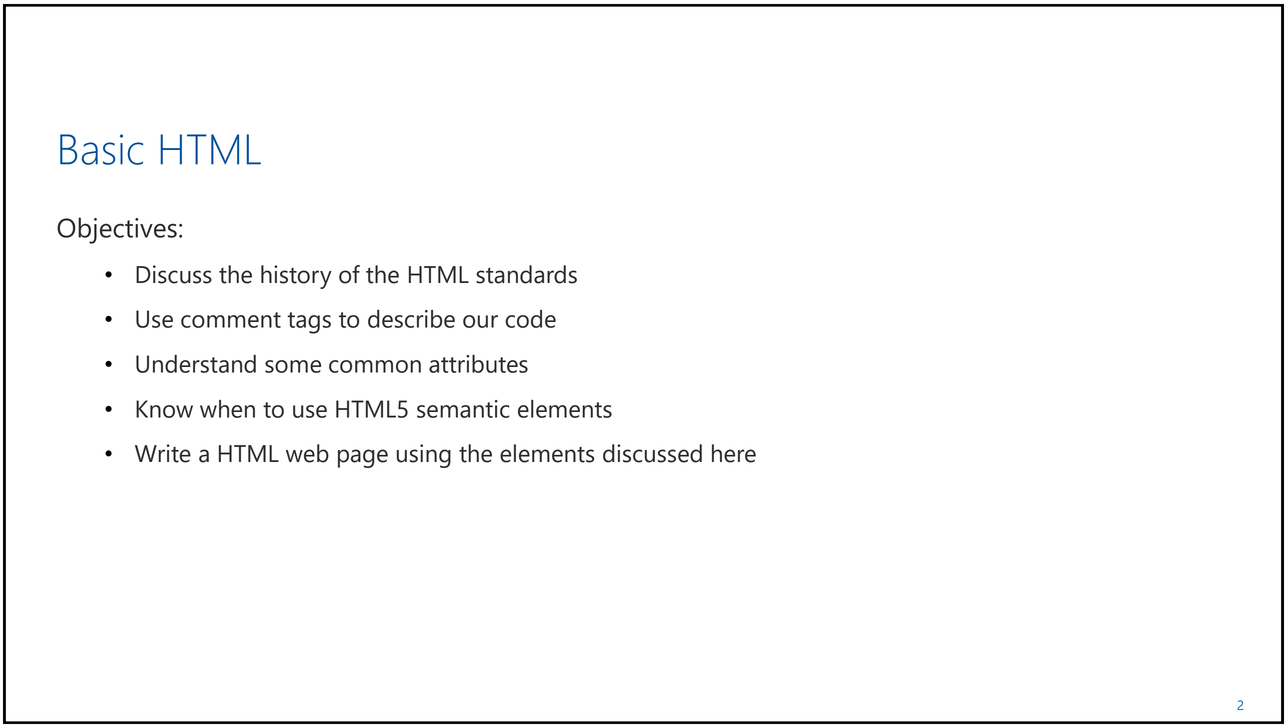
Basic HTML

WEB DEVELOPMENT FUNDAMENTALS



Basic HTML

Objectives:

- Discuss the history of the HTML standards
- Use comment tags to describe our code
- Understand some common attributes
- Know when to use HTML5 semantic elements
- Write a HTML web page using the elements discussed here

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HTML Standards

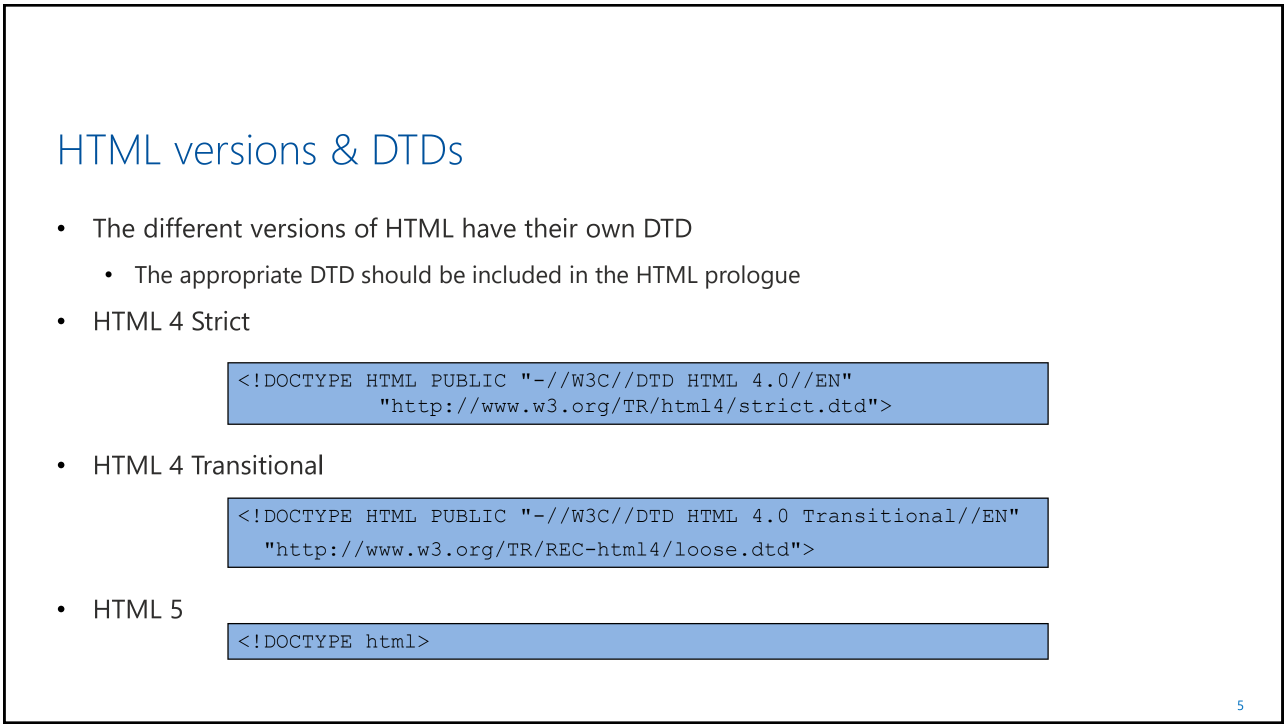
- HTML 2.0
  - Application of Standard Generalised Markup Language (SGML)
- Attempts to update the standard
  - HTML 3.0 (Obsolete)
  - Netscape and Microsoft ad-hoc extensions
- HTML 3.2
- HTML 4.01
  - Includes Cascading Style Sheets(CSS), DOM, scripting, XML and many other features
- HTML 5
  - The current W3C standard
  - 5.2 now a recommendation available at http://www.w3.org/TR/html5/

A Simple HTML Page

- Three sections to an HTML document
  - Prolog(document type declaration), header and body
- HTML Tags appear in angle brackets (< and >)
  - Many tags appear in pairs, acting as containers
  - Names are not case sensitive (convention is lower-case)
  - Carriage returns are not significant

```
<!DOCTYPE html>
<html>
<head>
      <title>Success!</title>
</head>

<body>
Congratulations on completing
your QA Training course.
</body>
</html>
```



HTML versions & DTDs

- The different versions of HTML have their own DTD
  - The appropriate DTD should be included in the HTML prologue
- HTML 4 Strict

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0//EN"
           "http://www.w3.org/TR/html4/strict.dtd">
```

- HTML 4 Transitional

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN"
  "http://www.w3.org/TR/REC-html4/loose.dtd">
```

