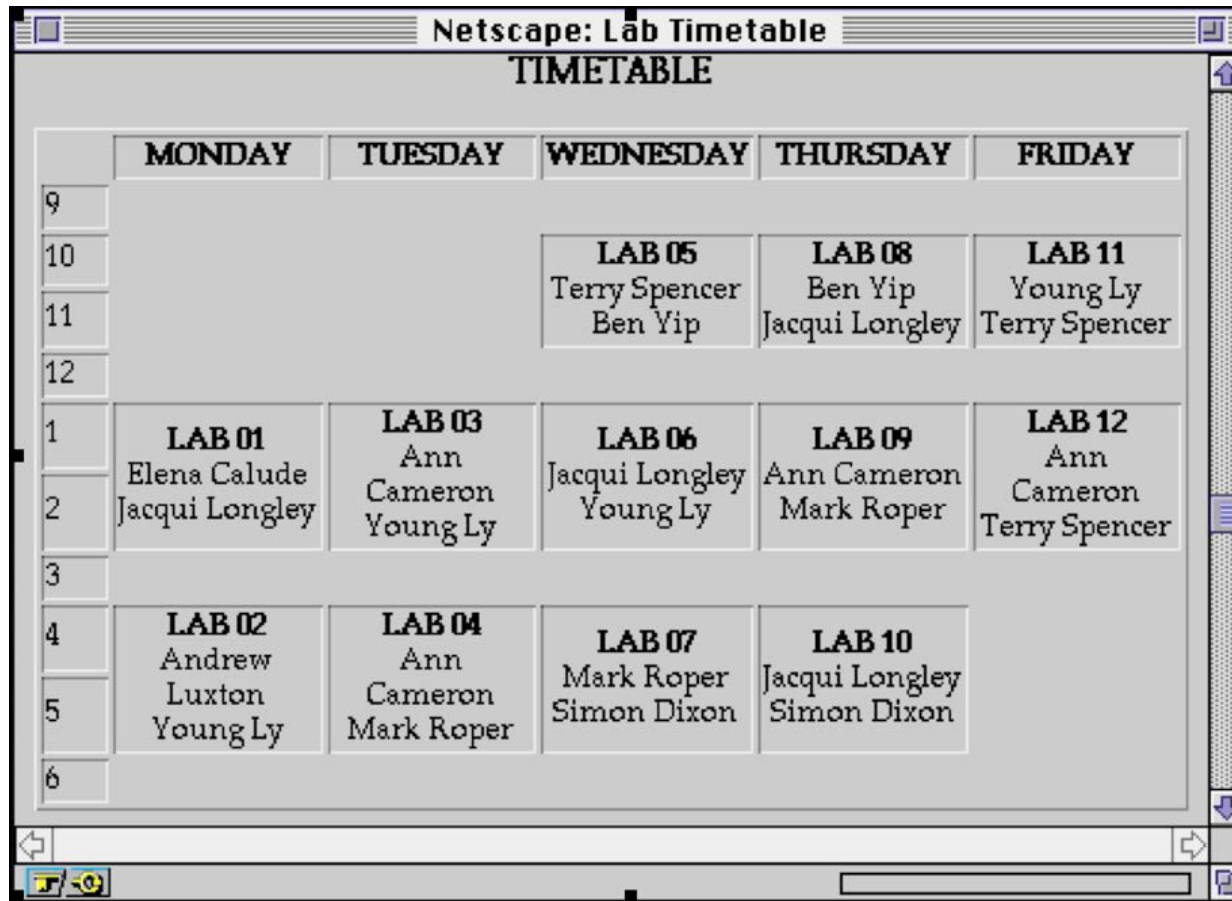
```
<p>Some definitions</p>
<d1>
<dt>HTML</dt>
<dd>Hypertext Markup Language</dd>
</d1>
```



