

# 4COSC011C.2 Web Design and Development

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HTML Images, Links and Special Characters

CSS for Links, Images, CSS positioning

Week 3

# Images

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- Image Formats
  - Web browsers support the following image formats:

Format	Transparency	Animation	Browser
GIF	Yes	Yes	All
PNG	Yes	No	All
JPEG	No	No	All

# Insertion of in-line images

Displayed by browser	HTML markup required
 <p>A Ginger cat and some text next to it</p>	<pre>&lt;img src="cat.jpeg" alt="ginger cat"&gt;</pre> <p>A Ginger cat and some text next to it</p>
 <p>The image here floats left next to the text and the text will go all around it.</p>	<pre>&lt;img src="cat.jpeg" alt="ginger cat" style="float: left;"&gt;</pre> <p>The image here floats left next to the text and the text will go all around it.</p>

# Contd..

<p>The image here floats right next to the text and the text will go all around it.</p>		<pre>&lt;img src="cat.jpeg" alt="ginger cat" style="float: right;"&gt;</pre> <p>The image here floats right next to the text and the text will go all around it.</p>
	<p>Specifying the height and width of the image will speed up the page construction process.</p>	<pre>&lt;img src="cat.jpeg" alt="ginger cat" width="200" height="132.969" style="float: left;"&gt;</pre> <p>Specifying the height and width of the image will speed up the page construction process.</p>
	<p>Be carefully to get your height and width correct or the image will be distorted</p>	<pre>&lt;img src="cat.jpeg" alt="ginger cat" width="200" height="200" style="float: left;"&gt;</pre> <p>Be carefully to get your height and width correct or the image will be distorted.</p>

# Image Attributes & folders

Attribute	Meaning
<code>alt</code>	If the image can not be displayed, then the text associated with the <code>alt</code> attribute will be displayed instead of the image. This occurs, if for example the display of images has been turned off in the browser, or for some reason the browser can not display the image. This attribute is <b>required</b> in html5.
<code>src</code>	The image URL. This attribute is mandatory.
<code>height</code>	Set the height of the image to be n pixels.
<code>width</code>	Set the width of the image to be n pixels.

## Images in folders

It is common practice to organise content in folders, and have images stored in an `images` folder. In that case, the image URL must reflect the location of the image, relative to the current document:

```

```

## Images on other servers

You may also use the full image URL if the image is stored on a different server:

```

```

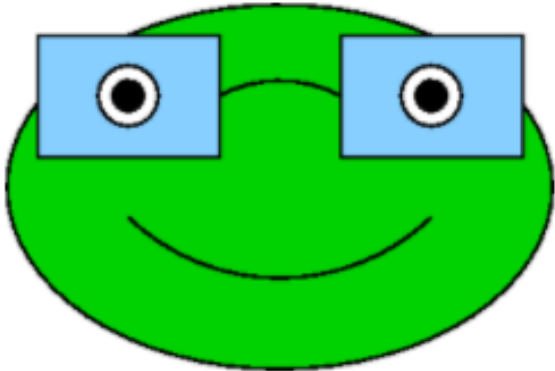
The background image can be added to most html elements.

# Image Maps

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- An image map is an image with clickable areas.
- Image maps are defined using the `<map></map>` tags, and each clickable area is defined using the `<area>` tag.
- Finally, the image is displayed using the usual `<img` tag, and a name reference to the image map:
- [Click here](#)

# Image Maps

Displayed by browser	HTML markup required
	<pre>&lt;img src="greenfrog.gif" alt="frog" usemap="#frog"&gt; &lt;map name="frog"&gt;   &lt;area shape="circle"     coords="55,41,14" href="lefteye.html"&gt;   &lt;area shape="circle"     coords="187,41,14" href="righteye.html"&gt;   &lt;area shape="rect"     coords="107,67,133,93" href="nose.html"&gt; &lt;/map&gt;</pre>



# Review Questions

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- Question 1 - Which HTML tags is used to display an image?
- Question 2 - What are the required attributes to the image tag?
- Question 3 - What are the optional attributes to the image tag?
- Question 4 - What is an image map?
- Question 5 - How does one declare an image map?

