HTML BASICS

HCI & WEB DESIGN

OVERVIEW

- Module introduction
- The nature of the Web
- HTML basics:
    - Page structure
    - Formatting
    - Adding an image
    - Adding lists
    - Linking pages
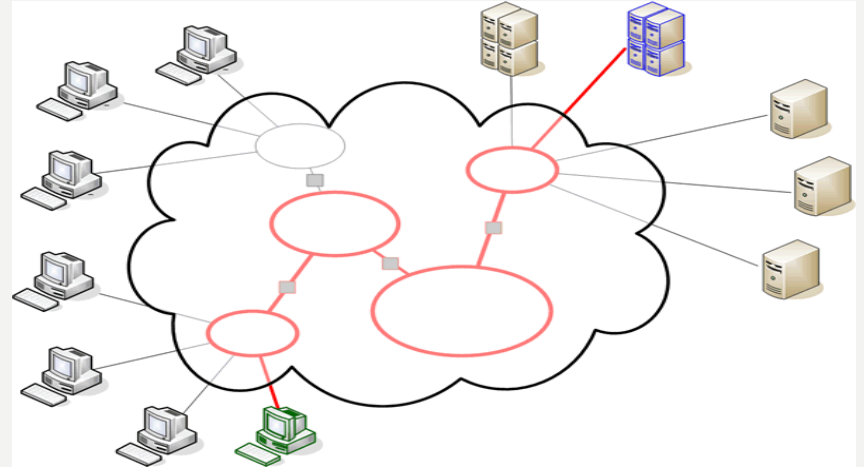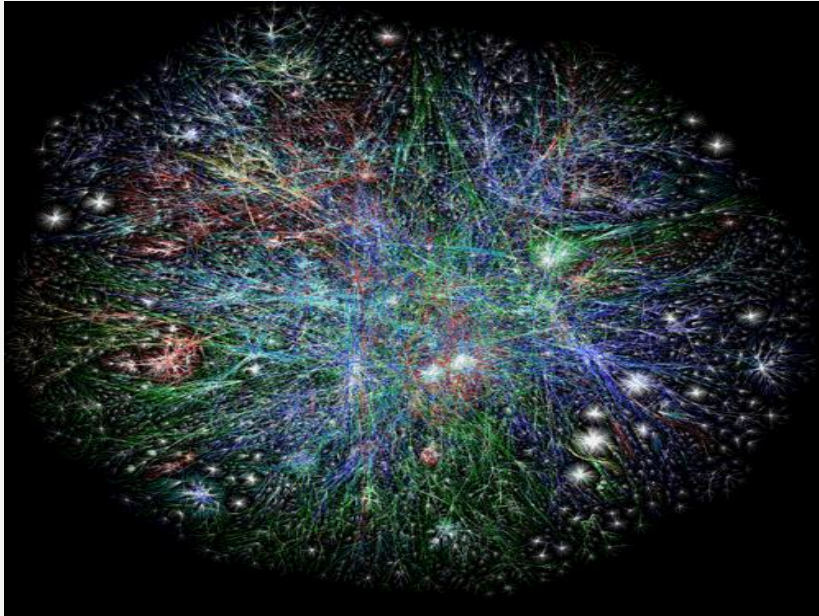   - Validation
- Structure of practical classes

HCI & WEB DESIGN

- Tuition Team:
  - Dr. Rosanne Birney (rbirney@wit.ie)
  - Trish O' Neill (troneill@wit.ie)
- 12 Week Module
  - 2 hours lecture
  - 2 hours supervised lab
  - 100% Continuous assessment
  - 2 Assignments during term

THE NATURE OF THE WEB

THE INTERNET

THE INTERNET

- Global network infrastructure connecting millions of computers.

- More than 190 countries linked

- 3,885,567,619 Internet users; 51.7% of the world's population (30/06/2017 www.internetlivestats.com)

- Over one billion websites.

WORLD WIDE WEB

- The world wide web is a huge globally distributed collection of information and data that can be accessed via the internet with the help of of http: Hypertext Transfer Protocol

- WWW has made the Internet the most important communication medium of our days.