# Tables

## <table>

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



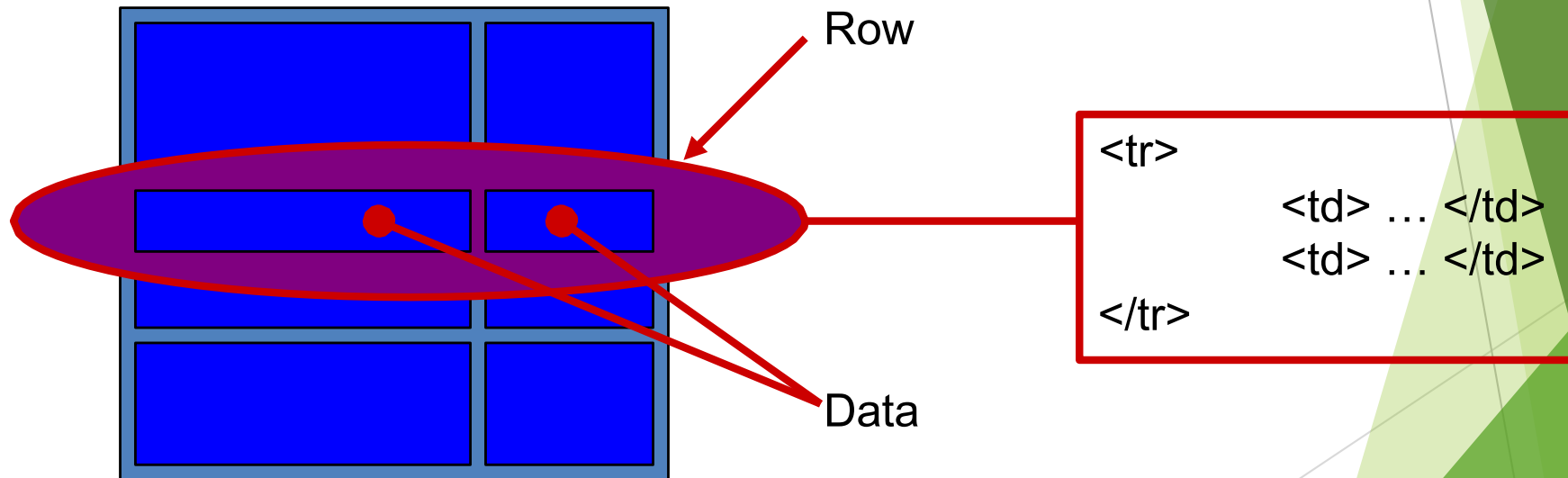
The screenshot shows a Netscape browser window titled "Netscape: Lab Timetable". The main content is a table with the following structure:

	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

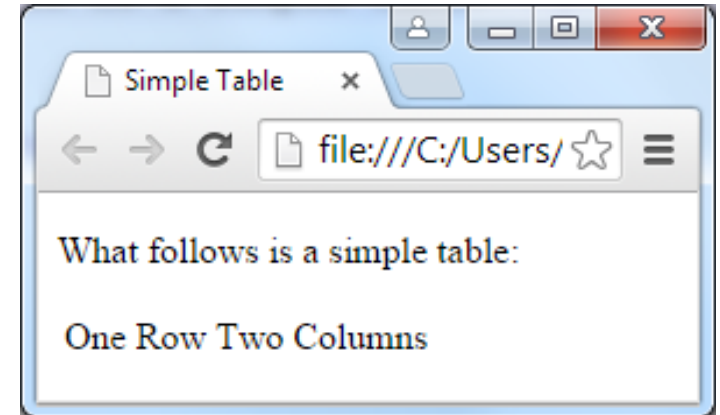
## Tags

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



# 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”.

```
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <title>Simple Table</title>
  </head>
  <body>
    <table>
      <tr><td>first row</td></tr>
      <tr><td>second row</td></tr>
    </table>
  </body>
</html>
```

# Inline tags

- ▶ Appear within the blocks
  - ▶ Apply to words within paragraphs etc.
- ▶ Common inline tags
  - ▶ Line Breaks
  - ▶ Images
  - ▶ Hypertext References