- HTML 5

```
<!DOCTYPE html>
```

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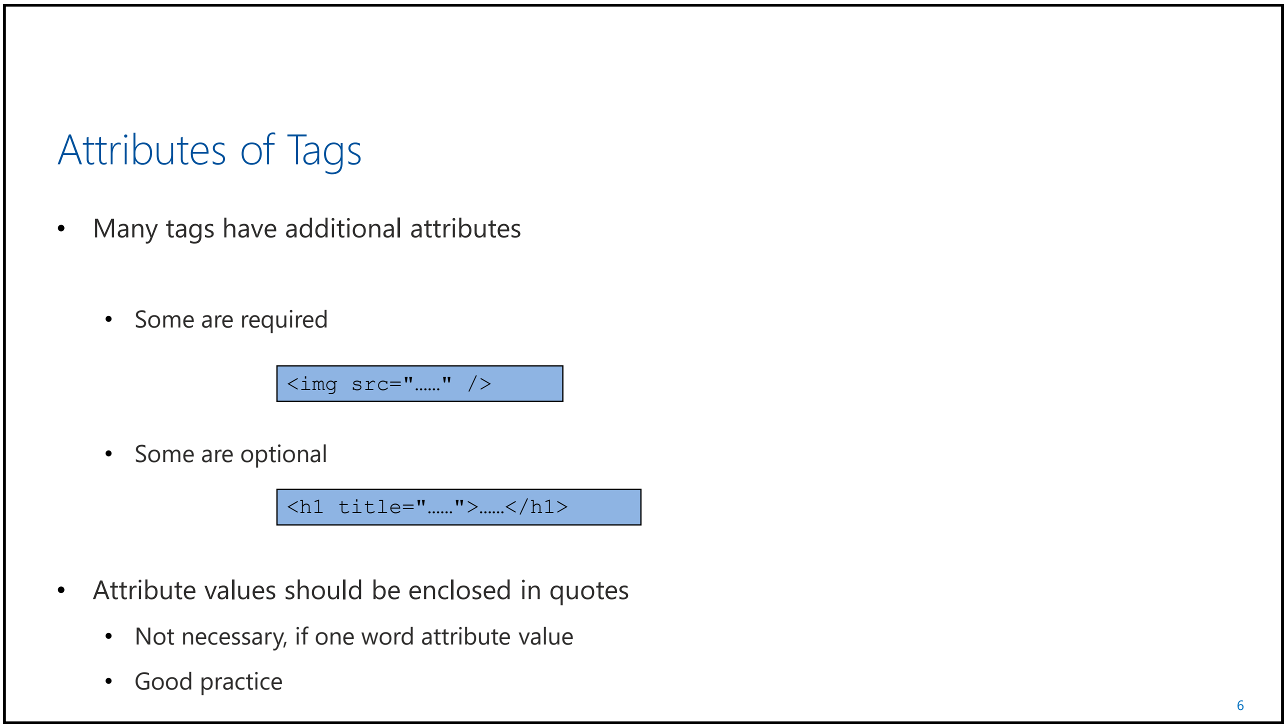

Attributes of Tags

- Many tags have additional attributes
  - Some are required

```
<img src="……" />
```

  - Some are optional

```
<h1 title="……">……</h1>
```

- Attribute values should be enclosed in quotes
  - Not necessary, if one word attribute value
  - Good practice

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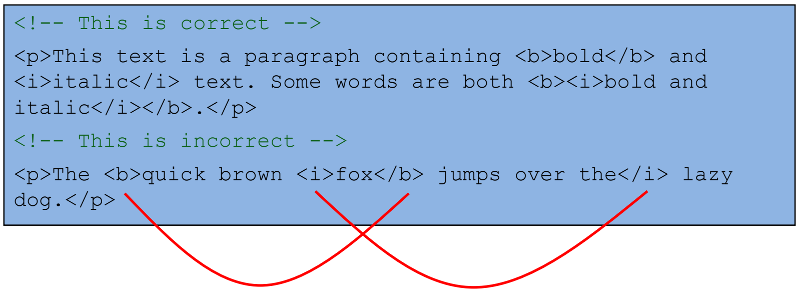
Comments

- Use <!-- and --> to enclose comments
- Not displayed by browser
- Can be used to hide scripts/styles from older browsers

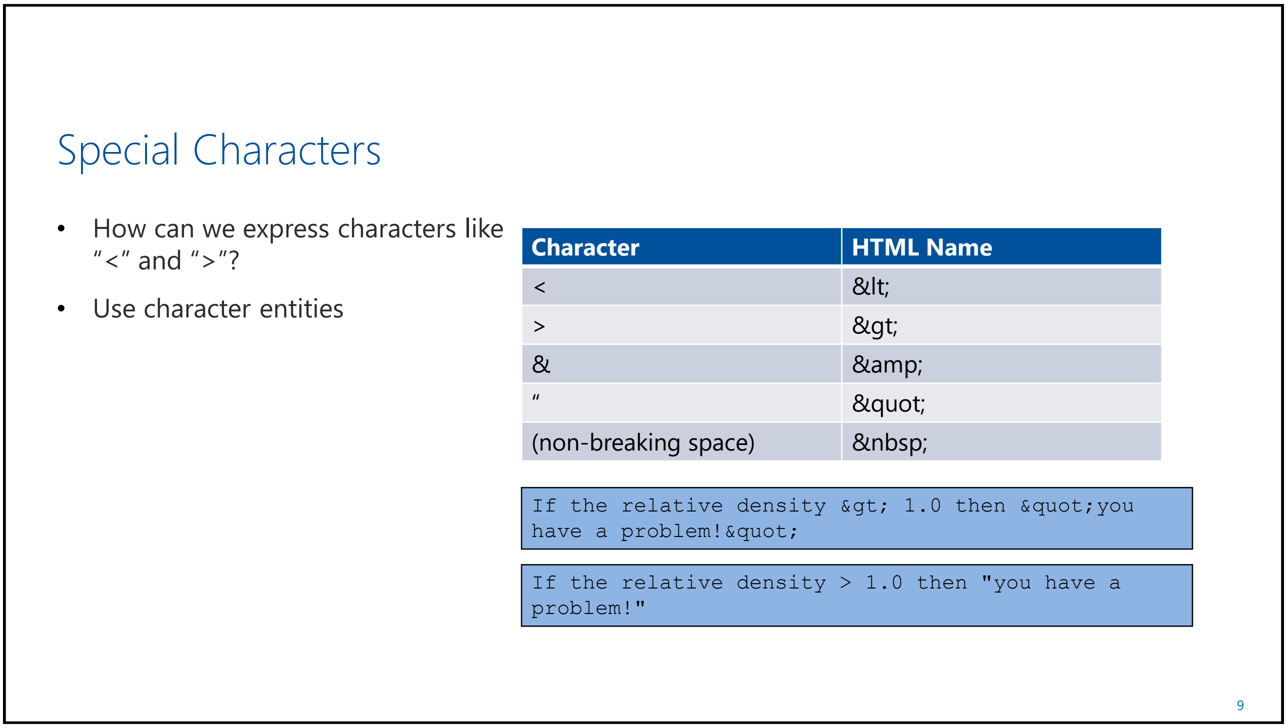
```
<html>
<head><title>Success!</title></head>
<body>
<!--A demo that comments can be used to clarify
HTML -->
Congratulations on completing
your <strong>QA Training</strong> course.<br>
</body>
</html>
```

Container Tags

- Containers may be nested but may not overlap



```
<!-- This is correct -->
<p>This text is a paragraph containing <b>bold</b> and
<i>italic</i> text. Some words are both <b><i>bold and
italic</i></b>.</p>
<!-- This is incorrect -->
<p>The <b>quick brown <i>fox</b> jumps over the</i> lazy
dog.</p>
```



