

Web Development

Module 4 –

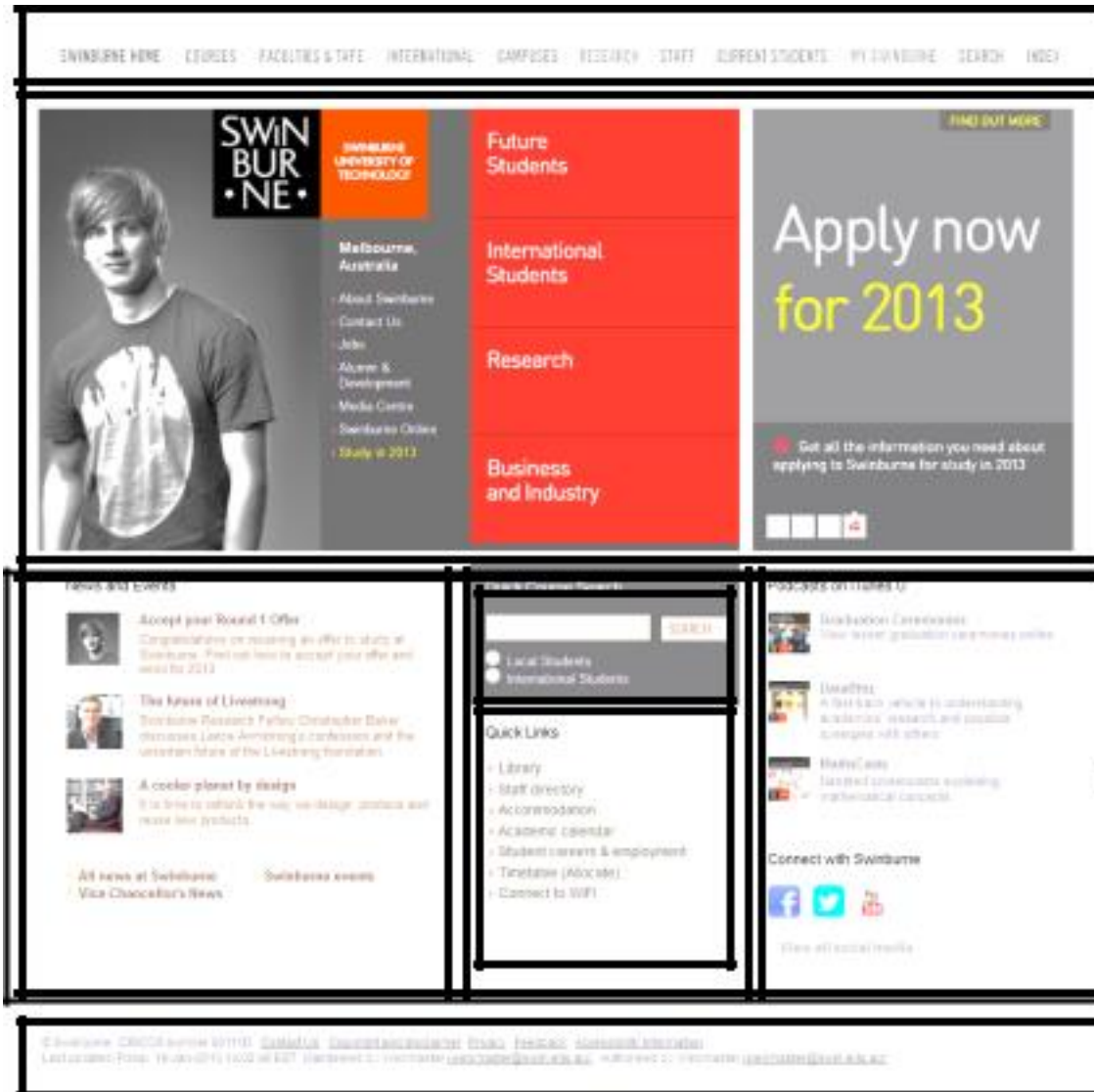
HTML: Page Structure and Content
Models

CSS: Presentation

Contents

- HTML: Page Structure and Content Models
 - Division and Span
 - HTML5: Article, Section, Header, Main, Footer and Navigation
 - HTML5: Aside and Figure
- CSS: Presentation
 - Application
 - Selectors
 - Properties

Division



Page logical divisions

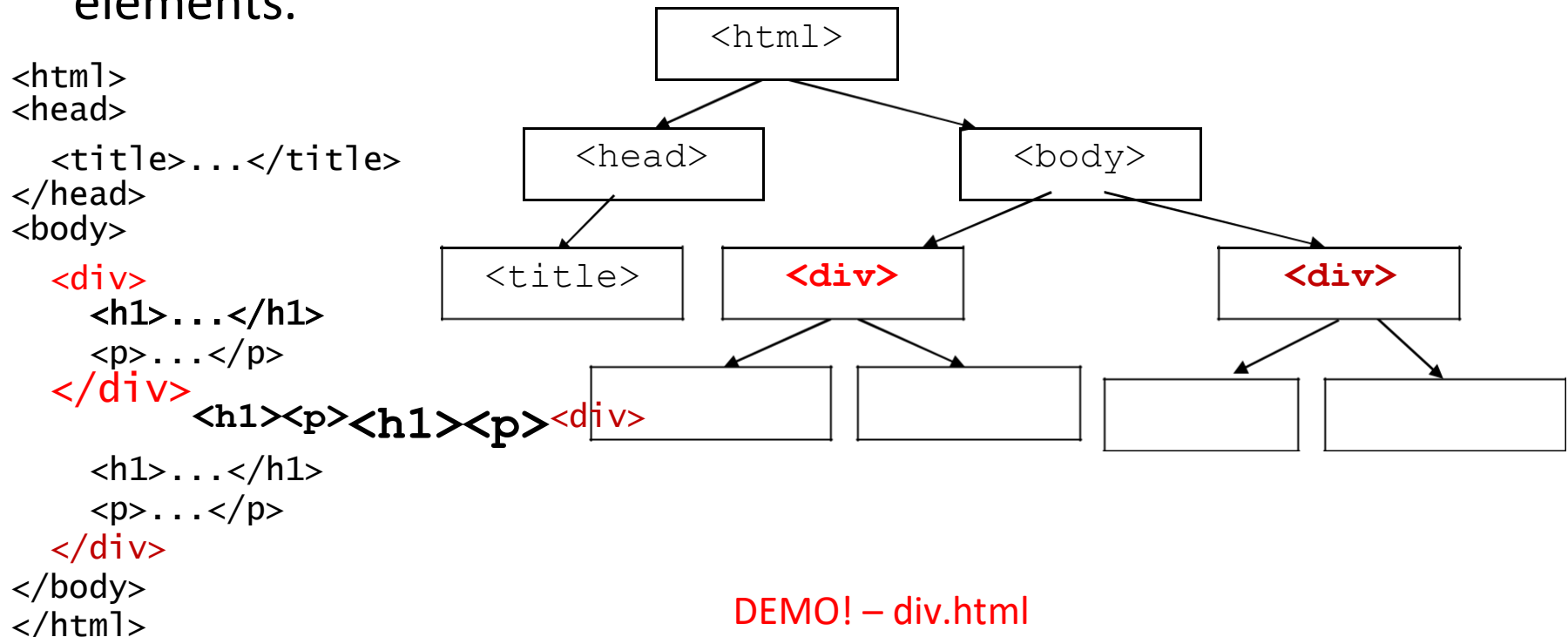
- Navigator (1)
- Banner (1)

- Main (1)
- Columns (3)
- Footer (1)

May contain smaller logical division

Division

- The **html** element - the “**root**” element of any html document, usually contains only two children **head** and **body**.
The **head** then contains the **title**, and other ‘head’ elements.
The **body** can contain many other elements, grouped by **div** elements.