- Thanks to the simple to use graphical interface – The Web Browser – the WWW provides everyone with simple access to information
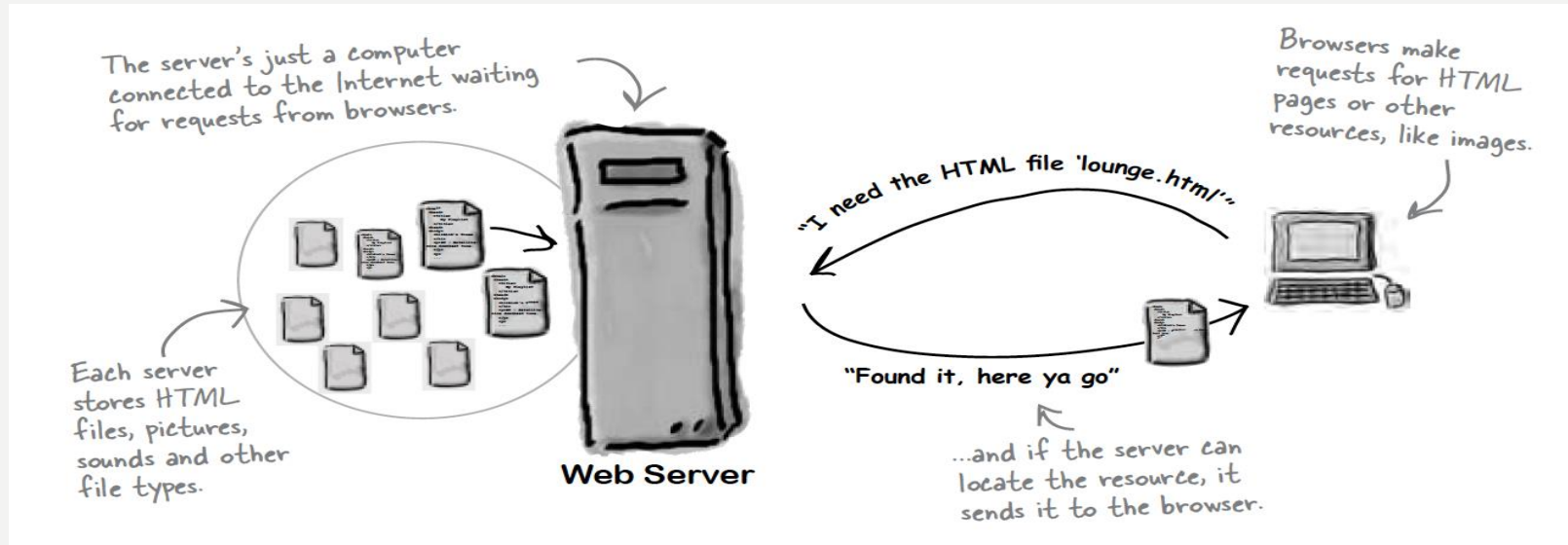
THE WEB

- Protocols & Standards
  - Protocol : agreed vocabulary to enable two programs to communicate
  - Standard: an agreed definition of the structure and meaning of a document
- Web Protocol
  - Hyper Text Transfer Protocol - HTTP
- Web Standard
  - Hyper Text Markup Language – HTML
  - Cascading Style Sheets - CSS
- Web Servers and Web Browsers use HTTP to exchange HTML documents
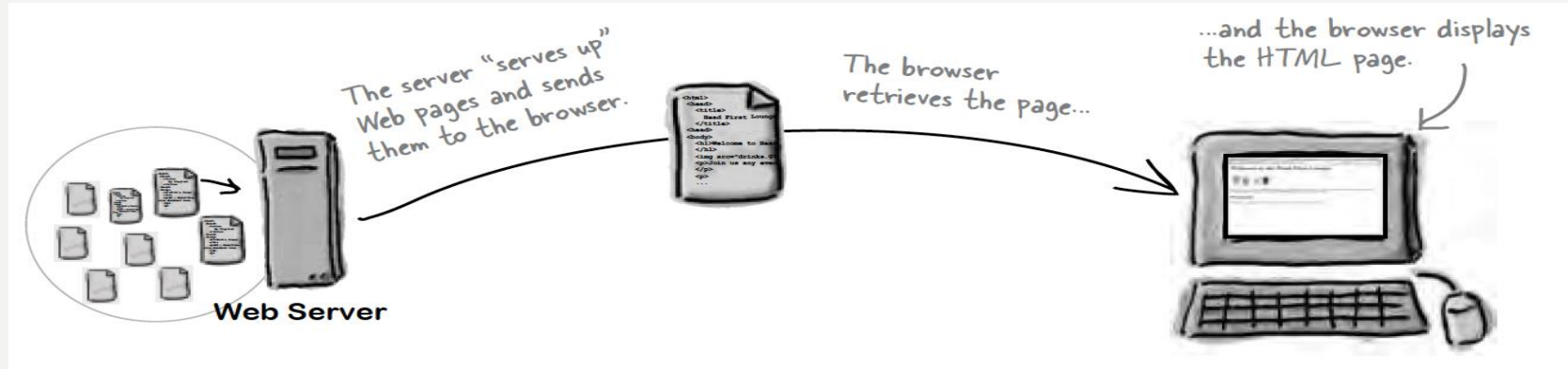
CLIENTS AND SERVERS

- Client/Server Computing:

  – The interaction between two programs when they communicate across a network.

  – A program at one site sends a request to a program at another site and awaits a response.

  – The requesting program is called a client; the program satisfying the request is called the server.

ROLE OF SERVER

The server's just a computer connected to the Internet waiting for requests from browsers.

Each server stores HTML files, pictures, sounds and other file types.

Web Server

"I need the HTML file 'lounge.html'"

"Found it, here ya go"

Browsers make requests for HTML pages or other resources, like images.

...and if the server can locate the resource, it sends it to the browser.

ROLE OF CLIENT

The server "serves up" Web pages and sends them to the browser.

The browser retrieves the page...

...and the browser displays the HTML page.