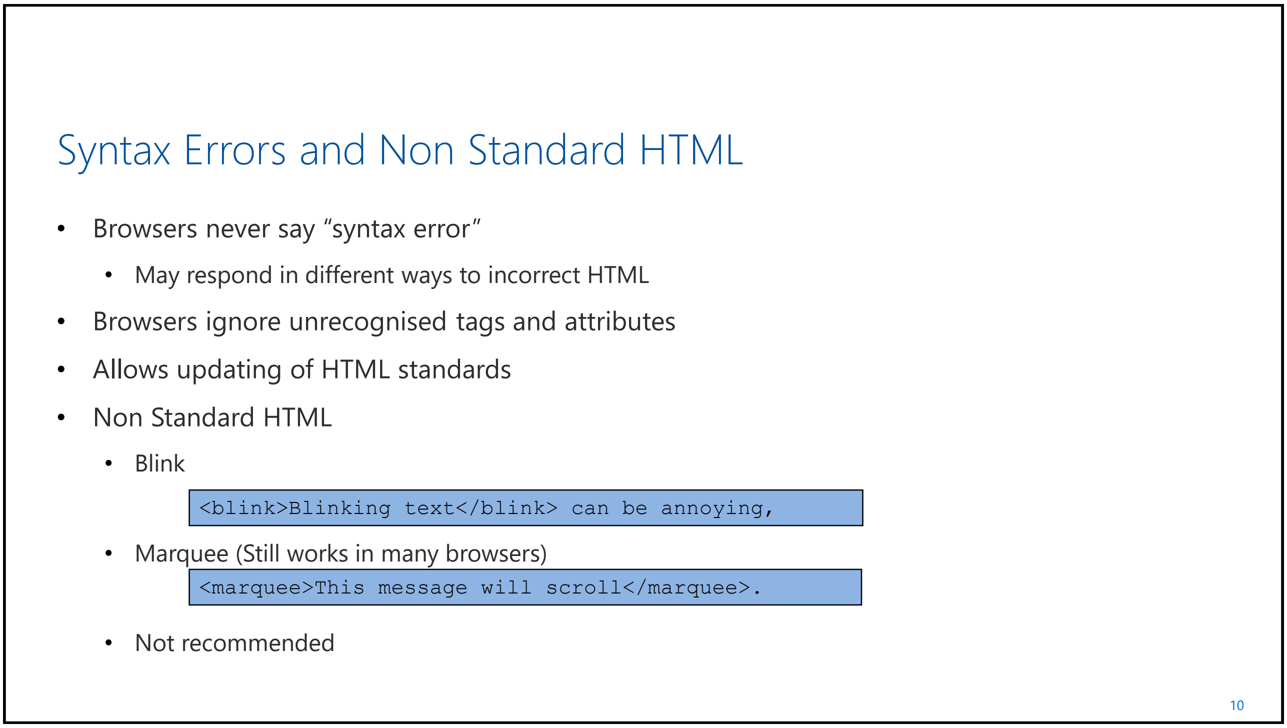
Special Characters

- How can we express characters like “<” and “>”?
- Use character entities

Character	HTML Name
<	&lt;
>	&gt;
&	&amp;
"	&quot;
(non-breaking space)	&nbsp;

```
If the relative density &gt; 1.0 then &quot;you
have a problem!&quot;
```

```
If the relative density > 1.0 then "you have a
problem!"
```



Syntax Errors and Non Standard HTML

- Browsers never say “syntax error”
  - May respond in different ways to incorrect HTML
- Browsers ignore unrecognised tags and attributes
- Allows updating of HTML standards
- Non Standard HTML
  - Blink

```
<blink>Blinking text</blink> can be annoying,
```

  - Marquee (Still works in many browsers)

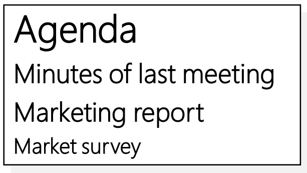
```
<marquee>This message will scroll</marquee>.
```

  - Not recommended

Headings and Paragraphs

- Heading levels: <h1> … <h6>

```
<h1>Agenda</h1>
<h2>Minutes of last meeting</h2>
<h2>Marketing report</h2>
<h3>Market survey</h3>
```



Agenda

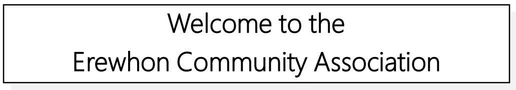
Minutes of last meeting

Marketing report

Market survey

- Paragraphs: <p>
  - Use &nbsp; for non-breaking whitespace
- Line breaks: <br>
  - Adds a carriage return

```
<h2 style=”text-align:center;”>Welcome to the <br>
Erewhon Community Association</h2>
```



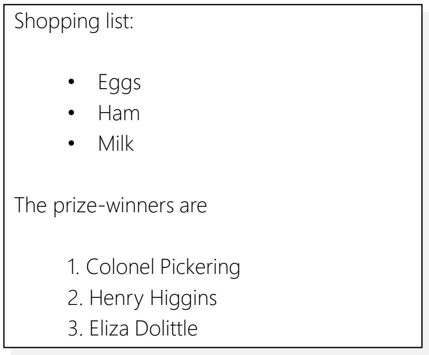
Welcome to the

Erewhon Community Association

Lists

- <ol> for ordered lists
- <ul> for unordered lists
- <li> for list items

```
<p>Shopping list:</p>
<ul>
<li>Eggs</li>
<li>Ham</li>
<li>Milk</li>
</ul>
<p>The prize-winners
are</p>
<ol>
<li>Colonel Pickering</li>
<li>Henry Higgins</li>
<li>Eliza Dolittle</li>
</ol>
```

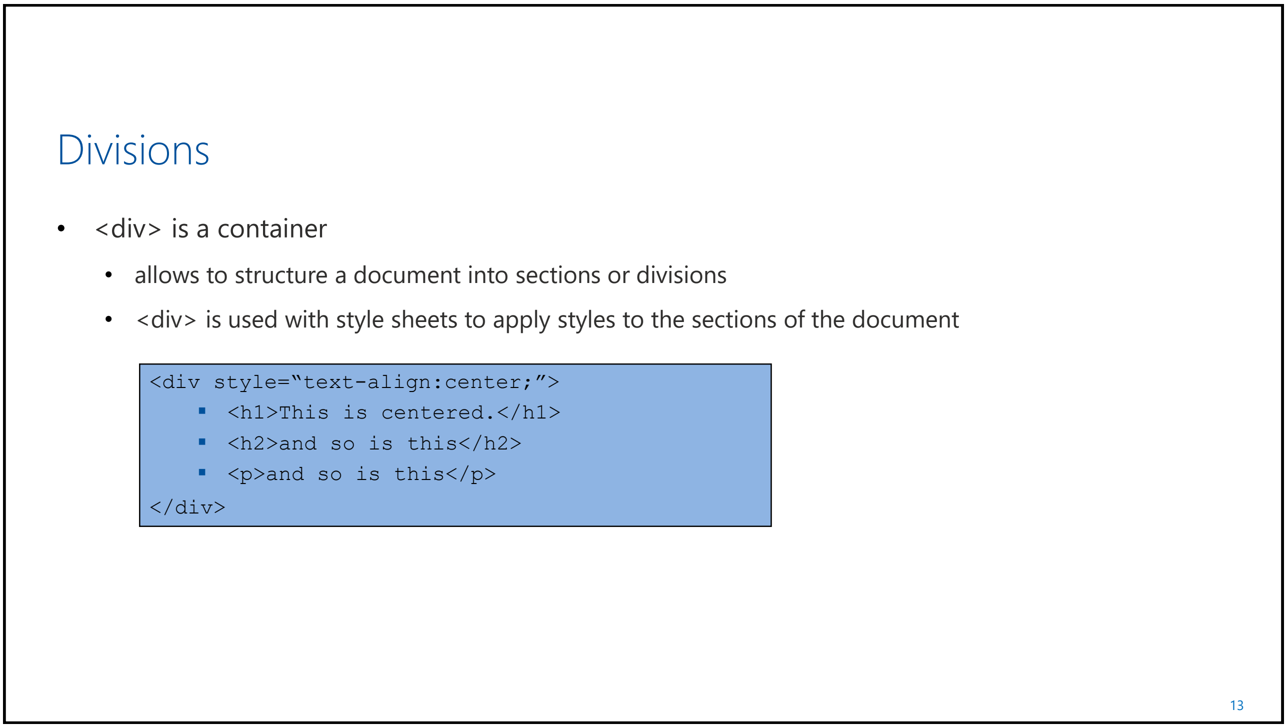


Shopping list:

- Eggs
- Ham
- Milk

The prize-winners are

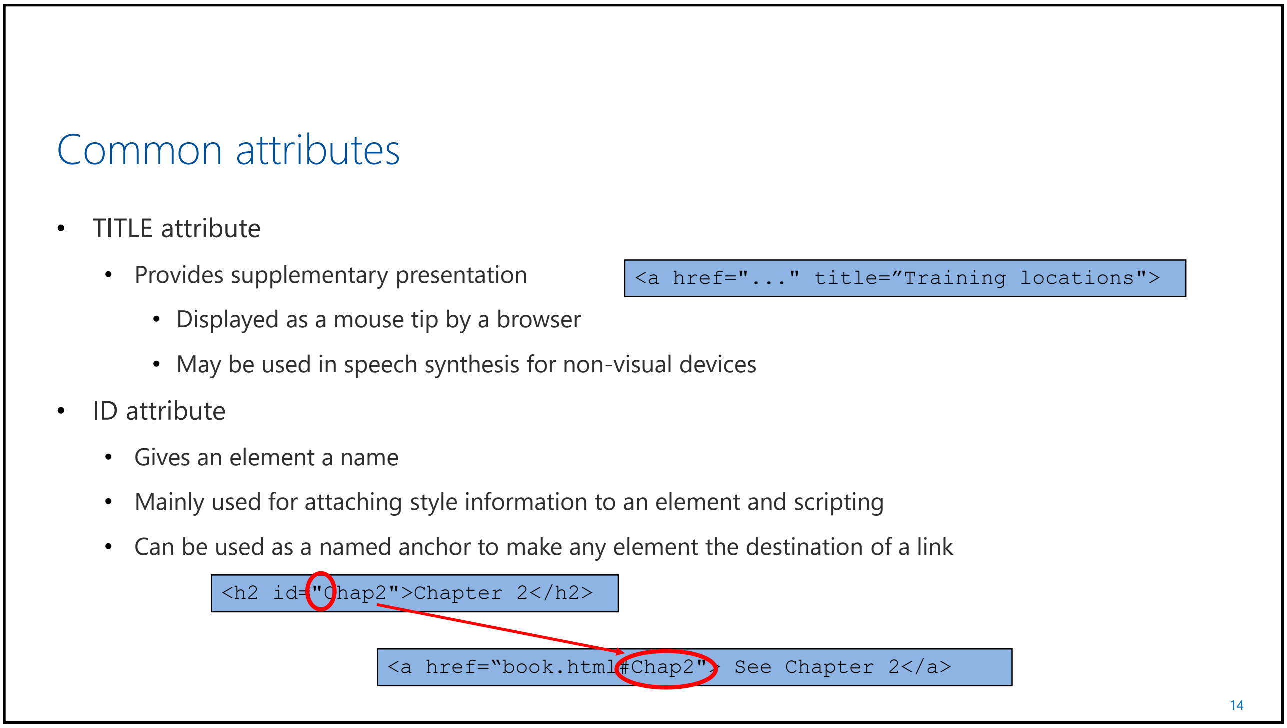
1. Colonel Pickering
2. Henry Higgins
3. Eliza Dolittle



Divisions

- <div> is a container
  - allows to structure a document into sections or divisions
  - <div> is used with style sheets to apply styles to the sections of the document

```
<div style=“text-align:center;”>
    ▪ <h1>This is centered.</h1>
    ▪ <h2>and so is this</h2>
    ▪ <p>and so is this</p>
</div>
```



Common attributes

- TITLE attribute
  - Provides supplementary presentation
    - Displayed as a mouse tip by a browser
    - May be used in speech synthesis for non-visual devices
- ID attribute
  - Gives an element a name
  - Mainly used for attaching style information to an element and scripting
  - Can be used as a named anchor to make any element the destination of a link

```
<a href="..." title=”Training locations">
```

```
<h2 id="Chap2">Chapter 2</h2>
```

```
<a href=“book.html#Chap2"> See Chapter 2</a>
```

Internationalisation

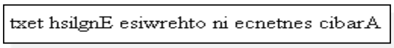
- LANG attribute
  - Can be added within any tag
  - Browser renders the contained content according to the rules for the language
    - character rendering, punctuation, spelling, grammar
  - Language codes defined in RFC1766
- HREFLANG attribute
  - Can be used within A and LINK element
  - Specifies the language of a linked document
- DIR attribute
  - Specifies direction in which text should be interpreted
    - Left to right(LTR) or right to left (RTL)
- Bi-directional override - BDO
  - DIR attribute is mandatory
  - Specifies the text that should be interpreted in different direction

```
<html lang=“fr">
```

```
<p lang=“ar‟ dir=“rtl”>
```

```
<bdo dir=“rtl“>Arabic sentence in otherwise English
text</bdo>
```

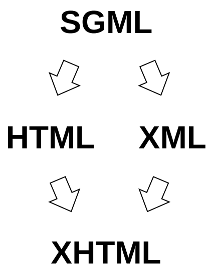
What you get:



txet hsilgnE esiwrehto ni ecnetnes cibarA

The Origins of XHTML: SGML

- XML and HTML are based on SGML
  - The Standard Generalised Mark-up Language
- XHTML is based on XML and HTML
- XML and HTML are much simpler than SGML
- Concepts of SGML
  - Entities
  - Elements and attributes
  - Document types



SGML

HTML XML

XHTML

XHTML1.0 versions & DTDs

- The different versions of XHTML1.0 have their own DTD
  - The appropriate DTD should be included in the prologue
- xhtml Transitional

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
```

- xhtml Strict

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
      "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
```

Some XHTML Rules

- In XML the case of elements must match. In XHTML all elements should be lower case to comply with this

```
<option value=“UK”>UK</Option>
```

- All elements must close
  - Introduces the concept of the self closing tag

```
<br />
<img src=“image.gif” alt=“Test Image” />
```

- All attribute values must be quoted

```
<option value=“UK”>UK</option>
```

- The ID attribute replaces the NAME attribute (XHTML1.1)

```
<img src=“image.gif” alt=“Test Image” id=“image1”/>
```

Exercise 2a

- Using some of the tags discussed so far to create a webpage

Some XHTML Rules

- All attributes must have a value

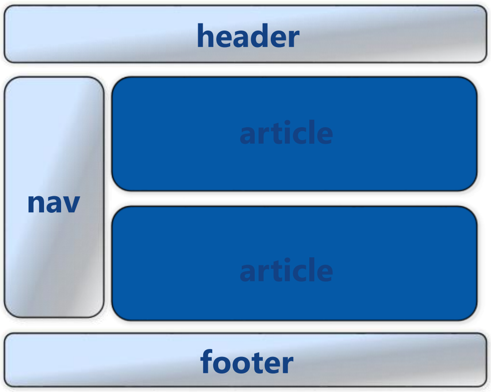
```
<button disabled=“disabled‟ onclick=“order();”>Buy</button>
```

- Examples of the minimised attributes in HTML and the XHTML equivalent

HTML	XHTML
checked	checked="checked"
readonly	readonly="readonly"
disabled	disabled="disabled"
selected	selected="selected"
ismap	ismap="ismap"
noshade	noshade="noshade"
multiple	multiple="multiple"
noresize	noresize="noresize"

The HTML5 structural tags

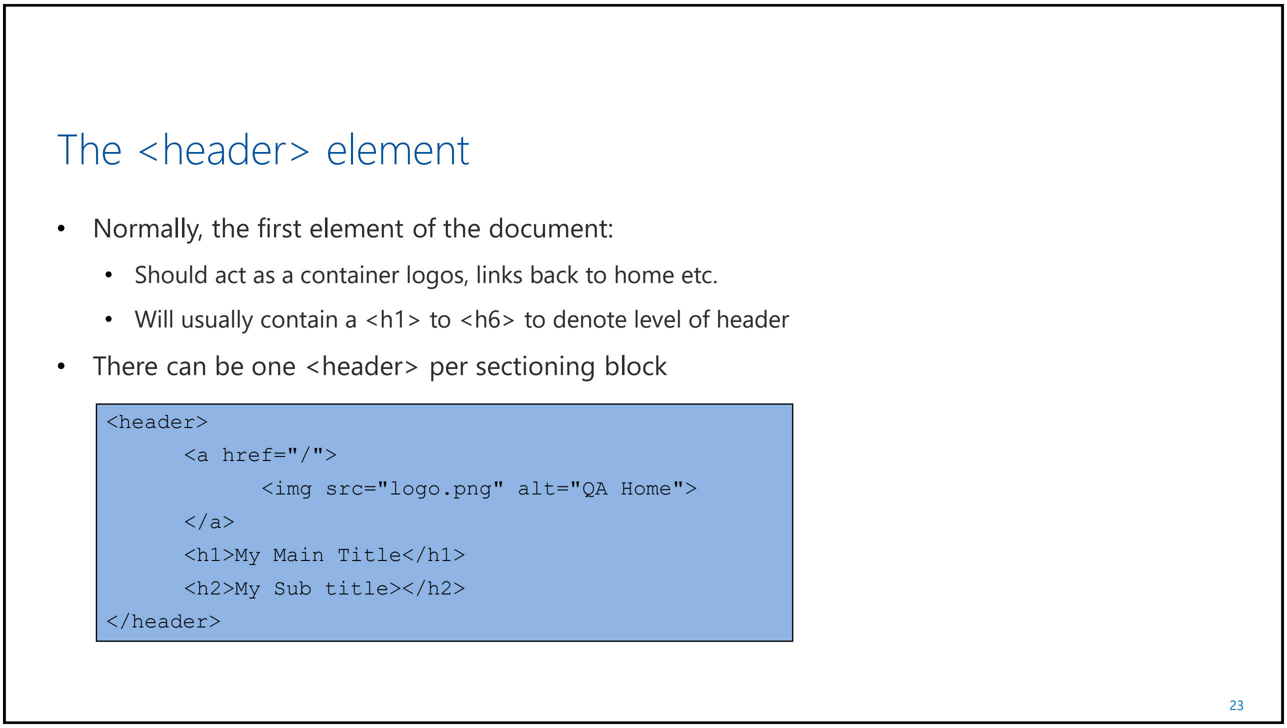
- HTML5 has a series of structural elements
  - To create a more semantically structured page
- The main building blocks of HTML5 are:
  - <header>
  - <nav>
  - <article>
  - <footer>
  - <section>
  - <aside>



