Web Application Development
Practical 1: HTML Basics

An editor such as Notepad/TextEdit or Brackets should be used to edit the HTML.

Introduction

Note: This practical makes use of some tags (e.g. FONT) that are no longer supported or encouraged in HTML 5. However, they are still widely used in older sites, so it is helpful to gain some experience of their use. In later practicals we will use CSS and the style attribute to achieve similar effects.

HTML provides a set of tags to facilitate the display and formatting of content. In the case of text, these tags cover a range of typographic features, such as choice of typeface, type size, typographic emphasis, and layout features such as paragraphs and breaks.

For example, typographic emphasis may be added to any text using tags such as

`<b>…</b>`	to bold text
`<em>…</em>`	to emphasise text
`<u>…</u>`	to underline text

Prior to HTML 5 the FONT tag was commonly used to format text:

```
<font face="typeface" size="type-size">...</font>
```

For example:

```
<font size="3" color="red">This is some red text!</font>
<font size="2" color="blue">This is some blue text!</font>
<font face="verdana" color="green">This is some green text!</font>
```

Beyond those tags targeted specifically to typography, an additional set of basic layout tags are provided:

`<p>…</p>` These tags denote a paragraph, and place a blank line after the paragraph has ended to separate it from the next. Individual paragraphs may be aligned to the left, right, or center using the **align attribute**.

`<br />` This tag identifies a break. That is, wherever a break tag appears, the current line of text is ended, and a new line started.

Furthermore, HTML provides layout tags for presenting lists of information. In lectures you have seen how to mark-up two kinds of lists: ordered lists and unordered lists (consult your lecture notes for examples here).

Standard mark-up elements that effect the text style, such as <h1>..</h1>, …, are a good starting point, but offer little in terms of layout control. Although we can centre text on a page as follows:

```
<center><h1>This is a very large heading</h1></center>
```

and/or, specify values for the align attribute such as “left”, “right” or “centre”, the visual appeal of a web page is still compromised.

Tables and Cascading Style Sheets (CSS) offer more sophisticated layout control.

HTML Template

HTML files have the following basic structure:

```
<!doctype html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>HTML5 Template</title>
</head>
<body>
  <!-- Body Content Goes Here! -->
</body>
</html>
```

Type this text into your editor and save it as test.html
Now open and view it in a web browser.

Using absolute and relative links effectively

- Absolute links give the full address of the target link or image
  e.g. <a href=“http://www.ireland.com”>
- Relative links give the address relative to the current page
  e.g. <a href=“./archive/news.html”> (‘./’ is shorthand for the current directory)

You should **always** use relative links unless linking to external content.

Example: In general, the only time an absolute link should be used is if the src attribute is a http:// (Web-accessible) address; i.e:

- <img src=“ http://www.webmail.gcd.ie/bottom.gif”> is fine.
- <img src=“C:/folder/bottom.gif”> **is not**. If this file was moved to another computer, the browser would look for the image on the C: drive, which might not exist. Also, if you made the page accessible on the web, any computers that accessed it would be looking on their own C: drive (if they had one) for your image and so would not be able to find it. This <img..> tag should be changed so the src attribute has a relative link.

Tables: Colspan and rowspan

Creating a cell that "spans" across a number of columns or rows is possible using the **colspan** and the **rowspan** properties in a TD tag.

The **colspan** attribute creates a cell that "spans" across a number of cells in a row. This makes the cell longer across, not down, since it is crossing COLumns, not ROWs. e.g.:

```
<table border=”1”>
    <tr>
        <td>row 1 cell 1</td>
        <td>row 1 cell 2</td>
    </tr>
    <tr>
        <td colspan="2">row 2 cell 1</td>
    </tr>
</table>
```

The code above produces:

row 1 cell 1	row 1 cell 2
row 2 cell 1	

Note that we are missing a <td> element in the second row of the table. Since the first cell of the second row is going to take up the room of 2 cells using **colspan="2"**, it also takes the place of the cell in the coding. So that one cell is actually taking up the space of 2 cells.

The **rowspan** attribute is very similar to colspan, but it works in the opposite direction. While colspan goes across columns, rowspan goes across rows.

```
<table border=”1”>
    <tr>
        <td rowspan="2">row 1 cell 1</td>
        <td>row 1 cell 2</td>
    </tr>
    <tr>
        <td>row 2 cell 2</td>
    </tr>
</table>
```

This produces:

row 1 cell 1	row 1 cell 2
	row 2 cell 2

Note again that we are missing a <td> element in the second row of the table. The first cell of the second row is gone. This is because the first cell of the first row is using that space via the rowspan.

