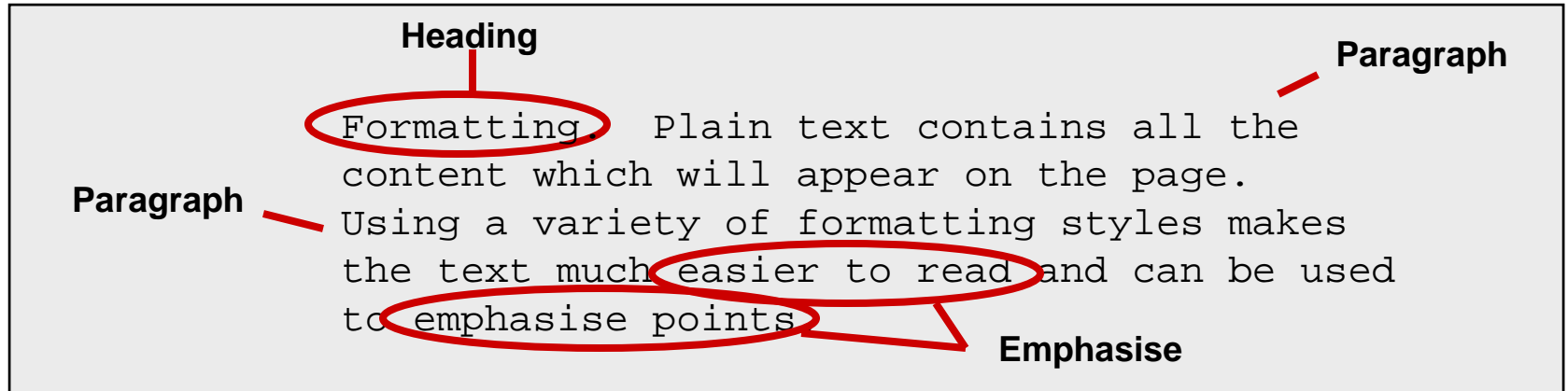


COMPSCI 111 / 111G

*Mastering Cyberspace:
An introduction to practical computing*

HTML5

Markup Languages



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

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*.

Final Appearance

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)

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?

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.