Web Server

HYPER TEXT MARKUP LANGUAGE

- HTML tells your browser about the structure of your document:
  - where the headings are,
  - where the paragraphs are,
  - what text needs emphasis, etc
  - what text needs to linked
  - what images to be displayed
- Given this information, browsers have built-in default rules for how to display each of these elements.
- This information is conveyed using "Tags", this denote the intention of the author regarding the structure and display of the document.

HTML

- An HTML document is called a 'page'

- The starting page of a site is called the 'homepage'

- Markup language should only be used for the description of the document structure and not to describe the document presentation

- Every HTML document consists of two parts:
  - Document 'header': contains information about the document.
  - Document 'body': contains the content of the document.
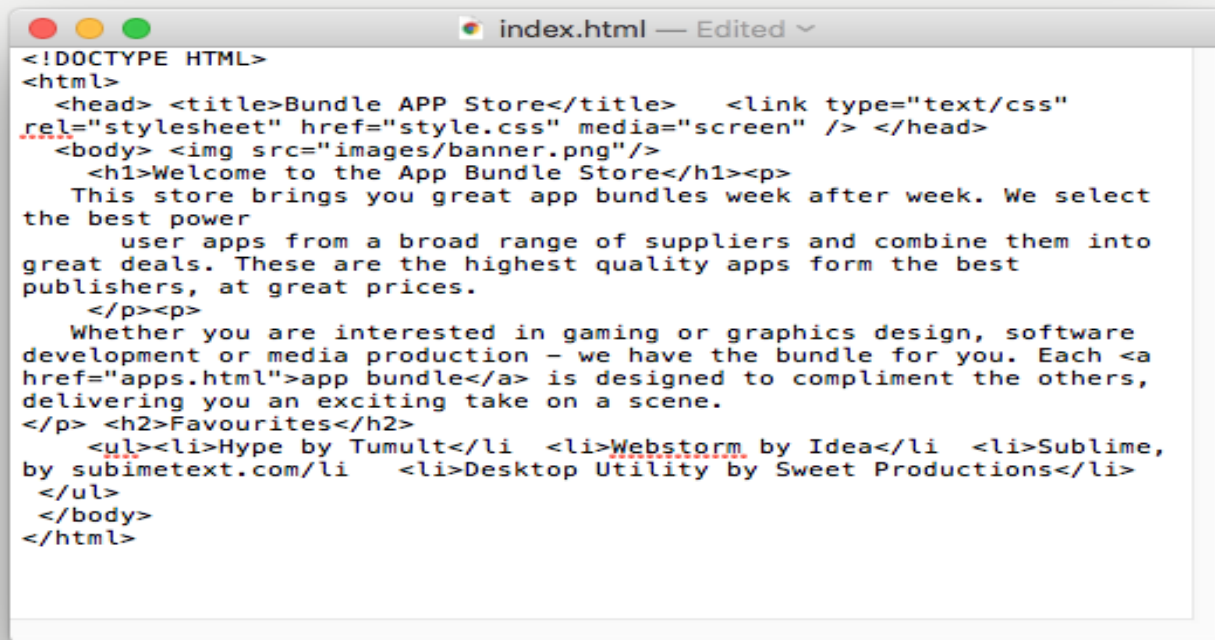
HTML TAGS
(MORE CORRECTLY CALLED ELEMENTS)

Tags for this week

<html>
<head>
<title>
<body>
<h1>
<h2>
<p>
<a>
<img>

- Grouped by purpose:
  - Structural
    - <html>, <head>, <title>, <body>
  - Text
    - Heading
      - <h1>, <h2>
    - Text
      - <p>, <b>, <i>
  - Hypertext
    - <a>
  - Image
    - <img>

THE CODE IN A CONVENTIONAL EDITOR

- The actual document text - but poorly structured (indented)


```
<!DOCTYPE HTML>
<html>
  <head> <title>Bundle APP Store</title>    <link type="text/css"
rel="stylesheet" href="style.css" media="screen" /> </head>
  <body> <img src="images/banner.png"/>
    <h1>Welcome to the App Bundle Store</h1><p>
  This store brings you great app bundles week after week. We select
the best power
      user apps from a broad range of suppliers and combine them into
great deals. These are the highest quality apps form the best
publishers, at great prices.
    </p><p>
    Whether you are interested in gaming or graphics design, software
development or media production — we have the bundle for you. Each <a
href="apps.html">app bundle</a> is designed to compliment the others,
delivering you an exciting take on a scene.
</p> <h2>Favourites</h2>
    <ul><li>Hype by Tumult</li>  <li>Webstorm by Idea</li  <li>Sublime,
by subimetext.com/li  <li>Desktop Utility by Sweet Productions</li>
  </ul>
  </body>
</html>
```

