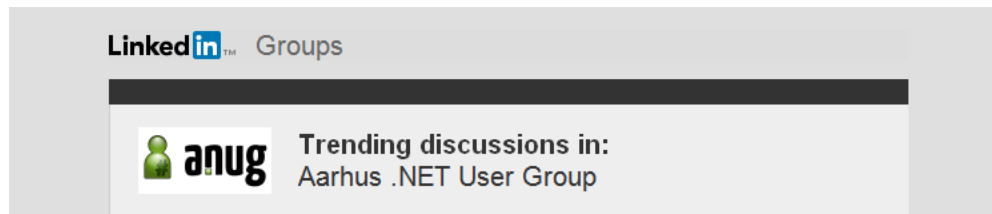


# HTML5 Basics



## Web Development with HTML5



Vi søger (også) en hardcore front udvikler

Dennis Micheelsen



### Hardcore Frontend Udvikler

Hardcore Frontend Udvikler For at kunne følge med udviklingen søger vi en hardcore frontend webudvikler til vores udviklingsafdeling. Vi leder efter en hardcore frontend webudvikler, der har fuldstændig styr på CSS, HTML og JavaScript,...

[View Discussion](#)

# What is HTML?

- HTML is an acronym for Hyper Text Mark-up Language
- The set of markup symbols or codes placed in a file intended for display on a Web browser page
- The World Wide Web Consortium (<http://w3c.org>) sets the standards for HTML and its related languages

# HTML Elements

- Each markup code represents an HTML element
- Each element has a purpose
- Most elements are coded as a pair of tags:  
an opening tag and a closing tag.
  - Tags are enclosed in angle brackets, "<" and ">" symbols

```
<html>
  <head>
    <title>I4GUI</title>
  </head>
  <body>
    <h1>GUI programmering</h1>
    <h2>I4GUI</h2>
    <p>Tit web-applikationer anvendes <b>HTML</b>,
      CSS og Javascript.</p>
  </body>
</html>
```

# What is XHTML?

- **eXtensible HyperText Markup Language**
  - Is a dialect of HTML
- XHTML uses:
  - the elements and attributes of HTML
  - the syntax of XML (eXtensible Markup Language)
- Must be **well-formed**:
  - Use lowercase
  - Use opening and closing tags  
`<body> </body>`
  - Close stand-alone tag with special syntax  
`<hr />`

# What is HTML5?

- Newest recommended version of HTML/XHTML
  - **HTML 5.1:** W3C Recommendation, 1 November 2016
- Supported by modern browsers
  - Safari, Google Chrome, Firefox, Internet Explorer 9 and newer, Edge
- Intended to be backwards compatible
- Adds new elements
- Adds new functionality
  - Edit form data
  - Native video and audio
  - And more!



# Document Type Definition

- Doctype statement placed at the top of a web page document
- Identifies the version of HTML contained in your document
- DTD Examples:
  - XHTML 1.0 Transitional DTD:  
`<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"  
http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd>`
  - **HTML5 DTD**  
`<!DOCTYPE html>`

# Example HTML5 Web Page

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Page Title Goes Here</title>
  <meta charset="utf-8">
</head>
<body>
  <p>
    Body text and more HTML5 tags go here
  </p>
</body>
</html>
```

XHTML5

```
<!DOCTYPE html>
<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
<head>
  <meta charset="utf-8" />
  <title></title>
</head>
<body>
</body>
</html>
```

# Head Sections

- Contains information that describes the Web page document

**<head>**

*head section info goes here*

**</head>**

- HTML head Elements

Tag	Description
<title>	Defines the title of a document
<base>	Defines a default address or a default target for all links on a page
<link>	Defines the relationship between a document and an external resource
<meta>	Defines metadata about an HTML document
<script>	Defines a client-side script
<style>	Defines style information for a document



# BODY SECTION

Contains text and elements that display in the Web page document