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`

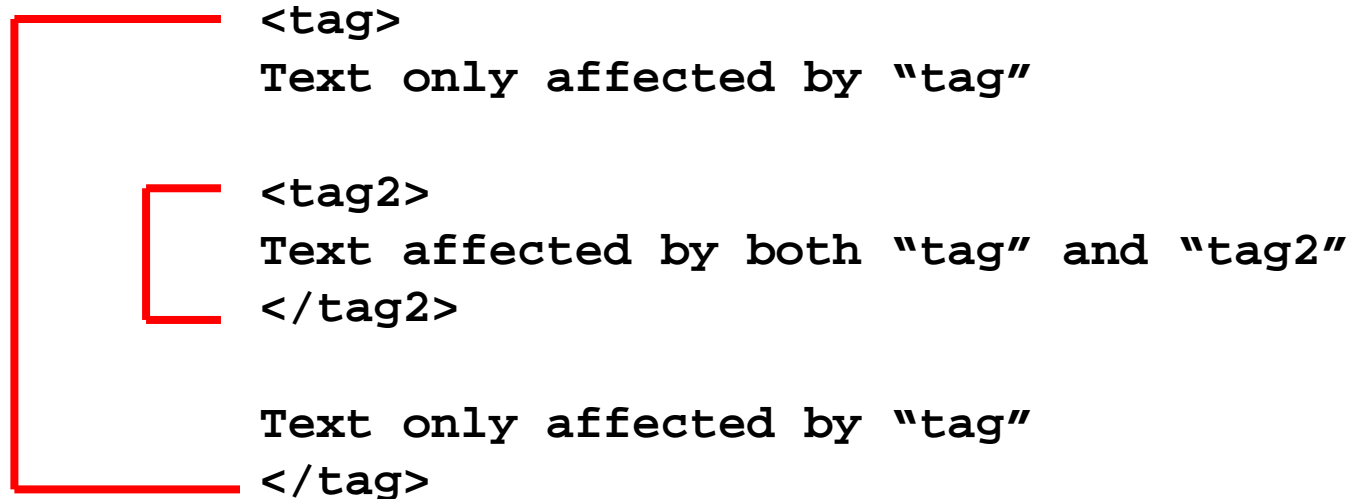


Attributes

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

Nested Tags

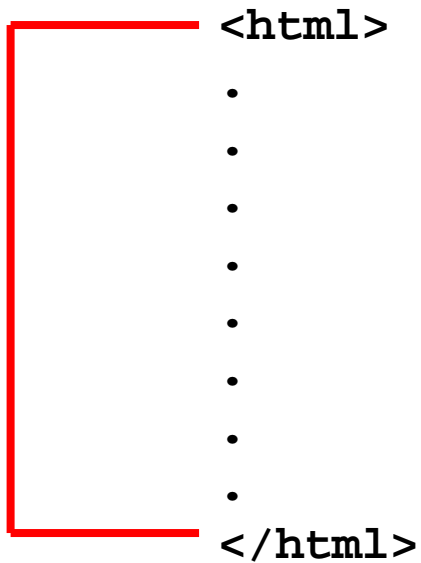
- **Tags must be correctly nested**
 - Cannot close an open tag until all the open tags that it affects are also closed



Essential tags

`<html>`

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



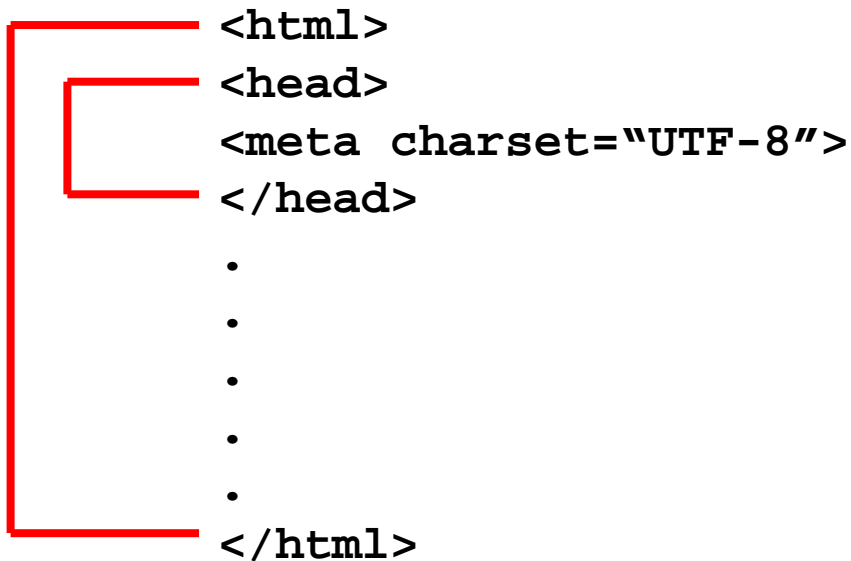
A diagram illustrating the `<html>` tag. A red bracket on the left side connects the opening tag `<html>` at the top to the closing tag `</html>` at the bottom. Inside the bracket, there is a vertical list of eight bullet points, representing the content enclosed by the `<html>` tag.