Important Notes

- To aid your own organisation, you can create a folder, e.g. ‘COMP30680’, in which you will save all practicals for this course. Create a subfolder of this folder called ‘practical1’ and save all this week's exercises there. This will aid you in future practicals for this course.
- **TIP:** When you edit a file and save a new version, you can click the “Refresh” button in your browser to see the new version. This will save you having to close your browser and open the file again each time.[1]

[1] If you use Brackets and the live demo function the refresh should happen automatically.

- This week's practical should be stored in a folder called **practical1** within the folder you created (see above). Create a subfolder of the practical1 folder called **images**. All images downloaded for this practical should be stored here.
- Images can be downloaded from the web by right-clicking on the image, and selecting "Save Picture As…" or "Save Image As...". *This facility could be useful for some of the later problems.*
- <img> tags should include an "alt" attribute, which will display alternative text if the image fails to load and is useful for users with text-based browsers or screen-readers.
- In all of the following exercises, you must create a full HTML document, i.e. use the HTML template that you saw above, with your own content in the <title>…</title> and <body>…</body> tags. Every page should have the <!DOCTYPE …> declaration at the top to comply with the HTML specification.

Practical Exercises

Using the elements described here and others described in lectures mark-up the following exercises in HTML. You can check the validity of your code by submitting it to **http://validator.w3.org/**

Exercise 1
Create a web page that displays the following piece of text. Ensure that you use appropriate fonts and emphasis. You do not need to create the border. Also, you need not break up the paragraphs exactly as below: your browser should automatically word-wrap each paragraph according to the window size.

AZINGER FINDS RECIPE FOR RYDER SUCCESS

RYDER CUP An upbeat *United States* team inspired by rookie *Anthony Kim* won the **Ryder Cup** for the first time in nine years by beating *Europe* 16.5-11.5 tonight.

Kim crushed *Sergio Garcia* 5 and 4 in the top encounter to set the tone for the Americans before *Jim Furyk* secured the decisive point with a 2 and 1 victory over Spaniard *Miguel Angel Jimenez* at a sun-drenched **Valhalla Golf Club**.

The following fonts were used: Times `Courier`
Save this file as **e1.html** in the …/practical1 folder.

Exercise 2
Write a HTML page that **lists** 5 of your current college courses (in any order). Include a heading "College Courses".

Save this file as **e2.html** in the …/practical1 folder

Exercise 3
Find the UCD logo through Google Image Search and download it as **logo.jpg** in the …/practical1/images folder**.**

Create a new web page that contains the UCD logo and the text "Welcome to UCD" In the image ('<img …>' – see lecture notes for more) tag, insert the attribute 'align="left" to control where the

image appears. Create a link so that the user is taken to the UCD homepage when the UCD logo is clicked.

Notice that by using left alignment, the text is placed to the right of the image. Try some of the other alignments mentioned in the notes.

Save this file as **e3.html** in the …/practical1 folder

Exercise 4

Write a web page listing the (numbered) names and reward for information for each of the FBIs 10 most wanted criminals.

Note: This requires you to find the official FBI Most Wanted page on the Web. You can use any search engine (e.g. Google) for this. Hopefully no one in the class is listed here.

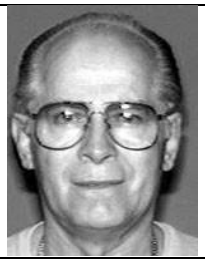
Save this file as **e4.html** in the …/practical1 folder

Exercise 5

Locate pictures of the FBI's top ten most wanted criminals. Update your FBI page from exercise 4 to instead contain a table showing the picture, name, and reward for each of the criminals. The criminal's name should link to his/her FBI page. The first row in the table should include a single cell with the header text "FBI's 10 Most Wanted". All of the images should be downloaded to your ../practical1/images folder.

Make sure you work on a copy of e4.html so you don't overwrite the original!

The table should look like the following (with each criminals details added):

FBI's 10 Most Wanted		
	JAMES J. BULGER	$2,000,000

Save as **q5.html** in the …/practical1 folder

If you still have time left when you complete these exercises please experiment with different tags and attributes available in HTML. For example, try to replace the FONT tag with style attributes in exercise 1 or try to manipulate the borders of the table in exercise 5.