

COMPSCI 111 / 111G

Mastering Cyberspace:

An introduction to practical computing

HTML5

Markup Languages

Heading
Formatting Plain text contains all the content which will appear on the page.

Paragraph
Using a variety of formatting styles makes the text much easier to read and can be used to emphasise points.

Emphasise

Markup Tags (HTML)

```
<h1>Formatting.</h1> <p>Plain text contains all the content which will appear on the page.</p>  
<p> Using a variety of formatting styles makes the text much <em>easier to read</em> and can be used to <em>emphasise points.</em></p>
```

Formatting

Final Appearance

Plain text contains all the content which will appear on the page.

Using a variety of formatting styles makes the text much *easier to read* and can be used to *emphasise points*.

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Markup Languages

- **Markup**
 - Indicates the formatting that should be used to display the page
- **Markup Language**
 - A markup language consists of special tags which are placed in the text
 - Specifies how to format the text
- **Hypertext Markup Language (HTML)**
 - Used to format web pages
 - Contains hypertext information (links)
 - Written in ASCII / Unicode
 - Embedded format codes (tags)

HTML5 01

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Browser Wars

- **HTML 1.0**
 - Tim Berners Lee (1993)
- **Browsers added extra features**
 - Internet Explorer had unique tags
 - Netscape Navigator had unique tags
- **Major problem**
 - What tags should a publisher use?
 - How can this problem be resolved?

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

HTML5 01

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Development of HTML

- **HTML 2.0**
 - Internet Engineering Task Force standard (1995)
- **HTML 3.2 / HTML 4.0**
 - W3 Consortium recommendation (1997)
- **HTML 4.01**
 - W3C recommendation (1999)
- **XHTML 1.0**
 - W3C recommendation (2000)
- **HTML5**
 - Fifth revision of HTML standard. Standardized October 2014.

<http://en.wikipedia.org/wiki/Html>

Document Type Definition

- **Defines which standard is being used for the page**
 - We use HTML5
- **Should appear at the top of the file**

```
<!DOCTYPE html>
```

Encoding methods

- **Different character sets used to encode the page**
 - ASCII
 - UTF-8
 - Unicode
- **Need to tell the browser which encoding is used**
 - Located in the *head* of the document.

```
<meta charset="UTF-8">
```

Use at the start of every file

- **Copy and paste the code exactly as it appears**
 - Will be provided in tests and exams

```
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
</head>
```

HTML Source Code

- **Code used by the browser to display the page**
 - White space is ignored
- **Comments**
 - Ignored by the browser
 - Allow you to document your code
 - `<!-- Put your comment here -->`
- **Layout**
 - Use tidy layout where possible
 - Make code easy to understand
 - Make code easy to maintain/ modify
 - Use whitespace and comments to help

Overview of tags

- **Markup achieved with “tags”**
 - Enclosed with angle brackets `< ... >`
 - Use lower case
 - Most come in pairs `<tag> ... </tag>`
- **Tag usually applies to text between start and end tag**

This word is in `italics`

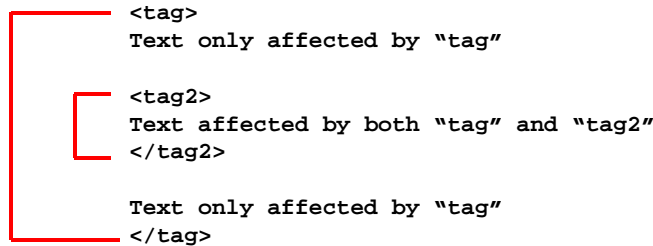


Attributes

- **Some tags require additional information**
 - Properties or attributes of the tag
 - `<tag property="value"> </tag>`

Nested Tags

- **Tags must be correctly nested**
 - Cannot close an open tag until all the open tags that it affects are also closed



```
<tag>
Text only affected by "tag"
  <tag2>
Text affected by both "tag" and "tag2"
  </tag2>
Text only affected by "tag"
</tag>
```

Essential tags

<html>

- Encloses the entire document
- Specifies that the document uses html

```
<html>
.
.
.
.
.
.
.
.
.
.
</html>
```