```
<body>
```

```
    body section info goes here
```

```
</body>
```

# The Heading Element

```
<body>
```

```
  <h1>Heading Level 1</h1>
```

```
  <h2>Heading Level 2</h2>
```

```
  <h3>Heading Level 3</h3>
```

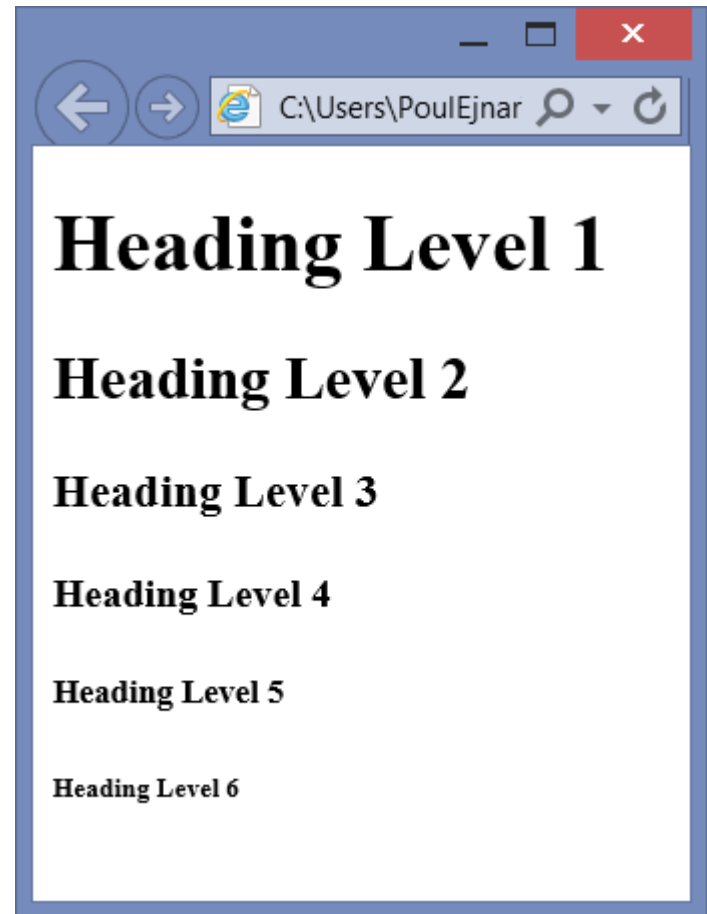
```
  <h4>Heading Level 4</h4>
```