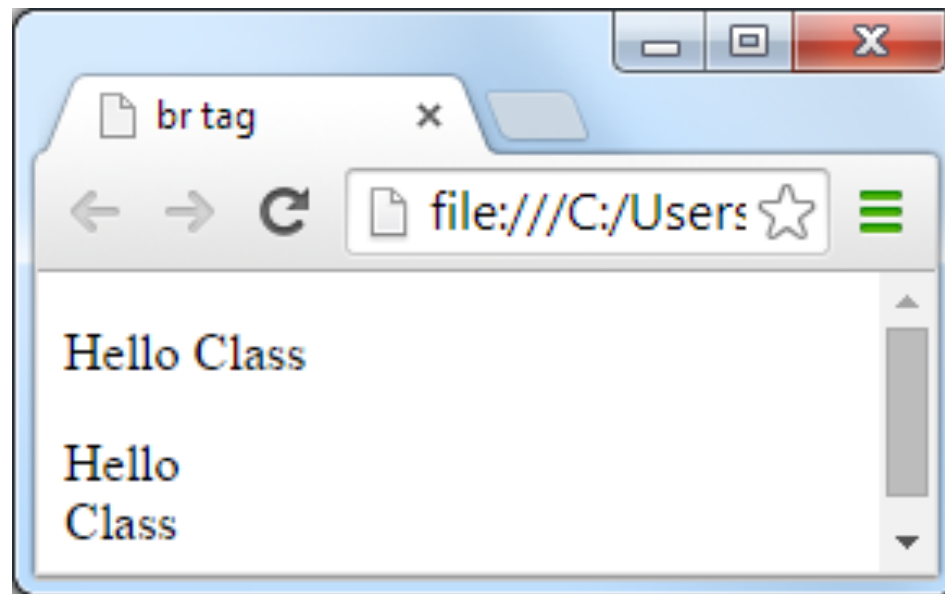
# Empty tags

- ▶ 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 `<br>`

```
<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

```

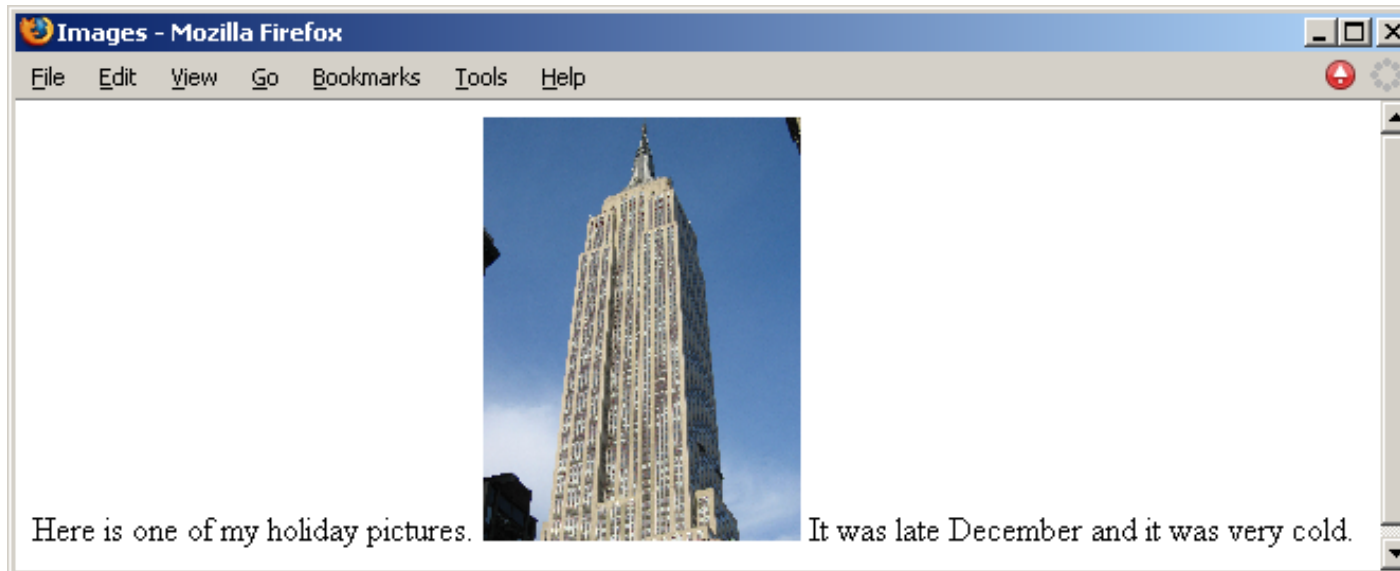
```