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>
```

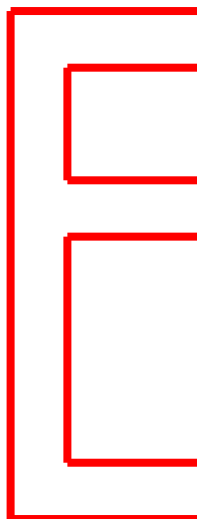
A diagram illustrating the structure of an HTML document. It shows a list of HTML tags: <html>, <head>, <meta charset="UTF-8">, </head>, five dots representing other content, and </html>. Red brackets are drawn to show the nesting: an outer bracket groups <html> and </html>, and an inner bracket groups <head> and </head>.

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?

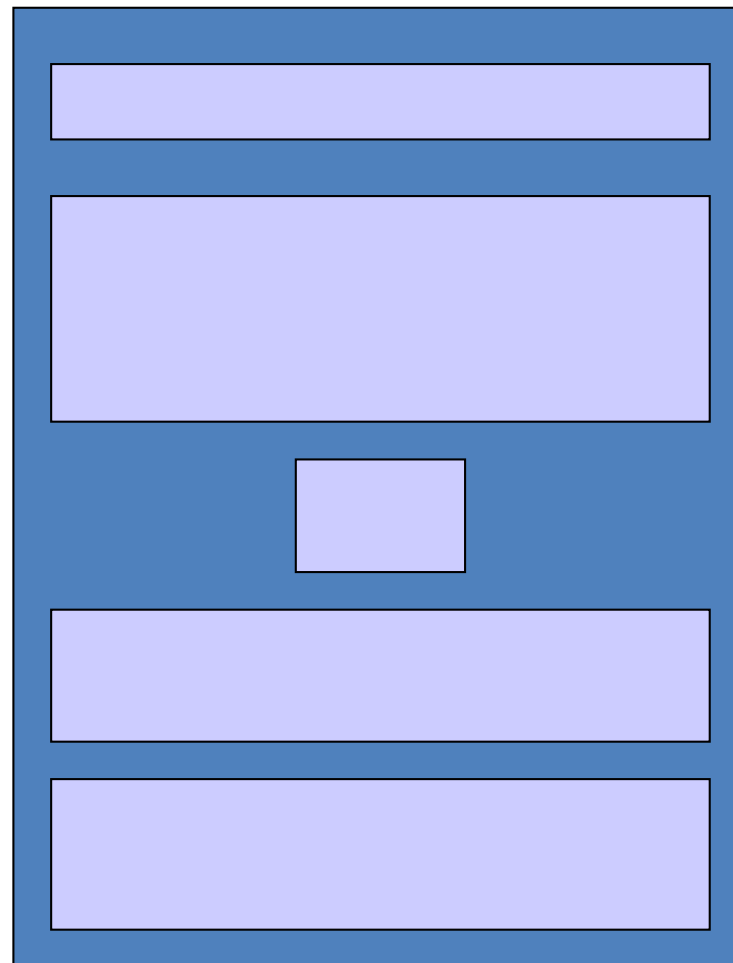
Exercise 2: What is a document type definition used for?

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>
```

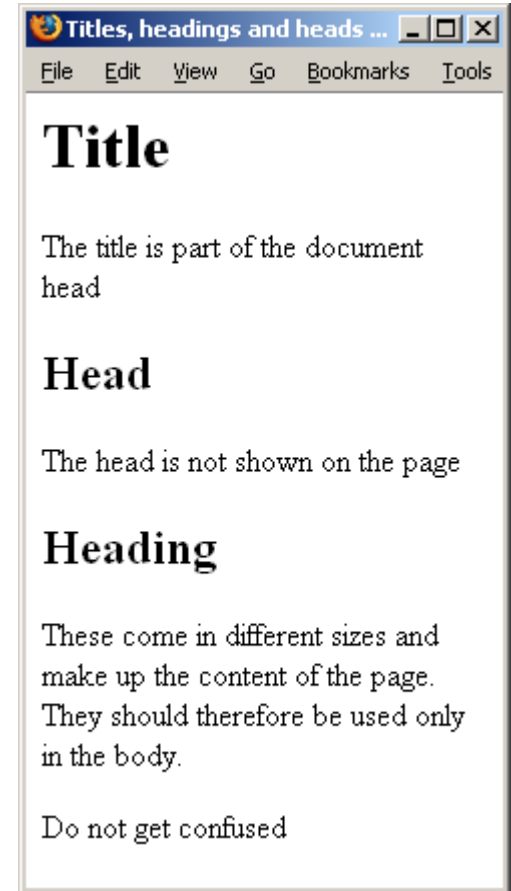


Example of Head, Heading and Title

```
<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>
```