Headings and sectioning elements

- HTML5 document have an outline
  - Generated by headings and form titles
  - Important for adaptive technology
- Sectioning elements create a logical document outline
  - Do not treat them as <div> tags

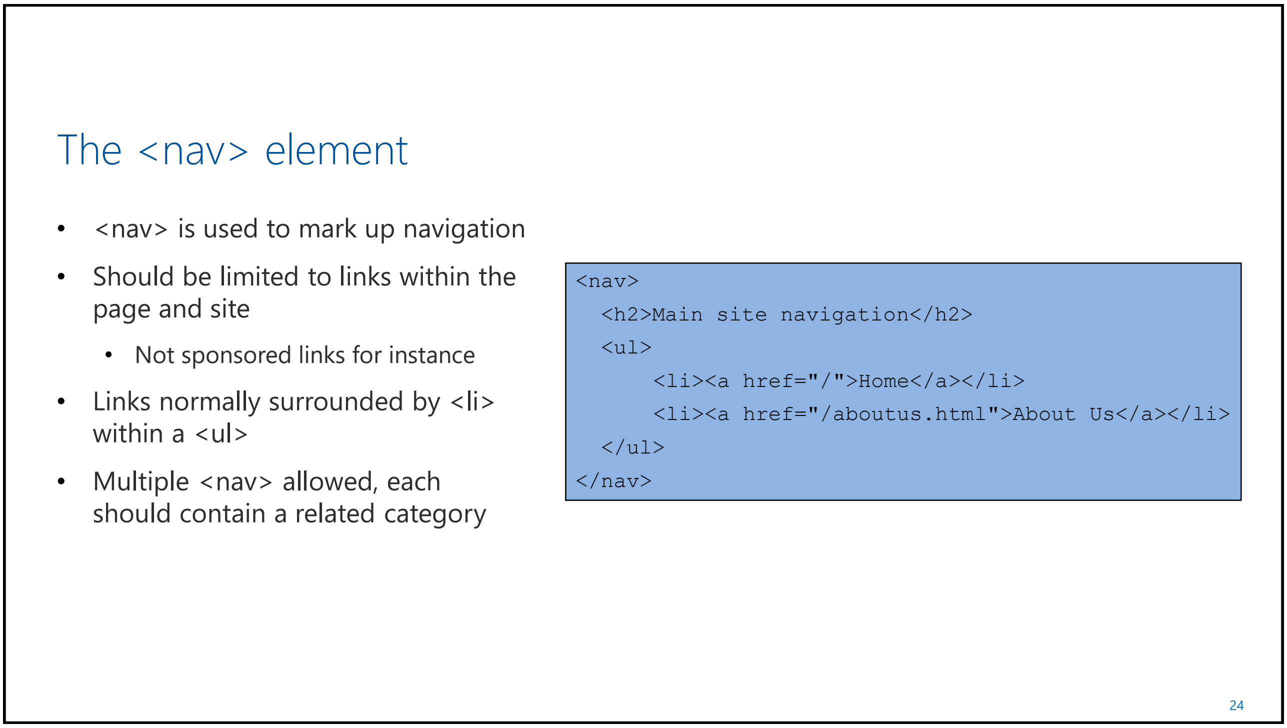
```
<h1>My article heading</h1>
<section>
  <h1>About me</h1>
  <p>All about me</p>
  <section>
    <h1>What I do for a living</h1>
    <p>I talk about web technologies for a living</p>
  </section>
</section>
```



The <header> element

- Normally, the first element of the document:
    - Should act as a container logos, links back to home etc.
    - Will usually contain a <h1> to <h6> to denote level of header
- There can be one <header> per sectioning block

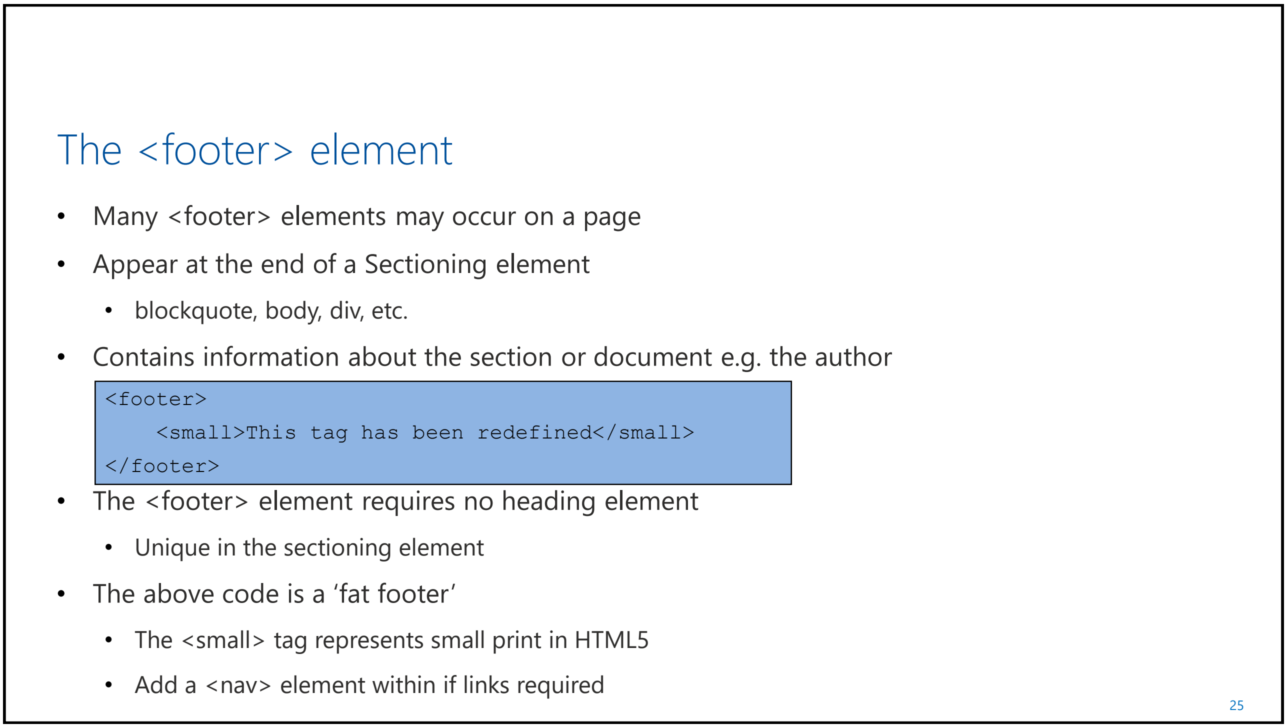
```
<header>
      <a href="/">
            <img src="logo.png" alt="QA Home">
      </a>
      <h1>My Main Title</h1>
      <h2>My Sub title></h2>
</header>
```



The <nav> element

- <nav> is used to mark up navigation
- Should be limited to links within the page and site
    - Not sponsored links for instance
- Links normally surrounded by <li> within a <ul>
- Multiple <nav> allowed, each should contain a related category

```
<nav>
  <h2>Main site navigation</h2>
  <ul>
      <li><a href="/">Home</a></li>
      <li><a href="/aboutus.html">About Us</a></li>
  </ul>
</nav>
```



The <footer> element

- Many <footer> elements may occur on a page
- Appear at the end of a Sectioning element
  - blockquote, body, div, etc.
- Contains information about the section or document e.g. the author

```
<footer>
    <small>This tag has been redefined</small>
</footer>
```

- The <footer> element requires no heading element
  - Unique in the sectioning element
- The above code is a ‘fat footer’
  - The <small> tag represents small print in HTML5
  - Add a <nav> element within if links required