# Links

- **Hypertext links**
- A hyper text link allows a browser of the document to navigate either:
  - to a new point in the document or to navigate to a different document.
  - A named point in a document is specified with the attribute ID. For example:

Displayed by browser	HTML markup required
here	<pre>&lt;p id="marker"&gt; here &lt;/p&gt;</pre>

- To ef

Displayed by browser	HTML markup required
Transfer to anchor	<pre>&lt;a href="#marker"&gt; Transfer to anchor &lt;/a&gt;</pre>

ample:

# Links

- Hypertext links may also link to other documents, in which case the href component names the document.
- If the file is held on another machine then a URL (Uniform Resource Locator) is used to describe the location of the document. For example:

Hyper text link to the file file.html	Hyper text link to the file file.html held on another machine using a URL
<code>&lt;a href="file.html"&gt; Name &lt;/a&gt;</code>	<code>&lt;a href="http://host/file.html"&gt; Name &lt;/a&gt;</code>

For example:

Displayed by browser	HTML markup required
<a href="#">Link to module schedule</a>	<code>&lt;a href="schedule.html"&gt; Link to module schedule &lt;/a&gt;</code>
<a href="#">University of Westminster</a>	<code>&lt;a href="http://westminster.ac.uk"&gt; University of Westminster &lt;/a&gt;</code>

# URL (Uniform Resource Locator)

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- The URL is used to specify the location of a file held on a remote machine.
- This is composed of several distinct components. For example, the URL `http://host/file.html` is composed of the following components.

URL Component	Meaning
<code>http</code>	The protocol that is to be used to access the file. In this case the HyperText Transfer Protocol.
<code>host</code>	The name of the machine, this can be either a symbol name such as <code>rhino.cscs.ac.uk</code> or a numeric IP (Internet Protocol) address such as <code>161.74.92.102</code> .
<code>file.html</code>	The path name of the file to which the hypertext link is to be made. This is relative to the base directory in which web pages are held. The location of this directory <code>htdocs</code> is defined by the person who has set up the web server.

# Links Contd


- Inserting an e-mail address

Displayed by browser	HTML markup required
<a href="#">Mail me</a>	<pre>&lt;a href="mailto:coloma@westminster.ac.uk"&gt;Mail me&lt;/a&gt;</pre>

- Automatic redirect- A page may contain a tag that will cause an automatic redirection to another URL after a specific time interval. For example, the tag

```
<meta http-equiv="refresh" content="3;url=http://domain/directory/file.html">
```

will cause the current page to be automatically replaced with the contents of the URL  
`http://domain/directory/file.html` after 3 seconds.

 **Note:** This tag must be included immediately after the tag `<head>`

# IFrames

- An iFrame is used to display a Web page within another Web page.

## HTML markup required

```
<iframe src="file.html" width="300" height="150"></iframe>
```

For example, here's an iframe showing the tutorial 3:

## Web Design and Development

### Tutorial 3 - A Page with links

🔗 This is the third page of a full Portfolio. This Portfolio will help you prepare for the tutorial test that will count towards your final Coursework mark.

#### Task 1 - Create your Web Page content

Create a file and save it as tutorial3.html.

#### ⚠ Important Notes:

- No space in the filename
- File must have the .html extension

# Review Questions

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- Question 1 - Write the HTML for a link to scroll to the paragraph with the id=myId?
- Question 2 - Write the HTML for a link to the email address w1234567@my.westminster.ac.uk
- Question 3 - Write the HTML to add an automatic redirect to http://westminster.ac.uk after 2s

# HTML Special Characters

- The markup language uses the character < to start a markup tag.
- The consequence of this is that < can not be used to represent the less than character directly in a web page.
- The HTML markup languages defines an escape sequences of characters to represent such special characters.
- The following are some of the character sequences used to represent characters that have a special meaning in the HTML language.

Character	Represent by sequence	Character	Represent by sequence	Character	Represent by sequence
<	<code>&amp;lt;</code>	>	<code>&amp;gt;</code>		<code>&amp;nbsp;</code>
&	<code>&amp;amp;</code>	"	<code>&amp;quot;</code>	©	<code>&amp;copy;</code>



# Review Questions

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- Question 1 - What is the sequence for a non breakable space?
- Question 2 - Write the HTML to display `<br>` on a web page

# Styling Links

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Link pseudo-classes - you can also style links differently depending on what state they are in. There are four states:

```
a:link {} - Defines style for unvisited links
a:visited {} - Defines style for visited links
a:hover {} - Style for hovered links (mouse over)
a:active {} - Defines style for active links (moment clicked)
```

Need the order – link-visited-hover-active.

```
a:link { color: green; }
a:visited { color: aqua; }
a:hover { color: blue; }
a:active { color: red; }
```

E.g, the link changes colour depending on its current state. Can also change the text-decoration (none, underline, overline).

```
a { text-decoration: none; }
```