```
  <h5>Heading Level 5</h5>
```

```
  <h6>Heading Level 6</h6>
```

```
</body>
```

Google recommends  
max one <h1> on a page!



# Paragraph Element

- Paragraph element

**<p> ...*paragraph goes here...* </p>**

- Groups sentences and sections of text together
- Configures a blank line above and below the paragraph
  - This can be modified by a css style

# Line Break Element

- Line Break element
  - Stand-alone, or void tag
    - HTML syntax: `<br>`
    - XHTML syntax: `<br />`

*...text goes here <br>*

*This starts on a new line...*

- Causes the next element or text to display on a new line

# Void Elements

- The term void elements is used to designate elements that must be empty
  - Such elements include, among others, br, hr, link and meta
- **HTML example:**

A void element in the HTML syntax. This is not permitted in the XHTML syntax

**<br>**
- **HTML- and XHTML-compatible example:**

A void element using the HTML- and XHTML-compatible self-closing tag syntax

**<br/>**
- **XHTML Example:**

A void element using the XHTML-only syntax with an explicit end tag. This is not permitted for void elements in the HTML syntax

**<br></br>**

# Blockquote Element

- Blockquote element
  - Indents a block of text for special emphasis

`<blockquote>`

*...text goes here...*

`</blockquote>`

# Paragraph and Blockquote Demo

`<body>`

`<h6>Heading Level 6</h6>`

`<p>`

...paragraph goes here...

This text continue on the same line  
but this text is on a line below.

`</p>`

`<p>`Next paragraph appears here`</p>`

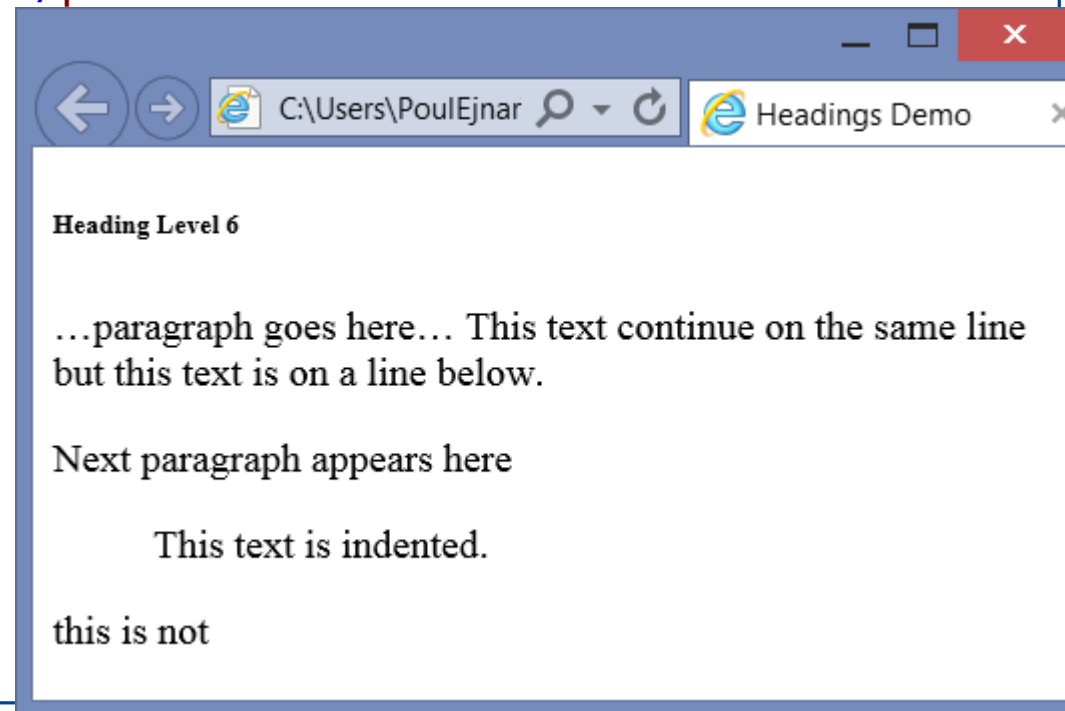
`<blockquote>`

This text is indented.

`</blockquote>`

`<p>` this is not `</p>`

`</body>`



# Phrase Elements

- Indicate the context and meaning of the text.

Element	Example	Usage
<b>&lt;b&gt;</b>	<b>bold</b> text	Text that has no extra importance but is styled in bold font by usage and convention
<b>&lt;em&gt;</b>	<i>emphasized</i> text	Causes text to be emphasized in relation to other text; usually displayed in italics
<b>&lt;i&gt;</b>	<i>italicized</i> text	Text that has no extra importance but is styled in italics by usage and convention
<b>&lt;mark&gt;</b>	<b>mark</b> text	Text that is highlighted in order to be easily referenced (HTML5 only)
<b>&lt;small&gt;</b>	small text	Legal disclaimers and notices (“fine print”) displayed in small font-size
<b>&lt;strong&gt;</b>	<b>strong</b> text	Strong importance; causes text to stand out from surrounding text; usually displayed in bold
<b>&lt;sub&gt;</b>	sub text	Displays a subscript as small text below the baseline
<b>&lt;sup&gt;</b>	sup text	Displays a superscript as small text above the baseline



# HTML Lists

- Unordered List
- Ordered List
- Description List  
*formerly called a definition list*

# Unordered List

- Displays a bullet, or list marker, before each entry in the list
- `<ul>`  
Contains the unordered list
  - type attribute determines the type of bullet point
  - default type is disc (but depends on the browser)
- `<li>`  
Contains an item in the list

```
<ul>  
  <li>TCP</li>  
  <li>IP</li>  
  <li>HTTP</li>  
  <li>FTP</li>  
</ul>
```



- TCP
- IP
- HTTP
- FTP

# Ordered List

- Displays a numbering or lettering system to itemize the information contained in the list

- `<ol>`

Contains the ordered list

- type attribute determines numbering scheme of list, default is numerals

- `<li>`

Contains an item in the list

```
<ol>  
  <li>Apply to school</li>  
  <li>Register for course</li>  
  <li>Pay tuition</li>  
  <li>Attend course</li>  
</ol>
```



1. Apply to school
2. Register for course
3. Pay tuition
4. Attend course

# Description List

- Useful to display a list of terms and descriptions or a list of FAQ and answers
  - `<dl>`  
Contains the description list
  - `<dt>`  
Contains a term/phrase/sentence  
Configures empty space above and below the text
  - `<dd>`  
Contains a description of the term/phrase/sentence
    - Indents the text
    - Configures empty space above and below the text

# Description List Example