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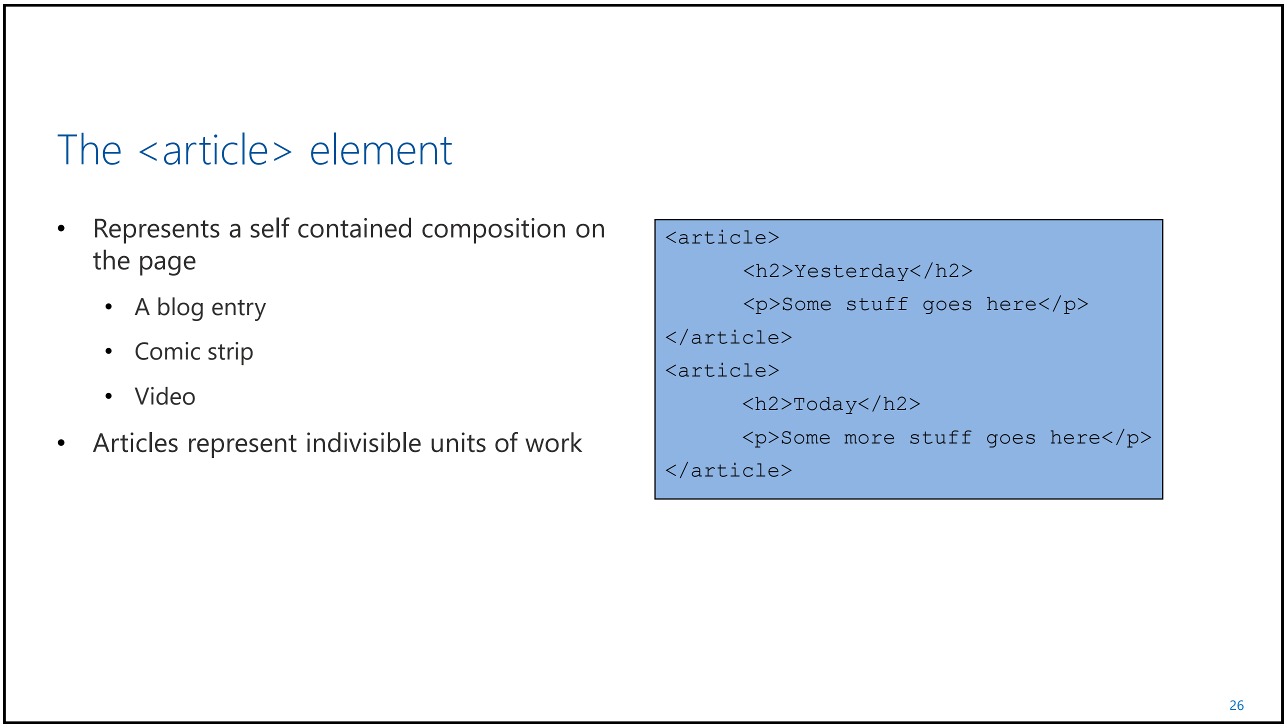

The <article> element

- Represents a self contained composition on the page
  - A blog entry
  - Comic strip
  - Video
- Articles represent indivisible units of work

```
<article>
      <h2>Yesterday</h2>
      <p>Some stuff goes here</p>
</article>
<article>
      <h2>Today</h2>
      <p>Some more stuff goes here</p>
</article>
```

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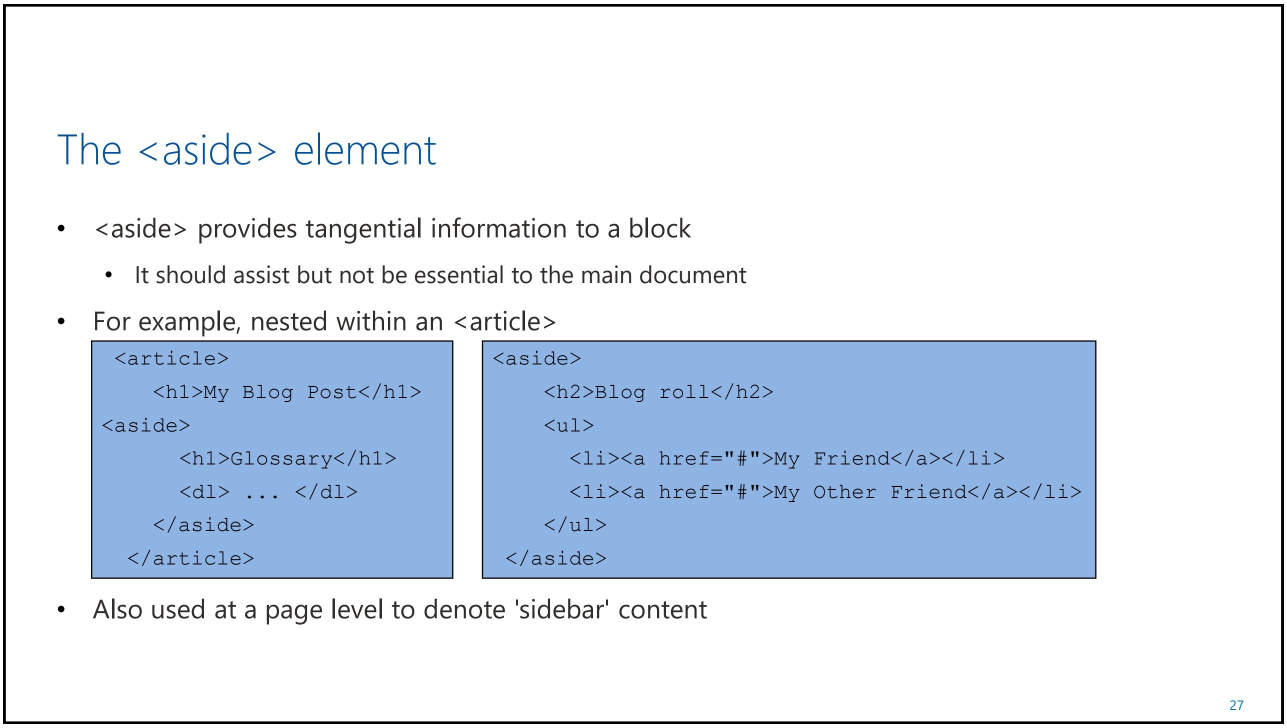


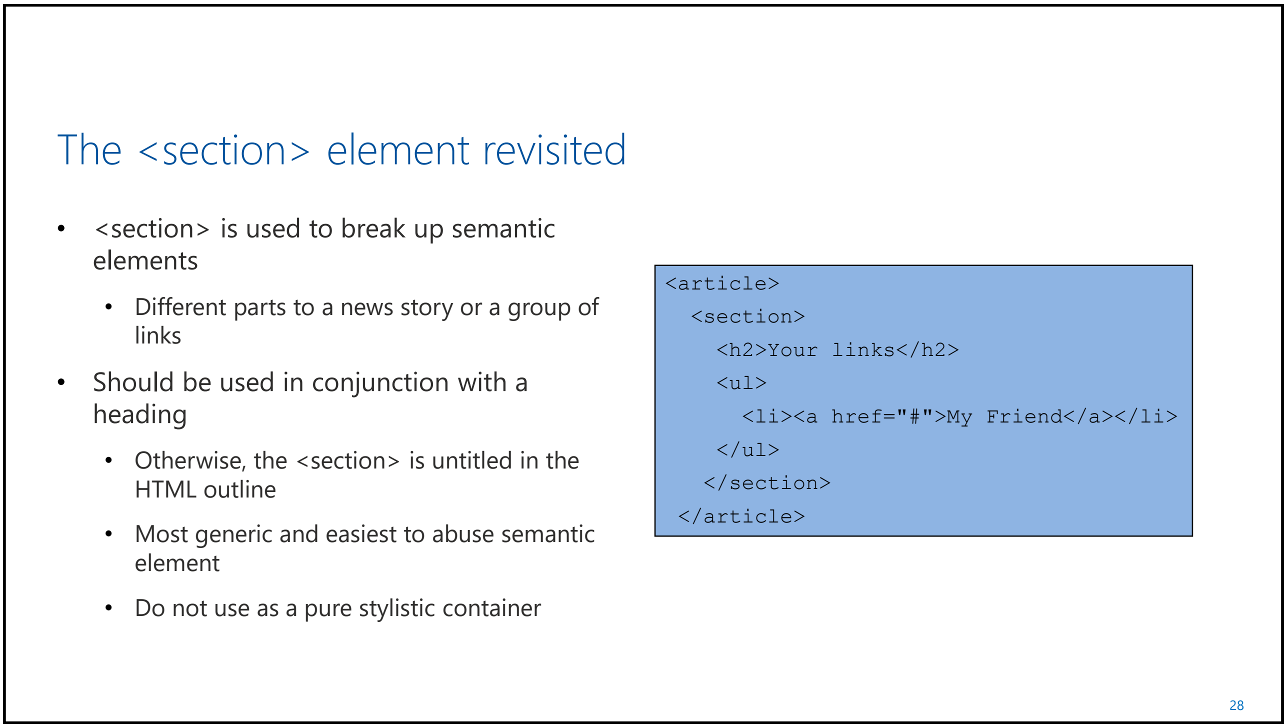
The <aside> element

- <aside> provides tangential information to a block
  - It should assist but not be essential to the main document
- For example, nested within an <article>

```
 <article>
    <h1>My Blog Post</h1>
<aside>
      <h1>Glossary</h1>
      <dl> ... </dl>
    </aside>
  </article>
```

```
<aside>
    <h2>Blog roll</h2>
    <ul>
      <li><a href="#">My Friend</a></li>
      <li><a href="#">My Other Friend</a></li>
    </ul>
 </aside>
```