Can also create rollover effect with:

```
a:hover { color: blue; background-color: magenta; }
```

# Styling Links- Example

```
<!doctype html>
<html>
<head>
  <title>An Introduction to Style Sheets</title>
  <style>
6    a:link { color: green; }
7    a:hover { color: blue; background-color: magenta; }
  </style>
</head>
<body>
<h1>An example of links:</h1>
<p>CSS can be used to modify the way links are displayed:
<ul>
  <li><a href="nopage.html">link1</a></li>
  <li><a href="nopage.html">link2</a></li>
  <li><a href="nopage.html">link3</a></li>
</ul></p>
</body>
</html>
```

# CSS Positioning

- The position property identifies how an element is positioned on a page.

- static

By default every element has a position value of static, which means that it exists in the normal flow of a document. The static value can be overwritten with a relative, absolute or fixed value.

```
.static {  
  position: static;  
}
```

- relative

Setting the top, right, bottom, and left properties of a relatively-positioned element will cause it to be adjusted away from its normal position. Other content will **not** be adjusted to fit into any gap left by the element - there will be blank space where the relatively-positioned element would normally be.

```
.relative {  
  position: relative;  
  top: -20px;  
  left: 20px;  
  width: 500px;  
}
```

# CSS Positioning

- fixed

A fixed element is positioned relative to the viewport, the element remains fixed at the same position inside the browser window. This means it always stays in the same place even if the page is scrolled. The top, right, bottom, and left properties can be used.

```
.fixed {  
  position: fixed;  
  bottom: 0;  
  right: 0;  
  width: 200px;  
}
```

- absolute

Taken out of the normal document flow. An element positioned with absolute is positioned relative to the nearest positioned parent. If an absolutely-positioned element doesn't have any parent elements, then the initial document <html> will be its parent.

```
.absolute {  
  position: absolute;  
  top: 120px;  
  right: 0;  
  width: 300px;  
  height: 200px;  
}
```

# Float and Layout

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- When using CSS float for layouts it is common to float a block-level element such as <div> (or one of the HTML5 new elements like article, section, aside).
- The floated elements will require a width.
- Use [CSSpoistioning.html](#) file for demonstration
- Layout approaches:
  - using percentages for the widths creates a fluid (or liquid) layout that shrinks and expands depending on the size of the browser window.
  - fixed layouts use pixel-based widths - the layout does not change when viewed on smaller/larger devices.

# Contd

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What happens if we add some padding to each column?:

```
#column1 {  
    float: left;  
    width: 40%;  
4    padding: 2%;}
```

```
#column2 {  
    float: left;  
    width: 60%;  
9    padding: 2%;
```

```
}
```

# Contd

---

- Example shows float drop - one column has dropped down. Why – because there is not enough room for the column. Note: the width of an element displayed in the browser window is not the same as its width property.
- The displayed width of any element is a combination of its width, left and right border sizes, left and right padding and left and right margins.
  - Width of Column 1 = 40% plus left padding (2%) plus right padding (2%) = 44%
  - Width of Column 2 = 60% plus left padding (2%) plus right padding (2%) = 64%



# Solutions

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- Solution 1 - Reduce column widths:

Column 1 = 36% plus left padding (2%)  
plus right padding (2%) = 40%

Column 2 = 56% plus left padding (2%)  
plus right padding (2%) = 60%

- Solution 2 - Use CSS3 box-sizing property.

This includes the width and any paddings and borders within the width of the column (reduces the column width).  
Need prefix for Firefox.

```
{ -moz-box-sizing:border-box; /* for Firefox */  
  box-sizing:border-box; /* for other browsers */ }
```

# CSS clear property

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- As we know, with CSS float an element can be pushed to the left or right, allowing other elements to wrap around it.
- The CSS clear property instructs an element to **not wrap** around a floated element. By clearing an element you can force it to drop down below the floated item.
- You have three options - clear:left; clear:right; clear:both.
- Many people choose to use clear:both since it clears elements floated left and/or right.

Example - We add the following footer to the web page:

```
<div id="footer">  
  <p>Some content for the footer. Some content for the footer.  
  Some content for the footer. Some content for the footer.</p>  
</div>
```

# Contd

---

We add the following CSS to our embedded style:

```
#footer {  
  border: solid 2px blue;  
  color:blue;  
}
```

The results are not as expected - the footer is trying to wrap around the floated columns! We need to force the footer to drop down below the floated items by adding `clear:both` to the CSS:

```
#footer {  
  border: solid 2px blue;  
  color: blue;  
  4 clear:both;  
}
```