Division

- In HTML **<div>elements** are commonly used
 - to define different divisions on the web page
 - to provide logical structure for the web page, e.g., banners, menus, footers and main content.
 - to allow CSS formatting for groups of elements.

```
<body>
  <div id="navigator">
    <a>...</a>
    <a>...</a>
    <a>...</a>
  </div>
  <div id="main_content">
    ...
  </div>
  <div id="footer">
    ...
  </div>
</body>
</html>
```

```
style.css

#navigator{
  color:red;
}

#main_content{
  color:brown;
  background-image:url('...');
}

#main_content{
  color:purple;
}
```

DEMO! – div.html

Division

```
<div id="header">...</div>
```

```
<div id="banner">...</div>
```

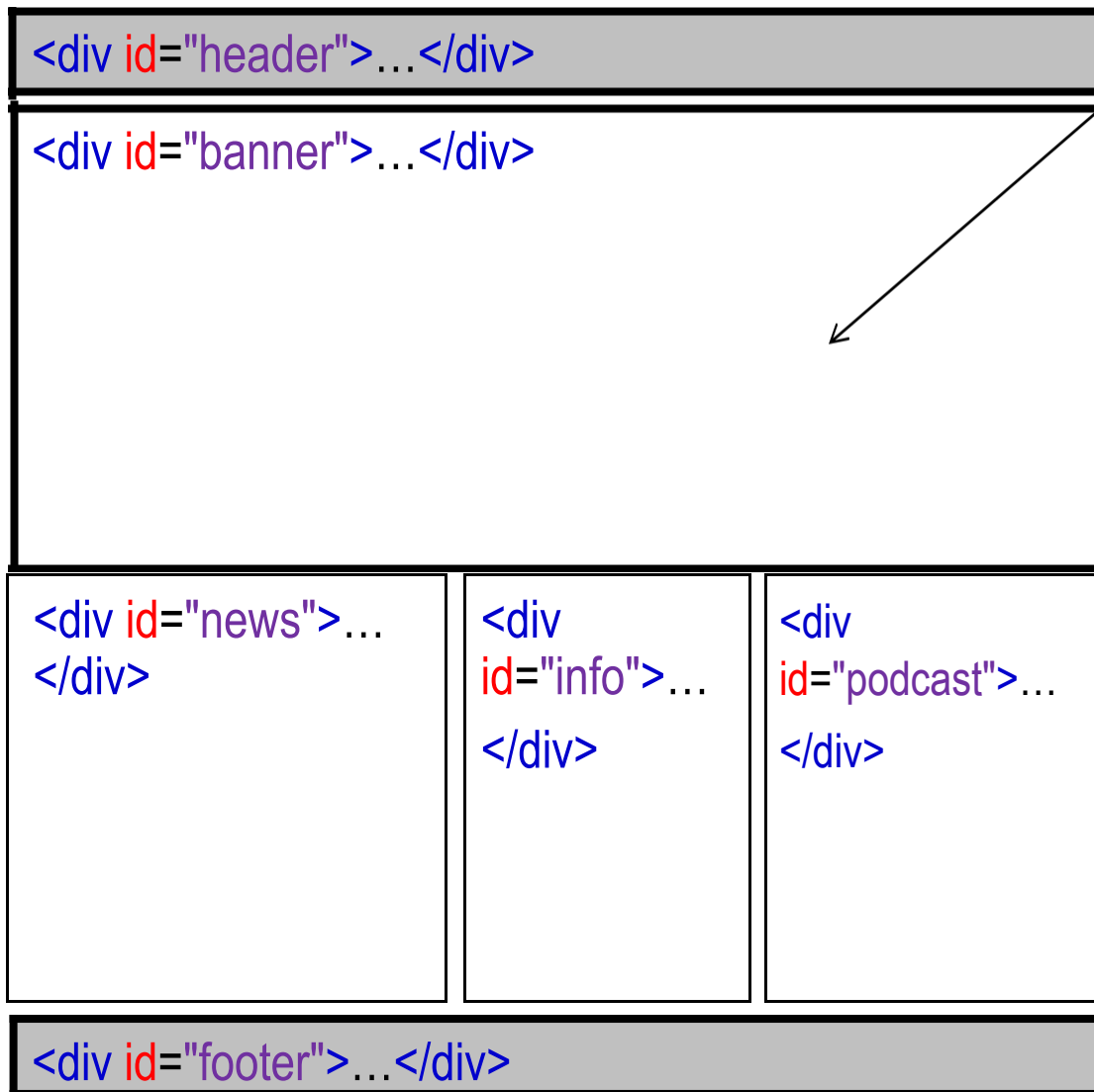
Presented without CSS

- Always remember that **HTML** is only about **structure** and **content**, how these will



- the screen will be specified through **CSS**

Division



Presented with CSS

- **id** is used if the style is only to be applied to one division on the web page
- **class** is used if a style is to be applied to several elements on the web page, for example multiple articles

HTML Structure: ``

- `...` is a generic **inline** level container used to group other inline elements, such as text.
- Similar to the `<div>` element, the `` tag is used to group content, but only for inline content.
- **Do not** use a `` when you should be using a logical element like `` or ``.

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HTML5 New Elements

- Many websites contain div elements like:
 - `<div id="nav">`
 - `<div id="header">`
 - `<div id="main">`
 - `<div id="footer">`
 - Thus, HTML5 introduces several new elements for structuring web pages:
 - `<nav>` instead of `<div id="nav">`
 - `<header>` instead of `<div id="header">`
 - `<main>` instead of `<div id="main">`
 - `<footer>` instead of `<div id="footer">`
- etc ...

DEMO! – div.html

HTML5 Structure: Main

```
<header>...</header>
```

```
<nav>  
...  
</nav>
```

```
<main>
```

```
<article>...</article>
```

```
<article>...</article>
```

```
<article>...</article>
```

```
</main>
```

```
<footer>...</footer>
```

- Always remember that **HTML** is only about **structure** and **content**, how these will be presented on the screen will be specified through **CSS**

DEMO! – div.html

HTML5 Structure: Navigation

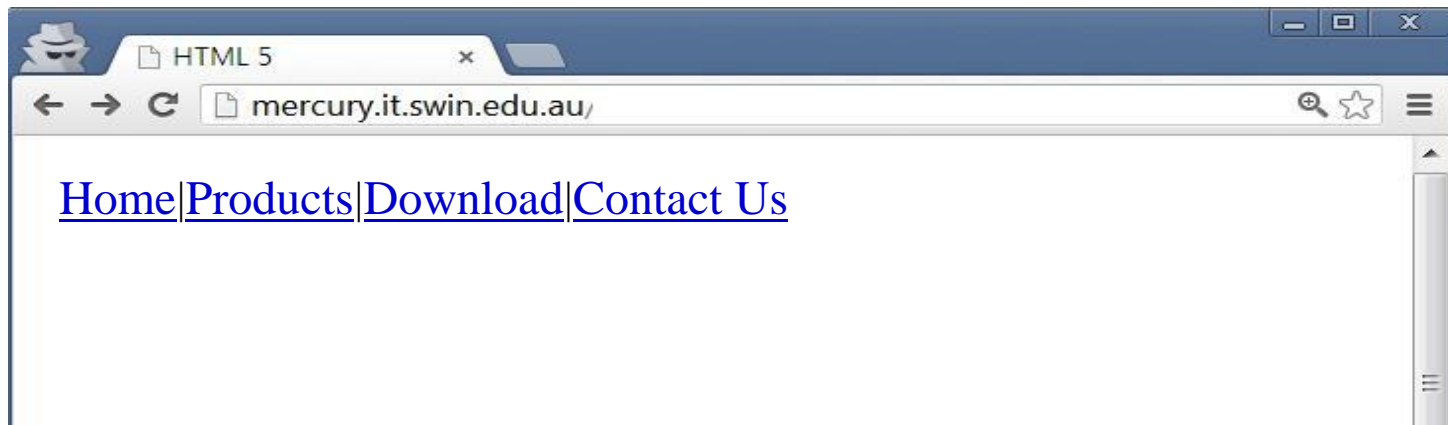
- `<nav>...</nav>` specifies a section of navigation links.
- It is intended only for major block of navigation links.
 - There can be multiple `<nav>` elements on one webpage.