```
<dl>
  <dt>IP</dt>
    <dd>Internet Protocol</dd>
  <dt>TCP</dt>
    <dd>Transmission Control Protocol</dd>
</dl>
```



IP	Internet Protocol
TCP	Transmission Control Protocol

# Special Characters

- Display special characters such as quotes, copyright symbol, etc.

Character	Code
©	&copy;
<	&lt;
>	&gt;
&	&amp;

- Insert white space of different widths

&nbsp;	<i>Non braking space</i>
&ensp;	<i>The width of two normal spaces</i>
&emsp;	<i>Roughly four normal spaces</i>

# Div Element

- Configures a structural block area or “division” on a web page with empty space above and below
- Can contain other block display elements, including other div elements

**<div>Home Services Contact</div>**

# span Element

- Purpose:
  - configure a specially formatted area displayed in-line with other elements, such as within a paragraph
  - Mainly used to change the style of words
- There is no additional empty space above or below a span
  - it is inline display

```
<p>Here are some text <span class="highlight">and  
here comes some important text</span>. Now we are  
back to some plain text again.</p>
```



# Anchor Element

- Specifies a hyperlink reference (href) to a file
- Text between the <a> and </a> is displayed on the web page

**<a href="contact.html">Contact Us</a>**

- href Attribute indicates the file name or URL

# Absolute & Relative Hyperlinks

- Absolute link
  - Link to other websites

```
<a href="http://au.dk">Aarhus University</a>
```

- Relative link
  - Link to pages on your own site

```
<a href="index.htm">Home</a>
```



No http!!!

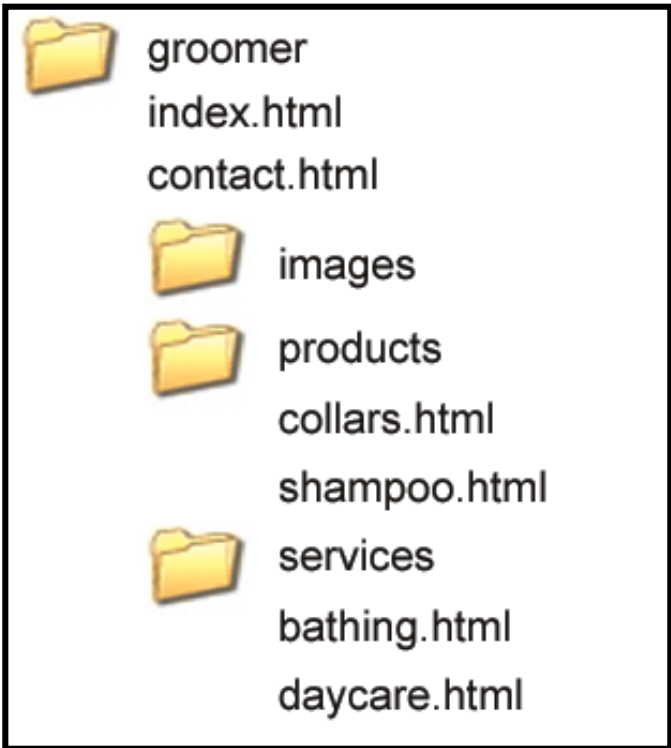
# More on Relative Linking

- Relative links from the home page index.html:

```
<a href="contact.html">Contact</a>  
<a href="products/collars.html">Collars</a>
```

- Relative links from the page collars.html:

```
<a href="../index.html">Home</a>  
<a href="../services/bathing.html">Dog Bathing</a>
```



# Opening Link in a New Window

- The target attribute on the anchor element opens a link in a new browser window or new browser tab

```
<a href="http://au.dk" target="_blank">Aarhus  
University</a>
```

# Linking to Fragments

- A link to a part of a web page
  - Also called named fragments, fragment ids
- Two components:
  1. The element that identifies the named fragment of a web page.  
This requires the id attribute  
**`<div id="top"> ..... </div>`**
  2. The anchor tag that links to the named fragment of a web page.  
This uses the href attribute  
**`<a href="#top">Back to Top</a>`**

# E-Mail Hyperlink

- Automatically launch the default mail program configured for the browser.
- If no browser default is configured, a message is displayed.