Essential tags

<head>

- Contains information for the browser
 - E.g. character encoding used
- Does not contain any content to be displayed on the page

```
<html>
  <head>
    <meta charset="UTF-8">
  </head>
  .
  .
  .
  .
  .
  .
  .
  .
  .
  .
</html>
```

Essential tags

<body>

- Contains all the content that will appear on the page

```
<html>
  <head>
    <meta charset="UTF-8">
  </head>
  <body>
    .
    .
    .
    .
  </body>
</html>
```

Essential tags

<title>

- Part of the head
- Specifies the title to be used by the browser
- Name of the window
- Used in navigation (bookmarks, history, etc.)

```
<html>
  <head>
    <meta charset="UTF-8">
    <title>Introduction to tags</title>
  </head>
  <body>
    .
    .
    .
  </body>
</html>
```

HTML5 Exercise

Exercise 1: What does HTML stand for?

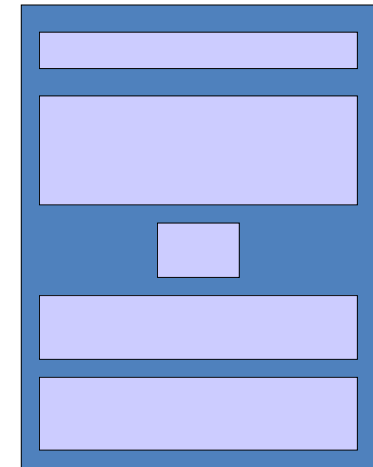
Exercise 2: What is a document type definition used for?

Exercise 3: What is “white space”?

Block-level tags

Define the structure of a “block”

- Headings
- Paragraphs
- Lists
- Tables
- Preformatted text



Paragraphs

`<p>`

- Defines a paragraph of text

```
<html>
<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>
```



HTML5 Exercise

- **Exercise 4: 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>
<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>
```

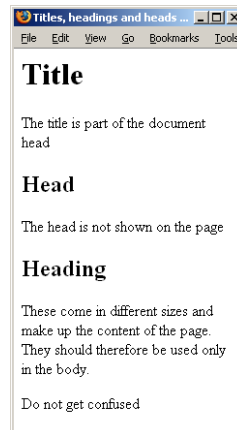


Example of Head, Heading and Title

```
<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>
```

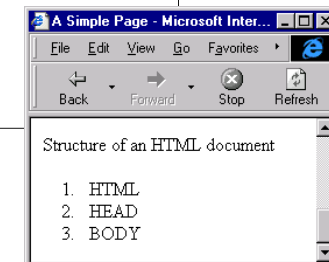


Ordered Lists

Ordered Lists

- Automatically numbered
- ` ... ` 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>
```

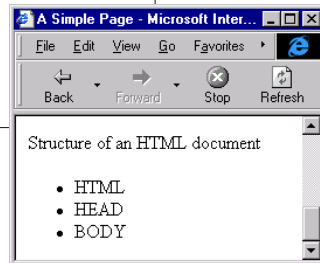


Unordered Lists

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>
```

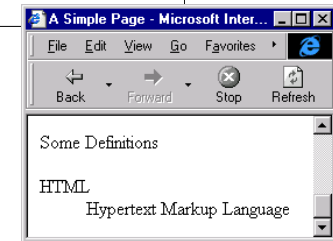


Description Lists

Terms and explanations

- `<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>`

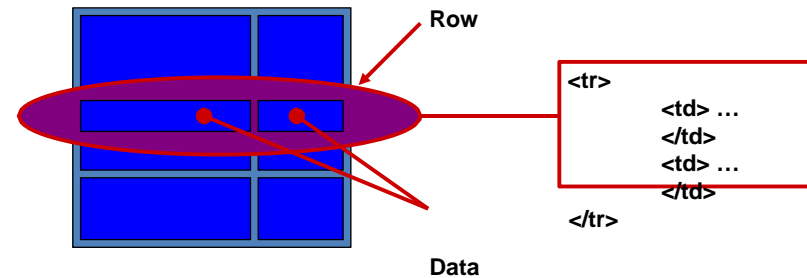
- Used to format tables of information
- By default, there are no borders shown

| | 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>
<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>
```



Table Exercise

Exercise: 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".