HTML5 Structure: Navigation

<nav>

```
<a href="index.php">Home</a> |  
<a href="product.php">Products</a> | <a  
href="download.php">Download</a> | <a  
href="contact.php">Contact Us</a>
```

</nav>



HTML5 Structure: Main

- `<main>...</main>` represents the *main content* of the `<body>` of a web page.
- **Only one** `<main>` is permitted in a `<body>`
- The *main content* area consists of content that is directly related to or expands upon the central topic of a document or central functionality of an application.

HTML5 Structure: Article

- `<article>...</article>` defines independent, self-contained content.
- Content should make sense on its own and it should be possible to distribute it independently from the rest of the site.
- Examples are
 - Forum post
 - Blog post
 - News story
 - Comment

HTML5 Structure: Article

```
<article>
```

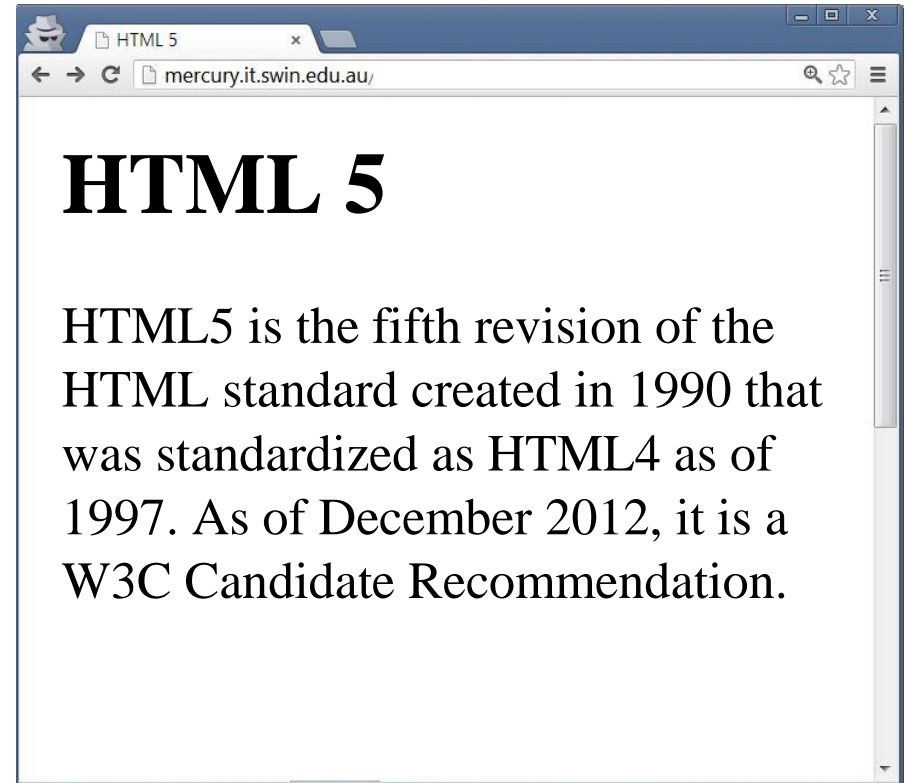
```
  <h1>HTML 5</h1>
```

```
  <p>HTML5 is
```

```
thefifth revision of  
the HTML standard  
created in 1990 that  
was standardized as  
HTML4 as of 1997. As  
of December 2012, it  
is a W3C Candidate  
Recommendation.
```

```
  </p>
```

```
</article>
```

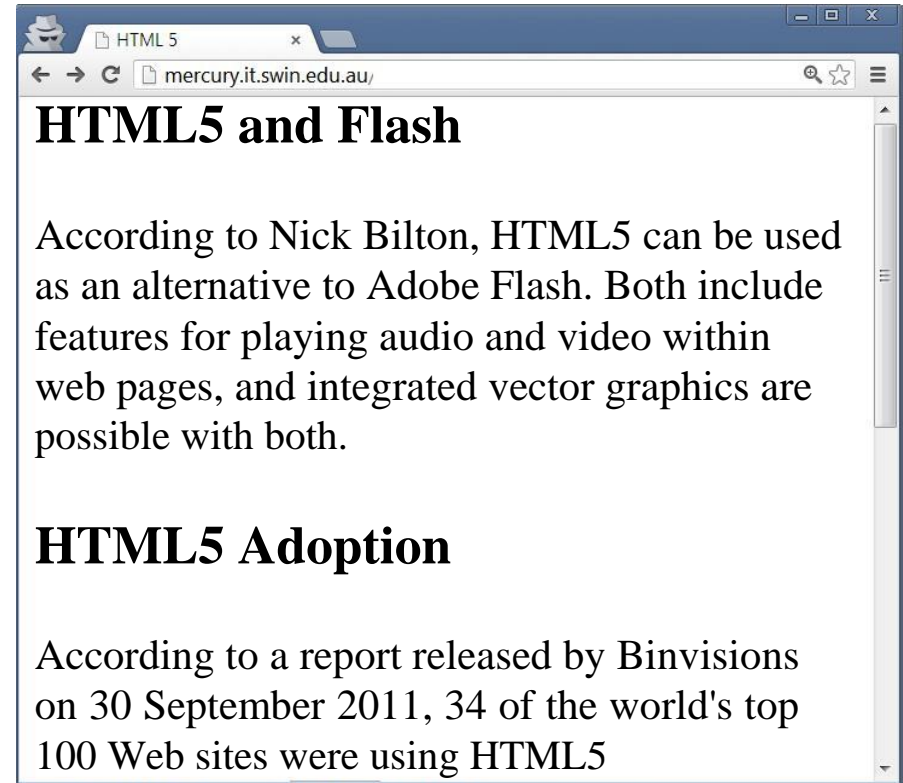


HTML5 Structure: Section

- `<section>...</section>` defines sections in a document. Such as chapters, headers, footers, or any other sections of the document.

HTML5 Structure: Section

```
<article>
  <section>
    <h1>HTML5 and
    Flash</h1><p>According
    to Nick
    Bilton, HTML5 can be used as an
    alternative to Adobe Flash. Both
    include features for playing
    audio and video within web
    pages, and integrated vector
    graphics are possible with
    both.</p>
  </section>
  <section>
    <h1>HTML5
    Adoption</h1><p>According to
    a report released by
    Binvisions on 30
    September 2011, 34 of the
    world's top 100 Web sites
    were using HTML5</p>
  </section>
</article>
```