index.html — Edited

THE CODE IN A PROGRAMMER'S EDITOR

```html
html
1   <html>
2       <head>
3           <title>Bundle APP Store</title>
4       </head>
5       <body>
6           <img src="images/banner.png"/>
7             <h3>Freebie</h3>
8           <p>
9               Stacksocial just published its so called Free Ondesoft Mac Tool Bundle, which contains
                5 apps from Ondesoft. The bundle worth $146 will be probably available only a couple
                of days so you'd better hurry up to get it.
10          </p>
11
12          <p>
13              <img src="images/ondesoft.jpg" alt="Black Brain Brew Elixir" />
14          </p>
15          </p>
16          <hr>
17          <h3>Macware Business Bundle</h3>
18          <p>
19              Here comes the next bundle for march. This time its macware who publish a bundle. The
                so called macware Business Bundle contains 6 apps at a price of only $29.99 instead
                of $199.94. So you can save around 84%. There is n...
20          </p>
21      </body>
22  </html>
```
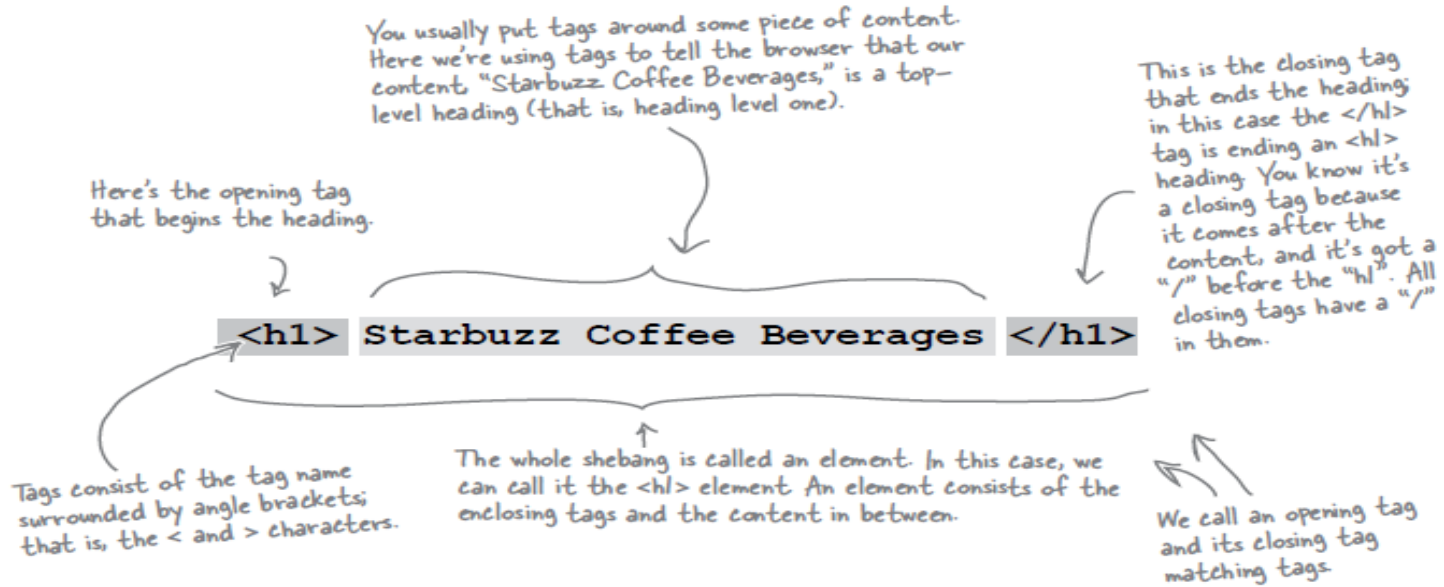
- Same document - pleasingly indented and syntax highlighted

HTML BASICS:
HTML ELEMENTS

COMPONENTS OF AN HTML ELEMENT

You usually put tags around some piece of content. Here we're using tags to tell the browser that our content, "Starbuzz Coffee Beverages," is a top-level heading (that is, heading level one).

This is the closing tag that ends the heading; in this case the </h1> tag is ending an <h1> heading. You know it's a closing tag because it comes after the content, and it's got a "/" before the "h1". All closing tags have a "/" in them.

Here's the opening tag that begins the heading.

`<h1> Starbuzz Coffee Beverages </h1>`

Tags consist of the tag name surrounded by angle brackets; that is, the < and > characters.

The whole shebang is called an element. In this case, we can call it the <h1> element. An element consists of the enclosing tags and the content in between.

We call an opening tag and its closing tag matching tags.

COMPONENTS OF AN HTML ELEMENT

<ElementName >   ⬅ Start Tag

   Content

</ElementName>   ⬅ End Tag

EXAMPLE: <TITLE>

<title>My App Store</title>

ElementName: *<title>*
Content: *My App Store*
ElementName: *</title>*

HTML BASICS: PAGE STRUCTURE

STRUCTURAL ELEMENTS - <HTML>

```
<html>
 <head>    <title>Page title goes here</title>
 </head>
 <body>    <!-- content goes here -->
 </body>
</html>
```

- The html element is the outer container for everything that appears in an HTML document.

- It can only contain two elements as direct descendants, namely the head element and the body element.

- As it is the outermost element in the document, it's also known as the root element.

- This element will have a place on every single web page you ever create. There's no case in which you would not use this element when crafting a web page.