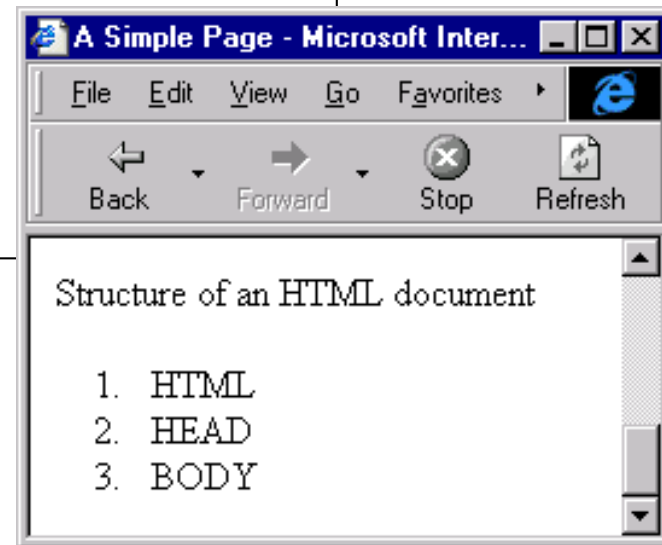


Ordered Lists

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>
```

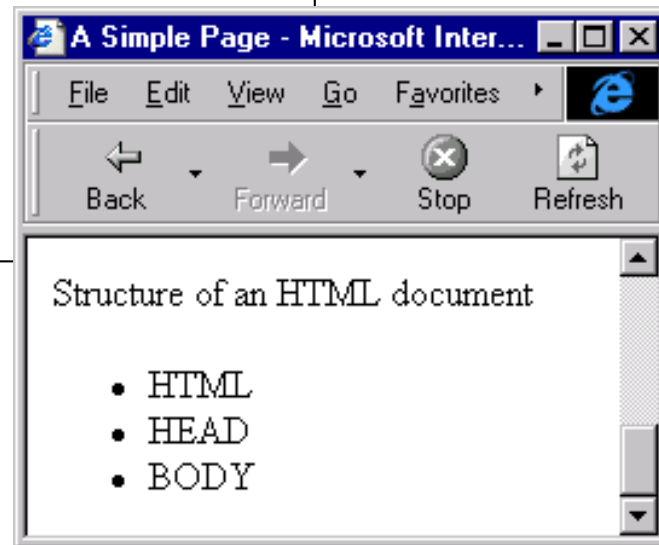


Unordered Lists

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>
```