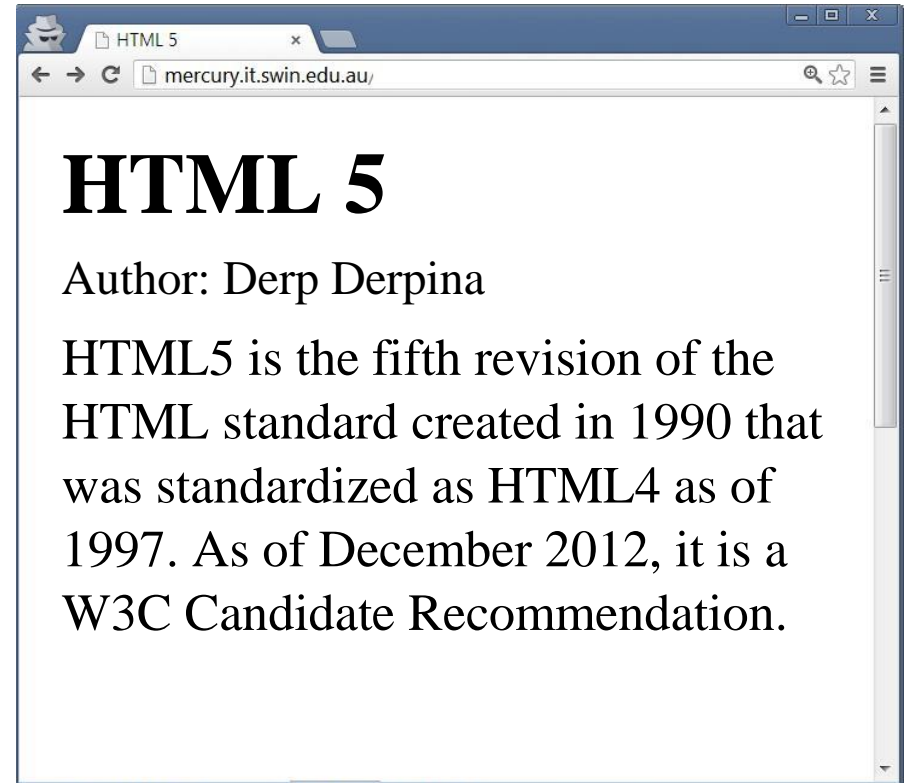


HTML5 Structure: Header

- `<header>...</header>` defines a header for a document, article and section.
- It should be used as a container for introductory content or set of navigational links for its **containing** content.
- There can be several `<header>` elements in one HTML document.
- Note: It cannot be placed within a `<footer>` or another `<header>` element.

HTML5 Structure: Header (continued)

```
<article>
  <header>
    <h1>HTML
    5</h1><p>Author
    : Derp
    Derpina</p>
  </header>
  <p>HTML5 is the fifth
  revision of the HTML
  standard created in 1990
  that was standardized as
  HTML4 as of 1997. As of
  December 2012, it is a
  W3C Candidate
  Recommendation.</p>
</article>
```



Refers specifically to the HTML5 article as the enclosing element is `<article>`

HTML5 Structure: Footer

- `<footer>...</footer>` specifies a footer for a document or a section.
- It should contain information about its **containing** content, such as copyright information, links to terms of use, contact information.
- Location information can be enclosed in `<address>...</address>` tags.
- There can be several `<footer>` elements on one web page.

HTML5 Structure: Footer (continued)

```
<body>
  <article>
    <header>...</header>
    <section>...</section>
    <footer>
      Posted by: Qiang (Nathan) He 27 Aug
    </footer>
  </article>
  <article>
    <header>...</header>
    <section>...</section>
    <footer>
      Posted by: Derp Derpina 19 March
    </footer>
  </article>
</body>
```

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HTML5 Structure: Aside

- The `<aside>...</aside>` element is used to contain supporting information related to the surrounding content, such as related reading links and glossaries.
- You can float the `aside` elements to the right with the following CSS rule:

```
aside
{
    float:right; DEMO! – div.html
}
```

HTML5 Structure: Aside

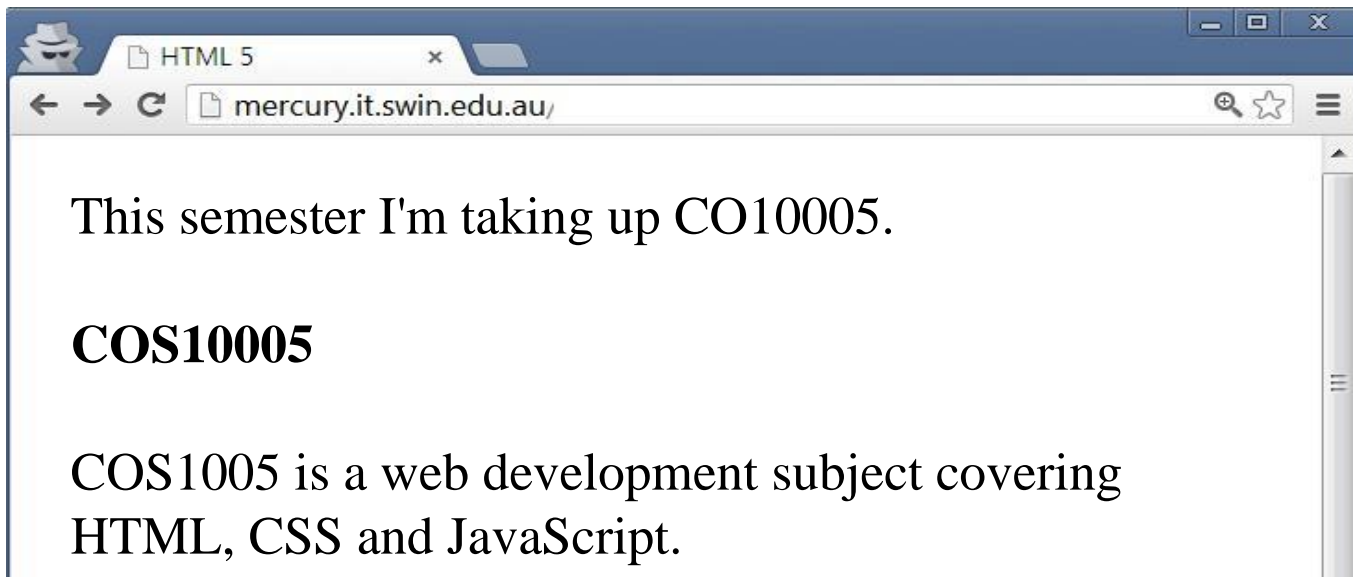
```
<p>This semester I'm taking up COS10005.</p>
```

```
<aside>
```

```
  <h4>COS10005</h4>
```

```
  <p>COS10005 is a web development subject  
  covering HTML, CSS and JavaScript.</p>
```

```
</aside>
```



HTML5 Structure: Figure

- `<figure>...</figure>`encloses a self-contained content such as illustrations, diagrams, photos, code listings
- Its position should be independent of the main flow, and can change without affecting the flow of the document.
- The `<figcaption>` element is used to add a caption for the `<figure>` element.

HTML5 Structure: Figure (continued)

```
<p>The Advanced Technologies  
Centre (ATC) has achieved a 5  
Star Green Star - Education  
Design v1 rating from the  
Green Building Council of  
Australia.</p>
```

```
<figure>
```

```
  