STRUCTURAL ELEMENTS - <HEAD>

- The head element is the wrapper for all the head elements that:

  - instruct the browser where to find style sheets,

  - define relationships that the document has to others in the web site;

  - provide essential meta information;

  - point to or include scripts that the document will need to apply later on.

```
<html>
 <head>    <title>Page title goes here</title>
<link type="text/css" rel="stylesheet" href="style.css"
media="screen"/>
 </head>
 <body>    <!-- content goes here -->
 </body>
</html>
```

HEAD ELEMENTS - <TITLE>

- Displaying a title in the browser toolbar or in the task bar (on Windows)

- Providing for the document a name that's used by the browser when you add the page as a favorite or bookmark

- Displaying a title of the page when it appears in search engine results

```
<html>
 <head>
  <title>
  FAQ
  </title>
 </head>
```

FAQ

STRUCTURAL ELEMENTS - <BODY>

- The body element wraps around all of the content that will be displayed on screen.

- You should not place character data (text) or inline elements such as em, or q directly into the body.

- Instead, these should be contained inside block-level elements such as p elements, headings h1 - h6 and so on.

```
<html>
 <head>    <title>Page title goes here</title>
<link type="text/css" rel="stylesheet" href="style.css"
media="screen"/>
 </head>
 <body
   <h1>101 Ways to make a paper aeroplane</h1>
   <p>Let's start with the basics …</p>
 </body>
</html>
```

BLOCK VS INLINE ELEMENTS

- Block elements are always displayed as if they have a line break before and after them

- inline elements appear "in line" within the flow of the text in your page.

"Block elements stand on their own; inline elements go with the flow."

EXAMPLES

- Block - h1, h2, p, blockquote
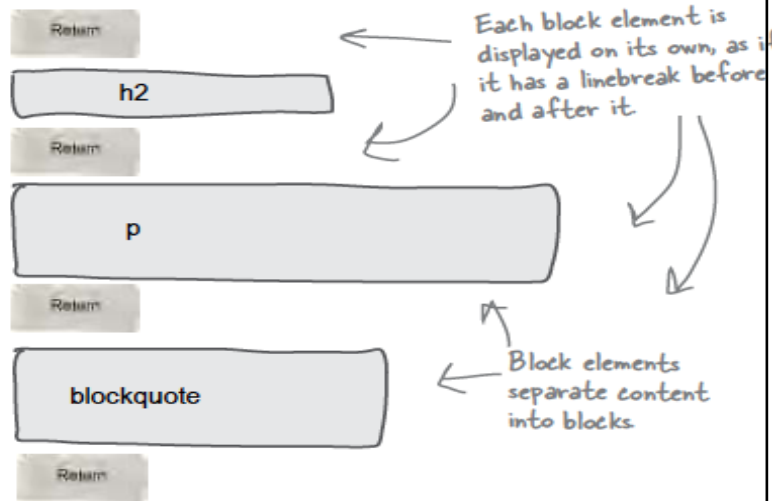
- Inline - a, em, q
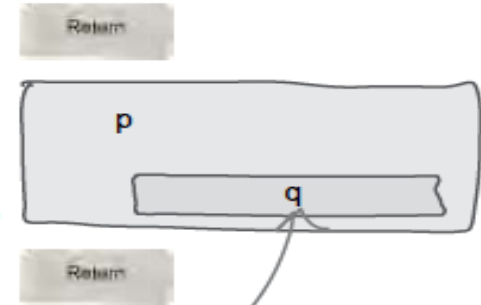
NESTING

- When we put one element inside another element, we call that nesting.

- We say, the <p>element is nested inside the <body>element.

- We put a <body>element inside an <html>element, a <p>element inside a <body>element etc.

NESTING - TREE STRUCTURE

a diagram, where each element becomes a box, and each line connects the element to another element that is nested within it.

<html> is always the element at the root of the tree.

<html> has two nested elements: <head> and <body>. You can call them both "children" of <html>.

<body> is nested within the <html> element, so we say <body> is the "child" of <html>.

title> is nested within the head> element.