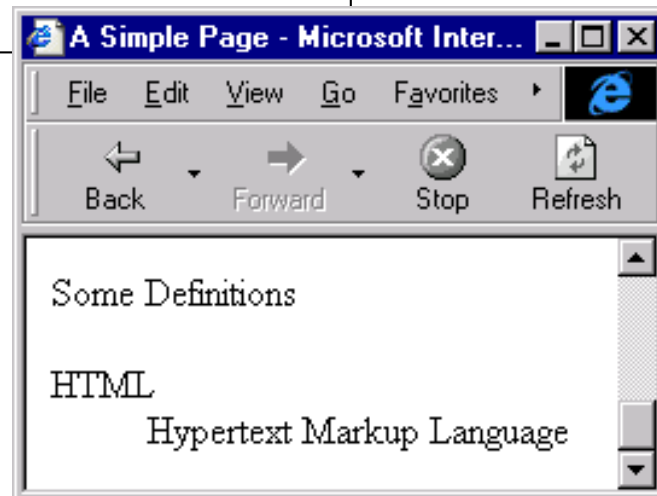


Description Lists

Terms and explanations

- `<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

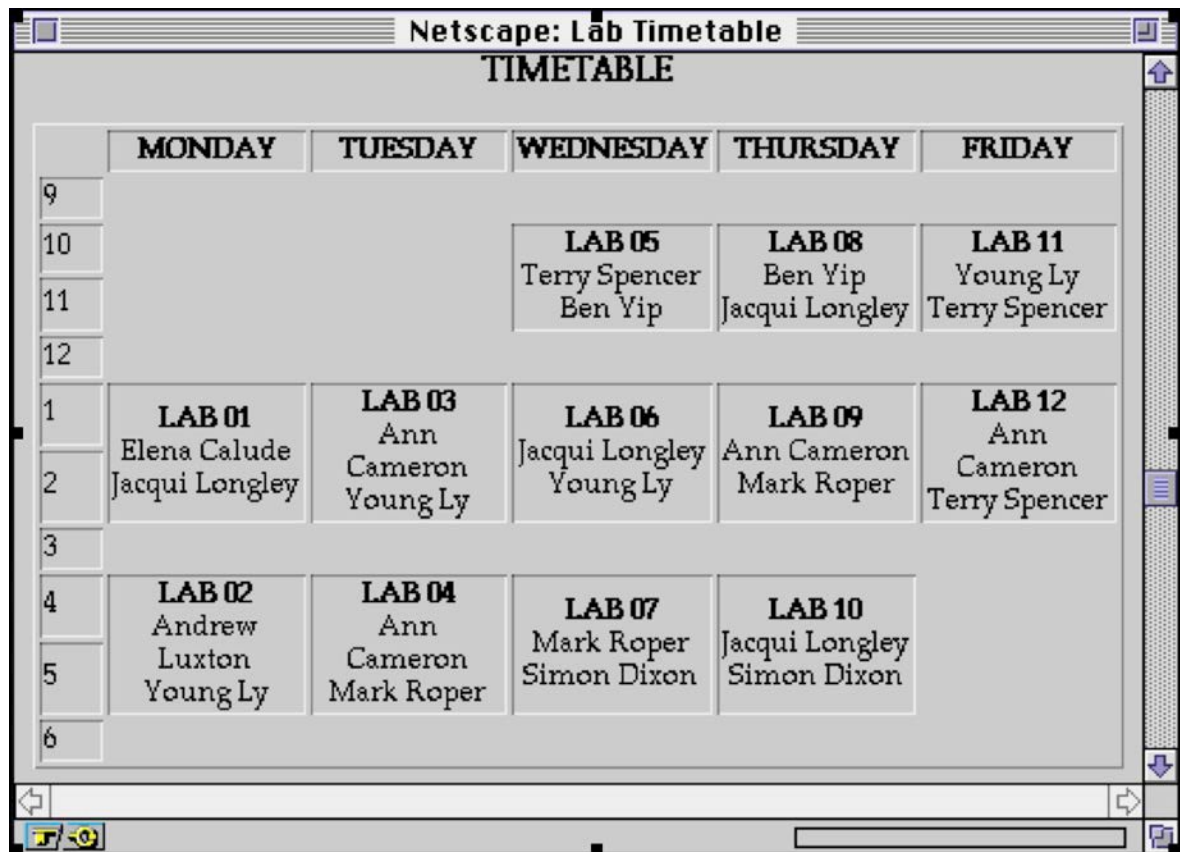
```
<p>Some definitions</p>
<dl>
<dt>HTML</dt>
<dd>Hypertext Markup Language</dd>
</dl>
```



