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### HTML5 Documents

- An HTML document has a very simple form:
  It consists of a DOCTYPE-declaration and an html-element
  ```html
  <!DOCTYPE html>
  <html>
  </html>
  ```

- An html-element has the form
  ```html
  <html>
  <head>
  <body>
  </html>
  ```

- It is recommended that the start tag of an html-element specifies the language used in the document
  ```html
  <html lang="en-GB">
  ```

### Structuring the Body

- The main-element contains the main content

- An article-element contains text that makes sense on its own

- A section-element contains text on the same theme

- A header-element contains introductory text for a document, article, or section

- A footer-element typically contains the author of the document, copyright information, links to terms of use, contact information, etc.

- A nav-element contains a set of navigation hyperlinks

- An aside-element contains related but independent content to the articles/sections

### Headings

- The head-element should include a title-element
  (typically appears in the (tab) title bar of a browser)

- The head-element should also include metadata such as the author of the page, a description of its content, keywords

- The head-element can also include Cascading Style Sheet (CSS) definitions or links to external style sheets

- The head-element can also include JavaScript code or links to files containing such code

```html
<title>The Highway Code</title>
<meta charset="UTF-8">
<meta name="description" content="Rules of the UK Highway Code">
<meta name="keywords" content="British, highway, highways, car, pedestrian">
<script src="code.js"></script>
</head>
```
Lists

There are three different types of lists:

- **Ordered list**: 01-element with 11-elements as content

  ```html
  <ol>
    <li>Item 1</li>
    <li>Item 2</li>
  </ol>
  ```

  Typically uses numbers or letters to label each item in the list

- **Unordered list**: 01-element with 11-elements as content

  ```html
  <ul>
    <li>Item 1</li>
    <li>Item 2</li>
  </ul>
  ```

  Typically uses bullet points to label each item in the list

- **Definition list**: d1-element typically with pairs of dt-elements and dd-elements as content

  ```html
  <dl>
    <dt>Definition</dt>
    <dd>DD: Definition content</dd>
  </dl>
  ```

Paragraphs

- **A paragraph** is a group of sentences that is centred on a single idea
- **HTML5 provides the p-element for paragraphs**

  ```html
  <p>This text provides clients, customers, interested parties and our staff with all of the information that they could want on our products, services, success and failures.</p>
  ```

  Several spaces within a paragraph will always be rendered as just one
  Line breaks will not be preserved
  The void element br can be used to force a line break
  Alignment will be determined by the style that applies (typically, by default, paragraphs are left-aligned)
  The p-element should not be used when a more specific element is more appropriate

HTML Elements for the Body

- **Div and Span**

  The div-element and the span-element are used as containers for a group of consecutive elements

  A common semantics or a common style can then be applied to all elements of that container

  ```html
  <div lang="en-US">A tempest in a teapot.</div>
  ```

  Compromise in colours is grey.
  Most bad behaviour comes from insecurity.
  A tempest in a teapot.
  Compromise in colours is grey.
  Most bad behaviour comes from insecurity.

  ```html
  <div lang="en-GB">A tempest in a teapot.</div>
  ```

  Most bad behaviour comes from insecurity.

  ```html
  <div lang="en-US">A tempest in a teapot.</div>
  ```

  Most bad behaviour comes from insecurity.

  ```html
  <div lang="en-GB">A tempest in a teapot.</div>
  ```

  A storm in a teacup.

  Compromise in colours is grey.
  Most bad behaviour comes from insecurity.
  A storm in a teacup.
  Compromise in colours is grey.

  ```html
  <div lang="en-US">A tempest in a teapot.</div>
  ```

  Most bad behaviour comes from insecurity.

  ```html
  <div lang="en-GB">A tempest in a teapot.</div>
  ```

  Most bad behaviour comes from insecurity.

  ```html
  <div lang="en-US">A tempest in a teapot.</div>
  ```

  Most bad behaviour comes from insecurity.

  ```html
  <div lang="en-GB">A tempest in a teapot.</div>
  ```

  Most bad behaviour comes from insecurity.

  ```html
  <div lang="en-US">A tempest in a teapot.</div>
  ```

  A storm in a teacup.

The difference between div and span is that by default:

- **span-elements are phrasing content** (HTML4: inline content)
  ~ Two consecutive span-elements are placed side-by-side
  ~ span-elements have neither width nor height

- **div-elements are floating content** (HTML4: block content)
  ~ Each div-element starts on a new line and ends a line
  ~ div-elements have width and height

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  </dl>
  ```

Paragraphs, Divs and Lists

- **List elements cannot be children of p-elements**

Wrong:

```html
<ol lang="en-US">01-element of an HTML document can include:
  <li>li-headings and
  li paragraphs
</li>
```

as well as many other things?/p>

Better (maybe only slightly):

```html
<p>The body-element of an HTML document may include:
  <ul>
    <li>li-headings and
    li paragraphs
  </ul>
  as well as many other things.
</p>
```
Address

- The address element represents contact information for a person organization.
- It is one of the few elements in which the use of a br element makes sense though paragraph, span or div could also be used.

```html
<Address>
  Dr Ullrich Hustadt
  Department of Computer Science
  University of Liverpool
  Email: U.Hustadt@liverpool.ac.uk
</address>
```

Hyperlinks

- Hyperlinks are created using:
  ```html
  <a href="url">text</a>
  ```
  where text is what the web browser will show to the user and url is the URL of a web page / resource that the web browser would visit if the user clicks on text.
- The a-element has an optional attribute target:
  - _blank:
    - Opens the linked web page in a new window or tab.
    - With HTML5 alone it is not possible to force whether a window or a tab is opened.
  - _self:
    - Opens the linked web page in the same window or tab (default).

```html
<a href="http://cgi.csc.liv.ac.uk/" target="_blank">CS Website</a>
```

Hyperlinks

- Instead of a whole document, a URL can also refer to a particular element within a document, provided that element has an id:
- In HTML5 any element can be given an id via the id attribute:
  ```html
  <tagName id="ID"> ... </tagName>
  ```
  where ID is non-empty sequence of characters without spaces, unique within the document.
- It is then possible to internally link to that element using:
  ```html
  <a href="#ID">text</a>
  ```
- It is also possible to externally link to that element using:
  ```html
  <a href="url#ID">text</a>
  ```
  assuming url is the URL of the document containing the element with id ID.

Revision and Further Reading

Read
- Chapter 4: Creating a Simple Web Page
- Chapter 5: Marking Up Text
- Chapter 6: Adding Links
  O’Reilly. 2018.
- E-book https://library.liv.ac.uk/record=b5647021