The parent of <q> is <p>, the parent of <p> is <body> parent of <body> is <html>
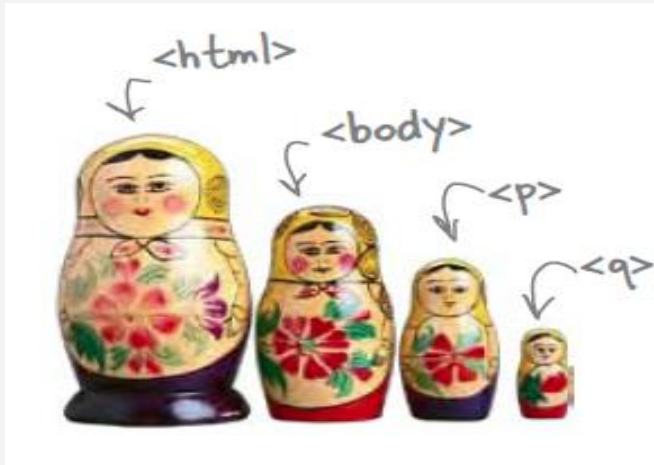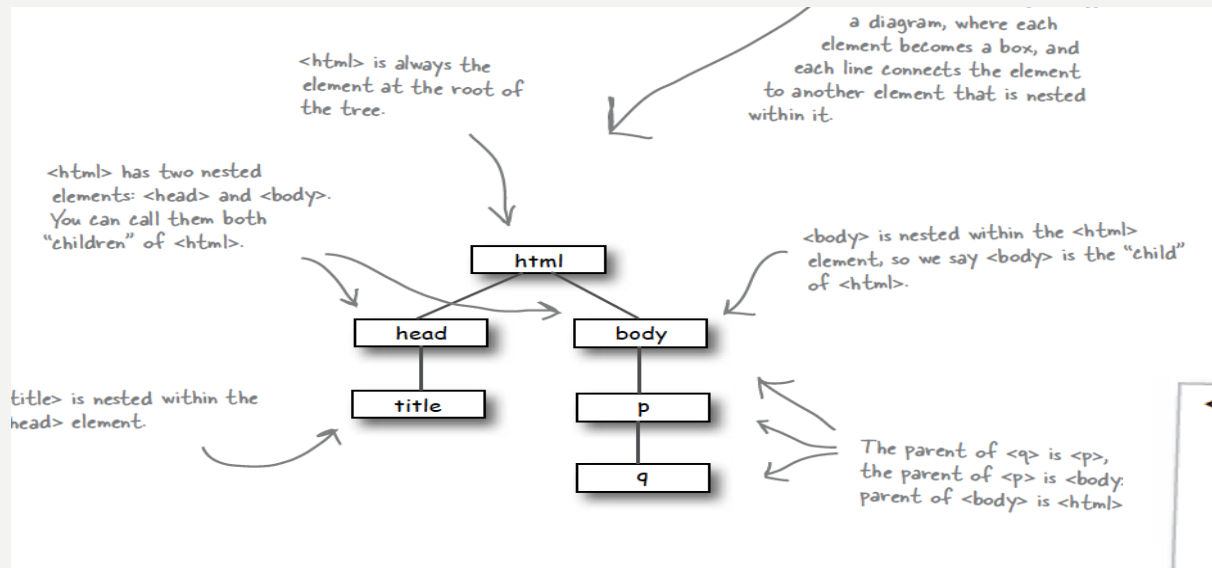
```
<html>
  <head>
    <title>Musings</title>
  </head>
  <body>
    <p>
      To quote Buckaroo,
      <q>The only reason
      for time is so
      that everything
      doesn't happen
      at once.</q>
    </p>
  </body>
</html>
```

29

NESTING CAN BE INCORRECT!

<p>I'm so going to blog this</p>
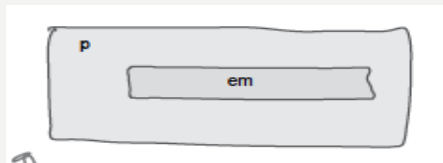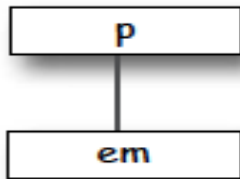
Good

<p>I'm so going to blog this</p>
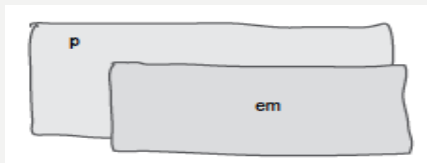
?

Bad

HTML BASICS: FORMATTING TEXT

STRUCTURAL ELEMENTS - <P>

- One of the most commonly used building blocks of HTML.

- When you use the p element to begin a new paragraph in HTML, it automatically creates some space above and below the content.

- Can only contain inline elements

```
<p>
We endeavour to give you your most wanted DVD and/or Game from your rental
queue depending on our stock situation. All DVDs and Games are posted out at noon
FIRST CLASS, and should be at your doorstep by the next morning.
When we dispatch your DVD/Game we'll send you an e-mail to advise you on which
DVD/Game was dispatched to you. There are no late fees so you can watch or play at your leisure
</p>
```

We endeavour to give you your most wanted DVD and/or Game from your rental queue depending on our stock situation. All DVDs and Games are posted out at noon FIRST CLASS, and should be at your doorstep by the next morning. When we dispatch your DVD/Game we'll send you an e-mail to advise you on which DVD/Game was dispatched to you. There are no late fees so you can watch or play at your leisure

STRUCTURAL ELEMENTS – <H1-H6>

```
<h1>Mobile Applications</h1>
<ol>
  <li><a href="apps.html">Apps</a></li>
</ol>
<h2>New Games</h2>
<ul>
  <li><img src="images/delete.png"/>Clear All</li>
  <li><img src="images/google.jpg"/>Google Box</li>
</ul>
```

- The h1 element is used to indicate the most important (or highest-level) heading on the page.

- There are six heading levels h1 to h6—to add structure to the web page.

- A document's first heading should be an h1, followed by one or more h2 headings; each of these h2 headings can then have a further series of h3 headings below them, and so on

- They may contain any text content, but it can't include any block-level elements: only inline elements can be included

STRUCTURAL ELEMENTS - <BLOCKQUOTE>

- The blockquote element is a mechanism for marking up a block of text quoted from a person or another document or source.

