COMP519 Web Programming
Lecture 4: HTML (HTLM5 Elements: Part 2)
Handouts

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Contents

Text-level Elements

- A `strong-element` represents strong importance, seriousness, or urgency for its content
  Can be used in a heading, caption, or paragraph to distinguish the most important parts

  ```
  <strong>Beware of the dog</strong>
  ```

- A `b-element` highlights its content without marking it as important

  ```
  Your <b>CV</b> should contain the following sections ...
  ```

- An `em-element` represents stress emphasis on its content

  ```
  <em>Cats</em> are cute animals  i.e.  Cats, not dogs, are cute
  ```

Text-level elements

- A code-element represents a fragment of computer code

```
The <code>begin</code> keyword indicates the start of
a block
```

- The pre-element represents a block of preformatted text (structure in the block is represented by typographic conventions instead of elements)

```
<pre><code class="language-java">
if (i > 0) {
  i := 1;
}
</code></pre>
```

- The var-element represents a (mathematical) variable, constant, or function
- The sup-element represents a superscript and the sub-element represents a subscript

```
<var>x<sub><var>i</var></sub></var> =
                    <var>y<sup><var>j</var></sup></var>
```

Images

The void element img allows to include images into an HTML document

```
<img src="URL" alt="descr" ... />
```

Attributes include

- src   specifies the URL / file name of the image
           (browsers can typically deal with JPEG, GIF and PNG images)
- alt   gives an alternative description that will be shown if the image
           cannot be displayed
- title   title of the image
- width   the reserved width to which the image should be scaled in pixels
- height   the reserved height to which the image should be scaled in pixels
- style   can be used as an alternative to height / width
- srcset   responsive images, see https://developer.mozilla.org/
           en-US/docs/Learn/HTML/Multimedia_and_embedding/
           Responsive_images

Images

```html
<img src="/images/ashton_detail.jpg" title="Ashton Building"
     alt="The Ashton Building at the University of Liverpool"
     width="100">

<!-- Image "ashton_detail.jpg" scaled to 100px,
     string "Ashton Building" will be shown if the pointer hovers over
     the image,
     string "The Ashton Building at the University of Liverpool" will
     be shown if image download has been disabled in the browser
 -->

<a href="index.html"><img src="home.png" alt="Home"></a>

<!-- A hyperlink containing an image. Clicking on the image will take
     the user to "index.html"
 -->
```

Images

- For all images in a HTML document, ownership/copyright plus licensing terms should be indicated in one of the following ways:

  - A copyright notice / attribution below the image

    ```
    "Edinburgh City" by A. N. Other /
    <a href="https://cc.org/licenses/by/2.0/">CC BY 2.0</a>
    ```

  - A copyright notice in the title attribute of the image

    ```
    title="Image of a castle.
           &copy; Freeimages/A. N. Other 2019"
    ```

  - A copyright notice in the footer of the page

    ```
    All images &copy; A. Student, 2019,
    unless otherwise indicated.
    ```

- Images that you are not allowed to copy should neither be copied nor embedded via an img element

Figures

- The `figure-element` represents an image, table, code that
  - is self-contained
  - is referenced from the main text of the document, and
  - can be moved within the document without affecting the document's meaning
- The `figcaption-element` represents a caption or legend for the figure in which it is included

```
<figure>
  <img src="warming.png" alt="A diagram showing that world temperature
  has increased significantly since 1900">
  <figcaption>Fig 1. World Temperature since 1900.</figcaption>
</figure>
Figure 1 shows that two-thirds of warming has occurred since 1975.
<figure>
  <pre><code>function sort { ... }</code></pre>
  <figcaption>Fig 2. Heap sort</figcaption>
</figure>
The heap sort algorithm shown in Figure 2 ...
```

Tables

- Tables are a common way of displaying data
- The content of tables is divided into rows (horizontal) and columns (vertical)
- Each column typically has a header,
  one column, typically the left-most one, also has particular significance
- The whole table typically has a title given by a caption
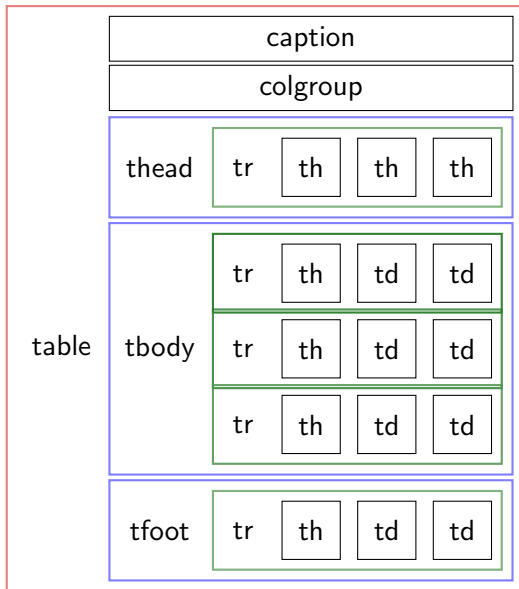- Lines are often used to make rows and columns more easily distinguishable