```

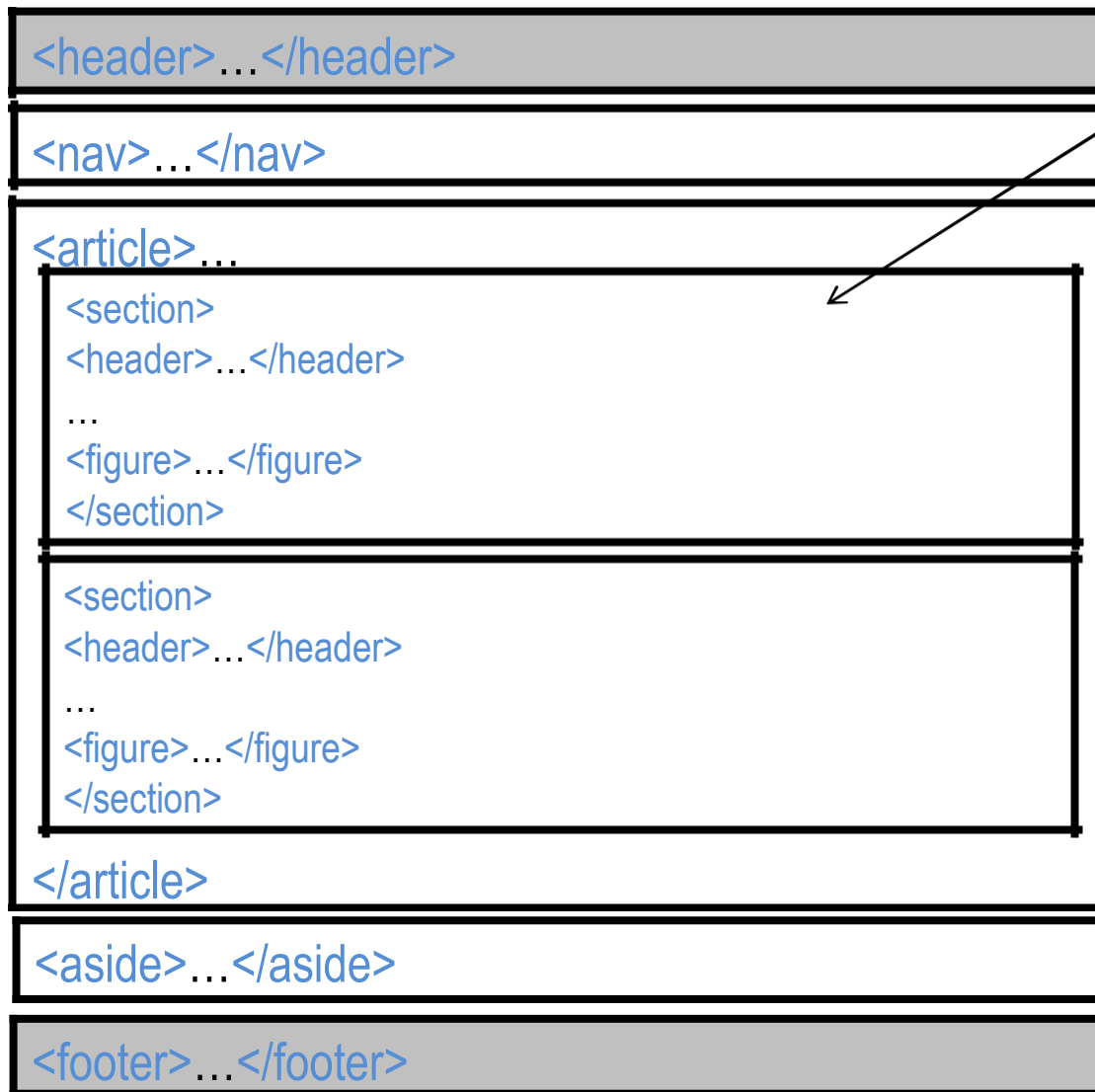
```
<figcaption>
```

```
Advanced Technologies Centre  
(ATC)
```

```
</figcaption>
```

```
</figure>
```

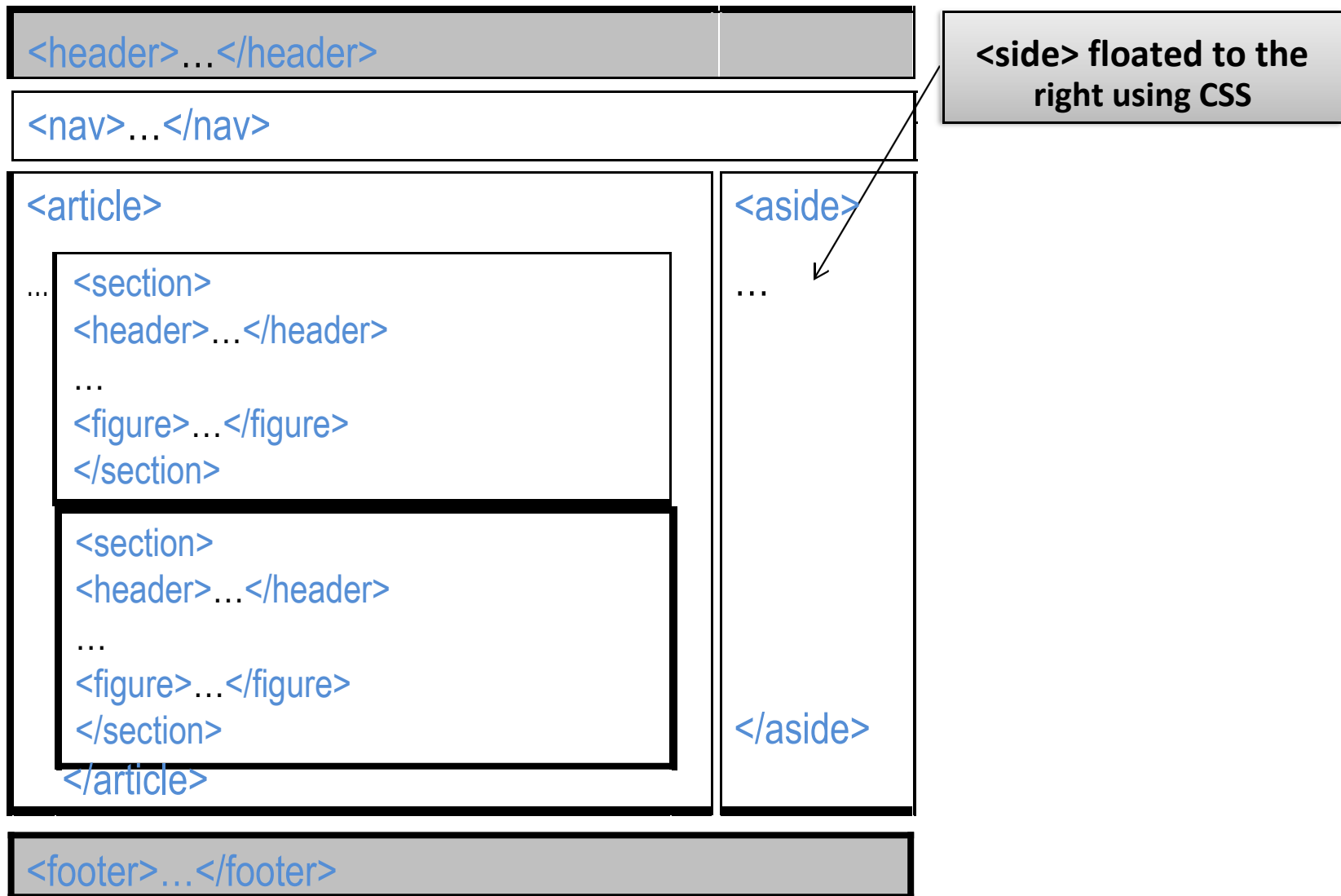

HTML5 Structure: Putting it all together



Presented without CSS

- Always remember that **HTML** is only about **content** and **structure**, where these will appear on the screen will be specified through **CSS**

HTML5 Structure: Putting it all together



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HTML5 Layout: (without CSS)