# <img> 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.

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/>

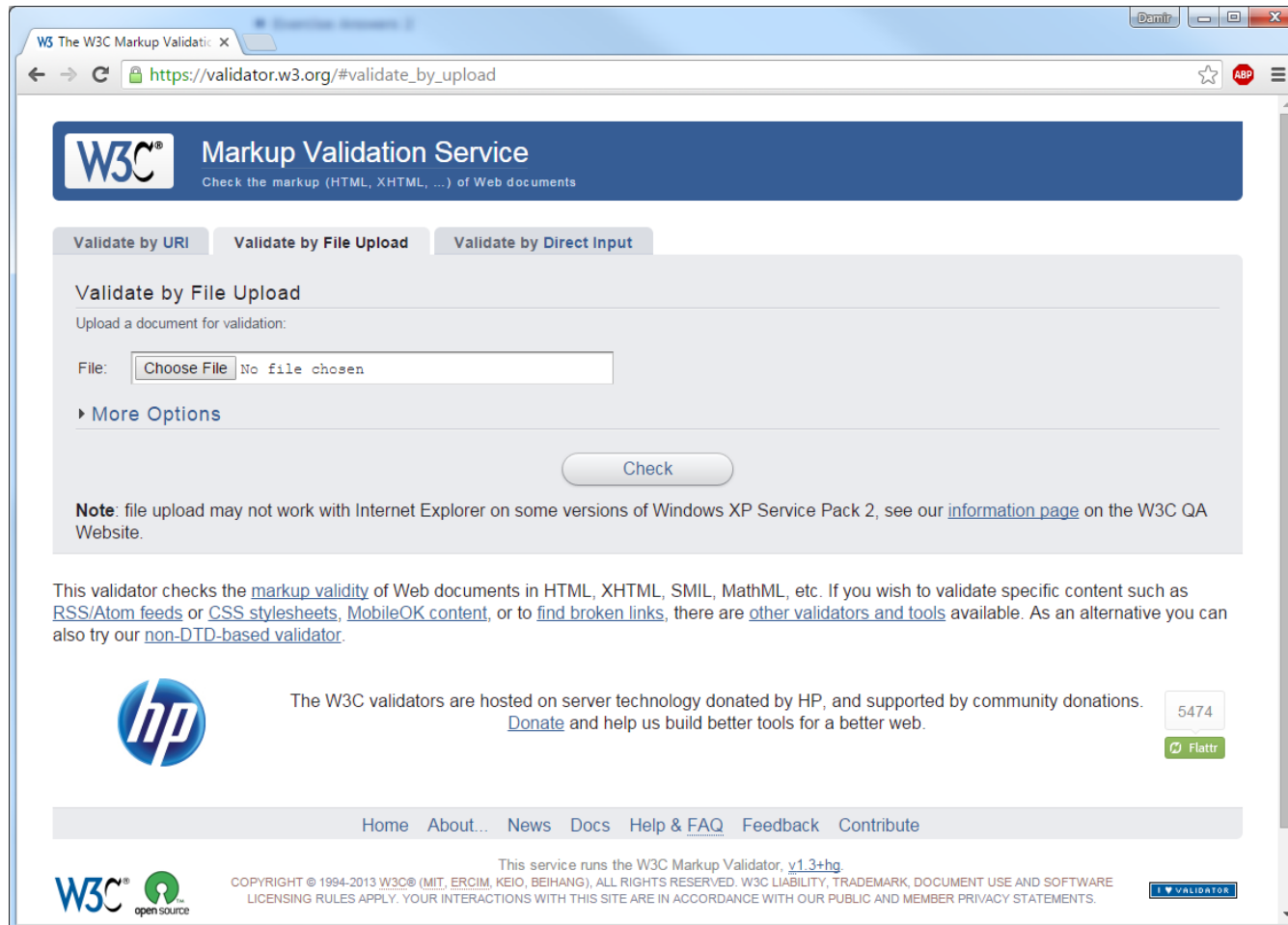
The underlined link on the page should be the text “111 home page”.