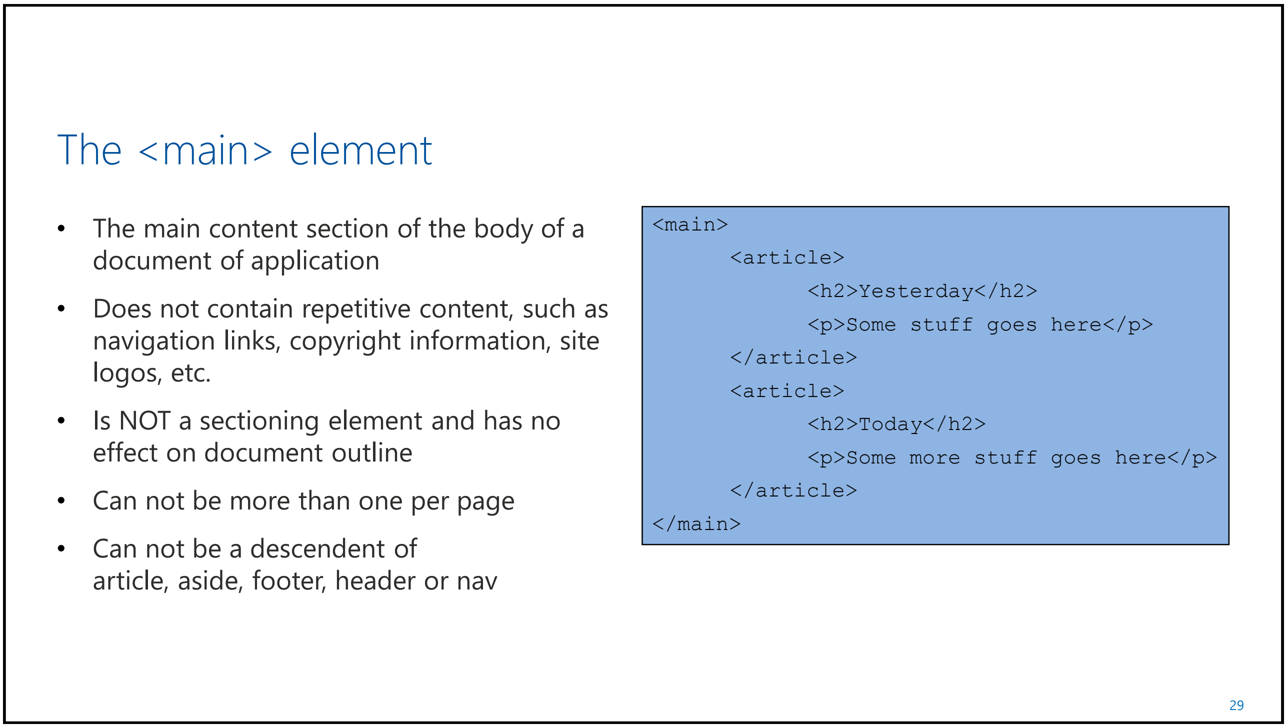
- Also used at a page level to denote 'sidebar' content



The <section> element revisited

- <section> is used to break up semantic elements
  - Different parts to a news story or a group of links
- Should be used in conjunction with a heading
  - Otherwise, the <section> is untitled in the HTML outline
  - Most generic and easiest to abuse semantic element
  - Do not use as a pure stylistic container

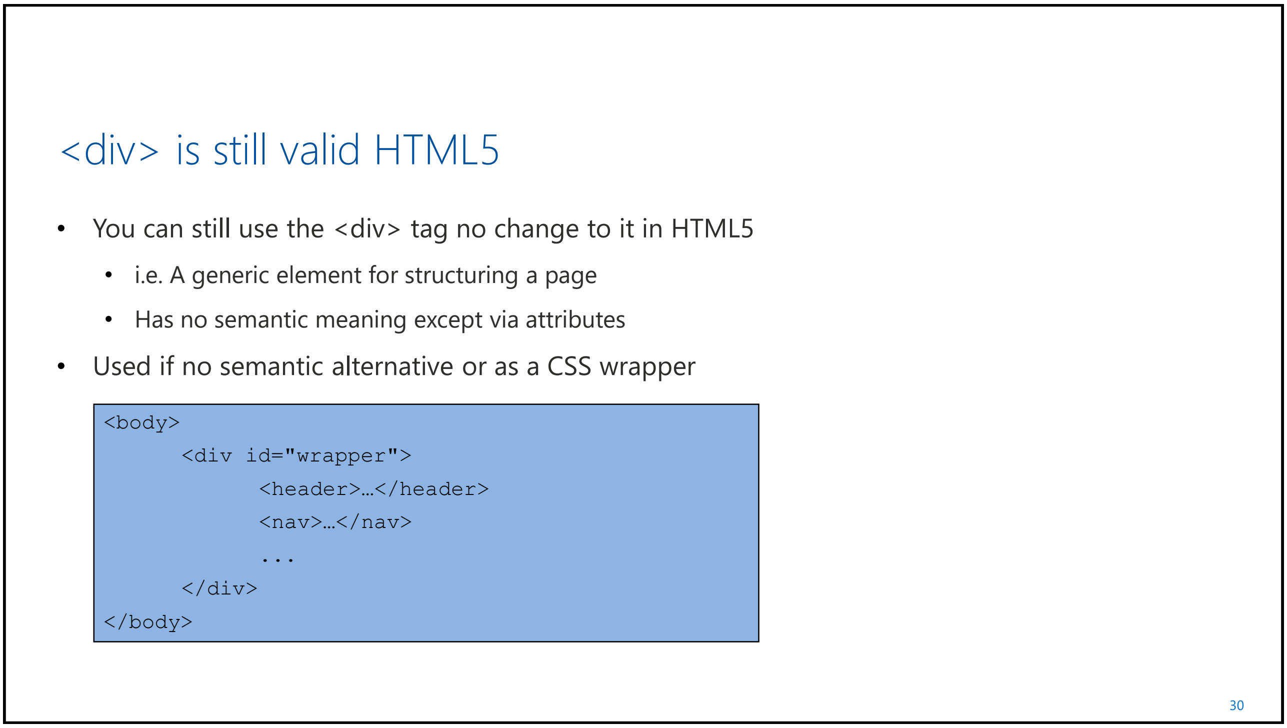
```
<article>
  <section>
    <h2>Your links</h2>
    <ul>
      <li><a href="#">My Friend</a></li>
    </ul>
   </section>
 </article>
```



The <main> element

- The main content section of the body of a document of application
- Does not contain repetitive content, such as navigation links, copyright information, site logos, etc.
- Is NOT a sectioning element and has no effect on document outline
- Can not be more than one per page
- Can not be a descendent of article, aside, footer, header or nav

```
<main>
    <article>
        <h2>Yesterday</h2>
        <p>Some stuff goes here</p>
    </article>
    <article>
        <h2>Today</h2>
        <p>Some more stuff goes here</p>
    </article>
</main>
```