- It may be just a few lines, or it may contain several paragraphs - which must be marked up using nested p elements).

```
<p>Not such a good one from film.com:</p>
<blockquote>
    The film is pretty, and there are a few solid moments every hour.
    But considered as a work of cinema, with paid professionals involved,
    it's an extremely lackluster story.
  </blockquote>
<p>Might be worth watching.</p>
```

Not so good one from film.com:

The film is pretty, and there are a few solid moments every hour. But considered as a work of cinema, with paid professionals involved, it's an extremely lackluster story.

Might be worth watching.

STRUCTURAL ELEMENTS -

- Creates a line break within a block of text, leaving no padding or margins between the two blocks of text created by the line break

```
<p>
  There was an old man from Swindon,<br>
  A place that rhymed only with 'pinned on,'<br>
  Okay, well that's fine,<br>
  Until the fifth line,<br>
  At which point … well, I'm totally out of luck.
</p>
```

There was an old man from Swindon,
A place that rhymed only with 'pinned on,'
Okay, well that's fine,
Until the fifth line,
At which point … well, I'm totally out of luck.

TEXT FORMATTING ELEMENTS - <I> AND <B>

- The i element is used to italicise text content, and displays in italics in all current browsers.

- The b element works in the same way, but displays bold text.

This week we recommend the Crazies.

reccomend *the Crazies*.

TEXT FORMATTING ELEMENTS - <Q>

- Used for inline quotations (instead of blockquote, which sets the quotation in its own block.

- It is intended that the browser should insert the necessary quotation marks, the style of which should depend on the language of the document or that section of the document, rather than the author adding quotation marks

- This can sometimes cause double sets of quotation marks to appear.

```
<p>
Not so good one from film.com: <q>The film is pretty, and there are a few
solid moments every hour. But considered as a work of cinema, with paid
professionals involved, it's an extremely lackluster story.</q>
</p>
```

Not so good one from film.com: "The film is pretty, and there are a few solid moments every hour. But considered as a work of cinema, with paid professionals involved, it's an extremely lackluster story."

HTML BASICS: ADDING AN IMAGE

IMAGE & MEDIA ELEMENTS - <IMG>

`<img src="images/robinhood.jpg" alt="Robin Hood">`

- Provides a means for embedding an image in the document.

- Has a total of 12 attributes

  - src provide a link to the image to be displayed

  - alt provides text to be displayed if the image cannot be retreived.

  - Height & Width provide (optional) dimensions. Used to help the browser lay out images properly, and should coincide with the actual image dimensions

HTML BASICS: ADDING LISTS

LIST ELEMENTS - UNORDERED LIST - <UL>

- Used to group a collection of items together in a list, but in a way that doesn't suggest an order of precedence or importance.

- Individual items in the list marked with - li

```
<ul>
  <li>Avatar</li>
  <li>Titanic</li>
  <li>Lord of the Rings: Return of the King</li>
</ul>
```

- Avatar
- Titanic
- Lord of the Rings: Return of the King

LIST ELEMENTS - ORDERED LIST - <OL>

- Like ul, used to group a collection of items together in a list

- However, the bullets in an unordered list are replaced with a series of incrementing numbers

```
<ol>
  <li>Robin Hood</li>
  <li>Prince of Persia, Sands of Time</li>
  <li>Date Night</li>
  <li>Last Chance, CO</li>
  <li>Bad Leutennant: Port of Call - New Orleans</li>
  <li>Cop Out</li>
</ol>
```

1. Robin Hood
2. Prince of Persia, Sands of Time
3. Date Night
4. Last Chance, CO
5. Bad Leutennant: Port of Call - New Orleans
6. Cop Out

HTML BASICS: LINKING PAGES

TEXT FORMATTING ELEMENTS - <A>

- Usually referred to as a link or hyperlink

- Has a 7 possible attributes in total, of which we start with just one: href, which defines the document to which the link leads. This may be

  - a web page in the same directory,

  - a page somewhere else on the same server,

  - a location within the current page,

  - a web page—or any another kind of document—stored on another server.

- In a link to another section within the same page, the destination is identified in the href attribute by a hash symbol combined with the id attribute of the destination

```
<a href="catalogue/newreleases.html">new releases</a>
```

```
<a href="#q1">Q.Does it matter where I live?</a>
```

```
<li>
  <a id="q1">Q.Does it matter where I live?</a>
</li>
<li>
  A.Our service is only available in the republic of Ireland,
  we use "An Post" and deliver to all 26 counties.
</li>
```

HTML BASICS: VALIDATION

W3C VALIDATOR

- The World Wide Web Consortium (W3C) is an international community that develops open standards to ensure the long-term growth of the Web.

- The W3C provide online validation tools that you allow to check whether your HTML code complies with the standard they have set.

- You will try out this tool in your practical classes this week.