Tables

<table>

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



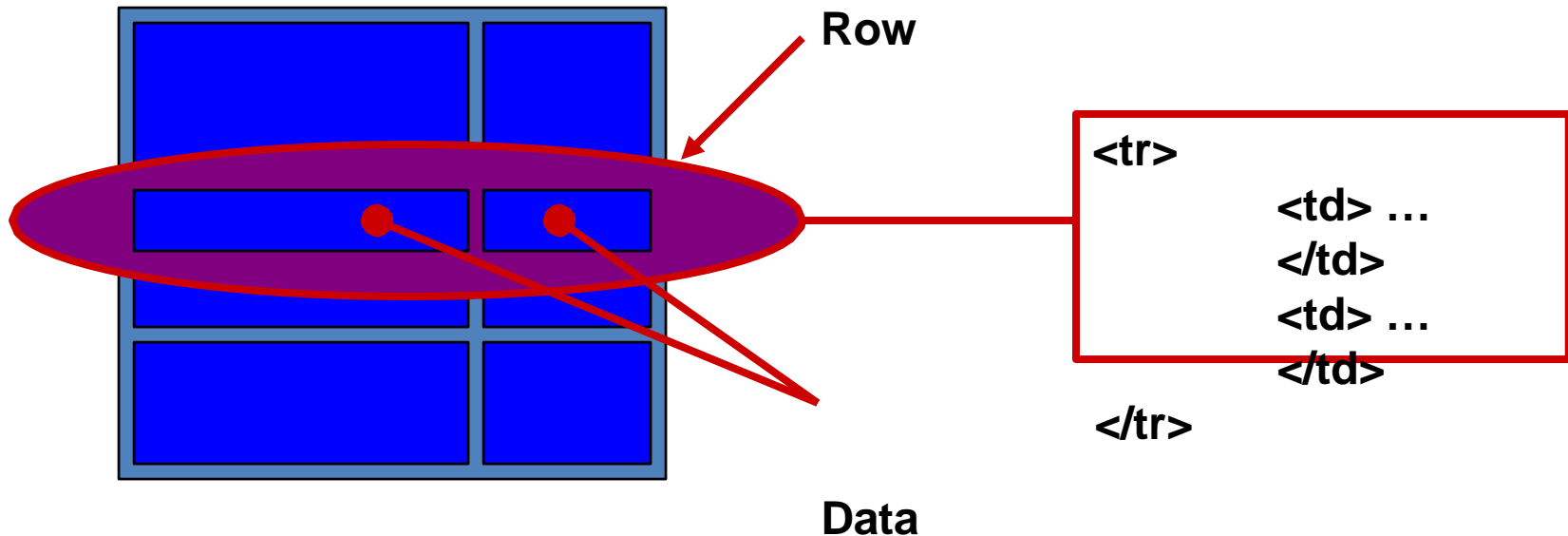
The screenshot shows a Netscape browser window titled "Netscape: Lab Timetable". The main content is a table titled "TIMETABLE" with columns for the days of the week (Monday to Friday) and rows for time slots (9, 10, 11, 12, 1, 2, 3, 4, 5, 6). The table contains information about lab sessions, including lab numbers and the names of the lab leaders.

	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>
```

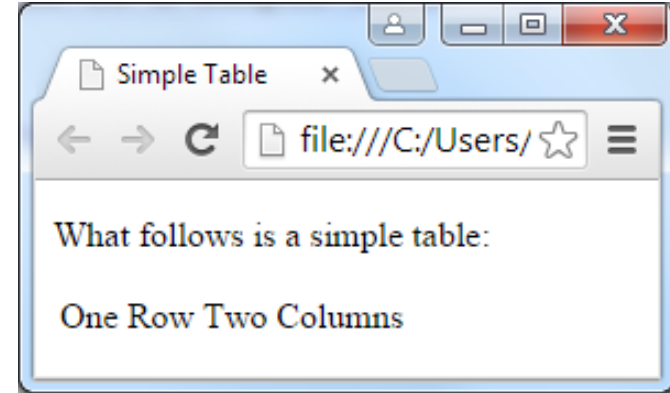


Table Exercise

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”.