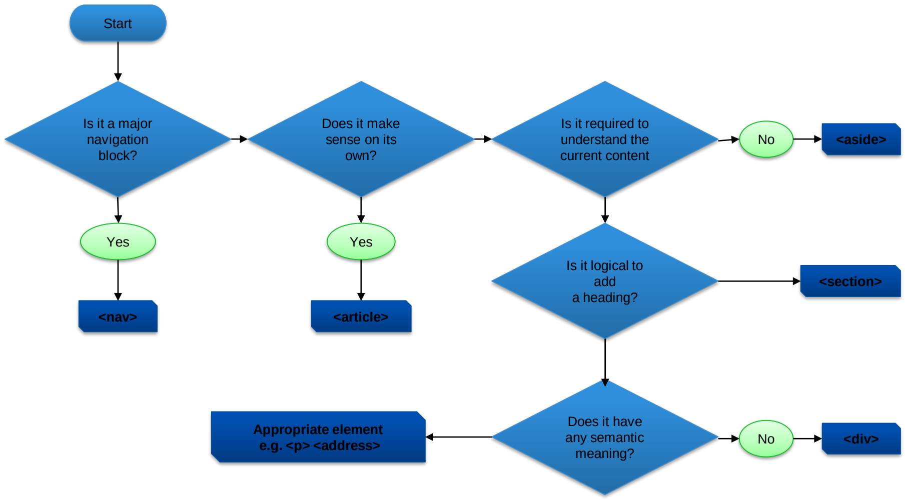


<div> is still valid HTML5

- You can still use the <div> tag no change to it in HTML5
  - i.e. A generic element for structuring a page
  - Has no semantic meaning except via attributes
- Used if no semantic alternative or as a CSS wrapper

```
<body>
    <div id="wrapper">
        <header>…</header>
        <nav>…</nav>
        ...
    </div>
</body>
```

When to use what


Start
Is it a major navigation block?
Yes
<nav>
Does it make sense on its own?
Yes
<article>
Is it required to understand the current content
No
<aside>
Is it logical to add a heading?
<section>
Does it have any semantic meaning?
No
<div>
Appropriate element e.g. <p> <address>

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Restructuring a blog with HTML5

- Each blog entry would be an article

```
<article>
        <header>
            <h2>My HTML5 Blog</h2>
            <p>March 15th 2010</p>
        </header>

        <p>Much less divitius occurs!</p>

        <footer>
            <address>
            <a href="..">Posted in</a>
            </address>
        </footer>
</article>
```

- Providing clear semantic intent for the page

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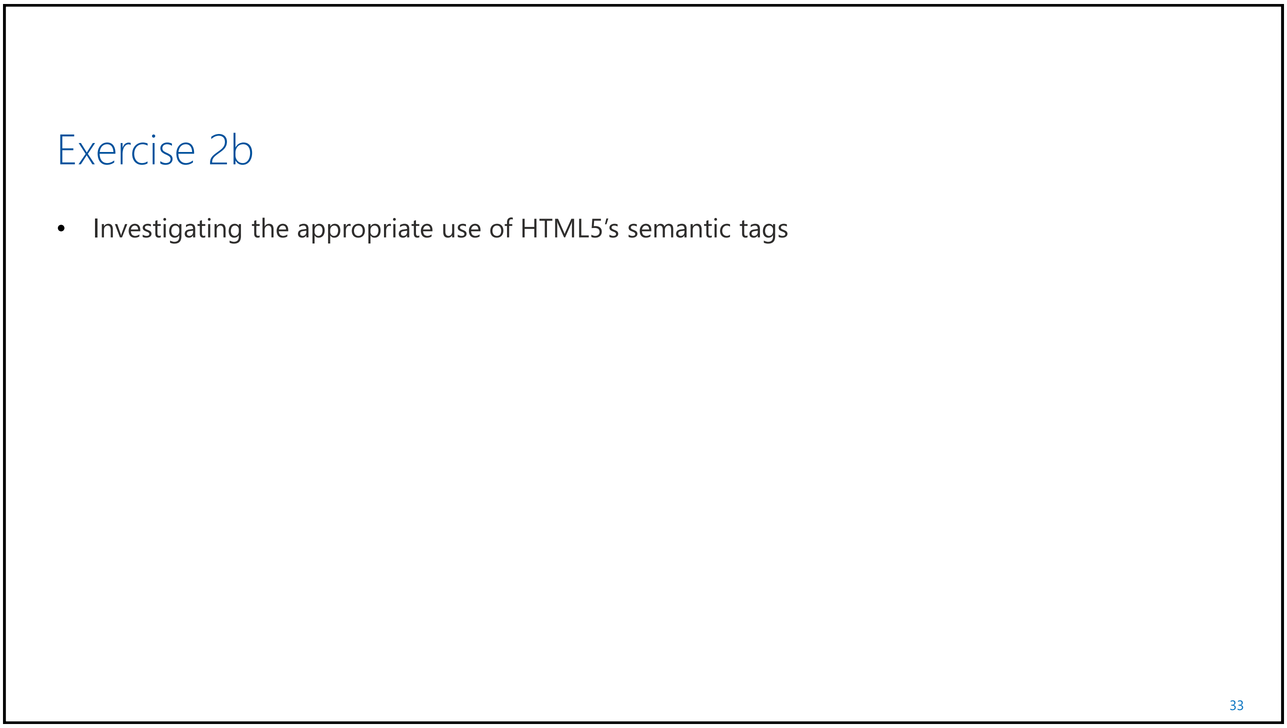
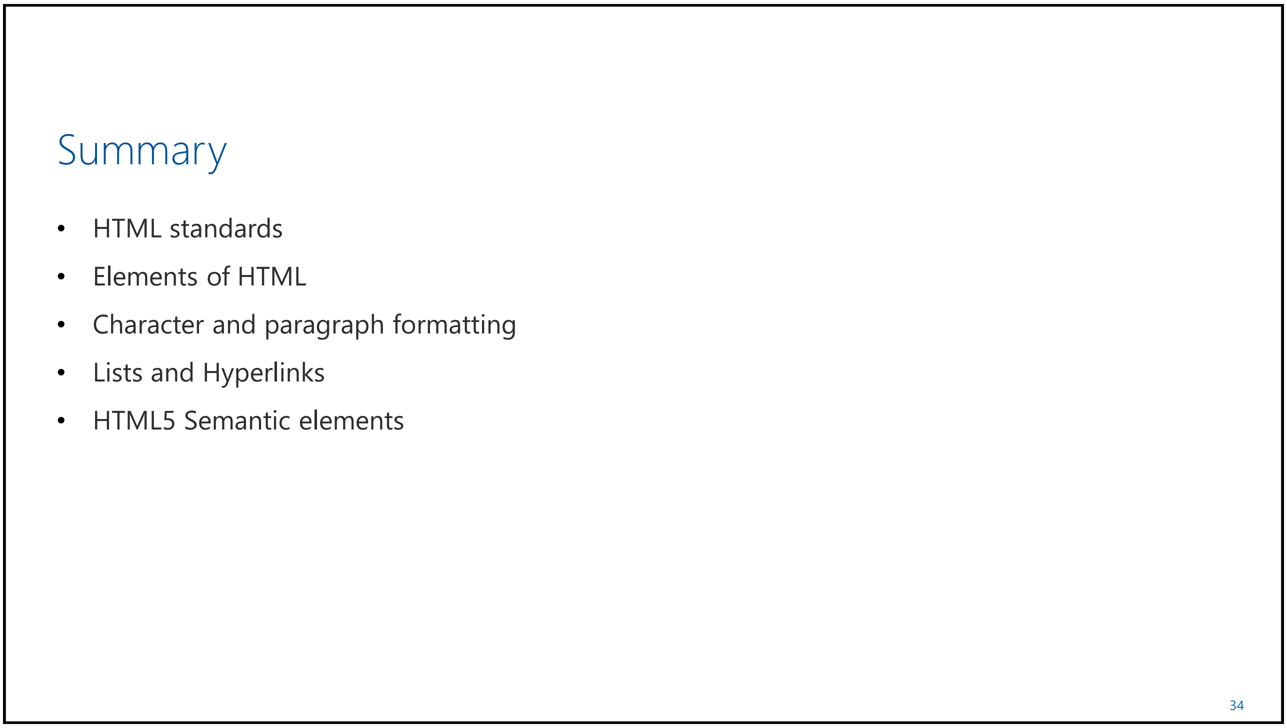


Exercise 2b

- Investigating the appropriate use of HTML5’s semantic tags



Summary

- HTML standards
- Elements of HTML
- Character and paragraph formatting
- Lists and Hyperlinks
- HTML5 Semantic elements