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```
<body>
  <header>
    <h1>Web Development Series</h1>
  </header>
  <nav>
    <ul>
      <li><a
        href="home.htm">Home</a></li><li><a
        href="about.htm">About</a></li>
    </ul>
  </nav>
  <article>
    <section>
      <h2>COS10005</h2>
      <p>COS10005 is a web development
subject covering HTML, CSS and JavaScript</p>
    </section>
    <section>
      <h2>COS20013</h2>
      <p>COS20013 is a web programming
subject covering PHP and MySQL</p>
    </section>
  </article>
  <aside>
    <p>XAMPP is an easy to install Apache
distribution containing MySQL, PHP and
Perl.</p>
  </aside>
  <footer>
    <p>Copyright 2014</p>
  </footer>
</body>
```

Web Development Series

- [Home](#)
- [About](#)

COS10005

COS10005 is a web development subject covering HTML, CSS and JavaScript

COS20013

COS20013 is a web programming subject covering PHP and MySQL

XAMPP is an easy to install Apache distribution containing MySQL, PHP and Perl.

Copyright 2014

This page
contains
5 major parts.

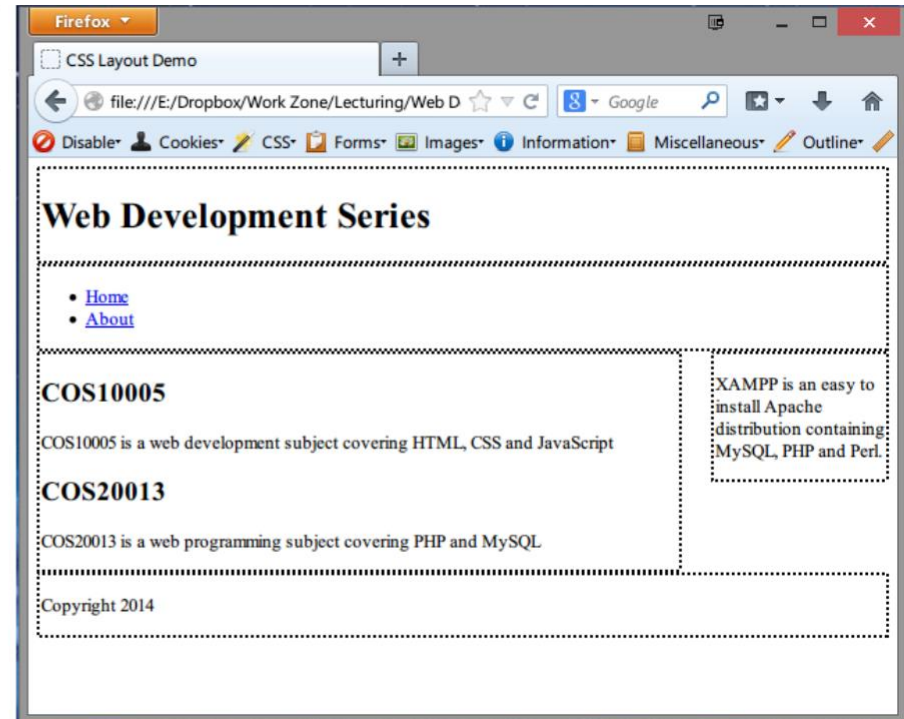
CSS Layout + Style

```
header, nav {border-  
  style : dotted;  
}
```

```
article {  
  float      : left;  
  width      : 75%;  
  border-style : dotted;  
}
```

```
aside{  
  float      : right;  
  width      : 20%;  
  border-style : dotted;  
}
```

```
footer {  
  clear      : both;  
  border-style : dotted;  
}
```



CSS: What is it?

- **Cascading Style Sheet (CSS)**
is a flexible, cross-platform, standards-based language developed by W3C
- It allows web designers to apply styles (e.g. fonts, colour and page layout) to one or more web pages.

Source: <http://www.w3.org/Style/CSS/>

CSS: Advantage and Disadvantage

- Advantages of CSS
 - Style is separated from HTML content
 - Styles can be stored and applied to webpages
 - Web page layout can be better controlled
 - Different styles can be used to present web pages to different devices, e.g., PC and mobile devices.
 - Web documents are potentially smaller
 - Web site maintenance is easier
- Disadvantage of CSS
 - Not all styles (currently) uniformly supported by all browsers

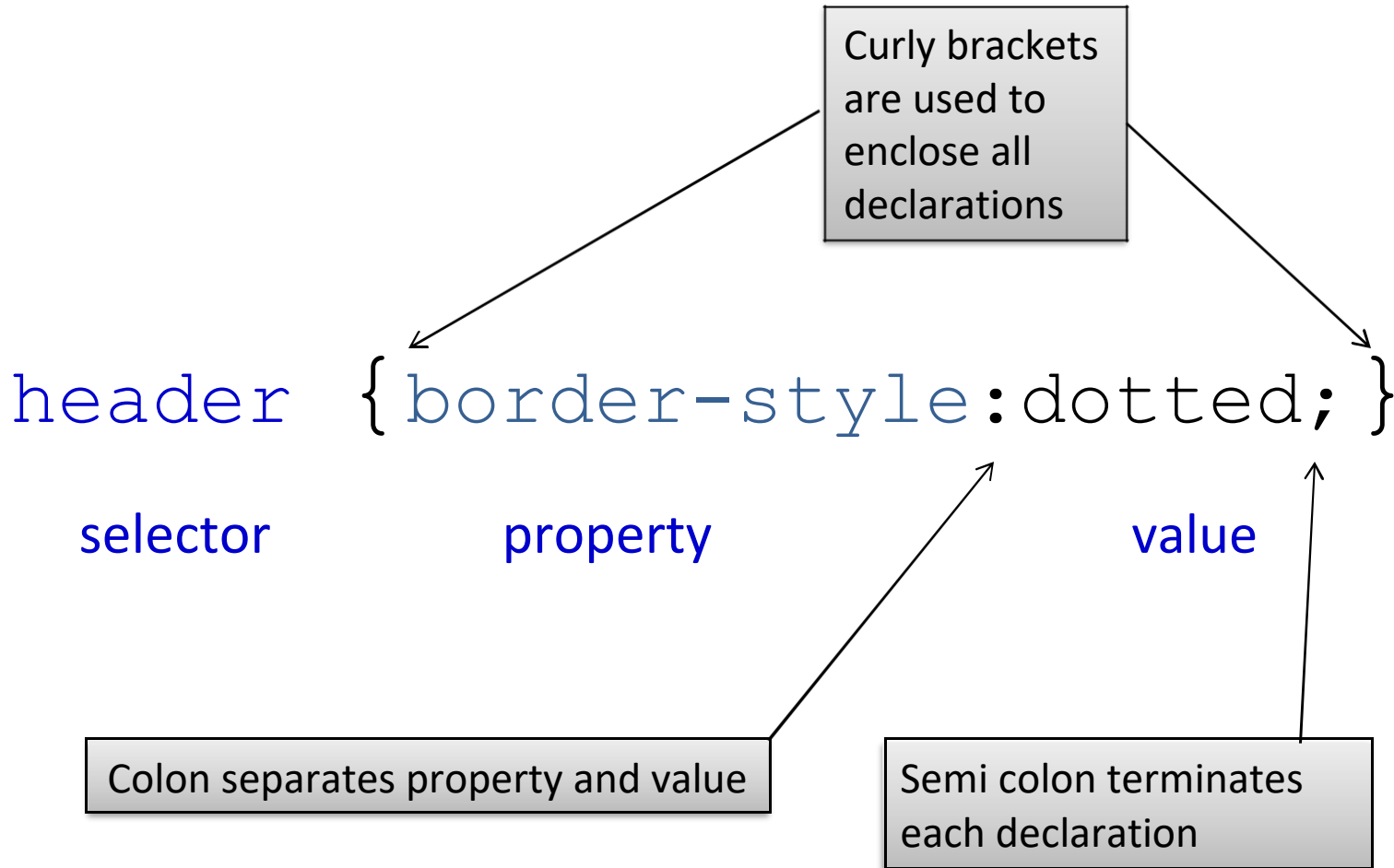
CSS: Selectors and Declarations

- Style is composed of rule sets
- A rule set (also called "rule") consists of a selector followed by a declaration block.
 - **Selector**
 - Specifies which HTML elements that style is applied to.
e.g. the selector could be a HTML element, class name, id name, grouping, combinations, and more.
 - **Declaration block**
 - **property** name and property **value** of the style.
Multiple declarations are separated with ;