```
<!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>



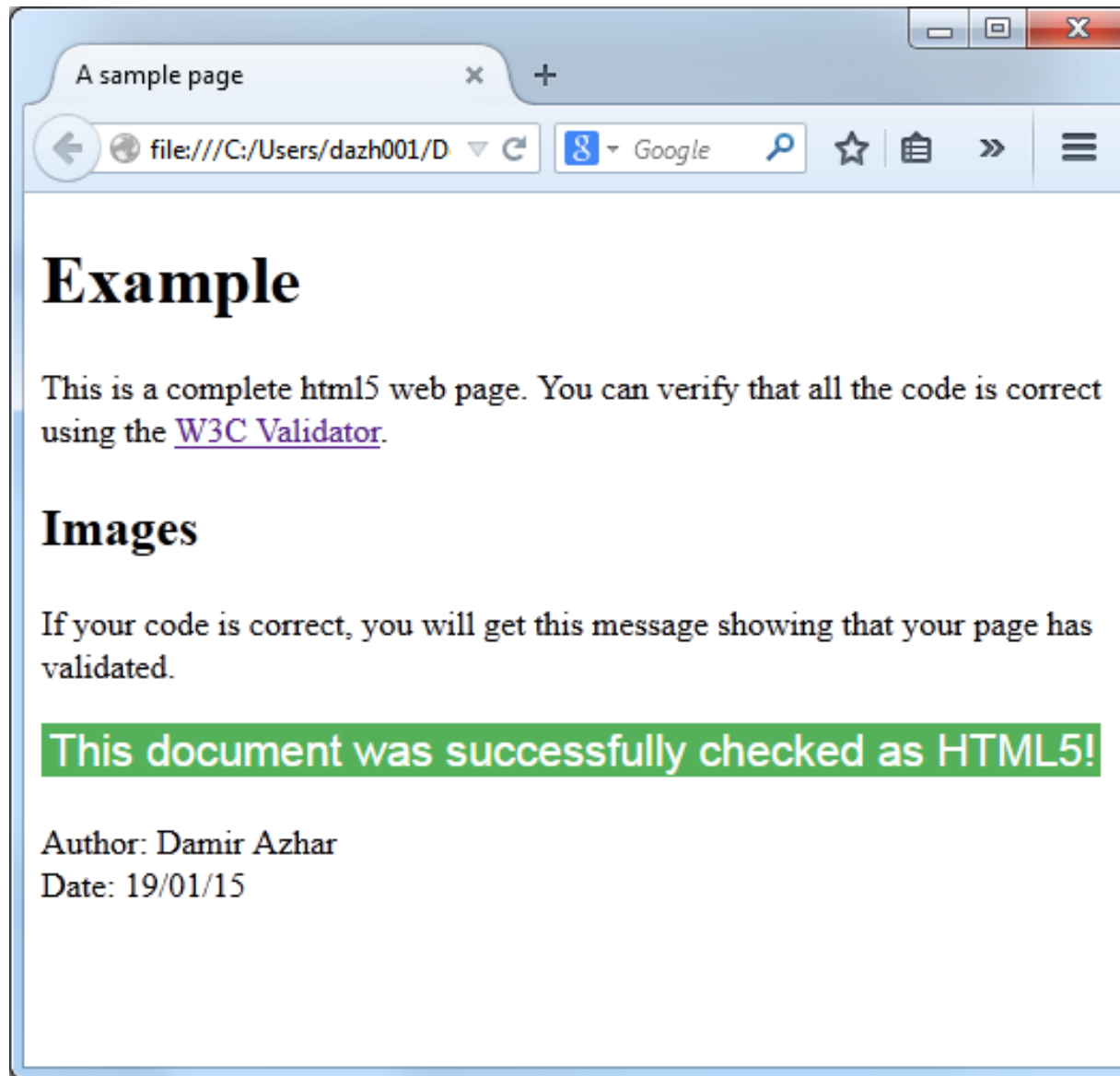
The screenshot shows the W3C Markup Validation Service website. The browser address bar displays [https://validator.w3.org/#validate\\_by\\_upload](https://validator.w3.org/#validate_by_upload). The page features a blue header with the W3C logo and the text "Markup Validation Service" and "Check the markup (HTML, XHTML, ...) of Web documents". Below the header, there are three tabs: "Validate by URI", "Validate by File Upload" (which is selected), and "Validate by Direct Input". The "Validate by File Upload" section includes the instruction "Upload a document for validation:" and a file selection interface with a "Choose File" button and the text "No file chosen". A "Check" button is positioned below the file selection area. A note states: "Note: file upload may not work with Internet Explorer on some versions of Windows XP Service Pack 2, see our [information page](#) on the W3C QA Website." Below this, a paragraph explains that the validator checks the markup validity of Web documents in HTML, XHTML, SMIL, MathML, etc., and provides links to other validators and tools. At the bottom, there is an HP logo, a statement that the W3C validators are hosted on server technology donated by HP, and a "Donate" link. A Flattr button shows a count of 5474. The footer contains navigation links (Home, About..., News, Docs, Help & FAQ, Feedback, Contribute), the W3C logo with "open source" text, copyright information (COPYRIGHT © 1994-2013 W3C® (MIT, ERCIM, KEIO, BEIHANG), ALL RIGHTS RESERVED. W3C LIABILITY, TRADEMARK, DOCUMENT USE AND SOFTWARE LICENSING RULES APPLY. YOUR INTERACTIONS WITH THIS SITE ARE IN ACCORDANCE WITH OUR PUBLIC AND MEMBER PRIVACY STATEMENTS.), and a "VALIDATOR" logo.

# 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>

</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>
```