```
<a href="mailto:me@gmail.com">me@gmail.com</a>
```

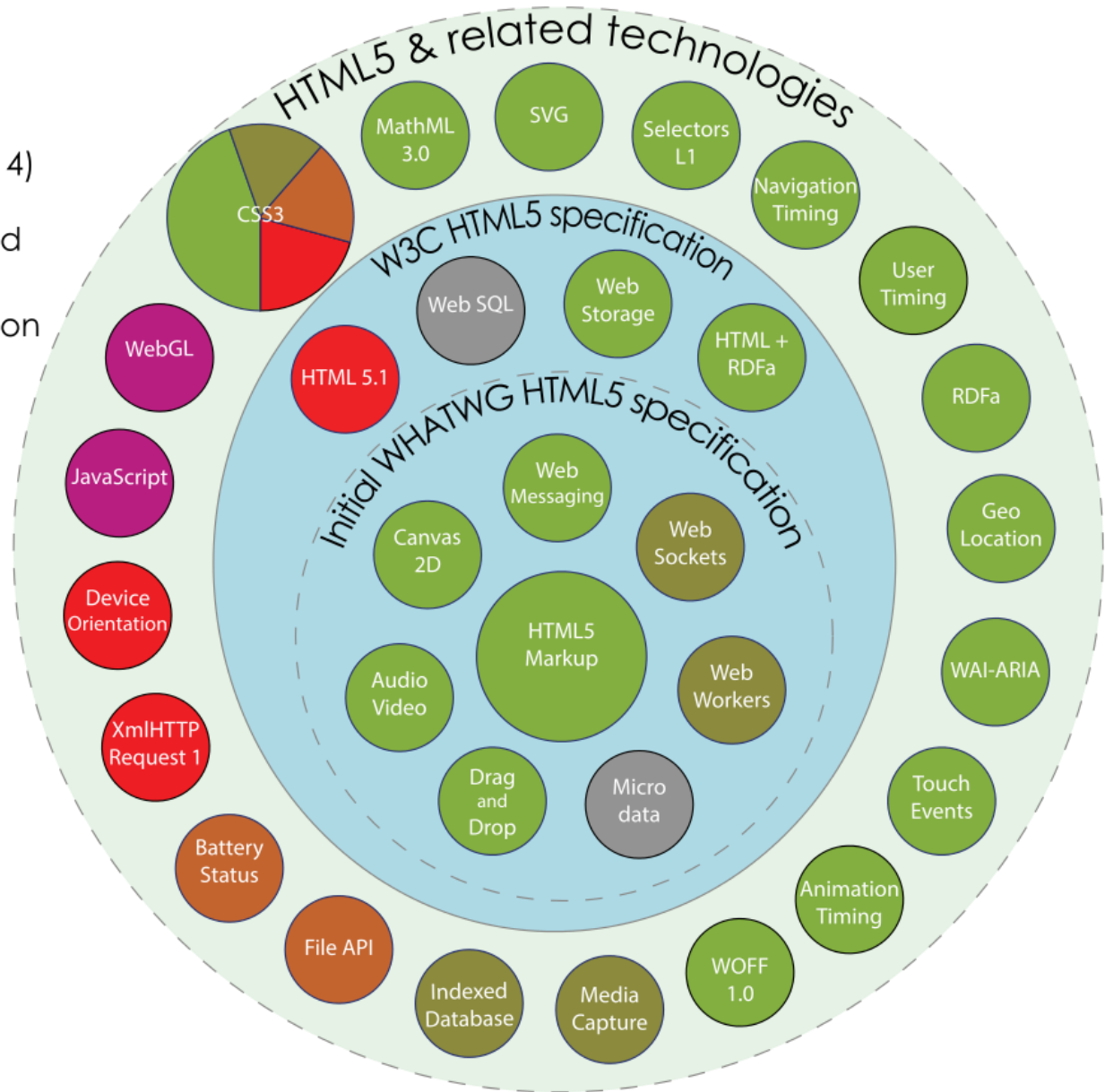
# Write Valid HTML

- Check your code for syntax errors!
- Valid code → more consistent browser display
- W3C XHTML Validation Tool:
  - <http://validator.w3.org>

# HTML5

Taxonomy & Status (October 2014)


-  Recommendation/Proposed
-  Candidate Recommendation
-  Last Call
-  Working Draft
-  Non-W3C Specifications
-  Deprecated or inactive



For an introduction to graphics (Canvas or SVG) on a Web page se:  
<http://www.codeproject.com/Articles/889679/Learn-HTML-in-days-Day-Part>



# References & Links

- **"Web Development and Design Foundations with HTML5"** by Terry Felke-Morris
- **"HTML5 & CSS3 for the Real World"** by Alexis Goldstein, Louis Lazaris, and Estelle Weyl
- Google site dedicated to help developers learn HTML5  
<http://www.html5rocks.com/en/> (view in Chrome)
- Validation tool  
<http://validator.w3.org>
- Test site for common coding problems  
<http://www.modern.ie> and <https://status.modern.ie/>  
 [\*\*http://vswebessentials.com/download\*\*](http://vswebessentials.com/download) (enhancement to Visual Studio)