	COMP516	COMP517	COMP518	COMP519
2015-16	66.0	66.3	73.0	71.9
2016-17	66.5	75.9	70.9	75.9
2017-18	66.2	69.6	70.9	66.4
2018-19	79.2	73.3	66.7	66.4

Average marks on 1st Semester CSMS Modules

Tables

A table-element represents
a whole table, including the
caption, consisting of

- a caption-element
  (optional)

- zero or more
  colgroup-elements

- a thead-element
  (optional)

- zero or more
  tbody-elements or one or
  more tr-elements

- a tfoot-element
  (optional)

Tables

```
<table>
  <caption>Average marks on 1st Semester CSMS Modules</caption>
  <thead>
    <tr><th></th><th>COMP516</th><th>COMP517</th>
                 <th>COMP518</th><th>COMP519</th>
    </tr>
  </thead>
  <tbody>
    <tr><th>2015-16</th><td>66.0</td><td>66.3</td>
                        <td>73.0</td><td>71.9</td>
    </tr>
    <tr><th>2016-17</th><td>66.5</td><td>75.9</td>
                        <td>70.9</td><td>75.9</td>
    </tr>
    <tr><th>2017-18</th><td>66.2</td><td>69.6</td>
                        <td>70.9</td><td>66.4</td>
    </tr>
    <tr><th>2018-19</th><td>79.2</td><td>73.3</td>
                        <td>66.7</td><td>66.4</td>
    </tr>
  </tbody>
</table>
```

Note: There are no lines between columns and rows
      Cell content is left-aligned

Tables

```html
<table>
  <caption>Average marks on 1st Semester
           CSMS Modules
  </caption>
  <thead>
    <tr><th></th><th>COMP516</th><th>COMP517</th>
               <th>COMP518</th><th>COMP519</th>
    </tr>
  </thead>
  <tbody>
    <tr><th>2015-16</th><td>66.0</td><td>66.3</td>
                        <td>73.0</td><td>71.9</td>
    </tr>
    <tr><th>2016-17</th><td>66.5</td><td>75.9</td>
                        <td>70.9</td><td>75.9</td>
    </tr>
    <tr><th>2017-18</th><td>66.2</td><td>69.6</td>
                        <td>70.9</td><td>66.4</td>
    </tr>
    <tr><th>2018-19</th><td>79.2</td><td>73.3</td>
                        <td>66.7</td><td>66.4</td>
    </tr>
  </tbody>
</table>
```

Average marks on 1st Semester CSMS Modules			
	COMP516	COMP517	COMP518	COMP519
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Note: There are no lines between columns and rows
       Cell content is left-aligned

`http://cgi.csc.liv.ac.uk/~ullrich/COMP519/examples/tables.html`

Table and Cell Attributes

- table-elements have a border attribute
  Value can be "" or "1"
  (browsers typically draw a border around table cells for both)

- td- and th-elements have attributes rowspan and colspan that specify
  how many rows and columns a cell spans

```html
<table border="1">
  <thead>
    <tr><th>Column 1</th><th>Column 2</th><th>Column 3</th></tr>
  </thead>
  <tbody>
    <tr><td>one (1)</td><td>two (2)</td><td>three (3)</td></tr>
    <tr><td rowspan="2">four (1)  </td>
        <td colspan="2">five (2+3)</td></tr>
    <tr><td>six (2)</td><td>seven (3)</td></tr>
  </tbody>
</table>
```

Table and Cell Attributes

```html
<table border="1">
  <thead>
    <tr><th>Column 1</th><th>Column 2</th><th>Column 3</th></tr>
  </thead>
  <tbody>
    <tr><td>one (1)</td><td>two (2)</td><td>three (3)</td></tr>
    <tr><td rowspan="2">four (1)   </td>
        <td colspan="2">five (2+3)</td></tr>
    <tr><td>six (2)</td><td>seven (3)</td></tr>
  </tbody>
</table>
```

Column 1	Column 2	Column 3
one (1)	two (2)	three (3)
four (1)	five (2+3)	
	six (2)	seven (3)

http://cgi.csc.liv.ac.uk/~ullrich/COMP519/examples/tables.html

Revision and Further Reading

Read

- Chapter 7: Adding Images
- Chapter 8: Table Markup

of

J. Niederst Robbins: Learning Web Design: A Beginner's Guide to
HTML, CSS, JavaScript, and Web Graphics (5th ed).
O'Reilly, 2018.
E-book https://library.liv.ac.uk/record=b5647021