```
selector { property :value; ...}
```

Declaration Block

CSS: Selectors and Declarations



Example CSS Rules

```
header, nav {  
    border-style : dotted;  
}
```

```
section {  
    float : left;  
    width : 75%;  
    border-style : dotted;  
}
```

```
aside {  
    float : right;  
    width : 20%;  
    border-style : dotted;  
}
```

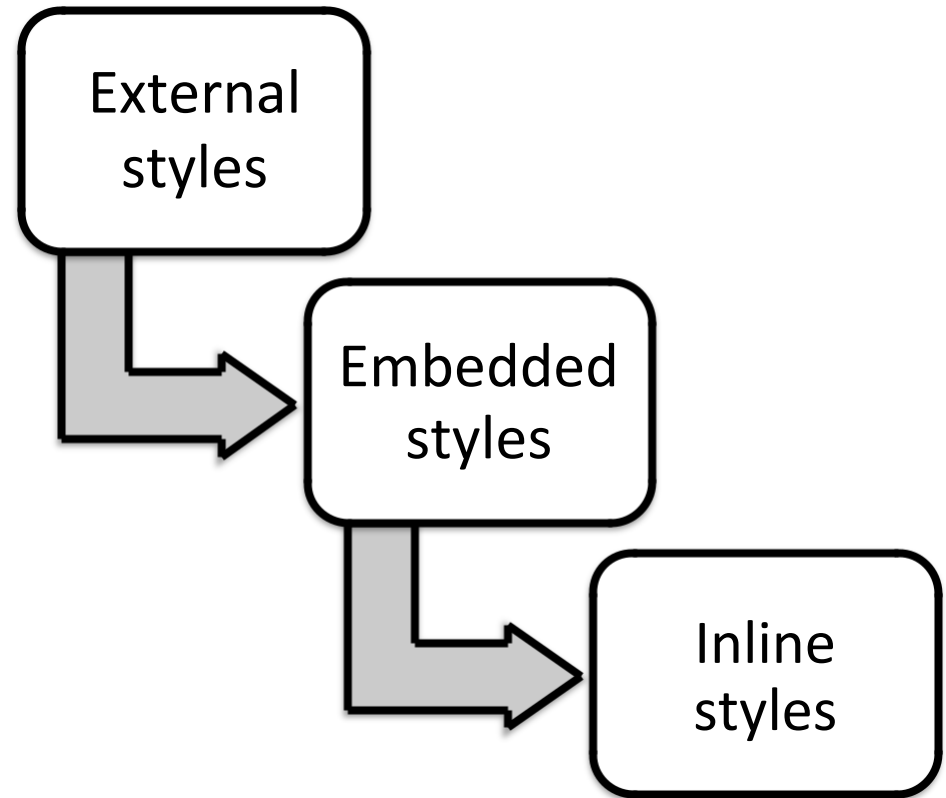
DEMO! – div.html

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Methods of Applying CSS to HTML

- **External** –coded in a separate file
- **Embedded** – code in the `<head>` section
- **Inline** –coded as an HTML element attribute



Rules of precedence in applying CSS styles

Methods of Applying CSS to HTML

- **Inline**

```
<section style="...">...</section>  
<h1 style="color:blue;">...</h1>
```

- **Embedded**

```
<head>  
  <style  
    type="text/css">h1  
    {color:blue;}  
    ...  
  </style>  
  <title>...</title>  
</head>
```

Limitation:

Can only be used for one HTML element.

Limitation:

Can only be used for one HTML page.

Methods of Applying CSS to HTML

- **External**

```
<link href="filename.css"  
      rel="stylesheet"/>
```



- **Imported** within a CSS stylesheet

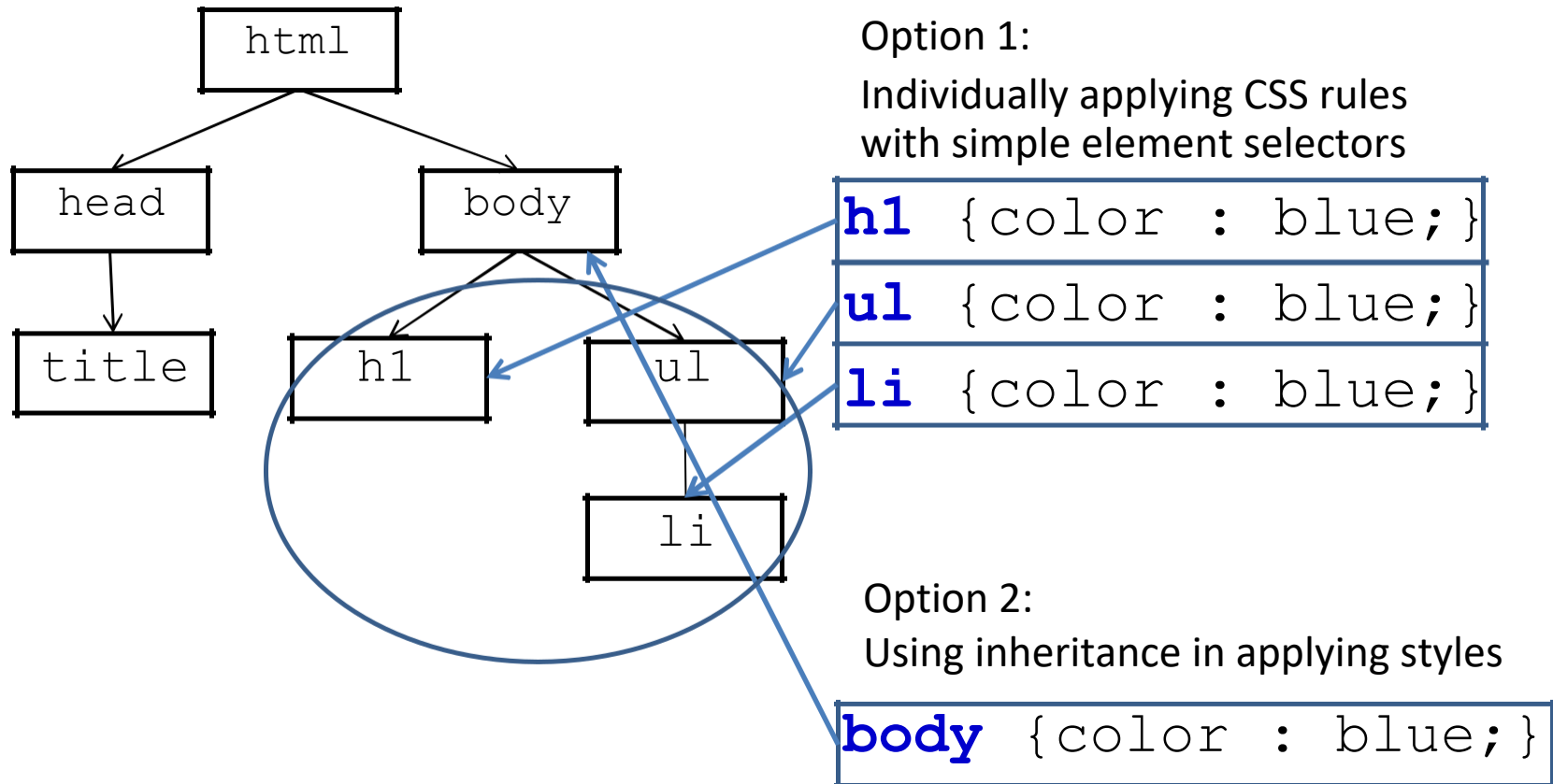
```
@import url("basic.css");
```