STRUCTURE OF PRACTICAL CLASSES

ON MOODLE: LECTURE SLIDES
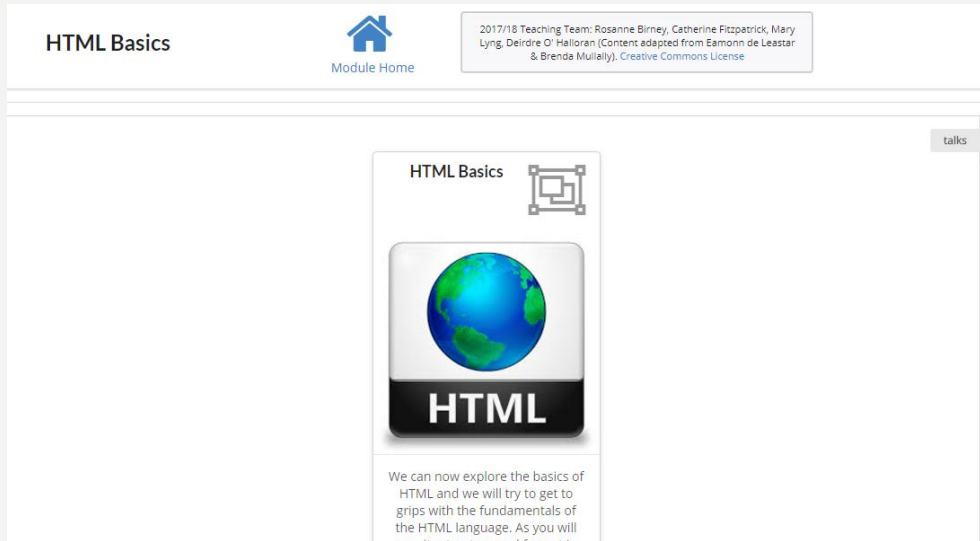
- This week's topic: HTML Basics

- Each week there will a new topic; you will find these lecture slides in the 'card' at the top

ON MOODLE: LABS
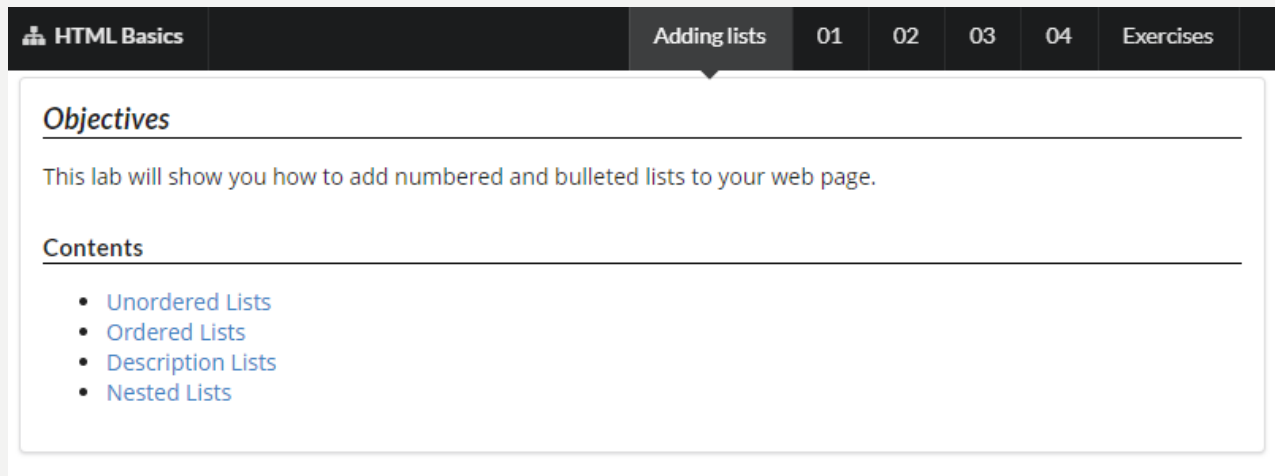
- Below that, you will see a card for each of the labs in this section
- Each topic will be split into a number of sections in this way

LAB CONTENTS

- In each lab, you will see a list of the contents

- Use the links to jump to a particular piece of information if you wish

LAB CONTENTS

- Go through the numbered steps at the top
- Read through the information in each step to refresh your memory from the lecture
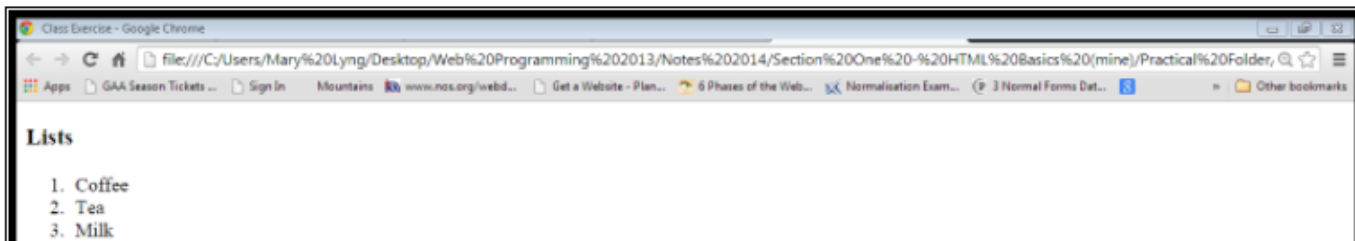- Try out the examples (if you wish)

LAB CONTENTS

- Complete the exercises in the last tab of each section