```
h1 {...}
```

```
h2 {...}
```

DEMO! – div.html

CSS: Inheritance



DEMO! – div.html

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 - Properties

CSS: Universal Selector

- Universal selector is represented by *

```
* { color : blue; }
```

- Can be overridden by more specific rule, regardless of code order

```
* { color : blue; }
```

```
p {color: red; }
```

or

```
p {color: red; }
```

```
* { color : blue; }
```

- Webpage will have blue coloured text, except those enclosed in `<p>` tags

DEMO! – div.html

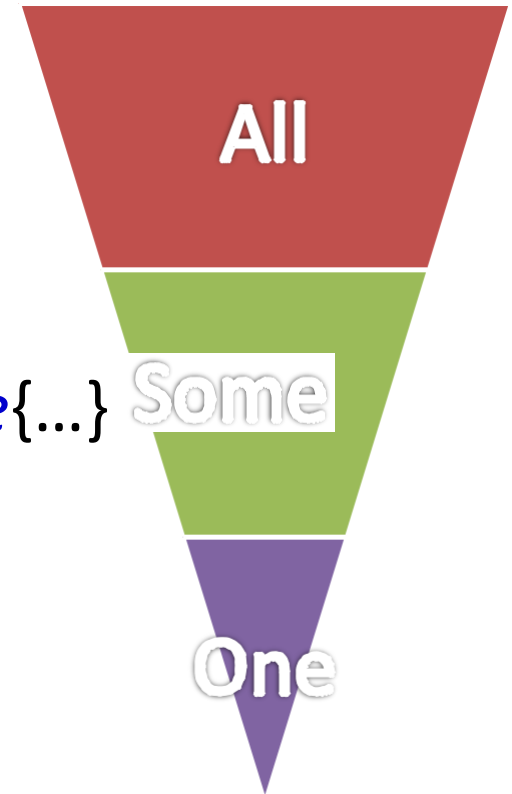
CSS: Class and ID Selectors

- HTML element selectors
 - applies style to all of that element within the document
- Class allows styles to be
 - applied to all HTML elements with the class name
- ID allows styles to be
 - applied to one specific HTML element with the ID

`h1 {...}`
`p {...}`

`.classname {...}`

`#id1 {...}`
`#id2 {...}`



CSS: ID Selector

- Apply a HTML **id** attribute

```
<p id="copyright">...</p>
```

- Select by using the id name prefixed with a hash "#"

```
#copyright{color: red; }
```

CSS: Class Selector

- Apply a HTML **class** attribute

```
<p class="story">...</p>
```

- Select by using the class name prefixed with a dot "."

```
.story { color : blue; }
```

- Can be made specific to an element by adding the HTML element before the dot "."

```
p.story { color:blue; }
```

DEMO! – div.html

CSS: Grouping Selectors

- Multiple selectors are separated by

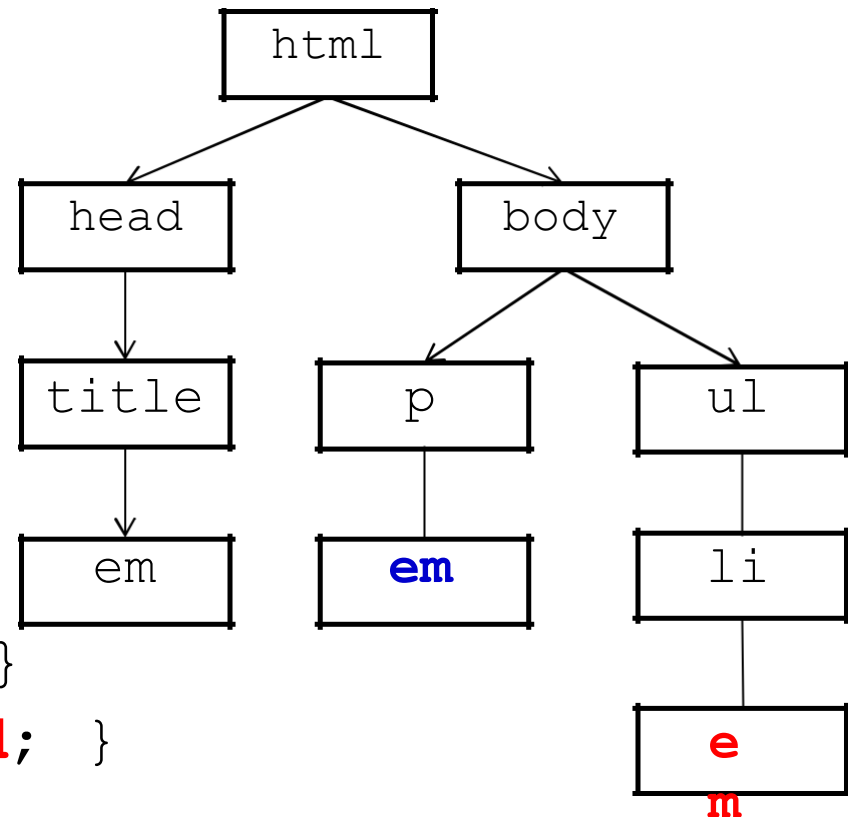
```
comma h1, h2, p {  
    color : blue;  
}
```

```
header, nav {border-  
    style : dotted;  
}
```

CSS: Contextual Selectors

- Contextual selector
is based on the hierarchical structure of the elements in the tree
- Using the HTML hierarchical structure, the `` elements can be selected individually through descendant selectors.

```
p em { color : blue; }  
ul li em { color : red; }
```



CSS: Pseudo-Class Selectors

- pseudo-classes select HTML elements based on their characteristics

Selector	Example	Description
:link	a:link	Selects all unvisited links
:visited	a:visited	Selects all visited links
:active	a:active	Selects the active link
:hover	a:hover	Selects links on mouse over
:focus	<input type="text"/> :focus	Selects the input element which has focus
:first-child	<p>p:first-child</p>	Selects every <p> elements that is the first child of its parent

DEMO! – div.html

CSS: Pseudo-Element Selector

- Pseudo-elements select part of a document that are not classified by elements
- These are common publishing design techniques that are not possible with HTML code

Selector	Example	Description
:first-letter	p: first-letter	Selects the first letter of every <code><p></code> element
:first-line	p: first-line	Selects the first line of every <code><p></code> element

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CSS: Properties

- CSS properties define which aspect of the selected HTML content will be changed or styled
 - color, background-color, background-image, border, padding, margin ...
- CSS3 introduces some new properties:
 - Rounded corner, box shadow, text shadow, gradient, opacity, ...

CSS: Style Rule errors –Watch out!

- Errors in CSS Style Rules may lead to your style rules being **ignored** <http://www.w3.org/TR/CSS2/syndata.html>



For example,
p1{color:blue }

h1, h7{color:red}

Unknown **property**- style rule ignored



For example,

h1 {font-color: red}

Illegal **value**- declaration ignored



For example,

h1 {color:"red"} h2 {background-image:logo.jpg}

img {float:across}

CSS: W3C References

- World Wide Web Consortium

CSS Home:

<http://www.w3.org/Style/CSS/>

CSS Selectors:

<http://www.w3.org/TR/selectors/>

CSS 2.1

<http://www.w3.org/TR/CSS2>

CSS Snapshot (2010) *May 2011*

<http://www.w3.org/TR/css-2010/>

CSS: Syntax References

- Syntax References

Mozilla CSS3 Reference:

<https://developer.mozilla.org/en-US/docs/Web/CSS/CSS3>

Sitepoint CSS:

<http://reference.sitepoint.com/css>

CSS Tutorial / References:

<http://www.w3schools.com/>

See also: ***Web Links on Blackboard***

NEXT LECTURE:

CSS PRESENTATION

COLOR, FONT, BOX, LAYOUT PROPERTIES